SECTION 00 9113 – ADDENDUM NO. 2

Central Middle School
Greenwich, Connecticut

S/L/A/M Project No. 22367.00

This Addendum, dated October 22, 2024, forms a part of the Contract Documents, and modifies the original Bidding Documents dated September 30, 2024 and Addendum No. 1 dated October 16, 2024. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum is comprised of Page Nos. 1 of 6, and the following attachments:

1.1 BID RFI LOG (GCMS Phase 2 – Bidder's Question Log – dated 10/22/2024)

1.2 00 4000 – Turner Construction: Phase 2 of 3 Procurement Manual

A. 01 – Updated Drawings & Specifications List.

B. 02 – Updated Bid Package Breakdown.

C. 03b - Updated BP#9- Scope of Work - SITEWORK

D. 03b - Updated BP#10 - Scope of Work - CONCRETE

E. 03d - Updated BP#11 - Scope of Work - MASONRY

F. 03e - Updated BP#12 - Scope of Work - STRUCTURAL STEEL

G. 03f - Updated BP#13 - Scope of Work - MISC. METAL

H. 03h - Updated BP#15 - Scope of Work - ROOFING

I. 03k - Updated BP#18 - Scope of Work - MILLWORK & CASEWORK

J. 03l - Updated BP#19- Scope of Work - GLASS, GLAZING, & METAL PANELS

K. 03n - Updated BP#21 - Scope of Work – DRYWALL & GENERAL TRADES

L. 03o - Updated BP#22 - Scope of Work - CEILINGS

M. 03w - Updated BP#30 - Scope of Work – FOOD SERVICE EQUIPMENT

N. 03z.a - Updated BP#34 - Scope of Work – ELEVATORS

O. 03z.c - Updated BP#36 - Scope of Work – PLUMBING

P. 03z.d - Updated BP#37 - Scope of Work – HVAC & CONTROLS

Q. 03z.e - Updated BP#38 - Scope of Work – ELECTRICAL & FIRE ALARM

R. 03z.f - Updated BP#39 - Scope of Work – LOW VOLTAGE & AV

S. 03z.g - Updated BP#40 - Scope of Work – CONCRETE FLATWORK

T. 03z.h – Updated BP#41 – Scope of Work - LANDSCAPING

U. 31 – Updated Pre-purchased Equipment Contractor Coordination Matrices.

1.3 PROJECT MANUAL

A. REPLACE the follow specification section, previously dated September 30, 2024 with the revised section dated October 16, 2024

1. 00 3132 GEOTECHNICAL REPORT – This replaces the entire section including the report portions, previously a total of 72 pages replaced with 110 pages. The additional pages include an executive summary and additional laboratory information, behind the boring information)
2. 05 5000 METAL FABRICATIONS
3. 08 8710 DOOR HARDWARE
4. 12 3553.19 WOOD LABORATORY CASEWORK
5. 14 2100 ELECTRIC TRACTION ELEVATORS
6. 26 2726 WIRING DEVICES
7. 32 0529 GLACIAL BOULDERS FOR EXTERIOR IMPROVEMENT
8. 32 3113 CHAIN LINK FENCES AND GATES

B. ADD new specification section dated October 16, 2024

1. 08 5653 SECURITY AND SERVICE WINDOWS
2. 33 3115 TELEVISION INSPECTION OF PIPELINE

C. Additional Reports Issued for reference only, these Appendices to be Added to Vol 4 of 4

1. **Appendix A – Phase 1 Environmental Site Assessment. Dated May 30, 2023, authored by Langan Engineering**
2. **Appendix B – Underground Storage Tank Investigation Report, Dated November 16, 2023, authored by Langan Engineering**
3. **Appendix C – Limited In-Siti Soil Sampling, Dated April 1, 2024**
4. **Appendix D – Stormwater Pollution Control Plan for Greenwich Central Middle School (Issued in response to Bidder RFI #93), authored by Tighe & Bond**

1.4 DRAWINGS

A. Replace the following Drawing, previously issued on 09/30/2024 for BIDDING/PERMIT, or ADDENDUMNo.1 on 10/10/24 with new drawings dated 10/16/2024

1.	C101	OVERALL SITE STORMWATER MANAGEMENT PLAN
2.	C104	SITE STORMWATER MANAGEMENT PART PLAN
3.	C301	OVERALL SITE UTILITY PLAN
4.	SU100	MEP SITE UTILITY PLAN
5.	L101B	SITE DEMOLITION AND PREPARATION SOUTHEAST
6.	L202A	SITE MATERIALS NORTHEAST
7.	L202C	SITE MATERIALS SOUTHWEST
8.	L301C	SITE GRADING SOUTHWEST
9.	L404	SITE IRRIGATION PLAN
10.	S101A	FOUNDATION PLAN – PART A
11.	S101C	FOUNDATION PLAN – PART C
12.	S101E	FOUNDATION PLAN – PART E
13.	S211	FOUNDATION DETAILS
14.	A805	INTERIOR DETAILS
15.	A911	FINISH PRODUCT LIST – PART B AND FINISH NOTES
16.	FP000	FIRE PROTECTION ABBREVIATIONS, NOTES AND SYMBOLS
17.	FP101A	FIRE PROTECTION FIRST FLOOR PLAN - PART A
18.	FP101B	FIRE PROTECTION FIRST FLOOR PLAN - PART B
19.	FP101C	FIRE PROTECTION FIRST FLOOR PLAN - PART C
20.	FP101D	FIRE PROTECTION FIRST FLOOR PLAN - PART D
21.	FP101F	FIRE PROTECTION FIRST FLOOR PLAN - PART F
22.	FP102A	FIRE PROTECTION SECOND FLOOR PLAN - PART A
23.	FP102C	FIRE PROTECTION SECOND FLOOR PLAN - PART C
24.	FP102E	FIRE PROTECTION SECOND FLOOR PLAN - PART E
25.	PSU001	PLUMBING SITE UTILITY PLAN
26.	P100A	PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART A
27.	P100B	PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART B
28.	P100E	PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART E
29.	P101A	PLUMBING FIRST FLOOR PLAN - PART A
30.	P101B	PLUMBING FIRST FLOOR PLAN - PART B
31.	P101D	PLUMBING FIRST FLOOR PLAN - PART D
32.	P101E	PLUMBING FIRST FLOOR PLAN - PART E
33.	P101F	PLUMBING FIRST FLOOR PLAN - PART F
34.	P102A	PLUMBING SECOND FLOOR PLAN -PART A
35.	P103A	PLUMBING ROOF PLAN - PART A
36.	P103F	PLUMBING ROOF PLAN - PART F
37.	P401	PLUMBING ENLARGED VIEWS
38.	P402	PLUMBING ENLARGED VIEWS
39.	P405	PLUMBING ENLARGED VIEWS
40.	P501	PLUMBING DETAILS
41.	P601	PLUMBING SCHEDULES AND DIAGRAMS
42.	M101B	MECHANICAL FIRST FLOOR PLAN - PART B
43.	M101C	MECHANICAL FIRST FLOOR PLAN – PART C
44.	M101E	MECHANICAL FIRST FLOOR PLAN – PATR E

45.	MP101A	MECHANICAL PIPING FIRST FLOOR PLAN - PART A
46.	MP101B	MECHANICAL PIPING FIRST FLOOR PLAN - PART B
47.	MP101C	MECHANICAL PIPING FIRST FLOOR PLAN - PART C
48.	MP101D	MECHANICAL PIPING FIRST FLOOR PLAN - PART D
49.	MP101E	MECHANICAL PIPING FIRST FLOOR PLAN - PART E
50.	MP102A	MECHANICAL PIPING SECOND FLOOR PLAN - PART A
51.	MP102C	MECHANICAL PIPING SECOND FLOOR PLAN - PART C
52.	MP102E	MECHANICAL PIPING SECOND FLOOR PLAN - PART E
53.	M601	MECHANICAL SCHEDULES
54.	M602	MECHANICAL SCHEDULES
55.	M700	MECHANICAL CONTROLS DIAGRAMS
56.	M701	MECHANICAL CONTROLS DIAGRAMS
57.	E000	ELECTRICAL ABBREVIATIONS, NOTES AND SYMBOLS
58.	EL101A	ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART A
59.	EL101B	ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART B
60.	EL101C	ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART C
61.	EL101D	ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART D
62.	EL101F	ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART F
63.	EL102A	ELECTRICAL LIGHTING SECOND FLOOR PLAN - PART A
64.	EL102B	ELECTRICAL LIGHTING SECOND FLOOR PLAN - PART B
65.	EL102C	ELECTRICAL LIGHTING SECOND FLOOR PLAN - PART C
66.	EL102E	ELECTRICAL LIGHTING SECOND FLOOR PLAN - PART E
67.	EP101A	ELECTRICAL POWER FIRST FLOOR PLAN - PART A
68.	EP101C	ELECTRICAL POWER FIRST FLOOR PLAN - PART C
69.	EP101E	ELECTRICAL POWER FIRST FLOOR PLAN - PART E
70.	E400	ELECTRICAL ENLARGED PLANS - KITCHEN
71.	E401	ELECTRICAL ENLARGED PLANS - AUDITORIUM
72.	E501	ELECTRICAL DETAILS
73.	E603	ELECTRICAL PANEL SCHEDULES
74.	E701	FIRE ALARM RISER DIAGRAM
75.	T000	TECHNOLOGY SYMBOL LEGEND & GENERAL NOTES
76.	T101A	TECHNOLOGY FIRST FLOOR PLAN A
77.	T101B	TECHNOLOGY FIRST FLOOR PLAN B
78.	T101C	TECHNOLOGY FIRST FLOOR PLAN C
79.	T101D	TECHNOLOGY FIRST FLOOR PLAN D
80.	T101E	TECHNOLOGY FIRST FLOOR PLAN E
81.	T101F	TECHNOLOGY FIRST FLOOR PLAN F
82.	T102A	TECHNOLOGY SECOND FLOOR PLAN A
83.	T102C	TECHNOLOGY SECOND FLOOR PLAN C
84.	T102E	TECHNOLOGY SECOND FLOOR PLAN E
85.	TA000	AUDIO VISUAL SYMBOL LEGEND & GENERAL NOTES
86.	TY000	SECURITY SYMBOL LEGEND & GENERAL NOTES
87.	TY101A	SECURITY FIRST FLOOR PLAN A
88.	TY101C	SECURITY FIRST FLOOR PLAN C

B. Issued for refernce only to address Bidder RFI #91

1. **For Refernce Only** – PLAN AND PROFILE OF SEWER DATED September 6. 1961

END OF DOCUMENT 00 9113 - ADDENDUM No. 2

END OF SECTION 01 09113

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GCMS Phase 2 - Bidder's Question Log

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
1	Turner	Procurement Manual	10/1/24	What type of labor is being requested for this project? Union or CT Prevailing wage ? When is the estimated installation of the food service equipment? Substantial completion date ? Do you expect to need BIM Coordination on this project?	As this is a public bid, all work must be Prevailing Wage, there is not a requirement for Union Carpentry on this project. Reference Project manual item 10 – Minimum Rates and Classifications for Building Construction – CT Prevailing Wage Rates dated 9.23.24. Note that the State of Connecticut issues updated required rates each year on July 1. Review project schedule for Lower Level fitout scheduled to start September 2025 through June 2026 specific kitchen development will be within this range. See Additional Provisiosn/Scope of Work for all Subcontractors, item #55. Kitchen equipment to participate in BIM 3D Modeling.	10/1/2024	Turner/ J Phelan		Closed	10/1/2024
2	Turner	Procurement Manual	10/1/24	Is this project being done under Carpenter Union?	As this is a public bid, all work must be Prevailing Wage, there is not a requirement for Union Carpentry on this project. Reference Project manual item 10 – Minimum Rates and Classifications for Building Construction – CT Prevailing Wage Rates dated 9.23.24. Note that the State of Connecticut issues updated required rates each year on July 1.	10/1/2024	Turner/ J Phelan		Closed	10/1/2024
3	SLAM	A111.16	10/1/24	No Basis of Design was found for the Ballistic Level 3 Transaction Window at Entry Vestibule. Please provide basis of design for this product. **Turner Follow-up (10/16/24):** Please provide a spec to cover this item.	BOD will be ARMORTEX Aluminum Transaction Window system w/speaker furnished & installed by BP #19. **Turner Response (10/21/24):** Spec Section 08 5653 has been issued in Addendum #2	10/9/2024	SLAM		Closed	10/21/2024
4	SLAM	Spec -1 3575 & Dwg GC01	10/1/24	Delegated Design Procedure Spec (01 3573) and table on drawing GC01 includes Spec 28 5319, Distributed Antenna System. This spec was not found in document. Please confirm if applicable and provide spec.						
5	Turner	Procurement Manual	10/2/24	Where can I find the information on Small Business / MWBE participation percentage requirements.	Refer to the Invite to bid for specific package requirements in the Chart on Page 1 and 2. Also, reference the Boilerplate additional provisions item #4 page 3C.	10/2/2024	Turner/ J Phelan		Closed	10/1/2024
6	Turner	Procurement Manual	10/2/24	Is a bid bond required for bid submission?	A bid bond is applicable for bids in excess of $100,000. This information is detailed in the Invitation to Bid document along with additional required information for bid submission.	10/2/2024	Turner/ B Moore		Closed	10/7/2024
7	SLAM	3D/A522	10/3/24	Please confirm that the anchorage at Curtain Wall header is the Anchorage is concealed in mullions per detail 6C/A640.	Confirmed	10/9/2024	SLAM		Closed	10/16/2024
8	SLAM	1D/A640	10/3/24	Please provide clarifying detail of sunshade attachment to storefront mullion. Additionally, clarify how flashing/roof membrane extends around attachment bracket.	The Sunshade is provide by the window manufacture - all attchment detail is per there typical instaltion method for their system. The shade does not interact with the roof or wall membrane flashings as it attached to the window system only.	10/9/2024	SLAM		Closed	10/16/2024
9	SLAM	1C/A640	10/3/24	At South Elevation Main Entrance (5C/A310), there is concern of potential condensation accumulation at metal panel infill. Please confirm that no insulation is required on the inside of the glazed-in metal insulated panel.	There is no condesation concern and no insulation is required.	10/9/2024	SLAM		Closed	10/16/2024

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GCMS Phase 2 - Bidder's Question Log

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
10	SLAM	A901C	10/3/24	Please confirm that the wall panels (AWP8) in the Media/Production Classroom 1063 & Media Sound Booth are to be full height at all walls.	Per the Finish Product List AWP6 is to be full height. It is only to be installed on the 2 walls per room as shown on the Finish Plan A901C. Furnished & Installed by BP #18.	10/8/2024	SLAM		Closed	10/16/2024
11	SLAM	A122	10/3/24	Please confirm that 3A/A501 is the applicable detail for waterproofing at the elevator pit (A122). Additionally, will waterproofing be required at the interior of the elevator pit? Please provide details.	3A/A501 is the correct detail refernnce for the Elevator Pit. No see 5E/A122 plan refernce tht calls for exterior side waterproofing on all sides of the elevatior pit.	10/9/2024	SLAM		Closed	10/16/2024
12	SLAM	S410, S411, S420, S421, S430	10/3/24	There are details throughout the S400 series of drawings that do no show all the connection types, i.e. bolt sizes, weld types & sizes, etc..for items like hung lintels and perimeter angles. For example see 9/S410 or 15/S410. Are these intended to be delegated design? If so, no loads seem to have been provided. Please advise & provide these connection details where missing. **Turner Follow-up (10/16/24):** Confirm typical welds shown on Detail 1 of same page are adequate for these conditions.						
13	SLAM	6/S420	10/3/24	Please confirm that the joist bridging, diagonal horizontal bracing, and rigging beam connections to the joists will be a delegated design.	Confirmed.	10/8/2024	SLAM		Closed	10/16/2024
14	SLAM	S302B	10/3/24	Please confirm that the intent is for the basketball hoop supplemental steel supports, attachement to the roof joists, and any associated bracing to be a delegated design.	Basketball hoop supplemental steel supports and attachments to roof joists by basketball supplier (BP #21), inclusive of delegated design.	10/8/2024	SLAM		Closed	10/16/2024
15	SLAM	S302B	10/3/24	It is not clear how motorized partition will be mounted to the roof joists. Please provide details and a section cut. **Turner Follow-up (10/16/24):** Provide detail of mount to roof joists.						
16	SLAM	A522	10/3/24	Detail 3B/A522 shows CFMF angles attached to the top flange of the steel beams to support the skylight framing. Will CFMF be sufficient to carry this load or will strcutrual steel angles welded to the steel be required?						
17	SLAM	GC12	10/3/24	The steel framing between gridlines XB-XC and in front of gridline AK seems to be called out to be galvanized as well as coated in thermal insulative coating and intumescent paint. Are any special primers or prep required for these 3 coating to be applied on top of each other? Please confirm the order these coatings should be applied in.						
18	SLAM	S502	10/3/24	Please confirm that all the shear walls shown on S502 are 12" CMU.	See architect plans and arch wall type sheets for wall designations	10/10/2024	SLAM		Closed	10/16/2024
19	SLAM	S401 & A122	10/3/24	No elevator hoist beam size has been provided. Please provide size and bearing details.	This identified on the related structural drawings S302E.	10/10/2024	SLAM		Closed	10/16/2024
20	SLAM	Spec 055000	10/3/24	Please confirm that the "ships ladder" spec also applies to roof hatch ladders in 055000 2.6.c	The refernce to "ships ladder" in this section will be removed and replaced with a fixed ladder revision. **Turner Response (10/21/24):** Revised Spec Section 05 5000 has been issued in Addendum #2	10/16/2024	SLAM		Closed	10/21/2024
21	SLAM	T400	10/3/24	Please confirm the fiber & copper backbone interconnecting the IDF & MDF rooms is not required to be run in conduit, and that armored cable is sufficient.	Armored cable, as specified, is sufficient. **Turner Additional Response (10/21/24):** Armored cable & supports furnished & installed by BP #39 per scope of work documents.	10/16/2024	DA		Closed	10/21/2024

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BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
22	SLAM	T400	10/3/24	Please confirm scope & devices noted on the T set and TY set generally have conduit pathways to above accessible ceilings, unless otherwise noted. And that scope & devices on TA set (AV) have conduit directly to the AV cabinet supporting the space, unless otherwise noted as to be above accessible ceiling. **Turner Follow-up (10/21/24):** Please confirm that AV conduit and rough-in requirements for rooms other than the Gym, Cafeteria, and Auditorium are only what is identified in the AV conduit & cabling schedule on TA000.	Confirmed.	10/16/2024	DA			
23	SLAM	T101A & T101D	10/3/24	There doesn't appear to be any data, voice, or network connections shown for the fire alarm system on the technology drawings. Please advise and provide details.						
24	SLAM	T series	10/3/24	There doesn't appear to be any data or network connections shown for the BMS system on the technology drawings. Please advise and provide details.	See data adds for BMS in Addendum 02.	10/16/2024	DA		Closed	10/21/2024
25	SLAM	Spec 276010	10/3/24	Sheet GC0A calls for the DAS to be a delegated design. The spec doesn't explicitly mention any engineering or delegated design requirements or deisgner certifications. **Turner Follow-up (10/16/24):** Spec section 276010 was issued, but is not listed on the delegated design schedule shown on sheet GC0A. Spec section 28 5319 was not issued, but is listed on sheet GC0A. Please advise.						
26	SLAM	E602-E607	10/3/24	The panel schedules indicate a lot of spares. Are there truly this many spares available?	Spare capacity in panels to remain at this time.	10/10/2024	CES		Closed	10/16/2024
27	SLAM	SU500	10/3/24	Detail 1 and 4 on SU500 reference a concrete encasement detail in Note #4. Has this detail been provided? What sheet is it on? Please add sheet reference to this Note #4. Also, please confirm if any concrete encasement around site conduit is required. **Turner Follow-up (10/16/24):** On C508 ductbank detail notes reference concrete being needed beneath paved areas only. Please confirm. Also please provide spacing and concrete encasement dimensions (i.e. concrete cover).	Refer to CIVIL (Tighe and Bond) drawings for trenching detail requirements. Concrete encasement as required furnished & installed by Site Contractor (BP #09).	10/10/2024	CES			
28	SLAM	SU500	10/3/24	Sheet SU100 references a detail on SU500 for the primary electric manhole. There is no detail on SU500. Please provide this detail, size, and specifications on the primary electric manhole.	Refer to sheet SU501 for eversource hex manhole detail. References to SU500 will be changed to reference SU501. Site Contractor (BP #09) shall furnish & install the Eversource manhole & associated details, inclusive of coordination with BP #38.	10/10/2024	CES		Closed	10/16/2024
29	SLAM	C301, SU100	10/3/24	Note 28 on C301 alludes to utility company review and the design being subject to change pending utility company review. Have the utility companies reviewed & approved the current design? There is also mention of ultility "design by others". Can you please clarify the intent?						
30	SLAM	09 6500	10/3/24	RT1, RT2 and RT3 are all listed as 4mm thick. Can you please confirm that they should be listed as 2.5 mm thick to match up to all the other LVT's on the job.	All should be 2.5mm (not 4mm)	10/11/2024	SLAM		Closed	10/16/2024
31	SLAM	09 6500	10/3/24	RT2 and RT3 come with the same wear layer as all the other RT's lised but they are both 40 mill and the warranty is 25 years. This 40 mill and 25 year warranty are specific to the Amtico selections	The minimum wear layer for the resilient tiles is 20 mil and the basic warranty is 15 years - RT2 and RT3 exceed this with 40mil wear layer and a 25 year Warranty which is acceptable but not a requirement.	10/11/2024	SLAM		Closed	10/16/2024

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GCMS Phase 2 - Bidder's Question Log

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
32	SLAM	C301, SU100	10/3/24	Please confirm that the electrical utility company will install conductors from Stanwich Road to the pad mounted transformer. Please confirm that the utility company will also furnish & install the pad mounted transformer. The EC will then provide conductors from the utility transformer to MSB-1 & FP-DS. Please confirm that the telecom service provider will be installing conductors from Stanwich road to a demarcation / box in MDF 1066.	The electric utility company will provide primary cable from the riser pole to the pad mounted transformer. The project will provide the conduit ductbank, pulling structure with proper subgrade and grounding, transformer pad with subgrade and grounding, secondary conductors from the transformer to MSB-1 and FP-DS in conformance with the identified trench detail.The communication utility company will provide service cable from the riser pole to the Telecommunications Equipment Room full length underground.	10/11/2024	CES		Closed	10/16/2024
33	SLAM	Spec 260573	10/3/24	Please confirm all electrical power studies required. Spec section 260573 didn't seem to mention an Arc-Flash study. Is that required? Other spec sections refer to arc-flash labeling. We want to ensure all the studies required is clear.						
34	SLAM	Electrical Specs	10/3/24	We didn't see a spec for electrical infrastructrure vibration & seismic controls. Please confirm that there are no vibration or Seismic requirements for electrical systems. If there are, then please provide the appropriate spec.						
35	SLAM	Spec 323120, SU100, TY100	10/3/24	The spec for vehicle barrier gates calls for communiction wiring. SU100 shows power run to the gates, but doesn't explicitly show any communications cabling or infrastructure run to the gates. Please advise and update the drawings to clearly shown interconenctions and/or wiring details.	Refer to keynote E13 and note calling for (1) 2” conduit. Refer to note on site plan “(2) 2” CONDUITS FOR COMMUNICATIONS TO SITE CAMERAS AND EV CHARGING EQUIPMENT.” Refer to EV charging detail for communication conduit requirements. The base electrical contractor (BP #38) shall funrish & install all conduits / pathways. Low voltage contractor (BP #39) to furnish, install, terminate, & test all low voltage cabling.	10/13/2024	CES		Closed	10/16/2024
36	SLAM	Spec 262653 & SU100	10/3/24	The spec calls for the EV charging stations to be networked. There doesn't seem to be any data / LV cabling or connections indicated. Will these be connected via a cellular or wifi signal? Please advise and update the drawings to clearly show network connections required and/or wiring details.						
37	SLAM	Spec 260533	10/3/24	This spec section mentions related spec sections that have not been issued, i.e. 270533 Raceways for Communications Systems. Please advise and provide all specs required. Please ensure all related specs are provided or delete references throughout. **Turner Follow-up (10/16/24):** Please provide an updated spec with the corrected references.	Refernces to 27 0533 in this spec section should be replaced with 27 0536.	10/9/1902	CES			
38	SLAM	E Series	10/3/24	Please confirm that all motorized shades are intended to be manually & locally controlled. Confirm that they will not be integrated with any lighting controls system or have any automation.	Motorized shade control shall be manual and locally controlled.	10/13/2024	CES		Closed	10/16/2024
39	SLAM	E701 & Spec 262826	10/3/24	This spec mentions an Engine Start Monitoring system that is integrated with the Fire Alarm system. There doesn't appear to be reference to this on the fire alarm riser SOO (E701). Please advise and update accordingly.	Monitoring module for monitoring of the engine start circuit is added to floor plan and riser diagram in Addendum #2.	10/10/2024	CES		Closed	10/21/2024
40	SLAM	Spec 283100	10/3/24	Please confirm that MC Cable is acceptable for fire alarms systems in all concealed conditions (i.e. within walls and above accessible, finished ceilings), and that conduit is only required in "exposed" installations. Please confirm if areas with "cloud" ceilings are considered "exposed" (i.e. the Cafeteria).	MC Cable is acceptable for fire alarm systems in concealed areas. Areas with cloud ceilings are considered exposed, provide wire in conduit.	10/10/2024	CES		Closed	10/16/2024
41	SLAM	Spec 270536	10/3/24	This spec section mentions delegated design for seismic restraints. Is this required for the small amount of cable tray scope in IDF/MDF rooms? If so, please reference this spec in the delegated design matrix on the GC series of drawings.	Disregard requirement for delegated design for seismic restraints in Specification 27 0536.	10/16/2024	DA		Closed	10/21/2024

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BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
42	SLAM	E Series	10/3/24	Is there a spec for the overhead cord reels? Please advise or provide.	Cord reel spec to be "Industrial cord reel, with Hubbell HBL4729C twist-lock input connector, 25' SJO Cable Jacket, 12/3, Nema 5-20R connector for use by owner. White housing. Shall be provided with the following: Pivot Base Hubbell #HBLI340PH; Mounting Bracket Hubbell #HBLIMB; Ball Stop Hubbell #HLI12BS". Cord reels shall be furnished & installed by BP #38.	10/11/2024	CES		Closed	10/16/2024
43	SLAM	S421 & A521	10/3/24	Detail 1B on A521 shows CFMF supports for the MCM panel soffit around the Gym. Detail 1 on S421 shows a top chord extension for the roof joists to create a an overhang. What is the profile / shape of this top chord extension because it looks larger than a typical top chord. Also, is the intent for the CFMF to attach to this extension or will the CFMF hang from the roof deck overhang?	Top chord extension & profile (i.e. depth) is by joist fabricator (BP #12) as part of the delegated design process. CFMF is intend to attach to the extended top cord, infilling between members. CFMF furinshed & installed by BP #21.	10/9/2024	SLAM		Closed	10/16/2024
44	SLAM	MEPFS Drawings	10/3/24	Please provide matchlines on all plans.						
45	SLAM	L503 & L504	10/3/24	Please confirm the manufacturer and model number intended to be used for the metal screen fence and black chainlink viynl coated fence shown on L503 & L504.	Please see spec section 12 9300 for METAL SCREEN FENCE – Basis of Design is Pallisade Fortress Screen Fence as provided by Palm SHIELD. Please see spec section 32 3113 for CHAIN LINK FENCE – components called out. B.O.D. EAGLE FENCE or equal. Furnished & installed by BP #09.	10/11/2024	SLAM		Closed	10/16/2024
46	SLAM	TR1 & TR2	10/3/24	Details 7 & 8 seem to show a rigging beam up high and then a pipe batten hung from that beam. Details 3, 5, & 6 on TR1 show "compression tubes" and "strongbacks" between the rigging beam and pipe baten, which are not part of the details on TR2. It is not clear from the sections & details provided what the intended theatrical lighting / rigging assembly should be. Please provide updated or additonal details.						
47	SLAM	TR1 & TR2	10/3/24	Please confirm how the curtain tracks shown in Detail 2 on TR1 on the perimeter (adjacent to gridlines CN & CJ) should be supported. Can they be hung directly from the roof deck or is that an issue structurally?	Theatrical rigging contractor (BP #31) to provide intermediate support strut between rigging beams to support track. System is not to be huing directly form the roof deck.	10/9/2024	CT/SLAM		Closed	10/16/2024
48	SLAM	T-Series & A912	10/3/24	It is not clear from the drawings & specs if there will be any owner furnished, contractor installed Low Voltage and/or AV equipment and components (for example network switches, smartboards, etc.). If there is anything, please provide a responsibility matrix indicating this scope. Ideally an OFCI vs. OFOI vs. CFCI matrix should be provided, similar to the specialty equipment matrices on A912.	Refer to scope matrix added to T000, TA000, & TY000 in Addendum 02.	10/16/2024	DA		Closed	10/21/2024
49	SLAM	Spec 276010	10/3/24	Please confirm that the distributed antena system shown in the bid documents is intended for Emergency Responder Radio Coverage Only. And that there will not be a system for extended cellular coverage.	Confirmed. DAS is intended for Emergency Responder Radio Coverage only.	10/11/2024	CES		Closed	10/16/2024
50	SLAM	E400 & EP101D	10/3/24	It seems like under slab conduit and electrical circuit infrastructure will be required, especially for the kitchen and auditorium spaces. There doesn't appear to be any typcial below slab typical details in the E500 series. Please advise and provide. Also, please confirm it is acceptable to run feeders and branch circuits below the slab on grade generally. **Turner Follow-up (10/16/24):** Please follow-up with a typical below slab conduit detail for within the footprint of the school.	Underslab feeders and branch circuits below slab are acceptable means and methods procedure.	10/11/2024	CES			

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BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
51	SLAM	E700	10/3/24	E700 shows the PV 1200A NEMA 3R disconnect and meter cabinet as "future" with dashed lines, seeming to indicate it is not part of the scope of work for this project. Is that true? However, E700 shows 1200A feeders from these future cabinets as being part of the scope of work for this project. Is this true? **Turner Follow-up (10/16/24):** Please provided updated drawings showing the (4) 4" empty conduits.	PV disconnect and meter cabinet is future and not part of the scope of work for this project. Space reserved for future PV equipment shown on EP101A, EP101C, EP101E and roof plans. 1200A feeder shown on E700 was intended to just be conduit and pull string. Reference to 1200A feeder will be removed in next addendum and replaced with note for (4) 4" conduits and pull strings, furnished & installed by BP #38.	10/11/2024	CES			
52	SLAM	E700	10/3/24	Detail 2 on E700 shows a Future PV System Riser Diagram. Please clarify what should be included in the base electrical bids. Will it be empty conduit w/ drag lines only to the general locations indicated.	Yes, base electrical bid (BP #38) will be empty conduit w/ drag lines. Refer to E700 Future PV System Conduit Riser Diagram, and roof plans for conduit stub up locations.	10/11/2024	CES		Closed	10/16/2024
53	SLAM	E700	10/3/24	Please confirm if the submetering shown in the submetering schedule on E700 is the only submetering required. Or is there addition submetering required for mechanical system and/or lighting not currently shown in this schedule? If so, please advise on a full list of submetering.	Confirmed. Submetering shown in schedule is all that is required. If you have specific system you have a question about please submit a more detsiled question. **Turner Follow-up Response (10/21/24):** The electrician (BP #38) to review all bid documents and specifications, and furnish & install all submetering identified therein.	10/16/2024	SLAM		Closed	10/21/2024
54	SLAM	S401 & A121	10/3/24	It is not clear from detail 1/S401 or 3D/A121 how the 2nd floor curtain wall / window will be supported. Please advise and provide the corresponding detail(s).	At the limited width of that window (7'-6) typical CFMF detailing & framing by BP #21 will be required (i.e. box headers and sills - double jamb king suds). Similar to 2D/A641 added in this Addednum	10/9/2024	SLAM		Closed	10/16/2024
55	SLAM	S211	10/3/24	Detail 1/S211 notes that 1st floor slab needs to be poured prior to backfill. Can you confirm if it is acceptable to backfill prior to pouring slab? Also note that detail 3/S211 does not require slab install prior to backfill. **Turner Follow-up (10/16/24):** Initial SLAM response will provide a hardship to construction sequence & scheduling. Please provide detail and plan locations for keyway at retaining wall footing to eliminate the requirement for placing this SOG prior to backfilling.						
New Bidder's Questions as of 10/04/24 Issuance										
56	Turner	Procurement Manual	10/8/24	Will the Turner Pre-Qualification Form be required for the bid, if the potential subcontractor has recently filled out pre-quals with Turner Construction?	Subcontractors who are currently Prequalified with Turner may request Turner provide a letter to verifiy prequalification. Copy of letter can be submitted with Bid in lieu of submission of the "Turner Prequalification Response Form" included within the project manual. Send requests for Prequalified letter Francesca Perugini at fperugini@tcco.com.	10/9/2024	JP/Turner		Closed	10/9/2024
57	Turner	Procurement Manual	10/8/24	What time do te buses arrive in the morning, and when do they pick-up in the afternoon.	CMS Dropoff starts at 7:20 a.m. and Dismissal time is 2:45 p.m.	10/9/2024	JP/Turner		Closed	10/9/2024
58	Turner	Procurement Manual	10/8/24	What percentage of the project is State funded vs. town funds?	Not applicable	10/16/2024	JP/Turner		Closed	10/16/2024
59	Turner	Procurement Manual	10/8/24	Is Turner planning on submitting and self-perform scopes?	Turner Self Perform (SPO) will not be bidding on any of the prime bid packages.	10/9/2024	CL/Turner		Closed	10/9/2024
60	SLAM	C305	10/9/24	There is a Heat Trace system for the grease waste system. The Civil Drawings say to reference details on the MEP drawings, MEP drawings only show HT-1 on the interior and then HT-2 on the portion of the exterior line shown on Drawing P100A. Shall HT-2 extend all the way to the grease trap on the site or just required for the first 10 feet of piping?	HT-2 shall extend all the way to the grease trap per Addendum #2. Heat trace installation shall be coordinated with Civil piping and routing. **Turner Additional Response (10/21/24):** Plumbing subcontractor (BP #36) to furnish heat trace and the Electrician (BP #38) to install per the Turner scope of work documents.	10/16/2024	CES		Closed	10/21/2024

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61	SLAM	A902A	10/9/24	Classroom 2019 also does not show roller shades at the counter space. Please confirm if this area is to have roller shades.						
62	SLAM	21 05 33, 22 05 33	10/9/24	There is no Heat Trace Specificaiton for Fire Protection or Plumbing systems. Please provide specifications. Turner Follow-up (10/21/24): Please provide a written heat trace specification.	Refer to schedules on plumbing and fire protection drawings for heat trace specification.	10/16/2024	CES			
63	SLAM	275313	10/9/24	Is it acceptable to utilize Primex Clocks in lieu of SiteSync IQ by American Time?						
64	SLAM		10/9/24	Are the site boulders intended to be imported to site or harvested from site?						
65	SLAM	L404	10/9/24	On drawing L404 the site irrigation plan what is the location of the point of connection to the new building for irrigation piping?	Irrigation will connect in through the Fitness Room 1099. See Plumbing Drawings P101B for more information.	10/16/2024	SLAM/CES		Closed	10/21/2024
66	SLAM	Spec 08 4413	10/10/24	In regards to the ballistic curtainwall type ICW02, no specification was found for ballistic curtainwall framing. Can you please clarify or provide? Turner Follow-up (10/17/24): The lower section of the frame (3E/A632) has the bullet resistant glass, but not the upper. Typically, if any part of the frame is to have bullet resistant glass in it than the entire frame is to be bullet resistant. The glass doesn't have to be, as it shows in this case, but the frame does. Please clarify if the entire frame is to be bullet resistant.						
67	Turner	A924	10/10/24	Please confirm that the masonry for Sign Type R is not within the scope of the signage contractor.	The masonry will be by the Masonry subcontractor (BP #11) and the fiber cement paneling system will be by the drywall subcontractor (BP #21). The flush mount alum. letters will be by the signage contractor (BP #28).	10/16/2024	JM/Turner		Closed	10/16/2024
68	SLAM	A924	10/10/24	Please confirm that halo lit is acceptable for Sign Type S.						
69	Turner	10-1416-1	10/10/24	Is the dedication plaque detailed in Section 10-1415 part of the signage scope?	The millwork subcontractor (BP #18) will be responsible for the Plaques spec section.	10/16/2024	JM/Turner		Closed	10/16/2024
70	SLAM	Existing / As-Built Dwgs	10/10/24	Can drawings of the Existing Building Construction be provided?						
71	SLAM	05 2100	10/10/24	Specification section 05 2100-1.3B notes comprehensive engineering analysis of "special joists", signed and sealed by qualified engineer. It appearst the joist sizes are already on the documents, please clarify the intent of what joists are to be delegated design as 'special joists". Are there restrictions on the 'special joists', meaning do portions of the design need to align with sizes provided on the documents?	The SP designation on the framing plans is what defines a "Special Joist". The depth designations on the plans need to be adhered to. The delegated design specified and required, covers all of the rest of the loading criteria that goes into sizing the individual parts and pieces thst make up a typical joist. All of which are defined in the drawing set. See Soo1, Individual Details in the S400 Series and S700 series for loading information and notes. Along with other things that hang from the joists - I.E. Basketball Hoops, divider curtains, motors that move these things....etc. All of these things need to be factored into the delegated desing by the fabricator's engineer (by BP #12)	10/14/2024	SLAM		Closed	10/21/2024

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72	SLAM	05 5000	10/10/24	Specification section 05 5000 is identified as delegeted design on sheet GC0A. Reviewign 05 5000-1.5 is notes notes ladders, backstop and elevator beams as delegated design. Please confirm these items are the extents of the delegated design requirements of this specification section 05 5000.	Paragraph 1.5-A says “ladders, backstop and equipment supports, and elevator beams”. Equipment support requiring delegated design should include support for the gym divider curtain, overhead coiling doors and grilles, and cubicle ceiling track support, unless covered by structural in their drawings. Turner Additional Response (10/21/24): Each bid package subcontractor is responsible for delegated design of their own scope items and coordination with associated trades for loads imposed. See Turner Scope of Work documents for delineation of scope.	10/16/2024	SLAM		Closed	10/21/2024
73	SLAM	08 4313	10/10/24	Specification section 08 4313 is identfied as delegated design on sheet GC0A. Reviewing the spec section 08 4313-1.5E it appears only to indicated attachments and anchors require delegated engineering analysis. Confirm this is the correct interpretation and that standard manufacturer data for the storefont framing in lieu of delegated design calcs.	Questioner’s interpretation is acceptable. Manufacturer’s published design data is sufficient to describe framing’s structural and physical characteristics.	10/16/2024	SLAM		Closed	10/21/2024
74	SLAM	A911	10/10/24	Finish Schedule doesn’t have a color for PL5 Wilsonart Plam, only a finish. It also shows PL7 Wilsonart Plam with no color or finish. Please advise a color and or finish selection are for these Plastic Laminates.	PL5 is a placeholder for finish on the face and sides of servery equipment only. There is no millwork in the servery. PL5 will match PL1. PL7 please use Formica, Specialty High Pressure Plastic Laminate, Magnetic, Writable Whiteboard surface, stain resistant in Crystal White. Both items have been modified in the Finish Materils list.	10/14/2024	SLAM		Closed	10/21/2024
75	Turner	Millwork SOW	10/10/24	SOW for Millwork and Casework (Scope Item #19) states we own furnish and install of TRM1 through TRM5. Details 1A, 1B, 3B/A805 all show Fry Reglet TRM trim being installed behind either wallcovering or AWP’s, both we don’t own. Shouldn’t this be furnished and installed under the Bid Packages that own the wallcovering and AWP Panels? Of all 5 TRM’s, the only one I see our Bid Package owning would be TRM3 per A911 as this if for the exposed edges tackboard that we do own. Please advise who will own the furnish and install of TRM1, TRM2, TRM4, & TRM5.	The Millwork subcontrator (BP #18) shall furnish and install all metal trim as noted in the millworks scope line item 19. The trim shall be coordinated with the adjacted trades material.	10/16/2024	JM/Turner		Closed	10/16/2024
76	SLAM	1E, 2E, 3E/A805	10/10/24	1E, 2E, & 3E/A805 show what looks like gyp. Panels on the top and bottom of all 3 types of display cases. Please advise if this is the design intent or are the tops and bottoms supposed to be Plam like the side walls? If gyp. on the top and bottom is the design intent, please advise who owns the gyp. furnish and install.	All sides of interior of display cases are to be PL7, this discription has been revised in the Finish Materials list.	10/16/2024	SLAM		Closed	10/16/2024
77	SLAM	64100	10/10/24	Spec Section 064100 – Architectural Wood Casework sub-section 2.9 Hardware states product grade as Grade 2. Since no cabinet door and drawer locks are listed, please confirm Grade 1 locks are not required. Also please advise the specific locks that are required for all cabinet doors and drawers since none are listed. a. 2.9/C states either side mounted recessed metal shelf standards or multiple holes for pin shelf rests with nominal 1in. spacing. Will standard 32mm spacing be acceptable, or are Metal Pilaster shelf standards required? b. 2.9/J calls for soft close door and drawer adjustable dampers. Are dampers required with self close European hinges and drawer slides, or are soft closed hinges and slides acceptable, not requiring the dampers?	Locks: Grade 2 is acceptable, Grade 1 not required. Owner to select specific lock types a: Standard 32mm spacing is acceptable. b. Provde a substitution request for alternate product types.	10/16/2024	SLAM			

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78	SLAM	64100	10/10/24	Architectural Wood Casework sub-section 2.1C states multiple-dovetailed/dovetail joint construction. Please advise if standard hardwood dowel construction is acceptable.	This method is acceptable as long as it conforms to the requirements and standards of AWI Custom Grade casework.	10/16/2024	SLAM		Closed	10/21/2024
79	SLAM	123553.19	10/10/24	Wood Laboratory Casework lists Acid Storage Cabinets, Solvent Storage Cabinets, and Mobile Tables. Please advise where these items are located as nothing is shown on any floor plans or elevations for these items. If these items are not required for this project, please advise if Div. 6 Architectural Wood Casework would be acceptable ilo of Div. 12 Lab Casework, still following hardware materials but using AWI Standard Construction as outlined in Spec Section 064100. Div. 12 Epoxy counters, google cabinets, and drying racks would still be supplied as speced. **Turner Follow-up (10/21/24):** Please provide a revised spec that removes references that are not applicable to this project.	Spec will be revised to remove refrences to Acid Storage, Solvent Storrage, and Mobile Tables as they are not in this projects scope. Both specification section will remain as is otherwise. **Turner Response (10/21/24):** Revised Spec Section 12 3553.19 has been issued in Addendum #2	10/16/2024	SLAM		Closed	10/21/2024
80	SLAM	08 4413	10/10/24	Specification section 08 4413 is identfied as delegated design on sheet GC0A. Reviewing the spec section 08 4413-1.5F and 1.6A it does not indicated any signed and sealed calculations are required. Please clafify the delegated design intent of this specification section.						
81	SLAM	08 4413	10/10/24	Specification section 08 4413-1.6B seems to indicate an off site mockup performance test. If this is required, additional information is required for testing procedures, size of mockup, etc. Or can standard manufacturer systems specified provide performance testing of the specified systems to meet this requirement. **Turner Follow-up (10/21/24):** Please advise and provide an updated spec removing reference to off-site performance testing.	The two required fleld tests are outlined in part 3.4 Field Qulaity Control to be included by BP #19.	10/13/2024	SLAM			
82	SLAM	12 6613	10/10/24	Specification section 12 6613 is identfied as delegated design on sheet GC0A. Reviewing the spec section 12 6613 and the requirements noted, can the specified manufacturers standard certification statement meet the delegated design requirements, assuming the specified seating meeting the requirements of this specification section.	Delgated design is required of the project specific seating design and layout, by BP #32.	10/13/2024	SLAM		Closed	10/21/2024
83	SLAM	22 1123	10/10/24	Specification section 22 1123-1.7C seems to indicate delegated design which is not called for on GC0A. Reviewing this spec section it is not clear if delegated design of "design piping system" is intended to included. Please clarify the design requirements of this specification section.						
84	SLAM	11 0610	10/10/24	Specification section 11 0610-1.9C seems to indicate delegated design which is not called for on GC0A. Reviewing this spec section it is not clear what portions of the specification section are to be delegated design and associated criteria. Please clarify the design requirements of this specification section.						

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BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
85	SLAM	14 2100	10/10/24	Specification section 14 2100-1.6A seems to indicate delegated design which is not called for on GC0A. Reviewing this spec section appears guide rails are to be delegated design. Please confirm the design requirements of this specification section. Turner Follow-up (10/21/24): Please provide updated specs.	Paragraph 1.2-C outlines the items requiring delegated design – pit ladder, divider beams [where required], supports for entrances and rails, and hoisting beam (a/k/a machine beam). Paragraph 1.6-A will be revised to include these items; Article 1.5 will be revised to include a delegated design submittal (in coordination with Section 05 5000). Turner Response (10/21/24): Revised Spec Section 14 2100 has been issued in Addendum #2. The elevator subcontractor (BP #34) shall provide signed and sealed elevator drawings with supporting calculations for all elevator delegated design, except for the hoist beam, pit ladder, and pit grating. The elevator subcontractor (BP #34) shall design, furnish, & install all steel supports for sills and entrances as required. The hoist beam, pit ladder, & pit grating delegated design shall be performed by the misc metals subcontractor (BP #13), as they are responsible to furnish & install these components. The elevator subcontractor (BP #34) must provide all loads imposed to the misc metals subcontractor (BP #13).				Closed	10/21/2024
86	SLAM	22 0516 & 23 0516	10/10/24	Specification section 22 0516 and 23 0516 seems to indicate delegated design which is not called for on GC0A. Please confirm if these spec sections should be added to GC0A.						
87	Turner	A610	10/10/24	Please clarify under which bid package the Sliding Window at the Nurses Office, and the Bullet Resistant Pass Thru Window at the Admin Office fall under. Are there any specification for them?	Per the BP#19 scope of work, the Sliding Window at the Nurses Office and the BR Pass Thru Window at the Admin Office are to be furnished and installed by BP #19 (Glass & Glazing). No specs are provided for these items. A basis of design for the Bullen Resistant Pass Thru Window is referenced in RFI #3. Reference RFI #88 for product information of the sliding window at the Nurse's office.	10/10/2024	BM/Turner		Closed	10/21/2024
88	SLAM	A610	10/10/24	Please provide basis of design and specification of sliding window at the Nurse's office.						
89	SLAM	10 5113	10/10/24	Please see attached RFI 89 attachments for potential locker substatution request. Please advise if this substitution is acceptable.				Yes -- Substitution Request		
90				BQ NOT UTILIZED						
91	SLAM	00 3132	10/11/24	The Geotechnical boring information provided within the specification 00 3132 provides limited information at the phase 2 Turnaround (dwg C303) and deep Sanitary sewer roadwork excavation along Indian rock lane(C306, C307). Are Rock elevations known in these areas? What assuptions are to be made?	Limited Rock elevations are known at the intersection of Indian Rock Lane and Stanwich Road. See the attached existing sanitary sewer as-built which shows rock profile. The Rock profile is anticipated to undulate as shown on the as-built profiles and the provided geotechnical data. Encountering rock should be anticipated in contractor's bid.	10/16/2024	T&B		Closed	10/21/2024
92	SLAM	Site Utility	10/11/24	When reviewing the permit application for the Sanitary sewer the town noted the new lines need to be videoed to show the install from within the new pipes/manholes. There does not appear to be a mention of this video documentaiton. Will this be required by the Sitework Subcontractor? If yes please provide the details and specifications.	Sheet C-301 has been revised to include note 35. stating "ALL SANITARY SEWER MAINS AND LATERALS SHALL BE VIDEO RECORDED PER SEWER DIVISION PERMIT REQUIREMENTS AND PER SPECIFICATION 33 31 15." This will be required by the Sitework Contractor (BP#09).	10/16/2024	T&B		Closed	10/21/2024

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93	SLAM	Civil Series	10/11/24	There does not appear to be a Storm Water Pollution Prevention Plan included in the contract documents. Please advise if Sitework Subcontractor will be responsible for SWPPP and if so provide aproject specific plan	Sitework Subcontractor (BP #09) is responsible for the SWPCP. See the included Stormwater Pollution Control Plan for the project.	10/16/2024	T&B		Closed	10/21/2024
94	SLAM	05 3100	10/11/24	Detail 1B/A521 calls for Steel plates top and bottom of deck - fasten and seal with continuous butyl. Please confirm these steel plates are to be by the metal deck manfacturer as no plates are shown on the structural documents. Please provide length of steel plates, and the fastening requirements of the steel plates top and bottom. Where should continuous butyl be applied? Is the butyl part of the roofing specification to be installed by the roofer? Turner Follow-up (10/16/24): Please confirm that this plate is not structural. Are there any specific fastening requirements for the attachment of these plates?	Structural Steel subcontractor (BP #12) shall furnish & install steel plates called for on A521 and detailed on 1E/A501. See 1E/A501 detail for length requirement of the steel plates. Fastening requirements are to coordinated between the trades by the Contractor. The mason (BP #11) shall furnish & install two lines of butyl sealant & insulation called for on 1E/A501 at all block exterior wall locaitons and the drywall contractor (BP #21) at all other locations. Sealant should be provide at outermost parrallel flute and each perpendicular flute.	10/13/2024	SLAM			
95	SLAM	Civil Series	10/11/24	Will Sitework Subcontractor be responsible for to perform the Turbidity tests (as part of a SWPPP) for the stormwater leaving the site which typically is performed by the Geotech engineer/by Owner?	No, turbidity monitoring is no longer required under the current CT DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities.	10/16/2024	T&B		Closed	10/21/2024
96	SLAM	02 4100	10/11/24	During the site walk through it was clear there was a significant amount of existing tables, chairs, file cabinets, general ffe, etc. throughout the existing building. What is the intent for the removal of this equipment? Can a schedule be provided for what is to be salvaged by the owner and what is to be removed as waste by the demo subcontractor?						
97	SLAM	02 4100	10/11/24	During the site walk through it was clear there was a significant amount of exterior items not called to be demolished on the site demolition plans (C402, C403) including chain link backstops, basketball hoops, fenced garden, soccer goals, etc. Can a schedule be provided for what is to be salvaged by the owner and what is to be removed as waste by the Sitework subcontractor?						
98				BQ NOT UTILIZED						
99	SLAM	31 2300	10/11/24	Are reports available regarding the hazardous material clasification of the exiting soils to be removed?						
New Bidder's Questions as of 10/11/24 Issuance										
100	SLAM	M601	10/11/24	Remark #5 on the HVLS Fan Schedule on Drawing M601 states the color and finish of the CF-A fans shall be selected by the Architect. Please provide desired color and finish.						
101	CES	M502	10/11/24	The Mechanical piping floor plans indicate HWS, HWR, MCHWS & MCHWR feeding the active chilled beams, however, Details 6 & 7 on Drawing M502 indicate HWS, HWR, CHWS & CHWR. Please advise which is correct.						
102	SLAM	A200 Series	10/11/24	General Note #12 on the A200 series drawings state nothing other than ceiling systems can be supported from the roof deck where there is no concrete fill. In instances where long duct runs on the roof occur (i.e. from RTU-1 into the building), does this statement still apply? 9/M500 and 9/M501 indicate duct/pipe supports sitting on top of the roof insulation; In most cases, these supports will not be located over structural steel, but solely on top of metal decking. Should curbs/rails be specified? Is there a wind load concern for detail 9/M500 and 9/M501?						

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BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
103	SLAM	003132	10/14/24	Specification Section 003132 Geotechnical Data The contract documents only include the boring locations and data. Please provide the complete Geotechnical report by Tighe & Bond dated 01/26/24 as referenced on drawing S-001 Paragraph C : Foundations and Geotechnical Report.						
104	SLAM	Civil Series	10/14/24	Will Versa Lok retaining walls be an acceptable substitiion to the specified product? See attached Product Data.				Yes -- Substitution Request		
105	Turner	Procurment Manual	10/14/24	Is the request for the bid bond a dual oblige (i.e. Construction and Board of Education of the Town of Greenwich)?	Confirmed Dual Oblige. Turner Construction and "Town of Greenwich"	10/14/2024	JP/Turner		Closed	10/14/2024
106	Turner	Procurment Manual	10/14/24	Do we need to fill out “35 - Turner Prequal form 1 17 07 format” if we’ve already submitted our prequal online with Turner for this year?	Subcontractors who are currently Prequalified with Turner may request Turner provide a letter to verify prequalification. Copy of letter can be submitted with Bid in lieu of submission of the "Turner Prequalification Response Form" included within the project manual. Send requests for Prequalified letter Francesca Perugini at fperugini@tcco.com.	10/14/2024	JP/Turner		Closed	10/14/2024
107	CES	M503	10/14/24	The following details were ommitted from Drawing M503 between the Phase 2 Set dated 07/08/2024 and the Bidding/Permit Set dated 09/30/2024: - 1 - Boiler - Condensing w/ Pump - 2 - Glycol Make-up Unit - 3 - Expansion Tank and Air Separator - 6 - Pump - Inline - 8 - Low Loss Header - Suspended - 9 - Pump - Base Mount Inline - 10 - Pot Feeder Please confirm these details are no longer required for this project.						
108	CES	M700, M701	10/14/24	We cannot locate Control Diagrams for the following pieces of Mechanical equipment on Drawings M700 or M701. Please provide: 1) Heat Recovery Ventilator HRV-1 2) High Volume Low Speed Fan CF-A 3) Dust Collector DC-1 4) Air Filtration Unit AFU-A 5) Heat Exchanger HX-1 6) Exhaust Fan KHEF-1 7) Exhaust Fan DEF-1						
109	CES	M700	10/14/24	Please confirm Detail 8/M700 should be utilized for both Exhaust Fans EF-1 and EF-2.						
110	CES	23 09 93	10/14/24	We cannot locate a sequence of operations for the following pieces of Mechanical equipment within Specification Section 23 09 93. Please provide: 1) Finned Tube Radiators 2) Dust Collector DC-1 3) Air Filtration Unit AFU-A						
111	CES	M601	10/14/24	Please provide a Specification Section for Dust Collector DC-1.						
112	CES	M602	10/14/24	Please provide a Specification Section for Air Filtration Unit AFU-A.						

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113	CES	23 09 93	10/14/24	Mechanical pump designations were updated on the drawings in the Bidding/Permit set dated 09/30/2024, however, these designations were not updated in Specification Section 23 09 93-3.20. Please update accordingly.						
114	CES	23 09 93	10/14/24	Specification Section 23 09 93-3.20.D identifies Heat Exchanger Pumps HXP-1 and HXP-2, however, we cannot locate these pumps on the mechanical plans or schedules. Please advise.						
115	CES	23 09 93	10/14/24	Specification Section 23 09 93 contains sub-part 3.18 for Boilers as well as sub-part 3.19 for Water Heaters. The Boilers are identified throughout the Plans and Specifications, however, please advise where the Water Heaters are located an specified.						
116	SLAM	FS141	10/14/24	Details 1/FS141 shows recessed slab and pourable fill and 2 " concrete topping within the Refrigerator rooms, who is to provide this scope.	Recessed slab, Pourable Fill and 2" concrete topping to be furnihsed and installed by the Concrete Bid Package #10. Concrete Bid Package #10 to also provide the concrete fill shown on 2/FS141	10/14/2024	JP/Turner		Closed	10/14/2024
117	SLAM	FS141	10/14/24	Detail 2/FS141 calls for back fill by GC below floor pan and grate. Please provide what this backfill material is intended to be?						
118	Turner	23 7413, 262413, 262416	10/14/24	Can shipping splits and informatoin be provided for the PrePurchsed Equipment	See attached BQ 118 for use in HVAC Bid Package #37 and Electrical Bid Package #38 information for spilts and weights.	10/14/2024	JP/Turner	Yes -- Prepurchased Equip. List & Shipping Splits	Closed	10/14/2024
119	SLAM	096466	10/14/24	Please advise if the attached wood flooring product can be substituted for the current speced out wood flooring.				Yes -- Substitution Request		
120	SLAM	L501	10/15/24	The curb detail calls for 6”x20” curb. Greenwich municipal standard is 5”x18” with a buzzed edge. Can you confirm the 6”x20” is correct?						
121	SLAM	L202C	10/15/24	Please clarify the proposed condition within the chiller pad area on L202C. There is a callout for stone mulch as well as heavy duty concrete pavement.						
122	SLAM	S210	10/15/24	2.Please provide a detail for the chiller and generator pads. The detail callout of 7/S210 doesn’t seem to be correct.						
123	SLAM	Civil / Landscape Series	10/15/24	Is there supposed to be a warning track along the baseball and softball backstops? If so, please provide a detail for the warning track						
124	SLAM	L601	10/15/24	Please clarify the limits of detail 3C/L601 on the ball fields as well as the limits of sod in alternate #’s 1 & 2						
125	SLAM	Existing / As-Built Dwgs	10/15/24	Please provide existing building drawings to help estimate the existing building slab elevations and the conditions the sitework contractor will be left with after the demolition contractor removed the building slab and foundations						
126	Turner	Civil / Landscape Series	10/15/24	Please confirm all existing topsoil is to be stripped and exported. None is to be left onsite for reuse a.Please confirm that BP#9 does NOT own furnishing and installing any topsoil or athletic field topsoil mix.	Confirmed. Top soil shall be removed from site by the Sitework Subcontractor (BP #09). Furnishing and installing topsoil is assigned to the Landscape Bid Package (BP #41).	10/15/2024	JAC - Turner		Closed	10/21/2024
127	SLAM	Civil Series	10/15/24	Please provide a detail for the concrete weirs under the porous asphalt						
128	SLAM	Geotech Report	10/15/24	I see the boring and soil information, but I do not see a geotechnical report with engineering directives/recommendations. Please provide a complete geotechnical report.						

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129	SLAM	Scope of Work	10/15/24	BP #9 scope of work item #93 states that the excavation is considered to be unclassified. We will utilize any provided information to include in our bid any and all rock, unsuitable soils, etc. that can be reasonably anticipated. If we encounter soil conditions that could not have been reasonably anticipated based on the contract documents, will extra compensation be paid via change order? a.Please provide a definition of “unclassified” as it relates to all excavation onsite. Confirm that it only applies to the subgrade level and any excavation required beyond subgrade level would be paid via change order.						
130	SLAM	A600	10/15/24	Can you identify the typical locations that Partition Type B is found within the building/on the drawings? For Type B Partitions - are these to be full height to underside of deck or just above ceiling ?						
131	SLAM	S211	10/15/24	As a follow up to Bidder Question #55 - For the portion of SOG that needs to be poured prior to the backfill taking place on the back side of the Retaining Wall, what is the minimum distance off the wall that the SOG needs to be poured?						
132	SLAM	Geotech Report	10/15/24	Only page 1 of the boring plan is visible. Page 2 is just a white screen. Please provide page 2 of the boring plan because the plan is cut off at the new baseball fields home plate area.						
133	Turner	Proj. Schedule/ Logistics Plans	10/15/24	1. Phased Project for Millwork Install? How Many? When do they Start & Complete? 2. Any special delivery times or requirements? 3. Elevator/Hoist available?	1. Please reference the project schedule where it references Start Finishes. 2. No specific delivery requirements other than what is shown on the logistics plans. Each delivery will have to be coordinated/ scheduled with the TCCO super. 3. No elevator/ Hoist available- However there will be access to the second-floor level through the back of the building as it is on grade.	10/15/2024	JM-Turner		Closed	10/16/2024
134	Turner	098416	10/15/24	Does ADC1 found in Spec Section 098416 belong to bid package #22 – Acoustical ceilings?	Yes ADC1 is part of the BP#22 Ceilings package.	10/15/2024	JM-Turner		Closed	10/16/2024
135	Turner	098416	10/15/24	BP#22, Line 18 refers to Spec Section 098416 for SAC1 locations. SAC1 is found in Spec Section 098430. Please Clarify.	BP#22 Ceilings shall furnish and install all Sound absorbing ceiling panels. BP#18 Millwork will install all sound absorbing Wall panels.	10/15/2024	JM- Turner		Closed	10/16/2024
136	Turner	098416	10/15/24	Is BP #22 responsible for work shown in Spec 098416?	Spec section 098416 Fixed Sound Reflective Panels is a shard spec section between BP#22 Ceilings and BP#18 Millwork. See specific scope of work for clarifications.	10/15/2024	JM- Turner		Closed	10/16/2024
137	Turner	098416	10/15/24	Which bid package is responsible for ceiling type ADC1?	Yes ADC1 is part of the BP#22 Ceilings package.	10/15/2024	JM-Turner		Closed	10/16/2024
138	SLAM	A901C	10/15/24	Is AWP8 only to be installed on 2 walls in room #’s 1059 and 1061?						
139	SLAM	A901D	10/15/24	Finish plan on A901D calls for AWP11 in rooms 1119 & 1110 while the finish schedule calls for AWP8 in practice rooms. Which is the correct?						
140	SLAM	A901D	10/15/24	Are AWP panels in rooms 1119 and 1110 to extend floor to ceiling?						
141	SLAM	095100	10/15/24	Finish schedule on A9111 specifies USG 88983 for APC2. This tile does not have the NRC value specified in Spec Section 095100. USG 86258, however, does meet the specified NRC value. Should 86258 be used instead of the specified 88983?						
142	SLAM	098416	10/15/24	The finish schedule lists a USG Geometrix product for ADC1 while Spec Section 098416 lists a Kinetics product. Which is correct?						
143	SLAM	A911	10/15/24	Are perforations and acoustical felt required for ADC1 panels?						

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144	SLAM	A910	10/15/24	The finish schedule lists a specification for AWP7. No AWP7 panels can be located on the architectural drawings. Is this specification relevant to this project?						
145	Turner	Logistics Plans	10/15/24	Regarding the debris netting on the Turner Logistics Plans - A site bidder asked what is this 12'-15' feet debris netting? Is this 4 more feet on top of the fence w/ driving range style golf protection? How high? 12 or 15?	This is additional protection on top of the 8ft construction fence for the egress door on that side of the building. It can be an extension of the fence posts, provided it works, or a separate system. Spacing that would prevent a golf ball size object should be sufficient. The height should be 15 feet.	10/15/2024	JAC - Turner		Closed	10/16/2024
146	SLAM	34 0000	10/16/24	Sitework Bid Package includes spec. 34 0000 – Transportation. Can you please clarify are we to trench and backfill for the electrical package or do we own furnish and install of all aspects of the traffic control signal plans? Turner Follow-up (10/21/24): SLAM please provide electrical design for traffic control devices that require power.	Turner Response (10/21/24): Sitework Bidder Shall trench and backfill power requirmetns and Electrical Subcontractor shall be responsible for load carrying conductors, raceways and power connections. Sitework subcontractor shall furnish and install, solar panels, batteries any interconnecting or control wiring for these systems.	10/22/2024	JAC-Turner			
147	Turner	Logistics Plans & Sitework Scope	10/16/24	1. Please clarify the reference to 12-15'H debris netting requirements with 8'H driven temp fence. 2. Scope of Work 75 thru 77 - Please confirm this equipment will remain property of Sitework Subcontractor at end of project or if it is to be handed over to Turner/owner permanently? 3. Scope of work 88 - "This subcontractor shall furnish and install all rain gardens and swales..." Is landscaping package responsible for any planting? 4. Scopes of work for utility coordination references "this subcontractor shall include all fees..." Please confirm any new service or connection fees required by utility companies will be paid for by the owner. If this is not the case, please provide appropriate allowance or amounts for bidding purposes. 5. scope of work 123 and 124 - Confirm sitework is to furnish concrete bases, but all anchor bolts, conduit or other embedded items that may be required from other trades' lighting vendors, will be provided to sitework prior to precast.	1. See RFI Response #145 2. These will become property of the Town of Greenwich. 3. Landscaping Bid Package (BP #41) will be reponsible for Plantings. 4. This is will be sitework subcontractors (BP #09) responsibility to include the fees associated with utility tie-ins, tap fees and/or conection fees due to the utility company. 5. Anchor Bolts shall be funished and installed by Sitework Subcontractor (BP #09). Conduit inside concrete bases provided by Sitework Bid Pacakge shall be furnished and installed by Sitework Subcontractor. Furthurmore it is the Sitework Subcontractor's responsibility to cooridnate Anchor Bolt Size and Locations and conduit size and location with Electrical Subcontractor (BP #38 & 39). Additionaly, sitework subcontractor to include delegated design of footings, per the contract documents, including the anchor bolts.	10/16/2024	JAC-Turner		Closed	10/16/2024
148	Langan	28213	10/16/24	Specification Section 028213-1.6 notes that the contractor is to provide Testing Lab Services for asbestos abatement. Please clarify what the extent of these services would be and how this differs from the Testing Lab Services provided by Langan and the Owner.						
149	Langan	28432	10/16/24	Specification Section 028432-1.6 notes that the contractor is to provide Testing Lab Services for PCB remediation. Please clarify what the extent of these services would be and how this differs from the Testing Lab Services provided by Langan and the Owner.						
150	Turner	PSU001	1/16/24	Drawing PSU001 shows the 4" fire protetion line up to Fire Dept. Connection by DIV 21, but Turner's scope of work assigns this to sitework subcontractor. Please clarify	Sitework Subcontractor (BP #09) is responsible for this scope outside of the building up to 5 feet from the building. Itis their responsibility to be licenced to install this scope of work. Fire protection subcontrator (BP #35) will be rsponsible to bring this, and other fire protection services, from 5 feet outside the building into the building including providing the foundation penetration or sleeve / link seal.	10/16/2024	JAC- Turner		Closed	10/16/2024

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151	Turner	Scope of Work	10/16/24	Sitework Scope Of Work #133, Furnish & Install Vertical Foundation Insulation Spec. Section 07 21 00; Thermal Insulation; Details 3A/A501 and 5E/A501. Please confirm that BP #14 - Waterproofing is responsible for the 3" thick rigid insulation as shown in details 3A & 5E/A501	The sitework bid package shall be reponsible to furnish and isntall the rigid insulation as described in scope of work item 133 and shall also be responsible to furnish and install the rigid insualiton per details 3A and 5E on drawing A501.	10/22/2024	JAC- Turner		Closed	10/21/2024
152	Turner	Scope of Work	10/16/24	Sitework Scope Of Work #70 states...'This contractor shall furnish, install and maintain asphalt millings, including removal for 50' around perimeter of the building. Does this mean 50 feet in width around the perimeter?? Many areas do not have 50 feet in width available.	The Intent is that the Sitework Subcontractor shall be responsible for providing a uniform and level compacted grade around the building perimeter suitable for the support of scaffolding and lifts. The 50 foot dimension may be deviated from if any obstruction such as a retaining wall, temporary fence, buildiung or similar obstruction exists, however if the 50' dimension is acheiveable, this uniform level comacted grade with millings shall be provided by the Sitework Subcontractor.	10/22/2024	JAC- Turner		Closed	10/21/2024
153	Turner	Scope of Work	10/16/24	Sitework Scope Of Work #28 - Turner's Site Trailer, paragraph (a), refers to 'plans for layout and furniture requirements. Please provide plan for the trailer and the wood platform/stairs.	See attached Layout within BQ Attachments for trailer layout.	10/22/2024	JP - Turner		Closed	10/22/2024
154	SLAM	TC Series	10/17/24	TC Drawings show Solar Powered Rapid Flashing Beacons and specification 344114 page 19, mentions hardwired 100-240VAC connections but no electrical scope is shown on the contract documents for the hardwired connection. Please confirm these units are only solar/battery and no line voltage connection is required. If line voltage is required please provide the electrical information						
155	Turner	Scope of Work	10/17/24	What bid package is required to wire the rapid flashing beacon	Sitework subcontractor (BP #09) shall be reponsible for all wiring with the exception of line voltage that may be required per RFI#154's response. If line voltage power is required then pathways, conductors, termination, & testing shall be furnished and installed by the base electrician (BP #38). Trenching, backfill, etc. will be by the site contractor (BP #09).	10/16/2024	JAC- Turner		Closed	10/16/2024
156	SLAM	TC Series	10/17/24	TC Drawings show radar speed display and indicate a hardwired connection. No electrical scope is sown on the CDs. If line voltage is required for radar speed display please provide the electrical information						
157	Turner	Scope of Work	10/17/24	What bid package is required to wire the Radar Speed Display?	Sitework subcontractor (BP #09) shall be reponsible for all wiring with the exception of line voltage that may be required per RFI#156's response. If line voltage power is required then pathways, conductors, termination, & testing shall be furnished and installed by the base electrician (BP #38). Trenching, backfill, etc. will be by the site contractor (BP #09).	10/16/2024	JAC- Turner		Closed	10/16/2024
New Bidder's Questions as of 10/16/24 Issuance										
158	SLAM	A311	10/17/24	Exterior elevations Dwg A311, grraphic legends, calls for Masonry Expansion Joint (MVEJ) detailed on 1B/A502. No 1B/A502 exists. Was this detail intended to be detail 1C/A502, Typical Masonry Veneer Movement Joint Detail?						
159	SLAM	07 9513	10/17/24	Specification section 07 9513-2.2 I and 2.2J call for Exterior expansion joint types, however, no designation is provided. Please provide designation of this type of Joint and where it would be located on the contract drawings.						
160	SLAM	01 4000	10/17/24	Please provide Statement of Speical inspections identifying the scope of owner testing requirements and frequency for coordination with trade subcontractors. (i.e. Concrete, Masonry, Steel)						

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161	Turner	32 1613.23 & 321640	10/17/24	BP #9 scope of work exclusion #6 states we should exclude all curbing unless otherwise indicated. Listed under exclusive specifications in the scope of work for BP#9 is precast concrete curbing (321613.23) and granite curbing (321640). Please advise as to who owns the curbing (BP#9 or BP #40).						
162	SLAM	32 1613.23 & 321640	10/17/24	There is no precast concrete curb shown on the plans nor is there a detail. Please confirm that all curbing is to be granite.						
163	Turner	03 6213	10/17/24	Is masonry to provide non-metallic non-shrinking grouting at the steel column and base plate locations?	The grouting at steel column and base plate locations to be furnished and installed by BP#10 Concrete.	10/17/2024	BM/Turner		Closed	10/17/2024
164	SLAM	A606	10/17/24	Drawing A606 seems to provide both Masonry and steel lintel schedule for masonry openings. Can either option be used at contractor choice for openings or are there specific areas that require masonry lintels and others that require steel?						
165	SLAM	A911	10/17/24	a: Finish Product List A911 calls out “9/16” DXL grid”. USG DXL grid is 15/16”. Please confirm USG DXT 9/16” grid should be utilized for APC-1-4. b: Finish Product List A911 APC-1,3,&4 states 70% recycled content. Please confirm if this is in reference to the tile recycled content, or if high recycled content grid is required?						
166	SLAM	3A/A520	10/17/24	Details 3A & 4C on A520 seem so show AVB below the window in the cavity behind the insulation at the expansion joint locations. (shown as dashed line). There also appears to show AVB outside of the vertical plywood also at the joint location. Please clarify if there is AVB at both locations or if the dashed line shown outside the plywood is part of the expansion joint. Also, where does the AVB behind the thermal insulation terminate, or confirm it terminates it terminates at the blocking at the steel beam/blocking at SOD?						
167	SLAM	A911	10/17/24	Substitution request for Certainteed products in lieu of USG. See attached RFI 167 request form.						
168	SLAM		10/17/24	Please advise if the roof joists at the Gym & Auditorium, which are a delegated design, need to account for the loads imposed by a future PV system. If so, please provide those future PV loads that need to be incorporated into the joist design.						
169	SLAM	SOW	10/17/24	Acoustical Ceiling SOW #22 states “This Subcontractor shall design, furnish & install an independent support system for all hung equipment, fixtures, ceiling and piping system that are directly below the metal roof deck. This support system must attach to structural steel framing members as the metal roof deck cannot be utilized for support. Refer to A200 series drawings General Note #12 for criteria.” Note #12B states “a. ACOUSTIC CEILING SYSTEMS (ACT TILES, ETC.) WEIGHING LESS THAN 5 LBS/SF AND HUNG AT 4'-0" O.C. BOTH DIRECTIONS. b. SINGLE LAYER GYPSUM BOARD CEILING SYSTEMS WEIGHING LESS THAN 5 LBS/SF AND HUNG AT 4'-0" O.C. BOTH DIRECTIONS.” Is it acceptable to hang ACT and GWB ceilings from the roof deck?						
170	SLAM	3B/A522	10/17/24	Please confirm that the vapor barrier at the skylight system notes to flap to inside face of curb is not required to lap to termination bar at roofing termination.						
171	SLAM	A126, A911	10/17/24	Drawing A126 does not have any interior layouts of the interior of the elevator cab walls and/or ceiling. Finish drawing A911 calls for Wilsonart Panels, clarify if this is for full height? are rails and/or base required?						

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172	SLAM	5B/A805	10/17/24	Detail 5BA805 shows the overall height of the locker and enclosure at 3'-5 ½". This includes the 4" high Z base and the thickness of the enclosure top. Subtracting the height of the Z base this leaves a total dimension of 37 ½". The locker itself would need to have an overall height of 37 1/32" leaving 15/32" for the top of the enclosure, and the slight gap between the locker and the top. Is this acceptable?						
173	SLAM	Speciifcation 105113 2.2 A .8	10/17/24	Speciifcation 105113 2.2 A .8 states to provide sloped top to the extent indicated on drawings. The Corridor Lockers as seen on drawing A111.13 Elevations 4C,4D,4E, & 4F do not show sloped top. Is there supposed to be sloped top for these lockers?						
174	Turner	Scope of Work & Procurement Manual	10/17/24	1.General Trade Requirements for BP12 - Structural Steel, #7 - will the erectors foreman suffice as representation for the full-time superintendent at the jobsite? 2.Scope of Work BP12 – Structural Steel; #50, can the requirement to furnish and install bituminous paint be removed from this bid package? 3.Scope of Work BP12 – Structural Steel; #63, can the requirement to furnish and install the spray-applied insulative coating system be removed from this bid package?	1. This will be acceptable assuming the foreman has decision making authority for the prime steel contractor. The prime steel contractor must have their own dedicated project manager assigned to the project. And Turner reserves the right to request a full time on-site superintendent from the prime contractor at Turner's discretion, especially if their sub tier is not performing the role accordingly. ~~2. This scope of work item will remain with Structural Steel BP #12.~~ See follow-up response below. 3. This scope of work item will remain with Structural Steel BP #12. **Turner Follow-up Response (10/21/24):** 2. Bituminous paint shall be excluded from the steel subcontractor's scope (BP #12). The concrete subcontractor (BP #10) shall furnish & install the required concrete cover in lieu of bituminous paint. For example, see detail 4 on S200.		CL/Turner		Closed	10/21/2024
175	SLAM	MEPD000 & MEPD001	10/18/24	Please advise if there are any existing electrical feeds that originate from the Existing School, which is slated for demolition, that need to remain energized or be re-circuited from another source prior to demolishing the existing school.						
176	SLAM	SU100 & TY301	10/18/24	Detail 7 on TY301 shows a pole mounted secuitry camera. TY100 shows locations of these cameras. They seem to align with SL-3 & SL-4W site lighting fixtures on SU100. Is the intent that the cameras are mounted to the light fixture poles, or are they independent poles?						
177	Turner	Procurement Manual	10/18/24	Please advise if Misc. Metals (BP #13) is a set aside package.	Yes, BP #13 is a set aside package. See the "Invitation to Bid" for a full list of all set aside bid pacakges.	10/18/2024	CL/Turner		Closed	10/18/2024
178	SLAM	12 6100	10/18/24	With regards to specfication section 126100, Subsection 2.2.B.3. To achieve this test, requires treatment of the fabric before it is placed on the chair assembly and then the mock-up is burned. This process is best referred to as CAL 133 (California Bulletin 133). The treatment of the fabric has been determined to have cancer causing agencies. Because of this, CAL 133 is being eliminated. Can this portion of the specification to be omitted?						
New Bidder's Questions as of 10/18/24 Issuance										
179	SLAM	C506	10/18/24	Sanitary details on C506 show flexible coupling adapters at existing sanitary sewer lines. Note #13 on C301 calls for "Fernco" syle shield couplings with hardware requirements. Confirm Sitework subcontractors are to follow the noteson C301 in lieu of the details provided.						

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180	Turner	Scope of Work & Procurement Manual	10/21/24	Who is responsible for the stone mulch to furnish and install?	Per the Landscapeing scope of work see exclusion#9. The Sitework contractor (BP #09) will furnish & install the stone mulch.	10/21/2024	Turner		Closed	10/21/2024
181	BC	Procurement Manual	10/21/24	Can the construction Start time be udjusted to 6 a.m. start Monday-Saturday in lieu of the current 7 a.m. start time?	Reference Greenwich Code of Ordinances, Chapter 6B Noise for requirements.				Closed	10/21/2024
182	SLAM	08 4313 & A611	10/21/24	Aluminum Storefront spec (08 4313) states the doors to be 2" thick where the door schedule (A611) calls for the doors to be 1 3/4" thick. Thermal doors are in actuality 2 1/4". Please confirm to follow the Aluminum Storefront specification for door thickness.						
183	SLAM	TA Series	10/21/24	Please confirm that ceiling mounted AV components in spaces other than the Gym, Cafeteria, & Auditorium will be furnished and installed by the Owner, including their associated support systems. For example, S1 speakers, S2 Speakers, and Plenum Enclosures.						
184	SLAM	T Series	10/21/24	Please confirm that Owner furnished WAPs will not require backboxes or supports provided by the Low Voltage subcontractor (BP #39).						
185	SLAM	T Series	10/21/24	Please confirm it is accepable to use plenum rataed cable supported by J-hooks in areas with "cloud" ceilings for low voltage & security cabling.						
186	SLAM	E700	10/21/24	Per Note E2 on E700, the electrician (BP #38) is to wire a remote EPO pushbutton for the Generator. Please advise where this EPO is located.						
187	SLAM	TA000	10/21/24	The new responsibility matrix issued in Addendum #2 lists the Gymnasium twice under Section #7 "AV Systems". Please confirm that one of these references was intended to be "Auditorium" instead.						
188	SLAM	14 2100	10/21/24	Please confirm that the elevator shaft walls were designed to be capable of supporting the elevator rail, entrance, & hoist beam loads imposed. There doesn't appear to be any support steel called for in the drawings. However, the revised 14 2100 spec section issued in Addendum #2 indicates elevator entrance and rail support steel to be a delegated desgin. Please advise.						
189	SLAM		10/22/24	For site pavers, Unilock Artline has (7) different sized blocks. Can you please clarify what size is required?						
190	SLAM	S002	10/22/24	The decking schedule on S002 calls for the decking to be attached with puddle welds. The 053100 Steel Decking spec calls for roof deck and floor deck to be fastened with powder actuated fasteners. Which is correct?						
191	SLAM	GC12, GC13	10/22/24	Per GC12 and GC13 there are multiple members including top chord joist extensions that require multiple coating systems - intumescent paint, galvanizing, and the 3-coat fluid applied insulative coating, or a combination thereof. Please provide detailed instructions as to the process, steps and sequence these different multiple coating systems are to be applied.						
192	Turner	Procurement Manual	10/22/24	Which bid package is responsible for the pony wall and anchors in detail 7/S210?	Per the Turner Scope of Work Documents, the General Trades subcontractor (BP #21) shall furnish & install all engineered posts and attachments for Pony Walls, for an example see 7/S210.	10/23/2024	CL/Turner		Closed	10/23/2024

BQ#118 Attachment

GCMS SB Pre-Purchased Equipment & Shipping Splits									10/9/2024
		Section Specs				Overall Unit Specs			
Equipment Tag	Number of Sections	Max Height	Max Length	Max Width	Max Weight	Height	Length	Width	Total Weight
RTU-1	5	87"	181"	72"	3,053 lbs	86.75"	305"	72"	6,600 lbs
RTU-2	5	127"	195"	80"	4,380 lbs	126.75"	325"	80"	8,300 lbs
RTU-3	5	102"	185"	72"	3,255 lbs	101.75"	310"	72"	7,200 lbs
Curbs: RTU-1,2,3	3 (Prefabricated)								
DOA-1	6	102"	79"	72"	1,616 lbs	102"	310"	72"	8,200 lbs
DOA-2	8	109"	79"	80"	1,543 lbs	109.25"	310"	80"	9,300 lbs
DOA-3	8	110"	80"	80"	1,543 lbs	109.25"	310"	80"	9,400 lbs
DOA-4	8	110"	79"	80"	1,543 lbs	109.25"	310"	80"	9,600 lbs
DOA-5	8	102"	79"	72"	1,475 lbs	102"	315"	72"	9,000 lbs
Curb: DOA-5	1 (Prefabricated)								
HRV-1	1					61"	190"	63"	3,500 lbs
CH-1	1					92.8"	335.2"	88.3"	17,271 lbs
CH-2	1					92.8"	335.2"	88.3"	17,271 lbs
Generator	1					108"	181"	58"	8,750 lbs
ATS-1	1								
ATS-2	1								

BQ#118 Attachment

GCMS SB Pre-Purchased Equipment & Shipping Splits									10/9/2024
		Section Specs				Overall Unit Specs			
Equipment Tag	Number of Sections	Max Height	Max Length	Max Width	Max Weight	Height	Length	Width	Total Weight
MSB-1	4	90"	45"	36"	2,400 lbs	90"	156"	36"	6,815 lbs

Transformers	QTY
T2 - 15KVA	1
T3 - 30 KVA	1
T4 - 45 KVA	3
T5 - 75 KVA	2
T7 - 150KVA	1
T8 - 225 KVA	1
T9 - 300 KVA	1
Electrical Panels	**QTY**
GP1A-F	6
GDP	1
GDPC	1
GDPE	1
GP2A, C, E	3
GP-CL	1
GP-WS	1
MHDP	1
MP1A-1E	5
OSDP	1
OSDPC & OSDPE	2
OSP1A-F	6
OSP2A, 2C, 2E	3
OSKP	1
ELDP	1
LP1B-E	4
SHP	1
SLP	1
KHP	1
KP	1
ELP1B-E	4
TLCP-1	1
EVLP1	1
EVLP2	1
EVHP	1
LDP	1
Secondary Overcurrent Protection	12
Utility Meter	1

Minimum Furniture Schedule:
(38) - Stackable Chairs
(15) - Rolling Desk Office Chairs
(31) - 30"x60" Tables
(15) - Rolling File Cabinets (For Under Desks)

Minimum Furniture Schedule (Cont...):
(7) - Front Privacy Shields
(13) - Side Privacy Shields
(9) - Large White Boards (LWB)
(5) - Medium White Boards (MW

REMOVE AND CAP EXSITING PLUMBING FIXTURES, IF APPLICABLE

WALL MOUNTED DATA JACK PATCH PANEL WITH SHELF ABOVE.

INTERIOR WALLS:
TYPE '2R' - 2x4 STUD WALLS AT 16"o.c. & ACOUSTIC INSULATION WITH 1/2" GYPSUM WALL BOARD, EACH SIDE
ALTERNATE 1: TACKABLE DEMOUNTABLE PANELED WALL SYSTEM (ACOUSTIC INSULATION)

Wellness/Mother's Room/prayer/meditation

Storage

LWB
LWB
ALIGN
NEW CARPET
LWB
REMOVE EXISTING TRAILER WALLS
CONFERENCE
FLOOR MOUNTED DATA & POWER JACKS, TYP.
LWB
2R
LWB
REMOVE EXISTING TRAILER WALLS
20' - 0"

CONFERENCE
MWB
42" A.F.F WORK SURFACE
2R
VIRTUAL PLAN TABLE /HUDDLE AREA
CLOSET
RECEPTI
5' - 6"
18' - 8"

NEW CARPET

1
2
3
4
5
6
7
8
9
10
11

Coffee/Snacks/Copier & Supplies

OPEN SHELVING AND CASEWORK FOR DISPLAYING SUBMITTALS, MATERIAL SAMPLES, FIELD PANELS, ETC...

Turner

TRIPLE 12x60 - TOILET (15 STAFF)

TYPE 'D.1'

1/4" = 1'-0"

BQ#153 sketch

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	*Description*	*Date*	*Addendum #1*	*Addendum #2*	*Comments*
SPECIFICATIONS					
Volume 1 - Division 00					
DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS					
00 0110	TABLE OF CONTENTS	9/30/2024			
00 3132	GEOTECHNICAL DATA	9/30/2024		10/16/2024	*Addendum #2*
00 4000	TURNER CONSTRUCTION: PHASE 2 OF 3 PROCUREMENT MANUAL	9/30/2024			
Volume 2 - Divisions 01-14					
DIVISION 01 - GENERAL REQUIREMENTS					
01 1000	SUMMARY	9/30/2024			
01 2000	PRICE AND PAYMENT PROCEDURES	9/30/2024			
01 2000A	SUPPLEMENTAL INSTRUCTIONS FORM	9/30/2024			
01 2000B	PROPOSAL REQUEST FORM	9/30/2024			
01 2000C	CONSTRUCTION CHANGE DIRECTIVE FORM	9/30/2024			
01 2100	ALLOWANCES	9/30/2024			
01 2201	UNIT PRICES	9/30/2024			
01 2300	ALTERNATES	9/30/2024			
01 2500	SUBSTITUTION PROCEDURES ATTACHMENT – CSI FORM 1.5C ATTACHMENT – CSI FORM 13.1A	9/30/2024			
01 3000	ADMINISTRATIVE REQUIREMENTS	9/30/2024			
01 3302	FORM B CADD EFT FORM REVD	9/30/2024			
01 3303	FORM C BIM ACCESS LICENSE AGREEMENT	9/30/2024			
01 3566.42	SUSTAINABILITY COMPLIANCE PROCEDURES – CTHPB WORKING COMPLIANCE CHECKLIST W/ LEED	9/30/2024			
01 3566.43	CTHPB SUBMITTAL COVER	9/30/2024			
01 3566.44	CTHPB MATERIAL CALCULATOR	9/30/2024			
01 3566.45	CTHPB VOC FORM	9/30/2024			
01 3566.46	IAQ FIELD REPORT FORM	9/30/2024			
01 3573	DELEGATED DESIGN PROCEDURES	9/30/2024			
01 4000	QUALITY REQUIREMENTS	9/30/2024			
01 4219	REFERENCE STANDARDS	9/30/2024			
01 4339	MOCK-UPS	9/30/2024			
01 4533	CODE-REQUIRED SPECIAL INSPECTIONS AND PROCEDURES	9/30/2024			
01 5000	TEMPORARY FACILITIES AND CONTROLS -- ATTACHMENT FORM SCG-3021 PROJECT SIGN	9/30/2024			
01 5639	TEMPORARY TREE AND PLANT PROTECTION	9/30/2024			
01 5719	TEMPORARY ENVIRONMENTAL CONTROLS	9/30/2024			
01 6000	PRODUCT REQUIREMENTS	9/30/2024			
01 6116	VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS	9/30/2024			
01 7000	EXECUTION AND CLOSEOUT REQUIREMENTS	9/30/2024			
01 7419	CONSTRUCTION WASTE AND MANAGEMENT DISPOSAL	9/30/2024			
01 7419A	ATTACHMENT: CW&MD CONSTRUCTION WASTE MANAGEMENT FORM	9/30/2024			
01 7800	CLOSEOUT SUBMITTALS	9/30/2024			
01 7900	DEMONSTRATION AND TRAINING	9/30/2024			
01 9113	GENERAL COMMISSIONING REQUIREMENTS	9/30/2024			
	ATTACHMENT: COMMISSIONING PLAN	9/30/2024			
DIVISION 02 - EXISTING CONDITIONS					
02 3000	SUBSURFACE INVESTIGATIONS	9/30/2024			
02 4100	DEMOLITION	9/30/2024			
02 4113	SITE UTILITY ABANDONMENT	9/30/2024			
02 8200	SELECTIVE HAZARDOUS BUILDING MATERIALS ABATEMENT DEMOLITION	9/30/2024			
02 8213	ASBESTOS ABATEMENT	9/30/2024			
	ATTACHMENT: FORM SCG-3011 – ASBESTOS CHECKLIST – CENTRAL MIDDLE SCHOOL	9/30/2024			
02 8313	LEAD-BASED PAINT AWARENESS	9/30/2024			
02 8416	UNIVERSAL WASTE REMOVAL AND RECYCLING	9/30/2024			
02 8432	PCBS GREATER THAN 50PPM REMEDIATION	9/30/2024			
	ATTACHMENT: FORM SCG-3012 PCB CHECKLIST – CENTRAL MIDDLE SCHOOL	9/30/2024			
	ATTACHMENT: FORM SCG-9008 PCB I CAULK - CENTRAL MIDDLE SCHOOL	9/30/2024			
DIVISION 03 - CONCRETE					
03 0516	UNDER-SLAB VAPOR RETARDER	9/30/2024			
03 1000	CONCRETE FORMING AND ACCESSORIES	9/30/2024			
03 2000	CONCRETE REINFORCING	9/30/2024			
03 3000	CAST-IN-PLACE CONCRETE	9/30/2024			
03 3250	CONCRETE POST-INSTALLED ANCHORS	9/30/2024			
03 3511	CONCRETE FLOOR FINISHES	9/30/2024			
03 6213	NON-METALLIC NON-SHRINK GROUTING	9/30/2024			
DIVISION 04 - MASONRY					
04 2000	UNIT MASONRY	9/30/2024			
04 7323	MANUFACTURED BUILDING STONE MASONRY	9/30/2024			
DIVISION 05 - METALS					
05 0805	FACTORY-APPLIED COATINGS FOR METAL	9/30/2024			
05 1200	STRUCTURAL STEEL FRAMING	9/30/2024			
05 2100	STEEL JOIST FRAMING	9/30/2024			
05 3100	STEEL DECKING	9/30/2024			
05 4000	COLD-FORMED METAL FRAMING	9/30/2024			
05 5000	METAL FABRICATIONS	9/30/2024		10/16/2024	*Addendum #2*
05 5100	METAL STAIRS	9/30/2024			

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Addendum #1	Addendum #2	Comments
05 7000	DECORATIVE METAL RAILINGS	9/30/2024			
05 7100	MONUMENTAL METAL STAIRS	9/30/2024			
DIVISION 06 - WOOD, PLASTICS AND COMPOSITES					
06 1000	ROUGH CARPENTRY	9/30/2024			
06 2000	FINISH CARPENTRY	9/30/2024			
06 4100	ARCHITECTURAL WOOD CASEWORK	9/30/2024			
06 4200	WOOD PANELING	9/30/2024			
06 6116	SOLID SURFACING FABRICATIONS	9/30/2024			
06 8316	FIBERGLASS REINFORCED PANELING	9/30/2024			
DIVISION 07 - THERMAL AND MOISTURE PROTECTION					
07 1400	FLUID-APPLIED WATERPROOFING	9/30/2024			
07 2100	THERMAL INSULATION	9/30/2024			
07 2119	FOAMED-IN-PLACE INSULATION	9/30/2024			
07 2163	FLUID-APPLIED INSULATIVE COATING	9/30/2024			
07 2410	DIRECT-APPLIED EXTERIOR FINISH SYSTEMS	9/30/2024			
07 2726	FLUID-APPLIED MEMBRANE AIR BARRIERS	9/30/2024			
07 4213.23	METAL COMPOSITE MATERIAL WALL PANELS	9/30/2024			
07 4646	FIBER-CEMENT WALL PANELS	9/30/2024			
07 5423	THERMOPLASTIC POLYOLEFIN (TPO) ROOFING	9/30/2024			
07 6200	SHEET METAL FLASHING AND TRIM	9/30/2024			
07 7100	ROOF SPECIALTIES	9/30/2024			
07 7200	ROOF ACCESSORIES	9/30/2024			
07 8100	APPLIED FIRE PROTECTION	9/30/2024			
07 8123	INTUMESCENT FIRE PROTECTION	9/30/2024			
07 8400	FIRESTOPPING	9/30/2024			
07 9200	JOINT SEALANTS	9/30/2024			
07 9513	EXPANSION JOINT COVER ASSEMBLIES	9/30/2024			
DIVISION 08 - OPENINGS					
08 1113	HOLLOW METAL DOORS AND FRAMES	9/30/2024			
08 1416	FLUSH WOOD DOORS	9/30/2024			
08 3323	OVERHEAD COILING DOORS	9/30/2024			
08 3326	OVERHEAD COILING GRILLES	9/30/2024			
08 4313	ALUMINUM-FRAMED STOREFRONTS	9/30/2024			
08 4413	GLAZED ALUMINUM CURTAIN WALLS	9/30/2024			
08 5653	SECURITY AND SERVICE WINDOWS	N/A		10/16/2024	*Addendum #2*
08 6300	METAL-FRAMED SKYLIGHTS	9/30/2024			
08 7100	DOOR HARDWARE	9/30/2024		10/16/2024	*Addendum #2*
08 7101	DOOR HARDWARE SCHEDULE	9/30/2024			
08 8000	GLAZING	9/30/2024			
08 8300	MIRRORS	9/30/2024			
08 9100	LOUVERS	9/30/2024			
08 9200	LOUVERED EQUIPMENT ENCLOSURE	9/30/2024			
DIVISION 09 - FINISHES					
09 0561	COMMON WORK RESULTS FOR FLOORING PREPARATION	9/30/2024			
09 2116	GYPSUM BOARD ASSEMBLIES	9/30/2024			
09 2216	NON-STRUCTURAL METAL FRAMING	9/30/2024			
09 3000	TILING	9/30/2024			
09 5100	ACOUSTICAL CEILINGS	9/30/2024			
09 6429	WOOD STRIP AND PLANK FLOORING	9/30/2024			
09 6466	WOOD ATHLETIC FLOORING	9/30/2024			
09 6500	RESILIENT FLOORING	9/30/2024			
09 6566	RESILIENT ATHLETIC FLOORING	9/30/2024			
09 6700	FLUID-APPLIED FLOORING	9/30/2024			
09 6813	TILE CARPETING	9/30/2024			
09 7200	WALL COVERINGS	9/30/2024			
09 7800	INTERIOR WALL PANELING	9/30/2024			
09 8300	ACOUSTIC FINISHES	9/30/2024			
09 8416	FIXED SOUND REFLECTIVE PANELS	9/30/2024			
09 8430	SOUND-ABSORBING WALL AND CEILING UNITS	9/30/2024			
09 9123	INTERIOR PAINTING	9/30/2024			
DIVISION 10 - SPECIALTIES					
10 1100	VISUAL DISPLAY UNITS	9/30/2024			
10 1416	PLAQUES	9/30/2024			
10 1419	DIMENSIONAL LETTER SIGNAGE	9/30/2024			
10 1423	PANEL SIGNAGE	9/30/2024			
10 1453	TRAFFIC SIGNAGE [LANDSCAPE]	9/30/2024			
10 1453	TRAFFIC SIGNAGE [CIVIL]	9/30/2024			
10 1454	TRAFFIC SIGNAGE REMOVAL AND RELOCATION	9/30/2024			
10 1473	PAINTED SIGNAGE	9/30/2024			
10 2113.19	PLASTIC TOILET COMPARTMENTS	9/30/2024			
10 2123	CUBICLE CURTAINS AND TRACK	9/30/2024			
10 2800	TOILET ACCESSORIES	9/30/2024			
10 4400	FIRE PROTECTION SPECIALTIES	9/30/2024			
10 5113	METAL LOCKERS	9/30/2024			
10 5502	MAIL SORTER	9/30/2024			
10 7516	GROUND-SET FLAGPOLES	9/30/2024			

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	*Description*	*Date*	*Addendum #1*	*Addendum #2*	*Comments*
DIVISION 11 - EQUIPMENT					
11 0610	STAGE RIGGING AND CURTAINS	9/30/2024			
11 3013	APPLIANCES	9/30/2024			
11 4000	FOODSERVICE EQUIPMENT	9/30/2024			
11 5400	ART EQUIPMENT	9/30/2024			
11 5410	TECHNICAL EDUCATION EQUIPMENT	9/30/2024			
11 6623	GYMNASIUM EQUIPMENT	9/30/2024			
11 6643	INTERIOR ELECTRONIC SCOREBOARD	9/30/2024			
11 6833	ATHLETIC FIELD EQUIPMENT	9/30/2024			
11 7300	PATIENT CARE EQUIPMENT	9/30/2024			
DIVISION 12 - FURNISHINGS					
12 2401	WINDOW SHADES	9/30/2024			
12 3553.19	WOOD LABORATORY CASEWORK	9/30/2024		10/16/2024	*Addendum #2*
12 3600	COUNTERTOPS	9/30/2024			
12 6100	FIXED AUDIENCE SEATING	9/30/2024			
12 6613	TELESCOPING BLEACHERS	9/30/2024			
12 9300	SITE FURNISHINGS	9/30/2024			
DIVISION 13 - SPECIAL CONSTRUCTION [Not Used]					
DIVISION 14 - Conveying Equipment					
14 2100	ELECTRIC TRACTION ELEVATORS	9/30/2024		10/16/2024	*Addendum #2*
Volume 3 - Divisions 21-26					
DIVISION 21 - FIRE SUPPRESION					
21 0400	GENERAL CONDITIONS FOR FIRE PROTECTION TRADES	9/30/2024			
21 0516	EXPANSION FITTINGS AND LOOPS FOR FIRE SUPPRESSION PIPING	9/30/2024			
21 0548	VIBRATION AND SEISMIC CONTROLS FOR FIRE SUPPRESSION PIPING AND EQUIPMENT	9/30/2024			
21 1313	WET PIPE SPRINKLER SYSTEMS	9/30/2024			
21 3000	FIRE PUMPS	9/30/2024			
DIVISION 22 - PLUMBING					
22 0400	GENERAL CONDITIONS FOR PLUMBING TRADES	9/30/2024			
22 0516	EXPANSION FITTINGS AND LOOPS FOR PLUMBING PIPING	9/30/2024			
22 0517	SLEEVES AND SLEEVE SEALS FOR PLUMBING PIPING	9/30/2024			
22 0519	METERS AND GAUGES FOR PLUMBING PIPING	9/30/2024			
22 0523	GENERAL DUTY VALVES FOR PLUMBING PIPING	9/30/2024			
22 0529	HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT	9/30/2024			
22 0548	VIBRATION AND SEISMIC CONTROLS FOR PLUMBING PIPING AND EQUIPMENT	9/30/2024			
22 0553	IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT	9/30/2024			
22 0700	PLUMBING INSULATION	9/30/2024			
22 1005	PLUMBING PIPING	9/30/2024			
22 1123	FUEL GAS PIPING	9/30/2024			
22 1124	DOMESTIC WATER PUMPS	9/30/2024			
22 1500	GENERAL SERVICE COMPRESSED-AIR SYSTEMS	9/30/2024			
22 3000	PLUMBING EQUIPMENT	9/30/2024			
22 4000	PLUMBING FIXTURES AND SPECIALTIES	9/30/2024			
DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING (HVAC)					
23 0400	GENERAL CONDITIONS FOR MECHANICAL TRADES	9/30/2024			
23 0516	EXPANSION FITTINGS AND LOOPS FOR HVAC PIPING	9/30/2024			
23 0517	SLEEVES AND SLEEVE SEALS FOR HVAC PIPING	9/30/2024			
23 0523	GENERAL DUTY VALVES FOR HVAC PIPING	9/30/2024			
23 0529	HANGERS AND SUPPORTS FOR HVAC PIPING, DUCTWORK, AND EQUIPMENT	9/30/2024			
23 0548	VIBRATION AND SEISMIC CONTROLS FOR HVAC PIPING AND EQUIPMENT	9/30/2024			
23 0553	IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT	9/30/2024			
23 0593	TESTING, ADJUSTING, AND BALANCING FOR HVAC	9/30/2024			
23 0700	HVAC INSULATION	9/30/2024			
23 0900	INSTRUMENTATION AND CONTROLS FOR HVAC	9/30/2024			
23 0993	SEQUENCE OF OPERATIONS	9/30/2024			
23 2113	HYDRONIC PIPING	9/30/2024			
23 2114	HYDRONIC SPECIALTIES	9/30/2024			
23 2123	HYDRONIC PUMPS	9/30/2024			
23 2500	HVAC WATER TREATMENT	9/30/2024			
23 3100	HVAC DUCTS AND CASINGS	9/30/2024			
23 3300	AIR DUCT ACCESSORIES	9/30/2024			
23 3400	HVAC FANS	9/30/2024			
23 3600	AIR TERMINAL UNITS	9/30/2024			
23 3700	AIR OUTLETS AND INLETS	9/30/2024			
23 5100	BREECHINGS, CHIMNEYS, AND STACKS	9/30/2024			
23 5239	FIRE-TUBE BOILERS	9/30/2024			
23 5700	HEAT EXCHANGERS FOR HVAC	9/30/2024			
23 6411	PACKAGED WATER CHILLERS - SCROLL	9/30/2024			
23 7413	MODULAR CENTRAL-STATION AIR-HANDLING UNITS	9/30/2024			
23 8126	SPLIT-SYSTEM AIR-CONDITIONERS	9/30/2024			
23 8200	CONVECTION HEATING AND COOLING UNITS	9/30/2024			
DIVISION 25 - INTEGRATED AUTOMATION [Not Used]					

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	*Description*	*Date*	*Addendum #1*	*Addendum #2*	*Comments*
DIVISION 26 - ELECTRICAL					
26 0400	GENERAL CONDITIONS FOR ELECTRICAL TRADES	9/30/2024			
26 0503	EQUIPMENT WIRING CONNECTIONS	9/30/2024			
26 0519	ELECTRICAL POWER CONDUCTORS AND CABLES	9/30/2024			
26 0526	GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS	9/30/2024			
26 0529	HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS	9/30/2024			
26 0533	RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS	9/30/2024			
26 0534	FLOOR BOXES FOR ELECTRICAL SYSTEMS	9/30/2024			
26 0536	CABLE TRAYS FOR ELECTRICAL SYSTEMS	9/30/2024			
26 0553	IDENTIFICATION FOR ELECTRICAL SYSTEMS	9/30/2024			
26 0573	OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY	9/30/2024			
26 0923	LIGHTING CONTROL DEVICES	9/30/2024			
26 2200	LOW-VOLTAGE TRANSFORMERS	9/30/2024			
26 2413	SWITCHBOARDS	9/30/2024			
26 2416	PANELBOARDS	9/30/2024			
26 2653	ELECTRIC VEHICLE CHARGING EQUIPMENT	9/30/2024			
26 2716	ELECTRICAL CABINETS AND ENCLOSURES	9/30/2024			
26 2726	WIRING DEVICES	9/30/2024		10/16/2024	*Addendum #2*
26 2813	FUSES	9/30/2024			
26 2819	ENCLOSED SWITCHES	9/30/2024			
26 2823	ENCLOSED CIRCUIT BREAKERS	9/30/2024			
26 2826	ENCLOSED TRANSFER SWITCHES	9/30/2024			
26 3213	ENGINE GENERATORS	9/30/2024			
26 4113	LIGHTNING PROTECTION FOR STRUCTURES	9/30/2024			
26 5100	LIGHTING	9/30/2024			
26 5561	THEATRICAL LIGHTING	9/30/2024			

Volume 4 - Divisions 27-34

DIVISION 27 - COMMUNICATIONS					
27 0536	CABLE TRAYS FOR COMMUNICATION SYSTEMS	9/30/2024			
27 1000	STRUCTURED CABLING	9/30/2024			
27 4100	AUDIO VIDEO SYSTEMS	9/30/2024			
27 5116	PUBLIC ADDRESS SYSTEM	9/30/2024			
27 5313	CLOCK SYSTEM	9/30/2024			
27 6010	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM	9/30/2024			
DIVISION 28 - ELECTRONIC SAFETY AND SECURITY					
28 0500	SECURITY CONDUCTOR CABLES	9/30/2024			
28 0528	PATHWAYS FOR SECURITY SYSTEMS	9/30/2024			
28 1300	ACCESS CONTROL SYSTEM	9/30/2024			
28 1600	INTRUSION DETECTION	9/30/2024			
28 2300	VIDEO SURVEILLANCE SYSTEM	9/30/2024			
28 3100	FIRE DETECTION AND ALARM	9/30/2024			
DIVISION 31 - EARTHWORK					
31 1000	SITE CLEARING	9/30/2024			
31 1000	SELECTIVE CLEARING AND THINNING [CIVIL]	9/30/2024			
31 1005	ATHLETIC FIELD SITE PREPARATION	9/30/2024			
31 1006	SOIL STRIPPING AND STOCKPILING	9/30/2024			
31 1200	SITE UTILITY PREPARATION	9/30/2024			
31 2200	GRADING	9/30/2024			
31 2300	EXCAVATION, BACKFILL, COMPACTION AND DEWATERING	9/30/2024			
31 2316.26	ROCK REMOVAL	9/30/2024			
31 2323	BORROW MATERIAL	9/30/2024			
31 2333	TRENCHING AND BACKFILLING	9/30/2024			
31 2500	SOIL EROSION AND SEDIMENT CONTROLS	9/30/2024			
31 6616	AGGREGATE PIERS	9/30/2024			
DIVISION 32 - EXTERIOR IMPROVEMENTS					
32 0529	GLACIAL BOULDERS FOR EXTERIOR IMPROVEMENTS	9/30/2024		10/16/2024	*Addendum #2*
32 1216	ASPHALT PAVING	9/30/2024			
32 1313	CONCRETE PAVING	9/30/2024			
32 1373	CONCRETE PAVING JOINT SEALANTS	9/30/2024			
32 1400	UNIT PAVERS	9/30/2024			
32 1500	AGGREGATE SURFACING	9/30/2024			
32 1613.23	PRECAST CONCRETE CURB	9/30/2024			
32 1640	GRANITE CURBING	9/30/2024			
32 1726	TACTILE WARNING SURFACES	9/30/2024			
32 1823.17	NATURAL INFIELD AND WARNING TRACK SURFACING	9/30/2024			
32 3113	CHAIN LINK FENCES AND GATES	9/30/2024		10/16/2024	*Addendum #2*
32 3118	METAL FENCES AND GATES	9/30/2024			
32 3120	VEHICLE BARRIER GATES	9/30/2024			
32 3223	SEGMENTAL RETAINING WALLS	9/30/2024			
32 8415	SITEWORK SLEEVES	9/30/2024			
32 8423	IRRIGATION SYSTEMS	9/30/2024			
32 9113	SOIL PREPARATION	9/30/2024			
32 9113.29	ATHLETIC FIELD ROOT ZONE	9/30/2024			
32 9200	TURF AND GRASSES	9/30/2024			
32 9219.22	ATHLETIC FIELD SEEDING AND SODDING	9/30/2024			
32 9300	PLANTS	9/30/2024			
DIVISION 33 - UTILITIES					
33 0513	MANHOLES AND CATCH BASINS	9/30/2024			
33 0514	BREAKING INTO EXISTING MANHOLES AND CATCH BASINS	9/30/2024			
33 1113	DUCTILE IRON PIPE AND FITTINGS	9/30/2024			
33 1300	DISINFECTION OF WATER DISTRIBUTION SYSTEMS	9/30/2024			
33 1400	TESTING OF WATER DISTRIBUTION SYSTEMS	9/30/2024			
33 3113	POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS	9/30/2024			
33 3114	TESTING OF SANITARY SEWER AND STORM DRAINAGE SYSTEMS	9/30/2024			
33 3115	TELEVISION INSPECTION OF PIPELINES	N/A		10/16/2024	*Addendum #2*
33 4100	STORM DRAINAGE	9/30/2024			
33 4113	HIGH DENSITY POLYETHYLENE PIPE AND FITTINGS	9/30/2024			
33 4114	UNDERGROUND WARNING TAPE	9/30/2024			
33 4419	STORMWATER TREATMENT SYSTEM	9/30/2024			

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	*Description*	*Date*	*Addendum #1*	*Addendum #2*	*Comments*
DIVISION 34 - TRANSPORTATION					
34 0000	TRANSPORTATION	9/30/2024			
34 4114	RECTANGULAR RAPID FLASHING BEACON	9/30/2024			
34 4115	LED SCHOOL RADAR SPEED DISPLAY WITH FLASHING BEACONS	9/30/2024			
34 4117	PEDESTRIAN PUSH BUTTON	9/30/2024			
34 7001	TRAFFIC PERSON	9/30/2024			
34 7002	MAINTENANCE AND PROTECTION OF TRAFFIC	9/30/2024			
DIVISION 40 - PROCESS INTEGRATION [Not Used]					
DIVISION 46 - WATER AND WASTEATER EQUIPMENT [Not Used]					
APPENDICES - tbd					
DRAWINGS					
VOLUME 1					
[01] GENERAL					
C1	COVER SHEET (VOLUME 1)	9/30/2024			
GI01.1	DRAWING LIST	9/30/2024			
GI02.1	GENERAL INFORMATION	9/30/2024			
GC0A	CODE INFORMATION	9/30/2024			
GC0B	BUILDING AREA PLANS	9/30/2024			
GC01	FIRST FLOOR FIRE SAFETY PLAN	9/30/2024			
GC02	SECOND FLOOR FIRE SAFETY PLAN	9/30/2024			
GC11	FIRST FLOOR FIRE PROOFING AND STEEL TREATMENT PLAN	9/30/2024			
GC12	SECOND FLOOR FIRE PROOFING AND STEEL TREATMENT PLAN	9/30/2024			
GC13	ROOF LEVEL FIRE PROOFING AND STEEL TREATMENT PLAN	9/30/2024			
[02] HAZARDOUS MATERIALS					
HBM-01	HAZARDOUS BUILDING MATERIALS ABATEMENT PLAN - FIRST FLOOR	9/30/2024			
HBM-02	HAZARDOUS BUILDING MATERIALS ABATEMENT PLAN - SECOND FLOOR	9/30/2024			
HBM-03	HAZARDOUS BUILDING MATERIALS ABATEMENT PLAN - ROOF	9/30/2024			
[03] SURVEY					
23-011	PROPERTY/BOUNDARY AND TOPOGRAPHIC SURVEY 1 OF 5	9/30/2024			
23-012	PROPERTY/BOUNDARY AND TOPOGRAPHIC SURVEY 2 OF 5	9/30/2024			
23-013	PROPERTY/BOUNDARY AND TOPOGRAPHIC SURVEY 3 OF 5	9/30/2024			
23-014	PROPERTY/BOUNDARY AND TOPOGRAPHIC SURVEY 4 OF 5	9/30/2024			
23-015	PROPERTY/BOUNDARY AND TOPOGRAPHIC SURVEY 5 OF 5	9/30/2024			
[04] CIVIL					
C001	GENERAL NOTES, ABREVIATIONS, AND LEGEND	9/30/2024			
C101	OVERALL SITE STORMWATER MANAGEMEN PLAN	9/30/2024		10/16/2024	*Addendum #2*
C102	SITE STORMWATER MANAGEMEN PART PLAN	9/30/2024			
C103	SITE STORMWATER MANAGEMEN PART PLAN	9/30/2024			
C104	SITE STORMWATER MANAGEMEN PART PLAN	9/30/2024		10/16/2024	*Addendum #2*
C105	SITE STORMWATER MANAGEMEN PART PLAN	9/30/2024			
C106	SITE STORMWATER MANAGEMEN PART PLAN	9/30/2024			
C107	SITE STORMWATER MANAGEMEN PART PLAN	9/30/2024			
C201	OVERALL SITE LOW IMPACT DEVELOPMENT PLAN	9/30/2024			
C202	SITE LOW IMPACT DEVELOPMENT PART PLAN	9/30/2024			
C203	SITE LOW IMPACT DEVELOPMENT PART PLAN	9/30/2024			
C204	SITE LOW IMPACT DEVELOPMENT PART PLAN	9/30/2024			
C205	SITE LOW IMPACT DEVELOPMENT PART PLAN	9/30/2024			
C206	OVERALL SOIL TEST LOCATIONS PLAN	9/30/2024			
C301	OVERALL SITE UTILITY PLAN	9/30/2024		10/16/2024	*Addendum #2*
C302	SITE UTILITY PART PLAN	9/30/2024			
C303	SITE UTILITY PART PLAN	9/30/2024			
C304	SITE UTILITY PART PLAN	9/30/2024			
C305	SITE UTILITY PART PLAN	9/30/2024			
C306	SANITARY SEWER EXISTING PLAN AND PROFILE	9/30/2024			
C307	SANITARY SEWER PROPOSED PLAN AND PROFILE	9/30/2024			
C308	SITE UTILITY PROFILES	9/30/2024			
C401	OVERALL PHASE 1 DEMOLITION, ENABLING AND SITE SOIL EROSION AND SEDIMENTATION CONTROL PLAN	9/30/2024			
C402	PHASE 1 DEMOLITION, ENABLING AND SITE SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN	9/30/2024			
C403	PHASE 1 DEMOLITION, ENABLING AND SITE SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN	9/30/2024			
C404	PHASE 1 DEMOLITION, ENABLING AND SITE SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN	9/30/2024			
C405	PHASE 1 DEMOLITION, ENABLING AND SITE SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN	9/30/2024			
C406	PHASE 1 IMPROVED CONDITIONS SOIL EROSION AND SEDIMENTATION CONTROL PLAN	9/30/2024			
C407	PHASE 1 IMPROVED CONDITIONS SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN	9/30/2024			
C408	PHASE 1 IMPROVED CONDITIONS SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN	9/30/2024			
C409	PHASE 1 IMPROVED CONDITIONS SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN	9/30/2024			
C410	PHASE 1 IMPROVED CONDITIONS SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN	9/30/2024			
C411	PHASE 2 DEMOLITION SOIL EROSION AND SEDIMENTATION CONTROL PLAN	9/30/2024			
C412	PHASE 2 DEMOLITION SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN	9/30/2024			
C413	PHASE 2 DEMOLITION SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN	9/30/2024			
C414	PHASE 2 IMPROVED CONDITIONS SOIL EROSION AND SEDIMENTATION CONTROL PLAN	9/30/2024			
C415	PHASE 2 IMPROVED CONDITIONS SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN	9/30/2024			
C416	PHASE 2 IMPROVED CONDITIONS SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN	9/30/2024			

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	*Description*	*Date*	*Addendum #1*	*Addendum #2*	*Comments*
C417	SOIL EROSION AND SEDIMENTATION CONTROL NOTES, CONSTRUCTION SEQUENCE AND DETAILS - 1	9/30/2024			
C418	SOIL EROSION AND SEDIMENTATION CONTROL NOTES, CONSTRUCTION SEQUENCE AND DETAILS - 2	9/30/2024			
C501	SITE STORMWATER MANAGMENT DETAILS - 1	9/30/2024			
C502	SITE STORMWATER MANAGMENT DETAILS - 2	9/30/2024			
C503	SITE STORMWATER MANAGMENT DETAILS - 3	9/30/2024			
C504	SITE STORMWATER MANAGMENT DETAILS - 4	9/30/2024			
C505	SITE STORMWATER MANAGMENT DETAILS - 5	9/30/2024			
C506	SANITARY SEWER DETAILS	9/30/2024			
C507	SITE UTILITY DETAILS - 1	9/30/2024			
C508	SITE UTILITY DETAILS - 2	9/30/2024			
C601	PARENT DRIVEWAY PROFILE 01	9/30/2024			
C602	PARENT DRIVEWAY PROFILE 02	9/30/2024			
C603	EMERGENCY PATH PROFILE 01	9/30/2024			
C604	EMERGENCY PATH PROFILE 02	9/30/2024			
C605	BUS DRIVEWAY PROFILE	9/30/2024			
C605A	SIGHT LINE PROFILES	9/30/2024			
C606	SIGHT LINE PROFILES	9/30/2024			
C607	BUS TURNING MOVEMENT PLAN	9/30/2024			
C608	FIRE TRUCK TURNING MOVEMENT PLAN	9/30/2024			
C609	SU-30 TURNING MOVEMENT PLAN	9/30/2024			
C610	WB-50 TURNING MOVEMENT PLAN	9/30/2024			
TC101	TRAFFIC CONTROL SIGNAL PLAN	9/30/2024			
TC101A	TRAFFIC CONTROL SIGNAL PLAN	9/30/2024			
TC102	TRAFFIC CONTROL SIGNAL PLAN	9/30/2024			
TC201	SIGNAGE AND PAVEMENT MARKING PLAN	9/30/2024			
TC202	SIGNAGE AND PAVEMENT MARKING PLAN	9/30/2024			
TC203	OVERALL ON-SITE TRAFFIC SIGNAGE, PAVEMENT MARKINGS, AND PARKING SPACE LAYOUT PLAN	9/30/2024			
TC204	ON-SITE TRAFFIC SIGNAGE, PAVEMENT MARKINGS, AND PARKING SPACE LAYOUT PART PLAN	9/30/2024			
TC205	ON-SITE TRAFFIC SIGNAGE, PAVEMENT MARKINGS, AND PARKING SPACE LAYOUT PART PLAN	9/30/2024			
TC206	ON-SITE TRAFFIC SIGNAGE, PAVEMENT MARKINGS, AND PARKING SPACE LAYOUT PART PLAN	9/30/2024			
TC207	ON-SITE TRAFFIC SIGNAGE, PAVEMENT MARKINGS, AND PARKING SPACE LAYOUT PART PLAN	9/30/2024			
TC301	TRAFFIC DETAIL PLAN	9/30/2024			
TC302	TRAFFIC DETAIL PLAN	9/30/2024			
TC303	TRAFFIC DETAIL PLAN	9/30/2024			
TC304	TRAFFIC DETAIL PLAN	9/30/2024			
TC305	TRAFFIC DETAIL PLAN	9/30/2024			
TC306	TRAFFIC DETAIL PLAN	9/30/2024			
TC307	TRAFFIC DETAIL PLAN	9/30/2024			
TC308	TRAFFIC DETAIL PLAN	9/30/2024			
TC309	TRAFFIC DETAIL PLAN	9/30/2024			
TC310	TRAFFIC DETAIL PLAN	9/30/2024			
TC311	TRAFFIC DETAIL PLAN	9/30/2024			
TC312	TRAFFIC DETAIL PLAN	9/30/2024			

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Addendum #1	Addendum #2	Comments
[06] SITE UTILITIES					
SU100	MEP SITE UTILITY PLAN	9/30/2024		10/16/2024	*Addendum #2*
SU500	MEP SITE UTILITY PLAN - DETAILS & SCHEDULES	9/30/2024			
SU501	MEP SITE UTILITY PLAN - DETAILS & SCHEDULES	9/30/2024			
PSU001	PLUMBING SITE UTILITY PLAN	9/30/2024		10/16/2024	*Addendum #2*
[10] LANDSCAPE					
L001	GENERAL SITE INFORMATION	9/30/2024			
L002	VICINITY MAP	9/30/2024			
L101	SITE DEMOLITION AND PREPARATION OVERALL	9/30/2024			
L101A	SITE DEMOLITION AND PREPARATION NORTHEAST	9/30/2024			
L101B	SITE DEMOLITION AND PREPARATION SOUTHEAST	9/30/2024		10/16/2024	*Addendum #2*
L101C	SITE DEMOLITION AND PREPARATION SOUTHWEST	9/30/2024			
L101D	SITE DEMOLITION AND PREPARATION NORTHWEST	9/30/2024			
L201	SITE LAYOUT OVERALL	9/30/2024			
L201A	SITE LAYOUT NORTHEAST	9/30/2024			
L201B	SITE LAYOUT SOUTHEAST	9/30/2024			
L201C	SITE LAYOUT SOUTHWEST	9/30/2024			
L201D	SITE LAYOUT NORTHWEST	9/30/2024			
L202	SITE MATERIALS OVERALL	9/30/2024			
L202A	SITE MATERIALS NORTHEAST	9/30/2024		10/16/2024	*Addendum #2*
L202B	SITE MATERIALS SOUTHEAST	9/30/2024			
L202C	SITE MATERIALS SOUTHWEST	9/30/2024		10/16/2024	*Addendum #2*
L202D	SITE MATERIALS NORTHWEST	9/30/2024			
L301	SITE GRADING	9/30/2024			
L301A	SITE GRADING NORTHEAST	9/30/2024			
L301B	SITE GRADING SOUTHEAST	9/30/2024			
L301C	SITE GRADING SOUTHWEST	9/30/2024		10/16/2024	*Addendum #2*
L301D	SITE GRADING NORTHWEST	9/30/2024			
L401	SITE PLANTING OVERALL	9/30/2024			
L401A	SITE PLANTING PLAN NORTHEAST	9/30/2024			
L401B	SITE PLANTING PLAN SOUTHEAST	9/30/2024			
L401C	SITE PLANTING PLAN SOUTHWEST	9/30/2024			
L401D	SITE PLANTING PLAN NORTHWEST	9/30/2024			
L402	PLANT MATERIAL LIST	9/30/2024			
L403	PLANTING DETAILS	9/30/2024			
L404	SITE IRRIGATION PLAN	9/30/2024		10/16/2024	*Addendum #2*
L501	SITE DETAILS	9/30/2024			
L502	SITE DETAILS	9/30/2024			
L503	SITE DETAILS	9/30/2024			
L504	SITE DETAILS	9/30/2024			
L601	ATHLETIC FIELD SITE DETAILS	9/30/2024			
L602	ATHLETIC FIELD SITE DETAILS	9/30/2024			
STRUCTURAL					
S001	GENERAL NOTES AND ABBREVIATIONS	9/30/2024			
S002	SCHEDULES AND DETAILS	9/30/2024			
S101A	FOUNDATION PLAN - PART A	9/30/2024		10/16/2024	*Addendum #2*
S101B	FOUNDATION PLAN - PART B	9/30/2024			
S101C	FOUNDATION PLAN - PART C	9/30/2024		10/16/2024	*Addendum #2*
S101D	FOUNDATION PLAN - PART D	9/30/2024			
S101E	FOUNDATION PLAN - PART E	9/30/2024		10/16/2024	*Addendum #2*
S101F	FOUNDATION PLAN - PART F	9/30/2024			
S200	TYPICAL FOUNDATION DETAILS	9/30/2024			
S201	TYPICAL FOUNDATION DETAILS	9/30/2024			
S210	FOUNDATION DETAILS	9/30/2024			
S211	FOUNDATION DETAILS	9/30/2024		10/16/2024	*Addendum #2*
S212	FOUNDATION DETAILS	9/30/2024			
S301A	SECOND FLOOR FRAMING PLAN - PART A	9/30/2024			
S301B	LOW ROOF FRAMING PLAN - PART B	9/30/2024			
S301C	SECOND FLOOR FRAMING PLAN - PART C	9/30/2024			
S301D	LOW ROOF FRAMING PLAN - PART D	9/30/2024			
S301E	SECOND FLOOR FRAMING PLAN - PART E	9/30/2024			
S301F	LOW ROOF FRAMING PLAN - PART F	9/30/2024			
S302A	ROOF FRAMING PLAN - PART A	9/30/2024			
S302B	HIGH ROOF FRAMING PLAN - PART B	9/30/2024			
S302C	ROOF FRAMING PLAN - PART C	9/30/2024			
S302D	HIGH ROOF FRAMING PLAN - PART D	9/30/2024			
S302E	ROOF FRAMING PLAN - PART E	9/30/2024			
S400	TYPICAL FRAMING DETAILS	9/30/2024			
S401	BUILDING SECTIONS	9/30/2024			
S402	BUILDING SECTIONS	9/30/2024			
S403	BUILDING SECTIONS	9/30/2024			
S410	FRAMING DETAILS	9/30/2024			
S411	FRAMING DETAILS	9/30/2024			
S420	FRAMING DETAILS	9/30/2024			
S421	FRAMING DETAILS	9/30/2024			
S430	FRAMING DETAILS	9/30/2024			
S500	LATERAL FRAME ELEVATIONS	9/30/2024			
S501	LATERAL FRAME ELEVATIONS AND DETAILS	9/30/2024			
S502	SHEAR WALL ELEVATIONS AND DETAILS	9/30/2024			
S600	COLUMN SCHEDULE	9/30/2024			
S601	COLUMN SCHEDULE	9/30/2024			
S700	SNOW DRIFT LOADING PLAN	9/30/2024			
S701	WALL & ROOF WIND PRESSURE PLANS	9/30/2024			

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Addendum #1	Addendum #2	Comments
VOLUME 2					
[28] GENERAL					
C2	COVER SHEET (VOLUME 2)	9/30/2024			
GI01.2	DRAWING LIST	9/30/2024			
GI02.2	GENERAL INFORMATION	9/30/2024			
[29] ARCHITECTURAL DEMOLITION					
AD101A	FIRST FLOOR DEMOLITION PLAN PART A	9/30/2024			
AD102A	SECOND FLOOR DEMOLITION PLAN PART A	9/30/2024			
AD102B	SECOND FLOOR DEMOLITION PLAN PART B	9/30/2024			
AD103A	ROOF DEMOLITION PLAN PART A	9/30/2024			
AD103B	ROOF DEMOLITION PLAN PART B	9/30/2024			
AD301	DEMOLITION ELEVATIONS	9/30/2024			
AD401	DEMO BUILDING SECTIONS	9/30/2024			
[30] ARCHITECTURAL					
A091	FIRST FLOOR SLAB EDGE PLAN	9/30/2024			
A092	SECOND FLOOR & LOWER ROOF SLAB EDGE PLAN	9/30/2024			
A093	ROOF SLAB EDGE PLAN	9/30/2024			
AL000	GEOMETRY LAYOUT PLAN	9/30/2024			
A101	OVERALL FIRST FLOOR PLAN	9/30/2024			
AL101A	FIRST FLOOR LAYOUT PLAN - PART A	9/30/2024			
A101A	FIRST FLOOR PLAN - PART A	9/30/2024			
AL101B	FIRST FLOOR LAYOUT PLAN - PART B	9/30/2024			
A101B	FIRST FLOOR PLAN - PART B	9/30/2024			
AL101C	FIRST FLOOR LAYOUT PLAN - PART C	9/30/2024			
A101C	FIRST FLOOR PLAN - PART C	9/30/2024			
AL101D	FIRST FLOOR LAYOUT PLAN - PART D	9/30/2024			
A101D	FIRST FLOOR PLAN - PART D	9/30/2024			
AL101E	FIRST FLOOR LAYOUT PLAN - PART E	9/30/2024			
A101E	FIRST FLOOR PLAN - PART E	9/30/2024			
AL101F	FIRST FLOOR LAYOUT PLAN - PART F	9/30/2024			
A101F	FIRST FLOOR PLAN - PART F	9/30/2024			
A102	OVERALL SECOND FLOOR PLAN	9/30/2024			
AL102A	SECOND FLOOR LAYOUT PLAN - PART A	9/30/2024			
A102A	SECOND FLOOR PLAN - PART A	9/30/2024			
AL102B	SECOND FLOOR LAYOUT PLAN - PART B	9/30/2024			
A102B	SECOND FLOOR PLAN - PART B	9/30/2024			
AL102C	SECOND FLOOR LAYOUT PLAN - PART C	9/30/2024			
A102C	SECOND FLOOR PLAN - PART C	9/30/2024			
AL102D	SECOND FLOOR LAYOUT PLAN - PART D	9/30/2024			
A102D	SECOND FLOOR PLAN - PART D	9/30/2024			
AL102E	SECOND FLOOR LAYOUT PLAN - PART E	9/30/2024			
A102E	SECOND FLOOR PLAN - PART E	9/30/2024			
A103	OVERALL ROOF PLAN	9/30/2024			
A103A	ROOF PLAN - PART A	9/30/2024			
A103B	ROOF PLAN - PART B	9/30/2024			
A103C	ROOF PLAN - PART C	9/30/2024			
A103D	ROOF PLAN - PART D	9/30/2024			
A103E	ROOF PLAN - PART E	9/30/2024			
A103F	ROOF PLAN - PART F	9/30/2024			
A104	ROOF SCREEN LAYOUT PLAN	9/30/2024			
A111.1	ENLARGED PLAN & ELEVATIONS - CAFETERIA	9/30/2024			
A111.2	ENLARGED CEILING PLAN & DETAILS - CAFETERIA	9/30/2024			
A111.3	ENLARGED PLAN & ELEVATION - GYMNASIUM	9/30/2024			
A111.4	ENLARGED PLAN & ELEVATIONS - GYMNASIUM	9/30/2024			
A111.5	ENLARGED PLAN - AUDITORIUM	9/30/2024			
A111.6	ENLARGED PLAN & ELEVATIONS - AUDITORIUM	9/30/2024			
A111.7	ENLARGED PLAN & DETAILS - AUDITORIUM	9/30/2024			
A111.8	ENLARGED CEILING PLAN - AUDITORIUM	9/30/2024			
A111.9	ENLARGED PLAN & ELEVATIONS - MEDIA CENTER	9/30/2024			
A111.10	ENLARGED PLAN, ELEVATIONS & CEILING PLAN - MEDIA CENTER & OT/PT	9/30/2024			
A111.11	ENLARGED PLAN & ELEVATIONS - ORCHESTRA & FITNESS	9/30/2024			
A111.12	ENLARGED PLAN & ELEVATIONS - BAND & CHORAL	9/30/2024			
A111.13	ENLARGED PLAN & ELEVATIONS - ART ROOM & LIFE SKILLS	9/30/2024			
A111.14	ENLARGED PLAN & ELEVATIONS - INNOVATION / ROBOTICS / WOODSHOP	9/30/2024			
A111.15	ENLARGED PLAN & ELEVATIONS - FAMILY CONSUMER SCIENCE	9/30/2024			
A111.16	ENLARGED PLAN & ELEVATIONS - ADMIN SUITE, HEALTH SUITE & GUIDANCE SUITE	9/30/2024			
A112.1	ENLARGED PLAN & ELEVATIONS - TYPICAL SCIENCE CLASSROOMS & PREP	9/30/2024			
A112.2	ENLARGED PLAN & ELEVATIONS - TYPICAL CLASSROOM, COMMONS	9/30/2024			
A120	ENLARGED STAIR PLANS AND SECTIONS	9/30/2024			
A121	ENLARGED STAIR PLANS AND SECTIONS	9/30/2024			
A122	ENLARGED STAIR AND ELEVATOR PLAN AND SECTIONS	9/30/2024			
A123	ENLARGED STAIR PLANS AND SECTIONS	9/30/2024			
A124	STAIR DETAILS	9/30/2024			
A125	STAIR DETAILS	9/30/2024			
A126	ELEVATOR DETAILS	9/30/2024			
A130	ENLARGED TOILET ROOM PLANS AND ELEVATIONS	9/30/2024			
A131	ENLARGED TOILET ROOM PLANS AND ELEVATIONS	9/30/2024			
A132	ENLARGED TOILET ROOM PLANS AND ELEVATIONS COPY 1	9/30/2024			
A150	GYM PRACTICE COURT LAYOUT & TYPICAL COURT LINE LAYOUT	9/30/2024			
A201A	FIRST FLOOR REFLECTED CEILING PLAN - PART A	9/30/2024			
A201B	FIRST FLOOR REFLECTED CEILING PLAN - PART B	9/30/2024			
A201C	FIRST FLOOR REFLECTED CEILING PLAN - PART C	9/30/2024			
A201D	FIRST FLOOR REFLECTED CEILING PLAN - PART D	9/30/2024			
A201E	FIRST FLOOR REFLECTED CEILING PLAN - PART E	9/30/2024			
A201F	FIRST FLOOR REFLECTED CEILING PLAN - PART F	9/30/2024			
A202A	SECOND FLOOR REFLECTED CEILING PLAN - PART A	9/30/2024			
A202B	SECOND FLOOR REFLECTED CEILING PLAN - PART B	9/30/2024			
A202C	SECOND FLOOR REFLECTED CEILING PLAN - PART C	9/30/2024			
A202D	SECOND FLOOR REFLECTED CEILING PLAN - PART D	9/30/2024			
A202E	SECOND FLOOR REFLECTED CEILING PLAN - PART E	9/30/2024			
A210	CEILING DETAILS	9/30/2024			
A211	CEILING DETAILS	9/30/2024			
A212	CEILING DETAILS - SHAFT WALL	9/30/2024			

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	*Description*	*Date*	*Addendum #1*	*Addendum #2*	*Comments*
A300	BUILDING ELEVATIONS	9/30/2024			
A301	AXON 3D VIEWS	9/30/2024			
A302	AXON 3D VIEWS	9/30/2024			
A310	EXTERIOR ELEVATIONS	9/30/2024			
A311	EXTERIOR ELEVATIONS	9/30/2024			
A312	EXTERIOR ELEVATIONS	9/30/2024			
A313	EXTERIOR ELEVATIONS	9/30/2024			
A314	EXTERIOR ELEVATIONS	9/30/2024			
A315	EXTERIOR STAND ALONE MOCK-UP	9/30/2024			
A400	BUILDING SECTIONS	9/30/2024			
A401	BUILDING SECTIONS	9/30/2024			
A402	BUILDING SECTIONS	9/30/2024			
A403	BUILDING SECTIONS	9/30/2024			
A410	EXTERIOR WALL SECTIONS	9/30/2024			
A411	EXTERIOR WALL SECTIONS	9/30/2024			
A412	EXTERIOR WALL SECTIONS	9/30/2024			
A413	EXTERIOR WALL SECTIONS	9/30/2024			
A414	EXTERIOR WALL SECTIONS	9/30/2024			
A415	EXTERIOR WALL SECTIONS	9/30/2024			
A416	EXTERIOR WALL SECTIONS	9/30/2024			
A417	EXTERIOR WALL SECTIONS	9/30/2024			
A418	EXTERIOR WALL SECTIONS	9/30/2024			
A420	INTERIOR WALL SECTIONS	9/30/2024			
A421	INTERIOR WALL SECTIONS	9/30/2024			
A500	TYPICAL EXTERIOR ASSEMBLIES	9/30/2024			
A501	TYPICAL EXTERIOR DETAILS	9/30/2024			
A502	EXTERIOR SECTION DETAILS OF NON-PROJECTED THROUGH WALL FLASHINGS	9/30/2024			
A510	EXTERIOR PLAN DETAILS	9/30/2024			
A511	EXTERIOR PLAN DETAILS	9/30/2024			
A512	EXTERIOR PLAN DETAILS	9/30/2024			
A513	EXTERIOR PLAN DETAILS	9/30/2024			
A514	EXTERIOR PLAN DETAILS	9/30/2024			
A515	EXTERIOR PLAN DETAILS	9/30/2024			
A516	EXTERIOR PLAN DETAILS	9/30/2024			
A520	EXTERIOR SECTION DETAILS	9/30/2024			
A521	EXTERIOR SECTION DETAILS	9/30/2024			
A522	EXTERIOR SECTION DETAILS	9/30/2024			
A530	TYPICAL MEMBRANE ROOFING DETAILS	9/30/2024			
A531	TYPICAL MEMBRANE ROOFING DETAILS	9/30/2024			
A540	INTERIOR PLAN DETAILS	9/30/2024			
A541	INTERIOR PLAN DETAILS	9/30/2024			
A600	TYPICAL FRAMED PARTITION TYPES AND DETAILS	9/30/2024			
A601	METAL STUD PARTITION FRAMING - TYPICAL DETAILS	9/30/2024			
A602	SPECIALTY PARTITION DETAILS	9/30/2024			
A605	TYPICAL MASONRY PARTITION TYPES AND DETAILS	9/30/2024			
A606	TYPICAL MASONRY PARTITION DETAILS	9/30/2024			
A610	DOOR AND FRAME TYPES	9/30/2024			
A611	DOOR SCHEDULE	9/30/2024			
A620	TYPICAL HOLLOW METAL DOOR FRAME DETAILS	9/30/2024			
A621	TYPICAL HOLLOW METAL DOOR & FRAME DETAILS	9/30/2024			
A622	TYPICAL HOLLOW METAL DOOR & FRAME DETAILS	9/30/2024			
A630	ALUMINUM FRAME ELEVATIONS - CURTAIN WALLS	9/30/2024			
A631	ALUMINUM FRAME ELEVATIONS - STOREFRONTS	9/30/2024			
A632	ALUMINUM FRAME ELEVATIONS - CURTAIN WALLS AND STOREFRONTS	9/30/2024			
A640	TYPICAL ALUMINUM FRAME DETAILS	9/30/2024			
A641	ALUMINUM FRAME WINDOW DETAILS	9/30/2024	10/10/2024		*Addendum #1*
A642	ALUMINUM FRAME SECTION DETAILS	9/30/2024			
A701	TYPICAL MOUNTING HEIGHTS	9/30/2024			
A702	INTERIOR ELEVATIONS - PUBLIC LOBBY	9/30/2024			
A703	INTERIOR ELEVATIONS - FIRST FLOOR	9/30/2024			
A704	INTERIOR ELEVATIONS - MAIN CONCOURSE	9/30/2024			
A705	INTERIOR ELEVATIONS - MAIN CONCOURSE	9/30/2024			
A706	2ND FLOOR ELEVATIONS - CORRIDORS	9/30/2024			
A707	INTERIOR ELEVATIONS	9/30/2024			
A708	INTERIOR ELEVATIONS - GYMNASIUM - CUSTOM GRAPHIC DESIGN	9/30/2024			
A801	CASEWORK - TYPICAL DETAILS & GENERAL NOTES	9/30/2024			
A802	CASEWORK - TYPICAL DETAILS	9/30/2024			
A803	CASEWORK - TYPICAL DETAILS	9/30/2024			
A804	INTERIOR DETAILS	9/30/2024			
A805	INTERIOR DETAILS	9/30/2024		10/16/2024	*Addendum #2*
A806	INTERIOR DETAILS	9/30/2024			
A901A	FIRST FLOOR FINISH PLAN - PART A	9/30/2024			
A901B	FIRST FLOOR FINISH PLAN - PART B	9/30/2024			
A901C	FIRST FLOOR FINISH PLAN - PART C	9/30/2024			
A901D	FIRST FLOOR FINISH PLAN - PART D	9/30/2024			
A901E	FIRST FLOOR FINISH PLAN - PART E	9/30/2024			
A901F	FIRST FLOOR FINISH PLAN - PART F	9/30/2024			
A902A	SECOND FLOOR FINISH PLAN - PART A	9/30/2024			
A902C	SECOND FLOOR FINISH PLAN - PART C	9/30/2024			
A902E	SECOND FLOOR FINISH PLAN - PART E	9/30/2024			
A903	FLOOR PATTERN DETAILS	9/30/2024			
A910	FINISH PRODUCT LIST - PART A	9/30/2024			
A911	FINISH PRODUCT LIST -PART B AND FINISH NOTES	9/30/2024		10/16/2024	*Addendum #2*
A912	SPECIALTY EQUIPMENT LIST	9/30/2024			
A920	SIGNAGE SCHEDULE AND NOTES	9/30/2024			
A921A	FIRST FLOOR SIGNAGE PLAN - PART A	9/30/2024			
A921B	FIRST FLOOR SIGNAGE PLAN - PART B	9/30/2024			
A921C	FIRST FLOOR SIGNAGE PLAN - PART C	9/30/2024			
A921D	FIRST FLOOR SIGNAGE PLAN - PART D	9/30/2024			
A921E	FIRST FLOOR SIGNAGE PLAN - PART E	9/30/2024			
A921F	FIRST FLOOR SIGNAGE PLAN - PART F	9/30/2024			
A922A	SECOND FLOOR SIGNAGE PLAN - PART A	9/30/2024			
A922C	SECOND FLOOR SIGNAGE PLAN - PART C	9/30/2024			
A922E	SECOND FLOOR SIGNAGE PLAN - PART E	9/30/2024			
A923	SIGN TYPES	9/30/2024			
A924	EXTERIOR SIGN TYPES	9/30/2024			
[31] FURNITURE					
I101	OVERAL FIRST FLOOR FURNITURE PLAN	9/30/2024			
I101A	FIRST FLOOR FURNITURE PLAN - PART A	9/30/2024			

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Addendum #1	Addendum #2	Comments
I101B	FIRST FLOOR FURNITURE PLAN - PART B	9/30/2024			
I101C	FIRST FLOOR FURNITURE PLAN - PART C	9/30/2024			
I101D	FIRST FLOOR FURNITURE - PART D	9/30/2024			
I101E	FIRST FLOOR FURNITURE PLAN - PART E	9/30/2024			
I101F	FIRST FLOOR FURNITURE PLAN - PART F	9/30/2024			
I102	OVERALL 2ND FLOOR FURNITURE PLAN	9/30/2024			
I102A	2ND FLOOR FURNITURE PLAN - PART A	9/30/2024			
I102C	2ND FLOOR FURNITURE PLAN - PART C	9/30/2024			
I102E	2ND FLOOR FURNITURE PLAN - PART E	9/30/2024			
[32] FOOD SERVICE					
FS001	FOODSERVICE EQUIPMENT SCHEDULE	9/30/2024			
FS101A	FIRST FLOOR - PART A - FOODSERVICE EQUIPMENT PLAN	9/30/2024			
FS111	FOODSERVICE EQUIPMENT PLAN	9/30/2024			
FS121	FOODSERVICE EQUIPMENT ROUGH-IN PLAN	9/30/2024			
FS131	FOODSERVICE EQUIPMENT VENTILATION ROUGH-IN PLAN	9/30/2024			
FS141	FOODSERVICE EQUIPMENT SPECIAL CONDITIONS PLAN	9/30/2024			
FS201	FOODSERVICE EQUIPMENT ELEVATIONS	9/30/2024			
FS301	FOODSERVICE EQUIPMENT DETAILS	9/30/2024			
[38] THEATRICAL					
TR1	THEATRICAL RIGGING	9/30/2024			
TR2	THEATRICAL RIGGING RISER AND SCHEDULES	9/30/2024			
VOLUME 3					
[39] GENERAL					
C3	COVER SHEET (VOLUME 3)	9/30/2024			
GI01.3	DRAWING LIST	9/30/2024			
GI02.3	GENERAL INFORMATION	9/30/2024			
FIRE PROTECTION					
FP000	FIRE PROTECTION ABBREVIATIONS, NOTES AND SYMBOLS	9/30/2024		10/16/2024	*Addendum #2*
FP001	FIRE PROTECTION ZONING PLAN	9/30/2024			
FP101A	FIRE PROTECTION FIRST FLOOR PLAN - PART A	9/30/2024		10/16/2024	*Addendum #2*
FP101B	FIRE PROTECTION FIRST FLOOR PLAN - PART B	9/30/2024		10/16/2024	*Addendum #2*
FP101C	FIRE PROTECTION FIRST FLOOR PLAN - PART C	9/30/2024		10/16/2024	*Addendum #2*
FP101D	FIRE PROTECTION FIRST FLOOR PLAN - PART D	9/30/2024		10/16/2024	*Addendum #2*
FP101E	FIRE PROTECTION FIRST FLOOR PLAN PART - E	9/30/2024			
FP101F	FIRE PROTECTION FIRST FLOOR PLAN - PART F	9/30/2024		10/16/2024	*Addendum #2*
FP102A	FIRE PROTECTION SECOND FLOOR PLAN - PART A	9/30/2024		10/16/2024	*Addendum #2*
FP102B	FIRE PROTECTION SECOND FLOOR PLAN - PART B	9/30/2024			
FP102C	FIRE PROTECTION SECOND FLOOR PLAN - PART C	9/30/2024		10/16/2024	*Addendum #2*
FP102D	FIRE PROTECTION SECOND FLOOR PLAN - PART D	9/30/2024			
FP102E	FIRE PROTECTION SECOND FLOOR PLAN - PART E	9/30/2024		10/16/2024	*Addendum #2*
FP400	FIRE PROTECTION ENLARGED PLANS	9/30/2024			
FP500	FIRE PROTECTION DETAILS	9/30/2024			
[50] PLUMBING					
P000	PLUMBING ABBREVIATIONS, NOTES AND SYMBOLS	9/30/2024			
P100A	PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART A	9/30/2024		10/16/2024	*Addendum #2*
P100B	PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART B	9/30/2024		10/16/2024	*Addendum #2*
P100C	PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART C	9/30/2024			
P100D	PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART D	9/30/2024			
P100E	PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART E	9/30/2024		10/16/2024	*Addendum #2*
P100F	PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART F	9/30/2024			
P001	PLUMBING FIRST FLOOR OVERALL PLAN	9/30/2024			
P101A	PLUMBING FIRST FLOOR PLAN - PART A	9/30/2024		10/16/2024	*Addendum #2*
P101B	PLUMBING FIRST FLOOR PLAN - PART B	9/30/2024		10/16/2024	*Addendum #2*
P101C	PLUMBING FIRST FLOOR PLAN - PART C	9/30/2024			
P101D	PLUMBING FIRST FLOOR PLAN - PART D	9/30/2024		10/16/2024	*Addendum #2*
P101E	PLUMBING FIRST FLOOR PLAN - PART E	9/30/2024		10/16/2024	*Addendum #2*
P101F	PLUMBING FIRST FLOOR PLAN - PART F	9/30/2024		10/16/2024	*Addendum #2*
P002	PLUMBING SECOND FLOOR OVERALL PLAN	9/30/2024			
P102A	PLUMBING SECOND FLOOR PLAN -PART A	9/30/2024		10/16/2024	*Addendum #2*
P102C	PLUMBING SECOND FLOOR PLAN - PART C	9/30/2024			
P102E	PLUMBING SECOND FLOOR PLAN - PART E	9/30/2024			
P003	PLUMBING ROOF OVERALL PLAN	9/30/2024			
P103A	PLUMBING ROOF PLAN - PART A	9/30/2024		10/16/2024	*Addendum #2*
P103B	PLUMBING ROOF PLAN - PART B	9/30/2024			
P103C	PLUMBING ROOF PLAN - PART C	9/30/2024			
P103D	PLUMBING ROOF PLAN - PART D	9/30/2024			
P103E	PLUMBING ROOF PLAN - PART E	9/30/2024			
P103F	PLUMBING ROOF PLAN - PART F	9/30/2024		10/16/2024	*Addendum #2*
P400	PLUMBING ENLARGED VIEWS - KITCHEN	9/30/2024			
P401	PLUMBING ENLARGED VIEWS	9/30/2024		10/16/2024	*Addendum #2*
P402	PLUMBING ENLARGED VIEWS	9/30/2024		10/16/2024	*Addendum #2*
P403	PLUMBING ENLARGED VIEWS	9/30/2024			
P404	PLUMBING ENLARGED VIEWS	9/30/2024			
P405	PLUMBING ENLARGED VIEWS	9/30/2024		10/16/2024	*Addendum #2*
P500	PLUMBING DETAILS	9/30/2024			
P501	PLUMBING DETAILS	9/30/2024		10/16/2024	*Addendum #2*
P600	PLUMBING SCHEDULES AND DIAGRAMS	9/30/2024			
P601	PLUMBING SCHEDULES AND DIAGRAMS	9/30/2024		10/16/2024	*Addendum #2*
[60] MECHANICAL					
MEPD000	MEP DEMOLITION ABBREVIATIONS, NOTES, AND SYMBOLS	9/30/2024			
MEPD001	MEP DEMO PLAN VIEW	9/30/2024			
M0.00	MECHANICAL ABBREVIATIONS, NOTES AND SYMBOLS	9/30/2024			
M001	OVERALL MECHANICAL FIRST FLOOR PLAN	9/30/2024			
M101A	MECHANICAL FIRST FLOOR PLAN - PART A	9/30/2024			
M101B	MECHANICAL FIRST FLOOR PLAN - PART B	9/30/2024		10/16/2024	*Addendum #2*
M101C	MECHANICAL FIRST FLOOR PLAN - PART C	9/30/2024		10/16/2024	*Addendum #2*
M101D	MECHANICAL FIRST FLOOR PLAN - PART D	9/30/2024			
M101E	MECHANICAL FIRST FLOOR PLAN - PART E	9/30/2024		10/16/2024	*Addendum #2*
M101F	MECHANICAL FIRST FLOOR PLAN - PART F	9/30/2024			
M002	OVERALL MECHANICAL SECOND FLOOR PLAN	9/30/2024			

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Addendum #1	Addendum #2	Comments
M102A	MECHANICAL SECOND FLOOR PLAN - PART A	9/30/2024			
M102B	MECHANICAL SECOND FLOOR PLAN - PART B	9/30/2024			
M102C	MECHANICAL SECOND FLOOR PLAN - PART C	9/30/2024			
M102D	MECHANICAL SECOND FLOOR PLAN - PART D	9/30/2024			
M102E	MECHANICAL SECOND FLOOR PLAN - PART E	9/30/2024			
M003	OVERALL MECHANICAL ROOF PLAN	9/30/2024			
M103A	MECHANICAL ROOF PLAN - PART A	9/30/2024			
M103B	MECHANICAL ROOF PLAN - PART B	9/30/2024			
M103C	MECHANICAL ROOF PLAN - PART C	9/30/2024			
M103D	MECHANICAL ROOF PLAN - PART D	9/30/2024			
M103E	MECHANICAL ROOF PLAN - PART E	9/30/2024			
M103F	MECHANICAL ROOF PLAN - PART F	9/30/2024			
MP101A	MECHANICAL PIPING FIRST FLOOR PLAN - PART A	9/30/2024		10/16/2024	*Addendum #2*
MP101B	MECHANICAL PIPING FIRST FLOOR PLAN - PART B	9/30/2024		10/16/2024	*Addendum #2*
MP101C	MECHANICAL PIPING FIRST FLOOR PLAN - PART C	9/30/2024		10/16/2024	*Addendum #2*
MP101D	MECHANICAL PIPING FIRST FLOOR PLAN - PART D	9/30/2024		10/16/2024	*Addendum #2*
MP101E	MECHANICAL PIPING FIRST FLOOR PLAN - PART E	9/30/2024		10/16/2024	*Addendum #2*
MP101F	MECHANICAL PIPING FIRST FLOOR PLAN - PART F	9/30/2024			
MP102A	MECHANICAL PIPING SECOND FLOOR PLAN - PART A	9/30/2024		10/16/2024	*Addendum #2*
MP102B	MECHANICAL PIPING SECOND FLOOR PLAN - PART B	9/30/2024			
MP102C	MECHANICAL PIPING SECOND FLOOR PLAN - PART C	9/30/2024		10/16/2024	*Addendum #2*
MP102D	MECHANICAL PIPING SECOND FLOOR PLAN - PART D	9/30/2024			
MP102E	MECHANICAL PIPING SECOND FLOOR PLAN - PART E	9/30/2024		10/16/2024	*Addendum #2*
M500	MECHANICAL DETAILS	9/30/2024			
M501	MECHANICAL DETAILS	9/30/2024			
M502	MECHANICAL DETAILS	9/30/2024			
M503	MECHANICAL DETAILS	9/30/2024			
M504	MECHANICAL DETAILS	9/30/2024			
M505	MECHANICAL DETAILS	9/30/2024			
M600	MECHANICAL SCHEDULES	9/30/2024			
M601	MECHANICAL SCHEDULES	9/30/2024		10/16/2024	*Addendum #2*
M602	MECHANICAL SCHEDULES	9/30/2024		10/16/2024	*Addendum #2*
M700	MECHANICAL CONTROLS DIAGRAMS	9/30/2024		10/16/2024	*Addendum #2*
M701	MECHANICAL CONTROLS DIAGRAMS	9/30/2024		10/16/2024	*Addendum #2*
[70] ELECTRICAL					
E000	ELECTRICAL ABBREVIATIONS, NOTES AND SYMBOLS	9/30/2024		10/16/2024	*Addendum #2*
EL001	ELECTRICAL LIGHTING FIRST FLOOR OVERALL PLAN	9/30/2024			
EL101A	ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART A	9/30/2024		10/16/2024	*Addendum #2*
EL101B	ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART B	9/30/2024		10/16/2024	*Addendum #2*
EL101C	ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART C	9/30/2024		10/16/2024	*Addendum #2*
EL101D	ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART D	9/30/2024		10/16/2024	*Addendum #2*
EL101E	ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART E	9/30/2024			
EL101F	ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART F	9/30/2024		10/16/2024	*Addendum #2*
EL002	ELECTRICAL LIGHTING SECOND FLOOR OVERALL PLAN	9/30/2024			
EL102A	ELECTRICAL LIGHTING SECOND FLOOR PLAN - PART A	9/30/2024		10/16/2024	*Addendum #2*
EL102B	ELECTRICAL LIGHTING SECOND FLOOR PLAN - PART B	9/30/2024		10/16/2024	*Addendum #2*
EL102C	ELECTRICAL LIGHTING SECOND FLOOR PLAN - PART C	9/30/2024		10/16/2024	*Addendum #2*
EL102D	ELECTRICAL LIGHTING SECOND FLOOR PLAN - PART D	9/30/2024			
EL102E	ELECTRICAL LIGHTING SECOND FLOOR PLAN - PART E	9/30/2024		10/16/2024	*Addendum #2*
EP001	ELECTRICAL POWER FIRST FLOOR OVERALL PLAN	9/30/2024			
EP101A	ELECTRICAL POWER FIRST FLOOR PLAN - PART A	9/30/2024		10/16/2024	*Addendum #2*
EP101B	ELECTRICAL POWER FIRST FLOOR PLAN - PART B	9/30/2024			
EP101C	ELECTRICAL POWER FIRST FLOOR PLAN - PART C	9/30/2024		10/16/2024	*Addendum #2*
EP101D	ELECTRICAL POWER FIRST FLOOR PLAN - PART D	9/30/2024			
EP101E	ELECTRICAL POWER FIRST FLOOR PLAN - PART E	9/30/2024		10/16/2024	*Addendum #2*
EP101F	ELECTRICAL POWER FIRST FLOOR PLAN - PART F	9/30/2024			
EP002	ELECTRICAL POWER SECOND FLOOR OVERALL PLAN	9/30/2024			
EP102A	ELECTRICAL POWER SECOND FLOOR PLAN - PART A	9/30/2024			
EP102B	ELECTRICAL POWER SECOND FLOOR PLAN - PART B	9/30/2024			
EP102C	ELECTRICAL POWER SECOND FLOOR PLAN - PART C	9/30/2024			
EP102D	ELECTRICAL POWER SECOND FLOOR PLAN - PART D	9/30/2024			
EP102E	ELECTRICAL POWER SECOND FLOOR PLAN - PART E	9/30/2024			
EP003	ELECTRICAL POWER ROOF OVERALL PLAN	9/30/2024			
EP103A	ELECTRICAL POWER ROOF PLAN - PART A	9/30/2024			
EP103B	ELECTRICAL POWER ROOF PLAN - PART B	9/30/2024			
EP103C	ELECTRICAL POWER ROOF PLAN - PART C	9/30/2024			
EP103D	ELECTRICAL POWER ROOF PLAN - PART D	9/30/2024			
EP103E	ELECTRICAL POWER ROOF PLAN - PART E	9/30/2024			
EP103F	ELECTRICAL POWER ROOF PLAN - PART F	9/30/2024			
E400	ELECTRICAL ENLARGED PLANS - KITCHEN	9/30/2024		10/16/2024	*Addendum #2*
E401	ELECTRICAL ENLARGED PLANS - AUDITORIUM	9/30/2024		10/16/2024	*Addendum #2*
E402	ELECTRICAL ENLARGED PLANS - ELEVATORS	9/30/2024			
E500	ELECTRICAL DETAILS	9/30/2024			
E501	ELECTRICAL DETAILS	9/30/2024		10/16/2024	*Addendum #2*
E502	ELECTRICAL DETAILS	9/30/2024			
E503	ELECTRICAL DETAILS	9/30/2024			
E504	ELECTRICAL DETAILS	9/30/2024			
E600	ELECTRICAL SCHEDULES AND DIAGRAMS	9/30/2024			
E601	ELECTRICAL SCHEDULES AND DIAGRAMS	9/30/2024			
E602	ELECTRICAL PANEL SCHEDULES	9/30/2024			
E603	ELECTRICAL PANEL SCHEDULES	9/30/2024		10/16/2024	*Addendum #2*
E604	ELECTRICAL PANEL SCHEDULES	9/30/2024			
E605	ELECTRICAL PANEL SCHEDULES	9/30/2024			
E606	ELECTRICAL PANEL SCHEDULES	9/30/2024			
E607	ELECTRICAL PANEL SCHEDULES	9/30/2024			
E700	ELECTRICAL RISER DIAGRAM	9/30/2024			
E701	FIRE ALARM RISER DIAGRAM	9/30/2024		10/16/2024	*Addendum #2*
[80] TECHNOLOGY					
T000	TECHNOLOGY SYMBOL LEGEND & GENERAL NOTES	9/30/2024		10/16/2024	*Addendum #2*
T001	TECHNOLOGY OVERALL FIRST FLOOR PLAN CABLING DELINIATION PLAN	9/30/2024			
T002	TECHNOLOGY OVERALL SECOND FLOOR PLAN CABLE DELINIATION PLAN	9/30/2024			
T101A	TECHNOLOGY FIRST FLOOR PLAN A	9/30/2024		10/16/2024	*Addendum #2*
T101B	TECHNOLOGY FIRST FLOOR PLAN B	9/30/2024		10/16/2024	*Addendum #2*
T101C	TECHNOLOGY FIRST FLOOR PLAN C	9/30/2024		10/16/2024	*Addendum #2*
T101D	TECHNOLOGY FIRST FLOOR PLAN D	9/30/2024		10/16/2024	*Addendum #2*
T101E	TECHNOLOGY FIRST FLOOR PLAN E	9/30/2024		10/16/2024	*Addendum #2*
T101F	TECHNOLOGY FIRST FLOOR PLAN F	9/30/2024		10/16/2024	*Addendum #2*

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	*Description*	*Date*	*Addendum #1*	*Addendum #2*	*Comments*
T102A	TECHNOLOGY SECOND FLOOR PLAN A	9/30/2024		10/16/2024	*Addendum #2*
T102B	TECHNOLOGY SECOND FLOOR PLAN B	9/30/2024			
T102C	TECHNOLOGY SECOND FLOOR PLAN C	9/30/2024		10/16/2024	*Addendum #2*
T102D	TECHNOLOGY SECOND FLOOR PLAN D	9/30/2024			
T102E	TECHNOLOGY SECOND FLOOR PLAN E	9/30/2024		10/16/2024	*Addendum #2*
T201	TECHNOLOGY MDF 1066 DETAILS	9/30/2024			
T202	TECHNOLOGY IDF 1046 & 1023 DETAILS	9/30/2024			
T301	TECHNOLOGY DETAILS	9/30/2024			
T302	TECHNOLOGY DETAILS	9/30/2024			
T400	TECHNOLOGY WIRING DIAGRAM	9/30/2024			
[81] AUDIO VISUAL					
TA000	AUDIO VISUAL SYMBOL LEGEND & GENERAL NOTES	9/30/2024		10/16/2024	*Addendum #2*
TA101A	AUDIO VISUAL FIRST FLOOR PLAN A	9/30/2024			
TA101B	AUDIO VISUAL FIRST FLOOR PLAN B	9/30/2024			
TA101C	AUDIO VISUAL FIRST FLOOR PLAN C	9/30/2024			
TA101D	AUDIO VISUAL FIRST FLOOR PLAN D	9/30/2024			
TA101E	AUDIO VISUAL FIRST FLOOR PLAN E	9/30/2024			
TA101F	AUDIO VISUAL FIRST FLOOR PLAN F	9/30/2024			
TA102A	AUDIO VISUAL SECOND FLOOR PLAN A	9/30/2024			
TA102B	AUDIO VISUAL SECOND FLOOR PLAN B	9/30/2024			
TA102C	AUDIO VISUAL SECOND FLOOR PLAN C	9/30/2024			
TA102D	AUDIO VISUAL SECOND FLOOR PLAN D	9/30/2024			
TA102E	AUDIO VISUAL SECOND FLOOR PLAN E	9/30/2024			
TA201	AUDIO VISUAL DETAILS	9/30/2024			
TA300	AUDIO VISUAL SIGNAL FLOW	9/30/2024			
TA301	AUDIO VISUAL AUDITORIUM SIGNAL FLOW	9/30/2024			
TA400	AUDIO VISUAL AUDITORIUM ELEVATIONS	9/30/2024			
TA401	AUDIO VISUAL ELEVATIONS	9/30/2024			
[82] SECURITY					
TY000	SECURITY SYMBOL LEGEND & GENERAL NOTES	9/30/2024		10/16/2024	*Addendum #2*
TY100	SECURITY SITE PLAN	9/30/2024			
TY101A	SECURITY FIRST FLOOR PLAN A	9/30/2024		10/16/2024	*Addendum #2*
TY101B	SECURITY FIRST FLOOR PLAN B	9/30/2024			
TY101C	SECURITY FIRST FLOOR PLAN C	9/30/2024		10/16/2024	*Addendum #2*
TY101D	SECURITY FIRST FLOOR PLAN D	9/30/2024			
TY101E	SECURITY FIRST FLOOR PLAN E	9/30/2024			
TY101F	SECURITY FIRST FLOOR PLAN F	9/30/2024			
TY102A	SECURITY SECOND FLOOR PLAN A	9/30/2024			
TY102B	SECURITY SECOND FLOOR PLAN B	9/30/2024			
TY102C	SECURITY SECOND FLOOR PLAN C	9/30/2024			
TY102D	SECURITY SECOND FLOOR PLAN D	9/30/2024			
TY102E	SECURITY SECOND FLOOR PLAN E	9/30/2024			
TY301	SECURITY DETAILS	9/30/2024			
TY302	SECURITY DETAILS	9/30/2024			
TY401	SECURITY WIRING DIAGRAMS	9/30/2024			

ADDITIONAL DOCUMENTS AND SKETCHES

1651	Plan and Profile of Sewer in Stanwich Road & Fairfield Road (Greenwich, Conn) -- Issued to address Bidder RFI #91			9/6/1961	*Addendum #2: Provided as a for-reference-only document*
00 9113-1	Appendix A – Phase 1 Environmental Site Assessment. Dated May 30, 2023, authored by Langan Engineering			5/30/2023	*Addendum #2*
00 9113-2	Appendix B – Underground Storage Tank Investigation Report, Dated November 16, 2023, authored by Langan Engineering			11/16/2023	*Addendum #2*
00 9113-3	Appendix C – Limited In-Siti Soil Sampling, Dated April 1, 2024			4/1/2024	*Addendum #2*
00 9113-4	Appendix D – Stormwater Pollution Control Plan for Greenwich Central Middle School (Issued in response to Bidder RFI #93), authored by Tighe & Bond			10/16/2024	*Addendum #2*

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	Spec Number	Bid Package	Comments
	8	**Demolition & Abatement**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	01 2200	Unit Prices - Hazardous Building Materials	Exclusive
	02 4100	Demolition	Exclusive
	02 8200	Selective Hazardous Building Materials Abatement Demolition	Exclusive
	02 8213	Asbestos Abatement	Exclusive
	02 8313	Lead-Based Paint Awareness	Exclusive
	02 8416	Universal Waste Removal and Recycling	Exclusive
	02 8432	PCBs Greater than 50ppm Remediation	Exclusive
	9	**Sitework**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	02 3000	Subsurface Investigations	Exclusive
	02 4113	Site Utility Abandonment	Exclusive
	07 2100	Thermal Insulation	Shared
	07 9200	Joint Sealants	Shared
	10 1453	Traffic Signage [Landscape]	Exclusive
	10 1453	Traffic Signage [Civil]	Exclusive
	10 1454	Traffic Signage Removal and Relocation	Exclusive
	10 7516	Ground-Set Flagpoles	Exclusive
	12 9300	Site Furnishings	Exclusive
	31 1000	Site Clearing	Exclusive
	31 1000	Selective Clearing and Thinning [Civil]	Exclusive
	31 1005	Athletic Field Site Preparation	Exclusive
	31 1006	Soil Striping and Stockpiling	Exclusive
	31 1200	Site Utility Preparation	Exclusive
	31 2200	Grading	Exclusive
	31 2300	Excavation, Backfill, Compaction and Dewatering	Exclusive
	31 2316.26	Rock Removal	Exclusive
	31 2323	Borrow Material	Exclusive
	31 2333	Trenching and Backfilling	Exclusive
	31 2500	Soil Erosion and Sediment Controls	Exclusive
	31 6616	Aggregate Piers	Exclusive
	32 0529	Glacial Boulers for Exterior Improvements	Exclusive
	32 1216	Asphalt Paving	Exclusive
	32 1400	Unit Pavers	Exclusive
	32 1500	Aggregate Surfacing	Exclusive
	32 1613.23	Precast Concrete Curb	Exclusive
	32 1640	Granite Curbing	Exclusive
	32 1823.17	Natural Infield and Warning Track Surfacing	Exclusive
	32 3113	Chain Link Fences and Gates	Exclusive
	32 3118	Metal Fences and Gates	Exclusive
	32 3120	Vehicle Barrier Gates	Exclusive
	32 3223	Segmental Retaining Walls	Exclusive
	32 8415	Sitework Sleeves	Exclusive
	33 0513	Manholes and Catchbasins	Exclusive
	33 0514	Breaking Into Existing Manholes and CatchBasins	Exclusive
	33 1113	Ductile Iron Pipe and Fittings	Exclusive
	33 1300	Disinfection of Water Distribution Systems	Exclusive
	33 1400	Testing of Water Distribution Systems	Exclusive
	33 3113	Polyvinyl Cholride (PVC) Pipe and Fittings	Exclusive
	33 3114	Testing of Sanitary Sewer and Storm Drainage Systems	Exclusive
	33 3115	Television Inspection of Pipelines	Exclusive
	33 4100	Storm Drainage	Exclusive
	33 4113	High Density Polythylene Pipe and Fittings	Exclusive

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	Spec Number	Bid Package	Comments
	33 4114	Underground Warning Tape	Exclusive
	33 4419	Stormwater Treatment System	Exclusive
	34 0000	Transportation	Exclusive
	34 4114	Rectangular Rapid Flashing Beacon	Exclusive
	34 4115	LED School Radar Speed Display with Flashing Beacons	Exclusive
	34 4117	Pedestrian Push Button	Exclusive
	34 7001	Traffic Person	Exclusive
	34 7002	Maintenance and Protection of Traffic	Exclusive
	10	**Concrete**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	03 0156	Under-Slab Vapor Retarder	Exclusive
	03 1000	Concrete Forming and Accessories	Shared
	03 2000	Concrete Reinforcing	Shared
	03 3000	Cast-in-Place Concrete	Shared
	03 3250	Concrete Post-Installed Anchors	Shared
	03 6213	Non-Metallic Non-Shrink Grouting	Shared
	07 2100	Thermal Insulation	Shared
	07 9200	Joint Sealants	Shared
	11	**Masonry & Precast**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	03 3250	Concrete Post-Installed Anchors	Shared
	03 6213	Non-Metallic Non-Shrink Grouting	Shared
	04 2000	Unit Masonry	Exclusive
	04 7323	Manufactured Building Stone Masonry	Exclusive
	05 5000	Metal Fabrications	Shared
	07 2100	Thermal Insulation	Shared
	07 2726	Fluid-Applied Membrane Air Barriers	Shared
	07 6200	Sheet Metal Flashing and Trim	Shared
	07 9200	Joint Sealants	Shared
	07 9513	Expansion Joint Cover Assmeblies	Shared
	12	**Structural Steel**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	03 3250	Concrete Post-Installed Anchors	Shared
	05 0805	Factory-Applied Coatings for Metal	Shared
	05 1200	Structural Steel Framing	Exclusive
	05 2100	Steel Joist Framing	Exclusive
	05 3100	Steel Decking	Exclusive
	05 5000	Metal Fabrications	Shared
	07 2163	Fluid-Applied Insulative Coating	Exclusive
	13	**Misc. Metal**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	03 3250	Concrete Post-Installed Anchors	Shared
	05 0805	Factory-Applied Coatings for Metal	Shared
	05 5000	Metal Fabrications	Shared
	05 5100	Metal Stairs	Exclusive
	05 7000	Decorative Metal Railings	Exclusive

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	Spec Number	Bid Package	Comments
	05 7100	Monumental Metal Stairs	Exclusive
	07 9200	Joint Sealants	Shared
	14	**Waterproofing**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	07 1400	Fluid-Applied Waterproofing	Exclusive
	15	**Roofing**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	07 5423	Thermoplastic Polyolefin (TPO) Roofing	Exclusive
	07 6200	Sheet Metal Flashing and Trim	Shared
	07 7100	Roof Specialties	Exclusive
	07 7200	Roof Accessories	Exclusive
	07 9513	Expansion Joint Cover Assmeblies	Shared
	16	**Fireproofing**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	07 8100	Applied Fire Protection	Exclusive
	07 8123	Intumescent Fire Protection	Exclusive
	17	**Firestopping**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	07 8400	Firestopping	Exclusive
	18	**Millwork & Casework**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	06 2000	Finish Carpentry	Exclusive
	06 4100	Architectural Wood Casework	Exclusive
	06 4200	Wood Paneling	Exclusive
	06 6116	Solid Surfacing Fabrications	Exclusive
	07 9200	Joint Sealants	Shared
	07 9513	Expansion Joint Cover Assmeblies	Shared
	09 7800	Interior Wall Paneling	Exclusive
	09 8416	Fixed Sound Reflective Panels	Shared
	09 8430	Sound-Absorbing Wall and Ceiling Units	Shared
	10 1100	Visual Display Units	Exclusive
	10 1416	Plaques	Exclusive
	10 5502	Mail Sorter	Exclusive
	12 3553.19	Wood Laboratory Casework	Exclusive
	12 3600	Countertops	Exclusive
	19	**Glass, Glazing & Metal Panels/Rainscreen**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	03 3250	Concrete Post-Installed Anchors	Shared
	07 2100	Thermal Insulation	Shared
	07 2726	Fluid-Applied Membrane Air Barriers	Shared
	07 4213.23	Metal Composite Material Wall Panels	Exclusive

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	Spec Number	Bid Package	Comments
	07 6200	Sheet Metal Flashing and Trim	Shared
	07 9200	Joint Sealants	Shared
	07 9513	Expansion Joint Cover Assmeblies	Shared
	08 4313	Aluminum-Framed Storefronts	Exclusive
	08 4413	Glazed Aluminum Curtain Walls	Exclusive
	08 5653	Security & Service Windows	Exclusive
	08 6300	Metal-Framed Skylights	Exclusive
	08 7100	Door Hardware	Shared
	08 7101	Door Hardware Schedule	Shared
	08 8000	Glazing	Exclusive
	08 8300	Mirrors	Exclusive
	08 9100	Louvers	Exclusive
	08 9200	Louvered Equipment Enclosures	Exclusive
	20	**Doors, Frames & Hardware**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	08 1113	Hollow Metal Doors and Frames	Shared
	08 1416	Flush Wood Doors	Shared
	08 7100	Door Hardware	Shared
	08 7101	Door Hardware Schedule	Shared
	21	**Drywall & General Trades**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	03 3250	Concrete Post-Installed Anchors	Shared
	05 5400	Cold-Formed Metal Framing	Exclusive
	06 1000	Rough Carpentry	Exclusive
	06 8316	Fiberglass Reinforced Paneling	Exclusive
	07 2100	Thermal Insulation	Shared
	07 2119	Foamed-In-Place Insulation	Exclusive
	07 23410	Direct-Applied Exterior Finish Systems	Exclusive
	07 2726	Fluid-Applied Membrane Air Barriers	Shared
	07 4646	Fiber-Cement Wall Panels	Exclusive
	07 9200	Joint Sealants	Shared
	07 9513	Expansion Joint Cover Assmeblies	Shared
	08 1113	Hollow Metal Doors and Frames	Shared
	08 1416	Flush Wood Doors	Shared
	08 3323	Overhead Coiling Doors	Exclusive
	08 3326	Overhead Coiling Grilles	Exclusive
	08 7100	Door Hardware	Shared
	08 7101	Door Hardware Schedule	Shared
	09 2116	Gypsum Board Assemblies	Exclusive
	09 2216	Non-Structural Metal Framing	Exclusive
	10 2113.19	Plastic Toilet Compartments	Exclusive
	10 2123	Cubicle Curtains and Track	Exclusive
	10 2800	Toilet Accessories	Exclusive
	10 4400	Fire Protection Specialties	Exclusive
	11 3013	Appliances	Exclusive
	11 5400	Art Equipment	Exclusive
	11 5410	Technical Education Equipment	Exclusive
	11 6623	Gymnasium Equipment	Exclusive
	11 6643	Interior Electronic Scoreboard	Exclusive
	11 7300	Patient Care Equipment	Exclusive

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	Spec Number	Bid Package	Comments
	22	**Acoustical Ceilings**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	07 9200	Joint Sealants	Shared
	07 9513	Expansion Joint Cover Assmeblies	Shared
	09 5100	Acoustical Ceilings	Exclusive
	09 8416	Fixed Sound Reflective Panels	Shared
	09 8430	Sound-Absorbing Wall and Ceiling Units	Shared
	23	**Ceramic Tile**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	09 0561	Common Work Results for Flooring Preparation	Shared
	09 3000	Tiling	Exclusive
	24	**Resilient Flooring**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	09 0561	Common Work Results for Flooring Preparation	Shared
	09 6500	Resilient Flooring	Exclusive
	09 6566	Resilient Athletic Flooring	Exclusive
	09 6700	Fluid-Applied Flooring	Exclusive
	25	**Carpet**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	09 0561	Common Work Results for Flooring Preparation	Shared
	09 6813	Tile Carpeting	Exclusive
	26	**Wood Flooring**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	07 9200	Joint Sealants	Shared
	09 0561	Common Work Results for Flooring Preparation	Shared
	09 6429	Wood Strip and Plank Flooring	Exclusive
	09 6466	Wood Athletic Flooring	Exclusive
	27	**Painting & Wall Covering**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	03 3511	Concrete Floor Finishes	Exclusive
	07 9200	Joint Sealants	Shared
	09 7200	Wall Coverings	Exclusive
	09 8300	Acoustic Finishes	Exclusive
	09 9123	Interior Painting	Exclusive
	28	**Signage**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	10 1419	Dimensional Letter Signage	Exclusive
	10 1423	Panel Signage	Exclusive
	10 1473	Painted Signage	Exclusive

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	Spec Number	Bid Package	Comments
	29	**Lockers**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	10 5113	Metal Lockers	Exclusive
	30	**Food Service Equipment**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	07 9200	Joint Sealants	Shared
	11 4000	Foodservice Equipment	Exclusive
	31	**Stage Extension, Draperies, Rigging, Acoustic Doors & Panels**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	11 0610	Stage Rigging and Curtains	Exclusive
	32	**Fixed Seating**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	12 6100	Fixed Audience Seating	Exclusive
	12 6613	Telescoping Bleachers	Exclusive
	33	**Window Treatment**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	12 2401	Window Shades	Exclusive
	34	**Elevators**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	14 2100	Electric Traction Elevators	Exclusive
	35	**Fire Protection**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	07 9200	Joint Sealants	Shared
	21 0400	General Conditions for Fire Protection Trades	Exclusive
	21 0516	Expansion Fittings and Loops for Fire Suppression Piping	Exclusive
	21 0548	Vibration and Seismic Controls for Fire Suppression Piping and Equipment	Exclusive
	21 1313	Wet Pipe Sprinkler Systems	Exclusive
	21 3000	Fire Pumps	Exclusive
	36	**Plumbing**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	07 9200	Joint Sealants	Shared
	22 0400	General Conditions for Plumbing Trades	Exclusive
	22 0516	Expansion Fittings and Loops for Plumbing Piping	Exclusive
	22 0517	Sleeves and Sleeve Seals for Plumbing Piping	Exclusive
	22 0519	Meters and Gauges for Plumbing Piping	Exclusive
	22 0523	General Duty Valves for Plumbing Piping	Exclusive
	22 0529	Hangers and Supports for Plumbing Piping and Equipment	Exclusive
	22 0548	Vibration and Seismic Controls for Plumbing Piping and Equipment	Exclusive
	22 0553	Identification for Plumbing Piping and Equipment	Exclusive

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	Spec Number	Bid Package	Comments
	22 0700	Plumbing Insulation	Exclusive
	22 1005	Plumbing Piping	Exclusive
	22 1123	Fuel Gas Piping	Exclusive
	22 1124	Domestic Water Pumps	Exclusive
	22 1500	General Compressed Air Systems	Exclusive
	22 3000	Plumbing Equipment	Exclusive
	22 4000	Plumbing Fixtures and Specialties	Exclusive
	37	**HVAC & Controls**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	07 9200	Joint Sealants	Shared
	23 0400	General Conditions for Mechanical Trades	Exclusive
	23 0516	Expansion Fittings and Loops for HVAC Piping	Exclusive
	23 0517	Sleeves and Sleeve Seals for HVAC Piping	Exclusive
	23 0523	General Duty Valves for HVAC Piping	Exclusive
	23 0529	Hangers and Supports for HVAC Piping, Ductwork, and Equipment	Exclusive
	23 0548	Vibration and Seismic Controls for HVAC Piping and Equipment	Exclusive
	23 0553	Identification for HVAC Piping and Equipment	Exclusive
	23 0593	Testing, Adjusting, and Balancing for HVAC	Exclusive
	23 0700	HVAC Insulation	Exclusive
	23 0900	Instrumentation and Controls for HVAC	Exclusive
	23 0993	Sequence of Operations	Exclusive
	23 2113	Hydronic Piping	Exclusive
	23 2114	Hydronic Specialties	Exclusive
	23 2123	Hydronic Pumps	Exclusive
	23 2500	HVAC Water Treatment	Exclusive
	23 3100	HVAC Ducts and Casings	Exclusive
	23 3300	Air Duct Accessories	Exclusive
	23 3416	Centrifugal HVAC Fans	Exclusive
	23 3600	Air Terminal Units	Exclusive
	23 3700	Air Outlets and Inlets	Exclusive
	23 5100	Breechings, Chimneys, and Stacks	Exclusive
	23 5239	Fire-Tube Boilers	Exclusive
	23 5700	Heat Exchangers for HVAC	Exclusive
	23 6411	Packaged Water Chillers- Scroll	Shared
	23 7413	Modular Central Station Air Handing Units	Shared
	23 8126	Split-System Air-Conditioners	Exclusive
	23 8200	Convection Heating and Cooling Units	Exclusive
	38	**Electrical & Fire Alarm**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	07 9200	Joint Sealants	Shared
	26 0400	General Conditions for Electrical Trades	Exclusive
	26 0503	Equipment Wiring Connections	Exclusive
	26 0519	Electrical Power Conductors and Cables	Exclusive
	26 0526	Grounding and Bonding for Electrical Systems	Exclusive
	26 0529	Hangers and Supports for Electrical Systems	Exclusive
	26 0533	Raceway and Boxes for Electrical Systems	Exclusive
	26 0534	Floor Boxes for Electrical Systems	Exclusive
	26 0536	Cable Trays for Electrical Systems	Exclusive
	26 0553	Identification for Electrical Systems	Exclusive
	26 0573	Overcurrent Protective Device Coordination Study	Shared
	26 0923	Lighting Control Devices	Exclusive
	26 2200	Low-Voltage Transformers	Shared

Board of Education of the Town of Greenwich
New Central Middle School Project
New Haven, CT

Turner Construction Company
7/8/2024
Revised: 10/22/2024

BID PACKAGE BREAKDOWN

	Spec Number	Bid Package	Comments
	26 2413	Switchboards	Shared
	26 2416	Panelboards	Shared
	26 2653	Electric Vehicle Charging Equipment	Exclusive
	26 2716	Electrical Cabinets and Enclosures	Exclusive
	26 2726	Wiring Devices	Exclusive
	26 2813	Fuses	Exclusive
	26 2819	Enclosed Switches	Shared
	26 2823	Enclosed Circuit Breakers	Shared
	26 2826	Enclosed Transfer Switches	Shared
	26 3213	Engine Generators	Shared
	26 4113	Lightning Protection for Structures	Exclusive
	26 5100	Lighting	Exclusive
	26 5561	Theatrical Lighting	Exclusive
	28 3100	Fire Detection and Alarm	Exclusive
	39	**Low Voltage & AV**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	07 9200	Joint Sealants	Shared
	27 0536	Cable Trays For Communication Systems	Exclusive
	27 1000	Structured Cabling	Exclusive
	27 4100	Audio Video Systems	Exclusive
	27 5116	Public Address System	Exclusive
	27 5313	Clock System	Exclusive
	27 6010	Emergency Responder Radio Coverage System	Exclusive
	28 0500	Security Conductor Cables	Exclusive
	28 0528	Pathways for Security Systems	Exclusive
	28 1300	Access Control System	Exclusive
	28 1600	Intrusion Detection	Exclusive
	28 2300	Video Surveillance System	Exclusive
	40	**Concrete Flatwork**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	03 1000	Concrete Forming and Accessories	Shared
	03 2000	Concrete Reinforcing	Shared
	03 3000	Cast-in-Place Concrete	Shared
	32 1313	Concrete Paving	Exclusive
	32 1373	Concrete Paving Joint Sealants	Exclusive
	32 1726	Tactile Warning Surfaces	Exclusive
	41	**Landscaping**	
	DIV 00	Division 00 - Procurement and Contracting Requirements	Shared
	DIV 01	Division 01 - General Requirements	Shared
	11 6833	Athletic Field Equipment	Exclusive
	32 8423	Irrigation Systems	Exclusive
	32 9113	Soil Preparation	Exclusive
	32 9113.29	Athletic Field Root Zone	Exclusive
	32 9200	Turf and Grasses	Exclusive
	32 9219.22	Athletic Field Seeding and Sodding	Exclusive
	32 9300	Plants	Exclusive

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State Project No. 057-0114 N
Greenwich, CT
BP#9 - Sitework
Dated: 07.08.2024
Revised: 10.21.2024

C.1 **Specific Scope of Work**

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***Sitework*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***Sitework*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible for performing a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

02 3000 – Subsurface Investigations
02 4113 – Site Utility Abandonment
10 1453 – Traffic Signage [Landscape]
10 1453 – Traffic Signage [Civil]
10 1454 – Traffic Signage Removal and Relocation
10 7516 – Ground-Set Flagpoles
12 9300 – Site Furnishings
31 1000 – Site Clearing
31 1000 – Selective Clearing and Thinning [Civil]
31 1005 – Athletic Field Site Preparation
31 1006 – Soil Striping and Stocking
31 1200 – Site Utility Preparation
31 2200 - Grading
31 2300 - Excavation, Backfill, Compaction and Dewatering
31 2316.26 – Rock Removal
31 2323 – Borrow Material
31 2333 – Trenching and Backfilling
31 2500 - Soil Erosion and Sediment Controls
31 6616 – Aggregate Piers
32 0529 – Granite Boulders
32 1216 – Asphalt Paving
32 1400 – Unit Pavers
32 1500 – Aggregate Surfacing
32 1613.23 – Precast Concrete Curb
32 1640 – Granite Curbing
32 1823.17 – Natural Infield and Warning Track Surfacing

32 3113 – Chain Link Fences and Gates
32 3118 – Metal Fences and Gates
32 3120 – Vehicle Barrier Gate
32 3223 – Segmental Retaining Walls
32 8415 – Sitework Sleeves
33 0513 - Manholes and Catchbasins
33 0514 - Breaking Into Existing Manholes and Catch Basins
33 1113 – Ductile Iron Pipe and Fittings
33 1300 - Disinfection of Water Distribution Systems
33 1400 - Testing of Water Distribution Systems
33 3113 - Polyvinyl Chloride (PVC) Pipe and Fittings
33 3114 - Testing of Sanitary Sewer and Storm Drainage Systems
33 3115 – Television Inspection of Pipeline
33 4100 – Storm Drainage
33 4113 - High Density Polyethylene Pipe and Fittings
33 4114 - Underground Warning Tape
33 4419 - Stormwater Treatment System
34 0000 – Transportation
34 4114 – Rectangular Rapid Flashing Beacon
34 4115 – LED School Radar Speed Display with Flashing Beacons
34 4117 – Pedestrian Push Button
34 7001 - Traffic Person
34 7002 – Maintenance and Protection of Traffic

Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Division 00 - Procurement and Contracting Requirements
Division 01 – General Requirements
07 1400 – Fluid-Applied Waterproofing
07 2100 - Thermal Insulation
07 9200 - Joint Sealants

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General Items

2. This Subcontractor has reviewed the Logistics & Phasing Plans and the Construction Schedule and has included all associated costs as relevant to this scope of work. It is extremely important to coordinate your work with the other adjacent Subcontractors during the various phases and perform the work as required by these documents. No come back costs will be entertained.
3. This Subcontractor will provide all pricing for changes within five (5) calendar days of notice of change (without exception). If subcontractor does not submit pricing within these terms, it will be assumed a ZERO cost change. The change orders shall include man-hours, material costs, tax (if applicable) and mark-ups as line items broken out separately.
4. Intent of the project Lean initiative is that all items that are to be installed are to prefabricated, arranged and shipped to project for ease of installation. Deliveries are to be packaged and labeled by room/area for ease of installation (kit-of-parts).
5. This Subcontractor shall be responsible to provide out of sequence work at no additional costs when required in coordination with other trades.
6. This Subcontractor shall include consistent and complete scheduling and coordination with all other trades to properly sequence the work and for the complete scope under this agreement.
7. This Subcontractor's Project Manager/Foreman shall participate in Pull Planning Sessions which affect their scope of work. This Project Manager/Foreman shall provide input to further develop the accurate sequence and timing for completion of the work.
8. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
9. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
10. This Subcontractor shall organize and neatly place all materials, tools, etc.. This Subcontractor shall remove all debris resulting from their work on a daily basis to a trash Rubbermaid tilt truck provided by Others while working inside the building. This Subcontractor shall be responsible for all debris removal and disposal outside of the building. No trash or debris will remain in the work areas at the end of the shift. If debris is left in the work areas, it will be removed to the dumpster by others, and the labor expense back-charged to the responsible Subcontractor. Large sections of debris shall be disposed of to a dumpster provided by others by this Subcontractor.
11. For any materials stored inside the building, this Subcontractor shall be required to store all onsite material on racks, carts or pallets capable of being easily moved and shall coordinate the delivery of and location of stored material with the Turner Superintendent. If material is stored on pallets, this Subcontractor is responsible to have a pallet jack onsite at all times. This Subcontractor shall include relocation and consolidation of materials as directed by Turner.
12. This Subcontractor shall review, conform to, and furnish and install all requirements included in the Safety Additional Provisions included in this Agreement. This Subcontractor understands that this document is project specific and all provisions must be included in this Subcontractors' bid.
13. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.

14. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.
15. This Subcontractor shall be responsible for the removal and proper legal disposal of all rubbish and/or materials associated with the site demolition (exterior of the buildings) and all other work performed by this subcontractor.
16. This Subcontractor will make every effort possible to ensure that their waste is properly sorted and disposed of to divert as much waste as possible from disposal in a landfill. This Subcontractor will track this recycling effort using the Online Waste Tracking System established by Turner Construction Company. Each dumpster ticket is to be logged into this system and its recycled content reported as a means of tracking the total percentage of construction and demolition debris diverted from landfills. There is a $50 per month fee for use of this website and this Subcontractor shall include all costs in his bid for use of this service. Refer to the attached User's Manual for more information about this system. Refer to the Turner Tracker Manual in the referenced "Forms and Policies," dated January 2015, in Turner's Project Manual.
17. This Subcontractor shall furnish, remove, and dispose of the contents of 150 ea. thirty cubic yard dumpsters for the entire duration of the project above and beyond that of which is required by this subcontractor for the Sitework scope of work. This Subcontractor shall remove and replace dumpsters per the direction of Turner's Superintendent and shall have Turner sign the hauler's ticket for each load. Unsigned tickets will not be charged against this allowance and any unused portion of these allowances will be credited to the project upon the completion of each phase. Additional dumpsters in excess of the defined allowances for general debris will be reimbursed per the unit cost included with this bid proposal. This Subcontractor shall provide their own dumpsters for the sitework debris, which are not included as part of this allowance.
18. Any and all excavations or trenching outside the construction fence MUST be covered up and protected each night and work coordinated with Turner to ensure that no unnecessary hardships are imposed on the school or the community.
19. This Subcontractor shall include all casual dewatering of all excavations, trenches, or footings from the start of the foundations to project completion. Water discharged from the dewatering operation shall be discharged into the dewatering basin or unless otherwise indicated.
20. This Subcontractor shall assume that temporary electric will not be available for this Subcontractor's use during the various stages of Sitework. This Subcontractor shall include the use of generators as required for the duration of their Work.
21. This Subcontractor shall include an Initial Baseline Survey (with Control Points for lay-out) for the Project and line and grade layout for the building provided by a licensed surveyor. Prior to beginning construction of the new foundation work, a review meeting on site of these layout points must be held. Subsequent to this initial survey control and the provision of two X axis and four Y axis and 3 benchmark elevations for each phase of the project, this Subcontractor shall provide five (5) additional days for each phase (1,2, and 3 equals 15 additional days and 18 days total) for the installation of control in the building for use by Turner. The control points shall be established on a monument or a permanent surface that will protected and not be lost or altered. These point locations shall also be transferred and memorialized on a drawing to be submitted to Turner. This Subcontractor shall be responsible for all of their own surveying and layout using Total Station or a licensed surveyor after the initial control is established.

22. This Subcontractor shall include an underground utility survey with ground penetrating radar at the complete scope area to locate the existing utilities and immediately document same on the site utility drawings. This survey shall include the entire construction zone and shall be performed prior to the installation of the construction fence. This Subcontractor shall also contact "Call BeforeYou Dig" for each phase, prior to beginning excavation.

23. This Subcontractor's work shall be tested and inspected by an independent testing agency hired by the Owner, in accordance with the specifications. Such testing agency shall be selected by the Owner and all compensation for the testing agency shall by borne by Owner. This Subcontractor shall schedule all inspections 72 hours in advance of the time of the inspection.

24. This Subcontractor shall include furnishing, installing, and removing orange temporary construction fencing around any open trench within or outside of the construction fence at the end of each day or when work at the trench is suspended and the manpower and equipment is removed from the work zone. This Subcontractor shall install hard barriers for excavations deeper than 5'. For example, but not limited to temporary protection for the new sanitary line schedule for the summer of 2025, refer to page #3 of the Turner Logistics Plan as well as contract documents.

25. This Subcontractor shall provide steel plating over all utility trenching in the parking lots or roadways, outside the construction fence, at the end of each day or when the work is suspended and the manpower or equipment is removed from the work zone. Include provisions including but not limited to road plates, trench boxes, and/or sequence or work, etc, to allow for vehicle and personal access to parking areas, building footprint, site bathroom and Turner trailers during excavation for site utilities.

26. This Subcontractor shall be responsible for all site snow removal, including but not limited to Subcontractor access to the building, Subcontractor parking areas and trailer / tent entrances/exits and general construction circulation within the construction fence and at the Center School satellite parking lot for all phases of the project, as directed and to the satisfaction of Turner, on the day of each clean-up event. This Subcontractor shall also furnish and maintain three 5 gallon buckets of ice melt at the entryways to the building under construction over the course of the project, include spreading as required during snow/ice events. This Subcontractor shall remove all snow from excavated trenches and protect the trenches until formwork is installed, at which point the concrete Subcontractor shall protect his work. The Municipality will be responsible for all driveways, parking lots, and walkways outside the construction fence. This subcontractor shall provide breakout pricing for Weather Protection by phase in Application for Payment.

27. This Subcontractor shall include the furnishing, maintaining, and the removal of the temporary toilets as defined below and per the site logistics scope of work and as required for durations per the Project Schedule.

    a. This subcontractor shall provide, for the duration of the project schedule, self-contained temporary toilet trailer consisting of a minimum of 8 stall bathroom trailer – 2 women stall, 6 men stall, and 4 urinal restroom trailer (with flushable toilets) and hot water handwash stations similar to those provided by United Site Services, Bonavita Luxury Lavatories, WILLSCOTT (or approved equal) including delivery, set up, rental and removal at the completion of the project.

    b. This subcontractor shall provide excavation and backfill for temporary power.

c. Trailer to include sanitary tanks that allow for pumpout and domestic water tank for self-contained toilet trailer complex. Include domestic water tank until this subcontractor furnish and installs tie in of a temporary water line from the onsite temp hydrant – include heat trace as required for water line to prevent freezing. Include sanitary tanks & pumpout until the sanitary line can tied in along Indian Rock Lane in June 2025, this subcontractor shall then tie in toilet trailer by furnish and installing temporary sanitary line from toilet trailer to new sanitary manhole. Once these temp tie ins are in place domestic water tank and regular tank pumping are no longer required. This subcontractor shall include required hand soap refill, toilet tissue and paper towels at toilet trailer, and cleaning services at a minimum of 3 times per week. Include cap and remain in place the temporary sewer connection piping when toilet trailer is removed at the end of the project.

28. This Subcontractor shall include the furnishing, maintaining, and the removal of the Turner's Site Trailer(s) and as required for durations per the Project Schedule and per below.

a. This Subcontractor shall furnish, install, maintain and remove temporary trailer for Turner similar or equal to WILLSCOTT Redi-plex, triple 60x36 trailer (56x36 box), min 8' ceiling height, metal clad insulated panel exterior walls, combination through wall heating and cooling unit(s). All lighting and data to be included with unit. See plans for required layout and furniture requirements. Include window/door security bundle, 3 data hubs, 15 manager chairs, 38 stackable side chairs with arms, 31 standard desks (5ftx2.5ft), 15 Pedestal filing cabinets (3 drawer), 5 small white boards (3ft x 4ft), 9 large white boards (4ftx6ft), 13 L-desk privacy shields.

b. This Subcontractor shall furnish, install and maintain 4 stairs and platforms at Turner's office trailer with Canopy. Include all required support and rails to meet the requirements of the local AHJ. Include complex anchor setup and associated anchors, and complex vinyl skirting.

c. This Subcontractor shall provide and maintain a 4 CY closed top dumpster at the Turner Office Trailer.

d. This subcontractor shall provide excavation and backfill for temporary power and internet to trailer complex including the excavation/backfill as required for eventual removal of temp power. Include furnish and install of 4" pvc conduit for power service and 2" pvc conduit for internet to the jobsite from Orchard Street or Stanwich Road (tbd by utility). In addition, This subcontractor shall excavate and backfill as required for a 2" below grade conduit (F&I by electrical) to bring internet cable from Turner Trailer to the media center room 1055. Assume all conduits to be 3' below finish grade.

e. This Subcontractor shall include 3 - ten person conference tables and 1 – 4 person conference table.

f. This Subcontractor shall include cleaning the construction manager's construction trailer once per week by a professional cleaning company. Cleaning shall include vacuum and/or sweep, wet mop, trash removal, cleaning of all exposed surfaces and toilets and sinks.

g. This Subcontractor shall include relocation of Turner Trailer to Demolition area – Phase 2 per logistics plans in July 2026 until the completion of the project. Include single 36ft trailer for Phase 2 portion of the project with similar layout to WILLSCOTT Redi-Plex per Phase 1 requirements.

29. This Subcontractor shall furnish, install and continuously maintain the anti-tracking pads indicated on the Logistics Plans in conformance with the details included in the contract documents, including a wheel wash station and water hook-ups at the Main Exit. This subcontractor shall furnish, install and continuously maintain the 15' wide crushed stone drive, crushed stone Subcontractor parking area, and weed-block/crushed stone at Turner's Office Trailer at the sizes/depths/coverage areas indicated. This Subcontractor shall include continuous maintenance of the anti-tracking pads, wheel wash station, and crushed stone for the duration of this Phase of Work. This subcontractor to provide high pressure washers at each exit location for tire washing purposes. This subcontractor is to provide all materials necessary to hook up and retrieve water and a water truck must be provided by this subcontractor if water is not available on site. This subcontractor shall be responsible for street sweeping to maintain clear roadways around the site as directed by Turner. It is the intent of this scope that the sitework subcontractor manages the site to limit the amount of mud to exit the site on any truck or vehicle. Include removal and disposal of stone and anti-tracking pad at the time, and as required, for new work to be put in place.
30. This Subcontractor is responsible for all the Sitework scope clarified in the final Bidder's Question Log, which includes, but is not limited to, the items identified for the Sitework Bid Package #9.
31. This Subcontractor shall provide the final A-2 Site Survey at the completion of each phase, and provide the comprehensive survey at the completion of the entire project.
32. This Subcontractor shall furnish and install 2 each worker break heavy duty outdoor event tents inclusive of tables and seating for the duration of the project. Tents shall allow 50 workers each a place to eat lunch and take breaks.
    a. Include required tie down points to prevent damage to tent and to properly hold in place.
    b. Include 1 – microwave at each tent for use by workers.
    c. Include outdoor picnic tables with integral benches capable of seating 50 workers per tent.
    d. Include retractable sidewalls (or walls cable of being tied to vertical posts when not required for use) with entrances at two ends.
    e. In lieu of 2 tents, this subcontractor can install an Allshelter between the 40' connex provided under this agreement plus 1 additional as required for support and use by this subcontractor. All shelter to be fully enclosed and include full Endwall at one end and doorway endwall & doors at the other.
33. This Subcontractor shall follow and include all Town of Greenwich Standard Construction Notes including but not limited to soil tilling 12-16 inches and amended used for all construction equipment and used for contractor parking per note #10 on drawing C001.
34. This Subcontractor shall be responsible for the demolition, removal, and disposal of all existing site demolition as indicated on the contract documents. This includes, but is not limited to, the removal of existing concrete pads, benches, flagpoles, athletic/sports equipment, sheds, posts, concrete stairs, ramps, handrails, retaining walls, fencing, trees, paving, sidewalks, curbs, storm water structures and associated piping, sanitary structure and associated piping, water systems, piping, electrical systems as indicated in the contract documents. This Subcontractor shall coordinate any service suspensions with the utility company and pay for any associated permits or fees.
35. Given the limited space for storage on the site, this Subcontractor shall export from the site all topsoil compiled as part of the clearing and grubbing process in accordance with the contract documents.

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36. This Subcontractor shall be responsible for the protection of any underground or above ground utilities or structures within construction area or adjacent to new construction affected by this subcontractors scope.
37. This Subcontractor shall remove paving, walks and curbing as required to install site utilities and replace/restore in kind.
38. This Subcontractor shall salvage items as indicated on the contract documents including but not limited to plaque and bolder and plaque and bench, per drawing L101B. This Subcontractor shall also survey any memorial plaques that are not identified on the drawings, and turn them over to the Owner.
39. This Subcontractor shall provide the tree protection identified on the contract document.
40. This Subcontractor shall be responsible for removing any preexisting materials from the athletic field area as indicated on the contract documents including but not limited to the 32 9119.29 Athletic Field Root Zone.
41. This Subcontractor shall not store, clean or service equipment within 100' of the wetlands. This Subcontractor shall create a fueling area with a liner or pavement in a location that is coordinated with Turner's site logistics plan and this scope of work.
42. Any work performed by this Subcontractor for curb cuts, street work, all work outside property line, our outside of the construction temporary fence will require temporary fence protection installed, maintained and eventually removed by this Subcontractor.
43. This Subcontractor shall prepare the subgrade at the slabs on grade to accommodate the requirements for the haunches for the slab on grade indicated on the structural drawings.
44. This Subcontractor shall furnish, install and maintain wood framed platform and stairs at Turner's office trailer. Include all required support and rails to meet the requirements of the local AHJ.
45. This Subcontractor shall include 1 laborer per 10-person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m. while the subcontractor is performing work on site. Composite crew is intended to cleanup general debris not necessarily associated with particular subcontractor ***(cardboard, plastic bottles, misc. trash item, general sweeping, etc.)***
46. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
47. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
48. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
49. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.

50. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
51. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
52. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
53. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.
54. This Subcontractor shall furnish and install the project sign for the Department of Administrative Services as noted in spec section 01 5000. The location and details of the sign shall be coordinated with TCCO.

Site Logistics

55. This Subcontractor shall include the rental of a 40 ft connex box for Turner use to the site scope with the dates Phase 1, from January 2025 to March 2026 or at a minimum 15 months.
56. This Subcontractor shall furnish and install 2 ea. color, exterior grade project sign approx. 48'x96" (Graphics will be provided by others) including posts set into concrete and relocated 2 additional times for phasing. Include furnish and install of an additional 16 aluminum signs for use at vehicle gate locations and as directed by Turner(Graphics will be provided-include provisions for fence mounting).
57. This Subcontractor furnish, install and maintain 8-**Foot-High** temporary construction fence with full height blue scrim per the Turner Logistics Plans. The post shall be driven posts and this subcontractor shall include GPR or other non-destructive testing to scan for underground utilities prior to install driven posts. Temp fence details shall include but not be limited to the details on drawing C418. Additionally, beyond the details on the contract documents, this Subcontractor shall include top and bottom rails on temporary fence and include providing scrim with graphics that includes Greenwich BOE & CMS name and logo repeated on the scrim.
58. This Subcontractor shall furnish and install 20-foot slide style construction gates at locations designated by the Turner Logistics Plans. Construction Entrance/Anti Tracking Pads shall be installed and maintain at construction entrance gates. All Sliding gate posts shall be cast into below grade 3' deep concrete sonotube base for support.
    a. This subcontractor shall furnish (10) – 5' length stainless steel chain link for locking gates and (10) – 2" Master Combination outdoor lock, shakel, resettable.
59. This Subcontractor shall furnish and install 1 ea. pedestrian gate and pedestrian entry portal at each temporary fence vehicular slide gate unless otherwise shown on the logistics plans. This subcontractor shall include 2 additional pedestrian gates at upper portion of the site opposite of the entrance gates to be located by Turner Construction. Include hardware for latching and locking of gates.
60. This Subcontractor shall furnish install and maintain temporary construction drives as indicated on the contract documents and the Turner Logistics Plans, drives shall consist of a minimum of 6 inches of crushed stone or unless otherwise noted.

61. Per the Turner Logistics Plans, at emergency egress from existing building, this Subcontractor shall provide and maintain overhead protection. Temporary overhead protection shall maintain minimum 15' distance from new building for construction vehicles and allow for egress from the existing building. Include ¾" minimum plywood barrier at Construction side of overhead protection locations.
62. This Subcontractor shall provide post driven temporary wood poles for the site security cameras to be mounted at locations identified on the Turner Logistics Plans. (Cameras by others) This subcontractor shall include GPR or other non-destructive testing to scan for underground utilities prior to install driven posts.
63. This Subcontractor shall furnish and maintain grading and temporary crushed stone at 6-inch minimum depth as required for contractor parking area per the Turner Logistics Plans.
64. This Subcontractor shall furnish, install and maintain a minimum of 6 crane pads per the Turner Logistics Plans, crane pads shall include compaction of subgrade and minimum of 12" of crushed stone and measure 40ft by 40ft.
65. This Subcontractor shall include the removal and relocation of all temp fence, gates, construction entrances, security camera posts, construction drives, construction gates, anti-tracking pads, crane pads, contractor parking areas and relocation of temporary trailer and temp trailer bathroom complexes or proving new as required for the phasing, refer to the Turner Logistics Plans for specifics.
66. This Subcontractor shall include eventual removals of all temporary sitework logistics scope and temporary erosion controls at the completion of the project and restoration as required.
67. This Subcontractor shall furnish and install Metered Yard Hydrant with hose bib manifold at approx. location per the Logistics Plans, 100 lf of buried HDPE pipe for pathways of hoses for Phase 1. At phase 2 include relocating yard hydrant into out construction space to help facilitate demolition and furnish and install (2ea) 300 Gallon HDPE Containers with ball valves for distribution around site for other trade use.
68. This Subcontractor shall furnish and install the expansion of the heavy-duty concrete to accommodate temporary road access including but not limited to as shown on page 5 of the Turner Logistics Plans.
69. This Subcontractor shall include the creation of a temporary sidewalk including but not limited to as shown on page 5 of the Turner Logistics Plans. This Subcontractor shall also include the removal at the completion of the phase and removal/restoration.
70. This Subcontractor shall furnish, install and maintain asphalt millings, including removal for 50' around perimeter of building post foundations in phase 1 including but not limited to as shown on page 4 of the Turner Logistics Plans. Intent is that this Subcontractor shall be responsible for providing a uniform and level compacted grade around the building perimeter suitable for the support of scaffolding and lifts.
71. This Subcontractor shall furnish, install and maintain temporary 4-foot-wide stone walkways from Turner trailers, toilet trailer and parking area locations to the two entrances located each side of the Auditorium. Coordinate final layout with Turner superintendent. Assume 6" depth of ¾" stone. This Subcontractor shall remove all temporary sidewalks at the direction of Turner.
72. This Subcontractor to furnish, install and remove (4) Jersey barriers for protection against vehicular traffic at any and all O2, Flammable Gas and LPG storage tanks within the construction area, location tbd.
73. This Subcontractor will provide 30 traffic cones with telescoping cone bars to be used in areas designated at the direction of Turner.
74. This Subcontractor shall furnish, install, relocate and remove (6) additional jersey barriers in locations directed by Turner.

75. This Subcontractor shall furnish to the jobsite a Stihl Kombi system KM 131 R with Power Sweep, Bristle Bush and FS-KM Line Head Trimmer. Unit to be run-ready and include a 5.0-gallon safety gas can filled with mixed gas.
76. This Subcontractor shall furnish to the jobsite one Stihl BR 800 C-e Magnum backpack blower. Blower shall be run-ready.
77. This Subcontractor shall furnish to the jobsite one Toro Power Clear 721 R Snow Blower. Snow blowers shall be run-ready.

Erosion Control and Stormwater Management

78. This Subcontractor shall provide grading as required to create and maintain temporary swales as indicated on the contract documents.
79. This Subcontractor shall furnish install and maintain temporary water bars on construction drives as indicated on the contract documents.
80. This Subcontractor shall furnish and install all temporary sediment basins including but not limited to stone, drainage pipe/structures, dams, and connections to existing drainage systems as indicated on the contract documents.
81. This Subcontractor shall include cleaning / mechanical sweeping of any soil or debris from the construction site on the adjacent streets and the school's driveways and parking lot areas as required or within 24 hours of a request by Turner during the entire duration of the project.
82. This Subcontractor shall include dust control as required per the contract documents for duration of the Project. This Subcontractor shall provide a water truck, buffalo misters, or other means of dust control as needed to control the dust on site.
83. This Subcontractor shall tarp the stockpiles of onsite material, as required, to protect it from saturation during a rain event and to control dust migration on windy days with wind speeds over 10 mph.
84. This Subcontractor shall furnish, install and maintain all geotextile silt fence, inlet protection, silt sacks, hay bales/hay bale barriers, erosion control blankets and temporary sediment traps as indicated on the contract documents. Any stockpiled areas shall be surrounded in additional silt fencing.
85. This Subcontractor shall furnish, install and continuously maintain Erosion Control Measures required per the contract documents. This Subcontractor shall include all costs to remove and dispose of Erosion Control Measures at the end of the Project. Note that the quantity of anti-tracking pads shall be installed per Turner's site logistics plan and not the civil drawings.
86. This Subcontractor shall coordinate/cooperate with the Greenwich authorities and the independent inspector, as necessary, to ensure proper erosion control methods/practices are in place at all times. This Subcontractor shall inspect the erosion control measures on a weekly basis and as required per the SWPPP. This Subcontractor shall maintain a log book documenting the condition and/or repairs implemented following each inspection. This Subcontractor shall also provide a rain gauge and maintain a daily log documenting the actual rainfall on site on a daily basis.
87. This Subcontractor shall furnish and install all storm water management structures, chambers, isolators, drains, inlets/outlets, manholes, manhole accessories, cleanouts, hydrodynamic separator(s) and accessories including but not limited to excavate and backfill required for installation, bedding materials, piping and connections to existing piping as indicated on the contract documents.

88. This Subcontractor shall furnish and install all Rain Gardens and Swales including but not limited to filter fabric, pipe, crushed stone, bedding materials, subgrade, grading, soils and scarifying and tilling soil beneath gardens. Refer to Rain Garden Typical Cross Section and 5' Wide Stone Swale With 6" Underdrain details on drawing C504.
89. This Subcontractor shall furnish and install all below grade under drainage piping, roof leader drain piping and the above grade downspout boots between roof leaders and drain piping. Building mounted roof leaders are by others. Refer to drawing C504.
90. This Subcontractor shall furnish and install the below Second floor slab storm piping from 5' outside of the foundation (retaining) wall. Reference multiple locations as shown on PSU001 and associated scope shown on the Civil drawings.
91. This Subcontractor shall provide Greenwich soil mix as indicated on the contract documents including but not limited to where shown on drawing C504 beneath rain garden(s).

Excavation, Backfill and Trenching

92. This Subcontractor shall furnish and install fill materials as required by the contract documents to fill excavation at demolished building(s). Coordinate with Demolition Subcontractor and specification section 024100 3.1.
93. This Subcontractor shall include all of the excavation and backfill for the foundation system per the contract documents. With the use of the geotechnical information, the excavation is considered to be unclassified and this Subcontractor shall be responsible for all rock removal and the removal and replacement of unsuitable soils necessary for the installation of the new structures and the associated site utilities. No additional compensation will be made to complete work as shown on the Contract Documents
    a. This subcontractor shall assume line drilling of rock along the Emergency Path rock face (at the rear of the new building). Intent would be to achieve a clean wall of rock where visible.
94. This Subcontractor shall provide the fill material necessary to achieve the designated grades on site, as well as the fill material identified inside the building including as required by the contract documents.
95. This Subcontractor shall include all trench excavation, bedding and backfill for removal of existing and installation of all new underground utilities beneath slabs-on-grade (see Fire Protection, Plumbing, Mechanical, & Electrical drawings) in accordance with the contract documents.
96. This Subcontractor shall furnish and install the bedding material, filter fabric, and crushed stone required per the contract documents for all installations performed by this Subcontractor. Under-slab vapor barrier will be furnished and installed by the Concrete Subcontractor after this Subcontractor shall furnish and install the crushed stone under slab as indicated on the contract documents.
97. This Subcontractor shall ensure that all excavations are properly sloped or laid back per OSHA regulations to avoid any collapses or cave-ins. Shoring will be required for all trenches over 5' deep. Materials shall not be stockpiled within 4' of an open excavation edge. This Subcontractor to provide trench boxes as required for any excavation requiring workers to enter the trench(es).

Site Utilities

Additional Provisions/Scope of Work

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98. This Subcontractor shall furnish and install all drainage, water, gas, sewer, and fire protection services outside of the building foundation walls and extend to 5 feet from foundation walls. These site utilities 5 feet from the building and closer shall be by respective MEP trades. This Subcontractor shall include any these site utilities shown under slabs but outside of the foundations walls that are shown on civil drawings for example: drainage piping on drawings C102 from grid 2 to 3, D to E.
99. This Subcontractor shall demolish and dispose of all existing site utilities as indicated on the contract documents including but not limited to drainage/drainage structures, sewer, light pole bases, overhead electrical/telecom poles, gas, water and fire services and components.
100. This Subcontractor shall provide excavation and back fill to expose any electrical / communications conduits / services scheduled for demolition. Removal of conduit in soil shall be by this subcontractor, any concrete encased ductback scheduled for demolition shall be removed by this Subcontractor after the electrical subcontractor cuts and makes safes.
101. This Subcontractor shall abandon existing utilities including but not limited to plugging piping, filling piping with pumpable controlled low strength materials, removing portions of manholes, removing manhole frames and covers, breaking existing structures and filling with material as indicated on the contract documents.
102. This Subcontractor shall provide warning tapes for all underground utilities as indicated on the contract documents.
103. This Subcontractor shall saw cut / patch and restore any existing finish including but not limited to lawn, concrete sidewalk/curb or bituminous pavement/curb scheduled to remain as required to demolish, provide or otherwise access trenches for all proposed underground utilities.
104. This Subcontractor shall furnish and install all gas piping up to and including meter and manifold, connection to existing main, excavate and back fill and provide bedding materials for all gas piping as indicated on the contract documents. This Scope shall include contacting and coordinating with local utility and providing any gas connection fees.
105. This Subcontractor shall furnish and install all the site utilities including but not limited to Sanitary Sewer piping, manholes, structures, connections to existing, trenching and backfilling, and bedding materials as indicated on the contract documents. Include any sewer connection fees to local utility/municipality. Additionally, this scope shall include coring / patching existing sanitary structures as required for connections, refer to E303 for example. This subcontractor shall include and submit a MOP for review and approval by design team and the Town of Greenwich Sanitary sewer department of the new sanitary work, including any by-pass of existing for the work at Indian Rock Lane and Stanwich Road.
106. This Subcontractor shall provide all concrete encasement for sanitary sewers as indicated on the contract documents including but not limited to what is shown on drawing C303.
107. This Subcontractor shall furnish and install all fire protection and water service piping, connections to existing, taps, valves, trust blocks, air vents, blow off boxes/covers, piping restraints, providing trenching and backfilling, and bedding materials as indicated on the contract documents.
108. This Subcontractor shall flush and chlorinate the water lines prior to putting them into service. This Subcontractor shall coordinate with the plumber and the fire protection contractors prior to performing this work.

109. This Subcontractor shall coordinate with Aquarion for the installation of new and removal of existing water service and the tapping of all new water lines to the project. This Subcontractor shall provide all fees associated with this work and shall perform the taps or hire an approved subcontractors to perform this work. This Subcontractor shall furnish and install all vaults/water meter pits per Aquarion's requirements for the new water connections to the buildings. This Subcontractor shall install the domestic water service lines to within 5' of the foundation wall, all fire protection piping shall be extended through the foundation wall by this Subcontractor. The fire protection line shall have a flanged connections or otherwise coordinated with fire protection Subcontractor.

110. This Subcontractor shall provide excavation and backfill, including furnishing and install bedding materials for the fire protection service and any new hydrants as indicated on the contract documents. Coordinate with the local fire department for the thread connection requirements for these hydrants. This subcontractor shall furnish and install all piping, automatic ball drip and Siamese connection scope at the exterior of the building, reference detail 8/FP500.

111. This Subcontractor shall coordinate with the Gas Company for the installation of the new or relocated services to the buildings including any underground gas piping scheduled for removal. This Subcontractor shall excavate and backfill per the gas company's specifications for the primary piping to be installed by the gas company. This subcontractor shall furnish and install the gas meter pads per the Gas Company's specifications.

112. This Subcontractor shall excavate and backfill for temporary 4" x 4" x 20' power poles to be installed by the electrician as defined in the logistics plan and scope of work. At the end of the project, this Subcontractor shall remove these poles, backfill the hole, and grade the area in preparation for the site improvements and landscaping for this area.

113. This Subcontractor shall coordinate with the various utility companies (power, telephone, cable) regarding the installation of new utility poles, the relocation of existing utility poles, and the removal of utility poles as defined in the contract documents. This Subcontractor shall include all fees associated with this work.

114. This Subcontractor shall obtain the proper permits for all utility work and provide the police for traffic control at any street opening as required by Greenwich.

115. This Subcontractor shall hand dig around existing utilities to ensure that they are not damaged or broken by excavating equipment.

116. This Subcontractor shall excavate and backfill all electrical, security, and communication conduits including but not limited to the primary and secondary electric services as indicated the contract documents.

117. This Subcontractor shall coordinate with the power company and shall furnish and install the concrete transformer pad(s) in accordance with the power company's specifications. The electrical contractor shall furnish and install all underground conduits.

118. This Subcontractor shall furnish and install all electrical manholes including the primary electrical manhole and include patching around the knockouts once the EC runs the conduits/ductbank.

119. This Subcontractor shall encase all underground conduits in concrete as indicated on the contract documents and install warning tape in accordance with the contract documents.

120. This Subcontractor shall excavate and backfill all the electrical conduits between the building and the emergency generator. The electrical subcontractor shall furnish and install all conduits/ductbanks. This Subcontractor shall furnish and install the concrete pad(s) for the generator(s).

121. This Subcontractor shall excavate and backfill for all the telecom ductbanks between the utility poles and the buildings. The electrical subcontractor shall furnish and install all conduits/ductbanks. This Subcontractor shall encase these conduits and install a warning tape in accordance with the contract documents.

122. This Subcontractor shall excavate and backfill for the site power, EV charging, lighting conduits and the traffic control gates / motorized gate controller conduits as indicated on the contract documents, including but not limited to what is indicated on drawing SU100.

123. This Subcontractor shall also furnish and install the concrete light pole bases, blue light concrete bases, and site entrance sign (A924) as indicated on the contractor documents. This Subcontractor shall coordinate with the electrical contractor (or Vendor) for the anchor bolts layouts and the installation of the conduit, prior to pouring the concrete.

124. This Subcontractor shall furnish and install all anchor bolt for concrete bases that are indicated to be "by Site Contractor" including but not limited to site lighting concrete bases, refer to details on SU501, EV charging station concrete base anchor bolts, refer to detail 3/SU500 for example and blue light concrete base anchor bolts per 7/SU500.

125. This Subcontractor shall excavate, backfill, rig and set electrical/telcom vaults / hand-holes and electrical / telcom manholes provided by the electrical subcontractor or utility as indicated on the contract documents. This scope shall also include preparing subgrade and bedding materials for vaults/hand holes/manholes as required by the contract documents.

126. This Subcontractor shall excavate and backfill, provide bedding materials for and furnish and install all grease waste, connections, structures, grease traps and oil/water separators, and inspections as indicated by the contract documents.

127. This Subcontractor shall furnish and install all exterior grease traps as indicated on the contract documents.

128. This Subcontractor shall furnish and install the footing underdrain system and the defined enclosure (filter fabric and crushed stone) around these pipes at all the new foundations, and as indicated on the contract documents. These drains shall connect to the storm system as indicated on the contract documents.

Site Paving, Curbing, and Pavement Marking

129. This Subcontractor shall furnish and install all bituminous concrete pavements and walks shown on the Contract Documents. This scope includes all pavement patching associated with the installation of all utilities. See Turner's Sitework/Hardscape & Utility Phasing Plan, dated 3/22/17, for out of sequence utility work and paving requirements.

130. This Subcontractor will be responsible for all new or replacement Pavement Markings required for roadways, walkways and parking lots. This Subcontractor shall also furnish and install the transverse rumble strips and the speed humps with pavement markings, as indicated in the contract documents.

Site Concrete

131. This Subcontractor shall be responsible for the site concrete including but is not limited to; fence and gate footings, light pole bases, thrust blocks, encasement of ductbanks. This Subcontractor shall include sub-grade preparation for the concrete Subcontractor. This Subcontractor shall coordinate with the concrete Subcontractor for the connections of the sitework walkways to the concrete contractor's step and walkways.
132. This Subcontractor shall furnish and install rigid insulation between frost pads and adjacent construction including but not limited to detail 5 on drawing S200.
133. This Subcontractor shall furnish and install vertical rigid insulation and required protection board on interior & exterior side of foundation walls as indicated on the contract documents including but not limited to details 1D, 2D, 3D/A410, 3E, 1E, 1C, 2C/A412, all details on A413 and A418, 4D, 5D, 6D, 3E, 2E/A414, 2D, 3D/A415,1E, 3E, 4E, 5E/A417, 1E, 2E, 3E, 4E/A416 and 1D, 2D, 5D, 4E/A411. Include per typical foundation wall vertical insulation, ref A501.
134. This Subcontractor shall furnish and install decorative boulder selected from the site coordinate with Owner, Architect and Landscape Architect and furnish and install all concrete for signage including the foundation/footing for Street Front Signage. Refer to drawing A924
135. This Subcontractor shall furnish and install a 15' x 20'x 5" concrete pad for a free-standing mock in a location to follow. The removal of the mock-up and the pad will be by the demolition contractor. This scope of work shall also include but not be limited to subsurface prep of gravel below the slab as reference of drawing A315 and furnishing and installing a mockup of the louver screen wall.

Site Improvements

136. This Subcontractor shall remove, store and re-install existing batting cage scheduled for re-use as indicated on the contract documents.
137. This Subcontractor shall furnish and install the dumpster enclosures as indicated on the contact documents including but not limited to all slab(s) walls, fencing and doors/gates and associated hardware at dumpster enclosure. Reference drawing L504.
138. This Subcontractor shall furnish and install all metal screen fencing as indicated on the contract documents including but not limited to fencing per details 3A, 3D, 1D on drawing L503.
139. This Subcontractor shall furnish and install the site and traffic signage, wayfinding and parking signage, and pavement markings as indicated in the contract documents including but not limited to demolishing, relocating any existing traffic signage and/or eradicating any existing conflicting pavement markings.
140. This Subcontractor shall furnish and install all unit pavers on sand bed with metal edge restraint and the flagpole(s) per the contract documents.
141. This subcontractor shall provide a value for Alternate #3 as defined in the form of proposal.
142. This Subcontractor shall furnish and install all ADA traffic Control Bollards, Electronic ADA stanchions, site planters, site benches, bicycle racks, steppingstones, stone mulch and metal edging, seating and tables, live edge wood benches and boulders as indicated on the contract documents.
143. This Subcontractor shall furnish and install all gates including but not limited to vehicular double swing gate per detail 3B on drawing L502 and Cantilever chain-link fence sliding gate (if this alternate is accepted) per detail 3A on drawing L601. Include any required painting of gate per documents.

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144. This Subcontractor shall furnish and install all combination sign/boards, steel concrete filled and removable type bollards (including the footings, concrete fill and painting), timber guiderails, vehicles access gates, automatic traffic control gates (along with the footing specified by the manufacturer) , and chain link fencing as indicated in the contract documents. This Subcontractor shall coordinate with the Landscaper for the installation of the timber rails relative to their access for the installation of the landscaping.

145. This subcontractor shall engineer, furnish and install the segmental block retaining walls indicated in the contract documents including but not limited to Diamond Pro PS Block – Victorian Face per detail 1D/L503 and Metal Screen Fence(s) including but not limited to details shown on L503.

146. This Subcontractor shall furnish and install all exterior litter receptacles as indicated in the contract documents.

147. This Subcontractor shall furnish and install all Safety Netting as indicated on the contract documents, reference detail 1A on drawing L601.

148. This Subcontractor furnish and install all baseball and softball backstop systems as indicated on the contract documents including but not limited to the details on drawing L602.

149. This Subcontractor furnish and install the baseball/softball shade enclosures including but not limited to the benches and corrugated roofing the as indicated on the contract documents including but not limited to the details on drawing L602.

150. This Subcontractor shall provide all metal fencing, metal screen fencing, shade enclosures, bollards, backstop assemblies, stanchions, safety netting support metal, dumpster enclosure gates, vehicle gates, and foul ball poles in a painted or factory applied finish. All finish painting or providing in factory finish shall be included for exposed metals supplied by this Subcontractor.

151. This Subcontractor shall furnish and install the raised planters as indicated on the contract documents including but not limited to raised concrete planters per detail 3E on drawing L501.

152. This Subcontractor shall include the follow **Trade Allowances**: 120 hours of machine time (assume small wheel loader similar to CAT 930) and 320 hours of a laborer for required site logistic modifications associated with phasing and restoration of areas. Laborer Time to be included as journeyman rate including any required supervision. This will be billed based on the final agreed contractual wage rates and may only be expended by written authorization of Turner Construction and any unspent portion of this unused scope hours will be credited at the end of your contract based on approved labor rate.

Additional Items

153. This Subcontractor shall relocate the existing two (2) storage sheds on the property. Reference drawing L101A and Drawing L301A at grid line E & 1 for shaded rectangle intended to show existing sheds location. Please note – sheds will not be demolished, shed will be relocated per Owner's direction on the property.

154. This Subcontractor will not participate in the Contractor Controlled Insurance Program (CCIP). This subcontractor shall provide a General Liability Insurance program inclusive of a $20 MM per occurrence and $20MM per aggregate for Blasting Operations. Refer to CCIP Manual for additional information.

155. This Subcontractor shall provide to the jobsite, at start of construction activities, for use by the Turner Staff during the project and will be turned over and the property of the Town of Greenwich the following Utility Terrian Vehicle: POLARIS RANGER CREW XP 1000 NorthStar Edition Premium with Fixed Windshield, equipped with all the capabilities of RANGER CREW XP 1000, plus a factory-installed Pro Shield cab system, heating and air conditioning—with seating for 6 and doors. Include pedal-start feature to reduce unnecessary idling if available, and (3)-5 gallon gas cans for refueling. Assume refueling cans weekly for the course of the project.

156. This Subcontractor shall adhere to the included schedule specifically the duration on rock removal and sitework to allow for following activities. A minimum of two crews made up of the appropriate number of individuals shall be working on sitework and rock removal operations to adhere to the indicated durations and meet production levels necessary to complete as scheduled.

D. Exclusions

1. Exclude fiber mulch. (by Landscape)
2. Exclude polymer Concrete handholes (by EC)
3. Exclude heat trace at exterior sanitary piping.
4. Exclude furnishing and installing under-slab sanitary piping (By Plumbing Bid Package)
5. Exclude Soil Preparation specification 32 9113 (By Landscape Bid Package)
6. This Subcontractor shall exclude the following flatwork concrete unless otherwise indicated above including frost pads, sidewalks, sidewalk ramps and curbing as indicted on the contract documents which shall include the detectable warning strips. Exclude spec sections 32 1313 – Concrete Paving and 32 1373 – Concrete Paving Joint Sealants.
7. Excludes concrete washout.

E. Safety

1. This Subcontractor shall excavate all trenches assuming all soil to be Type C. Meaning all excavations shall be continuously sloped at a 34-degree angle in accordance to the OSHA standards. Sloping cannot exceed 20 feet without verification by a PE. BENCHING NOT ALLOWED IN TYPE C SOIL. This Subcontractor shall provide a detailed sheeting and soil retention plan for the work to be undertaken. This requirement does not attempt to characterize soil suitability for the support of structures or equipment but is only recommended for the purposes of trench collapse prevention.

2. This Subcontractor to provide a fall protection plan for all excavations 6 feet or greater in depth. This Subcontractor shall ensure excavation fall exposures are guarded by a hard barrier that meets OSHA's definition of guard railing. Orange fencing, danger or caution tape will not be acceptable.

3. This Subcontractor shall furnish, install and maintain an OSHA compliant wire rope guardrail system atop ALL site perimeter H pile soil retention systems. This is to be installed before any mass excavation begins to eliminate fall hazards during its installation. This Subcontractor will furnish and install a 3x3 steel angle posts atop each H pile sized to accommodate a toprail cable at 42" inches above walking surface and a midrail cable at 21" above the walking surface, terminated by 3 appropriately sized and spaced forged steel wire rope clips (Crosby or equal) torqued to manufacturers specifications. All steel posts, cabling, hardware and turnbuckles are to be furnished and installed by this Subcontractor. The minimum allowable cable size will be 3/8ths only if aircraft rated cable is used. The perimeter cable system is to include turnbuckles spaced at no more than every 100 feet with terminations made at all corners. This Subcontractor to also furnish, install and maintain orange mesh secured to the top rail and terminated into the top piece of lagging. This Subcontractor is to inspect and maintain all guardrails and mesh on a daily basis until backfilling is complete and railing no longer necessary for fall protection. Daily inspections shall be documented by this Subcontractor and made available to Turner upon request. Removal of safety cabling systems will be by others. This Subcontractor to incorporate four (4) pedestrian access/material loading areas independent of perimeter protection with removable cables and tie-off points for three (3) workers. These material loading areas to be located by Turner's Superintendent. This subcontractor to use the top edge of the lagging as a toe board and means to secure orange mesh, it is important that this Subcontractor allow for the height of the H-pile to be at least 6 inches above the adjacent walking surface elevation.
4. This Subcontractor shall provide (prior to arriving on site) all tabulated data for shoring boxes utilized for soil retention, including soil retention at the site utilities. This Subcontractor must ensure that they furnish, install, maintain and remove guard railing (includes a continuous top rail at 42 inches above grade, a midrail at 21 inches above grade, a toe board 4 inches above grade) at all sheeting, soldier pile or trench box that terminates 6 feet or greater above a lower level. This Subcontractor to furnish, install, maintain and remove such guard railing as well as provide daily documented inspections.
5. This Subcontractor shall have a 40-hour Hazwoper trained employee on site at all times. (for projects with the requirement outlined in the soils management plan.)
6. This Subcontractor to provide snow removal for the entire site including all areas identified within the Turner site logistics plan. Removal must be continuous throughout all areas within the site fencing and all access paths to all entries into the building including any areas in the building impacted by snow and ice. Snow removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms. This Subcontractor shall sand and de-ice as required to maintain safe conditions on site including: egress from each building, trailers and to the Site Emergency Rally / Muster location per the Crisis Management Plan. The snow removal will be accomplished prior to commencement of the days work shift to allow for safe entry without delay into the jobsite. This subcontractor is required to maintain at all times roadways and foot paths in a safe traversable condition by plowing, shoveling and utilizing surface treatments.
7. This Subcontractor shall ensure the grade differential between any (concrete) surface and adjacent rough grade is no more than 10 inches below finish floor elevation during all phases of construction. This Subcontractor shall be responsible for providing a uniform and level compacted grade around the building perimeter suitable for the support of scaffolding and lifts.

8. This Subcontractor shall provide and maintain anti-tracking pads and tire wash stations per the Turner Site Logistics Plan or as required by Turner. Each anti-tracking pad shall be constructed as specified by the contract documents or Turner. Tracking pads as defined by the site logistics plan or site improvement plan will prevail if more stringent than this requirement or if the area is required to be greater in size. This subcontractor to provide high pressure washers at each location for tire washing purposes. This Subcontractor shall provide the appropriate manpower to ensure ALL vehicular traffic is washed at these locations before entering onto municipal streets. These areas must be isolated from coming in contact with any soil remediation areas where required. This subcontractor is to provide all materials necessary to hook up and retrieve water and a water truck must be provided by this subcontractor if water is not available on site. This subcontractor shall be responsible for street sweeping to maintain clear roadways around the site as directed by Turner.
9. This subcontractor shall perform inspections of the erosion/stormwater control measure for the project, this Subcontractor is responsible to furnish, install, repair and remove all stormwater/erosion control measures, devices, fixtures, etc. per the Project SWPPP (Stormwater Pollution Prevention Plan) and all terms and conditions associated with this work. This includes responsibility for all corrective action required to remediate the stormwater controls per the inspections by Turner and by all 3rd party inspectors and maintain a documentation log confirming all corrective actions. See Turner Construction Company Stormwater Compliance Program for additional requirements.
10. This Subcontractor will be required to maintain a lined concrete wash out for their concrete work and will be responsible for removing all surplus concrete from the job site in accordance with contract documents. Concrete surplus must be removed on a weekly basis or as directed by Turner.
11. This Subcontractor shall ensure safe access in and around all footings by providing ramps at every footing and every 25’ along the foundation walls. If trenches are to be traversed ensure that walkways are at least 18 inches wide and are secured together when using two planks to make up the required width. If the height of the walkway exceeds 4 feet vertically this subcontractor will install guardrails to prevent falls from same walkway.
12. This subcontractor shall excavate around footings to allow for an unobstructed 2 foot wide clear path around all footings during wall construction, drainage and waterproofing installation activities. The adjacent footing grade must be maintained no lower than 16 inches below top of footing.
13. This Subcontractor shall coordinate with Turner Superintendent and backfill to within 2” the top of all footings, compacted and leveled prior to the commencement of wall forming operations.
14. This Subcontractor shall verify the presence of all existing underground utilities that may be affected by their work. This includes the use of non-intrusive methods such as hand digging or vacuum excavation of pot holes every 15' to locate known utilities per the Surface Penetrating Request Permit. This includes areas where fence posts for site containment fences are to be driven. This Subcontractor will contact “Call before You Dig” for layout of existing utilities and coordinate with the facilities department. This subcontractor will be responsible for maintaining utility markings.
15. This Subcontractor shall hire an independent GPR Subcontractor approved by Turner to grid out, locate and mark all existing underground utilities in all areas of disturbance. This GPR Subcontractor shall provide subsurface utility profiles in plan and elevation as built by a licensed surveyor with dimensions off existing site benchmarks that will remain throughout the project and submit copies to Turner. This subcontractor will be responsible to maintain with updated as builts and remark utilities for the duration of the project when needed. This subcontractor shall utilize hand digging and/or vacuum excavation when excavating within 12’ of existing utilities to identify their locations below grade.

16. This Subcontractor shall ensure that the soil/ fill conditions under any equipment i.e. SCAFFOLDING/HYDROMOBILES/CRANES have been coordinated with the Subcontractor providing the equipment to ensure suitable soil bearing capacity.
17. All building and structure shoring/underpinning systems must be designed by a professional engineer. Plans and calculations must be submitted to the engineer of record for approval prior to undertaking the work. Inspections must be performed daily by a qualified party designated by the subcontractor and maintain a documentation log confirming any corrective actions required.
18. This subcontractor shall ensure that if self-supporting temporary fence is required tube bases that project into adjacent walkways will not be permitted. Temporary fencing must be supported by one sided fence bases (either steel and/or sand bagged) or low profile high-visibility bases shall be used to eliminate tripping hazards to the public side. In general, scrim shall be wind resistant scrim.
19. This Subcontractor shall ensure that all temporary fence panels are free from protruding wires or other components that could scratch, catch or snag pedestrians as the pass by the fence.
20. This subcontractor is to furnish, install, maintain and remove all fencing, scrim covering, and gates for the full duration of the project as outlined in the project schedule and layout defined by Turner's Site Logistics Plan. Fence must be inspected for integrity and this contractor will perform any necessary repairs identified.
21. All designated walking paths must be temporarily graveled and regularly maintained using ¾" stone maximum. A path must be furnished and maintained from the site entry gate to the building perimeter entry location at all times.
22. This Subcontractor must provide daily dust control for all sitework so that dust is controlled to the point that it is not visible. This subcontractor shall provide their own water connection.
23. Excavator cabs windshield must be protected with both a suitable cage covering and safety glass when the excavator is being used in conjunction with a hydraulic breaker, hoe ram and during clearing and grubbing operations.
24. This contractor will coordinate with Turner to determine the location of air intakes into other buildings that could be adversely affected by exhaust fumes from its machinery. This contractor will be expected to protect the fresh air intake of existing buildings from exhaust, mists or dusts generated by their work.
25. This Subcontractor will provide 80 traffic cones with telescoping cone bars to be used in areas designated at the direction of Turner.
26. This subcontractor shall furnish, install, relocate and remove (10) additional jersey barriers in locations directed by Turner.
27. This subcontractor shall furnish, install, maintain, relocate as needed and remove jersey barriers or dead men along ramp excavation inclines as guardrail protection for motor vehicles and construction equipment.
28. This Subcontractor shall ensure all street plates have anti-skid surfaces with no open lift holes.
29. Blasting Operations to be governed OSHA and the Manual of Accident Prevention in Construction of the Associated General Contractors of America. This contractor will be required to submit blasting plans to be reviewed by a 3rd Party. A Pre-Blast Permit will be required to be completed for each blast sequence. Include all Town permits and associated cost as required for Blasting.
30. This Subcontractor shall develop, implement and maintain a road closure plan that follows MUTCD requirements for any road/lane closures or work adjacent to public roadways.

31. This subcontractor shall provide "Danger Construction Do Not Enter" on the exterior scrim of the site fence every 20'.
32. This Subcontractor to furnish, install and remove concrete barriers for protection against vehicular traffic at any and all O2, Flammable Gas and LPG storage tanks within the construction area as further defined by Turner's Site Logistics Plan. Also provide grading and 3/4" stone as a base for these enclosures.
33. ~~This Subcontractor shall relocate the existing two (2) storage sheds on the property. Reference drawing L101A and Drawing L301A at grid line E & 1 for shaded rectangle intended to show existing sheds location. Please note – sheds will not be demolished, shed will be relocated per Owner's direction on the property.~~ See Above.

F. Logistics and Schedule

1. This subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

G. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for a complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	Amount
Refer to Form of Proposal	

H. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternate shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	Amount
Refer to Form of Proposal	

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#10 - Concrete
Dated: 07.08.2024
Revised: 10.21.2024

C.1 **Specific Scope of Work**

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***Concrete Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***Concrete Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible for performing a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
03 0156	Under-Slab Vapor Retarder

Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
DIV 00	Procurement and Contracting Requirements

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#10 - Concrete
Dated: 07.08.2024
Revised: 10.21.2024

DIV 01	General Requirements
03 1000	Concrete Forming and Accessories
03 2000	Concrete Reinforcing
03 3000	Cast-in-Place Concrete
03 3250	Concrete Post Installed Anchors
03 6213	Non-Metallic Non-Shrink Grouting
07 2100	Thermal Insulation
07 9200	Joint Sealants

General Items

2. This Subcontractor will make every effort possible to ensure that their waste is properly sorted and disposed of to divert as much waste as possible from disposal in a landfill. This Subcontractor will track this recycling effort using the Online Waste Tracking System established by Turner Construction Company. Each dumpster ticket is to be logged into this system and its recycled content reported as a means of tracking the total percentage of construction and demolition debris diverted from landfills. There is a $50 per month fee for use of this website and this Subcontractor shall include all costs in his bid for use of this service. Refer to the attached User's Manual for more information about this system. Refer to the Turner Tracker Manual in the referenced "Forms and Policies," dated January 2015, in Turner's Project Manual.
3. This Subcontractor shall assume that temporary electric will not be available for this Subcontractor's use during the various stages of Sitework. This Subcontractor shall include the use of generators furnished and maintained by this subcontractor as required for the duration of their Work.

Bid Package Specific Scope

4. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
5. This Subcontractor shall include all measures needed for winter concrete installation as required based on the construction schedule timing of this work, including but not limited to tarps, blankets, electric blankets, heaters, enclosures, concrete admixtures, etc. This Subcontractor shall protect all concrete from freezing temperatures per the specifications. Upon finish grading and turnover from the Sitework Subcontractor, this Subcontractor shall include any snow removal and protect the subbase from winter weather.
6. This Subcontractor shall provide a lined dumpster for the purposes of wash out to be available for cleaning all concrete trucks, including concrete provided by other trades. Any concrete truck not using this for clean-out will be noted and the clean-up back-charge from the Site Subcontractor will be the Concrete Subcontractor's responsibility. Any excess concrete due to over placement shall be the responsibility of this Subcontractor to remove to this lined dumpster.
7. This Subcontractor shall repair, clean or restore any existing or new areas that are disturbed by concrete operations to the satisfaction of Owner and Construction Manager. This includes immediately cleaning all concrete splatter and spills due to concrete placement by this Subcontractor on all surfaces exposed to view. This includes, but is not limited to, stair stringers, stair landings, stair risers, architecturally exposed structural steel, and masonry walls.

8. This Subcontractor shall attend a pre-installation meeting 30 working days prior to any concrete being placed. The meeting will be organized by Turner and the following people should be in attendance; the Building official, Testing Agency, Special Inspector, Structural Engineer, Architect, Concrete Supplier and this Subcontractor. The purpose of the meeting is to review proposed concrete mix designs and as well as project specific requirements and how they are to be achieved.

9. This Subcontractor shall submit cold weather and hot weather concrete placement plans in accordance with ACI and include all costs to implement these plans.

10. This Subcontractor shall furnish and install all layout, concrete formwork, concrete reinforcement and cast-in- place concrete placement per the contract documents including but not limited to the following items. This shall include all accessories and means and methods required to provide a completed product per the documents.

    a. Foundation walls, strip footings, spread footings, piers
    b. Frost Pads and Recessed Frost Pads
    c. Slab on Grade
    d. Slab on Decks, supported slabs
    e. Elevator pits, including sump pits
    f. Slab for Radon Pits
    g. All concrete stairs, ramps, and walls connected to the building or within the building footprint
    h. Housekeeping pads required for all mechanical, electrical, plumbing, etc. equipment inside of the building
    i. All concrete on S-Series Drawings

11. This Subcontractor shall furnish and install all frost pads, recessed frost pads and supporting frost walls as shown on the contract documents. See L501 and Structural S200 drawings for details. Include rigid insulation between slabs per details.

12. This Subcontractor shall furnish and install the 8” reinforced frost walls and pad at perimeter of the two Chiller pads at the exterior of the building, as shown on S101A.

13. This Subcontractor shall furnish and install all Portland cement based underlayment at ramps, as shown on but not limited to detail 2/S201.

14. This Subcontractor shall furnish and install any structural grade rigid filler material at applicable locations, including but not limited to detail 2/S201.

15. This Subcontractor shall furnish and install all cast in place concrete stairs including at the Auditorium leading to the Stage Level.

16. This Subcontractor shall furnish and install masonry/brick shelves at the concrete foundation wall. Refer to details on the Structural drawing series for examples of this condition. This includes all preparation work and coordination with the Masonry Subcontractor for sizing and locations.

17. This Subcontractor shall be responsible for all coordination with the Elevator Subcontractor for dimensions, inserts and keeping the elevator pits clear of all debris and water.

18. This Subcontractor shall layout, form and place concrete and reinforcement for all stepped footings where indicated. Reference the Structural drawings.

19. This Subcontractor shall monitor the formwork during and after concrete placement to ensure the plumbness of walls and make adjustments as necessary.

20. This Subcontractor shall receive, distribute, and install all concrete embedded items supplied by others, including but not limited to anchor bolts, bearing pads, masonry embeds-dovetail slots, embedded angles, wall sleeves, etc. All locations of embedded items to be set via Total Station layout or similar.
21. This Subcontractor shall remove all snap ties, cut concrete fins and fill voids in the concrete surfaces within two weeks of concrete placement, refer to requirements of project specifications.
22. This Subcontractor shall provide a hand-rubbed finish on concrete foundations, walls and sides of slabs where they are exposed to view.
23. This Subcontractor shall provide all surveying and layout required for the work included with this package.
24. This Subcontractor shall include consistent and complete scheduling and coordination with all other trades to properly sequence the work and for the complete scope under this agreement.
25. This Subcontractor shall include all horizontal underslab insulation where shown in the contract documents, including but not limited to 1D, 2D, 3D/A410, 3E, 1E, 1C, 2C/A412, all details on A413 and A418, 4D, 5D, 6D, 3E, 2E/A414, 2D, 3D/A415,1E, 3E, 4E, 5E/A417, 1E, 2E, 3E, 4E/A416 and 1D, 2D, 5D, 4E/A411.
26. This Subcontractor shall include 1 laborer per 10-person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m. while the subcontractor is performing work on site. Composite crew is intended to cleanup general debris not necessary associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)
27. This Subcontractor shall furnish & install all control joints, including but not limited to providing a control joint layout shop drawings for submission to design team for approval include details for required joint sealants by this subcontractor.
28. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
29. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
30. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
31. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.

Slab-On-Grade / Slab-On-Deck

32. Immediately prior to the placement of concrete slabs, this Subcontractor shall thoroughly clean all areas to receive concrete. Compressed air shall not be used. This Subcontractor shall use vacuums or other methods that minimize dust.

33. This Subcontractor shall furnish and install haunched slabs where slab on grade abuts the foundation walls. Reference details in the Structural drawings.
34. This Subcontractor shall furnish and install haunched slabs underneath CMU walls as detailed on Drawings S-301 thru S-303 for example. Refer to architectural drawings for full extent of CMU walls. Also include haunched slab for the stairs at the auditorium shown on drawing S402 and 13/S210.
35. This Subcontractor shall include furnishing and installing all vapor retarder beneath the slab on grade shown on the Contract Documents and as specified in Specification Section 030156. This Subcontractor shall inspect the under slab vapor barrier system prior to slab placement and repair any damage prior to concrete placement.
36. This Subcontractor shall coordinate with the finish flooring subcontractors for their trade's tolerance level for flatness and curing procedures to understand if any conflicts exist between the trades. If there are differences in the requirements, this needs to be addressed upfront with Turner Construction prior to slab placement. This subcontractor shall include laser float at all slab on grade locations for level slabs. Include total station layout of Auditorium sloped slab on grade.
    a. Subcontractor shall, in addition to the floor leveling required for their own work, provide an additional 1000sf of ¼" thick floor leveling to be completed at the direction of the Turner Superintendent.

Miscellaneous Concrete Work

37. This Subcontractor shall furnish and install all concrete housekeeping pads required for mechanical, electrical, and plumbing equipment including but not limited to those shown on the Structural S100 series drawings. Coordinate layout with the mechanical subcontractors. Scope shall include doweling into the slab.
38. This Subcontractor shall be responsible for furnishing and installing all non-shrink grout where new structural members are to be installed at concrete construction; including, but not limited to details on column baseplates and beam bearing plates.
39. This Subcontractor shall furnish and install all toe boards and scrim at all slab on grade and slab on deck locations where a fall hazard exists in accordance with Turner Safety Additional Provisions. Removal will be by others.
40. This Subcontractor shall furnish and install wire mesh (or acceptable concrete reinforcement) at all stair tread infills and landings. This Subcontractor is to include furnishing and installing all concrete fill at metal stair pans.
41. This Subcontractor shall include the removal of temporary wood infills at metal stair pans. Installation of temporary wood infills by others.
42. This Subcontractor shall include furnishing and installing any slab depressions required for wood flooring or other similar finishes, including but not limited to those shown on drawing A091.
43. This Subcontractor shall furnish and install vertical wall dowel reinforcing as required at masonry or concrete walls. Coordinate dowel locations for masonry walls with the Masonry Subcontractor. Refer to drawing S502 for Shear wall elevations that included rebar details for masonry and around beams.
44. This Subcontractor shall coordinate with the Plumbing Subcontractor for location of radon pit venting.
45. This Subcontractor shall furnish and install "Giatec Smartrock Wireless Sensors" for the retaining wall concrete pour, reference details 1&2 on S211 for the full length of the wall. Include no less than 36 total monitors for this concrete placement including required sensors, hub and monitoring software/applications to provide daily results of strength and temperature readings. Assume 6 of the 36

sensors will be required for the calibration of mix designs, in the event there are additional monitors remaining after the placement of the retaining wall, the remaining monitors will be used at the discretion of Turner.

Coordination with Other Trades

46. This Subcontractor shall coordinate all requirements for Testing and Inspection in accordance with Field Quality Control section found in the Division 1 specifications and Concrete Specifications. This Subcontractor shall furnish any required cure box (or boxes) of sufficient capacity for concrete placement schedule. Inspections will be scheduled through the Construction Manager.
47. This Subcontractor shall be responsible for ordering, scheduling and sequencing of concrete deliveries required for the work. This shall include any premium time and standby labor required for continuous work (including the concrete supplier if required).
48. This Subcontractor will work closely with the Sitework Subcontractor to coordinate the scheduling and installation of excavation of concrete footings/foundations as shown. It is to be understood that this Subcontractor will give a minimum of (24) hour notice to the Sitework Subcontractor of specific footings/foundations to be excavated. If it is not feasible to access for direct concrete placement, this subcontractor shall include pump for concrete placement. At a minimum, this subcontractor shall assume concrete pump will be required for all slab on grade, slab on deck, walls, foundation walls, elevated slabs.
49. This Subcontractor shall coordinate all concrete work with all other subcontractors having work adjacent to or embedded within the concrete.
50. This Subcontractor shall coordinate and provide all openings in formwork for other trades as required. This includes box-outs and/or sleeves in walls and/or slabs for MEP/FP trades or other work that penetrates the concrete. Layout and sleeves shall be furnished by others and installed by this Subcontractor. All openings through concrete slabs will be formed and stripped to provide opening size unless they are shown on the structural steel drawings to receive an edge stop.
51. This Subcontractor shall coordinate all work with Plumbing Subcontractor for installation of trap primers and floor drains at concrete slabs on grade.
52. This Subcontractor shall coordinate with the Plumbing Subcontractor for floor drain heights to be maintained during the concrete pour.
53. This Subcontractor shall include costs to assist the Sitework Subcontractor in dewatering of footings and open foundations as required to perform the concrete work. The Sitework Subcontractor's work shall include, but not be limited to, pumping water, mud removal from excavations, clean-up, etc. This Subcontractor shall be responsible for the removal and reinstallation of formwork and/or reinforcement if deemed necessary.
54. This Subcontractor shall use anchor bolt patterns supplied by Steel Subcontractor for the setting of anchor bolts. This Subcontractor shall also include installation of anchor bolts and leveling plates provided by the Steel Subcontractor. All locations of embedded items to be set via Total Station layout or similar.
55. This Subcontractor shall include grouting of leveling plates. This Subcontractor shall include providing an as built survey of installed anchor bolts, embedded items and bearing plates prior to the scheduled start of structural steel erection. This survey shall be by a licensed registered surveyor independent of any other survey performed by the Steel Subcontractor. A combined survey from this Subcontractor and the Steel Subcontractor will not be accepted**.** The cost to replace or reset any bolt, embedded item or plate found out of tolerance for location or elevation will be the responsibility of this Subcontractor.

The survey / corrective work shall be done so as to not delay steel erection or work of other trades. Coordinate the phasing of the work with Turner Superintendent and the Steel Subcontractor.

56. This Subcontractor shall grout in elevator door sills.

57. This subcontractor shall furnish and install all fall protection at the level two slab on grade areas for the entire length of the retaining wall per Turners EH&S program upon removal of the retaining wall formwork. Fall protection will be removed by the Steel subcontractor for installation of metal decking.

58. This Subcontractor shall include and implement a 5S (sort, straighten, shine, standardize and sustain) Lean system strategy onsite to be approved by Turner Construction. If in Turner's observation 5S implementation is insufficient (i.e. lack of organization, excess trash/material accumulation), Turner reserves the right to direct this subcontractor to add a full time designated laborer at this subcontractors expense to comply with approved 5S strategy, or Turner will hire one at this Subcontractor's expense.

59. This Subcontractor shall include consistent and complete scheduling and coordination with all other trades to properly sequence the work and for the complete scope under this agreement.

Joint Sealants:

60. This Subcontractor will furnish and install all Joint Sealants within and at perimeter of work where called out.

Expansion Control:

61. This Subcontractor will furnish and install expansion joints or expansion control items where required within the concrete slabs and walls. This work includes but is not limited to furnishing any expansion joint ~~covers~~ sealant as required as well as boxing out for them in the slab pour and then grouting them in as part of the installation by this Subcontractor if required. Include Expansion joint details reflected on drawings A092 & A093

Add'l Items:

62. This Subcontractor will furnish and install the 3" concrete cover shown in detail 4/S200 in lieu of the bituminous paint.

D. Safety/Logistics

1. This Subcontractor has reviewed the Logistics Plans and the Construction Schedule and shall include all associated costs as relevant to achieve this scope of work within the Project Schedule. No come back costs will be entertained.

2. This Subcontractor shall review, conform to, and furnish and install all requirements included in the Safety Additional Provisions included in this Agreement. This Subcontractor understands that this document is project specific, and all provisions must be included in this Subcontractors' bid.

3. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible for removing snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers. Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.

4. This Subcontractor shall provide a site-specific plan on how they will comply with Turner's Ladder's Last Program.

5. This subcontractor shall ensure that any Lulls used on site are equipped with hydraulic fork positioners.

6. This subcontractor shall engage a 3rd Party to complete a GPR Survey to mark out existing utilities under and in the general area of any proposed Mobile Crane locations.

7. This Subcontractor to provide, install and maintain a safe, secured transition strip with beveled edges around the entire perimeter between all elevated and depressed slabs. This Subcontractor shall remove and dispose of the transition strip as directed by Turner.

8. Winter weather tarps are not allowed to be hung from the perimeter guardrail cables. This Subcontractor to furnish an independent means to secure the tarps. All tarps must be fire rated.

9. This contractor shall provide (50) D-Ring Fall Protection straps to be cast in place or wrapped around the exterior beams at locations identified by the Turner Superintendent. Straps shall be accessible between 7 and 8 feet AFF. Each contractor is responsible for visibly inspecting each tie off point before using. This subcontractor is responsible to inspect each strap after installation. All anchorage points shall be installed prior to turnover of each deck and to be removed by others.

10. This subcontractor shall furnish and install plywood over rebar mats that must be traversed either by this contractor or by any trade. The solid walking surface must be made of suitable material 4' in width and the full length of the mat.

11. This Subcontractor shall install one layer of mesh on mat slabs to prevent workers from falling within the rebar in between top and bottom mat.

12. This Subcontractor shall utilize a rebar shear in lieu of a chop saw or grinder to cut rebar.

E. Exclusions

1 This Subcontractor shall exclude all vertical underslab insulation where shown in the contract documents, including but not limited to 1D, 2D, 3D/A410, 3E, 1E, 1C, 2C/A412, all details on A413 and A418, 4D, 5D, 6D, 3E, 2E/A414, 2D, 3D/A415,1E, 3E, 4E, 5E/A417, 1E, 2E, 3E, 4E/A416and 1D, 2D, 5D, 4E/A411. (By BP#9 Sitework).

2 This Subcontractor shall exclude flatwork concrete outside of the building footprint, such as concrete sidewalks (2A/L501), concrete pavement (2B/L501), and concrete curbing (By BP#40 Concrete Flatwork).

3 This Subcontractor shall exclude concrete lightpole bases or concrete fill for bollards (By BP#9 Sitework).

4 This Subcontractor shall exclude excavation, preparation of subgrade, backfill and dewatering (By BP#9 Sitework).

5 This Subcontractor shall exclude dumpster enclosure pads, gas meter pads, generator pad(s), fence and gate footings, furniture footings, sign footings, light pole bases, thrust blocks, encasement of ductbanks. (By BP#40 Concrete Flatwork or BP #9 Sitework).

F. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for a complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	**Amount**
Refer to Form of Proposal	

G. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternates shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	**Amount**
Refer to Form of Proposal	

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP11 – Masonry
Dated: 07.08.2024
Revised: 10.21.2024

C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***Masonry Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***Masonry Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible for performing a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
04 2000	Unit Masonry
04 7323	Manufactured Building Stone Masonry

Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
DIV 00	Division 00 – Procurement and Contracting Requirements
DIV 01	Division 01 – General Requirements
03 6213	Non-Metallic Non-Shrinking Grouting

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP11 – Masonry
Dated: 07.08.2024
Revised: 10.21.2024

05 5000	Metal Fabrications
07 2100	Thermal Insulation
07 2726	Fluid-Applied Membrane Air Barriers
07 6200	Sheet Metal Flashing and Trim
07 9200	Joint Sealants
07 9513	Expansion Joint Cover Assemblies

Bid Package Specific Scope

1. This subcontractor shall include all costs for access to work including, but not limited to, scaffolding, stair towers, lifts, etc. This subcontractor shall furnish, install, inspect, maintain and remove all scaffolding required for the performance of the work of this Contract. This Subcontractor shall provide protection under work access to protect slabs. All other subcontractors requiring access shall complete liability waivers as determined by this subcontractor.
2. This subcontractor shall leave all work areas broom clean at the completion of this subcontractor's daily work this includes continuous housekeeping at the base of any scaffolding system.
3. This Subcontractor includes all blocking, brackets, fixtures, shims, connections, and other items necessary for a complete system.
4. This Subcontractor shall include all cutting, coring & sleeving for penetrations relative to your trade for a complete system.
5. This Subcontractor shall be responsible for all testing required per the drawings, specs, and state requirements.
6. This Subcontractor shall include all Sustainability requirements, including but not limited to CTHB Documentation.
7. This subcontractor shall receive, store and install all embeds, sleeves, access doors, louvers, vents, etc. within masonry partitions. This subcontractor shall coordinate with the MEP/FP and Elevator Subcontractors for the installation of electrical conduits and mechanical sleeves/pipes within masonry partitions. All embeds and sleeves are to be furnished by the respective trades requiring such, along with dimensioned shop drawings indicating locations. This subcontractor shall not accept material without formal transfer of care and custody paperwork. This subcontractor shall provide copies to Turner upon request. This subcontractor shall coordinate with respective subcontractors for, including but not limited to, all in-wall rough-in for electrical, elevator, and controls devices.
8. This subcontractor shall perform all layout of masonry partitions including locations of door openings. This subcontractor shall use a laser to ensure that all masonry walls are level and plumb. This subcontractor shall verify that door frames have been installed plumb and level and shall ensure they remain plumb and level during the masonry installation. The setting of hollow metal frames shall be by BP #21 Drywall & General Trades and aluminum frames by BP #19 Glass, Glazing, & Metal Panels.
9. This Subcontractor shall provide all surveying and layout for the work of this package. Survey will be by a Total Station or a Licensed Surveyor.
10. This Subcontractor shall include consistent and complete scheduling and coordination with all other trades to properly sequence the work and for the complete scope under this agreement.
11. This Subcontractor shall furnish all the standard, special, finish, etc. warranties identified in the specifications.

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12. This subcontractor shall furnish and install all Exterior and Interior Masonry and Architectural Precast Concrete Work as required for complete systems. This shall include, but is not limited to, furnishing and installing all CMU, Masonry Veneer, Glass Unit Masonry, Cast Stone, Precast Architectural Concrete, accessories, etc. as shown on the Contract Documents.
13. This subcontractor will be responsible for any temporary connections, shoring or bracing and additional miscellaneous structural support not indicated on Contract Documents and required for a complete masonry system.
14. This subcontractor shall furnish, install, maintain and remove all weather protection required for the completion of the masonry work in accordance with the Project Schedule. This work shall include, but is not be limited to, shrink wrap (similar to Global Wrap or equal), enclosures, temporary heaters with fuel, admixtures, etc. and costs for hot water. This subcontractor shall include all heated enclosures, as required, for installation of masonry work in compliance with the specifications. The heated enclosure shall adhere to ALL safety policies required by the Safety Additional Provisions, and all safety requirements by Authorities Having Jurisdiction. If required for open flame heating source, this shall include 24-hour safety standby monitoring of the heating equipment and enclosures while in operation. This subcontractor shall provide breakout pricing for Weather Protection by phase in Application for Payment.
15. This subcontractor is required to provide a mixing station in a location acceptable to Turner and the Owner. This subcontractor shall keep mixing station clean and organized including, but not limited to, stockpile material, controlling dust, and daily removal of debris this subcontractor's dumpster. This subcontractor shall include weather protection as required.
16. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection of unfinished and finished work to prohibit damage from subsequent work. Protection must be approved by Turner.
17. This Subcontractor shall include the follow **Trade Allowance**: 80 hours of labor time for 5S and safety, protection and logistics requirements as directed by TCCo Superintendent. Laborer Time to be included as journeyman rate including any required supervision. This will be billed based on the final agreed contractual wage rates and may only be expended by written authorization of Turner Construction and any unspent portion of this unused scope hours will be credited at the end of your contract based on approved labor rate.
18. This Subcontractor shall coordinate all work with all other Subcontractors having work adjacent to or connecting to the work of this Subcontract.
19. This subcontractor shall protect roofing and metal deck, as per Roofing Subcontractor's recommendations, while performing work on upper masonry walls. Where this subcontractor is working on a finished roof, this subcontractor shall provide photographic documentation of the roof condition prior to the start of work. Failure to provide documentation will result in this subcontractor's responsibility to pay for costs associated with exterior and interior damage.
20. This subcontractor shall coordinate with MEP trades for locating and installing block outs in new masonry walls for duct and MEP raceways. This Contractor shall furnish and install lintels in masonry walls where block outs for MEPs are required. This Contractor shall coordinate these openings with the MEP contractors prior to wall construction, if this does not occur this Contractor shall cut and patch the partition at their own expense. See the MEP drawings for the extent of the new penetrations.
21. This Subcontractor shall furnish and install all mock-ups required for this scope of work per the contract documents, for example as shown on Drawing A-315.

22. This Subcontractor shall provide engineering stamp drawings and calculations of all delegated design items as indicated on the contract drawings.
23. This Subcontractor shall include 1 laborer per 10-person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m. while the subcontractor is performing work on site. Composite crew is intended to clean up general debris not necessary associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)
24. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
25. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule. Include separate early mobilization for install of all CMU that supports structural steel.
26. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
27. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.
28. This Subcontractor shall furnish and install all masonry components of the front signage as shown on documents, including but not limited to masonry veneer and flashing, for example as shown on 5D/A924.

Exclusive Specifications

Spec. 04 2000 Unit Masonry

29. This Subcontractor shall furnish and install all unit masonry and accessories as shown on the contract documents required for a complete system, including but not limited to grouting, masonry ties, anchorage, reinforcing steel, flashing, termination bars, drip edges, movement joints, weeps, etc.
30. This Subcontractor shall coordinate, furnish and install anchors as required, for example 13/S410 connection to steel tube.
31. This Subcontractor shall furnish and install all acoustical concrete masonry units as shown on documents for a complete system, for example as shown at Gymnasium A111.4.
32. This Subcontractor shall furnish and install all top of wall anchors for connecting interior masonry to underside of structure for joint stabilization, for example, as shown on Detail 1B/A605.
33. This Subcontractor shall exclude welded L anchorage at slab edge, for example 1A/A605. To be furnished and installed by BP #12 Structural Steel.
34. The BP #10 Concrete Subcontractor will furnish and install reinforcing steel dowels shown to be installed in cast-in-place concrete for reinforced CMU partitions. This subcontractor shall coordinate layout of masonry partitions with BP #10 Concrete Subcontractor.

Spec. 04 7323 Manufactured Building Stone Masonry

35. This Subcontractor shall furnish and install all manufactured stone masonry as shown on the contract documents for a complete system, including but not limited to anchor system, angles, mortar net, drainage mat, masonry ties, flashing, continuous metal flashing and sill drip edge, etc.
36. This Subcontractor shall design, furnish, and install anchors as shown on contract documents, for example ashlar stone anchor system as shown at detail 5B/A500.

Shared Specifications

Spec. 03 6213 Non-Metallic Non-Shrinking Grouting

37. This Subcontractor shall furnish and install all grout as shown on the contract documents for a complete system of this subcontractor's work. This Subcontractor shall furnish and install all grout except at Steel Column and Base Plate locations (By BP#10 Concrete).
38. This Subcontractor shall grout all new interior and exterior door frames installed in masonry interior and exterior walls. This subcontractor shall protect hinges from grouting operations in order to ensure a smooth door installation. Upon completion of grouting, this subcontractor shall clean excess grout to prepare for painting.

Spec. 05 5000 Metal Fabrications

39. This Subcontractor shall furnish and install all steel loose lintels as required per the contract documents, for example as shown on drawings A641 -A642 and lintel schedules on A606.

Spec. 07 2100 Thermal Insulation

40. This Subcontractor shall furnish and install insulation at all exterior veneer locations provided as part of this bid package scope of work. This includes but is not limited to all exterior wall assemblies with CMU back-up, concrete back-up, or stud and sheathing back-up with veneer provided by this subcontractor.

Spec. 07 2726 Fluid-Applied Membrane Air Barriers

41. This Contractor shall furnish and install **ALL** fluid-applied membrane air barriers as shown on the Contract Documents, including but not limited to masonry, FCP, skylight, louvers, curtainwall/storefront, rainscreen system, and metal panel locations with a minimum 1-foot overlap or per manufacturers requirements on vertical face with adjacent work. For example, this Subcontractor shall install membrane air barrier per detail 3A/A520.
42. This subcontractor shall provide all required termination bars as required per the Contract Documents for example as shown on 3D/A641.
43. This subcontractor shall furnish and install sealant at all through-wall penetrations and attachments that penetrate the air/vapor barrier as per manufacturer's requirements.

Spec. 07 6200 Sheet Metal Flashing and Trim

44. This Subcontractor shall furnish and install all formed wall flashings and trim within or adjacent (including at all perimeters) to exterior wall veneer provided by this Subcontractor.

Spec. 07 9200 Joint Sealants

45. This Subcontractor shall furnish and install all joint sealants, control joints and joint sealant assemblies within and at the perimeter of this subcontractor's work.
46. This Subcontractor shall furnish and install all joint sealants including but not limited to door frames, louvers, access doors and other items installed within masonry partitions and stone veneer by this subcontractor.

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Add'l Items

47. At the tops of all Masonry walls, this subcontractor shall include all required compressible filler, AVB and associated lapping requirements, infill of roof deck flutes with preformed mineral wool, refence details 1B&2B&3B/A521 as examples.
48. This Subcontractor shall furnish and install all movement and expansion joints within and at Perimeter of CMU Block and exterior wall systems installed by this subcontractor.

D. Safety

1. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible to remove snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers. Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.
2. This Subcontractor shall provide a site-specific plan on how they will comply with Turner's Ladder's Last Program.
3. This Subcontractor shall ensure that any Lulls used on site are equipped with hydraulic fork positioners.
4. This Subcontractor shall engage a 3rd Party to complete a GPR Survey to mark out existing utilities under and in the general area of any proposed Mobile Crane locations.
5. This subcontractor shall ensure scaffolding more than 4 tiers high is installed with debris netting covering the entirety of the non- working sides of the scaffolding full height extending to the top guardrail height of the upper most platform. All working platforms to include a guardrail, mid-rail and toe board per OSHA specifications. All scaffold bases will be installed on wood mudsills regardless if on level concrete. All scaffolding sections to be fully pinned and coupled. Stair towers are the required method of scaffold access. Others means such as ladders will be acceptable only when stair towers are not feasible. Fall protection must be provided at all scaffold access points by temporary gates, offset guardrails or other means to eliminate the fall hazard at access opening. All components are to be compatible. This subcontractor is responsible for a fully engineered scaffolding system that accounts for wind loading that may be imposed by scrim or tarp enclosures.

6. This Subcontractor shall ensure that Mortar tubs and other materials are prohibited from being landed on scaffold extended bracket support platforms. The subcontractor will be required to construct a separate scaffold bay/section bump out for which to receive material on. Workers must be protected from fall exposures should top or mid rails be removed when landing material on the scaffold structure. This Subcontractor shall provide a comprehensive scaffold and fall protection plan rendered by a qualified person. Plan should include plan and elevation renderings of the scaffold structure and key assembly and connection details. Scaffold erection and dismantling procedures must obey all regulations set forth by OSHA Subpart L 1926.451 and Turner's Site Safety Program. Maximum loading requirements must be provided for each bay. In the event the scaffolding needs to be built on an existing structure it shall be the responsibility of this Subcontractor to perform an engineering survey to determine if it can support the load of the scaffolding. In the event the existing structure needs to be shored or supported it shall be the responsibility of this Subcontractor to do so. The structure must be designed by an engineer to sustain potential wind loads produced from the encapsulating debris scrim or any winter weather protection barriers.
7. This Subcontractor shall ensure mixer staging areas if elevated above 2 feet have guard rails and stairs for access. The platform must be of solid construction and not a stack of pallets. All guards to mixers must be in place.
8. This Subcontractor is responsible to ensure that the perimeter protection of each floor that is affected by their work be maintained on a daily basis. If Guardrail systems need to be modified or removed to install the work this Subcontractor must ensure that they protect the floor edge by replacing the guardrails or installing a separate standard guardrail system. Open sided floors cannot be unprotected at any time. If this subcontractor's work replaces the guardrail edge protection this contractor will be responsible for removing and coordinating the return of the reusable guardrail/fall protection system (posts, cables, turnbuckles, clips,) to the concrete or structural steel subcontractors. Material should be palletized and returned in an orderly fashion.
9. This Subcontractor shall utilize a rebar shear in lieu of a chop saw or grinder to cut rebar.
10. This Subcontractor shall ensure stair access is provided for all scaffolding.
11. This Subcontractor shall ensure that all guardrails on scaffold systems are manufacturer fabricated standard fall protection rails.
12. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible to remove snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers. Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.

E. Exclusions

1. This Subcontractor shall exclude welded L anchorage at slab edge, for example 1A/A605 (By BP #12 Structural Steel).
2. This Subcontractor shall exclude hung lintels (By BP #12 Structural Steel).
3. This Subcontractor shall exclude masonry dowels cast in concrete and slab reinforcement at masonry partitions (By BP#10 Concrete).

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F. Logistics and Schedule

1. This subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

G. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for a complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	Amount
Refer to Form of Proposal	

H. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternates shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	Amount
Refer to Form of Proposal	

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C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***BP #12 Structural Steel Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detailed references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***BP #12 Structural Steel Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible for performing a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
051200	Structural Steel Framing
052100	Structural Joist Framing
053100	Steel Decking
072163	Fluid Applied Insulative Coating

Shared Specifications

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Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
Div 00	Division 00 – Procurement and Contracting Requirements
Div 01	Division 01 – General Requirements
033250	Concrete Post-Installed Anchors
050805	Factory-Applied Coatings for Metal
055000	Metal Fabrications

Bid Package Specific Scope

General

2. This subcontractor shall fully participate in all 3-D coordination - All work per 3-D MEP Coordination Additional Provisions. This shall include modeling all roof joists. This subcontractor is responsible for coordinating with all the MEP trades and resolve any conflicts or coordination issues.
3. This Subcontractor is aware that this is a High-Performance Building and submittals should be submitted according to these standards. This Subcontractor has included all costs associated with meeting these requirements as set forth in the Division 1 Specifications.
4. This Subcontractor will provide the necessary written documentation for meeting the CT High Performance requirements as outlined in the Division 1 specifications.
5. This Subcontractor is responsible for distributing material to all floors as required and its protection from damage during delivery, handling, storage, and installation.
6. Temporary power will not be available for Structural Steel erection. It is agreed and understood that this Subcontractor shall utilize gasoline-powered welders or similar in order to perform the welding associated with erection of the Structural Steel for this Project. In addition, this Subcontractor shall assume that temporary electric will not be available for this Subcontractor's use during steel erection. This Subcontractor shall include the use of generators as required for the duration of their Work.
7. Prior to entering the site this Subcontractor shall submit all fitness for use / inspection certifications required for cranes to the Construction Manager. This Subcontractor shall be responsible for all crane permits for his work. This matter is a very important safety requirement to follow, and no crane will be allowed to be used unless this paperwork is submitted and up to date. There shall be a pre-planning meeting prior to erecting the crane on site.

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8. This Subcontractor shall be responsible for ordering, scheduling, and sequencing of steel deliveries required for the work. This shall include any premium time.
9. No truck parking/idling is allowed on streets adjacent to project site while waiting to unload. This Subcontractor shall include accommodations as required to adhere to "just in time" deliveries. Refer to Turner's "Logistic Plans – Scope of Work" for delivery restrictions.
10. This Subcontractor shall include all costs for two (2) round trip inspection visits for two (2) individuals at the structural steel fabrication plant. These costs should include travel, meals, lodging, and round-trip airfare if necessary, from Greenwich, CT.
11. This Subcontractor shall review, conform to, and furnish and install all requirements included in the Safety Additional Provisions included in this Agreement. This Subcontractor understands that this document is project specific, and all provisions must be included in this Subcontractor's bid.
12. This Subcontractor is responsible for leaving the metal deck cleaned of all debris resulting from erection of structural steel and metal deck including removal of stud ferrules. Due to dust concerns, blowers and compressed air are prohibited. Prior to turnover, the Construction Manager shall review and accept metal deck cleanliness.
13. This Subcontractor shall provide snow/ice removal as required to perform the work of this trade. Provide all preheating of welds, covering etc. to work during winter conditions. Site Access/egress snow removal will be by Sitework Subcontractor.
14. The Sitework Subcontractor (BP #09) shall provide 5 crane pads (40'x40'each of 12" crushed stone). This Subcontractor shall coordinate locations and sizes with the Sitework Subcontractor. This subcontractor shall furnish & install their own additional pads, and any cribbing, dunnage, etc. that may be required for their crane set-up and steel erection.
15. This Subcontractor shall coordinate with the Owner's Special Inspections Testing Agency (TBD) as required per the plans and specifications including those referenced in The Statement of Special Inspections. This Subcontractor shall provide the Construction Manager with seventy-two (72) hour advance notice for all required inspections. This subcontractor shall provide means for the inspector to access work, including but not limited to appropriate lifts, ladders, scaffold, etc.
16. This Subcontractor shall furnish and install decking with support framing for a 6' x 6' Slab-On-Deck mock-up for firestopping penetrations.
17. This subcontractor shall provide PE stamped drawings, calculations, & all delegated design as indicated in the contract documents.
18. This subcontractor shall design, furnish, & install the roof safety tie off system. For an example see sheet A103D.
19. This subcontractor is responsible for pulling all permits as required for their scope of work. Any filing of permits associated with this scope to be performed by this subcontractor including associated filing fees to be paid by this subcontractor, permit fees by others.

20. This Subcontractor shall include 1 laborer per 10-person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m. while the subcontractor is performing work on site. Composite crew is intended to cleanup general debris not necessary associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)
21. This Subcontractor shall furnish and install "Safe-T-Strap" systems in accordance with Turner Safety Additional Provisions.
22. This Subcontractor shall provide holes in structural steel required by other trades including, but not limited to the Gymnasium folding partition, Auditorium rigging beams, etc. Coordinate work with applicable Subcontractors. Include 20 shop installed beam penetrations (assume no plate reinforcing required) with maximum diameter of 4", location TBD.
23. This subcontractor shall remove the fall protection at the level two slab on grade areas for the entire length of the retaining installed by the Concrete subcontractor prior to the installation of metal decking adjacent to this area.
24. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
25. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
26. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
27. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.

050805 Factory-Applied Coatings for Metal

28. This Subcontractor shall furnish and install all hot-dipped galvanized structural steel as shown on the contract drawings, and as specified and required for complete systems regardless of details shown on drawings. This subcontractor shall include high performance factory applied primer and color topcoat, including but not limited to the structural members indicated on the GC series of drawings.
29. This subcontractor shall repair any damage to the applied steel coatings that occurs during the course of delivery, rigging, and installation. Welds made on architecturally exposed steel shall be ground smooth by this subcontractor for finishes. This Subcontractor shall also provide field touch up of galvanizing due to field welds and areas adjacent to welds as required.
30. This subcontractor shall furnish & install mock-ups of all exposed steel finishes, including but not limited to colored galvanized steel.

051200 Structural Steel Framing

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31. This Subcontractor shall be responsible to furnish and install all Structural Steel and Exterior Wall Support Steel Work on the Structural & Architectural Drawings as required for complete systems regardless of detail, unless otherwise specifically called out in this scope of work. This work shall include, but not be limited to, all structural steel, angles, braces, bent plates, HSS steel framing, HSS steel posts, hung lintels, deck support angles, support angles bolted to CMU, embeds, fasteners, accessories including shims, clips, bolts, and studs, etc. This Subcontractor shall **exclude** loose lintels not attached to structural steel unless specifically called out in this scope of work.
32. This Subcontractor shall be responsible for designing, furnish and install all steel connections unless noted otherwise.
33. This Subcontractor shall be required to coordinate all Structural Steel Work with all other Subcontractors having work adjacent to or connecting to the Structural Steel Scope of Work.
34. This Subcontractor shall furnish all anchor bolts and other embedded items that are required for this scope of work. These are required to be on site at the start of the concrete operation with a complete set of layout drawings and templates. This Subcontractor shall coordinate with the Concrete and Masonry Subcontractors and the project schedule for the timing of this work. This Subcontractor shall document transfer of care and custody of embedded items to the Concrete and Masonry Subcontractor's and provide the Construction Manager with a copy upon request. This subcontractor is solely responsible for the care & custody of their materials.
35. This subcontractor must field verify & confirm that all cast in and embed layout & types are correctly installed before & after concrete or grout placement. This survey must be performed prior to the start of Structural Steel erection, by a licensed registered surveyor and be independent of any other survey performed by the Concrete Subcontractor. Notify the Construction Manager in writing of any deviations so that corrections can be made in ample time so as not to delay the Structural Steel erection.
36. This Subcontractor shall provide all necessary survey layout, etc. in order to properly perform their work. This includes, but is not limited to, a preconstruction survey for areas where interfacing with existing construction occurs. Surveys shall be submitted before related shop drawings are prepared. All Surveys shall be performed by a licensed surveyor or by Total Station as modeled.
37. This Subcontractor shall provide a Certified Survey of the plumbness of all columns as well as the elevations of all the column splices for submission to the Engineer & Turner to document compliance with Specifications.
38. This Subcontractor shall provide a Certified Survey of all framing members and metal deck, including but not limited to their elevations and indication that they are installed per allowable tolerances, for submission to the Engineer & Turner to document compliance with Specifications including prior to concrete placement where applicable.
39. This Subcontractor shall be responsible for providing framed openings in structural slabs. For example, refer to typical details on Drawing S400.
40. This subcontractor shall furnish & install all dunnage steel for mechanical equipment per the contract documents.
41. This subcontractor shall furnish & install all steel stub-ups for the louvered roof screens, for example see detail 12 on S410, coordinate final locations with exterior wall subcontractor.
42. This subcontractor shall furnish & install all lateral framing indicated on the contract drawings, including but not limited to all lateral brace frame connections (for examples see S500 & S501).
43. This subcontractor shall furnish & install temporary erection bracing as needed for all structural steel.

44. This Subcontractor shall furnish and install all support steel (i.e., channels and angles) and deck reinforcing / support (i.e. bent plates) required. For example, refer to the details on the S400 series of drawings. This Subcontractor shall coordinate with the Exterior Wall, Roofing and MEP Subcontractors for installation requirements. This subcontractor must confirm all steel is fully coordinated with the exterior wall prior to installation.
45. This Subcontractor shall coordinate steel coatings such as spray-on fireproofing, intumescent paint, thermal coatings, or concrete encasement with associated trades for primer requirements per the project specifications. Reference fireproofing plans for locations.
46. This Subcontractor shall coordinate with the painting specifications for steel that is exposed to view regarding paint finish. This Subcontractor shall coordinate with partition plans for steel columns exposed to view and shall be conscience of where factory labeling is placed so as not to require additional prep work by the painter.
47. This Subcontractor shall stencil column identification on all columns on all 4 sides approximately 7-8 ft. above floor. Stencils shall be in inconspicuous locations and compatible with finish and fireproofing material on columns. The stencil marks must be a minimum of 6" tall. Coordinate final locations during shop drawing submission.
48. This subcontractor shall make all pour stops and supplemental support steel adjustable to allow for flexibility during installation where possible and allowed / approved by the design team & the EOR.
49. This subcontractor shall furnish & install all steel supports required for the exterior wall mock-up shown on A315, including but not limited to HSS members, steel angles, connections, etc. Members required should be the same as those shown in similar permanent steel details, such as hung lintels.
50. ~~This subcontractor shall furnish & install bituminous paint on structural steel members as indicated in the contract documents, for example see detail 4 on S200.~~
51. This subcontractor shall furnish & install all CMU supports that are required to be welded to structural steel, including but not limited to angles, bent plates, epoxy anchors into CMU, etc. This subcontractor shall coordinate with the Mason (BP #11) for layout of supports. For an example see detail 1A on A605.
52. This subcontractor shall furnish & install the Auditorium rigging beams, including not limited to connections to the roof joists. For examples see S301D and detail ~~6~~ 5 on S402. This subcontractor must coordinate layout and locations of the rigging beams with the Theatrical Lighting Subcontractor (BP #38) and Theatrical Equipment Subcontractor (BP #31).

052100 Steel Joist

53. This Subcontractor shall design, furnish, and install all steel joists as shown on the contract drawings, and as specified and required for complete systems regardless of details shown on drawings.

053100 Steel Decking

54. This Subcontractor shall design, furnish, and install all steel decking as shown on the contract drawings, and as specified and required for complete systems regardless of details shown on drawings. The metal deck must be able to accommodate and be compatible to receive SOFP and or painted finish per the contract documents.

55. This Subcontractor shall furnish and install all metal deck & composite deck components for a complete floor system including but not limited to shear studs, connectors, flashings, metal closures, concrete stops, accessories, and fittings.
56. This subcontractor shall furnish & install acoustical insulation within flutes of acoustical metal deck to provide a complete acoustical deck system. This subcontractor must coordinate with the Roofing Subcontractor, General Trades, and MEP subcontractors to ensure there are no compatibility issues or conflicts.
57. This Subcontractor shall furnish and install roof drain sump pans. Coordinate installation locations of roof sump pans with Plumbing Subcontractor.
58. This Subcontractor shall deck over all framed openings, and coordinate & remobilize to cut the decking back for the MEP Subcontractors prior to the start of their MEP installations.
59. This Subcontractor shall survey perimeter pour stops with Total Station prior to deck pours and provide written confirmation to the construction Manager that all pour stops are within allowable tolerances.
60. This Subcontractor shall include metal deck layout and thickness so that shoring during of the deck is not required during concrete placement.

055000 Metal Fabrication

61. This Subcontractor shall furnish all loose bearing and leveling plates that are required for this scope of work. These are required to be on site at the start of the concrete operation with a complete set of layout drawings and templates. This Subcontractor shall coordinate with the Concrete and Masonry Subcontractor (BP #10 & 11) and the project schedule for the timing of this work. This Subcontractor shall document transfer of care and custody of embedded items to the Concrete Subcontractor and provide the Construction Manager with a copy upon request.
62. This Subcontractor shall furnish and install all steel required for the support of the exterior wall and window systems, including but not limited to HSS tubes, angles, bent plates, channels, hung lintels, etc. For example, see structural details on S410 through S430 and architectural detail 2A/A641.

072163 Fluid-Applied Insulative Coating

63. This Subcontractor shall furnish and install all spray-applied insulative coating systems for structural steel as shown on the contract drawings, and as specified and required for complete systems regardless of details shown on drawings, including but not limited to primer, insulative coating, and topcoat. For examples of where this system is required see the GC series of drawings and detail 2B on A521.
64. This subcontractor shall repair any damage to the applied steel coatings that occurs during the course of delivery, rigging, and installation.

D. Safety - See Safety Additional Provisions

1. This Subcontractor shall furnish & install (2) temporary stair towers for means of egress during construction. Stair towers to provide access to all floor levels and the roof.
2. This subcontractor shall furnish & install a scaffold platform at the deck height of their trailers for unloading steel. This platform must include adequate stairs for access.

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP12 – Structural Steel
Dated: 07.08.2024
Revised: 09.30.2024

3. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible to remove snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers. Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.
4. This Subcontractor shall provide a site-specific plan on how they will comply with Turner's Ladder's Last Program.
5. This subcontractor shall ensure that any Lulls used on site are equipped with hydraulic fork positioners.
6. This subcontractor shall engage a 3rd Party to complete a GPR Survey to mark out existing utilities under and in the general area of any proposed Mobile Crane locations.
7. This Subcontractor shall ensure all connections involving washer plates are made final while the steel is still supported by the crane. Washer plates must be installed at the time of initial connection at all slap connections.
8. This Subcontractor shall furnish and install at locations of Structural Steel Framing, a complete safety cable guardrail system around all elevators, stair shafts and any openings of size 2 inches x 2 inches or greater and the entire building perimeter at each level including the ground floor and any other locations with elevation changes of more than 4 feet. A reusable guardrails system shall be of equal performance or greater than Perimeter Protection Products system. The posts shall be installed no more than ten feet apart. The post shall be "reusable type system" with adjustable cable guides. The cable heights of 42 and 21 inches must be maintained by this subcontractor. **Perimeter and shaft way beams that are to receive posts shall be hole punched in the fabrication shop and the under-mount post receiver is to be welded under the flange at the fabrication shop and shipped to the job ready for post installation.** Steel columns will be equipped with column clips of adjustable type to facilitate cable heights on column. Be sure to coordinate enough length into the posts in order to maintain rail height at the finish floor level and the finished roof elevation. Posts will need to be longer than 42 inches to accommodate the concrete thickness of the finished slabs and the composite roofing thickness. The Perimeter Protection Products 5'-6" post is to be used. This Subcontractor to install the cables into the posts and they shall be terminated by 3 appropriately sized and spaced forged steel wire rope clips (Crosby or equal) torqued to manufacturers specifications. The minimum allowable cable size will be 3/8ths only if aircraft rated cable is used. The perimeter cable system is to include turnbuckles spaced at no more than every three (3) columns. This Subcontractor is to inspect and maintain all guardrails on a daily basis until Structural Steel Work is complete and this subcontractor has demobilized from the site. Daily inspections shall be documented. Removal of safety cabling systems will be by others. This Subcontractor to incorporate four (4) material loading areas independent of perimeter protection with removable cables and tie-off points for three (3) workers. These material loading areas are to be located by Turner's Superintendent.
9. This subcontractor shall include furnish and install an additional (20) 3"x3" angle post welded at designated access points by Turner to secure temporary rails.
10. This Subcontractor shall detail and fabricate beam connections and column splices for safe erection as outlined in OSHA 1926, Subpart R, Section 1926.756 (c)(1). Include all costs for engineering and detailing as required. There shall be NO double live connections at columns or beams.
11. This Subcontractor shall furnish, install and maintain at all shaft openings at every other level debris net capable of supporting a person for the purposes of fall arrest and left in place. Nets shall be inspected daily until this contractor demobilizes from the site.

12. This Subcontractor is required to prevent and contain all slag from hitting the ground and levels below. Flame resistant blankets and other suitable means are acceptable.
13. This subcontractor shall furnish and install all stairways in pace with the erection of each floor. All stairways will be shipped to the project with the necessary tread infills attached. The interior guardrails are to be installed in pace with the erection of each floor.
14. This Subcontractor shall investigate and review deck/beam capacity prior to loading any floors with its materials and provide an engineered loading plan/drawing. This may include additional supports required to utilize any floor/deck and or identifying specific areas that can be utilized to pick from. This plan should account for tripping of columns not to exceed or point load structural assemblies. Loading plan must be reviewed and approved by the structural engineer prior to delivery. Post material loading specs on each floor and at location of a critical nature.
15. This Subcontractor shall provide all new rigging at the start of the project. Monthly documented inspections of all rigging shall be completed by this Subcontractor and provided to Turner upon request.
16. This Subcontractor shall provide a man basket on site at all times during the scope of work. The basket shall comply with all Turner and OSHA requirements and a test pick shall be performed once a week.

E. Exclusions

1. Demolition of existing structure (by Demolition Subcontractor, BP #08)
2. CFMF exterior wall clip / slip connections to base building steel (by General Trade Subcontractor, BP #21)
3. Furnishing and installing of loose lintels (by Masonry Subcontractor, BP #11)
4. Typical CFMF Seismic Restraint Details at Tops of Masonry Walls (By Masonry Subcontractor, BP #11), for an example see detail 1B on A605.
5. Expansion & Seismic joints (by Concrete, Roofing, and Exterior Wall Subcontractors (BP #10, 15, 19)
6. Exterior bollards (by Sitework Subcontractor, BP #09)
7. Steel for Street Signage, for example details 4, 5, & 6 on S212 (by Misc. Metals Subcontractor BP #13)
8. Miscellaneous Metals (by Miscellaneous Metals Subcontractor, BP #13), such as the metal stairs, elevator pit ladders, elevator hoist beams, areaway grating, vanity supports, overhead coiling door supports, Street sign framing (S212), and elevator pit ladders.
9. Exterior chain link fence (by Sitework Subcontractor, BP #09)
10. Roof screen at rooftop MEP equipment (by Roofing Subcontractor, BP #15)
11. Grouting of elevator sill angles, column baseplates, and beam bearing plates (by Concrete Subcontractor, BP #10)

F. Logistics and Schedule

1. This subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

G. Unit Prices

Additional Provisions/Scope of Work

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Greenwich, CT
BP12 – Structural Steel
Dated: 07.08.2024
Revised: 09.30.2024

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	**Amount**
Refer to Form of Proposal	

H. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternates shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	**Amount**
Refer to Form of Proposal	

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP13 – Miscellaneous Metals
Dated: 07.08.2024
Revised: 10.21.2024

C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***BP #13 Miscellaneous Metals Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***BP #13 Miscellaneous Metals Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible for performing a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
055100	Metal Stairs
057000	Decorative Metal Railings
057100	Monumental Metal Stairs

Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Additional Provisions/Scope of Work

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Spec. #	Specification Name
Div 00	Division 00 – Procurement and Contracting Requirements
Div 01	Division 01 – General Requirements
033250	Concrete Post-Installed Anchors
050805	Factory-Applied Coatings for Metal
055000	Metal Fabrications
079200	Joint Sealants

Bid Package Specific Scope

General

2. This Subcontractor shall include all 3D modelling in accordance with Turner's BIM Coordination Additional Provisions; this shall also include modeling all miscellaneous metals steel that is part of this subcontractor's scope of work. This subcontractor is responsible to coordinate with all the MEP trades and resolve any conflicts or coordination issues.
3. This Subcontractor is aware that this is a High-Performance Building and submittals should be submitted according to these standards. This Subcontractor has included all costs associated with meeting these requirements as set forth in the Division 1 Specifications.
4. This Subcontractor will provide the necessary written documentation for meeting the CT High Performance requirements as outlined in the Division 1 specifications.
5. This Subcontractor is responsible for distributing material to all floors as required and its protection from damage during delivery, handling, storage, and installation.
6. Temporary power will not be available for Misc Metal installation. It is agreed and understood that this Subcontractor shall utilize gasoline-powered welders or similar in order to perform the welding associated with erection of the Misc. Metal for this Project. In addition, this Subcontractor shall assume that temporary electric will not be available for this Subcontractor's use during steel erection. This Subcontractor shall include the use of generators as required for the duration of their Work.
7. Prior to entering the site this Subcontractor shall submit all fitness for use / inspection certifications required for cranes to the Construction Manager. This Subcontractor shall be responsible for all crane permits for his work. This matter is a very important safety requirement to follow and no crane will be allowed to be used unless this paperwork is submitted and up to date. There shall be a pre-planning meeting prior to erecting the crane on site.
8. This Subcontractor shall be responsible for ordering, scheduling and sequencing of steel deliveries required for the work. This shall include any premium time.
9. No truck parking/idling is allowed on streets adjacent to project site while waiting to unload. This Subcontractor shall include accommodations as required to adhere to "just in time" deliveries. Refer to Turner's "Logistic Plans – Scope of Work" for delivery restrictions.
10. This Subcontractor shall include all costs for two (2) round trip inspection visits for two (2) individuals at the structural steel fabrication plant. These costs should include travel, meals, lodging, and round-trip airfare if necessary, from Greenwich, CT.

Additional Provisions/Scope of Work

New Central Middle School Project
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Greenwich, CT
BP13 – Miscellaneous Metals
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11. This Subcontractor shall review, conform to, and furnish and install all requirements included in the Safety Additional Provisions included in this Agreement. This Subcontractor understands that this document is project specific, and all provisions must be included in this Subcontractor's bid.
12. This Subcontractor shall perform all field touchup of finishes as it relates to this scope of work.
13. This Subcontractor shall provide snow/ice removal as required to perform work of this trade. Provide all preheating of welds, covering etc. to work during winter conditions. Access /egress snow removal will be by Sitework Subcontractor. This subcontractor shall provide breakout pricing for Weather Protection in Application for Payment.
14. This subcontractor shall furnish & install their own pads, cribbing, dunnage, etc. that may be required for the rigging associated with the Miscellaneous Metals scope of work.
15. This Subcontractor shall coordinate with the Owner's Special Inspections Testing Agency (TBD) as required per the plans and specifications including those referenced in The Statement of Special Inspections. This Subcontractor shall provide the Construction Manager with a minimum of seventy-two (72) hour advance notice for all required inspections. This subcontractor shall provide means for the inspector to access work, including but not limited to appropriate lifts, ladders, scaffold, etc.
16. This subcontractor is solely responsible for the care & custody of their materials.
17. This subcontractor shall provide PE stamped drawings, calculations, & all delegated design as indicated in the contract documents.
18. This subcontractor is responsible to pull all permits as required for their scope of work. Any filing of permits associated with this scope to be performed by this subcontractor including associated filing fees to be paid by this subcontractor, permit fees by others.
19. This Subcontractor shall include 1 laborer per 10-person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m. while the subcontractor is performing work on site. Composite crew is intended to cleanup general debris not necessary associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)
20. This Subcontractor shall coordinate all Miscellaneous Metals with all other Subcontractors having work adjacent to or connecting to the Miscellaneous Metals scope of work.
21. This Subcontractor shall provide holes in Miscellaneous Metals required by other trades including, but not limited to the, vanity supports, etc. Coordinate work with applicable Subcontractors.
22. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
23. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
24. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.

25. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.

050805 Factory-Applied Coatings for Metal

26. This Subcontractor shall furnish and install all hot-dipped galvanized Miscellaneous Metals as shown on the contract drawings, and as specified and required for complete systems regardless of details shown on drawings.

27. This subcontractor shall repair any damage to the applied steel coatings that occurs during the course of delivery, rigging, and installation. Welds made on architecturally exposed steel shall be ground smooth by this subcontractor for finishes. This Subcontractor shall also provide field touch up of galvanizing due to field welds and areas adjacent to welds as required.

055000 Metal Fabrication

28. This Subcontractor shall design, furnish and install all miscellaneous metals, including but not limited to vanity supports, basketball hoop support steel, metal ladders, elevator hoist beam, elevator sump pump grating, gymnasium dividing partition support, etc. Note miscellaneous support steel framing includes framing and supports that are not specified in other specification sections but required for installation and are indicated on the contract documents. This subcontractor must coordinate with all other trades that are being supported by the miscellaneous metal.
29. This subcontractor shall furnish & install all necessary miscellaneous metals components, including but not limited to all connections, bearing plates, anchor bolts, embeds, etc. This subcontractor must coordinate with the concrete and or masonry subcontractor regarding embed layout and transfer of care & custody of these embedded components.

30. This Subcontractor shall be responsible to design, furnish and install all miscellaneous metals unless noted otherwise. This Subcontractor shall also be responsible to design, furnish and install all miscellaneous metals connections unless noted otherwise.

31. This subcontractor shall furnish & install miscellaneous metal support beams as needed for the divider curtain partition in the Gym.
32. This subcontractor shall furnish & install miscellaneous steel supports for the basketball hoops at the Gym.
33. This subcontractor shall furnish & install roof hatch ladders. For an example see A102C and A103C. Roof hatches themselves shall be **excluded** by this Subcontractor, as they will be furnished and installed by the roofing subcontractor.
34. This Subcontractor shall furnish and install the elevator sill support angles at each floor required but may not be shown on drawings.
35. This Subcontractor shall furnish and install the elevator hoist beam. This Subcontractor shall coordinate size and installation with Elevator Subcontractor.
36. This Subcontractor shall furnish and install the elevator sump pit covers and supports.

37. This Subcontractor shall furnish and install the elevator pit ladder.
38. This subcontractor shall furnish & install all radon pit framing, including but not limited to angles, deck, etc. See Detail ~~3~~ 2 on S201 on sheet for an example. The radon pit framing must be expedited to not delay underground work and placing the slabs on grade per the contract schedule. Coordinate piping requirements with Plumbing subcontractor.
39. This subcontractor shall furnish & install all steel framing, components, and connections necessary for the street signage. For examples see details 4, 5, & 6 on S212. This subcontractor must coordinate with the signage subcontractor prior to creating shop drawings, engineering, furnishing & installing.
40. This Subcontractor shall furnish all loose bearing and leveling plates that are required for this scope of work. These are required to be on site at the start of the concrete operation with a complete set of layout drawings and templates. This Subcontractor shall coordinate with the Concrete and Masonry Subcontractor and the project schedule for the timing of this work. This Subcontractor shall document transfer of care and custody of embedded items to the Concrete Subcontractor and provide the Construction Manager with a copy upon request.

055100 Metal Stairs, 057000 Decorative Metal Railings, & 057100 Monumental Metal Stairs

41. This Subcontractor shall design, furnish, and install all metal stairs, all guardrails and all handrails as complete systems, as shown on the contract documents and as specified. This shall include the appropriate design calculations for the stairs, railings, guardrails, and all supplemental support steel required beyond the structural members indicated on the contract documents.
42. This subcontractor shall design, furnish & install all connections required for metal stairs, handrails, guardrails, etc., including but not limited to any supplemental steel that may be required.
43. This subcontractor must expedite Stair 1 & Stair 2 per the contract schedule so that these stairs can be utilized for construction access and egress.
44. This subcontractor shall repair any damage to the applied steel coatings that occurs during the course of delivery, rigging, and installation. Welds made on architecturally exposed steel shall be ground smooth by this subcontractor for finishes. This Subcontractor shall also provide field touch up of galvanizing due to field welds and areas adjacent to welds as required.
45. This subcontractor shall furnish & install mock-ups of all exposed steel finishes, including but not limited to stainless steel rails.

079200 Joint Sealants

46. This Subcontractor shall furnish and install all joint sealants related to the miscellaneous metals scope as shown on the contract drawings

D. Safety - See Safety Additional Provisions

1. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible for removing snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers. Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.

2. This Subcontractor shall provide a site-specific plan on how they will comply with Turner's Ladder's Last Program.
3. This subcontractor shall ensure that any Lulls used on site are equipped with hydraulic fork positioners.
4. This subcontractor shall engage a 3rd Party to complete a GPR Survey to mark out existing utilities under and in the general area of any proposed Mobile Crane locations.
5. This Subcontractor shall ensure all connections involving washer plates are made final while the steel is still supported by the crane. Washer plates must be installed at the time of initial connection at all slap connections.
6. This Subcontractor shall furnish, install and maintain at all shaft opening for stairs at every other level debris nets capable of supporting a person for the purposes of fall arrest and left in place. Nets shall be inspected daily until this contractor demobilizes from the site.
7. This Subcontractor is required to prevent and contain all slag from hitting the ground and levels below. Flame resistant blankets and other suitable means are acceptable.
8. This subcontractor shall furnish and install all stairways in pace with the erection of each floor. All stairways will be shipped to the project with the necessary tread infills attached. The interior guardrails are to be installed in pace with the erection of each floor.
9. This Subcontractor to investigate and review deck/beam capacity prior to loading any floors with its materials and provide an engineered loading plan/drawing. **This may include additional supports required to utilize any floor/deck and or identifying specific areas that can be utilized to pick** from. This plan should account for tripping of columns not to exceed or point load structural assemblies. The loading plan must be reviewed and approved by the structural engineer prior to delivery. Post material loading specs on each floor and at location of a critical nature.
10. This Subcontractor shall provide all new rigging at the start of the project. Monthly documented inspections of all rigging shall be completed by this Subcontractor and provided to Turner upon request.

E. Exclusions

1. Demolition of existing structure (by Demolition Subcontractor, BP #08)
2. Furnishing and installing of loose lintels (by Masonry Subcontractor, BP #11)
3. Typical Seismic Restraint Details at Tops of Walls Under Metal Deck (By Masonry & Steel Subcontractors, BP #11 & 12)
4. Expansion & Seismic joints (by Concrete, Roofing, and Exterior Wall Subcontractors (BP #10, 15, 19)
5. Exterior bollards (by Sitework Subcontractor, BP #09)
6. Structural Steel (by Structural Steel Subcontractor, BP #12), such as the floor framing, roof joists, lateral bracing, and mechanical equipment dunnage
7. Concrete fill at stairs (by Concrete Subcontractor, BP #10)
8. Exterior fence & rails (by Sitework Subcontractor, BP #09)
9. Roof screen at rooftop MEP equipment (by Roofing Subcontractor, BP #15)

10. Grouting of elevator sill angles, column baseplates, and beam bearing plates (by Concrete Subcontractor, BP #10)
11. Overhead Coiling Door Supports (by General Trades BP #21)

F. Logistics and Schedule

1. This subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

G. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for a complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	Amount
Refer to Form of Proposal	

H. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternates shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	Amount
Refer to Form of Proposal	

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#15 – Roofing
Dated: 07.08.2024
Revised: 10.21.2024

C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***Roofing Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***Roofing Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible for performing a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
07 5423	Thermoplastic Membrane Roofing
07 7100	Roof Specialties
07 7200	Roof Accessories

Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Additional Provisions/Scope of Work

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Greenwich, CT
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Spec. #	Specification Name
DIV 00	Division 00 – Procurement and Contracting Requirements
DIV 01	Division 01 – General Requirements
07 6200	Sheet Metal Flashing and Trim
07 9513	Expansion Joint Cover Assemblies

Bid Package Specific Scope

1. This Subcontractor shall include all hoisting/rigging/scaffolding required for this scope of work.
2. This Subcontractor shall include all Sustainability requirements, including but not limited to CTHB Documentation.
3. This Subcontractor shall be responsible for maintaining fall protection at all Roofs for the duration of the project and fall protection removal (including removal of fall protection installed by Steel Bid Package). This Fall Protection plan shall be coordinated with Turner Safety. This Subcontractor shall also furnish and install engineered temporary tie-off points per Safety Ad pros.
4. This Subcontractor shall furnish and install all roofing systems in their entirety for a complete watertight system as shown on the Contract Documents, including but not limited to, protection board, vapor barrier, insulation, rubber membrane, metal flashings, copings, all necessary accessories i.e. walk pads, boots pitch pockets etc.
5. This Subcontractor shall include all sealants as required for a complete watertight system. This Subcontractor shall ensure the compatibility of the sealants with adjacent materials.
6. This Subcontractor shall furnish and install temporary watertight covers for all MEP curbs. These must be fastened to the curb.
7. This Subcontractor shall coordinate with ~~these~~ Masonry, Drywall, MEP, Glass & Glazing, Misc. Metals, etc. trades to confirm proper protection. This Subcontractor shall also spot check protection provided by other trades and report to TCCo any lack of or inadequate protection.
8. This Subcontractor shall include consistent and complete scheduling and coordination with all other trades to properly sequence the work and for the complete scope under this agreement.
9. This Subcontractor shall include following **Trade Allowance:** 3,008 sf of ¾" pressure treated plywood (94 – 4x8 sheets) for temp roof protection as directed by TCCo Superintendent.
10. This Subcontractor will provide a final sweep and washdown of the roof at the end of each phase. This will include but not be limited to cleaning debris out of the drains and removing any soiling from the roof membrane. Review when complete with TCCo for acceptance.
11. This Subcontractor shall include the following **Trade Allowance**: 160 hours for 5S, Safety & protection and logistics including temporary measures for watertight as directed by TCCo Superintendent. Laborer Time to be included as journeyman rate including any required supervision. This will be billed based on the final agreed contractual wage rates and may only be expended by written authorization of Turner Construction and any unspent portion of this unused scope hours will be credited at the end of your contract based on approved labor rate.
12. This Subcontractor shall be responsible to review the contract documents and compare the materials and procedures with the manufacturer's recommended details and procedures and shall report any discrepancies to Turner and the Architect prior to beginning any work.
13. This Subcontractor shall include securing the perimeter of the roof temporarily if the parapet is not installed by the time the roof is installed, and a comeback to seal to the parapet.

14. Furnish and install any requirements shown on the contract documents for the Future PV Array system.
15. This Subcontractor shall furnish and install all mock-ups required for this scope of work per the contract documents, for example as shown on Drawing A-315.
16. This Subcontractor shall include 1 laborer per 10-person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m. while the subcontractor is performing work on site. Composite crew is intended to clean up general debris not necessary associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)
17. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
18. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
19. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
20. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.

Spec. 07 5423 Thermoplastic Membrane Roofing

21. This Subcontractor shall furnish and install all TPO Roofing as shown on the contract documents for a complete system, including but not limited to Roofing Membrane and associated materials, coverboards, air vapor barriers, insulation, fasteners, sealants, walkway pads, etc.
22. This Subcontractor shall furnish and install flexible walkways per the contract documents. Include an additional 100’ of flexible walkway to be used at the discretion of the Turner Superintendent. This subcontractor will be responsible to protect the roof from damage and dirt and perform the work in a sequence that will keep the new roof clean.
23. This Subcontractor shall furnish all the standard, special, finish, etc. warranties identified in the specifications.
24. This Subcontractor shall furnish and install counterflashing, termination bar, and extended roofing system at skylight, for example as shown on 3B/A522.
25. This Subcontractor shall exclude furnish and install roof wood blocking, including but not limited to plywood, wood blocking, expansion joint blocking, wood curb blocking, etc. By BP #21 (Drywall & General Trades).

Spec. 07 7100 Roof Specialties

26. This Subcontractor shall furnish and install all roof specialties as required per contract documents, including but not limited to roof edge flashing, copings, fascia, expansion joint covers, scuppers, gutter & downspouts, and conductor heads.

27. This Subcontractor shall furnish and install all movement joints, including but not limited to, Roof to Roof and Roof to Exterior Wall, for a complete system as shown in the Contract Documents; for example, as shown on 2D/A530.
28. This Subcontractor shall furnish and install all movement and expansion joints for the roofing systems, for example as shown on 3E/A531. This Subcontractor shall coordinate with other trades for a complete system - BP #12 Structural Steel to furnish and install steel angles and BP #21 General Trades to furnish & install wood blocking & curb.
29. This Subcontractor shall furnish and install roof coverboard, roofing system, and stainless-steel sill pan at the Roof Louver Box Detail 1B/A531. Plywood sheathing, louver, CFMF, and insulation by BP #21 Drywall and General Trades.
30. This Subcontractor shall furnish and install thru-wall scuppers, for example as shown on 5E/A531.

Spec. 07 7200 Roof Accessories

31. This Subcontractor shall furnish and install all roof accessories per contract documents, including but not limited to roof hatches, smoke vents, curbs, metal covers, safety rail system, roof ladder safety post, pipe portals, pipe box, etc,
32. This Subcontractor shall furnish and install roof hatches with corresponding extended roof system as shown on contract documents, for example as shown on 1C/A530. Wood blocking by BP #21 Drywall and General Trades.
33. This Subcontractor shall furnish and install pipe portal system as shown on contract documents for a complete system, for example 5B/A530, 5D/A530 and 5E/A530.

Spec. 07 6200 Sheet Metal Flashing and Trim

34. This Subcontractor shall furnish and install all sheet metal flashing and trim at roofs as shown on contract documents, including but not limited to flashing of all roof penetrations and all MEP Curbs.
35. This Subcontractor shall furnish and install rainwater leader and custom fabricated galvanized bent plate, for example detail 3E/A511.

Add'l Items

36. This Subcontractor shall furnish and install all roofing systems of the front signage as shown on documents, including but not limited to membrane roof system, scupper, and fascia, for example as shown on 4D/A924.
37. This Subcontractor shall furnish and install all components of the Roof expansion joint shown on details on drawing A520 including but not limited to all Stainless Steel flashing, compressible insulation, fire resistant materials.

D. Safety

1. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible to remove snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers. Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.
2. This Subcontractor shall provide a site-specific plan on how they will comply with Turner's Ladder's Last Program.

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3. This subcontractor shall ensure that any Lulls used on site are equipped with hydraulic fork positioners.
4. This subcontractor shall engage a 3rd Party to complete a GPR Survey to mark out existing utilities under and in the general area of any proposed Mobile Crane locations.
5. This Subcontractor is to anticipate all moves on the roof and understand areas where fall protection may be required. In the event proper anchorage locations for fall protection do not exist it will be the responsibility of this Subcontractor to provide suitable anchorage points for their workers using Personal Fall Arrest Systems. A Site-Specific Fall Protection Plan including type of fall protection equipment, maintenance and use, fall hazard assessment, access and training of all employees involved with fall protection or work at heights. This must be submitted and documented with Turner Construction prior to beginning such work onsite.
6. This Subcontractor shall roof around and make watertight the temporary fall protection posts on all roofs and provide final termination of the roofing system once the posts are removed. This contractor shall remove and return the reusable perimeter guard railing system (installed by others), at all roof levels, in its entirety, including removing posts and all associated cables and hardware, wood and ensure roof is weather tight to allow for completion of the roofing system. This subcontractor shall maintain a standard guardrail system or other fall protection systems approved by the Turner Superintendent upon removing the reusable perimeter guard railing system.
7. This subcontractor shall ensure any fall protection roof flagging that is installed by this Subcontractor is adequate to accommodate all other trades working on the roof.
8. This Subcontractor shall provide necessary protection, whether existing or created by the Subcontractor, to prevent their employees and others from falling through holes, etc. Any hole or floor penetration 2 inches or greater in any dimension must be protected by a cover capable of supporting, without failure, at least twice the weight of employees, equipment, and material loads that may be imposed on the cover at any one time. Covers shall be secured when installed so as to prevent accidental displacement by the wind, equipment, or employees. All covers shall be color coded or they shall be marked with the word “Hole” to provide warning of the hazard. If for any reason this Subcontractor has to remove a cover it is their responsibility to replace cover, re-secure and mark. Caution or Danger Tapes shall not be considered as acceptable barriers.
9. This subcontractor shall ensure all flammable and combustible materials including but not limited to mop heads and solvent covered rags are removed from the site each day. Flammable/combustible materials will be properly stored in accordance with OSHA standards.
10. This Subcontractor shall provide all necessary means to prevent material from falling off the roof or scaffolding. Falling object protection below will be the responsibility of this Subcontractor.
11. This contractor shall ensure that a crane plan including crane layout, anticipated swing paths, loading calculations, etc. is provided for all crane picks. Preplanning meeting to be held at least 2 weeks before arrival of crane to the job site. A critical pick is any pick putting the crane at 75% of its rated lifting chart capacity and must include an approved Pre-Plan with Turner Construction.
12. This Subcontractor shall participate in a Safety preplanning meeting at least 4 weeks prior to the start of work. This subcontractor should be prepared to review Turner’s Safety and Health Program as well as their own including their Hazardous Communication Program. Logistical items to be discussed include crane layout and picks, kettle location, roof access, fire watch, material storage, fire prevention, crisis management plan, etc.

13. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible to remove snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers. Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.
14. This subcontractor shall provide (#) stair towers for access to all roofs on all buildings per the Turner Logistics Plans. This shall include all rental costs and daily/ per shift inspections by a competent person. This stair towers shall be 'Systems Scaffold' or equal. This shall extend to the roof and this Subcontractor shall include a walkway with rails to step off on to the upper roof. These shall Remain until all the trades have finished their work on these roofs.
15. This Subcontractor shall furnish, install, maintain and remove an engineered overhead protection system at (3) locations as protected building entrances.
16. This subcontractor shall furnish, install and remove (remove upon completion of all roof work) individual sets of temporary access stairs at all changes in roof levels exceeding 19 inches in height difference between the walking/working surfaces. This subcontractor will coordinate with the roofing subcontractor to adjust stair height and position to allow for permanent installation and access stairs to remain in service for access between roof levels. Each stair must meet OSHA stairways (1926.1052) requirements including handrails, guardrails (where a fall hazard exists), equal spacing of treads and anti-slip surface on stair surfaces and landings.
17. This Subcontractor shall provide a "Systems Scaffolding", or similar, stair tower at the exterior of the building structure, location to be coordinated with the Turner Superintendent onsite. This shall be erected allowing access to each level including the roof. This stair tower shall remain until at least one permanent stair has been installed and all work including stair pan infills, masonry and other work has been completed. Coordinate stair handrails and safety cables with stair layout and install cables at landings prior to stair removal. This subcontractor shall include all inspection and identification (red/green tags & sign off) associated with temporary work platforms and temporary access stairways per OSHA.

E. Exclusions

1. This Subcontractor shall exclude roof wood blocking (By BP#21 Drywall & General Trades)
2. This Subcontractor shall exclude skylight (By BP# 19 Glass, Glazing, and Metal Panels)

F. Logistics and Schedule

1. This subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

G. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for a complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	**Amount**
Refer to Form of Proposal	

Additional Provisions/Scope of Work

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H. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternates shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	Amount
Refer to Form of Proposal	

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#18 – Millwork & Casework
Dated: 07.08.2024
Revised: 10.21.2024

C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***Millwork & Casework Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***Millwork & Casework Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
06 2000	Finish Carpentry
06 4100	Architectural Wood Casework
06 4200	Wood Paneling
06 6116	Solid Surfacing Fabrications
09 7800	Interior Wall Paneling
10 1100	Visual Display Units
10 1416	Plaques
10 5502	Mail Sorter
12 3553.19	Wood Laboratory Casework
12 3600	Countertops

Shared Specifications

Additional Provisions/Scope of Work

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Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
Division 00	Procurement and Contracting Requirements
Division 1	General Requirements
07 9200	Joint Sealants
09 8430	Sound-Absorbing Wall and Ceiling Units
09 8416	Fixed Sound Reflective Panels
07 9513	Expansion Joint Cover Assemblies

Bid Package Specific Scope

Millwork and Casework

1. This Subcontractor shall furnish a blocking schedule indicating the exact locations of all in wall blocking required for the installation of new millwork, casework, counters and other items furnished and installed by this Subcontractor. Any blocking not indicated on this blocking schedule will be the responsibility of this Subcontractor. The blocking schedule & associated submittals must be approved by the design team prior to the start of exterior wall framing.
2. This Subcontractor shall include field verification of all installation locations prior to fabrication. Any discrepancies shall be brought to the attention of Turner Superintendent immediately.
3. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates for the millwork.
4. This Subcontractor shall furnish and install all grommets in all counters as indicated. Coordinate exact locations with Owner Representative as located in the field. This Subcontractor shall include a 2nd mobilization for the installation of grommets in locations as required by the Owner.
5. This Subcontractor shall provide all cut outs in millwork cabinets, counters, etc. as required for the installation of items by others including, but not limited to, sinks, electrical devices, etc.
6. This Subcontractor shall be responsible for the shimming of the new millwork as required for a level and plumb installation. This Subcontractor shall include all field scribing as required for a tight installation.

7. This Subcontractor shall broom sweep the entire work area where millwork operations are occurring at the end of each shift. This subcontractor shall utilize "dust-less" equipment while on the project.
8. This Subcontractor shall furnish and install all wood blocking required outside the GWB. This shall include counters mounted to plywood and all wood cleats. In wall blocking to be furnished and installed by the Drywall Subcontractor.
9. This subcontractor shall provide all wood paneling, trim, etc. in the auditorium, for example as shown on details A111.7. This subcontractor shall also include all out of GWB blocking for example as shown on detail 4B A111.7.
10. This Subcontractor shall furnish and install all counter, seating, and shelf support brackets, including, but not limited to, Rakks brackets, continuous aluminum angles, etc. This subcontractor shall coordinate with the Drywall subcontractor.
11. This Subcontractor shall include the costs for three full days of OFS to perform touch-ups of millwork and existing items throughout the project space. Turner / Owner / Architect will provide a list of items requiring touch-up including, but not limited to, doors, millwork, existing items.
12. This Subcontractor shall furnish and install protection over all horizontal and vertical items supplied by this Subcontractor. This subcontractor shall assume all protection is plastic corrugated board (correx) and is to be installed on an angle to avoid installed work being used as a surface to place material on. This Subcontractor shall maintain while your forces are onsite and prevent damage from dust, subsequent work, storage of materials, etc. as approved by Turner. This subcontractor shall provide a protection plan to Turner prior to installation.
13. This Subcontractor shall coordinate with the plumbing, mechanical, electrical, fire protection, low voltage and security subcontractors for final connections and equipment mounting in and through casework.
14. This Subcontractor shall furnish and install all trim/filler/etc. pieces required at built in appliances shown at this casework.
15. This subcontractor shall furnish and install all countertops, solid surfaces, windowsills, etc. This subcontractor shall coordinate and install all required cut outs with the MEP subcontractors.
16. This Subcontractor shall include all metal integral to the millwork and casework including, but not limited to trim, reveals, base, louvers, shelf channels, etc.
17. This Subcontractor shall include all glass integral to the millwork and casework including, but not limited to, shelves, sliding doors, etc.
18. This subcontractor shall furnish and install all display cases and all associated components, for example as shown on details 2E & 3E A805. This subcontractor shall include but not limited to all wood trim, ¾" plywood, shelving, glass, clad plywood, hardwood veneer, out of wall blocking/ shimming, etc. BP21 Drywall to install all framing, gypsum wall board, in wall blocking, GWB trim, and ½" plywood.
19. This subcontractor shall furnish and install all wire management systems, for example as shown on 1E/A803.
20. This subcontractor shall furnish and install all metal trim TRM1 through TRM5 as indicated on the plans. This subcontractor shall coordinate this work with adjacent trades work.
21. This subcontractor shall furnish and install all wood railings, wood shelves, wood base and brackets, for example as shown on detail 4A and 5A A805.
22. This subcontractor shall furnish and install all wood slats, shelf channels, etc. for a complete system. For example, as shown on 1E A804.

23. This subcontractor shall furnish and install all whiteboards and tack boards per plans.
24. This subcontractor shall furnish and install all plaques as indicated on the plans.
25. This subcontractor shall furnish and install all sound absorbing wall panels. This shall include but not limited to all panels, clips, blocking, shimming, etc. to complete the system and install.
26. This subcontractor shall furnish and install all wood wall paneling, for example as shown on 2D A111.2.
27. This subcontractor shall furnish and install all wood benches for example as shown on 3B/A804, include wood framing for all wood bench supports.
28. This subcontractor shall furnish all Rakks brackets and any other brackets that are called out to be installed in wall. These are to be turned over to BP21 Drywall to install. For example, as shown on 5E/ A805 & 1B/A801.
29. This subcontractor shall furnish and install all support brackets out of wall for example as shown on 1C/A803.
30. This subcontractor shall furnish and install the plastic laminate fascia ¾" plywood laminated for example as shown on detail 2E/A211, include sealant and backer rod.
31. This subcontractor shall furnish and install all visual display boards and associated trim. For example, TRM3.
32. This subcontractor shall furnish and install all brackets, millwork etc. associated with the display shelfs. Concealed blocking by BP21 Drywall. For example, as shown on 5A/A805.
33. This subcontract shall furnish and install EQ11 Mail Sorter.
34. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
35. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
36. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
37. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.
38. This subcontractor shall provide all acoustical diffusion wall panels ADP1 & ADP2.

Joint Sealants

39. This Subcontractor shall furnish and install all caulk joints within and to the adjacent surfaces as required for the complete installation of their work. This includes, but is not limited to, new counters, cabinets, backsplashes, etc.

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D. ***Exclusions***

40. This subcontractor shall exclude trash bins in millwork (By owner)
41. This Subcontractor shall exclude sound absorbing ceiling panels- SAC1- (By BP#22)
42. This Subcontractor shall exclude furnish and install of wood doors (Furnish by BP#20 & Install by BP#21)
43. This subcontractor shall exclude installing Rakks Brackets. (Install By BP#21) This subcontractor shall furnish only the rakks brackets.

E. **Safety - See Safety Additional Provisions**

F. **Logistics & Schedule**

1. This Subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

G. ***Unit Prices***

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for a complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	**Amount**
Refer to Form of Proposal	

H. ***Alternate Prices***

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternates shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	**Amount**
Refer to Form of Proposal	

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#19 – Glass, Glazing, & Metal Panels
Dated: 07.08.2024
Revised: 10.21.2024

C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***Glass, Glazing, & Metal Panels Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***Glass, Glazing, & Metal Panels Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible for performing a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
07 4213.23	Metal Composite Material Wall Panels
08 4313	Aluminum-Framed Storefronts
08 4413	Glazed Aluminum Curtain Walls
08 5653	Security and Service Windows
08 6300	Metal-Framed Skylights
08 8000	Glazing
08 8300	Mirrors
08 9100	Louvers
08 9200	Louvered Equipment Enclosures

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#19 – Glass, Glazing, & Metal Panels
Dated: 07.08.2024
Revised: 10.21.2024

Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
DIV 00	Procurement and Contracting Requirements
DIV01	General Requirements
03 3250	Concrete Post-Installed Anchors
07 2100	Thermal Insulation
07 2726	Fluid-Applied Membrane Air Barriers
07 6200	Sheet Metal Flashing and Trim
07 9200	Joint Sealants
08 7100	Door Hardware
08 0671	Door Hardware Schedule
07 9513	Expansion Joint Cover Assemblies

Bid Package Specific Scope

1. This Subcontractor shall be responsible for all testing required per the drawings, specs, and state requirements.
2. This Subcontractor shall include all Sustainability requirements, including but not limited to CTHPB Documentation.
3. This Subcontractor shall include the cost of all surveying and layout (baseline survey to be provided by others).
4. This Subcontractor shall include field Measurement as required prior to fabrications. This Subcontractor shall have the responsibility to field verify dimensions of existing openings prior to start of fabrication. This Subcontractor shall also coordinate dimensions with other Subcontractors installing work adjacent to items installed under this Subcontract. This Subcontractor shall be required to attend multiple coordination meetings scheduled by Turner to review shop drawings, existing conditions and tie-in locations.
5. This Subcontractor includes all blocking, brackets, fixtures, shims, connections, and other items necessary for a complete system.

6. This Subcontractor shall include all cutting, coring, sleeving, & firestopping for penetrations relative to your trade for a complete system.
7. This Subcontractor shall furnish all the standard, special, finish, etc. warranties identified in the specifications.
8. This Subcontractor shall be responsible to remove any temporary protection at window/door openings to perform their work and ensuring its weather tight at the end of each shift.
9. This Subcontractor shall be responsible for the removal of all factory stickers, emblems, and grease pencil marks, etc. adhered to the glass or frames. Final cleaning of the glass is by others.
10. This Subcontractor shall install shims as necessary to align and support their work in the proper location. In no case shall the shims interfere with or protrude into the caulking assembly identified in the design documents.
11. This Subcontractor shall take precautions where dissimilar metals will contact each other or corrosive substrates and protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricators or manufacturers of dissimilar metals.
12. This Subcontractor shall provide a complete operating system for scope of work.
13. This Subcontractor shall coordinate all work with all other Subcontractors having work adjacent to or connecting to the work of this Subcontract.
14. This Subcontractor shall include consistent and complete scheduling and coordination with all other trades to properly sequence the work and for the complete scope under this agreement.
15. This Subcontractor shall provide engineering stamp drawings and calculations of all delegated design items as indicated on the contract drawings.
16. This Subcontractor shall furnish and install all mock-ups required for this scope of work per the contract documents, for example as shown on Drawing A-315.
17. This Subcontractor shall include 1 laborer per 10-person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m. while the subcontractor is performing work on site. Composite crew is intended to clean up general debris not necessary associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)
18. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
19. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
20. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
21. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.

Additional Provisions/Scope of Work

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Exclusive Specifications

Spec. 07 4213.23 Metal Composite Material Wall Panels

22. This Subcontractor shall design, furnish and install metal composite wall panels as shown on documents for a complete system. This scope of work shall include, but is not limited to, clips, fastening and support required. This Subcontractor shall coordinate with BP #21 Drywall and BP #15 Roofing.
23. This Subcontractor shall include any internal supports for the metal panels as required to withstand the designed loads for the project.
24. This Subcontractor shall include full coordination of membrane flashing(s) and composite metal panels glazed into the window system as indicated.
25. This Subcontractor shall design, furnish and install Exterior Wall Assembly Type 07 & Type 06, including metal wall panel system, CFMF subgirt furring, fluid applied vapor barrier 4" Mineral Wool insulation, thermally broken wall bracket, CFMF "Z" Furring, and vertical L-girt. This Subcontractor shall exclude the wall back up, that includes the gypsum sheathing, CFMF, and gyp board, to be by BP #21 (Drywall & General Trades).
26. This Subcontractor shall design, furnish and install metal panels at soffits, including but not limited to Type S3 and Type S2. This scope of work includes metal composite panel, cold form metal hat channels, insulation, fluid applied membrane air and vapor barrier, and cladding support system. Gypsum sheathing and cold form metal framing hung from structure by BP #21 (Drywall and General Trades).
27. This Subcontractor shall exclude wood blocking at gym overhang, for example as shown on 4C/A521, by #21 (Drywall & General Trades).
28. This Subcontractor shall design, furnish and install metal panels at front signage as shown on documents, for example as shown on 5C/A924.

Spec. 08 4313 & 08 4413 Aluminum-Framed Storefronts & Glazed Aluminum Curtain Walls

29. This Subcontractor shall furnish and install all exterior and interior aluminum doors, door hardware, glazing and frames as indicated on the contract drawings for a complete operating system
30. This Subcontractor shall include coordination and make provisions to accommodate all raceways internal to the storefront and curtainwall system as required for others including but not limited to electrical, tele/data and security.
31. This Subcontractor shall furnish and install all security glazing and Bullet Resistant (BWSR) scope within storefronts and curtainwalls, including doors with corresponding hardware, glazing, and frame as shown on documents.
32. This Subcontractor shall design, furnish and install complete exterior and interior aluminum storefront & curtainwall systems. This Subcontractor shall include the engineering and performance criteria associated with the aluminum storefront & curtain wall systems as required by project specifications. All connections and reinforcement shall be indicated on the shop drawings. The scope of work shall include, but is not limited to, supports, angles, blocking, fasteners, cover pieces, anchorage & internal reinforcement as well as shadow boxes. For example, this Subcontractor shall provide anchorage at curtain wall header, as shown on 6C/A640.

33. This Subcontractor shall tie-in AVB into glazing pocket at required locations, for example, details as shown on drawing A641. Include stripping in AVB within all storefront and curtainwall pockets and minimum 1 foot overlap or per manufacturer minimum requirements on vertical face with adjacent work.
34. This Subcontractor shall furnish and install all extruded sunshade louvers per contract documents, including but not limited to finish, mounting brackets/sunshade clips, trims and sills, for example as shown on 1D/A640.

Spec. 08 6300 Metal-Framed Skylights

33. This Subcontractor shall design, furnish and install scheduled skylight system, including but not limited to support bracket, loose fill mineral wool, perimeter flashing, foam seal, and steel plate attachment, for a complete system per contract documents, for example as shown on 3B/A522. This Subcontractor shall coordinate skylight size, and design requirements with Roofer (BP #15) and Drywall (BP #21). Include AVB at perimeter of skylight per details.

Spec. 08 8000 Glazing

34. This Subcontractor shall furnish and install all glazing per contract documents. The scope of work includes, but is not limited to, windows, aluminum doors, glazed curtain walls, glazed entrances, interior borrowed lites, storefronts, security glazing, fire protection rated glazing, laminated glass interlayers and accessories, HM sidelites and transoms.
35. This Subcontractor shall furnish and install schoolguard glazing at required locations per contract documents. For example, as shown and noted on Aluminum Frame Elevations A630 – A632.
36. This Subcontractor shall furnish and install friction fit mineral wool insulation at all spandrel glazing for insulated coated spandrel glazing (ICS) per Glazing Graphic Legend A630 – A632.

Spec. 08 8300 Mirrors

35. This Subcontractor shall provide and install all glass mirror, for example as shown in Fitness Room. The scope of work shall include, but not limited to, blocking drawing, trim, edge sealer, mastic, fasteners, anchors and inserts.
36. This Subcontractor shall exclude toilet accessory mirror units, to be provided by BP#21 Drywall and General Trades.

Spec. 08 9100 Louvers

36. This Subcontractor shall furnish and install all interior and exterior louvers, for example as shown on roof plans and schedule on A610.
37. This Subcontractor shall exclude the louvered air return and doors.

Spec. 08 9200 Louvered Equipment Enclosures

38. This Subcontractor shall design, furnish and install all louvered equipment enclosures/louver screen wall as a complete system with specified finishes & color. This subcontractor shall provide louver screen panel, post, and post base plate, for example as shown on 1A/A531. This subcontractor shall exclude structural support post below post base for louver screen wall, by BP #12 (Structural Steel).

39. This Subcontractor shall furnish and install access gates, for example 3E/A516 and 4E/A516.
40. This Subcontractor shall provide delegated design submittals with Professional Engineer stamp as specified in 1.4-D & 1.4-C-1.

Shared Specifications

Spec. 07 2100 Thermal Insulation

41. This Subcontractor shall furnish and install thermal insulation between the work of this bid package both similar and dissimilar materials including but not limited to metal panels, insulated coated spandrel glazing, and skylights.

Spec. 07 2726 Fluid-Applied Membrane Air Barriers

42. This Subcontractor shall furnish and install fluid-applied where AVB terminates into scope furnished and installed by this subcontractor. Include stripping in AVB within all work provided by this subcontractor including but not limited to storefront and curtainwall pockets, louvers, skylight with a minimum of 1 foot overlap or per manufacturer minimum requirements with adjacent work.

Spec. 07 6200 Sheet Metal Flashing and Trim

43. This Subcontractor shall furnish and install sheet metal flashing and trim at perimeter, head, sill, and integral withing the work of this bid package both similar and dissimilar materials.
44. This Subcontractor shall include flashing at 3E/A522, similar to typical curtain wall at sill slab-on grade 3A/A641.

Spec. 07 9200 Joint Sealants

45. This Subcontractor shall provide and install all joint sealants, including but not limited to backer rod and sealant, within this subcontractors systems and between the work of this bid package both similar and dissimilar materials.
46. This Subcontractor shall be responsible for providing all compatibility tests for sealants to adjoining materials.

Spec. 08 7100 & 08 0671 Door Hardware & Door Hardware Schedule

47. This Subcontractor shall furnish and install all hardware associated with the aluminum (interior & exterior) doors as indicated on the contract documents. This Subcontractor shall provide construction cylinders for all doors. Furnishing of final cylinders & keying is by D/F/H Subcontractor; installation of final cylinders is by Drywall & General Trades Subcontractor. This Subcontractor shall coordinate with the Electrical Subcontractor for installation and power and security requirements.
48. This Subcontractor shall furnish and install the automatic door operators and the remote activation paddles, mag locks, etc. specified for the aluminum doors including but not limited to wiring, start up by manufacturers authorized vendor of all electrical hardware devices, testing, troubleshooting with security and fire alarm. This Subcontractor is responsible for all the low voltage wiring between the operator and the remote paddles. Coordinate with the Electrical Subcontractor for the line voltage connection to this system.

49. This Subcontractor shall exclude the furnish of electronic security hardware (card readers) as it will be supplied and installed by the Security Subcontractor. This Subcontractor shall coordinate required cutouts and installation with Security Subcontractor.

Add'l Items

50. This Subcontractor shall furnish a blocking schedule indicating the exact locations of all in wall blocking required for the installation of this subcontractors work including but not limited to , metal panels, storefront, curtainwall, pass through, mirrors and other items furnished and installed by this Subcontractor. Any blocking not indicated on this blocking schedule will be the responsibility of this Subcontractor. The blocking schedule & associated submittals must be approved by the design team prior to the start of exterior wall framing.
51. This Subcontractor shall furnish and install the bullet resistant aluminum pass thru window and the 2-pane sliding window(nurse's office).
52. This Subcontractor shall furnish and install all movement and expansion joints within and at Perimeter of Curtainwall, storefront and exterior wall systems installed by this subcontractor.

D. Safety

53. This Subcontractor shall provide a site-specific plan on how they will comply with Turner's Ladder's Last Program.
54. This subcontractor shall ensure that any Lulls used on site are equipped with hydraulic fork positioners.
55. This subcontractor shall engage a 3rd Party to complete a GPR Survey to mark out existing utilities under and in the general area of any proposed Mobile Crane locations.
56. This Subcontractor is responsible to ensure that the perimeter protection of each floor that is affected by their work be maintained on a daily basis. Temporary perimeter guard railing systems that are required to be removed to allow for the installation of the exterior wall, will be replaced by this subcontractor who will provide a separate standard guardrail system, such as a Guardian or Garlock system, to protect the floor edge while the exterior wall is being installed. There shall not be any unprotected slab edges at any time.
57. During the installation this Subcontractor shall provide a secondary redundant means of material support in case the primary means of support fails.
58. This Subcontractor is to have all glass and glazing bulk materials labeled with the weight and is to coordinate with Turner the safe storage of materials to mitigate overload to any part of the structure.
59. This Subcontractor is to utilize Leading Edge fall protection in all circumstances where installation is done from the inside of the building.
60. This Subcontractor shall install a Controlled Access Zone below elevated work areas.
61. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible to remove snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers. Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.

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E. Exclusions

1. This Subcontractor shall exclude furnish and installing glazing at HM and wood Doors (By BP #20 Doors, Frames, & Hardware).
2. This Subcontractor shall exclude metal copings and fascia (By BP #15 Roofing).
3. This Subcontractor shall exclude gutters, downspouts, and recessed rainwater leader (By BP #15 Roofing).
4. This Subcontractor shall exclude flush sound barrier mullion cap (By BP #21 Drywall).
5. This Subcontractor shall exclude bathroom stainless framed mirrors (By BP #21 General Trades).
6. This Subcontractor shall exclude the louvered air return within HM doors.
7. This Subcontractor shall exclude structural support post below post base for louver screen wall (By BP #12 Structural Steel).
8. This Subcontractor shall exclude furnishing final door cylinders. To be furnished by BP#20 and installed by this subcontractor.
9. This Subcontractor shall exclude line voltage power for door hardware (By BP #38 Electrical).

F. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	**Amount**
Refer to Form of Proposal	

G. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternate shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	**Amount**
Refer to Form of Proposal	

Additional Provisions/Scope of Work

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C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***Drywall & General Trades Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***Drywall & General Trades Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible for performing a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
05 5400	Cold-Formed Metal Framing
06 1000	Rough Carpentry
06 8316	Fiberglass Reinforced Paneling
07 2119	Foamed-In-Place Insulation
07 23410	Direct-Applied Exterior Finish Systems
07 4646	Fiber-Cement Wall Panels
08 3323	Overhead Coiling Doors
08 3326	Overhead Coiling Grilles
09 2116	Gypsum Board Assemblies
09 2216	Non-Structural Metal Framing
10 2113.19	Plastic Toilet Compartments
10 2123	Cubicle Curtain and Track
10 2800	Toilet Accessories
10 4400	Fire Protection Specialties
11 3013	Appliances
11 5400	Art Education Equipment
11 5410	Technology Education Equipment
11 6623	Gymnasium Equipment
11 6643	Interior Electronic Scoreboard
11 7300	Patient Care Equipment

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Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
Div 00	Division 00 – Procurement and Contracting Requirements
Div 01	Division 01 – General Requirements
03 3250	Concrete Post-Installed Anchors
05 5000	Metal Fabrications
07 2100	Thermal Insulation
07 2726	Fluid-Applied Membrane Air Barrier
07 9200	Joint Sealant
08 7101	Door Hardware Schedule
08 1113	Hollow Metal Doors and Frames
08 1416	Flush Wood Doors
08 7100	Door and Hardware
07 9513	Expansion Joint Cover Assemblies

Bid Package Specific Scope

2. This Subcontractor shall include Daily Cleanup to Dumpster & daily trash recycling dumpsters.
3. This Subcontractor shall include all Sustainability requirements, including but not limited to CTHB Documentation.
4. This Subcontractor shall furnish all the standard, special, finish, etc. warranties identified in the specifications.
5. This Subcontractor shall provide a complete operating system for their scope of work.
6. This Subcontractor shall furnish and install all work associated with this Bid Package required for the mock-ups depicted on Drawing A-315.
7. This Subcontractor shall be responsible for providing out of sequence work at no additional costs when required in coordination with other trades.
8. This Subcontractor shall include consistent and complete scheduling and coordination with all other trades to properly sequence the work and for the complete scope under this agreement.
9. This Subcontractor's Project Manager/Foreman shall participate in Pull Planning Sessions which affect their scope of work. This Project Manager/Foreman shall provide input to further develop the accurate sequence and timing for completion of the work.

10. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
11. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
12. This Subcontractor shall organize and neatly place all materials, tools, etc. This Subcontractor shall remove all debris resulting from their work on a daily basis to trash Rubbermaid tilt trucks provided by this Subcontractor, these buggies will be separate from the 24 provided for other trades. This Subcontractor shall be responsible to bring all their trash to a dumpster provided by others. No trash or debris will remain in the work areas at the end of the shift. If debris is left in the work areas, it will be removed to the dumpster by others, and the labor expense back charged to the responsible Subcontractor. Large sections of debris shall be disposed of to a dumpster provided by others by this Subcontractor.
13. This Subcontractor shall be required to store all onsite material on racks, carts or pallets capable of being easily moved and shall coordinate the delivery of and location of stored material with the Turner Superintendent. If material is stored on pallets, this Subcontractor is responsible to have a pallet jack onsite at all times. This Subcontractor shall include relocation and consolidation of materials as directed by Turner. This pallet jack must be accessible to Turner at all times. If it is to be chained and locked at the end of the shift, Turner must be provided with a key.
14. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
15. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.
16. This Subcontractor shall review, conform to, and furnish and install all requirements included in the Safety Additional Provisions included in this Agreement. This Subcontractor understands that this document is project specific, and all provisions must be included in this Subcontractors' bid.
17. This Subcontractor shall provide their own means of access for their scope of work. Any lifts used on interior slabs or elevated areas shall be approved by EOR or Third-Party Engineer.
18. All material cutting areas will be supplied with a portable waste container by this Subcontractor. Scrap will not be allowed to be thrown on the floor. All scrap must be put in this rubbish container.
19. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
20. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.

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Temporary Requirements

21. This Subcontractor has reviewed the Logistics & Phasing Plans and the Construction Schedule and has included all associated costs as relevant to this scope of work. It is extremely important to coordinate your work with the other adjacent contractors during the various phases and perform the work as required by these documents. No come back costs will be entertained.
22. This Subcontractor shall furnish, install and maintain temporary weather protection at all exterior wall openings, including but not limited to windows, doors, curtain wall, storefronts, etc.
    - At all window and other openings, this Subcontractor shall furnish, install and maintain provisions to provide for a watertight condition of the rough openings. The Glass and Glazing Subcontractor shall remove the temporary protection at window and storefront/curtain wall openings prior to installation of their work. Denseglass over openings will be removed by this Subcontractor. Other protection shall be removed by this Subcontractor as required for installation of new work.
    - At all storefront/curtainwall entrances, this Subcontractor shall furnish, install and maintain temporary partitions with temporary hollow metal frames, doors and hardware. Temporary walls to be watertight and constructed with metal studs, insulation and sheathing. Hollow metal doors and frames to be minimum 8-0 x 7-0, be equipped with heavy duty closers, and shall be lockable (keyed alike). Provide keys to Turner. Coordinate with the Glass & Glazing Subcontractor to locate temporary walls and doors at exterior storefront/curtainwall locations to allow installation without conflict with temporary provisions. This protection will remain in place until permanent systems are installed or as directed by Turner and removed by this Subcontractor. Include at **least 1 complete removal and replacement of the same.**
    - At all weathertight wall locations, this Subcontractor shall furnish and install all temporary partitions at discretion of Turner Superintendent. Temporary walls to be watertight and constructed with metal studs, insulation and sheathing. In addition to the Temporary Protection Plan requirements, an additional 100 LF of temporary partitions, approximately 15’ high and two (2) temporary HM doors and frames (7’0”x6’0”), hardware, including closers, shall be included to be used at the discretion of Turner. This Subcontractor shall include dismantling and removing as needed for new work or as directed by Turner.
23. This Subcontractor shall furnish, install, maintain, and/or remove temporary protection in accordance with Turner Safety Additional Provisions.
24. This Subcontractor shall furnish and build (15) temp power stands to support (2) quad outlets (by electrician), as well as (2) shelves for each stand, to support battery chargers. Locations to be determined by Tuner Superintendent.
25. This Subcontractor shall furnish and install a 4 sided- 10’ x 10’ x 8’ tall exterior plywood enclosure for the housing of exterior temp power and transformer for Phase 1 and Phase 2 of the project. This should include a lockable plywood door.
26. This Subcontractor shall build a 4’x8’ Information Board for display of Project Information, for example Building Permits. This board shall be on posts and moveable, as well as have a roof to keep the information board dry.

27. This Subcontractor shall build two (2) 4'x8' plan tables at the direction of Turner Superintendent. Plan tables to be constructed of wood. Tables to be dismantled and removed and disposed of, when directed by Turner
28. This Subcontractor shall furnish and deliver Four (2) walk behind floor sweepers. Cleaning should consist of the entire building footprint, and these sweepers should become available once exterior CFMF begins and be onsite until finished flooring is complete. These floor sweepers shall be (2)Bissell Commercial Mfr. Model # BG477 or equal and (2) Advance Terra 28B walk-behind sweepers – Include 10 filters for each unit.
29. This Subcontractor shall furnish and install temporary HM doors for use in permanent frames, hardware and locks for all electrical and data rooms.
30. This Subcontractor shall furnish and install temporary removable railing and net system(s) at all elevator shaft door openings per Turner Safety Standards.
31. This subcontractor shall furnish (24) Rubbermaid tilt trucks (60") for garbage and deliver to locations as directed by the Turner Superintendent for use by other trades. These shall be continuously monitored and be emptied by this subcontractor. These are not to be used for work or drawing tables on site. This subcontractor shall provide their own buggies/trucks for removal of their own drywall and stud debris.
32. This Subcontractor shall furnish and install plywood infills at newly installed metal stair pans to allow for use during construction. Along with any additional railings for temporary use at metal stairs. Removal by BP# 10 Concrete.
33. This Subcontractor shall furnish and install at the direction of Turner (200) - 3-foot-long cord holding Sky hooks similar or equal to the kind provided by Colony to be used by all trades on the project.

General

34. This Subcontractor shall include all requirements for "delegated design" items including, but not limited to, calculations, Professional Engineer Stamp, Errors and Omissions Insurance.
35. This Subcontractor shall provide all warranties per specifications.
36. This Subcontractor shall allow sufficient time to inspect and accept the work of the previous Subcontractor. Should any discrepancies be discovered, Turner shall be notified sufficiently in advance so that corrective action can be accomplished without effecting the progress of any other Subcontractor.
37. This Subcontractor shall provide all surveying and layout for the work of this package. The survey will be by Total Station or a Licensed Surveyor.
38. This Subcontractor shall include consistent and complete scheduling and coordination with all other trades to properly sequence the work and for the complete scope under this agreement.
39. This Subcontractor shall include 1 laborer per 10-person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m. while the subcontractor is performing work on site. Composite crew is intended to clean up general debris not necessary associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)

GWB Partitions, Ceilings and Soffits

40. This Subcontractor shall be responsible for distributing all gypsum board to the rooms in which it is to be installed, upon delivery. It will NOT be stockpiled in one area.
41. This Subcontractor shall furnish and install the partition top tracks and clips, prior to SOFP. Top track shall be deep enough to include required SOFP thickness and deflection. Refer to CODE Drawings.
42. This Subcontractor shall furnish and install ALL components for a drywall fire rated assembly, both horizontal and/or vertical portions. Scope of work includes but is not limited to, shaftliner, insulation, drywall, firestopping (shaftwall locations only), track, and doghouse/lids.
43. This Subcontractor is required to provide Fire Rating Identification of Drywall and Masonry Partitions. For example, stenciling of Partition(s) with verbiage provided in the Contract Documents and/or required by the local AHJ.
44. This Subcontractor shall furnish and install ALL interior partitions including but not limited to: partitions to the underside of decking, pre-manufactured drywall ceiling suspension system, low wall partitions with required support and stiffener posts, drywall ceilings, beam encasements, soffits as shown and specified. Sealants – acoustical at top and bottom of walls, or penetrations created by this subcontractor, in-wall insulation, flat stock strapping/bridging, in-wall blocking, continuous sheet metal filler for deck flutes, sound isolation clips off of steel, metal trim and accessories of exposed areas (for example Details 2A and 4A on A600), controls joints, all stud and/or track associated to the partition, gypsum board – including but not limited to abuse, cement, fire rated, sound, and fiberglass ballistic panel.
45. This Subcontractor shall furnish and install taping joint treatments for GWB Assemblies as indicated on the contract documents and specifications.
46. This Subcontractor shall furnish and install cement board for base support as indicated on Contract Documents. For example, Detail 4E on A806
47. This Subcontractor shall furnish and install all components for a complete Fiberglass Ballistic Panel Partition. For example, partition type B1, B1A, and B1B are shown on drawing A600.
48. This Subcontractor shall coordinate with all other trades and identify critical walls and sequences. This subcontractor will provide header openings in framing and drywall as needed for MEPF trades following MEPF coordination. Coordinate with all the MEPF subcontractors for sleeves and penetrations and perform the necessary framing as required. Include separate mobilizations as required. This Subcontractor shall coordinate and install critical walls to facilitate the installation of Ductwork and MEP systems where top of wall access will be restricted following MEP FP Rough in prior to being watertight. Where critical walls are required, this Subcontractor shall provide paperless/ dens shield drywall equivalent to required type per partition schedule to protect potential moisture and damage from this early installation. Assume critical walls are where ductwork is within 2 feet of walls and runs parallel to the wall inhibiting access post ductwork installation, for example ductwork at Corridor 1115, Choral Room 1122, Waiting 1010, etc.
49. This Subcontractor shall vacuum out clean all bottom tracks and chases prior to installing drywall.
50. This Subcontractor shall furnish and install all in-wall insulation as identified on the wall type drawings. Additionally, this must be coordinated with other trades performing in wall work.
51. This Subcontractor shall coordinate, furnish and install all in-wall blocking including but not limited to millwork/millwork sills, signage, railings, base, chair rails toilet accessories, curtainwalls, windows, window treatment, storefronts, doors, wall-mounted items, food service equipment, owner furnished items, televisions or similar AV items, etc. This subcontractor shall also furnish and install any in-ceiling blocking required to support light fixtures or MEP devices that are supported from

GWB ceilings. Coordinate with MEP trades. The blocking around window / storefront and curtainwall openings, at the jambs, heads and sills. For example, blocking shown on details on Drawing A-641. This blocking shall be installed before exterior AVB. Include separate mobilizations as required.

52. This Subcontractor shall coordinate their work with other trade Subcontractors and allow for additional studding or framing to accommodate the work of others (i.e. electrical boxes, equipment, mechanical fixtures, mechanical and electrical cabinets and piping, etc.).
53. This Subcontractor shall coordinate and install any in-wall brackets or supports required by the millworker prior to closing walls. Furnished by millworker.
54. This Subcontractor shall furnish and install all GWB ceilings and soffits, including but not limited to, GWB board, metal framing, insulation, expansion joint systems channel molding and trim pieces (for example 1E/A210).
55. This Subcontractor shall coordinate and design their suspended ceiling system attachments with the new structure and decking capacities for fastening. Refer to Note 12 on A200 series drawings. This Subcontractor shall provide delegated design and include shop drawings and calculations indicating, but not limited to, load carrying capacities, point loads, etc
56. This Subcontractor shall furnish and install the framing and GBW associated to the Clouds located in the Auditorium. For example, Detail 1A/A111.8.
57. This Subcontractor shall design, furnish & install an independent support system for all hung equipment, fixtures, ceiling and piping system that are directly below the metal roof deck. This support system must attach to structural steel framing members as the metal roof deck cannot be utilized for support. Refer to A200 series drawings General Note #12 for criteria. This Subcontractor shall provide delegated design and include shop drawings and calculations indicating, but not limited to, load carrying capacities, point loads, etc. This Subcontractor shall include adding miscellaneous metal supports into the 3D model for coordination with all MEP trades.

Access Doors and Frames

58. This Subcontractor shall be responsible for the receipt, distribution, storage and installation of all access doors/panels being provided by Food Service, Elevator, and MEPF subcontractors (including all related blocking required for same). The Food Service, Elevator and MEPF Subcontractors have been instructed to arrange their work in such a manner so as to minimize the quantity of access doors required. All required access doors or panels shall be furnished from one (1) manufacturer with their ratings consistent with the respective partition/ceiling/floor ratings.

Expansion Control

59. This Subcontractor shall furnish and install expansion joint assemblies/covers at all interior drywall to drywall, drywall to ceiling, and masonry to drywall expansion joints, including associated blocking per the documents. This includes but not limited to the complete install of all joint types CWJ-1, CCJ-1, IFJ-1, IWJ-1, IWJ-2, EWJ-1 where shown on plans. Coordinate expansion joint assemblies with adjacent finishes.
60. This Subcontractor shall furnish and install any GWB ceiling and/or wall transitions and reveals associated to their work. For example, Detail 5F/A210

Additional Provisions/Scope of Work

New Central Middle School Project
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Joint Sealants

61. This Subcontractor shall furnish and install joint sealants within this work and where materials furnished and/or installed by this Subcontractor; including but not limited to control and expansion joints, adjacent to other building materials; exclude joint sealants for trades who follow your work (i.e. casework, plumbing fixtures).

Cold Formed Metal Framing

62. This Subcontractor shall design, furnish and install metal stud or light gage framing as indicated in the contract documents including attachments to structural steel framing.
63. This Subcontractor shall design, furnish and install all slip connections as indicated in the contract documents at cold formed metal framing or metal studs.
64. This Subcontractor shall furnish and install the CFMF tracks and clips, prior to SOFP. Top track and clips shall be deep enough to include required SOFP thickness and deflection. Refer to CODE Drawings.
65. This Subcontractor shall furnish and install engineered posts for pony walls as indicated on the Contract Documents. For example, detail 7/S210 or 5E/A602.

Exterior Framing

66. This Subcontractor is responsible for providing its own means to access the exterior wall construction.
67. This Subcontractor shall furnish and install the exterior cold formed metal framing as shown and specified. Scope of work includes, but not limited to, metal framing, deflection track, gypsum board, fiberglass faced gypsum board sheathing, and interior cavity insulation (spray and other). This Subcontractor shall coordinate stud spacing with other trades as required
68. This subcontractor shall keep sheathing in place over window openings for weather protection, to be cut out at a later date by this Subcontractor per direction of Turner Superintendent.
69. This Subcontractor is responsible for ensuring that the perimeter protection of each floor that is affected by their work be maintained on a daily basis. If guardrail systems need to be modified or removed to install the work this Subcontractor must ensure that they protect the floor edge by replacing the guardrails or installing a separate standard guardrail system. Open sided floors cannot be unprotected at any time. If this subcontractor's work replaces the guardrail edge protection this contractor will be responsible for removing and coordinating the return of the reusable guardrail/fall protection system (posts, cables, turnbuckles, clips) to the concrete or structural steel subcontractors. Material should be palletized and returned in an orderly fashion.
70. This Subcontractor shall provide the metal stud framing and insulation for the roof parapets and the metal stud framing for the roof expansion joints.
71. This Subcontractor shall furnish and install all framing, wood blocking and plywood including but not limited to all parapets and overflow scuppers, wood and framing for curbs associated to Roof Equipment (i.e. Condenser Units, Exhaust Fans, etc.), Expansion Joint blocking and wood curb (for example detail 3E/A531) and wood blocking and framing for roof hatches, skylights and perimeter

fascias throughout (For example, Detail 1A/A521). This Subcontractor shall also furnish, install, and coordinate with the roofer, plywood and wood blocking and CFMF for blocking support associated to the roofing system and its buildup (For example, Detail 1C/A521). This subcontractor shall include CFMF angle(s) as required to support their work, for example detail 3B/A522.

72. This Subcontractor shall furnish and install CFMF, mineral wool insulation, and blocking/plywood associated to the Roof Louver Boxes similar to that of 1B/A531.
73. This Subcontractor shall furnish and install CFMF, sheathing, blocking, plywood and spray foam within stud cavity for Exterior wall assemblies. This Subcontractor shall also furnish and install top of wall CFMF Galvanized Plate as shown on Contract Documents. For Example, Top of Wall Plate shown on 3E/A501.
74. This Subcontractor shall furnish and install the FCP (Fiber Cement Panel) Rainscreen System throughout including but not limited to framing, sheathing, fasteners, AVB, insulation and trim for penetrations. Coordinate with Mason for FCP to be installed on Masonry backup, include patching of AVB as required for attachments.
75. This Subcontractor shall furnish, install, and coordinate the installation of framing, blocking and plywood for the MCM (Metal Composite Material) Wall Panels as indicated on the Contract Documents.

Miscellaneous Work

76. This Subcontractor shall furnish and install all overhead coiling grilles/doors and required support steel and blocking whether shown or not. This Subcontractor is responsible for all control wiring to make grilles operational per the documents and shall coordinate the electrical requirements with the Electrical Subcontractor prior to completing installation. This subcontractor is responsible for any engineering for support and/or function of the overhead door system.
77. This Subcontractor shall furnish and install the CFMF 12GA Clips and Sheetmetal shown at top of wall(s) for all Masonry Partitions. For example, Details 1C and 1B on A-605. As well as the diagonal CFMF bracing/bent plate and clips. For example, 1A and 2A on A-605.
78. This Subcontractor shall furnish and install framing studs and track shown to support all display cases, example shown on 1E-3E A805. Along with GWB, blocking and fry reglet shown.
79. This Subcontractor shall furnish and install all Spray Foamed Insulation as identified on the Contract Documents and Specifications. This work shall be performed ~~a~~ on second shift, as not to affect other trades. This subcontractor shall furnish and install any preformed mineral wool insulation plugs or similar at metal deck flutes, butyl sealant and metal backer plates at framed partitions as indicated on the contract documents. For example typical detail 1E/A501.
80. This Subcontractor shall furnish and install a complete EIFS (Exterior Insulation Finish System) as indicated on the Contract Documents and Specifications.
81. This Subcontractor shall coordinate, furnish and install all Specialty Equipment identified on drawing A912 (Specialty Equipment –Product Information Schedule) with a “Purchase – C” to be furnished and installed by this Subcontractor, and items identified with a “Purchase – O” will be by Owner, but installed by this Subcontractor if it states “Install – C”. This subcontractor will be responsible for coordinating and installing equipment by the Owner identified in the Schedule. Provide necessary blocking as needed for equipment. Electrical and Plumbing will be by others. Scope shall include all necessary supports and blocking for all wall mounted display items specified.
82. This Subcontractor shall furnish and install all Fire Extinguishers, Fire Extinguisher Cabinets, and wall mounted brackets and blocking as indicated on the drawings.

83. This Subcontractor shall furnish and install all FRP / fiber-reinforced plastic sanitary wall panels as indicated on the contract documents.
84. This Subcontractor shall furnish and install all Cubicle Curtains and track as indicated on the contract documents and any supporting framing and blocking associated for install.
85. This Subcontractor shall furnish and install fire rated plywood backer boards at locations including but not limited to electrical panels, communications, and A/V equipment.
86. This Subcontractor shall coordinate, furnish and install the framing, blocking, and plywood for Locker installation. For example, detail 2B/A805. Lockers by others.
87. This Subcontractor shall coordinate, furnish, and install metal framing and drywall for Built-in Benches as indicated on Contract Documents. For Example, detail 5E/A805
88. This Subcontractor shall furnish and install the toilet partition enclosures, entrance screens and urinal screens including all anchorage, in-wall blocking, bracing support, overhead supports, etc. required to meet contract document requirements.
89. This Subcontractor shall furnish and install all Gym Equipment and Interior Scoreboard Equipment as identified on the Contract Documents and Specifications. Including but not limited to furnishing wall padding, basketball system, controls for gym equipment, floor mounted equipment etc. for a full functioning system. This Subcontractor shall coordinate with other adjacent trades for installation and function of their work. The power wiring of electronics will be by the Electrician, any required interconnected wiring to be by this subcontractor. This subcontractor shall include supports as required for equipment supplied by this subcontractor.
90. This Subcontractor shall furnish and install all Patient Care Equipment as indicated on the Contract Documents.
91. This Subcontractor shall furnish and install all Toilets Accessories and associated blocking as indicated on the Contract Documents and Specifications.
92. This Subcontractor shall furnish and install any drywall partition end caps or trim caps that abut up to adjacent constructions. For Example: Detail 1B/A541
93. This Subcontractor shall include the following **Trade Allowance:** 200 hours for a Laborer and material for use as directed by Turner for 5S, cleaning and additional safety provisions and logistics. Laborer Time to be included as journeyman rate including any required supervision. This will be billed based on the final agreed contractual wage rates and may only be expended by written authorization of Turner Construction and any unspent portion of this unused scope hours will be credited at the end of your contract based on approved labor rate.
94. This Subcontractor shall include the following **Trade Allowance:** 200 hours for a Carpenter and material for use as directed by Turner for additional safety provisions and logistics. Laborer Time to be included as Foreman rate including any required supervision. This will be billed based on the final agreed contractual wage rates and may only be expended by written authorization of Turner Construction and any unspent portion of this unused scope hours will be credited at the end of your contract based on approved labor rate.
95. This Subcontractor shall furnish and install all firestopping at all shaftwall assembly locations.

Doors, Frames and Hardware

96. This Subcontractor shall receive, and install all doors, frames, and hardware for this project. Upon delivery this subcontractor will review and accept doors as delivered. Written approval must be submitted to Turner Construction upon request.
97. This Subcontractor will take possession of doors frames and hardware and securely, and properly store until installation. This subcontractor shall inventory all deliveries upon receipt and notify Turner of any discrepancies or missing items. This subcontractor shall turn over all hardware not to be to be installed by this subcontractor to Turner Construction (i.e. power supplies). This Subcontractor will provide their own lockable room(s) for the storage of hardware, at a location agreed upon with Turner Superintendent.
98. This Subcontractor shall be responsible to receive, offload and install all hollow metal frames and doors, including at all new and masonry wall partitions. This Subcontractor shall be responsible to securely brace all door frames, check and adjust as masonry walls are being erected. This subcontractor is ultimately responsible for all frames being true and plumb. Grouting of frames in existing masonry partitions shall be by the Masonry Subcontractor. This subcontractor shall coordinate and provide a list of HM frames needed for installation at least 6 weeks prior to the start of drywall/sheathing of partitions.
99. This Subcontractor shall furnish, install and perform all control wiring necessary to make operational all overhead coiling doors, per the documents and shall coordinate the electrical and security requirements with the Electrical and Security Subcontractors prior to completing installation. Line voltage wiring by Electrical subcontractor.
100. This Subcontractor shall install final keyed cores at all doors, including the aluminum and glass doors and STC doors.
101. This Subcontractor shall install all door accessories and hardware provided by Door Vendor (BP#20), including but not limited to Door Closers, Locksets, Weatherstripping, Thresholds, Hinges, etc.
102. This Subcontractor shall Include the following **Trade Allowance:** 60 hours for door frame adjustments including materials as required (i.e. Bondo). Mechanic Time to be included as Foreman rate including any required supervision. This will be billed based on the final agreed contractual wage rates and may only be expended by written authorization of Turner Construction and any unspent portion of this unused scope hours will be credited at the end of your contract based on approved labor rate.
103. This Subcontractor shall furnish and install insulation and blocking for HM Door frames as indicated on the Contract Documents.

Add'l Items.

104. This Subcontractor shall provide (20) Expandable Safety Plastic Barriers – Portable Fence Units, for use to be determined by Turner Superintendent. These units shall be "Orange Expandable Safety Plastic Barrier: Adjustable 75" – Portable Fence" as found on Amazon or equal.

D. Exclusions

1. This Subcontractor shall exclude Room Signage (By BP#28).

2. This Subcontractor shall exclude Food Service Equipment (By BP#30).
3. This Subcontractor shall exclude top of Wall Firestopping at top of walls (By BP#17) except at shaftwall locations (Shaftwall firestop by this subcontractor).
4. This Subcontractor shall exclude Bathroom vanity support Brackets (By BP#13 Misc. Metal)
5. This Subcontractor shall exclude Metal Composite Material (By BP#19 Glass & Glazing)

E. Safety

2. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible for removing snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers. Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.
3. This Subcontractor shall provide a site-specific plan on how they will comply with Turner's Ladder's Last Program.
4. This subcontractor shall ensure that any Lulls used on site are equipped with hydraulic fork positioners.
5. This subcontractor shall engage a 3rd Party to complete a GPR Survey to mark out existing utilities under and in the general area of any proposed Mobile Crane locations.
6. This Subcontractor to investigate and review floor capacity prior to loading floor with sheetrock and provide a loading plan. The loading plan must be reviewed and approved by the structural engineer prior to delivery. Post drywall loading specs on each floor and at locations of a critical nature.
7. This subcontractor shall provide an engineered scaffolding plan for all work in shafts and stairwells. Compatibility between systems must be demonstrated to ensure stability of stairwell scaffold structures.
8. This subcontractor shall remove anchorage points installed by others, including "Safe T Straps" during ceiling installation.
9. This Subcontractor is responsible for ensuring that the perimeter protection of each floor that is affected by their work be maintained on a daily basis. If Guardrail systems need to be modified or removed to install the work this Subcontractor must ensure that they protect the floor edge by replacing the guardrails or installing a separate standard guardrail system. Open sided floors cannot be unprotected at any time. If this subcontractor's work replaces the guardrail edge protection this contractor will be responsible for removing and coordinating the return of the reusable guardrail/fall protection system (posts, cables, turnbuckles, clips,) to the concrete or structural steel subcontractors. Material should be palletized and returned in an orderly fashion.
10. This Subcontractor shall utilize fasteners when drywall is stored in a vertical/leaning manner to prevent accidental displacement equal or similar to RockSteady clips.
11. If scissor lifts are used to install drywall the lifts shall be equipped with a drywall package from the manufacturer.
12. This Subcontractor to ensure that drywall is stored flat and not leaning vertically against any surface. It is expected that the drywall stacks will be stored on dollies or in another fashion to allow for portability. PORTABLE A FRAME DOLLIES ARE TO HAVE LOCKABLE CASTER WHEELS.
13. This contractor shall not construct temporary guardrails using metal studs or track.

14. This subcontractor shall ensure that when securing wood guardrails to concrete or masonry, Tapcon screws
or an equivalent fastener are to be used (a wire and nail is not an acceptable method). When securing wood components together proper wood screws are required, sheetrock screws are not acceptable.
15. This subcontractor shall adequately secure doorframes to prevent tipping over.
16. This Subcontractor to also ensure all guards are maintained on equipment at all times. All material cutting areas will be supplied with a portable waste container by this Subcontractor. Scrap will not be allowed to be thrown on the floor. All scraps must be put in this rubbish container.
17. This Subcontractor shall use self-retractable knives to score drywall.
18. This Subcontractor shall establish an unloading and loading zone. If this subcontractor is loading the building on an upper level a fall protection system must be installed with leading edge capability.
19. This subcontractor shall provide and maintain 20 lb. ABC fire extinguishers and stands to be placed every 3000 SF around the entire site and building at all levels. Stands to be Fire-Mate Extinguisher Stand P14-1137 or equal. This subcontractor shall provide annual inspections of all fire extinguishers by a licensed 3rd party inspection company.
20. This subcontractor shall install portable eye wash stations on each floor. Locations to be coordinated with Turner. The eye was stations must be capable of delivering flushing fluid to the eyes at not less than 0.4 gallons per minute for 15 minutes. This subcontractor should furnish and install these as soon as the space is turned over to Turner.
21. This subcontractor is to furnish, install, maintain and remove 4 jobsite posting boards. Each shall be 4' high x 8' wide and shall be mounted on 4" x 4" posts 42" above the adjacent walking surface. Each posting board shall have a 2' wide roof water atop to help keep elements off the postings. All boards shall be made of pressure treated 4" x 4"s and 3/4" PT plywood. Boards to be located by Turner.
22. TEMPORARY STAIR PROTECTION: a.) This Subcontractor is to furnish, install, maintain and remove temporary handrails at all metal stairway locations along all stair stringers and landing areas. The railing system to be used is the Stringer Shield Stair Rail Clamping System by Safety Maker, Inc.as shown, including all the lumber for the handrail and midrail. B.) This Subcontractor to furnish, install, maintain and remove Eagle Industries Flame Retardant Safety Debris Netting ¼" knitted mesh over the entire railing system to prevent loose materials from falling through the handrails. C.) This Subcontractor shall furnish, install, maintain and remove temporary wood infills at all metal stair tread and landing locations. Infills must be full width without any voids or gaps between the infill and the metal framing of the stairways.
23. This Subcontractor is to provide daily documented inspections and perform maintenance of all perimeter guardrail systems at all floor and shaft edges upon the Structural Steel Contractor's demobilization from site. Documented training must be provided for all employees who will be maintaining the cables. The proper tools (i.e. come along) will be provided, by this subcontractor, to adequately tighten cables.
24. This subcontractor shall furnish and install at the direction of Turner 200 - 3-foot-long cord holding Sky hooks similar or equal to the kind provided by Colony to be used by all trades on the project.
25. This subcontractor shall furnish, install, maintain and remove temporary removable wooden guardrails with scrim at the front of all elevator shaft locations at each level to allow elevator installers entry into the shaft-way. Rails shall be in a three-sided configuration with the side parallel to the shaft opening 2' from the opening. A removable scrim shall be hung from above the elevator opening and extend down to the guardrail to prevent material from entering the shaft.

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F. Logistics & Schedule

1. This Subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

G. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for a complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	**Amount**
Refer to Form of Proposal	

H. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternates shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	**Amount**
Refer to Form of Proposal	

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#22 – Acoustical Ceilings
Dated: 07.08.2024
Revised: 10.21.2024

C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***Acoustical Ceilings Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detailed references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all the ***Acoustical Ceilings Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible for performing a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail /symbol /illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
09 5100	Acoustical Ceilings

Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/ symbol/ illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
Division 00	Procurement and Contracting Requirements

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#22 – Acoustical Ceilings
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Division 1	General Requirements
07 9200	Joint Sealants
07 9513	Expansion Joint Cover Assemblies
09 8430	Sound-Absorbing Wall and Ceiling Units
09 8416	Fixed Sound Reflective Panels

Bid Package Specific Scope

General-

1. This Subcontractor shall include 1 laborer per 10-person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m. while the subcontractor is performing work on site. Composite crew is intended to cleanup general debris not necessary associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)
2. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
3. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
4. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
5. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.

Acoustical Ceiling Panels-

6. This Subcontractor shall provide all surveying and layout for the work of this package.
7. This Subcontractor shall furnish & install all acoustical ceiling panel types eg: metal and ACT with associated suspension systems as shown in the contract drawings and as listed in the room finish schedule.
8. This Subcontractor shall follow the reflected ceiling plan notes carefully as to locations where rooms get new ceilings and note the various types of ceilings. This Subcontractor shall coordinate with the MEP contractors for exact locations where duct and pipe run in order to facilitate the least amount of impact to installation of grid.
9. This Subcontractor shall furnish and install all ACT ceiling trim, perfricated prefinished metal trim, etc. For example, as shown on ceiling details on sheets A210 and A211.

10. This Subcontractor shall coordinate with the Painting Subcontractor to ensure the walls and soffits are taped and prime painted prior to the installation of the edge molding.

11. This Subcontractor shall include consistent and complete scheduling and coordination with all other trades to properly sequence the work and for the complete scope under this agreement.

12. This Subcontractor shall install the "Cut" tiles such that other trades can install their devices in preparation for an above ceiling inspection by the Building Official. The "full" ceiling tiles shall not be installed until the CM has received written signoffs from all Mechanical, Electrical, Plumbing, Fire Alarm, Low Voltage, Security, etc. Subcontractors that their scope is complete, and Turner Construction directs this subcontractor to proceed with this work.

13. This Subcontractor shall review the Mechanical, Fire Protection, Electrical, Fire Alarm, Security, Low Voltage, etc. drawings to confirm the count of the fixtures and devices that will be penetrating the ceiling systems installed by this Subcontractor. The Architectural RCP may not accurately represent the scope of work.

14. This Subcontractor shall include all trim and accessories at the acoustical ceiling system.

15. This Subcontractor shall include installing ceiling hangers for the suspension systems or any supports required prior to the spray fireproofing being applied to the deck above.

16. This Subcontractor shall furnish and install all prefabricated, prefinished metal edge trim. For example, as shown on detail 1D A210.

17. This subcontractor shall properly seal all gaps and penetrations at the ceiling system that is to be installed in the food service areas. This shall include but is not limited to ceiling to wall gaps, MEP penetrations, etc. This shall comply with the local Department of Health requirements.

18. This subcontractor shall furnish and install all sound absorbing ceiling panels. Refer to spec section-09 8416 all SAC1 locations. For example, as shown on A201E and detail 1E A211. This subcontractor shall include the entire system including but not limited to panels, CFMF clips, supports etc.

19. This subcontractor shall furnish and install all CFMF clips and supports required for their system. These clips and supports are to be installed prior to spray on fireproofing.

20. This subcontractor shall coordinate with the electrical subcontractor where their ceiling system integrates with various light fixtures. For example, as shown on 3C A210.

21. This subcontractor shall coordinate their ceiling system with BP37 HVAC & Controls for the radiant ceiling panels and chilled beams. BP37 HVAC & Controls is to furnish and install the radiant ceiling panels and chilled beams.

22. This Subcontractor shall design, furnish & install an independent support system for all hung equipment, fixtures, ceiling and piping system that are directly below the metal roof deck. This support system must attach to structural steel framing members as the metal roof deck cannot be utilized for support. Refer to A200 series drawings General Note #12 for criteria. This Subcontractor shall provide delegated design and include shop drawings and calculations indicating, but not limited to, load carrying capacities, point loads, etc. This Subcontractor shall include adding miscellaneous metal supports into the 3D model for coordination with all MEP trades.

23. This subcontractor shall paint and finish any cut exposed edges to all ceiling tiles and/ or ceiling systems.

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#22 – Acoustical Ceilings
Dated: 07.08.2024
Revised: 10.21.2024

Joint Sealants

24. This Subcontractor shall provide acoustic joint sealants as specified in Specification 07 9200 and where indicated between the ceiling wall angle and the adjoining wall.

Expansion Control

25. This Subcontractor shall furnish & install the expansion joint system at acoustical ceiling locations as well as between acoustical ceiling panels and walls where indicated. Note: the expansion joint system between gypsum board ceilings is by the General Trades subcontractor. This includes but not limited to the complete install of all joint types CWJ-2, CCJ-2, where shown on plans. Coordinate expansion joint assemblies with adjacent finishes.

D. Exclusions

1. This Subcontractor shall exclude expansion joint systems within gypsum board ceilings to walls or gypsum board ceilings to each other. (By BP#21)
2. This Subcontractor shall exclude sound absorbing wall panels, ~~AWP12~~ (By BP#18)
3. This subcontractor shall exclude furnishing and installing the radiant ceiling panels. By BP37 HVAC & Controls.

E. Safety

1. This subcontractor shall provide an engineered scaffolding plan for all work in shafts and stairwells. Compatibility between systems must be demonstrated to ensure stability of stairwell scaffold structures.
2. This subcontractor shall remove anchorage points installed by others, including “Safe T Straps” during ceiling installation.
3. If scissor lifts are used to install ceiling grid the lifts shall be equipped with a drywall package from the manufacturer.
4. It is expected that the ceiling stacks will be stored on dollies or in another fashion to allow for portability. PORTABLE A FRAME DOLLIES ARE TO HAVE LOCKABLE CASTER WHEELS.
5. This contractor shall not construct temporary guardrails using metal studs or track.
6. "This Subcontractor to also ensure all guards are maintained on equipment at all time. All material cutting areas will be supplied with a portable waste container by this subcontractor. Scrap will not be allowed to be thrown on the floor. All scrap must be put in this rubbish container.
7. This Subcontractor shall use self-retractable knives to cut ceiling tiles if additional means is not presented.
8. This Subcontractor shall establish an unloading and loading zone. If this subcontractor is loading the building on an upper level a fall protection system must be installed with leading edge capability.
9. This Subcontractor shall establish a comprehensive scaffold plan including live load ratings and loading plan.

F. Logistics & Schedule

1. This Subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

G. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for a

complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	Amount
Refer to Form of Proposal	

H. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternates shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	Amount
Refer to Form of Proposal	

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#30 – Food Service Equipment
Dated: 07.08.2024
Revised: 10.21.2024

C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***Food Service Equipment Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***Food Service Equipment Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
114000	Food Service Equipment

Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#30 – Food Service Equipment
Dated: 07.08.2024
Revised: 10.21.2024

Spec. #	Specification Name
079200	Joint Sealants

Bid Package Specific Scope

General

2. This Subcontractor shall furnish and install all equipment shown on the Food service equipment drawings series FS drawings and as specified in 114000 unless stated otherwise.
3. This Subcontractor shall ensure all work is performed in accordance with Local, State & Health codes as well as regulatory agencies having jurisdiction.
4. This Subcontractor shall provide all permits and fees required for Food Service Equipment work. This Subcontractor shall take the lead responsibility in arranging a kickoff meeting with the Health Department and all inspections and meetings through final Health Department approval. This includes ensuring all Food Service Equipment is in clean and working order prior to the Health Department review. Check all water temperatures at the sinks and Dishwasher to ensure they meet with the Health Department acceptance prior to final walk through and if not, coordinate with the plumbing Subcontractor to resolve any issues. Include the reference made in note#2 on 2E-101.EK regarding coordination of cleanable surface requirements for health inspection with food service equipment.
5. This Subcontractor shall include coordinating the work shown on the Food Service Equipment FS series drawings with the corresponding MEP drawings and structural drawings to insure full coordinated installation of work. Included in this is participating in the MEP coordination meetings as it relates to the kitchen areas and including your work within the 3D coordination so that your work will not be in conflict with the other trades. Also included as part of this Subcontractors bid is the coordination of floor recesses with the concrete subcontractor as well as the coordination of your rooftop unit locations with the MEP contractors so that there are no conflicts in the field. This Subcontractor shall distribute material and be responsible for its protection from damage during delivery, handling, storage and installation. Protection is to be maintained by this Subcontractor as long as they are on site. Protection shall generally consist of Masonite and or homosote on exposed edges and faces to protect them from damage while on site. Should any damage occur due to the negligence of this contract's field personnel, all costs to repair and or restore same shall be the sole responsibility of this Subcontractor. This Subcontractor shall also protect the finish flooring during the installation of your work.
6. This Subcontractor shall provide all coring as required for this scope of work.
7. This Subcontractor shall include consistent and complete scheduling and coordination with all other trades to properly sequence the work and for the complete scope under this agreement.
8. This Subcontractor shall include 1 laborer per 10-person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m. while the subcontractor is performing work on site. The composite crew is intended to clean up general debris not necessary associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)

9. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
10. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
11. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
12. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.

Food Service Equipment Specific:

13. This Subcontractor shall furnish and install the Ansul fire extinguishing systems for the Food Service Equipment and shall meet all applicable codes. Identify on shop drawings all connection points for hook-up to base building services. This Subcontractor is NOT responsible for the final electrical, fire protection and control connections related to this system as detailed on the Contract Documents. This Subcontractor shall coordinate with the Electrical, Fire Alarm, Controls and Pluming Contractors for tie in of the Ansul system other trades.
14. This Subcontractor shall include interlocking the Ansul system with the base building fire alarm system. The Electrical Subcontractor is responsible for the tie-in to the base building fire alarm system.
15. This Subcontractor shall furnish only all gas solenoid valves for the food service equipment. The valves will be installed by the Plumbing Subcontractor. This Subcontractor shall be present for any inspections.
16. This Subcontractor shall furnish only all access doors required for food service equipment. The access doors will be turned over by this subcontractor to be installed by Drywall Subcontractors.
17. This Subcontractor shall furnish and install all wiring, with necessary switches, fuses, shunt trip breakers, terminal boxes, controls, cords, flexible connectors, starters, VFD's disconnects and plugs. All of the equipment which is to be connected to the building electrical services shall be shown on the KEC shop drawings and tagged with voltage, phasing/load, grounding requirements, and NEMA plug type. All terminations of power required between a piece of equipment and its power source will be by the Electrician. All control and power wiring responsibilities between food service equipment and pieces will be wired according to the plans and specifications by this subcontractor. Any "Extra" connections as the result of items that are installed in more pieces than shown on the plans and specifications are the responsibility of the Food Service Equipment Contractor.
18. This Subcontractor shall furnish and install all caulking and sealants between countertops/backsplashes and adjoining walls as required to pass all inspections.
19. This Subcontractor shall include all layout and field measuring for this scope of work in accordance with the specifications.
20. This Subcontractor shall furnish and install the exhaust hoods for the Food Service Equipment in strict conformance with all applicable codes. Coordinate the height of the hood with the ceiling heights in the room and MEP coordination layout.

Additional Provisions/Scope of Work

New Central Middle School Project
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21. The Subcontractor shall furnish and install the Freezer/cooler walk in's complete including all free-standing equipment and flooring. Coordinate the slab depression for them with the concrete subcontractor.
22. This Subcontractor shall furnish and install the Freezer and Cooler roof top condensers where located on the roof. This Subcontractor shall coordinate with the ~~MEP~~ Electrical contractor~~s~~ for electrical power service**s** to the condensers. This Subcontractor shall coordinate with the roofer for any and all roof top blocking/flashing required. Curbs for the condensers are by this Subcontractor.
23. This Subcontractor shall furnish & install all refrigeration piping for all equipment including condenser and evaporator units. Follow the requirements in the contract documents for the location of the roof top units and the distance from the Freezer and Cooler they serve.
24. This Subcontractor shall furnish and install all floor troughs w/gratings if and where detailed in the contract documents required for Food Service. Coordinate with the concrete subcontractor for all embedded Food Service items including these floor troughs. Include delivering all embedded items to the site prior to the pouring of the slab.
25. This Subcontractor shall include being involved in the start-up and commissioning process associated with the turnover of the kitchen equipment. If it is found that a piece of equipment(s) isn't performing as specified, it is incumbent upon this Subcontractor to remain engaged in the problem solving until the matter is resolved. For example, circuit breakers or GFI outlets tripping when equipment is running or dishwasher not achieving the appropriate temperatures. These problems need to be addressed and corrected at no Cost to the Owner unless it is found to be a design flaw that is creating the problem.
26. This Subcontractor shall provide coordination of all connections for the equipment that is provided within this scope of work. This includes, but is not limited to all electrical, water, waste and gas lines and mechanical, final connections will be by the MEP Subcontractors.
27. This Subcontractor shall provide layout and coordinate all MEP penetrations in the slab with the MEP Subcontractors and Concrete Subcontractor. Note: provide approved submittals 12 weeks prior to underground MEP work installation so everything gets roughed in properly as you need it.
28. This Subcontractor shall provide a specific in-wall and below slab rough in plan for all MEP requirements and in wall blocking requirements. This subcontractor shall include two field visits to conform all rough locations installed by others prior to wall closure, assume this will take two separate 8 hours days.
29. This Subcontractor shall provide to the Electrical and HVAC Subcontractors: power and control wiring diagrams for the inter-wiring within the exhaust hoods, light fixtures, the Ansul fire protection systems and all other items requiring work by these Subcontractors.
30. This Subcontractor shall furnish and install all required hangers, supports, straps, clips, angle iron, etc. for a complete installation of all food service equipment including support of exhaust hoods.
31. This Subcontractor shall furnish and install all hand sinks, associated faucets, brackets and accessories including but not limited to splash guards for each sink listed in the specifications. ~~These items are to be installed by the plumbing contractor~~.
32. This Subcontractor shall furnish and install all glass integral with the food service equipment shown on the FS drawings.
33. This Subcontractor shall furnish and install any and all plastic laminate surfaces, solid surface counters, stainless steel counters, etc. if and where shown on the FS series drawings.

34. This Subcontractor shall furnish and install all custom fabricated items shown on the FS series drawings such as stainless-steel counters, sneeze guards, stainless steel closure at ventilator, etc. per drawing details, specifications and or manufacturer's standard details.
35. This Subcontractor shall include all closeout documentation and training of the Owners staff as required per the contract documents. In addition, your scope shall include the scheduling of all training for each piece of Food service equipment required to be trained on and your firm shall be in attendance for all training. In no circumstance shall the Owner and or Turner Construction Company be left to coordinate this training and meet directly with the vendor of the piece of equipment. Your firm must take ownership of proper closeout and training and problem solving. Include an additional 16 hours of owner training in addition to the specification requirements to be used as directed by Turner Construction.
36. All Subcontractors are responsible for incorporating all work described in Bidder Questions relative to their Bid Package scope of work. Referenced Bid Packages on the Bidders Question Log do not necessarily list all impacted Subcontractors.

D. Exclusions

1. ~~This Subcontractor shall exclude the installation of hand sinks as this work will be performed by the plumbing Subcontractor.~~
2. This Subcontractor shall exclude the installation of dry heads in the freezer/cooler walk in's as this work will be by the Fire Protection Subcontractor.
3. This Subcontractor shall exclude the furnishing and installing of the supply and exhaust fans. This work will be by the HVAC Subcontractor.
4. This Subcontractor shall exclude all final HVAC, Plumbing and Electrical connections to the Food Service Equipment. This work to be by the applicable MEP contractor.

E. Safety

1. This subcontractor shall perform a negative exposure assessment if any Stainless-Steel Welding takes place per OSHA Standard 1926.1126 - Chromium and all other standards that apply.
2. This subcontractor shall use sleeves and cut 4 gloves when handling sharp metal or Sheetmetal.
3. This subcontractor shall complete a site-specific lock out tag out plan 4 weeks prior to mobilization.

F. Logistics and Schedule

1. This subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

G. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for a complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	Amount
Refer to Form of Proposal	

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#30 – Food Service Equipment
Dated: 07.08.2024
Revised: 10.21.2024

H. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternates shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	**Amount**
Refer to Form of Proposal	

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#41 – Elevators
Dated: 07.08.2024
Revised: 10.21.2024

C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***Elevators*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***Elevators*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible for performing a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
14 2100	Electric Traction Elevators

Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
DIV 00	Procurement and Contracting Requirements
DIV 01	General Requirements

Additional Provisions/Scope of Work

New Central Middle School Project
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Bid Package Specific Scope

2. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
3. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
4. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
5. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.
6. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
7. This Subcontractor shall receive, distribute, and install any concrete embedded items supplied by others, including but not limited to anchor bolts, bearing pads, embedded angles, pad sleeves, etc.
8. This Subcontractor shall provide all surveying and layout required for the work included with this package.
9. This Subcontractor shall coordinate all deliveries and storage locations with Turner personnel. Any on-site storage must be coordinated at least 48 hours in advance with the authorization of a Turner Superintendent. It is also understood that this Subcontractor shall store all materials on mobile rolling racks and or palletized so that materials can be relocated immediately by the subcontractor upon request if deemed necessary by Turner's Superintendent. (Assume there will be multiple moves), if pallets are used there must be a pallet jack on floor at all times provided by this Subcontractor.
10. This Subcontractor shall coordinate "Just in Time" delivery of Elevator Equipment with Turner. Turner will not be responsible for offsite storage and any required storage costs shall be included by this Subcontractor.
11. This Subcontractor shall maintain access for other trades to Corridor 1050 at all times. Turner will provide a location within a reasonable distance from the shaft for storage once Elevator Installation has begun. All material must be mobile per the "Nothing Hits the Ground" Policy
12. This Subcontractor shall include 1 set of Wall Protection Blankets for protection during construction. Protection blankets shall be installed within the elevator to allow for use and prevention of damage.
13. This Subcontractor shall furnish to and Coordinate with Mason and Concrete Subcontractors for shaft inserts and wall boxes for fixtures and in the shaft. This shall be included in the Elevator Shop Drawings. Any inserts not provided in time for installation by the Concrete or Masonry Subcontractors will be installed by this Subcontractor. This subcontractor shall not turn over material without formal transfer of care and custody paperwork. This subcontractor shall provide copies to Turner upon request.

14. This Subcontractor shall coordinate with Concrete Subcontractor for proper installation of sill detail at new and existing slab. This shall be included in the Elevator Shop Drawings.
15. This Subcontractor shall show on their Shop Drawings dimensioned locations for all items in the Elevator pit and shaft that are provided by other Trades, including but not limited to Electrical devices, ladders, sump pit covers, sprinkler heads, Fire alarm devices, penetrations, access doors and Hoist beams.
16. This Subcontractor shall coordinate with Flooring Contractor and include time for Elevator Installer to set car and lock open doors for flooring installation. This Subcontractor shall also provide and confirm compatibility of sub floor
17. This Subcontractor shall inspect the Elevator Pit, Shaft and Lobbies and submit a Punchlist to Turner of other trades items to complete prior to scheduling the final inspection. This Subcontractor shall inspect the work of other trades as it is put in place. This Subcontractor shall schedule a meeting on site to review punchlist with the affected trades and schedule completion of items. No additional time above the contract Allowance in Item 30 will be permitted for Punchlist Items. This must be included in the Elevator Bid.
18. This Subcontractor is responsible to furnish and install their own Fall Protection including anchorage points.
19. This Subcontractor shall furnish and install all provisions needed for Security at the Elevator including but not limited provisions for cameras and card access. Coordinate with the Security Contractor. This should be addressed in the Elevator Shop Drawings.
20. This Subcontractor shall coordinate with the Fire Alarm contractor for installation and testing of all Fire Alarm devices related to the elevator. This Subcontractor shall be present at the time of the Fire Marshal FA testing.
21. This Subcontractor shall coordinate with the proper AHJ for witnessing of testing. This subcontractor shall coordinate with the AHJ as required per the plans, specifications, Local and State requirements. This subcontractor shall provide Turner seventy two (72) hour advance notice for all required.
22. This subcontractor shall pull the required permits from the municipality for the elevator and any other associated required permits related to the elevator. This subcontractor shall be present along with a TCCO representative for all inspections that involve the elevator.
23. This Subcontractor shall include the following **Trade Allowance:** 48 hours for operation of the car for other trades work in the Elevator Shaft as coordinated, scheduled and directed by Turner. Operator Time to be included as Foreman rate including any required supervision. This will be billed based on the final agreed contractual wage rates and may only be expended by written authorization of Turner Construction and any unspent portion of this unused scope hours will be credited at the end of your contract based on approved labor rate.
24. This Subcontractor shall include 1 laborer per 10 person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m while the subcontractor is performing work on site. Composite crew is intended to cleanup general debris not necessary associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)

Utilities and Rough-in Coordination

25. Thru wall and thru slab fire stopping will be by the Fire Stopping Subcontractor. This Subcontractor shall include the "putty-packs" needed to achieve ratings at push button back boxes.

26. This Subcontractor shall participate in the preparation of MEP 3D Coordination drawings. This Subcontractor shall be required to label and show their work on these Drawings and participate in Coordination meetings to resolve conflicts.

Quality Assurance / Quality Control

27. This Subcontractor has confirmed that all hoistway pit depths as designed are adequate for this Subcontractors equipment and conform to all applicable codes. This Subcontractor shall coordinate all "clear hoistway" dimensions at each pit and shaft as it relates to the work of others.
28. This Subcontractor shall include all work required to satisfy the State Elevator Inspector and obtain final acceptance of the elevators. This Subcontractor shall provide a written list to TCCo of all discrepancies that must be corrected by other trades. This Subcontractor shall pay all fees associated with State of Connecticut elevator inspections.
29. This Subcontractor has verified that all the structural steel as designed is adequate to support the installation of the new elevators. This Subcontractor shall be responsible for the installation of any additional support steel required but not shown for their work.
30. This Subcontractor is responsible for all surveying and layout required for this scope of work, control lines will be provided by others.
31. This Subcontractor has verified that the power shown on the Electrical drawings for the Elevators are compatible with the new elevator system.

Add'l Items

32. This Subcontractor furnish and install all interior cab panels, reference finish schedule on A911 for material requirements.

D. Safety & Logistics

1. This Subcontractor has reviewed the Logistics Plans and the Construction Schedule and shall include all associated costs as relevant to achieve this scope of work within the Project Schedule. No come back costs will be entertained.

2. This Subcontractor shall review, conform to, and furnish and install all requirements included in the Safety Additional Provisions included in this Agreement. This Subcontractor understands that this document is project specific and all provisions must be included in this Subcontractors' bid.

3. This Subcontractor shall maintain and remove full height (floor to underside of deck) fire rated mesh, scrim or similar product in front of the hoist way opening prior to the installation of the elevator doors at all levels.

4. This Subcontractor shall ensure that all hoist-ways are secured and protected with a standard guardrail at all times to prevent fall hazards.

5. This Subcontractor shall ensure all temporary cars are fully guard-railed.

6. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible to remove snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers.

Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.

7. This Subcontractor shall provide a site specific plan on how they will comply with Turner's Ladder's Last Program.

8. This subcontractor shall ensure that any Lulls used on site are equiped with hydraulic fork positioners.

E. Exclusions

1. This Subcontractor shall exclude furnishing and installing flooring inside of the elevator cab (By BP #25 Flooring).
2. This Subcontractor shall exclude furnish and installing the hoist beam (By BP #13 Misc Metal).
3. ~~This Subcontractor shall exclude furnishing and installing the interior wilsonart plam wall coverings (By BP #18 Millwork).~~
4. This Subcontractor shall exclude the Sump pit ladder (By BP#13 Misc. Metal)

F. Logistics and Schedule

1. This subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.
2. Logistics plans are provided conceptually and for bidding purposes. Successful bidder will be required to further refine logistics plans with the Turner superintendent prior to the start of work and during the project.
3. The Project Site must remain accessible to all Emergency Response Units at all times.
4. Overall schedule duration for installation of the work shall be per the Project Schedule. This Subcontractor understands that multiple shifts and/or extended hours may be required to meet the project schedule durations. Costs associated with multiple shifts are included as part of the bid.
5. This Subcontractor shall include all costs for out of sequence work, all phased work and all come back work. No additional compensation will be considered for comeback work.
6. This subcontractor shall be responsible for all hoisting and rigging of any and all equipment, materials, etc. required for the completion of the scope of work. This Subcontractor has included all crane rental fees and material hoist fees.
7. This Subcontractor understands that the elevator must be installed complete and ready for construction use as shown on the Construction Schedule without exception. This Subcontractor has included any and all premium time for installation and / or costs premiums for material procurement associated with meeting this date.

G. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for a complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#41 – Elevators
Dated: 07.08.2024
Revised: 10.21.2024

Unit Prices:	Amount
Refer to Form of Proposal	

H. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternate shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	Amount
Refer to Form of Proposal	

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#36 - Plumbing
Dated: 07.08.2024
Revised: 10.21.2024

C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***Plumbing Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***Plumbing Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
22 0400	General Conditions for Plumbing Trades
22 0516	Expansion Fittings and Loops for Plumbing Piping
22 0517	Sleeves and Sleeve Seals for Plumbing Piping
22 0519	Meters and Gauges for Plumbing Piping
22 0523	General Duty Valves for Plumbing Piping
22 0529	Hangers and Supports for Plumbing Piping and Equipment
22 0548	Vibration and Seismic Controls for Plumbing Piping and Equipment
22 0553	Identification for Plumbing Piping and Equipment
22 0700	Plumbing Insulation
22 1005	Plumbing Piping
22 1123	Fuel Gas Piping
22 1124	Domestic Water Pumps
22 3000	Plumbing Equipment [Water Heaters]
22 4000	Plumbing Fixtures and Specialties
22 1500	General Compressed Air Systems

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#36 - Plumbing
Dated: 07.08.2024
Revised: 10.21.2024

Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
DIV 00	Division 00 - Procurement and Contracting Requirements
DIV 01	Division 01 - General Requirements
079200	Joint Sealants

Bid Package Specific Scope

Submittals & Coordination

2. This subcontractor shall submit dimenstioned shop drawings and coordinate the layout in the field all equipment pads with concrete subcontractor.

3. Provide penetration drawings for interior, exterior, foundation and floor penetrations. This should include dimensions off columns, elevations above finish floor, and required opening size. Layout as required for proper field coordination is included under this scope.

4. This Subcontractor shall furnish, F.O.B. jobsite, all access doors for all valves and other equipment requiring access and which may become inaccessible at a later date in the drywall and masonry assemblies. This Subcontractor shall arrange their work in such a manner to minimize the quantity of access doors required. All items requiring accessibility shall be located in already accessible areas, such as above lay-in ceilings, etc. if at all possible. It is the responsibility of the Plumbing Subcontractor to coordinate and provide information regarding the location, sizes and quantities of access doors, panels, etc. required for their Work as well as furnish same. Failure to furnish the access doors and / or coordinated locations such that other Subcontractors (e.g., masonry, drywall, etc.) must go back to complete work, shall result in a back-charge to this Subcontractor for out of sequence Work accordingly. Also note that all required access doors and / or panels shall be furnished from one (1) manufacturer with their ratings consistent with the respective partition / ceiling / floor ratings and must be keyed alike. Access door type will be per the architect's direction in each location. This Subcontractor shall provide access door shop drawings indicating locations, types and sizes in architectural ceilings and partitions for design team review and approval.

5. This Subcontractor shall fully coordinate his work with other trades for construction sequence and methods. This Subcontractor shall be prepared to participate in extensive coordination meetings with other subcontractors to accomplish this. Changes to details as a result of this coordination and out-of-sequence work necessitated by this coordination shall be included.

6. This Subcontractor will provide the necessary written documentation for meeting the CT high performance requirements as outlined in the specifications.
7. This Subcontractor shall coordinate all installations with ceiling heights as per shown in the Contract Documents. All conflicts must be made in writing to Turner Construction immediately so that a corrective action can take place without delaying the work of any other Trade Subcontractor.
8. This subcontractor shall fully participate in all 3-D coordination. Each Subcontractor, in addition to this effort, shall coordinate and provide a coordinated Reflective Ceiling Plan for review by the design team for all ceiling mounted devices.
9. This subcontractor shall coordinate all installations to meet accessibility requirements as noted in the contract documents.
10. This Subcontractor will be required to relocate any piping, supports, or other part of the Plumbing system installed by this subcontractor that deviates from the coordinated drawings that prohibits access to any equipment, valve, damper, junction box or anything else requiring access in the future. Acceptable access shall be deemed by Turner, Owner, Engineer, or Cx agent.
11. This Subcontractor shall design, furnish & install an independent support system for all hung equipment, fixtures, ceiling and piping system that are directly below the metal roof deck. This support system must attach to structural steel framing members as the metal roof deck cannot be utilized for support. Refer to A200 series drawings General Note #12 for criteria. This Subcontractor shall provide delegated design and include shop drawings and calculations indicating, but not limited to, load carrying capacities, point loads, etc. This Subcontractor shall include adding miscellaneous metal supports into the 3D model for coordination with all MEP trades.
12. This Subcontractor shall include all labor and material to coordinate locations of pipe runs so as not to interfere with egress passages, Electrical Rooms and stairwells. Plumbing systems shall not run in or pass through stairways.
13. Utilize Total Station system to layout and set hanger supports and layout risers/ boxes/ penetrations/ underslab infrastructure.
14. This Subcontractor shall include consistent and complete scheduling and coordination with all other trades to properly sequence the work and for the complete scope under this agreement.
15. This Subcontractor shall be responsible to core all penetrations required with this scope of work, this includes in the existing foundations, walls and slabs as well as where sleeves where not installed prior to placing of concrete.
16. This Subcontractor shall participate in rough-in inspection coordination with other trades and Turner Construction utilizing color-coded framing identification to illustrate completion and inspection ready areas. Color-code key and inspection sequencing will be identified by Turner Superintendent.

Demolition

17. This subcontractor shall make safe all Plumbing piping, equipment and accessories scheduled to be demolished, refer to MEPD000 and MEPD001. This subcontractor shall cut and leave an air gap at the location of the start of the demo this shall be at the upstream location at the source (i.e. equipment, valve, distribution point, etc. All material to be removed shall be painted green by this subcontractor, green markings must be no more than 5' apart. Any material to remain will be painted red with markings no more than 5' apart. The Demolition subcontractor will remove and dispose all piping, accessories and materials
18. This Subcontractor shall furnish, install and maintain 4 hose bid locations per Turner superintendant for use during the demolition and abatement of the existing building.

Plumbing

19. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
20. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
21. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
22. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.
23. This Subcontractor shall furnish and install all under slab plumbing systems in coordination with the Site Subcontractor, Demolition and Concrete Subcontractor. Excavation and backfill for under slab plumbing systems shall be performed by others.
24. This Subcontractor shall furnish and install the storm, sanitary and water services from 5' outside of the foundation footprint to the point of use. This includes the sleeves and link seals for each penetration of the foundation wall and connections to the piping outside the foundation wall installed by others.
25. This Subcontractor shall furnish and install caulking of all plumbing fixtures to walls and floors with a pre-approved colored caulk this includes but not limited to lavatories, water closets, shower enclosures, etc. Colors may vary by location/application.
26. This Subcontractor shall layout, furnish and install all sleeves and inserts required for their work.
27. This Subcontractor shall store roof drain baskets and install after roof installation. Provide 5% spare roof drain baskets. Additionally, clean out roof baskets every 3 months while on the project until substantial completion.
28. This Subcontractor shall furnish all heat trace and controllers as indicated on the plumbing drawings by the Contract Documents for installation by the Electrical Subcontractor. Include heat trace to the grease trap on site. This Subcontractor shall coordinate with the Electrical Subcontractor for power requirements and locations. Installation, circuiting, and terminations shall be provided by the Electrical Subcontractor. This Subcontractor shall furnish and install any insulation that is required per the manufacturer. This Subcontractor will obtain heat trace manufacturer inspection and sign-off certificate prior to the installation of insulation on all pipes with heat trace.

29. This intent is for no mechanical systems to be installed over electrical equipment, however, this Subcontractor shall furnish and install drain pans that are properly slopped and piped to nearest drain as indicated on the contract documents for Plumbing equipment and/or for any piping which is coordinated over electrical components. This Subcontractor shall ensure proper code clearances are maintained for installations over and around MEP equipment, this includes but is not limited to NEC Clear access requirements. In addition, if a drip pan is being utilized, this subcontractor shall furnish and install a full leak detection system including but not limited to, power, control wiring, BMS monitoring etc. All costs for such leak detection systems shall be burdened by this subcontractor.
30. This Subcontractor shall coordinate trap primer headers in an accessible location for the end user facilities.
31. This Subcontractor install all indirect drain lines at floor drains in a manner which minimizes splashing and overflow opportunity of water to the area floor area.
32. This Subcontractor shall coordinate and provide proper rough to millwork an casework. This subcontractor shall furnish and install all lavatories and sinks within millwork and casework locations. For millwork islands, ensure proper venting and operation per code.
33. This Subcontractor shall coordinate and provide proper rough and drain locations for Kitchen Equipment. This Subcontractor shall Furnish and install all piping and equipment connections, per plumbing and Food Service Documents, greater quantity and scope to prevail. Include all branch sanitary, grease waste, gas, hot water, cold water, hangers, valves, caulking, sealants, etc.
34. This Subcontractor shall provide final connections to all Food Service Equipment including but not limited to all domestic water, gas, sanitary and waste. Furnish and install all mixing valves associated with the Kitchen Equipment, assume this subcontractor shall have representative in attendance at Department of Health and AHJ inspection of Food Service Equipment. This subcontractor shall coordinate and set required temperature settings per local DOH for all sinks within the Food Service area.
35. This Subcontractor shall Furnish and install all floor drains, trench drains, floor sinks as indicated on the floor plans, and at locations indicated on the enlarged plans on the Food Service Drawings.
36. This Subcontractor shall coordinate with the Ansul system furnished by the Food Service subcontractor. This subcontractor shall furnish and install all components of the emergency gas shut off station enclosure.
37. This Subcontractor shall provide installation of all mockups identified in the project documents as well as materials for each type of wall/ slab penetration to complete a firestopping mockup for review and approval by AHJ and Design Team. Assume exterior wall penetration mockup will be required for wall hydrant and coordatied with A315. Include requirement for first install mockup of science classroom prior to start of remaining areas.
38. This Subcontractor shall coordinate all exterior wall penetration and hose bid installations with exterior wall contractors. All flashing requirements, cavity depth and freeze protection coordination must be performed to ensure the exterior wall thermal and moisture specifications are maintained with these penetrations.
39. This Subcontractor shall coordinate equipment voltages with the Electrical Design. Identify accessories requiring power in addition to those indicated on the documents at the submittal phase for design team confirmation and coordination.
40. This Subcontractor shall provide all final gas and plumbing connections to equipment provided by others including but not limited to Food Service and HVAC Equipment.

41. The Structural Steel Subcontractor shall deck over all framed openings and the MEP Subcontractors shall cut and remove the deck for their installations and penetrations. Cutting of deck will not be permitted prior to installation of scope of work.
42. This Subcontractor shall coordinate with all toilet accessory installations. Pay attention to locations of flushometers in coordination with grab bars and water supply rough in elevations.
43. This Subcontractor shall ensure proper support of plumbing connections to devices and fixtures and should not utilize the fixture as a support to avoid loosening of connection over time due to fixture movement.
44. This Subcontractor shall provide adequate support for all in-wall plumbing to ensure restraint of movement within the wall cavity. This includes but is not limited to supports at slab penetrations as well as on vertical lengths of piping to prevent movement within stud cavity.
45. This Subcontractor shall furnish, install and maintain 3 Mop sinks locations, 5 hose bid locations and 4 hand washing stations with hot water and sanitary hook up, to be located within the building per the direction of the Turner Superintendent. All temporary sanitary lines shall have a strainer included and cleaned buy this subcontractor once a week. Any Temporary water lines shall be insulated.
46. All above ceiling seismic and required sway bracing shall be installed and inspected minimum 4 weeks prior to any scheduled ceiling grid installation.
47. This Subcontractor shall furnish and install all components of the air compressor system as shown on the contract documents.
48. This Subcontractor shall furnish and install all acoustical sealant of all wall and floor penetrations by this subcontractor per specification section 079200. Firestopping will be by BP #17.

Commisioning

49. This Subcontractor shall fully cooperate with the Owner's Commissioning Agent for commissioning of systems furnished and/or installed by this Subcontractor.
50. This Subcontractor will provide a dedicated engineer / staff person on site dedicated to the contractor commissioning of all systems prior to occupancy. This includes documenting, organizing and submitting to the owner all startup reports, pre-functional checklists and any performance reports that may be required for each piece of equipment.
51. This Subcontractor's Project Manager and Commissioning engineer shall attend a weekly Commissioning/MEP coordination meeting for the duration of the project.
52. This subcontractor shall include sufficient time to fully commission all systems. Adequate man power shall be available to fully meet the commissioning requirements.
53. Start-up reports shall be submitted to Turner within (3) days of startup.
54. This Subcontractor shall submit fully filled out Pre-Functional and Functional test reports to TCCo.
55. This Subcontractor shall provide testing and balancing as it applies to this scope of work.
56. This Subcontractor shall provide documentation of air pre-test of all wet systems via completed flow permit for all systems.

57. This Subcontractor shall perform all required testing in accordance with the specifications. Testing is to be performed in a manner so as to complement the schedule and procedure of construction, and the Work of others. Test reports shall identify the system, infrastructure and area testing with specified test requirements. Any and all manpower, temporary connections, etc. required to accomplish this work in this manner are included. NOTE: This Subcontractor will test every piece of equipment in the presence of Turner and / or the Engineer and provide a full report to Turner and the Engineer accordingly.
58. This subcontractor shall coordinate with the Authority Having Jurisdiction as required per the plans and specifications including those referenced in The Statement of Special Inspections. This subcontractor shall provide Turner seventy two (72) hour advance notice for all required inspections.
59. This Subcontractor shall include all necessary shutdowns and / or tie-ins for your specific systems. This subcontractor shall assume all shutdowns and tie-ins are to be performed premium time; provide proper notification and coordination with all affected parties (Owner, Turner, local agencies, utilities, etc.).
60. This Subcontractor shall complete all identification, labeling and tagging prior to the installation of the ceiling grid by others so as to allow for proper inspections as to thoroughness of these items. Coordinate end user requirements per Specification 220553.
61. This Subcontractor shall include in their Bid all necessary overtime and / or off-hour work for testing so as not to delay the Work of other Trade Subcontractors. This includes testing in conjunction with any other Trade that tie-in to this Subcontractor's scope of Work.
62. This subcontractor shall include necessary piping, valves, fittings, and terminations as required for partial testing of systems as required by the needs of the project. Temporary isolations of phased or multi-level, area systems shall be included.
63. This subcontractor will be responsible for all costs associated with the reopening and patching of ceilings or walls required for corrective work. All required testing of piping must be scheduled and completed before ceilings are installed. This subcontract includes any out of sequence work and testing required to complete the work before ceiling work starts.
64. This Subcontractor shall participate in rough-in inspection coordination with other trades and Turner utilizing color coded framing identification to illustrate completion and inspection ready areas. Color code key and inspection sequencing will be identified by Turner Superintendent.

Miscellaneous

65. Maintain and operate all systems installed under this package from start-up thru substantial completion and turn-over to Owner. Perform maintenance per manufacturer's recommendations.
66. This Subcontractor shall maintain utmost care so as not to damage Spray-on Insulating materials. Any and all damages and / or over-scraped areas, which may require repair, shall be back-charged to the Subcontractor that causes the damage. Hangers and supports shall be installed prior to SOFP operations to minimize scraping after the fact.
67. This subcontractor shall receive, install all Owner plumbing equipment and appliances including connections as identified on the equipment contract documents.
68. This Subcontractor shall provide training as specified for all of the equipment and systems furnished by this Subcontractor by phases. This Subcontractor shall include two (2) man-days of additional training be used at Turner Construction Company's discretion.
69. This Subcontractor shall submit a fully detailed MOP (Method of Procedure) to TCCo two (2) Weeks prior to start up and/or testing of any piece of equipment.

70. This Subcontractor has included all additional fittings as required for a complete system. The drawings may NOT fully dictate the number of fittings/ valves required for a complete system.
71. This Subcontractor shall be responsible to protect all plumbing equipment. Any damage as a result to equipment not being protected will be at this subcontractor's expense.
72. This subcontractor shall grout with non-shrink grout all base plates that are used to support piping and/or equipment.
73. This subcontractor shall be responsible for all cost associated with rigging their equipment into the building.
74. This Subcontractor shall secure covers over waterclosets to prevent use during construction.
75. Through wall and floor to floor fire stopping is included in a separate bid package. This subcontractor must coordinate all penetrations with the fire stopping subcontractor.
76. This Subcontractor shall furnish and install the higher quantity of fixtures if a discrepancy occurs between the architectural and plumbing drawings.
77. This Subcontractor shall include 1 laborer per 10 person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m while the subcontractor is performing work on site. Composite crew is intended to cleanup general debris not necessary associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)
78. This Subcontractor shall include all costs to provide delegated design criteria and submittals per the following, but not limited to, Delegated Design Table on Drawing GC0A. This Subcontractor has thoroughly read all Specification Sections regardless of what is indicated on the Delegated Design Table on Drawing GC0A and included all costs for delegated design scope of work.
79. This Subcontractor shall design and install all, but not limited to, channel support systems, heavy duty steel trapezes, seismic restraint hangers, etc. required for all Mechanical systems as indicated in the Contract Documents. All above ceiling seismic and required sway bracing shall be installed and inspected 4 weeks prior to any scheduled ceiling grid installation.

D. Safety

1. This Subcontractor to air test all wet systems prior to filling with water.
2. This Subcontractor is to control water used in pressure testing at all times. Water will not be allowed to be dumped out onto the building floors.
3. Subcontractor shall provide a containment method for cutting oils and shavings that consists of a pan and absorbent material or equivalent (cardboard is not sufficient). A plan on how cutting oil will be handled and disposed of shall be provided.
4. This subcontractor shall ensure all stub ups extend a minimum of 3' above the slab or walking surface. If this is not possible, a 3' or higher cone must be placed over the stub up. Impalement protection is required on all stub up, when a hazard exists.
5. This subcontractor shall utilize a threaded rod cutter in lieu of a porta band or grinder to cut all threaded rod.
6. This Subcontractor shall protect all downward protruding threaded rod with rubber caps to prevent injury to employees while working around rods.

7. This Subcontractor shall submit on and use only rounded edged saddle for all pipe support in lieu of saddles with 90 degree corners equal or similar to the Buckaroo Saddle
8. This subcontractor shall provide a stamped engineered rigging plan for any pre-fabricated vertical risers to be picked with a crane.
9. This Subcontractor shall supply at a minimum one spill kit per floor for interior demolition adjacent to active space, containing the following: 3 Kibosh 3/4" pipe menders, 3 Kibosh 1" pipe menders, 1 shut gun, 2 (3/4" & 1") shark bite fitting with ball valve, portable electric submersible pump with 3/4" threaded hose nipple, 50 feet of 3/4" hose, Rubbermaid with castors labeled with cover, a water diversion tarp and water barriers, and a shop vacuum.

E. Exclusions

1. This Subcontractor shall exclude Firestopping

F. Logistics and Schedule

1. This subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

G. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for a complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	**Amount**
Refer to Form of Proposal	

H. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternate shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	**Amount**
Refer to Form of Proposal	

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#36 - Plumbing
Dated: 07.08.2024
Revised: 10.21.2024

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#37 – HVAC & Controls
Dated: 07.08.2024
Revised: 10.21.2024

C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***BP#37 – HVAC & Controls Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***BP#37 – HVAC & Controls Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
230400	General Conditions for Mechanical Trades
230516	Expansion Fittings and Loops for HVAC Piping
230517	Sleeves and Sleeve Seals for HVAC Piping
230523	General-Duty Valves for HVAC Piping
230529	Hangers and Supports for HVAC Piping, Ductwork and Equipment
230548	Vibration and Seismic Controls for HVAC Piping and Equipment
230553	Identification for HVAC Piping and Equipment
230593	Testing, Adjusting, and Balancing for HVAC
230900	Instrumentation and Controls for HVAC
230993	Sequence of Operations
232113	Hydronic Piping
232114	Hydronic Specialties
232123	Hydronic Pumps
232500	HVAC Water Treatment
233100	HVAC Ducts and Casings
233300	Air Duct Accessories
233400	HVAC Fans
233600	Air Terminal Units
233700	Air Outlets and Inlets

235100	Breechings, Chimneys, and Stacks
235239	Fire-Tube Boilers
235700	Heat Exchangers for HVAC
238126	Split-System Air-Conditioners
238200	Convection Heating and Cooling Units

Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
DIV 00	Division 00 – Procurement and Contracting Requirements
DIV 01	Division 01 – General Requirements
019113	General Commissioning Requirements
079200	Joint Sealant
230700	HVAC Insulation
236411	Packaged Water Chillers – Scroll
237413	Modular Central Station Air-Handling Units

Bid Package Specific Scope

2. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
3. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
4. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
5. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.

6. This Subcontractor shall furnish and install all mechanical systems, including but not limited to, associated piping, fittings, ductwork, fire/smoke dampers, hangers, supports, insulation, valves, actuators, identification, controls, and specialties as shown on the Contract Documents and in the Specifications. This Subcontractor is to include items not specifically shown but required for the operation of systems shown within this bid package.
7. This Subcontractor shall coordinate and provide all final Mechanical connections to equipment provided by others, including but not limited to, Food Service Equipment, Pre-Purchased Equipment, etc.
8. This Subcontractor shall file and pull all permits required for their Scope of Work. Utility connection coordination and cost shall also be included by this Subcontractor.
9. This Subcontractor shall provide rigging plans for all equipment and/or installations requiring the use of a crane at a minimum of one (1) month prior to the rigging operation. This Subcontractor shall include, but not limited to, all road plans, signage, traffic controls, etc. This Subcontractor shall coordinate crane pad locations with the BP#09 Sitework Subcontractor.
10. This Subcontractor shall include all costs for escalation on materials, labor, equipment, etc. for the durations indicated on the project schedule.
11. This Subcontractor shall provide all necessary layout including benchmarks, extending of control lines, etc. to properly perform their Work.
12. This Subcontractor shall provide a full-time competent Project Manager for the duration of the project. This individual must have the authority to make all decisions for this Subcontractor, attend all weekly meetings, and be responsible for all lower tier subcontractors and vendors.
13. This Subcontractor shall be required to continuously record the progress of the HVAC and Controls Work on a record set of Drawings, to be maintained on the jobsite at all times. The Architect, Engineer and Turner will review these Documents on a monthly basis in conjunction with their monthly payment application review; this shall be a condition of approval of each progress payment.
14. This Subcontractor understands the specific warrantee/guarantee period will start when the equipment/system is accepted by the Owner for their operation/use at the time of Substantial Completion. This Subcontractor shall include, but not limited to, ownership, preventative maintenance, protection, care, operation, cleaning, etc. for all HVAC equipment/systems, whether furnished by this Subcontractor or others, any gap duration between the scheduled start up of such equipment and owner acceptance of the equipment/system. This Subcontractor shall perform maintenance per equipment manufacturer's recommendations.
15. This Subcontractor shall be responsible for protecting all Mechanical equipment, whether furnished by this Subcontractor or by others. Any damage as a result to equipment not being properly protected will be repaired at this Subcontractor's expense.
16. This Subcontractor shall furnish and install all supports and support systems for mechanical equipment and piping if not indicated on the structural or mechanical drawings. Systems shall meet the requirements of seismic and sway parameters per the local building code and project specifications.
17. This Subcontractor shall provide their own lifts and access for construction. No scaffolding will be provided.
18. This Subcontractor shall submit shop drawings as well as layout and mark housekeeping pads for equipment provided and/or installed under this scope of work. Installation of housekeeping pads will be by BP#10 – Concrete.

19. This Subcontractor shall be responsible for coring all penetrations required with this scope of work. This includes, but not limited to, foundations, walls, slabs, etc. as well as where sleeves were not installed prior to placing of concrete.

20. This Subcontractor shall coordinate, layout, furnish and install all sleeves and inserts required for their work. Sound sealing shall be by this Subcontractor. Firestopping will be by the BP#17 Firestopping Subcontractor. Throughout the entirety of the construction progress/schedule, this Subcontractor shall review all sleeve locations installed within, but not limited to, gypsum partitions, masonry partitions, concrete foundation walls, steel decking, etc. and confirm the sleeves are located and installed where needed as progress continues for the other associated Subcontractors (i.e. confirm sleeve locations prior to the Masonry Subcontractor setting masonry blocks and/or grout). Commencement of this Subcontractor's work will constitute this Subcontractor's acceptance of the existing conditions.

21. This Subcontractor shall provide locations of all HVAC pipe sleeves and penetrations to the BP#17 Firestopping Subcontractor so they can properly seal/stop the HVAC pipe sleeves, penetrations. This Subcontractor shall coordinate duct and pipe insulation with firestopping, sleeves, and penetrations.

22. This Subcontractor shall furnish and install all expansion fittings and expansion loop material, size and spacing. Reference specification table, 23 0516 page – 9.

23. This Subcontractor shall furnish, F.O.B. jobsite, all access doors for all valves and other equipment requiring access and which may become inaccessible at a later date in the drywall and masonry assemblies. This Subcontractor shall arrange their work in such a manner to minimize the quantity of access doors required. All items requiring accessibility shall be located in already accessible areas, such as above lay-in ceilings, etc. if at all possible. It is the responsibility of the Mechanical Subcontractor to coordinate and provide information regarding the location, sizes and quantities of access doors, panels, etc. required for their Work as well as furnish same. Failure to furnish the access doors and / or coordinated locations such that other Subcontractors (e.g., masonry, drywall, etc.) must go back to complete work, shall result in a back-charge to this Subcontractor for out of sequence Work accordingly. Also note that all required access doors and / or panels shall be furnished from one (1) manufacturer with their ratings consistent with the respective partition / ceiling / floor ratings and must be keyed alike. Access door type will be per the architect's direction in each location. This Subcontractor shall provide access door shop drawings indicating locations, types and sizes in architectural ceilings and partitions for design team review and approval.

24. This Subcontractor shall furnish and install all HVAC and Controls equipment along with, but not limited to, all associated piping, insulation, conduit, wire, terminations, start-up, commissioning, etc. indicated in the Contract Documents **not** being furnished by SourceBlue.

25. This Subcontractor shall furnish and install Boilers B-1 and B-2. This Subcontractor shall include all costs for, but not limited to, rigging, protection, connections, startup, commissioning, controls, etc. This Subcontractor shall refer to all Contract Drawings and specifications to furnish and install a complete operating system including, but not limited to, pressure relief valves, solenoid valves, electronic spark ignitions, low water cut-off switches, temperature sensors, manufacturer accessories, etc. Associated EPO's to be furnished and installed by the BP#38 Electrical Subcontractor.

26. The BP#12 Structural Steel Subcontractor shall deck over all framed openings and this Subcontractor shall cut and remove the deck for their installations and penetrations.

27. Open ends of ductwork are NOT acceptable. ALL ductwork (whether or not installed or stored) are required to be covered at all times (especially its openings) even during transport by this Subcontractor. This Subcontractor shall inspect and protect the open ends of all installed ductwork daily. All duct work must be stored on movable carts and protected. This Subcontractor shall issue reports of investigations and corrective action of open ends of ductwork to Turner Construction on a weekly basis.
28. This Subcontractor shall furnish and install all Hydronic Radiant Ceiling Panels and Active Chilled Beam units per the associated schedules on Drawings M601 and M602. This shall include all, but limited to, associated pipes, valves, fittings, control valves, etc. per Details 7, 8, 9, and 10 on Drawing M502 as an example. This Subcontractor shall coordinate mounting of these units with the scheduled ceilings as well as furnish and install all components required to support, hang and finish these units including, but not limited to, hangers, rods, finish trim, t-bars, Coanda wing trims, etc. This Subcontractor shall coordinate installation and support of these units with the BP#22 Acoustical Ceilings Subcontractor.
29. This Subcontractor shall utilize a Total Station system for surveying and layout as well as setting hanger supports and layout risers/ boxes/ penetrations/ under slab infrastructure, etc. This Subcontractor shall include utilizing the Total Station system by downloading the MEP Coordination and/or Design model and using such model to layout the points. The Total Station system shall not be utilized solely as a transit.
30. This Subcontractor shall include consistent and complete scheduling and coordination with all other trades to properly sequence the work and for the complete scope under this agreement.
31. This Subcontractor shall provide Turner Construction with twenty-five (25) USB Data Loggers to record temperature and humidity. These Data Loggers are to be Bluetooth compatible and interface with a cell phone application provided by the manufacturer.
32. This Subcontractor shall furnish and install all identification, labeling and tagging defined in the Contract Documents prior to the installation of the ceiling grid by others so as to allow for proper inspections as to thoroughness of these items.
33. This Subcontractor shall furnish and install all fire, smoke and combination dampers with actuators. Required quantity of dampers to be fully coordinated and included by this Subcontractor with the Architectural Partition and slab rating plans.
34. This Subcontractor shall paint the interior of metal ducts that are visible through registers and grilles and that do not have duct liner. Apply one coat of flat, black, latex paint over a compatible galvanized-steel primer.
35. This Subcontractor shall include all necessary shutdowns and / or tie-ins for your specific systems. This includes all required premium time, proper notification and coordination with all affected parties (Owner, Turner, local agencies, utilities, etc.).
36. This Subcontractor shall furnish and install all specialty ductwork including kitchen hood exhaust ductwork, and fabric ductwork.
37. This Subcontractor shall furnish and install all breeching, chimneys, and vents for equipment including but not limited to, boilers, water heater, generator, etc.
38. This Subcontractor shall grout with non-shrink grout all base plates that are used to support piping and/or equipment.

39. This Subcontractor shall include all costs to provide delegated design criteria and submittals per the following, but not limited to, Delegated Design Table on Drawing GC0A. This Subcontractor has thoroughly read all Specification Sections regardless of what is indicated on the Delegated Design Table on Drawing GC0A and included all costs for delegated design scope of work.

40. This Subcontractor shall design, furnish & install an independent support system for all, but not limited to, hung equipment, fixtures, ~~ceiling and~~ piping systems, ductwork, registers, grilles, diffusers, etc. that are ~~directly below the~~ typically supported from a metal roof deck. This support system must attach to structural steel framing members as the metal roof deck cannot be utilized for support, either above or below the roof deck. Refer to A200 series drawings General Note #12 for criteria. This Subcontractor shall provide delegated design and include shop drawings and calculations indicating, but not limited to, load carrying capacities, point loads, etc. This Subcontractor shall include adding miscellaneous metal supports into the 3D model for coordination with all MEP trades.

41. This Subcontractor shall design and install all, but not limited to, channel support systems, heavy duty steel trapezes, seismic restraint hangers, etc. required for all Mechanical systems as indicated in the Contract Documents. All above ceiling seismic and required sway bracing shall be installed and inspected 4 weeks prior to any scheduled ceiling grid installation.

42. This Subcontractor shall include 1 laborer per 10-person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m. while the subcontractor is performing work on site. Composite crew is intended to cleanup general debris not ~~necessary~~ necessarily associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)

43. This Subcontractor shall furnish and install all acoustical sealant of all wall and floor penetrations by this subcontractor per specification section 079200. Firestopping will be by BP #17.

44. This subcontractor shall furnish and install all aluminum fabricated duct plenum boxes & louvers on all associated roofs. For example, reference 1B/ A531 & M103A.

45. This Subcontractor shall include 2 complete cleanings of equipment and systems provided under this scope. Cleanings shall be performed prior to initial energizing equipment and again prior to turnover to the Owner. Cleanings shall include complete debris, dust removal and wiping of all internal and external components and shall be in accordance with manufacturers approved methods.

46. This subcontractor shall provide video recording of owner demonstrations and trainings for all installed equipment.

Early Equipment Use

47. This subcontractor shall provide all labor and material for early start-up and use of HVAC systems for early heating & cooling. Provide extended warranties & cleaning of all systems for like-new turn-over conditions at time of Substantial Completion. Please include the following in your bid:

    A. Include labor and materials for filter changes at VRF, HR and roof top units. One (1) at final cleaning and one (1) final set of filters in each piece of equipment used for early cooling / dehumidification as needed. This is in addition to what is specified.

    B. Include time to assist in additional start up by manufacturer if required for equipment used for early cooling / dehumidification.

    C. Include any routine maintenance required per the O & M manuals.

    D. Include furnishing, installing and maintaining filter media on RGD's and before VRF, HR and RTU Unit pre-filters.

E. Include furnish and installation of means to bypass any heat or energy recovery wheels within major Mechanical Equipment (i.e. RTUs, DOAs, etc.). Heat or energy recovery wheels cannot get dirty.

Logistics

48. Temporary power will be provided in accordance with Turner's Temporary Light and Power Additional Provisions. This Subcontractor shall be responsible for any additional power requirements not provided in this document for the work of your trade.
49. This Subcontractor is required to provide neat rack storage of materials on the working floors. Space is limited, therefore, a neat and organized work area is required to be maintained by all trades.
50. This Subcontractor shall coordinate and plan all large deliveries, whether equipment, materials or any other items, with Turner Construction to determine impact of the Project's logistics and identify any obstacles such as, but not limited to, requiring larger gates, larger exterior wall leave-outs, etc. to ensure the delivery is successful and does not impact the overall Project Schedule.
51. This Subcontractor shall review all areas of high roofs and confirm access can be achieved with the lift and/or crane they intend to utilize at a minimum of two (2) weeks prior to the installation date. This review shall include, but not limited to, all types of obstructions, site grading, already installed materials/systems, etc.
52. This Subcontractor shall provide temporary heating for the winter of 2025-2026 (Beginning October 2025 to the end of March 2026) for the interior construction of the new school. Assume fifteen (15) 480V electric units, similar to Heat Wagon P6000, located per Turner's Temporary Heating Additional Provisions. This Subcontractor shall size accordingly to provide a minimum of 50-degree ambient air temperature. Coordinate quantity of units required and include distribution to each floor level. Coordinate Electrical requirements and points of connection with the BP#38 Electrical Subcontractor accordingly.

Submittals & Coordination

53. This Subcontractor shall provide penetration drawings for, but not limited to, interior, exterior, foundation, partition and floor penetrations. This shall include dimensions off columns, elevations above finish floor, and required opening size. Layout as required for proper field coordination is included under this scope.
54. This Subcontractor shall coordinate all Mechanical and Controls equipment voltages with the Electrical Design. Identify accessories requiring power in addition to those indicated on the documents during the submittal phase for design team confirmation and coordination.
55. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing, one (1) week in advance, any discrepancies that may prevent the proper execution, installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled. This notice should provide sufficient time to repair conditions without impacting the overall Project Schedule. Commencement of this Subcontractor's work will constitute this Subcontractor's acceptance of the existing conditions.
56. This Subcontractor shall coordinate installation height and dimensions of all, but not limited to, roof top equipment, curbs, supports, ducts, pipes, insulation, conduit, etc. with the BP#15 Roofing contractor to ensure minimum clearances for flashings, pitch pockets, etc. are maintained.

57. This Subcontractor shall furnish and install a complete insulated piping system through all roof penetrations. This includes, but not limited to, all required Counter Flashing, Rigid insulation, link seals, Anchor/Stop plates, Pipe sleeves, Pipe guides, etc. Start and stop point locations of counter flashing shall be coordinated with Turner Construction and the BP#15 Roofing Subcontractor.
58. This Subcontractor shall furnish and install all roof supports for their work, including but not limited to, all roofing pads and other necessary materials. This Subcontractor shall coordinate with the BP#15 Roofing Subcontractor all details and installations to comply with the roofing warranty.
59. This Subcontractor shall coordinate and perform all roof penetrations when the BP#15 Roofing Subcontractor is on-site and present so the penetrations can be flashed/closed properly and in accordance with the roofing warranty requirements.
60. This Subcontractor shall maintain utmost care so as not to damage the Spray-on Insulating materials. Any and all damages and / or over-scraped areas, which may require repair, shall be back charged to the Subcontractor that causes the damage. Hangers and supports shall be installed prior to SOFP operations to minimize scraping after the fact.
61. This Subcontractor shall coordinate all domestic water tie-ins with the Plumbing Subcontractor.
62. This Subcontractor shall coordinate all exterior wall penetration installations with the exterior wall contractors. All, but not limited to, details, flashing requirements, cavity depth and freeze protection coordination(s) must be performed to ensure the exterior wall thermal and moisture specifications are maintained with these penetrations.
63. This Subcontractor will be required to relocate any piping, supports, or other parts of the Mechanical system installed by this Subcontractor that deviates from the coordinated drawings that prohibits access to any equipment, valve, damper, junction box or anything else requiring access in the future. Acceptable access shall be deemed by Turner, Owner, Engineer, or Commissioning Agent.
64. This Subcontractor shall participate in rough-in inspection coordination with other trades and Turner Construction utilizing color-coded framing identification to illustrate completion and inspection ready areas. Color-code key and inspection sequencing will be identified by Turner Superintendent.
65. Duct-mounted smoke detectors shall be furnished by the BP#38 Electrical and Fire Alarm Subcontractor. This Subcontractor shall coordinate locations, sizes, orientation and layout of all Duct-mounted smoke detectors with the BP#38 Electrical and Fire Alarm Subcontractor. This Subcontractor shall install all Duct-mounted smoke detectors. This Subcontractor shall reseal all associated penetrations and ensure sealing and insulation are adequate. Power wiring of Duct Smoke & Fire/Smoke dampers will be by the BP#38 Electrical and Fire Alarm Subcontractor. This Subcontractor shall furnish and install all interconnecting control wiring between the duct-mounted smoke detector and fire/smoke damper including but not limited to alarm points, status/position, shut down of Mechanical equipment, notification by BMS subcontractor, etc.
66. This intent is for no mechanical systems to be installed over electrical equipment, however, this Subcontractor shall furnish and install drain pans that are properly slopped and piped to nearest drain as indicated on the contract documents for Mechanical equipment and/or for any piping which is coordinated over electrical components. This Subcontractor shall ensure proper code clearances are maintained for installations over and around MEP equipment, this includes but is not limited to NEC Clear access requirements. In addition, if a drip pan is being utilized, this subcontractor shall furnish and install a full leak detection system including but not limited to, power, control wiring, BMS monitoring etc. All costs for such leak detection systems shall be burdened by this subcontractor.

67. This Subcontractor shall coordinate installations with the BP#21 Drywall & General Trades and BP#22 Acoustical Ceiling Subcontractors of all equipment and systems, including but not limited to, registers, diffusers, grilles, hydronic radiant ceiling panels, active chilled beams, fan coil units, etc. to ensure proper fit and finish at all ceilings and walls.
68. This Subcontractor shall review and confirm all, but not limited to, Mechanical, Controls, Electrical, Fire Alarm, etc., necessary penetrations and connections are installed within the curb prior to the installation of any rooftop equipment. This Subcontractor shall provide sign-off sheets to Turner Construction.
69. This Subcontractor shall provide access within all equipment curbs to allow for any under-unit connections (i.e. duct, gas, electric, condensate, etc.) so these services don't need to be connected while the unit(s) are suspended during the rigging/installation process.
70. This Subcontractor shall include all labor and material to coordinate locations of pipe runs so as not to interfere with egress passages, Electrical Rooms and stairwells. Piping systems shall not run in or pass through Electrical Rooms or stairways.
71. This Subcontractor shall furnish and install all roof curbs, stands, duct/pipe supports, counter flashing, etc. required for their work. This Subcontractor shall coordinate roofing depths and blocking requirements furnished and installed by the BP#15 Roofing Subcontractor.
72. This subcontractor shall coordinate with the BP#38 electrical and BP#30 food service subcontractors to provide the required sequence of operations for the ansul system. This subcontractor shall include all but not limited to wiring, conduit, devices, testing, etc. for a complete operational system. For example, refer to 1/E502, E701 & 5/P501.

Coordination with SourceBlue

73. This Subcontractor understands SourceBlue will be furnishing the following HVAC equipment: Dedicated Outdoor Air Units DOA-1, DOA-2, DOA-3, DOA-4 and DOA-5; Rooftop Units RTU-1, RTU-2 and RTU-3; Heat Recovery Ventilator HRV-1; Air Cooled Chillers CH-1 and CH-2. This Subcontractor has received, reviewed, included costs and understands the scope of work to be performed in the Equipment Coordination Matrix(ces). This Subcontractor is responsible for all work to be performed under the Trade Partner – MECH, Trade Partner – BMS, and where applicable, Trade Partner – OTHER roles and responsibilities.
74. This Subcontractor shall review the submittals for all equipment furnished by SourceBlue and shall furnish and install any HVAC and/or Controls components not provided by SourceBlue to provide a complete and operational system.
75. This Subcontractor shall include receiving and storing the above-referenced SourceBlue-furnished equipment in an insured and suitable location as per the associated equipment manufacturer's directions for up to a year's time. This Subcontractor shall include all costs to transport this equipment to the jobsite.
76. Upon arrival to the jobsite, all, but not limited to, marshaling, hoisting, rigging, setting and associated costs shall be provided by this Subcontractor for the pre-purchased HVAC equipment. All costs to protect and ensure no damage occurs during the storage, transportation, rigging and installation phases shall be included.

77. This Subcontractor understands SourceBlue will be furnishing seismic curbs for the following, but not limited to, HVAC equipment: Dedicated Outdoor Air Units DOA-1, DOA-2, DOA-3, DOA-4 and DOA-5; Rooftop Units RTU-1, RTU-2 and RTU-3; Heat Recovery Ventilator HRV-1. This Subcontractor shall contract a third-party engineer licensed in the State the work is being performed to design curb attachment to building structure. This Subcontractor shall include all costs associated with coordinating, installing and attaching these curbs. This engineer shall review installed field conditions and issue a report confirming all attachment of rooftop equipment and/or curbs to the structure are adequate prior to setting the unit(s).

Demolition

78. This Subcontractor has included all Mechanical Demolition notes and scope of work identified on the Contract Documents including, but not limited to, Drawings MEPD000 and MEPD001.

79. This Subcontractor shall make safe all HVAC and Controls piping, equipment and accessories scheduled to be demolished. This subcontractor shall cut and leave an air gap at the location of the start of the demolition at the upstream source/location (i.e. equipment, valve, distribution point, etc.). All material to be removed shall be painted green by this Subcontractor, green markings must be no more than 5' apart. Any material to remain will be painted red with markings no more than 5' apart. Removal and disposal of all piping, accessories and materials will be provided by the BP#08 Demolition & Abatement Subcontractor.

80. The BP#08 Demolition & Abatement Subcontractor will perform all MEP mass demolition and removals (piping, conduits, wire, equipment, etc.) for all phases of the work after the services have been cut, capped and made safe by the MEP trades. This Subcontractor will be responsible for capturing and properly disposing of the refrigerant of all Mechanical equipment from the existing Building.

81. This Subcontractor has received, reviewed and included all costs for phased demolition of the existing Building and associated HVAC and Controls per the Phasing & Logistics Plans. This Subcontractor acknowledges and understands portions of the existing Building will be abated and demolished prior to the entire Building. This Subcontractor shall coordinate with the BP#08 Demolition and Abatement Subcontractor with respect to the sequencing of the work relative to the zoning and shutdown or continued operation of the existing HVAC and Controls systems.

Controls

82. This Subcontractor shall furnish and install, but not limited to, all labor, materials, services, equipment and transportation necessary for a complete and operational system of automatic temperature control and BMS (Building Management System) along with required control wiring in accordance with provisions of the contract documents. This Subcontractor shall include all, but not limited to, computer hardware/software, input/output devices, controllers, local area networks, sensors, control devices, actuators, control units, etc. required for a complete operating system.

83. This Subcontractor is required to furnish and install, but not limited to, all conduit, boxes, devices, wiring, terminations, etc., for a complete and operational low voltage Controls system as well as equipment interlocks between fans, dampers, detection devices, actuators, etc. This Subcontractor shall verify voltages are compatible between components, whether furnished under this scope of work or by others (i.e. SourceBlue pre-purchased equipment).

84. This Subcontractor will be responsible for all costs associated with the reopening and patching of ceilings and/or walls required for corrective work. All required testing must be scheduled and completed before ceilings are installed or walls are closed.
85. This Subcontractor shall coordinate, furnish, install, wire, test, startup and commission all sensors such as but not limited to temperature, humidity, carbon dioxide, combination temperature/humidity/CO2, etc. required for a complete operating system. This Subcontractor shall produce and submit shop drawings indicating exact locations of sensors which will be reviewed and approved by the Design Team prior to any wall rough-in.
86. This Subcontractor shall generate, test and confirm functioning BMS graphics and all equipment Sequence of Operations prior to the start of Commissioning, Owner Training and Owner acceptance/occupancy.
87. The BP#38 Electrical & Fire Alarm Subcontractor will provide power to all Controls DDC Panels. This Subcontractor shall provide power to all control devices downstream of the DDC Panels per the plans and specifications.
88. This Subcontractor shall include all, but not limited to, cabling, terminations, patch panels, etc. to provide network connections to their BMS/Controls system required for a complete operating system. This Subcontractor shall include both temporary and permanent installations to comply with the Project Schedule.
89. This Subcontractor shall review all contract drawings and specifications to furnish and install all required BMS integrations, programming, etc. For example, reference Keynote FP18 on Drawing FP101E, 2/P500, 1/E500, 1/E501, 1/E701, etc.

Commissioning and Testing

90. This Subcontractor shall include, but not limited to, all necessary piping, valves, fittings, and terminations as required for partial testing of systems as required by the needs of the project. Temporary isolations of phased or multi-level, area systems shall be included.
91. This Subcontractor shall fully cooperate with the Owner's Commissioning Agent for commissioning of systems furnished and/or installed by this Subcontractor. This Subcontractor's Project Manager and Commissioning Engineer shall attend a weekly Commissioning/MEP Coordination meeting for the duration of the project. This Subcontractor shall include sufficient time to fully commission all systems. This Subcontractor shall be responsible for Controls commissioning until each system is fully operational and accepted by the independent Commissioning Agent and/or Owner.
92. This Subcontractor will provide a dedicated engineer / staff person on site dedicated to the commissioning of all systems prior to occupancy. This includes, but is not limited to, documenting, organizing and submitting startup reports, pre-functional checklists, functional checklists and any performance reports that may be required for each piece of equipment within three (3) days of startup. This Subcontractor shall provide adequate manpower to fully meet the commissioning requirements.
93. This Subcontractor shall perform all required testing in accordance with the specifications. Testing is to be performed in a manner to complement the Project Schedule and procedure of construction, and the Work of others. Test reports shall identify the system, infrastructure and area testing with specified test requirements. Any and all manpower, temporary connections, etc. required to accomplish this work in this manner are included. NOTE: This Subcontractor will test every piece of equipment in the presence of Turner and / or the Engineer and provide a full report to Turner and the Engineer accordingly.

94. This Subcontractor will be responsible for all costs associated with the reopening and patching of ceilings or walls required for corrective work. All required testing of HVAC and Controls systems must be scheduled and completed before ceilings are installed. This subcontract includes any out of sequence work and testing required to complete the work before ceiling work starts.

95. This Subcontractor shall include in their scope of Work, the proper starting, testing, and water / air balancing of the HVAC system. This is to include all costs associated with working with the Controls Subcontractor for starting, stopping, adjusting, and modifying all equipment with the Balancing Subcontractor (i.e., the Balancing and Control Subcontractors are to work together simultaneously full-time during the balancing phase). Any repair and / or replacement costs for ceiling tiles damaged during this phase shall be this Subcontractor's responsibility.

96. This Subcontractor will be responsible for all sheave changes for any HVAC equipment on the project that does not meet the design CFM.

97. This Subcontractor shall coordinate the Mechanical installation sequence, provide and execute a building flush-out schedule/procedure to meet the CT High Performance Building Requirements identified in Specification Section 230500. This Subcontractor shall provide the necessary written documentation including, but not limited to, confirmation of balancing completion, flush-out procedure, hourly trend logs, etc. as well as furnish and install new filtration media on all associated HVAC equipment.

98. This Subcontractor shall perform and document all pressure tests for all ductwork, piping and equipment as required by the contract documents, commissioning and QA/QC requirements. This Subcontractor shall visually mark all tested sections of ductwork. Testing is to be scheduled according to the needs of the project. This Subcontractor shall coordinate with the associated trades and pressure test all ductwork and/or piping scheduled to be concealed in a chase or behind partitions prior to being permanently concealed.

99. This Subcontractor shall include in their Bid all necessary overtime and / or off-hour work for testing so as not to delay the Work of other Trade Subcontractors. This includes testing in conjunction with any other Trade that tie-in to this Subcontractor's scope of Work.

Additional Scope Clarifications

100. This Subcontractor shall include, but not limited to, all design, furnishing and installation of metal support stands for all exterior ductwork associated with Dust Collector DC-1. This Subcontractor shall also include, but not limited to, all design, furnish and installation of Dust Collector DC-1 supports. See Drawing ME for reference.

101. This Subcontractor shall furnish and install all condensate piping, traps, supports, clean outs, insulation, etc., associated with all equipment requiring such. This Subcontractor shall coordinate with the Plumbing drawings and Plumbing Subcontractor for indirect drain connections into storm piping. Refer to 7/P501 for coordination purposes; BP#36 – Plumbing to furnish and install all storm piping, backwater valves and J.R. Smith Model No. 3950 (or equal) air gaps; This Subcontractor shall install their condensate drain pipe into the air gap and adjust the inlet set screw; This Subcontractor shall furnish all access doors for these applications to either BP#11 – Masonry or BP#21 – Drywall and General Trades for installation, depending on the ceiling and/or partition type.

102. This Subcontractor shall furnish, rig, install, connect, test, commission, etc., all Mechanical equipment indicated on the Contract Documents NOT being furnished by SourceBlue. This shall include, but not be limited to, finned tube radiators, hydronic radiant ceiling panels, HVLS fans, fan coils, VAVs, exhaust fans, Duct Collector DC-1, split system AC units and outdoor units, cabinet unit heaters, unit heaters, duct silencers, active chilled beams, diffusers, registers, air filtration units, heat exchangers, duct mounted hot water reheat coils, mechanical pumps, etc.

103. This Subcontractor shall include, but not limited to, furnishing, coordinating, installing, wiring, testing, etc., all pressure sensors on the mechanical piping system indicated on the Contract Documents.

D. Exclusions

1. This Subcontractor shall exclude Division 22 Plumbing Scope of work (By BP#36 – Plumbing).
2. This Subcontractor shall exclude furnish and installation of concrete housekeeping pads beneath equipment (By BP#10 – Concrete).
3. This Subcontractor shall exclude trenching, excavation and backfilling of any exterior below-grade scope of work (By BP#09 – Sitework).
4. This Subcontractor shall exclude Penetration Firestopping (By BP#17 – Firestopping).
5. This Subcontractor shall exclude rigging, furnishing or installation of the walk-in refrigerator and freezer condensing units as well as associated refrigerant piping and insulation (By BP#30 – Food Service Equipment).

E. Safety

1. This Subcontractor to air test all wet systems prior to filling with water.
2. This Subcontractor is to control water used in pressure testing at all times. Water will not be allowed to be dumped out onto the building floors.
3. This Subcontractor shall provide a containment method for cutting oils and shavings that consists of a pan and absorbent material or equivalent (cardboard is not sufficient). A plan on how cutting oil will be handled and disposed of shall be provided. Plan should not allow for any oil to stain or penetrate the concrete slab or finished surfaces, this subcontractor shall be responsible for any damage to installed material.
4. This subcontractor shall ensure all stub ups extend a minimum of 3’ above the slab or walking surface. If this is not possible, a 3’ or higher cone must be placed over the stub up. Impalement protection is required on all stub up, when a hazard exists.
5. This subcontractor shall utilize a threaded rod cutter in lieu of a porta band or grinder to cut all threaded rod.
6. This Subcontractor shall protect all downward protruding threaded rod with rubber caps to prevent injury to employees while working around rods.
7. This Subcontractor shall submit on and use only rounded edged saddle for all pipe support in lieu of saddles with 90-degree corners equal or similar to the Buckaroo Saddle.
8. This subcontractor shall provide a stamped engineered rigging plan for any prefabricated vertical risers to be picked with a crane.
9. This Subcontractor shall supply at a minimum one spill kit per floor for interior demolition adjacent to active space, containing the following: 3 Kibosh 3/4" pipe menders, 3 Kibosh 1" pipe menders, 1 shut gun, 2 (3/4" & 1") shark bite fitting with ball valve, portable electric submersible pump with 3/4" threaded hose nipple, 50 feet of 3/4" hose, Rubbermaid with castors labeled with cover, a water diversion tarp and water barriers, and a shop vacuum.
10. This Subcontractor shall review, conform to, and furnish and install all requirements included in the Safety Additional Provisions included in this Agreement. This Subcontractor understands this document is project specific and all provisions must be included in this Subcontractors’ bid.

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F. Logistics and Schedule

1. This subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

G. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	**Amount**
Refer to Form of Proposal	

H. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternates shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	**Amount**
Refer to Form of Proposal	

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C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***BP #38 Electrical & Fire Alarm Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***BP #38 Electrical & Fire Alarm Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible for performing a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
260400	General Conditions for Electrical Trades
260503	Equipment Wiring Connections
260519	Electrical Power Conductors and Cables
260526	Grounding and Bonding for Electrical Systems
260529	Hangers and Supports for Electrical Systems
260533	Raceway and Boxes for Electrical Systems
260534	Floor Boxes for Electrical Systems
260536	Cable Trays for Electrical Systems
260553	Identification for Electrical Systems
260923	Lighting Control Devices
262653	Electric Vehicle Charging Equipment
262716	Electrical Cabinets and Enclosures
262726	Wiring Devices
262813	Fuses
264113	Lightning Protection for Structures
265100	Lighting
265561	Theatrical Lighting
283100	Fire Detection and Alarm

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Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
Div 00	Division 00 – Procurement and Contracting Requirements
Div 01	Division 01 – General Requirements
019113	General Commissioning Requirements
260573	Overcurrent Protective Device Coordination Study
262200	Low-Voltage Transformers
262413	Switchboards
262416	Panelboards
262819	Enclosed Switches
262823	Enclosed Circuit Breakers
262826	Enclosed Transfer Switches
263213	Engine Generators

Bid Package Specific Scope

General / Phasing & Logistics

2. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
3. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
4. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
5. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.

6. The drawings are diagrammatic and may not be complete in every detail. They reflect the intent of the Arch/Engineer to provide a complete working system in compliance with all codes as shown by the documents. This contractor shall include any other equipment or devices necessary to provide a complete functioning system. This Trade Contractor shall include, as part of his work, the cost of relocating his work, due to the coordination procedure as part of his trade agreement price.
7. This Subcontractor shall provide a full-time competent Project Manager for the duration of the project. This individual must have the authority to make all decisions for this subcontractor, attend all weekly meetings, and be responsible for all lower tier subcontractors and vendors. This Subcontractor shall submit a complete organization chart indicating the title and names of the people that will staff the project. Submit resumes of each person on the organization chart for Turner's approval. This shall include Project Managers, Commissioning Manager, Foreman, Superintendents and other key personnel as required by Turner Construction.
8. This Subcontractor shall be required to continuously record the progress of the Electrical Work on a record set of Drawings, to be maintained on the jobsite at all times. The Architect, Engineer and Turner will review these Documents on a monthly basis in conjunction with their monthly payment application review; this shall be a condition of approval of each progress payment.
9. This Subcontractor shall examine the work of others, which will affect this subcontractor work and notify Turner well in advance of any condition, which will prevent the proper execution of this subcontractor's work. This shall include but not be limited to this subcontractor reviewing the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled. Any notice must provide sufficient time to repair conditions without impacting the overall schedule. Commencement of this subcontractor's work will constitute this subcontractor's acceptance of the existing conditions.
10. This Subcontractor is aware that this is a High-Performance Building and submittals should be submitted according to these standards. This Subcontractor has included all costs associated with meeting these requirements as set forth in the Division 1 Specifications.
11. This Subcontractor will provide the necessary written documentation for meeting the CT High Performance requirements as outlined in the Division 1 Specifications.
12. This Subcontractor shall provide all necessary layout including benchmarks, extending of control lines, etc. in order to properly perform the Work.
13. This Subcontractor shall be responsible for providing out of sequence work at no additional costs when required in coordination with other trades.
14. Utilize Total Station system to layout all electrical distribution including but not limited to set hanger supports and layout risers/ boxes/ penetrations etc. for under slab and within slab on deck, cast in slab locations required for electrical infrastructure.
15. This subcontractor shall furnish and install all supports and support systems for Electrical equipment and piping including if not indicated on the structural drawings. Systems shall meet the requirements of seismic and sway parameters per the local building code and project specifications.
16. Each Subcontractor understands that Quality Control and Quality Assurance is a specific commitment and attitude, which is required during the implementation of the work. The focus required to establish a quality level, by developing in-place mock-ups, by providing skilled supervision and by monitoring daily production quality are all expected to be carried out during the execution on this Contract.

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17. It is understood that the specific warrantee/guarantee period will start when the equipment/system is accepted by the Owner for their operation/use at this time of Substantial Completion. Any gap between the scheduled start up of equipment and owner acceptance of the system shall be included.
18. This Subcontractor has reviewed the On-Site Phasing & Logistics Plans and the Construction Schedule and has included all associated costs as relevant to this scope of work. It is extremely important to coordinate your work with the other adjacent Subcontractors during the various phases and perform the work as required by these documents. No come back costs will be entertained.
19. This subcontractor shall provide and maintain all temporary light and power as per OSHA standards, Turner safety Manual and the Temporary Light and Power Additional Provisions for Construction purposes issued within the Procurement manual. This is in addition to temporary scope indicated on the Contract Documents and phasing requirements. This Subcontractor shall provide relocation and cut over of this temporary system to the permanent power source as soon as source is available in each area and removal all temporary devices and wiring.
20. This subcontractor shall furnish & install complete metering system for all temporary electric panels provided under their scope of work, including but not limited to all metering devices, wiring, etc., reference the Jobsite Metering Components & Fuel Tracking Log for additional information.
21. This subcontractor shall furnish & install temporary solar powered lighting along the temporary sidewalk per the On-Site Phasing & Logistics Plans.
22. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
23. No truck parking/idling is allowed on streets adjacent to the project site while waiting to unload. This Subcontractor shall include accommodations as required to adhere to “just in time” deliveries. Refer to Turner’s “Logistic Plans – Scope of Work” for delivery restrictions.
24. All Change Order quotes shall include labor per NECA Column 1 and Full breakdown of all pricing is required and should be broken out separately for each drawing. Pricing shall be provided in accordance with the expected project conditions, breaking out any premium installations required at the time of the installation i.e.: closed ceiling, furniture, additional cleaning etc. No additional compensation will be considered for logistics, staging, inefficiencies and/or coordination with other contractors if not clearly broken out in the Change Order Proposal.
25. This Subcontractor shall include consistent and complete scheduling and coordination with all other trades to properly sequence the work and for the complete scope under this agreement.
26. This Subcontractor’s Project Manager/Foreman shall participate in Pull Planning Sessions which affect their scope of work. This Project Manager/Foreman shall provide input to further develop the accurate sequence and timing for completion of the work.
27. This Subcontractor shall provide their own lifts and access for construction. No scaffolding will be provided.
28. This Subcontractor shall be responsible to core all penetrations required with this scope of work, this includes but is not limited to foundations, walls and slabs as well as where sleeves where not installed prior to placing of concrete.
29. This subcontractor is responsible to pull all permits as required for their scope of work. Any filing of permits associated with this scope to be performed by this subcontractor including associated filing fees to be paid by this subcontractor, building permit fees by others. This subcontractor to include special permits such as Generator Permits, EV chargers, etc.

30. This Subcontractor shall include 1 laborer per 10-person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m. while the subcontractor is performing work on site. Composite crew is intended to clean up general debris not necessary associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)

Demolition

31. This subcontractor is responsible for all tracing of existing circuits prior to disconnect. Any circuits found to feed areas of the building or other other buildings that are to remain active shall be rerouted to ensure occupied spaces remain active. This subcontractor understands that the demolition will be performed in multiple phases and will perform the demolition work according to these phases.
32. This subcontractor shall cut, cap, and make safe all Electrical, equipment and accessories scheduled to be demolished, including but not limited to the exterior electrical service, existing Low Voltage Systems, existing Fire Alarm, etc. Coordinate with the utility company & AHJ as required. For an example see sheet notes on MEPD000 & MEPD001. This subcontractor shall cut and leave an air gap at the location of the start of the demo; this shall be at the upstream location at the source (i.e. equipment, valve, distribution point, etc.). All material to be removed shall be painted green by this subcontractor, green markings must be no more than 5' apart. Any material to remain will be painted red with markings no more than 5' apart. The Demolition subcontractor (BP #08) will remove and dispose of all materials.
33. The Demolition Subcontractor (BP #08) will perform all MEP mass demolition and removals (piping, conduits, wire, equipment, etc.) for all phases of the work after the services have been cut, capped and made safe by the MEP trades. The Demolition Subcontractor (BP #08) will remove and dispose of all the demolished material and equipment from the basement.

Power Distribution

34. This Subcontractor shall furnish and install a complete and fully functional power distribution system including but not limited to all raceways, supports, backboxes, receptacles, outlets, junction boxes, busway, disconnects, wire mold, floor boxes, etc. This Subcontractor shall furnish & install all electrical devices as it relates to your work on all Drawings, including but not limited to all receptacles, switches, overhead power reels, etc. Greater quantities and quality prevails.
35. This subcontractor shall furnish & install all site electrical infrastructure, including but not limited to handholes, conduit pathways / ductbanks, site lighting, emergency blue light communication stations, EV charging stations, receptacles, low voltage pathways & handholes / manholes, etc., reference SU100 for example of these electrical scope items. This subcontractor shall exclude excavation and backfill which will be performed by the Sitework Subcontractor.
36. This subcontractor shall furnish & install all Emergency Blue Light Communication Stations. For example, conduit pathways, pole, and fixtures provided by this Subcontractor. This subcontractor must coordinate requirements with the Low Voltage Subcontractor. The Low Voltage subcontractor shall perform all low voltage cabling, terminations, and low voltage testing as required.

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37. This Subcontractor shall provide Site lighting templates for anchor bolts and conduit layout to sitework contractor. This subcontractor shall furnish site lighting anchor bolts & conduit for the sitework contractor to install within the concrete bases. Concrete bases will be furnished and installed by the sitework contractor.
38. This subcontractor shall furnish and install power for all equipment on the equipment schedules and shown on the Contract Documents.
39. This Subcontractor shall furnish and install all necessary mounting hardware, hangers, brackets, seismic supports, pull boxes, etc. for a complete electrical distribution and lighting system.
40. This subcontractor shall provide PE stamped drawings, calculations, & all delegated design as indicated in the contract documents.
41. This Subcontractor shall provide and Coordinate equipment voltages with Plumbing/mechanical equipment and identify accessories requiring power in the submittal phase for design team confirmation.
42. This Subcontractor shall coordinate and provide power for leak detection equipment as required per the Contract Documents.
43. This subcontractor shall furnish & install all final electrical power connections and terminations as required to items furnished by others, including but not limited to security doors, fire doors/gates, automatic door entrances and gates, overhead coiling doors, mechanical blinds/ shades, screens, kitchen equipment, seating, theater equipment, signage etc. Regardless if circuitry is identified on plans.
44. This Subcontractor shall provide wiring of all Plumbing and HVAC Equipment, including but not limited to circulator pumps, aquastats, motors, electronic valves, meters, emergency control valves, monitoring stations, shunt trip interconnect requirements for gas shut off, etc. This subcontractor shall furnish & install dedicated circuits for equipment as needed.
45. This Subcontractor shall coordinate and install all final connections for power to Food Service Equipment. This subcontractor shall include all interconnections for food service equipment in the field. This subcontractor must be present and participate in all DOH and AHJ inspections.
46. This subcontractor shall furnish, install, and wire all EPO and emergency shutoff systems. This subcontractor shall wire, terminate, and test all valves and equipment furnished by others, including but not limited to solenoid valves. This subcontractor shall review and coordinate with all drawing & specification disciplines for EPO requirements, including but not limited to the mechanical, food service, & plumbing disciplines.
47. This subcontractor must notify all trades and Turner a minimum of (10) days in advance, and receive approval to proceed, before performing any shutdowns.
48. This subcontractor shall install all heat tracing and control panels to be furnished by others. This subcontractor shall furnish and install final connections, terminations, and circuiting for heat tracing. This subcontractor shall be responsible for testing all heat traces prior to concealing and/or burying the system.
49. This Subcontractor shall Coordinate any phased existing to remain lighting requirements indicated on the documents and associated temporary infrastructure required by the phase construction.
50. This Subcontractor shall coordinate all requirements of the new electrical service and UTILITY METER with the local power company, Turner and Owner.

51. This Subcontractor shall coordinate and provide required power for Division 8 Hardware requirements per the hardware schedule and Contract Documents.
52. This subcontractor shall provide panel schedules for any existing or new panels modified or installed by this subcontractor.
53. This Subcontractor shall coordinate with the Controls Subcontractor (BP #37) and provide source and breakers for 120V power to controls devices and all BMS / DDC panels. 120V raceway and circuit shall be provided complete by this Subcontractor. This subcontractor shall include 6 (120V) dedicated circuits for controls power in addition to the power shown on the documents. This subcontractor shall reference the Mechanical series of drawings for BMS control panel locations.
54. This subcontractor shall furnish & install all wiring associated with the fire pump ATS and fire pump controller. The Fire Protection subcontractor (BP #35) will furnish and set this equipment in place.
55. This subcontractor shall furnish & install the fire pump ~~disconnect~~ main service switch (FP-DS) shown on E700, including but not limited to all associated wiring.
56. SourceBlue shall provide the Power Studies as described and required in spec section 260573. This subcontractor shall provide all required feeder sizing, feeder lengths and any other information based on this subcontractor's work required to complete these studies. Within two weeks of award, this subcontractor must provide anticipated feeder sizes and lengths for use with initial study. Final sizes and lengths to be provided when MEP coordination is complete.
57. This subcontractor shall furnish & install all ARC Flash Hazard Labeling of electrical equipment.
58. This Subcontractor shall design, furnish & install an independent support system for all, but not limited to, hung equipment, fixtures, ~~ceiling and piping~~ electrical systems, conduit, cable tray, etc. that are directly below the metal roof deck. This support system must attach to structural steel framing members as the metal roof deck cannot be utilized for support, either above or below the roof deck. Refer to A200 series drawings General Note #12 for criteria. This Subcontractor shall provide delegated design and include shop drawings and calculations indicating, but not limited to, load carrying capacities, point loads, etc. This Subcontractor shall include adding miscellaneous metal supports into the 3D model for coordination with all MEP trades.
59. This Subcontractor shall design, furnish, and install all, but not limited to, hangers, supports, channel support systems, heavy duty steel trapezes, seismic restraint hangers, etc. required for all Electrical systems as indicated in the Contract Documents. All above ceiling scope shall be installed and inspected 4 weeks prior to any scheduled ceiling grid installation.
60. This subcontractor shall furnish & install overhead cord reels.
61. This subcontractor shall coordinate, furnish, & install a typical exterior conduit penetration and exterior back box at each different exterior wall material type, as part of the exterior wall mock-up process for Design Team review. Reference A315 for the intended exterior wall mock-up.
62. This subcontractor shall prioritize and maximize the under slab 3D BIM modeling for utilization of below slab conduit raceways prior to concrete placement.
63. This Subcontractor shall Utilize Total Station layout of all seating boxes at the auditorium, all boxes located within concrete slabs, and conduit stub ups within walls.

Lightning Protection & Grounding

64. This Subcontractor shall furnish and install a complete grounding and bonding system as indicated on the contract documents from grounding source (ground loop, building steel, rebar, etc.) up to and including main grounding bus bars and connection any equipment requiring ground connection. This subcontractor shall furnish & install all grounding bars in telecommunications rooms.
65. This Subcontractor shall design, furnish and install a complete lightning protection system in conformance with the contract documents and applicable codes, including but not limited to conduit pathways, conductors, grounding rods, air terminals, etc. This subcontractor is responsible for providing a lighting protection system, UL Master Label. Note this system is delegated design for the lighting protection systems as indicated in the contract documents by this subcontractor.

Lighting

66. This subcontractor shall furnish & install all lighting as called for on the Contract Documents, including but not limited to all exterior lighting, signage lighting, athletic field lighting, landscape lighting, etc. Lighting may be shown on several drawings including but not limited to RCPs and Electrical Lighting plans. This Subcontractor shall provide lighting with the understanding that when documents indicate differences the greater quantity and quality prevails. This includes but is not limited to specialty lighting such as theatrical and aisle lighting.
67. This subcontractor shall furnish & install a complete and fully functioning theatrical lighting system for the auditorium, including but not limited to all rigging equipment, pipe & clamp support system, etc. This subcontractor must coordinate and fully integrate the AV & all other stage / auditorium system components for a complete system.
68. This subcontractor must identify all light fixtures that are installed in sheetrock ceilings and submit them for early release to ensure they are available prior to the start of sheetrock ceilings per the project schedule.
69. This subcontractor shall include coordination with general trades (BP #21) for modeling of all lighting fixtures and associated manufacturer clearances. Coordinate ceiling types, materials, soffits, architectural features, detailed locations, FFE and equipment. This subcontractor must model all light fixtures, as well as all electrical equipment provided by others and installed by this subcontractor, to ensure a fully coordinated electrical system with all other trades.
70. This Subcontractor shall provide shop drawing for all exit lighting & exit signs (low level and typical overhead) for approval by AHJ.
71. This subcontractor shall furnish and install a complete and fully functioning lighting control system, including but not limited to all modules, switches, sensors, panels, time clocks, photocells, conduit, wiring, connectors, circuitry, etc., as required to complete the system whether or not shown on the drawings. Reference for examples E500 & E501. This subcontractor shall furnish & install all wiring and infrastructure necessary to provide network connectivity to lighting controls devices and components, including but not limited to network cabling, terminations, patch panels, etc.
72. This Subcontractor shall coordinate directly with all other trades providing auditorium & stage equipment for all lighting and power requirements, for example theatrical seating & motorized curtain rigging vendors.
73. This Subcontractor shall coordinate under slab electrical infrastructure with all Subcontractors to ensure proper rough in requirements are installed for approved equipment, fixtures, devices, etc.
74. This Subcontractor shall coordinate and store lighting materials off site in an appropriate facility. It should not be assumed the building will be secure nor large enough to store lighting materials.

Low Voltage and Security System Rough-in & Coordination

75. This Subcontractor shall provide all in-wall conduit raceways and back boxes for all low voltage, telecom, security and AV systems as indicated on the contract documents. Any specialty AV or Telecom backboxes shall be furnished by the Telecom and/or AV subcontractor respectively and installed by this Subcontractor (i.e. Chief PAC boxes). This subcontractor shall provide all standard back boxes, NEMA rated boxes, and conduit pathways to an accessible location. This subcontractor shall furnish & install all grounding of LV pathways installed per the scope of work herein.
76. This subcontractor shall furnish & install all low voltage and security site underground raceways & ductbank required, including but not limited to ductbank for new telecom service, underground raceways / conduit for site cameras, all handholes, etc. For a reference see sheet SU100.
77. This subcontractor must expedite their 3D BIM model and shop drawings of low voltage and AV rough in order to ensure this is reviewed and fully coordinated with the low voltage and AV subcontractor.
78. Where low voltage, tele/data, AV & Security jacks share a common floor box with 120vac power, this contractor is required to furnish and install the back box, cover plate, and appropriate sized conduit with a pull string (coordinated with the respective Tel/data sub-contractor) which will be routed to the nearest accessible ceiling in accordance with typical installations throughout the project. The tel/data, Security & AV subcontractor (BP #39) will pull the data lines and terminate the jacks.
79. This subcontractor shall furnish & install all in-wall raceways & junction boxes required for access controlled & secured doors, automatic door operators, overhead coiling doors, etc. including but not limited to junction boxes, back boxes, conduit for power, conduit for low voltage cabling, pull strings, etc. This includes conduit raceway through the door frame up to an accessible location in the ceiling. For example, reference drawing TY302. Please note that references of electrical components being installed by "General Contractor" will be by this subcontractor. Raceways within the door slab shall be provided by the Doors/Hardware Subcontractor (BP #20).
80. This subcontractor shall furnish & install all line side power (i.e. 120V) from electrical panels to power supplies / transformers & equipment required for any access controlled & secured doors, overhead coiling doors, and/or auto-opening doors. Power supplies and transformers shall by furnished and installed by the Door Hardware Subcontractor and/or Low Voltage Subcontractor for their respective systems.
81. This subcontractor must coordinate and integrate with the BDA / DAS / ERRCS system(s), including but not limited to fire alarm integration. This subcontractor is solely responsible for furnishing & installing all fire alarm infrastructure. Rough-in for DAS / BDA / ERRCS systems will be furnished and installed by the Low Voltage Contractor (BP #39), since this is a delegated design and the drawings do not indicate the system requirements and device count.

BMS / ATC Coordination

82. This Subcontractor shall provide power to HVAC ATC Subcontractors Control Panels. Any and all other electrical power connections beyond ATC/DDC Control Panel devices shall be furnished and wired by the ATC Contractor, at no additional cost to the project. This requirement includes the furnishing and installing of 120V, circuit breakers in electric panelboards, wire, conduit junction boxes, etc.

Fire Alarm

83. This subcontractor shall furnish and install a complete and fully functioning, code-compliant fire alarm system per the documents.
84. This subcontractor shall furnish and install paging speakers associated with the fire alarm system as shown in the fire alarm drawings and specifications.
85. This subcontractor shall furnish and install conduit and raceway for the fire alarm system.
86. This subcontractor shall coordinate, furnish and install and terminate all fire alarm requirements associated with the Building Temperature Controls (BAS / BMS) Vendor (BP #37) including but not limited to the sequence of operations.
87. This subcontractor shall coordinate, furnish, install and terminate all fire alarm components necessary for fire smoke dampers that are provided by others.
88. Coordinate locations of all Fire Alarm devices, including but not limited to pull stations, horn strobes, etc. shown on the contract documents with the Architect/Engineer and with Turner to resolve any conflicts with the Work of other trades and to confirm exact locations.
89. This subcontractor shall furnish & install all the power required to operate a complete Fire Alarm system. For example, if multiple control panels need individual power circuits, and only one is shown, any additional circuits for this equipment will be this subcontractor's responsibility. Any additional circuits will be detailed, quantified, and reported to the Design Team.
90. This Subcontractor will furnish and wire all duct smoke detectors consistent with the Fire Alarm Specifications and per Contract Documents. This subcontractor will coordinate locations, orientations, layout & size of duct smoke detectors in conjunction with the HVAC contractor (BP #37). HVAC Subcontractor (BP #37) will install the duct smoke detectors. This subcontractor will furnish and install any necessary transformers and low voltage wiring. All fire alarm terminations will be by this subcontractor.
91. This Subcontractor shall wire smoke detectors that are factory installed and integral to HVAC units (and furnish and install fire alarm modules as required). This subcontractor shall wire all smoke/fire dampers furnished and installed by others. This subcontractor shall wire and make final connections to all the duct mounted smoke detectors & FSD's for a fully functioning and complete system. This subcontractor shall review and include any devices shown on Mechanical Drawings in addition to the Electrical/Fire Alarm drawings.
92. This Subcontractor shall furnish and install wiring and connection of sprinkler system equipment & components to the Fire Alarm system, including but not limited to water flow and supervisory switches. The Fire Alarm drawings may not show all devices, this subcontractor shall review and include any devices shown on Fire Protection Drawings in addition to the Electrical drawings. Fire Protection / Sprinkler subcontractor (BP #35) shall furnish and install the switches.
93. This Subcontractor shall coordinate with the Security (BP #39) & Door Hardware Subcontractor (BP #20) to furnish & install all power and fire alarm integration for access controlled & secure doors, automatic door operators, overhead coiling doors, etc. including but not limited to all fire alarm cabling, relays, control modules, terminations, etc. This subcontractor shall furnish & install all final power & fire alarm connections and terminations as required to items furnished by others, including but not limited to connections from equipment to fire alarm modules. This Subcontractor shall coordinate Door holders or closers withhold-open provided as part of door hardware and security specifications.
94. This Subcontractor shall coordinate with the Low Voltage subcontractor (BP #39) for integration of the BDA / Emergency Responder Radio Communication System (ERRCS) as it pertains to providing a complete, fully functioning, and compliant fire alarm system.

95. This Subcontractor shall Coordinate FA device depth requirements with architectural finishes, depths and clearances and notify the Design team of any conflicts via the RFI process.
96. This Subcontractor shall coordinate, furnish and install all FA devices required in the elevator hoist ways to meet the design documents, NFPA and Authority Having Jurisdiction.
97. This Subcontractor shall coordinate and provide all required components and interconnect wiring for the operation and monitoring of the Food Service Equipment Ansul System. (Reference drawing E400 for location)
98. This subcontractor shall coordinate and provide all required components for the operation and monitoring of the natural gas detection systems.
99. This subcontractor shall coordinate, furnish, & install all wiring and components necessary for the operation and monitoring of roof smoke / heat vents, for an example see A103D.
100. This subcontractor shall coordinate, furnish, & install all wiring and components necessary to mute all AV, sound systems, and theatrical systems, for an example see the sequence of operations on E701.
101. This Subcontractor shall include pretesting 100% of the fire alarm devices PRIOR to performing acceptance testing with Turner and the AHJ. The pretesting shall be performed during off hours.
102. This Subcontractor shall coordinate elevator recall and elevator shunt trip Systems with Elevator Contractor indicated on Electrical Drawings.

Commissioning and Testing

103. This Subcontractor shall fully cooperate with the Owner's Commissioning Agent for commissioning of systems furnished and/or installed by this Subcontractor.
104. This Subcontractor will provide a dedicated engineer / staff person on site dedicated to the contractor commissioning of all systems prior to occupancy. This includes documenting, organizing and submitting to the owner all startup reports, pre-functional checklists and any performance reports that may be required for each piece of equipment.
105. This Subcontractor's Project Manager and Commissioning engineer shall attend a weekly Commissioning/MEP coordination meeting for the duration of the project.
106. This subcontractor shall include sufficient time to fully commission all systems. Adequate manpower shall be available to fully meet the commissioning requirements.
107. Start-up reports shall be submitted to Turner within (3) days of startup.
108. This Subcontractor shall submit fully filled out Pre-Functional and Functional test reports to TCCo.
109. This Subcontractor shall perform all required testing in accordance with the specifications. Testing is to be performed in a manner so as to complement the schedule and procedure of construction, and the Work of others. Test reports shall identify the system, infrastructure and area testing with specified test requirements. Any and all manpower, temporary connections, etc. required to accomplish this work in this manner are included. NOTE: This Subcontractor will test every piece of equipment in the presence of Turner and / or the Engineer and provide a full report to Turner and the Engineer accordingly.
110. This subcontractor shall coordinate with the Authority Having Jurisdiction as required per the plans and specifications including those referenced in The Statement of Special Inspections. This subcontractor shall provide Turner a minimum of seventy-two (72) hour advance notice for all required inspections.

111. This Subcontractor shall include all necessary shutdowns and / or tie-ins for your specific systems. This subcontractor shall assume all shutdowns and tie-ins are to be performed premium time; provide proper notification and coordination with all affected parties (Owner, Turner, local agencies, utilities, etc.).

112. This Subcontractor shall complete all identification, labeling and tagging prior to the installation of the ceiling grid by others so as to allow for proper inspections as to thoroughness of these items.

113. This Subcontractor shall include in their Bid all necessary overtime and / or off-hour work for testing so as not to delay the Work of other Trade Subcontractors. This includes testing in conjunction with any other Trade that tie-in to this Subcontractor's scope of Work.

114. This subcontractor will be responsible for all costs associated with the reopening and patching of ceilings or walls required for corrective work. All required testing of piping must be scheduled and completed before ceilings are installed. This subcontract includes any out of sequence work and testing required to complete the work before ceiling work starts

115. This Subcontractor shall participate in rough-in inspection coordination with other trades and Turner utilizing color coded framing identification to illustrate completion and inspection ready areas. Color code key and inspection sequencing will be identified by Turner Superintendent.

116. This Subcontractor shall provide fuel for the Generator testing and Commissioning as well as ensure a full tank of fuel is present at time of substantial completion acceptance by the Owner. This subcontractor must provide all components necessary to fully test the generator, including but not limited to temporary load bank as needed.

117. This Subcontractor shall provide training as specified for all of the equipment and systems furnished by this Subcontractor by phases. This Subcontractor shall include two (2) man-days of additional training be used at Turner Construction Company's discretion.

118. This subcontractor shall include all training required for systems installed by this subcontractor, including but not limited to videotaping the training sessions for turnover to the Owner.

SourceBlue Coordination

119. This subcontractor has received and understands the SourceBlue Equipment List and Coordination Matrices. This subcontractor accepts and agrees to perform the scope identified as this subcontractors responsibility in these matrices.

120. This Subcontractor shall coordinate, receive, offload, hoist, protect, store, set in place, install, wire, & test all electrical distribution equipment being furnished by SourceBlue or others. This shall include start up requirements and commissioning. Once this subcontractor receives and accepts delivery of equipment provided by others, it is in their sole care & custody. This subcontractor is responsible to inspect and identify any damages or deficiencies prior to accepting delivery & taking custody. If any equipment or component is damaged or lost after taking custody, it will be the responsibility of this subcontractor to repair or replace it at their expense.

121. This subcontractor shall provide off-site storage for electrical equipment furnished by SourceBlue. Materials shall be brought on site per "Just In Time Delivery" provisions. This subcontractor shall include **6 months** of offsite storage for all equipment supplied by SourceBlue.

122. This subcontractor shall furnish & install all electrical distribution equipment and components **not** identified as being furnished by SourceBlue.

123. This subcontractor is responsible for the means & methods of rigging and fitting electrical distribution equipment through existing & new conditions (i.e. doorways). This subcontractor shall assume the generator and main electrical switchgear will be rigged and installed in place on premium time.

Coordination & Miscellaneous

124. The intent of the project Lean initiative is that all items that are to be installed are to prefabricated, arranged and shipped to project for ease of installation. Devices installed with partitions will be prefabricated with conduits/ piping as coordinated in the BIM model. These devices are to be packaged and labeled by room for ease of installation (kit-of-parts).

125. This subcontractor shall fully participate in all 3-D coordination, this Contractor stall take the lead on modeling the ceilings and developing with the other Subcontractors a comprehensive coordinated Reflective Ceiling Plan for all ceiling devices, light fixtures, soffit conditions and special framing support systems.

126. This subcontractor shall provide shop drawings and models showing blocking requirements for their systems and scope of work. Blocking will be furnished & installed by the General Trades Subcontractor. This subcontractor is responsible for coordination in order to ensure the correct type & size of blocking is provided in the correct locations.

127. This subcontractor shall coordinate all installations to meet accessibility requirements as noted in the contract documents and all NEC clearance required for maintenance and code.

128. This Subcontractor will be required to relocate any conduit, wire, or other part of the Electrical system installed by this subcontractor that deviates from the coordinated drawings that prohibits access to any equipment, valve, damper, junction box or anything else requiring access in the future. Acceptable access shall be deemed by Turner, Owner, Engineer, or Cx agent.

129. This Subcontractor will coordinate, furnish and install their work within millwork & casework in accordance with the contract documents and building code. This subcontractor shall include pathways, wiring, devices and cover plates within finished walls, millwork panels, desks, etc.

130. This subcontractor shall receive, rig, install, and power all motor starters and VFD's for equipment furnished by owner and other subcontractors.

131. This subcontractor shall receive, rig, install, and power all owner furnished equipment as indicated in the contract documents.

132. This Subcontractor shall coordinate, furnish and install all electrical power & controls to motorized shades and shade controllers, including but not limited to interconnecting low voltage wiring, wall switches, all wiring associated with integrating motorized shades and the lighting control system, etc... The shades, motors, and motor controllers will be furnished & mounted by the Shade Subcontractor (BP #33). This subcontractor shall be responsible for assisting the Shade Subcontractor (BP #33) with testing the motorized shade systems upon completion.

133. This subcontractor shall make all internal connections between shipping splits needed for mechanical equipment.

134. This Subcontractor shall maintain utmost care so as not to damage Spray-on Insulating materials. Any and all damages and / or over-scraped areas, which may require repair, shall be back charged to the Subcontractor that causes the damage. Hangers and supports shall be installed prior to SOFP operations to minimize scraping after the fact.

135. This Subcontractor shall furnish, F.O.B. jobsite, all access doors for all valves and other equipment requiring access and which may become inaccessible at a later date in the drywall and masonry assemblies. This Subcontractor shall arrange their work in such a manner to minimize the quantity of access doors required. All items requiring accessibility shall be located in already accessible areas, such as above lay-in ceilings, etc. if at all possible. It is the responsibility of the Mechanical Subcontractor to coordinate and provide information regarding the location, sizes and quantities of access doors, panels, etc. required for their Work as well as furnish same. Failure to furnish the access doors and / or coordinated locations such that other Subcontractors (e.g., masonry, drywall, etc.) must go back to complete work, shall result in a back-charge to this Subcontractor for out of sequence Work accordingly. Also note that all required access doors and / or panels shall be furnished from one (1) manufacturer with their ratings consistent with the respective partition / ceiling / floor ratings and must be keyed alike. Access door type will be per the architect's direction in each location. This Subcontractor shall provide access door shop drawings indicating locations, types and sizes in architectural ceilings and partitions for design team review and approval.

136. This Subcontractor shall provide installation of all mockups identified in the project documents as well as materials for each type of wall/ slab penetration to complete a firestopping mockup for review and approval by AHJ and Design Team.

137. This subcontractor shall provide a concrete housekeeping pad layout to the concrete subcontractor for all required locations of concrete equipment pads.

138. This Subcontractor is required to cut ceiling pads for ceiling mounted devices installed under this scope of work. Ceiling pads shall be furnished by the Ceiling Subcontractor (BP #22).

139. The subcontractor shall include 2 complete cleanings of equipment and systems provided under this scope. Cleanings shall be performed prior to initial energizing equipment and again prior to turnover to the Owner. Cleanings shall include complete debris, dust removal and wiping of all internal and external components and shall be in accordance with manufacturers approved methods.

140. Additional drawings required during the coordination process are as follows:

    a) Space allocations and equipment paths for future equipment shall be planned for and included within all coordination drawings presented during the construction phases. This area shall not be utilized for any other means when equipment is installed.

    b) Provide penetration drawings for interior, exterior, foundation and floor penetrations. This should include dimensions off columns, elevations above the finish floor, and required opening size. Layout as required for proper field coordination is included under this scope.

    c) Provide equipment loading drawing showing loading paths of all equipment and required access. This includes any equipment purchased by others but received under this scope. This does not replace any Turner scheduling or logistics plan.

    d) Provide rigging plan for all equipment requiring the use of a crane. Plan does not replace any Turner Logistics plan.

141. This Subcontractor shall be responsible for complete coordination of all generator, UPS, ATS and Switchgear Controls. This shall include all coordination and wiring required between manufacturers and interconnection requirements.

142. In addition to all other protection requirements listed elsewhere in the project documents, this Subcontractor is responsible for complete protection of equipment installed under this scope. This shall include protection from external dust, debris, and adjacent construction activities. Additionally, all sensitive exposed components such as controls, meters, displays, etc. shall be individually covered with protective material to avoid damage and/or scratching. The protection plan shall be reviewed with Turner prior to implementation and all resulting damage from improper protection shall be the responsibility of this subcontractor.

143. This Subcontractor will be required to develop a Method of Procedure (MOP) for various specific operations occurring during construction, testing and commissioning of this project. The MOP must itemize in step-by-step, detailed fashion, each work task and time frame for a complete and safe procedure for execution of specific work activities. Examples of work activities requiring a written MOP may include, but not limited to, operations that present heightened safety concern, tie-in or shutdown of live/energized equipment, equipment/system testing, etc. The MOP must be prepared by This Subcontractor and submitted to Turner Construction for review and approval prior to the start of associated work.

144. This Subcontractor shall provide all permanent identification/labels for equipment, systems and components provided under this scope of work and per the specification requirements. Provide complete submittal of all identification components such as nameplates, tags, special signage, type, size, material, fastening/mounting methods, text, font and color for review and coordination prior to release. The submittal shall also include a table of all identification items clearly indicating the above characteristics for each and referencing associated cut-sheets/product literature.

145. This Subcontractor shall be responsible for the review of equipment submittals provided by other trades requiring external power connection and/or controls as part of this scope of work. Provide comments for coordination of adequate cable entrance space, method of connection, and conformance with required electrical installation and the project documents.

146. This Subcontractor shall coordinate all locations of equipment power supplies and disconnects with equipment locations installed by the other MEP Subcontractors

147. This Subcontractor shall provide equipment grounding infrastructure requirements. This will include but not limited to lighting, cable tray, SDT Flooring, IT/ AV/ Telecomm/ Plumbing/ Mechanical equipment per manufacturer, LV racks, all grounding bus bars, and devices and all other ground requirements weather indicated or not on the contract documents.

148. This Subcontractor shall coordinate with Roof Subcontractor to ensure penetrations meet specifications and layout requirements to maintain the required roofing manufacturer's warranty.

149. This Subcontractor shall layout, furnish and install all sleeves and inserts required for their work. This includes coordinating with Firestopping Subcontractor (BP #17) for receipt and install of pre-manufactured firestopped sleeves. Sound sealing shall be by this Subcontractor, including but not limited to acoustical putty pads. Firestopping will be by Fire Stopping Subcontractor.

150. Through wall and floor to floor fire stopping is included in a separate bid package. This subcontractor must coordinate all penetrations with the fire stopping subcontractor. This subcontractor will receive and install any in slab/cast in place sleeves or assemblies required for this subcontractor's scope of work.

151. This subcontractor shall ensure that the nothing hits the ground policy is followed during underground electrical infrastructure installation, as well as above grade.

152. This subcontractor shall furnish & install all submetering required per the contract documents, including but not limited to all associated pathways, conductors, etc. For an example see the submetering schedule on E700.

153. This Subcontractor shall include all costs to provide delegated design criteria and submittals per the following, but not limited to, Delegated Design Table on Drawing GC0A. This Subcontractor has thoroughly read all Specification Sections regardless of what is indicated on the Delegated Design Table on Drawing GC0A and included all costs for delegated design scope of work.

D. Safety

1. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible for removing snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers. Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.
2. This Subcontractor shall provide a site-specific plan on how they will comply with Turner's Ladder's Last Program.
3. This subcontractor shall ensure that any Lulls used on site are equipped with hydraulic fork positioners.
4. This subcontractor shall engage a 3rd Party to complete a GPR Survey to mark out existing utilities under and in the general area of any proposed Mobile Crane locations.
5. This Subcontractor to eliminate slip/trip/fall hazards to surrounding trades or ensure all stub ups extend a minimum of 3' above the slab or walking surface. If this is not possible, a 3' or higher cone must be placed over the stub up. Impalement protection is required on all stub up, when a hazard exists.
6. This Subcontractor is to mark with labels all Temporary Electrical Power Panels and circuit breakers. All electrical panels (temporary or otherwise) shall be governed by an external main disconnect switch at the panel.
7. All temporary power receptacles shall be protected by Ground Fault Circuit Interrupters (GFCI).
8. The electrical contractor must perform and document monthly testing and inspection of all temporary power installations.
9. This subcontractor to provide a minimum of Battery Charging Stations with 8 outlets in 2 locations per each floor of new construction and each shall be designated only for charging tool batteries. Battery charging stations shall be constructed as a shelf or rack.
10. All temporary lighting shall be completely protected on all sides to eliminate the potential of the bulb coming in contact with anything.
11. All temporary lighting shall be run with sheathed multi-conduction wire. No single strand wiring is allowed. Temporary lighting must never be put on the same circuit as temporary or permanent receptacles; temporary lights must be on a dedicated circuit and cannot be used for power.

12. Temporary lighting must be at least 8 feet AFF, LED and generate a minimum of 8-foot candles in all construction work areas. There shall be at least one bulb per room throughout the building.
13. This Subcontractor, prior to concrete slab on deck placements shall install temporary lighting from the deck above by pulling temporary lights up through the deck.
14. All temporary power connections must be either 8 feet AFF or installed in a junction box. Monkey fists are not allowed below 8 feet.
15. This Subcontractor must have all energized switches and outlets covered with wall plates prior to energizing these circuits.
16. This subcontractor shall provide a written plan showing the temporary lighting and power receptacles.
17. This subcontractor shall hardwire an evacuation horn and strobe at Three locations per floor with two pull stations on the ground level. Locations shall be reviewed by the Turner Superintendent.
18. This subcontractor shall install emergency lighting in stairwells, lamps shall remain lit for 1 hour in the event of a loss of power to the building.
19. This subcontractor shall utilize a threaded rod cutter in lieu of a porta band or grinder to cut all threaded rods.
20. This Subcontractor shall protect all downward protruding threaded rods with rubber caps to prevent injury to employees while working around rods.

E. Logistics and Schedule

1. This subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

F. Exclusions

1. This Subcontractor shall EXCLUDE Trenching, excavation & backfill (by Sitework Subcontractor (BP #09))
2. This Subcontractor shall EXCLUDE concrete bases for site light fixtures (by Sitework Subcontractor (BP #09))
3. This Subcontractor shall EXCLUDE wood backer boards in Electrical rooms (By General Trades (BP #21))
4. This Subcontractor shall EXCLUDE Penetration Firestopping as it will be performed by Firestopping Subcontractor (BP #17). This Subcontractor shall provide an add alternate on the Bid Form of Proposal to perform penetration firestopping related to this scope of work.

G. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	**Amount**
Refer to Form of Proposal	

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP #38 – Electrical & Fire Alarm
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Revised: 10.21.2024

H. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternates shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	Amount
Refer to Form of Proposal	

Additional Provisions/Scope of Work

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State Project No. 057-0114 N
Greenwich, CT
BP39 – Low Voltage & AV
Dated: 07.08.2024
Revised: 10.21.2024

C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***BP #39 Low Voltage & AV Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***BP #39 Low Voltage & AV Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
270536	Cable Trays For Communication Systems
271000	Structured Cabling
274100	Audio Video Systems
275116	Public Address System
275313	Clock System
276010	Emergency Responder Radio Coverage System
280500	Security Conductor Cables
280528	Pathways for Security Systems
281300	Access Control System
281600	Intrusion Detection
282300	Video Surveillance System

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Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
Div 00	Division 00 – Procurement and Contracting Requirements
Div 01	Division 01 – General Requirements
019113	General Commissioning Requirements
079200	Joint Sealants

Bid Package Specific Scope

2. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
3. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
4. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
5. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.
6. The drawings are diagrammatic and may not be complete in every detail. They reflect the intent of the Arch/Engineer to provide for a complete working system in compliance with all codes as shown by the documents. This contractor shall include any other equipment or devices necessary to provide a complete functioning system. This Trade Contractor shall include, as part of his work, the cost of relocating his work, due to the coordination procedure as part of his trade agreement price.

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7. This Subcontractor shall provide a full-time competent Project Manager for the duration of the project. This individual must have the authority to make all decisions for this subcontractor, attend all weekly meetings, and be responsible for all lower tier subcontractors and vendors. This Subcontractor shall submit a complete organization chart indicating the title and names of the people that will staff the project. Submit resumes of each person on the organization chart for Turner's approval. This shall include Project Managers, Commissioning Manager, Foreman, Superintendents and other key personnel as required by Turner Construction.
8. This Subcontractor shall be required to continuously record the progress of the ~~Electrical~~ Low Voltage & AV Work on a record set of Drawings, to be maintained on the jobsite at all times. The Architect, Engineer and Turner will review these Documents on a monthly basis in conjunction with their monthly payment application review; this shall be a condition of approval of each progress payment.
9. This Subcontractor shall examine the work of others, which will affect this subcontractor's work and notify Turner well in advance of any condition which will prevent the proper execution of this subcontractor's work. This shall include but not be limited to this subcontractor reviewing the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled. Any notice provides sufficient time to repair conditions without impacting overall schedule. Commencement of this subcontractor's work will constitute this subcontractor's acceptance of the existing conditions.
10. This Subcontractor is aware that this is a High-Performance Building and submittals should be submitted according to these standards. This Subcontractor has included all costs associated with meeting these requirements as set forth in the Division 1 Specifications.
11. This Subcontractor will provide the necessary written documentation for meeting the CT High Performance requirements as outlined in the Division 1 specifications.
12. This Subcontractor shall provide all necessary layout including benchmarks, extending of control lines, etc. in order to properly perform the Work.
13. This Subcontractor shall be responsible for providing out of sequence work at no additional costs when required in coordination with other trades.
14. Utilize total station system to layout and set hanger supports and layout risers/ boxes/ penetrations/ underslab infrastructure.
15. This subcontractor will provide all supports and support systems for ~~Electrical~~ Low Voltage & AV equipment, infrastructure, and pathways ~~piping~~ if not indicated on the structural drawings. Systems shall meet the requirements of seismic and sway parameters per the local building code and project specifications.
16. This subcontractor shall include all costs for escalation on materials, labor, equipment, etc. for the durations indicated on the project schedule.
17. Each Subcontractor understands that Quality Control and Quality Assurance is a specific commitment and attitude, which is required during the implementation of the work. The focus required to establish a quality level, by developing in-place mock-ups, by providing skilled supervision and by monitoring daily production quality are all expected to be carried out during the execution on this Contract.
18. It is understood that the specific warrantee/guarantee period will start when the equipment/system is accepted by the Owner for their operation/use at this time of Substantial Completion. Any gap between the scheduled start up of equipment and owner acceptance of the system shall be included.

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19. This Subcontractor shall review, conform to, and furnish and install all requirements included in the Safety Additional Provisions included in this Agreement. This Subcontractor understands that this document is project specific, and all provisions must be included in this Subcontractors' bid.
20. This Subcontractor has reviewed the Logistics & Phasing Plans and the Construction Schedule and has included all associated costs as relevant to this scope of work. It is extremely important to coordinate your work with the other adjacent Subcontractors during the various phases and perform the work as required by these documents. No come back costs will be entertained.
21. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
22. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
23. This Subcontractor will provide all pricing for changes within five (5) calendar days of notice of change (without exception). If the subcontractor does not submit pricing within these terms, it will be assumed a ZERO cost change. The change orders shall include man-hours, material costs, tax and mark-ups as separate line items broken out separately. This subcontractor will utilize Turner's standard change order cover sheet for all change orders.
24. All Change Order quotes shall be price labor per NECA Column 1 Full breakdown of all pricing is required and should be broken out separately for each drawing. Pricing shall be provided in accordance with the expected project conditions, breaking out any premium installations required at the time of the installation ie: closed ceiling, furniture, additional cleaning etc. No additional compensation will be considered for logistics, staging, inefficiencies and/or coordination with other contractors in not clearly broken out in the Change Order Proposal.
25. This Subcontractor shall organize and neatly place all materials, tools, etc. This Subcontractor shall remove all debris resulting from their work on a daily basis to a dumpster provided by others. No trash or debris will remain in the work areas at the end of the shift. If debris is left in the work areas, it will be removed to the dumpster by others, and the labor expense back charged to the responsible Subcontractor. Large sections of debris shall be disposed of to a dumpster provided by others by this Subcontractor.
26. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
27. No truck parking/idling is allowed on streets adjacent to the project site while waiting to unload. This Subcontractor shall include accommodations as required to adhere to "just in time" deliveries. Refer to Turner's "Logistic Plans – Scope of Work" for delivery restrictions.
28. This Subcontractor shall include consistent and complete scheduling and coordination with all other trades to properly sequence the work and for the complete scope under this agreement.
29. This Subcontractor's Project Manager/Foreman shall participate in Pull Planning Sessions which affect their scope of work. This Project Manager/Foreman shall provide input to further develop the accurate sequence and timing for completion of the work.
30. This Subcontractor shall provide their own lifts and access for construction. No scaffolding will be provided.

Additional Provisions/Scope of Work

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31. This Subcontractor shall be responsible to core all penetrations required with this scope of work, this includes but is not limited to foundations, walls and slabs as well as where sleeves where not installed prior to placing of concrete.
32. This subcontractor is responsible for pulling all permits required for their scope of work.
33. This Subcontractor shall include 1 laborer per 10-person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m. while the subcontractor is performing work on site. The composite crew is intended to clean up general debris not necessary associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)

Low Voltage & AV

34. This Subcontractor shall furnish and install complete Low Voltage, AV, & Security Systems, including but not limited to head end equipment, pullboxes, devices & cover plates, cameras, WAPs, device boxes, hangers, J-hooks, low voltage cabling, conduit, cable tray, racks, cabinets, panels, uninterruptible power supplies, switches, patch panels, cameras, card readers, door contacts, lock down, etc. for all low voltage systems, including but not limited to telecommunications, telephone, data, optical fiber, security, AV, DAS / ERRCS / BDA system(s), etc. as shown on Contract Documents.
35. All data cabling & terminations required to connect all building systems to the network / internet shall be furnished, installed, and terminated by this subcontractor, including but not limited to network connections for Fire Alarm, Lighting Controls, Elevator, BMS / ATC controls, electrical metering, etc.
36. This subcontractor shall design, furnish & install all infrastructure for the DAS / ERRCS / BDA, including but not limited to all fire rated cabling, conduit pathways, in-wall rough, hangers & supports, backboxes, devices, etc. for a complete and fully functioning system. For an example, see detail 4 on E502. The Fire Alarm subcontractor will be responsible for all fire alarm integration.
37. The Electrical Subcontractor (BP#38) shall furnish & install in-wall rough, including standard electrical boxes with conduit raceways to accessible ceilings, for use by this Subcontractor except as indicated herein. This subcontractor shall furnish & install any additional pathways required above ceilings. Non-standard boxes shall be furnished by this subcontractor and installed by the Electrical Subcontractor. This subcontractor shall furnish & install any in-wall pathways required at low voltage system cabinets, including but not limited to installing the low voltage cabinet(s).
38. This subcontractor shall furnish and install their own conduit & cable tray pathways as needed for low voltage systems above ceiling. The Electrical Subcontractor (BP#38) will only be providing in-wall rough for use by this subcontractor.
39. This Subcontractor shall coordinate all in wall rough-in requirements with the Electrical Contractor (BP #38) and shall assume infrastructure will be installed concurrently with Electrical infrastructure. It is the Low Voltage Subcontractor's responsibility to ensure timely and correct information is provided to the Electrical Contractor to facilitate this installation. Any cost associated with delays and or incorrect information will be the responsibility of this Low Voltage Subcontractor. This Subcontractor shall provide the Electrical Contractor with detailed shop drawings electronically via Revit, CAD, and PDF to properly coordinate this effort.
40. The Electrical Contractor (BP #38) shall furnish & install all low voltage and security site underground raceways & ductbank required, including but not limited to ductbank for new telecom service, underground raceways / conduit for site cameras, all handholes, etc. For a reference see sheet SU100.

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41. This subcontractor shall coordinate, review, confirm, & sign off on all low voltage in-wall rough & site pathways being provided by the Electrical Subcontractor (BP#38). If any additional pathways (i.e. conduit, cable tray, etc.) are required after coordination & sign-off, then this subcontractor shall furnish & install them at their own expense.
42. This subcontractor shall furnish & install all ladder rack, conduit, & cable tray assemblies / pathways within data rooms (IDF/MDF). J-Hooks and other support of free air / plenum rated cabling for low voltage systems shall also be furnished & installed by this Subcontractor.
43. This subcontractor shall furnish & install all low voltage wiring and devices required for auto opening doors, overhead coiling doors, and access controlled / secured doors, including but not limited to cabling, terminations, access control panel(s) & board(s), door contacts, REX devices, crash bars, I.R. sensors, card readers, alarms, power supplies / transformers, etc. Electric strikes to be furnished by others but installed & wired by this subcontractor. This subcontractor shall furnish & install all power supplies per the hardware schedule hardware specifications. This subcontractor shall furnish & install all 12V/24V wiring from power supplies to equipment. Raceways through doors frames will be furnished & installed by the Electrical Subcontractor. This subcontractor shall furnish & install all wiring through pathways for a complete and fully functioning door.
44. This subcontractor shall furnish & install all power supplies and transformers required for Low Voltage & Security system components. The Low Voltage Subcontractor shall be required to bring 120v power from the nearest junction box to any Low Voltage or Security power supply, panels, or subpanels that are not quantified on the Electrical series of drawings. If power is shown on the Electrical series of drawings, then the Electrical Subcontractor (BP#38) will furnish, install and terminate 120V power. This subcontractor shall furnish, install, & terminate all 12V/24V wiring from these power supplies, panels, etc.
45. This Subcontractor shall coordinate with the Electrical subcontractor for all shared floor box and poke-thru requirements. Shared floor boxes and poke thrus shall be furnished & installed by the Electrical subcontractor (BP #38). This subcontractor is responsible for installing and terminating all low voltage cabling within the floor box for the low voltage system. This subcontractor shall furnish & install all floor boxes that are dedicated solely to low voltage systems.
46. This Subcontractor shall furnish, install and test all cabling, terminations and devices associated with the Low Voltage scope of work.
47. This subcontractor shall provide PE stamped drawings, calculations, & all delegated design as indicated in the contract documents.
48. This Subcontractor shall furnish and install all site & exterior low voltage electrical as indicated on the contract documents, including not limited to security cameras, emergency call stations, gate card readers and all communications / control wiring, etc. Also reference Civil, Landscape, & Architectural drawings for system details. Irrigation control wiring and pathways for control wiring shall be furnished and installed by the Irrigation contractor.
49. This subcontractor shall furnish & install all low voltage required for Emergency Blue Light Call Stations. Conduit pathways, pole, and fixtures provided by the Electrical Subcontractor. This subcontractor must coordinate requirements with the Electrical Subcontractor. This subcontractor shall perform all low voltage cabling, terminations, and testing as required.
50. This Subcontractor shall coordinate all requirements of the new telecommunications service(s) with the Owner and local power company.
51. This subcontractor shall furnish & install a complete and fully functioning public address system as indicated in the contract documents.

52. This subcontractor shall furnish & install a complete and fully functioning building clock system as indicated in the contract documents.
53. This subcontractor shall furnish & install all grounding required for their own scope of work, including but not limited to equipment furnished by others but installed by this subcontractor. The Electrical Subcontractor (BP #38) shall furnish & install grounding bus bars indicated in the contract documents.
54. This Subcontractor shall coordinate, receive, offload, hoist, protect, store, set in place, install, wire, & test all Low Voltage & AV equipment being furnished by the Owner. This shall include start up requirements and commissioning. Once this subcontractor receives and accepts delivery of equipment provided by others, it is in their sole care & custody. This subcontractor is responsible for inspecting and identifying any damage or deficiencies prior to accepting delivery & taking custody. If any equipment or component is damaged or lost after taking custody, it will be the responsibility of this subcontractor to repair or replace it at their expense.
55. This Subcontractor shall design, furnish & install an independent support system for all, but not limited to, hung equipment, fixtures, ~~ceiling and piping~~ low voltage systems, low voltage system components, etc. that are directly below the metal roof deck. This support system must attach to structural steel framing members as the metal roof deck cannot be utilized for support, either above or below the roof deck. Refer to A200 series drawings General Note #12 for criteria. This Subcontractor shall provide delegated design and include shop drawings and calculations indicating, but not limited to, load carrying capacities, point loads, etc. This Subcontractor shall include adding miscellaneous metal supports into the 3D model for coordination with all MEP trades.
56. This Subcontractor shall design and install all, but not limited to, channel support systems, heavy duty steel trapezes, seismic restraint hangers, etc. required for all Low Voltage & AV systems as indicated in the Contract Documents. All above ceiling scope shall be installed and inspected 4 weeks prior to any scheduled ceiling grid installation.
57. This subcontractor shall coordinate with the BP#38 electrical and BP#30 food service subcontractors to provide the required sequence of operations for the ansul & fire alarm systems. This subcontractor shall include all, but not limited to, wiring, conduit, devices, testing, etc. for complete operational systems. For example, muting of all sound systems and theatrical systems, refer to 1/E502, E701 & 5/P501.

Demolition

58. This subcontractor is responsible for all tracing of existing circuits prior to disconnect. Any circuits found to feed areas of the building or other buildings that are to remain active shall be rerouted to ensure occupied spaces remain active. This subcontractor understands that the demolition will be performed in multiple phases and will perform the demolition work according to these phases.
59. This subcontractor shall cut, cap, & make safe all Low Voltage & Security equipment and accessories scheduled to be demolished. For an example see sheet MEPD000 & MEPD001. This subcontractor shall cut and leave an air gap at the location of the start of the demo, this shall be at the upstream location at the source (i.e. equipment, valve, distribution point, etc.) All material to be removed shall be painted green by this subcontractor, green markings must be no more than 5' apart. Any material to remain will be painted red with markings no more than 5' apart. The Demolition subcontractor (BP #08) will remove and dispose of all materials.
60. The low voltage and security shall be cut, capped and made safe prior to the start of the demo/abatement.

61. The Demolition Subcontractor (BP #08) will perform all MEP mass demolition and removals (piping, conduits, wire, equipment, etc.) for all phases of the work after the services have been cut, capped and made safe by the MEP trades. The Demolition Subcontractor (BP #08) will remove and dispose of all the demolished material and equipment from the basement.
62. This subcontractor shall coordinate, furnish, & install a typical exterior conduit penetration and exterior back box at each different exterior wall material type, as part of the exterior wall mock-up process for Design Team review. Reference A315 for the intended exterior wall mock-up.

Commissioning and Testing

63. This Subcontractor shall fully cooperate with the Owner's Commissioning Agent for commissioning of systems furnished and/or installed by this Subcontractor.
64. This Subcontractor will provide a dedicated engineer / staff person on site dedicated to the contractor commissioning of all systems prior to occupancy. This includes documenting, organizing and submitting to the owner all startup reports, pre-functional checklists and any performance reports that may be required for each piece of equipment.
65. This Subcontractor's Project Manager and Commissioning engineer shall attend a weekly Commissioning/MEP coordination meeting for the duration of the project.
66. This subcontractor shall include sufficient time to fully commission all systems. Adequate manpower shall be available to fully meet the commissioning requirements.
67. Start-up reports shall be submitted to Turner within (3) days of startup.
68. This Subcontractor shall submit fully filled out Pre-Functional and Functional test reports to TCCo.
69. This Subcontractor shall perform all required testing in accordance with the specifications. Testing is to be performed in a manner so as to complement the schedule and procedure of construction, and the Work of others. Test reports shall identify the system, infrastructure and area testing with specified test requirements. Any and all manpower, temporary connections, etc. required to accomplish this work in this manner are included. NOTE: This Subcontractor will test every piece of equipment in the presence of Turner and / or the Engineer and provide a full report to Turner and the Engineer accordingly.
70. This subcontractor shall coordinate with the Authority Having Jurisdiction as required per the plans and specifications including those referenced in The Statement of Special Inspections. This subcontractor shall provide Turner a minimum of seventy-two (72) hours in advance notice for all required inspections.
71. This Subcontractor shall include all necessary shutdowns and / or tie-ins for your specific systems. This includes all required premium time, proper notification and coordination with all affected parties (Owner, Turner, local agencies, utilities, etc.).
72. This Subcontractor shall complete all identification, labeling and tagging prior to the installation of the ceiling grid by others so as to allow for proper inspections as to thoroughness of these items.
73. This Subcontractor shall include in their Bid all necessary overtime and / or off-hour work for testing so as not to delay the Work of other Trade Subcontractors. This includes testing in conjunction with any other Trade that tie-in to this Subcontractor's scope of Work.

74. This subcontractor will be responsible for all costs associated with the reopening and patching of ceilings or walls required for corrective work. All required testing of piping must be scheduled and completed before ceilings are installed. This subcontract includes any out of sequence work and testing required to complete the work before ceiling work starts.
75. This Subcontractor shall participate in rough-in inspection coordination with other trades and Turner utilizing color coded framing identification to illustrate completion and inspection ready areas. Color code key and inspection sequencing will be identified by Turner Superintendent.
76. This Subcontractor shall provide training as specified for all of the equipment and systems furnished by this Subcontractor by phases. This Subcontractor shall include two (2) man-days of additional training be used at Turner Construction Company's discretion.
77. This subcontractor shall include all training required for systems installed by this subcontractor, including but not limited to videotaping the training sessions for turnover to the Owner.

Coordination & Miscellaneous

78. This subcontractor shall fully participate in all 3-D coordination - All work per 3-D MEP Coordination Additional Provisions. This Subcontractor shall be responsible for all coordination activities and requirements identified for the Electrical Subcontractor in the BIM additional Provisions as pertinent to Low Voltage & AV systems scope of work. Ceiling modeling lead will remain by the Electrical Subcontractor however this Subcontractor shall coordinate Low Voltage with the Electrician as required.
79. This subcontractor must include 3D modeling of all cable bundles on J-hooks & IDF/MDF room raceways & equipment to ensure a fully coordinated installation, as well as for turnover of accurate 3D as-builts. This subcontractor must also coordinate locations of all hangers & embeds.
80. This subcontractor shall provide shop drawings and models showing blocking requirements for their systems and scope of work. Blocking will be furnished & installed by the General Trades Subcontractor. This subcontractor is responsible for coordination in order to ensure the correct type & size of blocking is provided in the correct locations.
81. The intent of the project Lean initiative is that all items that are to be installed are to prefabricated, arranged and shipped to project for ease of installation. Devices installed with partitions will be prefabricated with conduits/ piping as coordinated in the BIM model. These devices are to be packaged and labeled by room for ease of installation (kit-of-parts).
82. This subcontractor shall coordinate all installations to meet accessibility requirements as noted in the contract documents and all NEC clearance required for maintenance and code.
83. This Subcontractor will be required to relocate any conduit, wire, or other part of the Electrical system installed by this subcontractor that deviates from the coordinated drawings that prohibits access to any equipment, valve, damper, junction box or anything else requiring access in the future. Acceptable access shall be deemed by Turner, Owner, Engineer, or Cx agent

84. This Subcontractor shall furnish, F.O.B. jobsite, all access doors for all valves and other equipment requiring access and which may become inaccessible at a later date in the drywall and masonry assemblies. This Subcontractor shall arrange their work in such a manner to minimize the quantity of access doors required. All items requiring accessibility shall be located in already accessible areas, such as above lay-in ceilings, etc. if at all possible. It is the responsibility of the Mechanical Subcontractor to coordinate and provide information regarding the location, sizes and quantities of access doors, panels, etc. required for their Work as well as furnish same. Failure to furnish the access doors and / or coordinated locations such that other Subcontractors (e.g., masonry, drywall, etc.) must go back to complete work, shall result in a back-charge to this Subcontractor for out of sequence Work accordingly. Also note that all required access doors and / or panels shall be furnished from one (1) manufacturer with their ratings consistent with the respective partition / ceiling / floor ratings and must be keyed alike. Access door type will be per the architect's direction in each location. This Subcontractor shall provide access door shop drawings indicating locations, types and sizes in architectural ceilings and partitions for design team review and approval.
85. This Subcontractor shall provide installation of all mockups identified in the project documents as well as materials for each type of wall/ slab penetration to complete a firestopping mockup for review and approval by AHJ and Design Team.
86. This Subcontractor is required to cut ceiling pads for ceiling mounted devices installed under this scope of work. Ceiling pads shall be furnished by the Ceiling Subcontractor (BP #22).
87. This Subcontractor shall maintain utmost care so as not to damage Spray-on Insulating materials. Any and all damages and / or over-scraped areas, which may require repair, shall be back charged to the Subcontractor that causes the damage. Hangers and supports shall be installed prior to SOFP operations to minimize scraping after the fact.
88. This Subcontractor will provide all pricing for changes within five (5) calendar days of notice of change (without exception). If subcontractor does not submit pricing within these terms, it will be assumed a ZERO cost change. The change orders shall include man-hours, material costs, tax and mark-ups as separate line items broken out separately. This subcontractor will utilize Turner's standard change order cover sheet for all change orders.
89. This subcontractor shall include 2 complete cleanings of equipment and systems provided under this scope. Cleanings shall be performed prior to initial energizing equipment and again prior to turnover to the Owner. Cleanings shall include complete debris, dust removal and wiping of all internal and external components and shall be in accordance with manufacturers approved methods.
90. Additional drawings required during the coordination process are as follows:
    a) Space allocations and equipment paths for future equipment shall be planned for and included within all coordination drawings presented during the construction phases. This area shall not be utilized for any other means when equipment is installed.
    b) Provide penetration drawings for interior, exterior, foundation and floor penetrations. This should include dimensions off columns, elevations above finish floor, and required opening size. Layout as required for proper field coordination is included under this scope.
91. In addition to all other protection requirements listed elsewhere in the project documents, this Subcontractor is responsible for complete protection of equipment provided under this scope. This shall include protection from external dust, debris, and adjacent construction activities. Additionally, all sensitive exposed components such as controls, meters, displays, etc. shall be individually covered with protective material to avoid damage and/or scratching. The protection plan shall be reviewed with Turner prior to implementation and all resulting damage from improper protection shall be the responsibility of this subcontractor.

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92. This Subcontractor will be required to develop a Method of Procedure (MOP) for various specific operations occurring during construction, testing and commissioning of this project. The MOP must itemize in step-by-step, detailed fashion, each work task and time frame for a complete and safe procedure for execution of specific work activities. Examples of work activities requiring a written MOP may include, but not limited to, operations that present heightened safety concern, tie-in or shutdown of live/energized equipment, equipment/system testing, etc. The MOP must be prepared by This Subcontractor and submitted to Turner Construction for review and approval prior to the start of associated work.

93. This subcontractor shall include sufficient time to fully commission all systems. Adequate man power shall be available to fully meet the commissioning requirements.

94. This Subcontractor shall provide all permanent identification/labels for equipment, systems and components provided under this scope of work and per the specification requirements. Provide complete submittal of all identification components such as nameplates, tags, special signage, type, size, material, fastening/mounting methods, text, font and color for review and coordination prior to release. The submittal shall also include a table of all identification items clearly indicating the above characteristics for each and referencing associated cut-sheets/product literature.

95. Through wall and floor to floor fire stopping is included in a separate bid package. This subcontractor must coordinate all penetrations with the fire stopping subcontractor. This subcontractor will receive and install any in slab/cast in place sleeves or assemblies required for this subcontractor's scope of work. The coordination of wall and floor sleeves will be critical to the success of this project.

96. This Subcontractor shall layout, furnish and install all sleeves and inserts required for their work. This includes coordinating with Firestopping Subcontractor (BP #17) for receipt and install of pre-manufactured firestopped sleeves. Sound sealing shall be by this Subcontractor, including but not limited to acoustical putty pads. Firestopping will be by Fire Stopping Subcontractor.

~~97. This Subcontractor will furnish and install the electrical power circuits for the Automatic Door Operators and Electric Overhead Doors. This includes terminations of wiring, furnishing and installing of the relays/control modules for the interface with the fire alarm system, wiring electric hinges, crash bars, I.R. sensors, raceways for card readers and push plates (Includes running wires inside of metal frames). Wiring of the Fire Alarm system to the control modules will be by this subcontractor. Power supplies furnished by the Security Subcontractor shall be installed and connected to power circuits by this Subcontractor above an accessible ceiling. The Door Hardware shall be furnished by others.~~ See Item #43 for automatic door operator scope.

~~98. This Subcontractor will furnish and install the electrical power circuits for Electric Overhead Doors. This includes terminations of wiring, furnishing and installing of the relays/control modules for the interface with the fire alarm system (if required), wiring electric sensors, raceways for card readers and key switches (Includes running wires inside of metal frames). Include coordination with Overhead Door installer for specific electrical requirements. Wiring of the Fire Alarm system to the control modules will be by this subcontractor (if required).~~ See Item #43 for overhead coiling door scope.

99. This Subcontractor shall include all costs to provide delegated design criteria and submittals per the following, but not limited to, Delegated Design Table on Drawing GC0A. This Subcontractor has thoroughly read all Specification Sections regardless of what is indicated on the Delegated Design Table on Drawing GC0A and included all costs for delegated design scope of work.

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D. Safety

1. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible for removing snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers. Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.
2. This Subcontractor shall provide a site-specific plan on how they will comply with Turner's Ladder's Last Program.
3. This subcontractor shall ensure that any Lulls used on site are equipped with hydraulic fork positioners.
4. This subcontractor shall engage a 3rd Party to complete a GPR Survey to mark out existing utilities under and in the general area of any proposed Mobile Crane locations.
5. This subcontractor shall utilize a threaded rod cutter in lieu of a porta band or grinder to cut all threaded rods.
6. This Subcontractor shall protect all downward protruding threaded rods with rubber caps to prevent injury to employees while working around rods.
7. This Subcontractor shall eliminate slip/trip/fall hazards to surrounding trades and ensure all stub ups extend a minimum of 3' above the slab or walking surface. If this is not possible, a 3' or higher cone must be placed over the stub up. Impalement protection is required on all stub ups, when a hazard exists.

E. Logistics and Schedule

1. This subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

F. Exclusions

2. This Subcontractor shall EXCLUDE wood backer boards in Electrical rooms (By General Trades BP #21)
3. This Subcontractor shall EXCLUDE Penetration Firestopping as it will be performed by Firestopping Subcontractor (BP #17). This Subcontractor shall provide an add alternate on the Bid Form of Proposal to perform penetration firestopping related to this scope of work.
4. Exterior bollards (by Sitework Subcontractor (BP#9)

G. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	**Amount**
Refer to Form of Proposal	

H. Alternate Prices

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The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternates shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	Amount
Refer to Form of Proposal	

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BP#40 – Concrete Flatwork
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C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***Concrete Flat Work*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***Concrete Flat Work*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible for performing a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
32 1313	Concrete Paving
32 1373	Concrete Paving and Joint Sealants
32 1726	Tactile Warning Surfaces

Shared Specifications

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
DIV 00	Procurement and Contracting Requirements

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DIV 01	General Requirements
03 1000	Concrete Forming and Accessories
03 2000	Concrete Reinforcing
03 3000	Cast-in-Place Concrete
~~32 1726~~	~~Tactile Warning Surfaces~~

General Items

2. This Subcontractor will make every effort possible to ensure that their waste is properly sorted and disposed of to divert as much waste as possible from disposal in a landfill. This Subcontractor will track this recycling effort using the Online Waste Tracking System established by Turner Construction Company. Each dumpster ticket is to be logged into this system and its recycled content reported as a means of tracking the total percentage of construction and demolition debris diverted from landfills. There is a $50 per month fee for use of this website and this Subcontractor shall include all costs in his bid for use of this service. Refer to the attached User's Manual for more information about this system. Refer to the Turner Tracker Manual in the referenced "Forms and Policies," dated January 2015, in Turner's Project Manual.
3. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
4. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
5. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
6. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.

Bid Package Specific Scope

7. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.

8. This Subcontractor shall include all measures needed for winter concrete installation as required based on the construction schedule timing of this work, including but not limited to tarps, blankets, heaters, enclosures, etc. This Subcontractor shall protect all concrete from freezing temperatures per the specifications. Upon finishing grading and turnover from the Sitework Subcontractor, this Subcontractor shall include any snow removal and protect the subbase from winter weather.

9. This Subcontractor shall provide a lined dumpster for the purposes of wash out to be available for cleaning trucks. Any concrete truck not using this for clean-out will be noted and the clean-up back-charge from the Site Subcontractor will be the Concrete Subcontractor's responsibility. Any excess

concrete due to over placement shall be the responsibility of this Subcontractor to remove to this lined dumpster.

10. This Subcontractor shall repair, clean or restore any areas that are disturbed by concrete operations to the satisfaction of the Owner and Construction Manager. This includes immediately cleaning all concrete splatter and spills due to concrete placement by this Subcontractor on all finish surfaces or landscaped areas.

11. This Subcontractor shall attend a pre-installation meeting 30 working days prior to any concrete being placed. The meeting will be organized by Turner and the following people should be in attendance; the building official, Testing Agency, Special Inspector, Structural Engineer, Architect, Concrete Supplier and this Subcontractor. The purpose of the meeting is to review proposed concrete mix designs as well as project specific requirements and how they are to be achieved.

12. This Subcontractor shall submit cold weather and hot weather concrete placement plans in accordance with ACI and include all costs to implement these plans.

13. This Subcontractor shall furnish and install all layout, concrete formwork, concrete reinforcement and cast-in- place concrete placement per the documents for the following items. This shall include all accessories and means and methods required to provide a completed product per the documents.

    a. Concrete Sidewalk Pavement
    b. Concrete Footing for Bleachers
    c. Heavy Duty Concrete Pavement
    d. Concrete Utility Pads
    e. Concrete Curbs
    f. Concrete Edge at Synthetic Track Trench Drain
    g. Concrete Edge at Synthetic Sports Field
    h. ADA detectable warning tiles

14. This Subcontractor shall furnish and install all type “2A” pedestrian concrete pavement as shown on but not limited to the Landscape and Civil drawings both within the project fenceline and along abutting roads (see 2A/L501 for details). This Subcontractor is to include tactile warning strips, transitions, ramps and ensuring that all sidewalks meet ADA and local requirements.

15. This Subcontractor shall furnish and install all type “2B” heavy duty concrete pavement as shown on but not limited to the Landscape and Civil drawings (see 2B/L501 for details).

16. This Subcontractor shall furnish and install all exterior concrete utility pads, including but not limited to transformer pads, dumpster enclosure pads, gas meter pads, dust collection system pads and generator pad(s).

17. This Subcontractor shall furnish and install any structural grade rigid filler material at applicable locations.

18. This Subcontractor shall furnish and install any exterior cast in place concrete curbing.

19. This Subcontractor shall layout, form and place concrete and reinforcement for all stepped concrete where indicated.

20. This Subcontractor shall monitor the formwork during and after concrete placement to ensure the plumbness of edges and make adjustments as necessary.

21. This Subcontractor shall receive, distribute, and install any concrete embedded items supplied by others, including but not limited to anchor bolts, bearing pads, embedded angles, pad sleeves, etc.

22. This Subcontractor shall remove all snap ties, cut concrete fins and fill voids in the concrete surfaces within two weeks of concrete placement at exposed surfaces.
23. This Subcontractor shall provide all surveying and layout required for the work included with this package.
24. Immediately prior to the placement of concrete slabs, this Subcontractor shall thoroughly clean all areas to receive concrete. Compressed air shall not be used. This Subcontractor shall use vacuums or other methods that minimize dust.
25. This Subcontractor shall furnish and install haunched slabs where required. Reference details in the Structural drawings.
26. This Subcontractor shall furnish and install all outdoor concrete pads required for mechanical, electrical, and plumbing equipment including but not limited to those shown on the Civil and Landscape drawings. See list of exclusions at end of this document.

Coordination with Other Trades

27. This Subcontractor shall coordinate all requirements for Testing and Inspection in accordance with Field Quality Control section found in the Division 1 specifications and Concrete Specifications. This Subcontractor shall furnish any required cure box (or boxes) of sufficient capacity for concrete placement schedule. Inspections will be scheduled through the Construction Manager.
28. This Subcontractor shall be responsible for ordering, scheduling and sequencing of concrete deliveries required for the work. This shall include any premium time and standby labor required for continuous work (including the concrete supplier if required).
29. This Subcontractor will work closely with the Sitework Subcontractor to coordinate the scheduling of excavation for concrete flatwork areas as shown.
30. This Subcontractor shall coordinate all concrete work with all other subcontractors having work adjacent to or embedded within the concrete.
31. This Subcontractor shall coordinate and provide all openings in formwork for other trades as required. This includes box-outs and/or sleeves in slabs for MEP trades or other work that penetrates the concrete. Layout and sleeves shall be furnished by others and installed by this Subcontractor.
32. This Subcontractor shall coordinate with the Sitework Subcontractor for any drains, cleanouts, hand holes or valve caps within hardscaped areas to be maintained during the concrete pour.

Joint Sealants:

33. This Subcontractor will furnish and install all Joint Sealants within and at perimeter of work abutting adjacent work where required per the contract documents.

Expansion Control:

34. This Subcontractor will furnish and install Expansion Control where required within the concrete flatwork.

D. Exclusions

1. This Subcontractor shall exclude concrete lightpole bases or concrete fill for bollards (By BP #9 Sitework)

2. This Subcontractor shall exclude foundation walls, strip footings, interior spread footings, piers, frost pads, recessed frost pads, interior slabs on grade, slabs on decks, elevator pits, sump pits, radon pits, interior housekeeping pads and any other interior structural concrete items (By BP #10 Concrete).
3. This Subcontractor shall exclude fence footings, gate footings, furniture footings, bench footings, athletic field equipment footings, signage footings, light pole bases, thrust blocks, encasement of ductbanks and bituminous concrete (By BP #9 Sitework).
4. This Subcontractor shall exclude type "2C" concrete pedestrian pavers (By BP #9 Sitework).
5. This Subcontractor shall exclude excavation, surface preparation and backfill (By BP #9 Sitework).
6. This Subcontractor shall exclude the frost walls beneath the exterior Chiller pads (By BP #10 Concrete).

E. **Safety**

1. This Subcontractor and its Contractors (rod busters) shall eliminate impalement and puncture hazards attributable to exposed rebar and anchor bolts. This Subcontractor is to utilize rebar that is candy caned (or bent to 180 degrees) to eliminate impalement hazards when approved by the Engineer of Record. If this is not possible, this Subcontractor is responsible for any rebar protection that may pose an impalement or laceration hazard to workers. This Subcontractor shall provide, maintain and remove all necessary rebar impalement protection. This Subcontractor, at the request of Turner, from time to time may be asked to bend steel bars over to eliminate impalement hazards. It will be this Subcontractors responsibility to comply with and complete these requests.

2. This Subcontractor shall provide daily clean up and removal of surplus concrete spoils from within the building and jobsite immediately following concrete operations and placed in dumpster that is approved for concrete disposal.

3. This Subcontractor shall ensure safe access/egress in and around all their work areas. If trenches are to be traversed ensure that walkways are at least 18 inches wide and are secured together when using to planks to make up the required width. If the travel height of the walkway exceeds 4 feet vertically this Contractor will install guardrails to prevent falls from same walkway. FORMWORK is not to be used for any type of walkway, ladder, scaffolding or any other type of support platform other than the intended use for which it was manufactured. Concrete formed and decked areas must have a continuous access corridor running through the work area to prevent employees from stepping over material.

4. This Subcontractor shall provide temporary portable generators or other power supply sources for their use until such time the temporary power has been brought to the site by others. Temporary portable power sources being used must be GFCI protected.

5. This Subcontractor to provide, install and maintains a safe, secured transition strip with beveled edges around the entire perimeter between all elevated and depressed slabs. This Subcontractor shall remove and dispose of the transition strip as directed by Turner.

6. Winter weather tarps are not allowed to be hung from the perimeter guardrail cables. This Subcontractor to furnish an independent means to secure the tarps. All tarps must be fire rated.

7. This Subcontractor shall utilize a rebar shear in lieu of a chop saw or grinder to cut rebar.

8. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible for removing snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers. Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.

9. This Subcontractor shall provide a site-specific plan on how they will comply with Turner's Ladder's Last Program.

10. This subcontractor shall ensure that any Lulls used on site are equipped with hydraulic fork positioners.

11. This subcontractor shall engage a 3rd Party to complete a GPR Survery to mark out existing utilities under and in the general area of any proposed Mobile Crane locations.

F. Logistics and Schedule

1. This subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

G. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	**Amount**
Refer to Form of Proposal	

H. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternates shall remain valid for the life of the project and include all costs for a*** complete installation.

Alternates:	**Amount**
Refer to Form of Proposal	

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#41 – Landscaping
Dated: 07.26.2024
Revised: 10.21.2024

C.1 Specific Scope of Work

Without the intent of limiting the Scope of Work to be performed by the Subcontractor, included is the furnishing and installing of the ***Landscaping*** in accordance with the contract documents and as further enumerated within these Additional Provisions. The items listed herein are NOT intended to be a complete list of work items to be performed under this agreement. Furthermore, detail references are included for convenience but are not intended to identify all applicable details.

1. Includes performing all of the ***Landscaping*** in accordance with the Contract Documents and as established in the Project Specifications and Document List. This includes the following Specification Sections specifically but does not limit the Subcontractor from the responsibility of the entire Project Documents Scope of Work:

Exclusive Specifications

Specification Sections listed below as 'Exclusive' shall be considered the sole responsibility of this Subcontractor. This Subcontractor shall furnish and install all products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible for performing a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the entire scope of work for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these exclusive specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
11 6833	Athletic Field Equipment
32 8423	Irrigation Systems
32 9113	Soil Preparation
32 9913.29	Athletic Field Root Zone
~~32 9115~~	~~Topsoil and Planting Mix~~
32 9200	Turf and Grasses
32 9219.22	Athletic Field Seeding and Sodding
32 9300	Plants

Shared Specifications

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#41 – Landscaping
Dated: 07.26.2024
Revised: 10.21.2024

Specification Sections listed below as 'Shared' shall be considered the mutual responsibility of two (2) or more Subcontractors. This Subcontractor shall furnish and install products listed within these specification sections in conformance with all requirements and as indicated in the Contract Documents, including coordination with other related sections as listed within these specification sections and in reference to the entire Contract Specifications and Drawings. This Subcontractor shall be responsible to perform a complete and thorough review of the Contract Documents and include in their lump sum bid amount all costs to complete the specific scope, as defined below, for products listed within these specification sections. This includes, but is not limited to, the review of all drawings, details, notes, keys, keynotes, legends, symbols, abbreviations, schedules, callouts, and all applications of the products listed within these shared specification sections for a complete system which are reasonably inferable (i.e. similar detail/symbol/illustration, adjacent construction, means & methods, etc.) from the Contract Documents. No additional costs will be considered without clear and definitive substantiation.

Spec. #	Specification Name
DIV 00	Procurement and Contracting Requirements
DIV 01	General Requirements

General Items

2. This Subcontractor will make every effort possible to ensure that their waste is properly sorted and disposed of to divert as much waste as possible from disposal in a landfill. This Subcontractor will track this recycling effort using the Online Waste Tracking System established by Turner Construction Company. Each dumpster ticket is to be logged into this system and its recycled content reported as a means of tracking the total percentage of construction and demolition debris diverted from landfills. There is a $50 per month fee for use of this website and this Subcontractor shall include all costs in his bid for use of this service. Refer to the attached User's Manual for more information about this system. Refer to the Turner Tracker Manual in the referenced "Forms and Policies," dated January 2015, in Turner's Project Manual.
3. This Subcontractor shall examine the layout and installation of all adjacent work performed by others at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.
4. This Subcontractor shall include multiple mobilizations as required by the latest issuance of the project schedule.
5. This Subcontractor must meet the latest issuance of the project schedule. To this end, this Subcontractor understands that all adjacent work may not be 100% complete at the time of field dimension verification and this Subcontractor shall coordinate with other trades and accept reasonable hold-to dimensions which may be required to meet the delivery and installation dates.
6. This Subcontractor shall clean all items installed by this Subcontractor and install, secure and maintain appropriate protection to prohibit damage from subsequent work. Protection must be approved by Turner.

Bid Package Specific Scope

7. This Subcontractor shall examine the layout and site conditions at weekly intervals leading up to the date of installation and shall report to Turner in writing any discrepancies that may affect the installation or operation of the scope provided under this agreement to avoid any delay in starting work as scheduled.

8. This Subcontractor shall furnish and install all the plantings as defined in the contract documents, including but not limited to trees, shrubs, grasses, ground cover and perennials as listed on the Plant Material List on drawing L402.
9. This Subcontractor shall include furnishing and installing all of the topsoil required for this scope of work in accordance with the contract documents. This Subcontractor is to assume that there will be no topsoil salvaged or stockpiled by the sitework contractor. See "Soil Preparation" specification 32 9113 for further clarifications.
10. This Subcontractor shall coordinate with the sitework contractor and flatwork concrete subcontractors regarding the timing of the installation of the hardscape included within their scopes of work. This Subcontractor is to coordinate their activities to minimize impacts to finish hardscape work. If this Subcontractor has to work around or travel over finished hardscape areas, this Subcontractor is to furnish and install any protective measures to avoid damaging the hardscape. Include plywood sheeting or wood planks for any locations where small equipment needs to pass over hardscape. Repair costs for any damage to finish hardscape will be incurred by this Subcontractor if it is determined to be at fault.
11. This Subcontractor shall furnish and install all mulches at planting bed areas as required by the contract documents. Include type "2D" Fiber Mulch as shown on but not limited to the L200 drawing series.
12. This Subcontractor shall provide the maintenance, watering, pruning, replacements, mowing and all warranty requirements defined in the contract documents for 1 year following substantial completion.
13. This Subcontractor shall furnish and install the irrigation system as required by the contract documents. This Subcontractor shall furnish and install any subgrade sleeving required beneath hardscape. Connection to water supply to be made 5' outside of foundation wall, piping up to that point fed from inside of the building is to be provided by the Plumbing Subcontractor.
14. This Subcontractor shall include furnishing and installing all mulch and plantings shown at Rain Gardens and Swales. See Exclusions for Rain Garden components that are to be provided by Others.
15. This Subcontractor shall include 1 laborer per 10-person workforce while working on site but no less than 1 person for a composite cleanup crew. The composite cleanup crew will be required for 2 hours each Friday from 12:30-2:30 p.m. while the subcontractor is performing work on site. The composite crew is intended to clean up general debris not necessary associated with particular subcontractor (cardboard, plastic bottles, misc. trash item, general sweeping, etc.)

Coordination with Other Trades

16. This Subcontractor shall coordinate all requirements for Testing and Inspection in accordance with Field Quality Control section found in the Division 1 specifications and Landscaping specifications.
17. This Subcontractor shall be responsible for ordering, scheduling and sequencing of deliveries required for the work. This shall include any premium time and standby labor required for receiving a delivery.
18. This Subcontractor will work closely with the Sitework Subcontractor to coordinate the scheduling of excavation, backfilling, utility and any subgrade work around the site so that it is not to impact or delay landscaping activities.

Safety/Logistics

19. This Subcontractor has reviewed the Logistics Plans and the Construction Schedule and shall include all associated costs as relevant to achieve this scope of work within the Project Schedule. No come back costs will be entertained.

20. This Subcontractor shall review, conform to, and furnish and install all requirements included in the Safety Additional Provisions included in this Agreement. This Subcontractor understands that this document is project specific, and all provisions must be included in this Subcontractors' bid.

21. This Subcontractor shall be required to store all onsite material on racks, carts or pallets capable of being easily moved and shall coordinate the delivery of and location of stored material with the Turner Superintendent. If material is stored on pallets, this Subcontractor is responsible to have a pallet jack onsite at all times. This Subcontractor shall include relocation and consolidation of materials as directed by Turner.

22. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible for removing snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers. Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.

23. This Subcontractor shall provide a site-specific plan on how they will comply with Turner's Ladder's Last Program.

24. This subcontractor shall ensure that any Lulls used on site are equipped with hydraulic fork positioners.

25. This subcontractor shall engage a 3rd Party to complete a GPR Survey to mark out existing utilities under and in the general area of any proposed Mobile Crane locations.

26. This Subcontractor is to include 320 hours good for the life of the project for use as directed by Turner Construction. This is to cover labor and material costs for additional 5S site cleanup, restoration of abutting landscaping above and beyond what is shown on the contract documents or called for in this scope of work per the direction of the Turner Superintendent. This will be billed based on the contractual wage rates and may only be expended by written authorization of Turner Construction and any unspent portion of this unused scope hours will be credited at the end of your contract based on approved labor rate.

D. Exclusions

1. This Subcontractor shall exclude concrete light pole bases, concrete planters or concrete fill for bollards (By BP #9 Sitework)
2. This Subcontractor shall exclude structural concrete, concrete sidewalk pavement, heavy duty concrete pavement, concrete utility pads, concrete curbs, concrete edge at synthetic track and ADA detectable warning tiles. (By BP #40 Flatwork Concrete).
3. This Subcontractor shall exclude dumpster enclosure pads, gas meter pads, generator pad(s), fence and gate footings, furniture footings, sign footings, light pole bases, thrust blocks, encasement of ductbanks and bituminous concrete (By BP #9 Sitework).
4. This Subcontractor shall exclude type "2C" concrete pedestrian unit pavers (By BP #9 Sitework).
5. This Subcontractor shall exclude exterior concrete pads for Air Cooling Chiller – 1 and 2 as indicated on the contract documents (By BP #9 Sitework).

6. This Subcontractor shall exclude all Rain Gardens and Swales including but not limited to filter fabric, pipe, crushed stone, bedding materials, subgrade, grading, Greenwich soil mix and scarifying and tilling soil beneath gardens. Refer to Rain Garden Typical Cross Section and 5' Wide Stone Swale With 6" Underdrain details on drawing C504 (By BP #9 Sitework).
7. This Subcontractor shall exclude all below grade under drainage piping, roof leader drain piping and the above grade downspout boots between roof leaders and drain piping (By BP #9 Sitework).
8. This Subcontractor shall exclude fill materials as required by the contract documents to fill excavation at demolished building(s) (By BP #9 Sitework). Coordinate final grades with Sitework Contractor.
9. This Subcontractor shall exclude all site furnishings and fixtures, including but not limited to signage, bollards, concrete planters, site benches, bicycle racks, stepping stones, stone mulch and metal edging, seating and tables, live edge wood benches, boulders, vehicular gates, chain link fencing, metal screen fencing, baseball/softball field shade enclosures, athletic fencing, and dumpster enclosures as indicated on the contract documents (By BP #9 Sitework).
10. This subcontractor shall exclude the segmental block retaining walls indicated in the contract documents (By BP #9 Sitework).
11. This Subcontractor shall exclude the raised planters as indicated on the contract documents including but not limited to raised concrete planters per detail 3E on drawing L501. (By BP #9 Sitework).
12. This Subcontractor shall furnish and install all pitching rubber(s), home plate(s), and bases including but not limited to stanchions, ground anchors, and concrete blocks as indicated on the contract documents. Reference details 2B and 2C on drawing L601.

E. Safety

1. The Sitework Contractor shall be responsible for snow removal of the site, access roads and walkways to the building. This subcontractor will be responsible for removing snow and ice from all other areas for their work including but not limited to their work areas, material areas, storage conex's and trailers. Snow and ice removal is not allowed to free fall from upper levels of buildings, scaffolding or platforms.
2. This subcontractor shall provide a site-specific plan specifically outlining how they will comply with Turners ladders last program.

F. Logistics and Schedule

1. This subcontractor shall include the requirements of the Project Logistics Plan and Project Schedule.

G. Unit Prices

The following Unit Prices reflect the work of this bid package under which the bid proposal was submitted, and all unit prices shall remain valid for the life of the project and include all costs for a complete installation. Unit prices which do not affect the work of this bid package have been filled in "not applicable (n/a)". ***UNIT PRICES ARE GOOD FOR BOTH ADDS AND DEDUCTS.***

Unit Prices:	**Amount**
Refer to Form of Proposal	

H. Alternate Prices

The following Alternate Prices reflect the work of this bid package under which the bid proposal was ***submitted, and these alternates shall remain valid for the life of the project and include all costs for a*** complete installation.

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#41 – Landscaping
Dated: 07.26.2024
Revised: 10.21.2024

Alternates:	Amount
Refer to Form of Proposal	

ATTACHMENT C - COORDINATION MATRIX - BP# 1 - RTUs

Turner

Greenwich Central Middle School – State Project No. 057-0114N
9 Indian Rock Ln. Greenwich, CT
8/13/2024

Material procurement for this project is supplied by Turner Construction. This matrix coordinates responsibility for the scopes identified.

Key	
F	Furnish
I	Install
L	Lead
A	Assist

		CM/GC	SourceBlue	Product Vendor / Rep	Trade Partner- MECH	Trade Partner - ELEC	Trade Partner - BMS	Trade Partner - OTHER	Notes / Includes Manufacturer / Vendor coordination
1	**SUBMITTALS & COORDINATION**								
2	Submit product data	A	A	L, F					
3	Publish material lead times (Production & shipping)		A	L, F					
4	Publish Required on Job (ROJ) Dates	F,L	A	A	A				
5	Provide shop drawings		A	L, F					
6	Submit shop drawings to design team for approval	L, F	A	A					
7	Publish approved Shop Drawings and submittals	L, F	A	A					
8	Review approved submittals and ensure that comments are acceptable	F	A	A	L	L	L	L	
9	Field measurements for coordination or confirmation of shop drawings	L	A	L, F	L	L	L	L	
10	Meet Requirements of Material, Product, Equipment Specification Section	A	A	L					
11	Meet ALL Code and Jurisdictional Requirements of Material, Product, Equipment	A	A	L					
12	Provide ALL Material, Product, Equipment seismic calculations and/or certifications	A	A	L					
13	Provide ALL System/Building/Anchorage seismic calculations and/or certifications	L	A	L	F&I				
14	**MATERIAL ORDERS & PRODUCTION**								
15	Formal notice to release vendor to fabricate	L	F						
16	Vendor's factory or warehouse site visit	A	L	L, F	A	A	A	A	As Required
17	Provide identification on packaging (i.e. shipping labels)	A	A	L, F					
18	**DELIVERY, STORAGE AND HANDLING**								
19	Provide material delivery (protection, ocean, trucking)	A	A	L, F					
20	Publish delivery schedule and delivery locations	A	A	L	L				
21	Provide unloading equipment	L			F				
22	Store equipment in a suitable location as per manufacturers directions for up to a year's time				F				
23	Provide maintenance if equipment is going to sit for more than one month				F&I				
24	Receive deliveries (inspect, inventory, and sign off on Receipt Verification Form)	A	L	A	L,F				SB to verify and inspect with Trade Partner
25	Offload delivered material.				L, F				
26	Make any material breakage claims within 5 calendar days from delivery of the product. After which it is assumed breakage is the responsibility of the installing contractor				L, F				Transfer of care and custody of material
27	**FIELD COORDINATION**								
28	Attend coordination meeting (s)	L	A	A	A	A	A	A	
29	Coordinate installation (including assembly, location and connections)	A	A	A	L	L	L	L	
30	**RTUs**								
31	RTU-1, RTU-2, RTU-3			F	I				
32	Internal seismic vibration isolation as per spec			F&I					
33	Assemble units if shipped in sections (manufacturer to provide direction if needed)			A	F&I	A	L	L	
34	All mechanical/plumbing piping, mechanical ductwork connections, and associated hardware and accessories				F&I				
35	All power conduit, wiring, and terminations					F&I			
36	All Building Automation system controls and interface with equipment, including low voltage wiring						F&I		
37	Housekeeping bad and/or inertia base and submit to A/E for approval	A	A					F&I	Housekeeping pads and/or inertia base furnished and installed by BP#10 Concrete Subcontractor.
38	Disconnect switch			F		I			
39	Duct silencers				F&I				
40	Externally wrapped insulation				F&I				
41	Internal insulation			F&I					
42	Mounting and wiring of any sensors outside of the units including wall, and duct mounted, sensors						F & I		
43	Start up		A	L	A	A	A		
44	Start up reports			F	F	F	F		
45	Engage qualified testing agency to perform tests and inspections				A			A	Owner
46	All field testing referenced in specifications			F	F	F	F		
47	Anchor bolts or welds for installation of unit to curb			F	I				
48	Design and install curb to building structure attachment				F&I				
49	Internal vibration isolation			F & I					
50	Hardware to assemble units shipped in sections			F	I				
51	Assemble components shipped loose: (i.e. filters and mixing boxes)			F	I				
52	provide list of all components shipping loose		A	F					
53	Isolation valves, motorized valves, gauges, actuators and control valves				F & I		F & I		
54	Disconnect switch (Separate from Starter/VFD)					F & I			
55	Duct Smoke detectors					F & I	F & I		
56	Power conduit, wiring, and terminations to Duct Smoke Detectors					F&I			
57	Control conduit, wiring, terminations, and programming to Duct Smoke Detectors						F&I		
58	Fire Smoke / Smoke Dampers				F & I				
59	Fire alarm wiring					F&I			
60	Initial filters and belts			F	I				
61	Spare filters and belts			F	I				
62	Motor alignment			L	L				
63	Check belt tension (if belt driven fan)				L				

ATTACHMENT C - COORDINATION MATRIX - BP# 1 - RTUs

Greenwich Central Middle School – State Project No. 057-0114N
9 Indian Rock Ln. Greenwich, CT
8/13/2024

Material procurement for this project is supplied by Turner Construction. This matrix coordinates responsibility for the scopes identified.

Key	
F	Furnish
I	Install
L	Lead
A	Assist

		CM/GC	SourceBlue	Product Vendor / Rep	Trade Partner- MECH	Trade Partner - ELEC	Trade Partner - BMS	Trade Partner - OTHER	Notes / Includes Manufacturer / Vendor coordination
64	**RTUs Cont.**								
65	Air balancing			A	L	A	A		Balancing Contrator
66	Escutcheons/seal for all Factory penetrations			F&I					
67	Escutcheons/seal for all field penetrations				F&I	F&I	F&I		
68	Balancing of fans at factory			F					
69	Balancing of fans in the field if required				F				
70	Programming and Testing of VFD's			L					
71	VFD installation			F&I					
72	VFD Wiring including power					F&I			
73	UV Light Fixture and Lamps, where specified			F&I					
74	Electrical connections between shipping splits, where required					F&I			
75	Gasket, Tape Sealer, Caulk between shipping splits, where required			F	I				
76	Clean Unit Prior to Start Up and Turn Over				L				
77	Condensate Trap				F & I				
78	Confirm proper depth of trap prior to pad and floor install. Coordinate requirements with Project Superintendent	A			L				
79	DDC Interface, Wiring, programing, and Graphics for RTU controls on DDC Head End						F & I		
80	Programming of Controls						L		
81	Shims for field adjustment of fans and motors			A	F & I				
82	Mounting and wiring of any sensors outside of the units including CO2, wall, and duct mounted, sensors						F & I		
83	Airflow Monitoring Probes				F&I		A		
84	Drain pipes from unit drain pans to roof drain				F&I				
85	Separate devices furnished by manufacturer and not factory installed				F&I				
86	Seismic Curbs			F	I				
87	Linkage and Damper Actuator						F&I		
88	Damper			F	I		A		
89	Duct pressure switch				F&I				
90	**Refrigerant and Filters**								
91	Filter Clips and/or Clamps			F	I				
92	Any and all Field work, and field installed parts, pieces, and/or equipment				F&I				
93	Provide MRE and MRC efficiency values			F					
94	**Electric Duct Mounted Heating**								
95	Duct Mounted heating elements				F&I				
96	Electrical connections for Duct Mounted elements, including power					F&I			
97	**INSTALLATION**								
98	Install the products according to the approved plans, specifications, and Authorities Having Jurisdiction.	A			I	I	I	I	
99	Fill with appropriate volume of Propylene Glycol if needed				F,I				
100	Protect installed material from damage	L			F, I	F, I			
101	Provide for ALL piping, conduit, wiring, connections, power, controls, etc. not provided with Prepurchased Material, Product or Equipment	L	A		F, I	F, I			
102	Provide for ALL housekeeping pad layouts, vibration isolation, Snubbers, bases, anchors, supports, brackets, etc. not provided with Prepurchased Material, Product or Equipment	L	A		F, I				Housekeepign pads are furnished and isntalled by BP#10 Concrete Subcontractor.
103	Provide for ALL gauges, valves, actuators, etc. not provided with Prepurchased Material, Product or Equipment	L	A		F, I				
104	Provide for ALL accessories, hardware, external components, etc. not provided with Prepurchased Material, Product or Equipment	L			F, I	F, I			
105	Provide Onsite Technical Support and Witness of Installation		A	L					As Required
106	**CHANGE ORDERS**								
107	Evaluate contract documents for changes, assemble COR	L	A	F	F	F	F		
108	Assemble material COR's once COR quantities received	L	F						
109	Provide quantities of material changes for each COR	A	A	F	F	F	F		
110	**ACCEPTANCE, WARRANTY AND CLOSEOUT**								
111	Perform Installation Inspection	A	A	A	A	A	A	A	As Required
112	Provide Pre Start Up or Installation Checklist		A	L,F	L,F	L,F	L,F	A	
113	Provide Start Up / Installation / Commissioning Procedure		A	L	A	A	A	A	
114	Perform Start Up. For Plug and Play or Material, confirm product functionality	A	A	L	A	A	A		As Required
115	Attend Pre-commissioning meeting	L	A	A	A	A	A	A	Design team, CxA
116	Provide for Assistance during Commissioning		A	A	L	L	L	L	
117	Provide for Assistance during Field testing		A	A	L	L	L	L	
118	Provide for Assistance during Owner training		A	L	A	A	A		
119	Provide all O&M manuals		A	F					
120	Provide all attic stock and spare parts	A	A	F					
121	Provide for Material/Equipment/Parts warranty		A	F					
122	Provide for Material/Equipment/Labor warranty (Labor for Replacement)		A	F					
123	Provide for Installation labor warranty				F	F	F		
124	Provide for Trouble shooting during warranty period		A	A	L	L	L		
125	Provide for Building controls parts / labor warranty						F,L		
126	Provide Temporary Use Maintenance				F,L	F,L	F,L		
127	Provide for Manufacturer or Specified Warranty Certificates		A	F					

ATTACHMENT C - COORDINATION MATRIX - BP#2 - DOAS

Turner

Greenwich Central Middle School – State Project No. 057-0114N
9 Indian Rock Ln. Greenwich, CT
8/13/2024

Material procurement for this project is supplied by Turner Construction. This matrix coordinates responsibility for the scopes identified.

Key	
F	Furnish
I	Install
L	Lead
A	Assist

		CM/GC	SourceBlue	Product Vendor / Rep	Trade Partner-MECH	Trade Partner - ELEC	Trade Partner - BMS	Trade Partner - OTHER	Notes / Includes Manufacturer / Vendor coordination
1	**SUBMITTALS & COORDINATION**								
2	Submit product data	A	A	L, F					
3	Publish material lead times (Production & shipping)		A	L, F					
4	Publish Required on Job (ROJ) Dates	F,L	A	A	A				
5	Provide shop drawings		A	L, F					
6	Submit shop drawings to design team for approval	L, F	A	A					
7	Publish approved Shop Drawings and submittals	L, F	A	A					
8	Review approved submittals and ensure that comments are acceptable	F	A	A	L	L	L	L	
9	Field measurements for coordination or confirmation of shop drawings	L	A	L, F	L	L	L	L	
10	Meet Requirements of Material, Product, Equipment Specification Section	A	A	L					
11	Meet ALL Code and Jurisdictional Requirements of Material, Product, Equipment	A	A	L					
12	Provide ALL Material, Product, Equipment seismic calculations and/or certifications	A	A	L					
13	Provide ALL System/Building/Anchorage seismic calculations and/or certifications	L	A	L	F&I				
14	**MATERIAL ORDERS & PRODUCTION**								
15	Formal notice to release vendor to fabricate	L	F						
16	Vendor's factory or warehouse site visit	A	L	L, F	A	A	A	A	As Required
17	Provide identification on packaging (i.e. shipping labels)	A	A	L, F					
18	**DELIVERY, STORAGE AND HANDLING**								
19	Provide material delivery (protection, ocean, trucking)	A	A	L, F					
20	Publish delivery schedule and delivery locations	A	A	L	L				
21	Provide unloading equipment	A			F				
22	Store equipment in a suitable location as per manufacturers directions for up to a year's time				F				
23	Provide maintenance if equipment is going to sit for more than one month				F&I				
24	Receive deliveries (inspect, inventory, and sign off on Receipt Verification Form)	A	L	A	L,F				SB to verify and inspect with Trade Partner
25	Offload delivered material.				L, F				
26	Make any material breakage claims within 5 calendar days from delivery of the product. After which it is assumed breakage is the responsibility of the installing contractor				L, F				Transfer of care and custody of material
27	**FIELD COORDINATION**								
28	Attend coordination meeting (s)	L	A	A	A	A	A	A	
29	Coordinate installation (including assembly, location and connections)	A	A	A	L	L	L	L	
30	**DOAS**								
31	Internal seismic vibration isolation as per spec			F&I					
32	Assemble units if shipped in sections (manufacturer to provide direction if needed)			A	F&I	A			
33	For buildings with Aluminum wire, provide approved Aluminum-to-Copper junction					F&I			
34	All mechanical/plumbing piping, mechanical ductwork connections, and associated hardware and accessories				F&I				
35	All power conduit, wiring, and terminations					F&I			
36	All Building Automation system controls and interface with equipment, including low voltage wiring						F&I		
37	Housekeeping bad and/or inertia base and submit to A/E for approval	A	A					F&I	Housekeeping pads and/or inertia base furnished and installed by BP#10 Concrete Subcontractor.
38	BACnet interface			F			I		
39	Motor starters and/or VFD's			F		I			
40	If starter is provided by others, provide coordination to ensure starter/equipment are compatible. For example, torque requirements, size…			A	A	A	A	A	
41	Disconnect switch			F		I			
42	Duct silencers				F&I				
43	Externally wrapped insulation				F&I				
44	Internal insulation			F&I					
45	Check belt tension if needed				L				
46	Assemble units shipped in sections (manufacturer to provide direction if needed)			A	L				
47	Mounting and wiring of any sensors outside of the units including wall, and duct mounted, sensors						F & I		
48	Start up		A	L	A	A	A		
49	Start up reports			F	F	F	F		
50	Engage qualified testing agency to perform tests and inspections				A			A	Owner
51	All field testing referenced in specifications			F	F	F	F		
52	All factory testing referenced in specifications			F&I					
53	Anchor bolts or welds for installation of unit to curb			F	I				
54	Design and install curb to building structure attachment				F&I				
55	External vibration				F&I				
56	Internal vibration isolation			F & I					
57	Hardware to assemble units shipped in sections			F	I				
58	Assemble components shipped loose: (i.e. filters and mixing boxes)			F	I				
59	Cleaning of mechanical equipment and mechanical rooms prior to substantial completion				F				
60	Provide list of all components shipping loose		A	F					
61	Isolation valves, motorized valves, gauges, actuators and control valves				F & I		F & I		
62	Disconnect switch (Separate from Starter/VFD)					F & I			
63	Duct Smoke detectors				I	F			
64	Power conduit, wiring, and terminations to Duct Smoke Detectors					F&I			
65	Control conduit, wiring, terminations, and programming to Duct Smoke Detectors						F&I		
66	Fire Smoke / Smoke Dampers				F & I				
67	Fire alarm wiring					F&I			
68	Installation of all actuators for dampers				F&I				
69	Insulation of coil piping internal to air handling unit			F&I					
70	Drain pan			F & I					
71	Initial filters and belts			F	I				
72	Spare filters and belts			F	I				
73	Motor alignment			L	L				
74	Check belt tension (if belt driven fan)				L				

ATTACHMENT C - COORDINATION MATRIX - BP#2 - DOAS

Greenwich Central Middle School – State Project No. 057-0114N
9 Indian Rock Ln. Greenwich, CT
8/13/2024

Material procurement for this project is supplied by Turner Construction. This matrix coordinates responsibility for the scopes identified.

Key	
F	Furnish
I	Install
L	Lead
A	Assist

		CM/GC	SourceBlue	Product Vendor / Rep	Trade Partner-MECH	Trade Partner - ELEC	Trade Partner - BMS	Trade Partner - OTHER	Notes / Includes Manufacturer / Vendor coordination
75	**DOAS Cont.**								
76	Air balancing			A	L	A	A		
77	Escutcheons/seal for all Factory penetrations			F&I					
78	Escutcheons/seal for all field penetrations				F&I	F&I	F&I		
79	Balancing of fans at factory			F					
80	Balancing of fans in the field if required				F				
81	Programming and Testing of VFD's			L					
82	VFD installation			F&I					
83	VFD Wiring including power					F&I			
84	UV Light Fixture and Lamps, where specified			F&I					
85	Electrical connections between shipping splits, where required					F&I			
86	Gasket, Tape Sealer, Caulk between shipping splits, where required			F	I				
87	Clean Unit Prior to Start Up and Turn Over				L				
88	Condensate Trap				F & I				
89	Confirm proper depth of trap prior to pad and floor install. Coordinate requirements with Project Superintendent	A			L				
90	DDC Interface, Wiring, programing, and Graphics for RTU controls on DDC Head End						F & I		
91	Programming of Controls						L		
92	Shims for field adjustment of fans and motors			A	F & I				
93	Mounting and wiring of any sensors outside of the units including CO2, wall, and duct mounted, sensors						F & I		
94	Airflow Monitoring Probes				F&I		A		
95	Drain pipes from unit drain pans to roof drain				F&I				
96	Separate devices furnished by manufacturer and not factory installed				F&I				
97	Seismic Curbs			F	I				
98	Linkage and Damper Actuator						F&I		
99	Damper			F	I		A		
100	Duct pressure switch				F&I				
101	**Refrigerant and Filters**								
102	Filter Clips and/or Clamps			F	I				
103	Any and all Field work, and field installed parts, pieces, and/or equipment				F&I				
104	Provide MRE and MRC efficiency values			F					
105	**Electric Duct Mounted Heating**								
106	Duct Mounted heating elements				F&I				
107	Electrical connections for Duct Mounted elements, including power					F&I			
108	**INSTALLATION**								
109	Install the products according to the approved plans, specifications, and Authorities Having Jurisdiction.	A			I	I	I	I	
110	Fill units with appropriate volume of Propylene Glycol				F&I				
111	Protect installed material from damage	L			F, I	F, I	F, I		
112	Provide for ALL piping, conduit, wiring, connections, power, controls, etc. not provided with Prepurchased Material, Product or Equipment	L	A		F, I	F, I	F, I		
113	Provide for ALL housekeeping pads, vibration isolation, Snubbers, bases, anchors, supports, brackets, etc. not provided with Prepurchased Material, Product or Equipment	L	A		F, I				Housekeeping pads furnished and installed by BP#10 Concrete Subcontractor.
114	Provide for ALL gauges, valves, actuators, etc. not provided with Prepurchased Material, Product or Equipment	L	A		F, I		F, I		
115	Provide for ALL accessories, hardware, external components, etc. not provided with Prepurchased Material, Product or Equipment	L			F, I	F, I	F, I		
116	Provide Onsite Technical Support and Witness of Installation		A	L					As Required
117	**CHANGE ORDERS**								
118	Evaluate contract documents for changes, assemble COR	L	A	F	F	F	F		
119	Assemble material COR's once COR quantities received	L	F						
120	Provide quantities of material changes for each COR	A	A	F	F	F	F		
121	**ACCEPTANCE, WARRANTY AND CLOSEOUT**								
122	Perform Installation Inspection	A	A	A	A	A	A	A	As Required
123	Provide Pre Start Up or Installation Checklist		A	L,F	L,F	L,F	L,F	A	
124	Provide Start Up / Installation / Commissioning Procedure		A	L	A	A	A	A	
125	Perform Start Up. For Plug and Play or Material, confirm product functionality	A	A	L	A	A	A		As Required
126	Attend Pre-commissioning meeting	L	A	A	A	A	A	A	Design team, CXA
127	Provide for Assistance during Commissioning		A	A	L	L	L	L	
128	Provide for Assistance during Field testing		A	A	L	L	L	L	
129	Provide for Assistance during Owner training	A	A	L	A	A	A		
130	Provide all O&M manuals		A	F					
131	Provide all attic stock and spare parts	A	A	F					
132	Provide for Material/Equipment/Parts warranty		A	F					
133	Provide for Material/Equipment/Labor warranty (Labor for Replacement)		A	F					
134	Provide for Installation labor warranty				F	F	F		
135	Provide for Trouble shooting during warranty period		A	A	L	L	L		
136	Provide for Building controls parts / labor warranty						F,L		
137	Provide Temporary Use Maintenance				F,L	F,L	F,L		
138	Provide for Manufacturer or Specified Warranty Certificates		A	F					

ATTACHMENT C - COORDINATION MATRIX - BP #03 Chillers

Greenwich Central Middle School - State Project No. 057-0114N
9 Indian Rock Lane, Greenwich, CT
8/13/2024

Material procurement for this project is supplied by SourceBlue. This matrix coordinates responsibility for the scopes identified.

Key	
F	Furnish
I	Install
L	Lead
A	Assist

		CM/GC	SourceBlue (SB)	Product Vendor / Rep	Trade Partner - MECH	Trade Partner - ELEC	Trade Partner - BMS	Trade Partner - OTHER	Notes SB column includes Manufacturer/Ven
1	**SUBMITTALS & COORDINATION**								
2	Submit product data	A	A	L, F					
3	Publish material lead times (Production & shipping)		A	L, F					
4	Publish Required on Job (ROJ) Dates	F,L	A	A	A				
5	Provide shop drawings		A	L, F					
6	Submit shop drawings to design team for approval	L, F	A	A					
7	Publish approved Shop Drawings and submittals	L, F	A	A					
8	Review approved submittals and ensure that comments are acceptable	F	A	A	L	L	L		
9	Field measurements for coordination or confirmation of shop drawings	L	A	L, F	L	L	L		
10	Meet Requirements of Material, Product, Equipment Specification Section	A	A	L					
11	Meet ALL Code and Jurisdictional Requirements of Material, Product, Equipment	A	A	L					
12	Provide ALL Material, Product, Equipment seismic calculations and/or certifications	A	A	L					
13	Provide ALL System/Building/Anchorage seismic calculations and/or certifications	L	A	L	F&I				
14	**MATERIAL ORDERS & PRODUCTION**								
15	Formal notice to release vendor to fabricate	L	F						
16	Vendor's factory or warehouse site visit	A	L	L, F	A	A	A		As Required
17	Provide identification on packaging (i.e. shipping labels)	A	A	L, F					
18	**DELIVERY, STORAGE AND HANDLING**								
19	Provide material delivery (protection, ocean, trucking)	A	A	L, F					
20	Publish delivery schedule and delivery locations	A	A	L	L				
21	Provide unloading equipment	L			F				
22	Store equipment in a suitable location as per manufacter's directions for up to 12 months.				F				
23	Receive deliveries (inspect, inventory, and sign off on Receipt Verification Form)	A	L	A	L,F				SB to verify and inspect with Trade Partner
24	Offload delivered material.				L, F				
25	Provide maintenance if equipment is going to sit for more than 1 month (ie: fan rotation, grease bearings, etc)				F&I				
26	Make any material breakage claims within 5 calendar days from delivery of the product. After which it is assumed breakage is the responsibility of the installing contractor				L, F				Transfer of care and custody of material
25	Provide COI for all offsite stored material.				F				
27	**FIELD COORDINATION**								
28	Attend coordination meeting (s)	L	A	A	A	A	A		
29	Coordinate installation (including assembly, location and connections)	A	A	A	L	L	L		
30	**AIR COOLED CHILLERS**								
31	ALL mechanical piping, mechanical connections and associated hardware and accessories.				F&I				
32	ALL power conduit, wiring and terminations					F&I			
33	ALL Building Automation System controls and interface with equipment, including low voltage wiring						F&I		
34	Housekeeping Pad and/or Intertia base and submit to A/E for Approval	A	A					Other (BP 10 Concrete)	BP #10 Concrete - F&I
35	Design and Install Attachment of Unit to Concrete Pad				F&I				
36	Interface card			F&I					
37	Power wiring to Interface Card					F&I			
38	Interconnect Wiring to Interface Card						F&I		
39	Motor starters and/or VFD's			F&I					
40	VFD wiring to Motor			F&I					
41	Power wiring and terminations (VFD to panel)					F&I			
42	Lugs			F		I			
43	Increased junction box size as required to meet conduit bend radius					F&I			
44	Assemble components shipped loose (i.e.: flow switch)			F	I				
45	Remote Evaporator (If applicable)			F	I				
46	Remote Economizer (If applicable)			F	I				
47	Isolation valves				F&I				
48	Motorized valves, temperature and pressure gauges				F&I				
49	Control panel			F&I					
50	Internal Insulation			F&I					
51	Initial charge of refrigerant/oil			F&I					
52	Water-flow sensing device			F	I				
53	Refrigerant monitoring system			F	I				
54	Subcomponents of refrigerant monitoring system including break glass switches, SCBA, remote beacon, alarms, strobes, silence switch, remote reset switch.				F&I				
55	Refrigerant relief valves			F	I				
56	Refrigerant relief piping				F&I				
57	Ducting of purge system				F&I				
58	Air separator				F&I				
59	Expansion tanks				F&I				
60	Chemical treatment				F&I				
61	Water balancing				L	A	A		
62	**INSTALLATION**								
63	Install the products according to the approved plans, specifications, and Authorities Having Jurisdiction.	A			I	I	I		
64	Protect installed material from damage	L			F, I				
65	Provide for ALL piping, conduit, wiring, connections, power, controls, etc. not provided with Prepurchased Material, Product or Equipment	L			F, I	F, I	F, I		
66	Provide for ALL **housekeeping pad layout,** vibration isolation, Snubbers, bases, anchors, supports, brackets, etc. not provided with Prepurchased Material, Product or Equipment	L		F	I			Concrete	Housekeeping pads furnished and installed by BP #10 Concrete Subcontractor.
67	Provide for ALL gauges, valves, actuators, etc. not provided with Prepurchased Material, Product or Equipment	L			F, I		F, I		
68	Provide for ALL accessories, hardware, external components, etc. not provided with Prepurchased Material, Product or Equipment	L			F, I	F, I	F, I		
69	Provide Onsite Technical Support and Witness of Installation		A	L					As Required
70	**CHANGE ORDERS**								
71	Evaluate contract documents for changes, assemble COR	L	A	F	F	F	F		
72	Assemble material COR's once COR quantities received	L	F						
73	Provide quantities of material changes for each COR	A	A	F	F	F	F		
74	**ACCEPTANCE, WARRANTY AND CLOSEOUT**								
75	Perform Installation Inspection	A	A	A	A	A	A		As Required
76	Provide Pre Start Up or Installation Checklist		A	L,F	L,F	L,F	L,F		
77	Provide Start Up / Installation / Commissioning Procedure		A	L	A	A	A		
78	Perform Start Up. For Plug and Play or Material, confirm product functionality	A	A	L	A	A	A		As Required
79	Attend Pre-commissioning meeting	L	A	A	A	A	A	A (design team, CxA)	
80	Provide for Assistance during Commissioning		A	A	L	L	L		
81	Provide for Assistance during Field testing		A	A	L	L	L		
82	Provide for Assistance during Owner training		A	L	A	A	A		
83	Provide all O&M manuals		A	F					
84	Provide all attic stock and spare parts	A	A	F					
85	Provide for Material/Equipment/Parts warranty		A	F					
86	Provide for Material/Equipment/Labor warranty (Labor for Replacement)		A	F	~~A~~	~~A~~	~~A~~		
87	Provide for Installation labor warranty				F	F	F		
88	Provide for Trouble shooting during warranty period		A	L	L	L	L		
89	Provide for Building controls parts / labor warranty						F,L		
90	Provide Temporary Use Maintenance				F,L	F,L	F,L		
91	Provide for Manufacturer or Specified Warranty Certificates		A	F					

ATTACHMENT C - COORDINATION MATRIX - BP # 5 Electrical Distribution

Greenwich Central Middle School - State Project No. 057-0114N
9 Indian Rock Lane, Greenwich, CT
10/22/2024

Material procurement for this project is supplied by SourceBlue. This matrix coordinates responsibility for the scopes identified.

Key	
F	Furnish
I	Install
L	Lead
A	Assist

		CM/GC	SourceBlue (SB)	Product Vendor / Rep	Trade Partner MECH	Trade Partner - ELEC	Trade Partner - BMS	Trade Partner - OTHER	Notes SB column includes Manufacturer/Ven
1	**SUBMITTALS & COORDINATION**								
2	Submit product data	A	A	L, F		A	A		
3	Publish material lead times (Production & shipping)		A	L, F					
4	Publish Required on Job (ROJ) Dates	F,L	A	A		A	A		
5	Provide shop drawings		A	L, F					
6	Submit shop drawings to design team for approval	L	A	A					
7	Publish approved Shop Drawings and submittals	L	A	A					
8	Review approved submittals and ensure that comments are acceptable	L	A	A		L	L		
9	Field measurements for coordination or confirmation of shop drawings	L	A	L, F					
10	Meet Requirements of Material, Product, Equipment Specification Section	A	A	L					
11	Meet ALL Code and Jurisdictional Requirements of Material, Product, Equipment	A	A	L					
12	Provide ALL Material, Product, Equipment seismic calculations and/or certifications	A	A	L					
13	Provide ALL System/Building/Anchorage seismic calculations and/or certifications	A	A	L		F&I	F&I		
14	**MATERIAL ORDERS & PRODUCTION**								
15	Formal notice to release vendor to fabricate	L	F						
16	Vendor's factory or warehouse site visit	A	L	L, F		A			As Required
17	Provide identification on packaging (i.e. shipping labels)		A	L, F					
18	Firmly attach standard factory label(s) to equipment indicating name of manufacturer, equipment model number, equipment serial number and tag number			F&I					
19	**DELIVERY, STORAGE AND HANDLING**								
20	Provide material delivery (protection, ocean, trucking)	A	A	L, F					
21	Publish delivery schedule and delivery locations	L	A	A		L			
22	Provide unloading equipment	A				L, F			
23	Receive deliveries (inspect, inventory, and sign off on Receipt Verification Form)	A	A	A		L, F			SB to verify and inspect with Trade Partner
24	Offload delivered material.					L, F			
25	Make any material breakage claims within 5 calendar days from delivery of the product. After which it is assumed breakage is the responsibility of the installing contractor					L, F			Transfer of care and custody of material
26	Provide Certificate of Insurance for stored material					F			
27	**FIELD COORDINATION**								
28	Attend coordination meeting (s)	L	A	A	A	A	A		
29	Coordinate installation (including assembly, location and connections)	A	A	A	L	L	L		
30	**Electrical Distribution**								
31	Final Panel Schedules for use with As-builts		A	A		F			final panel schedules will need to be provided in order to turn over final As-builts
32	Reference SB Equipment Matrix for electrical equipment provided	A	A	A	A	L	A		
33	Changes to panels once delivered per RFIs during construction phase (i.e. breakers, equipment landed in breaker panels)		A	F		I			
34	HVAC Controls Panels~~(shipped loose) Panel mounting by BAS~~					I	F&I		120V Power by EC
35	Meeting Seismic Code Requirements for Equipment Certifications		L	L					
36	Seismic Calculations for Anchorage					L			
37	Meeting Seismic Code Requirements for Anchorage and Installation					L			
38	Connection lugs		A	F&I					
39	Fuses		A	F&I					
40	Installation of all ship loose materials, including but not limited to main, distribution and branch circuit breakers, fuses, and connection lugs					F&I			
41	Medium Voltage Substations		A	F		I			
42	Unit Substations		A	F		I			
43	Power monitors		A	F&I					
44	Interface power monitoring with building controls		A	A			F&I		
45	Customer metering					F&I			
46	Utility metering and coordination					F&I			
47	Connect bus joints and align switchgear		A	A		I			
48	Traveling CB lifter		A	F		I			
49	Coordination of Junction locations		A	A		L			
50	All Cabling and interconnects					F&I			
51	Coordination of top and bottom feeds		A	A		L			
52	Verify correct CB trip settings					L			
53	Distribution Panels		A	F		I			
54	Digital metering for main switchboard		A	F&I					
55	Initial fuses, subsequent replacements by EC		A	F&I		I			
56	Coordination Study		A	F&I		A			EC to provide information to vendor for study
57	**INSTALLATION**								
58	Coordination Study/ARC Flash Labels refer to Power Systems Study	A	A	F		I			Coordination study to be approved by EOR
59	Any required feeder sizing, feeder lengths and any other information needed to complete the coordination study	A	A			F			
60	Set Trip unit setting					F&I			
61	Install the products according to the approved plans, specifications, and Authorities Having Jurisdiction.	A				I			
62	Protect installed material from damage	L	A			F, I			
63	Provide for ALL piping, conduit, wiring, connections, power, controls, etc. not provided with Prepurchased Material, Product or Equipment	L	A			F, I	F, I		Power provided by EC, Monitoring points by BAS
64	Provide for ALL housekeeping pads, layout, vibration isolation, Snubbers, bases, anchors, supports, brackets, etc. not provided with Prepurchased Material, Product or Equipment	L	A					F, I	Housekeeping pads by concrete subcontractor
65	Provide for ALL gauges, valves, actuators, etc. not provided with Prepurchased	L	A			F, I			
66	Provide for ALL accessories, hardware, external components, etc. not provided with	L	A			F, I			
67	Provide Onsite Technical Support and Witness of Installation		A	L					As Required
68	**CHANGE ORDERS**								
69	Evaluate contract documents for changes, assemble COR	L	A	F	F	F	F		
70	Assemble material COR's once COR quantities received	L	F		F	F	F		
71	Provide quantities of material changes for each COR	A	A	F	F	F	F		
72	**ACCEPTANCE, WARRANTY AND CLOSEOUT**								
73	Perform Installation Inspection	A	A	A		A	A		As Required
74	Provide Pre Start Up or Installation Checklist		A	L		L	L		
75	Provide Start Up / Installation / Commissioning Procedure		A	L		L	L		
76	Perform Start Up. For Plug and Play or Material, confirm product functionality	A	A	L					As Required
77	Attend Pre-commissioning meeting	L	A	A		A	A		
78	Provide for Assistance during Commissioning		A	A		L	L		
79	Provide for Assistance during Field testing		A	A		L	L		
80	Provide for Assistance during Owner training		A	A		L	L		
81	Provide all O&M manuals		A	F					
82	Provide all attic stock and spare parts	A	A	F					
83	Provide for Material/Equipment/Parts warranty		A	F					
84	Provide for Material/Equipment/Labor warranty (Labor for Replacement)		A	F		L	L		
85	Provide for Installation labor warranty					F	F		
86	Provide for Trouble shooting during warranty period		A	A		L	L		
87	Provide for Building controls parts / labor warranty						F,L		
88	Provide Temporary Use Maintenance					F,L	F,L		
89	Provide for Manufacturer or Specified Warranty Certificates		A	F					
90	**Additional Items**								
91	Coordinate specialty breakers and shunt trips		A	F&I		A		A - Elevator & Fire Protection	
92	Test ETU at factory before shipping to site to ensure functionality		A	F&I					

ATTACHMENT C - COORDINATION MATRIX - BP #06 Generator & ATS

Greenwich Central Middle School - State Project No. 057-0114N
9 Indian Rock Lane, Greenwich, CT
10/22/2024

Material procurement for this project is supplied by SourceBlue. This matrix coordinates responsibility for the scopes identified.

Key	
F	Furnish
I	Install
L	Lead
A	Assist

		CM/GC	SourceBlue (SB)	Product Vendor / Rep	Trade Partner MECH	Trade Partner - ELEC	Trade Partner - BMS	Trade Partner - OTHER	SB column includes Manufacturer/Ven	Notes
1	**SUBMITTALS & COORDINATION**									
2	Submit product data	A	A	L, F		A	A			
3	Publish material lead times (Production & shipping)		A	L, F						
4	Publish Required on Job (ROJ) Dates	F,L	A	A		A	A			
5	Provide shop drawings		A	L, F						
6	Submit shop drawings to design team for approval	L	A	A						
7	Publish approved Shop Drawings and submittals	L	A	A						
8	Review approved submittals and ensure that comments are acceptable	L	A	A		L	L			
9	Field measurements for coordination or confirmation of shop drawings	L	A	L, F						
10	Meet Requirements of Material, Product, Equipment Specification Section	A	A	L						
11	Meet ALL Code and Jurisdictional Requirements of Material, Product, Equipment	A	A	L						
12	Provide ALL Material, Product, Equipment seismic calculations and/or certifications	A	A	L						
13	Provide ALL System/Building/Anchorage seismic calculations and/or certifications	A	A	L						
14	**MATERIAL ORDERS & PRODUCTION**									
15	Formal notice to release vendor to fabricate	L	F							
16	Vendor's factory or warehouse site visit	A	L	L, F	A	A	A			As Required
17	Provide identification on packaging (i.e. shipping labels)		A	L, F						
18	**DELIVERY, STORAGE AND HANDLING**									
19	Provide material delivery (protection, ocean, trucking)	A	A	L, F						
20	Publish delivery schedule and delivery locations	L	A	A		L				
21	Provide unloading equipment	L				F				
22	Receive deliveries (inspect, inventory, and sign off on Receipt Verification Form)	A	L	A		L, F				SB to verify and inspect with Trade Partner
23	Offload delivered material.					L, F				
24	Make any material breakage claims within 5 calendar days from delivery of the product. After which it is assumed breakage is the responsibility of the installing contractor					L, F				Transfer of care and custody of material
25	**FIELD COORDINATION**									
26	Attend coordination meeting (s)	L	A	A	A	A	A			
27	Coordinate installation (including assembly, location and connections)	A	A	A	L	L	L			
28	**TRANSFER SWITCHES**									
29	ATS		F	F		I				
30	ATS controller		F	F		I				
31	ATS remote annunciator		F	F		I				
32	Meeting Code Requirements for Equipment Seismic Certifications		L	L		F&I				
33	Seismic Calculations for Anchorage					F&I				
34	Meeting Seismic Code Requirements for Anchorage and Installation					F&I				
35	Connection Lugs			F&I						
36	Fuses			F&I						
37	Installation of all ship loose materials, including but not limited to main, distribution and branch circuit breakers, fuses, and connection lugs			F		I				
38	Power Monitors		A	F&I						
39	Interface Power Monitoring with Building Controls		A	A			F&I			
40	Customer Metering					F&I	A			
41	Utility Metering and Coordination					F&I	A			
42	~~Connect Bus Joints and Align Switchgear~~		~~A~~	~~A~~		~~I~~				
43	All Cabling and Interconnects					F&I				
44	Coordination of Top and Bottom Feeds		A	A		L				
45	Verify Correct CB Trip Settings					L				
46	**GENERATOR PACKAGE**									
47	Accessories (i.e.: terminal blocks, I/O cards, relays)		A	F&I		A				
48	Generator mounted vibration isolators (internal)		A	F&I						
49	Meeting Code Requirements for Equipment Seismic Certifications		L	L						
50	Seismic Calculations and hardware for Anchorage	A		F		I				
51	Meeting Seismic Code Requirements for Anchorage and Installation	A		F		I				
52	Meeting Sound Code Requirements for Equipment dBA Ratings		L	L						
53	Meeting Emissions Code Requirements for Equipment, Including Sensitive Receptor Particulate Filters per specs.		L	L						
54	Meeting Fuel Code Requirements for Equipment Package		L	L						
55	Permits and other permits required by the project's specifications.					L				
56	Provide equipment required to meet current SCAQMD emissions standards		A	F&I						
57	Generator CBs (unit mounted)		A	F&I						
58	Generator CBs (remote mounted)		A	F		I	I			
59	If unit mounted, batteries, battery charger(s), and battery heaters		A	F&I						
60	If remote mounted, batteries, battery charger(s), and battery heaters		A	F		I				
61	If unit mounted, generator control panel and control panel heater		A	F&I						
62	If remote mounted, generator control panel and control panel heater		A	F		I	I			
63	Generator SCADA system		A	F		I	I			Power by EC, Monitoring points by BAS
64	Generator Remote start/stop		A	F		I				
65	Generator Remote annunciator		A	F		I	I			Power by EC, Monitoring points by BAS
66	Generator Remote monitoring equipment		A	F		I	I			Power by EC, Monitoring points by BAS
~~67~~	~~If generator enclosure, provide and install louvers~~		~~A~~	~~F&I~~						
~~68~~	~~If generator enclosure, provide and install space heater~~		~~A~~	~~F&I~~						
~~69~~	~~If indoor generator, provide and install space heater~~		~~A~~	~~F~~	~~I~~	~~I~~				
~~70~~	~~If generator enclosure, provide and install raincaps and piping~~		~~A~~	~~F&I~~						
~~71~~	~~If generator enclosure, provide and install exhaust silencer/muffler, flex, and associated hardware~~		~~A~~	~~F&I~~						
~~72~~	~~If exhaust silencer/muffler, flex, and associated hardware are shipped separately~~		~~A~~	~~F~~	~~I~~					
~~73~~	~~If indoor generator, exhaust silencer/muffler, flex and associated hardware~~		~~A~~	~~F~~	~~I~~					
~~74~~	~~Day/ subbase tank (shipped with assembled unit)~~		~~A~~	~~F&I~~						
~~75~~	~~If day/ subbase tank is shipped separately due to size restraints~~		~~A~~	~~F~~	~~I~~					
~~76~~	~~Control wiring and power feeds to remote fuel tank~~					~~F&I~~	~~F&I~~			Power by EC, Monitoring points by BAS
77	Fuel flexes		A	F	I					
78	If remote radiator		A	F	I					
~~79~~	~~If unit mounted radiator~~			~~F&I~~						
80	Coolant		A	F						
81	Care, custody, handling and install of coolant				L&I					
82	**INSTALLATION**									
83	Install the products according to the approved plans, specifications, and Authorities Having Jurisdiction.	A			I	I	I			
84	Protect installed material from damage	L				F, I				
85	Provide for ALL piping, conduit, wiring, connections, power, controls, etc. not provided	L				F, I	F, I			
86	Provide for ALL housekeeping pads, layout, vibration isolation, Snubbers, bases, anchors, supports, brackets, etc. not provided with Prepurchased Material, Product or Equipment	L						F, I		Housekeeping pads with concrete subcontractor
87	Provide for ALL gauges, valves, actuators, etc. not provided with Prepurchased	L					F, I			
88	Provide for ALL accessories, hardware, external components, etc. not provided with Prepurchased Material, Product or Equipment	L		A		F, I	F, I			see shipped loose equipment sheet
89	Provide Onsite Technical Support and Witness of Installation		A	L						As Required
90	**CHANGE ORDERS**									
91	Evaluate contract documents for changes, assemble COR	L	A	F	F	F	F			
92	Assemble material COR's once COR quantities received	L	F	F	F	F	F			
93	Provide quantities of material changes for each COR	A	A	F	F	F	F			
94	**ACCEPTANCE, WARRANTY AND CLOSEOUT**									
95	Perform Installation Inspection	A	A	A	A	A	A			As Required
96	Provide Pre Start Up or Installation Checklist		A	L	A	A	A			
97	Provide Start Up / Installation / Commissioning Procedure		A	L	A	A	A			
98	Perform Start Up. For Plug and Play or Material, confirm product functionality	A	A	L						As Required
99	Attend Pre-commissioning meeting	L	A	A	A	A	A			

ATTACHMENT C - COORDINATION MATRIX - BP #06 Generator & ATS

Greenwich Central Middle School - State Project No. 057-0114N
9 Indian Rock Lane, Greenwich, CT
10/22/2024

Material procurement for this project is supplied by SourceBlue. This matrix coordinates responsibility for the scopes identified.

Key	
F	Furnish
I	Install
L	Lead
A	Assist

		CM/GC	SourceBlue (SB)	Product Vendor / Rep	Trade Partner - MECH	Trade Partner - ELEC	Trade Partner - BMS	Trade Partner - OTHER	Notes SB column includes Manufacturer/Ven
100	Provide for Assistance during Commissioning		A	A	L	L	L		
101	Provide for Assistance during Field testing		A	A	L	L	L		
102	Provide for Assistance during Owner training		A	A	L	L	L		
103	Provide all O&M manuals		A	F					
104	Provide all attic stock and spare parts	A	A	F					
105	Provide for Material/Equipment/Parts warranty		A	F					
106	Provide for Material/Equipment/Labor warranty (Labor for Replacement)		A	L	A	A	A		
107	Provide for Installation labor warranty				F	F	F		
108	Provide for Trouble shooting during warranty period		A	A	L	L	L		
109	Provide for Building controls parts / labor warranty						F,L		
110	Provide Temporary Use Maintenance				F,L	F,L	F,L		
111	Provide for Manufacturer or Specified Warranty Certificates		A	F					
112	**Additional Iteams**								
113	Installation of EPO switch (shipped loose)		A	F		I			

ATTACHMENT C - COORDINATION MATRIX - BP#7 - HRV

Turner

Greenwich Central Middle School – State Project No. 057-0114N
9 Indian Rock Ln. Greenwich, CT
8/13/2024

Material procurement for this project is supplied by Turner Construction. This matrix coordinates responsibility for the scopes identified.

Key	
F	Furnish
I	Install
L	Lead
A	Assist

		CM/GC	Pre-purchase Manager	Product Vendor / Rep	Trade Partner-MECH	Trade Partner - ELEC	Trade Partner - BMS	Trade Partner - OTHER	Notes / Includes Manufacturer / Vendor coordination
1	**SUBMITTALS & COORDINATION**								
2	Submit product data	A	A	L, F					
3	Publish material lead times (Production & shipping)		A	L, F					
4	Publish Required on Job (ROJ) Dates	F,L	A	A	A				
5	Provide shop drawings		A	L, F					
6	Submit shop drawings to design team for approval	L, F	A	A					
7	Publish approved Shop Drawings and submittals	L, F	A	A					
8	Review approved submittals and ensure that comments are acceptable	F	A	A	L	L	L	L	
9	Field measurements for coordination or confirmation of shop drawings	L	A	L, F	L	L	L	L	
10	Meet Requirements of Material, Product, Equipment Specification Section	A	A	L					
11	Meet ALL Code and Jurisdictional Requirements of Material, Product, Equipment	A	A	L					
12	Provide ALL Material, Product, Equipment seismic calculations and/or certifications	A	A	L					
13	Provide ALL System/Building/Anchorage seismic calculations and/or certifications	L	A	L	F&I				
14	**MATERIAL ORDERS & PRODUCTION**								
15	Formal notice to release vendor to fabricate	L	F						
16	Vendor's factory or warehouse site visit	A	L	L, F	A	A	A	A	As Required
17	Provide identification on packaging (i.e. shipping labels)	A	A	L, F					
18	**DELIVERY, STORAGE AND HANDLING**								
19	Provide material delivery (protection, ocean, trucking)	A	A	L, F					
20	Publish delivery schedule and delivery locations	A	A	L	L				
21	Provide unloading equipment	A			F				
22	Store equipment in a suitable location as per manufacturers directions for up to a year's time				F				
23	Provide maintenance if equipment is going to sit for more than one month				F&I				
23	Receive deliveries (inspect, inventory, and sign off on Receipt Verification Form)	A	L	A	L,F				SB to verify and inspect with Trade Partner
24	Offload delivered material.				L, F				
25	Make any material breakage claims within 5 calendar days from delivery of the product. After which it is assumed breakage is the responsibility of the installing contractor				L, F				Transfer of care and custody of material
26	**FIELD COORDINATION**								
27	Attend coordination meeting (s)	L	A	A	A	A	A	A	
28	Coordinate installation (including assembly, location and connections)	A	A	A	L	L	L	L	
29	**DOAS**								
30	Internal seismic vibration isolation as per spec			F&I					
31	Assemble units if shipped in sections (manufacturer to provide direction if needed)			A	F&I	A			
32	For buildings with Aluminum wire, provide approved Aluminum-to-Copper junction					F&I			
33	BACnet interface			F			I		
34	All mechanical/plumbing piping, mechanical ductwork connections, and associated hardware and accessories				F&I				
35	All power conduit, wiring, and terminations					F&I			
36	All Building Automation system controls and interface with equipment, including low voltage wiring						F&I		
37	Housekeeping bad and/or inertia base and submit to A/E for approval	A	A					F&I	Housekeeping pads and/or inertia base furnished and installed by BP#10 Concrete Subcontractor.
34	Motor starters and/or VFD's			F&I					
35	If starter is provided by others, provide coordination to ensure starter/equipment are compatible. For example, torque requirements, size…			A	A	A	A	A	
36	Disconnect switch			F		I			
37	Duct silencers				F&I				
38	Externally wrapped insulation				F&I				
39	Internal insulation			F&I					
40	Check belt tension if needed				L				
41	Assemble units shipped in sections (manufacturer to provide direction if needed)			A	L				
42	Mounting and wiring of any sensors outside of the units including wall, and duct mounted, sensors						F & I		
43	Start up		A	L	A	A	A		
44	Start up reports			F	F	F	F		
45	Engage qualified testing agency to perform tests and inspections				A			A	Owner
46	All field testing referenced in specifications			F	F	F	F		
47	All factory testing referenced in specifications			F&I					
48	Anchor bolts or welds for installation of unit to curb			F	I				
49	Design and install curb to building structure attachment				F&I				
48	External vibration				F&I				
49	Internal vibration isolation			F & I					
50	Hardware to assemble units shipped in sections			F	I				
51	Assemble components shipped loose: (i.e. filters and mixing boxes)			F	I				
52	Cleaning of mechanical equipment and mechanical rooms prior to substantial completion				L				
53	Provide list of all components shipping loose		A	F					
54	Isolation valves, motorized valves, gauges, actuators and control valves				F & I		F & I		
55	Disconnect switch (Separate from Starter/VFD)					F & I			
56	Duct Smoke detectors				I	F			
57	Power conduit, wiring, and terminations to Duct Smoke Detectors					F&I			
58	Control conduit, wiring, terminations, and programming to Duct Smoke Detectors						F&I		
59	Fire Smoke / Smoke Dampers				F & I				
60	Fire alarm wiring					F&I			
56	Duct Smoke detectors				I	F			
57	Fire Smoke / Smoke Dampers				F & I				
58	Installation of all actuators for dampers				F&I				
59	Insulation of coil piping internal to air handling unit			F & I					
60	Drain pan			F & I					
61	Initial filters and belts			F	I				
62	Spare filters and belts			F	I				
63	Motor alignment			L	L				
64	Check belt tension (if belt driven fan)				L				

ATTACHMENT C - COORDINATION MATRIX - BP#7 - HRV

Turner

Greenwich Central Middle School – State Project No. 057-0114N
9 Indian Rock Ln. Greenwich, CT
8/13/2024

Material procurement for this project is supplied by Turner Construction. This matrix coordinates responsibility for the scopes identified.

Key	
F	Furnish
I	Install
L	Lead
A	Assist

		CM/GC	Pre-purchase Manager	Product Vendor / Rep	Trade Partner-MECH	Trade Partner - ELEC	Trade Partner - BMS	Trade Partner - OTHER	Notes / Includes Manufacturer / Vendor coordination
65	**DOAS Cont.**								
66	Air balancing				L				
67	Escutcheons/seal for all Factory penetrations			F&I					
68	Escutcheons/seal for all field penetrations				F&I				
69	Balancing of fans at factory			F					
70	Balancing of fans in the field if required				F				
71	Programming and Testing of VFD's			L					
72	VFD installation			F&I					
73	VFD Wiring including power					F&I			
74	UV Light Fixture and Lamps, where specified			F&I					
75	Electrical connections between shipping splits, where required					F&I			
76	Gasket, Tape Sealer, Caulk between shipping splits, where required			F	I				
77	Clean Unit Prior to Start Up and Turn Over				L				
78	Condensate Trap				F & I				
79	Confirm proper depth of trap prior to pad and floor install. Coordinate requirements with Project Superintendent	A			L				
80	DDC Interface, Wiring, programing, and Graphics for RTU controls on DDC Head End						F & I		
81	Programming of Controls						L		
82	Shims for field adjustment of fans and motors			A	F & I				
83	Mounting and wiring of any sensors outside of the units including CO2, wall, and duct mounted, sensors						F & I		
84	Airflow Monitoring Probes				F&I		A		
85	Drain pipes from unit drain pans to roof drain				F&I				
86	Separate devices furnished by manufactrurer and not factory installed				F&I				
87	Seismic Curbs			F	I				
88	Duct pressure switch				F&I				
89	**Refrigerant and Filters**								
#REF!	Filter Clips and/or Clamps			F	I				
#REF!	Any and all Field work, and field installed parts, pieces, and/or equipment				F&I				
#REF!	Provide MRE and MRC efficiency values			F					
#REF!	**Electric Duct Mounted Heating**								
#REF!	Duct Mounted heating elements				F&I				
#REF!	Electrical connections for Duct Mounted elements, including power					F&I			
#REF!	**INSTALLATION**								
#REF!	Install the products according to the approved plans, specifications, and Authorities Having Jurisdiction.	A			I	I	I	I	
#REF!	Fill units with appropriate volume of Propylene Glycol				F&I				
#REF!	Protect installed material from damage	L	A		F, I	F, I	F, I		
#REF!	Provide for ALL piping, conduit, wiring, connections, power, controls, etc. not provided with Prepurchased Material, Product or Equipment	L	A		F, I	F, I	F, I		
#REF!	Provide for ALL housekeeping pads, vibration isolation, Snubbers, bases, anchors, supports, brackets, etc. not provided with Prepurchased Material, Product or Equipment	L	A		F, I				Housekeeping pads and/or inertia base furnished and installed
#REF!	Provide for ALL gauges, valves, actuators, etc. not provided with Prepurchased Material, Product or Equipment	L			F, I		F, I		
#REF!	Provide for ALL accessories, hardware, external components, etc. not provided with Prepurchased Material, Product or Equipment	L			F, I	F, I	F, I	F, I	
#REF!	Provide Onsite Technical Support and Witness of Installation		A	L					As Required
#REF!	**CHANGE ORDERS**								
#REF!	Evaluate contract documents for changes, assemble COR	L	A	F	F	F	F		
#REF!	Assemble material COR's once COR quantities received	L	F						
#REF!	Provide quantities of material changes for each COR	A	A	F	F	F	F		
#REF!	**ACCEPTANCE. WARRANTY AND CLOSEOUT**								
#REF!	Perform Installation Inspection	A	A	A	A	A	A	A	As Required
#REF!	Provide Pre Start Up or Installation Checklist		A	L, F	L, F	L, F	L, F	A	
#REF!	Provide Start Up / Installation / Commissioning Procedure		A	L	A	A	A	A	
#REF!	Perform Start Up. For Plug and Play or Material, confirm product functionality	A	A	L	A	A	A		As Required
#REF!	Attend Pre-commissioning meeting	L	A	A	A	A	A	A	Design Team, CxA
#REF!	Provide for Assistance during Commissioning		A	A	L	L	L	L	
#REF!	Provide for Assistance during Field testing		A	A	L	L	L	L	
#REF!	Provide for Assistance during Owner training		A	L	A	A	A		
#REF!	Provide all O&M manuals		A	F					
#REF!	Provide all attic stock and spare parts	A	A	F					
#REF!	Provide for Material/Equipment/Parts warranty		A	F					
#REF!	Provide for Material/Equipment/Labor warranty (Labor for Replacement)		A	F					
#REF!	Provide for Installation labor warranty				F	F	F		
#REF!	Provide for Trouble shooting during warranty period		A	A	L	L	L		
#REF!	Provide for Building controls parts / labor warranty						F,L		
#REF!	Provide Temporary Use Maintenance				F,L	F,L	F,L		
#REF!	Provide for Manufacturer or Specified Warranty Certificates		A	F					

SECTION 003132 – GEOTECHNICAL DATA

PART 1 GENERAL

1.1 SUMMARY

A. For the preparation of Bidding Documents, Engineer has relied upon the following reports and tests of subsurface and latent physical conditions of the site. The location of all bore holes and test pits is shown on the Drawings.

1. Geotechnical report, Soil boring and test pit data, and laboratory test results (attached)

a. The subsurface data are not guaranteed as to accuracy or completeness, nor are they a part of the Contract Documents.

b. Bidders are cautioned that the subsurface data have been utilized for general design purposes only. No explicit or implicit representation is made as to the nature of the materials which may be encountered below the surface of the ground.

c. The making available of this subsurface data to Bidders is not intended to relieve them from their responsibility to familiarize themselves with the subsurface and other site conditions.

2. Plan and Profile of Sewer in Stanwich Road & Fairfield Road Greenwich, CT dated Sept. 6, 1961 (attached)

a. The subsurface information provided is not guaranteed as to accuracy or completeness, nor are they a part of the Contract Documents.

b. Bidders are cautioned that the information provided is for general design purposes only. No explicit or implicit representation is made as to the nature of the materials which may be encountered below the surface of the ground.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

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16-5068-003
January 26, 2024

Kemp A. Morhardt, AIA, NCARB
Principal Architect
The SLAM Collaborative
80 Glastonbury Blvd
Glastonbury, CT 06033

Re: **Geotechnical Evaluation – Greenwich Central Middle School, Greenwich, CT**

Dear Mr. Morhardt:

Tighe & Bond is pleased to present this geotechnical evaluation for the proposed new Central Middle School at 9 Indian Rock Lane in Greenwich, Connecticut. A preliminary geotechnical evaluation report dated October 17, 2023 was previously prepared by Tighe & Bond for the project This geotechnical report was prepared to present supplemental subsurface data and geotechnical recommendations, and is intended to supersede the preliminary geotechnical evaluation report in its entirety.

A Site Locus is presented as Figure 1 of Appendix A. This evaluation was completed in general accordance with our agreement dated February 2, 2023. Elevations in this report reference the North American Vertical Datum of 1988 (NAVD 88).

Executive Summary

Tighe & Bond conducted a subsurface exploration program in August and November 2023 consisting of nine geotechnical borings and eleven geotechnical test pits. For this evaluation, Tighe & Bond also incorporated 20 borings and 12 test pits performed by ATANE in 2022. In general, subsurface conditions encountered in the explorations consisted of surficial topsoil, forest mat or recreational field sand underlain by native granular soils and bedrock, or in the eastern portion of the proposed building and to the east/southeast of the proposed building the surficial materials were underlain by existing granular fill followed by a layer of buried sand with organics, followed by native granular soils, a discontinuous layer of sandy clay that was 0.5 to 3 feet thick, and bedrock.

The existing fill and underlying sand with organics layers are not suitable to remain in place below the proposed building footprint (slab and foundations) due to the potential for intolerable settlement of the building foundations and/or slab that may result from additional load on the uncontrolled fill of variable composition and density, and organic-containing layers that are expected to decompose over the life of the structure. Existing fill and underlying sand with organics should be completely over-excavated from below the proposed building footprint and foundation bearing zones (defined as the 1 horizontal to 1 vertical [1H:1V] lines extending down and away from the bottom of footing elevation starting at 1 foot away from the footing edge) to the top of suitable native soils, and be replaced with suitable compacted backfill. After completion of over-excavation and replacement of the unsuitable materials, the proposed building can be supported on conventional shallow soil-supported footings and a soil-supported slab-on-grade bearing on native soils or suitable compacted backfill placed over native soils. A maximum net allowable bearing pressure of 4 kips per square foot (ksf)

is recommended for footings. Total and differential settlements are anticipated to be less than 1 inch and ½ inch, respectively.

Permanent slopes and/or retaining walls are planned to the west of the proposed building, with maximum cuts of up to 22 feet. The thickness of overburden soils in the existing hillside where the permanent slopes and/or retaining walls are planned was approximately 3 to 14.5 feet, with an average thickness of approximately 7 feet. It is anticipated that the proposed permanent slopes and/or retaining walls could consist of a combination of permanent rock and soil slopes, or modular block or mechanically-stabilized earth (MSE) retaining walls. These areas were not accessible during our exploration program due to dense tree growth.

Once access is available at the actual locations of proposed permanent slopes and/or retaining walls, at least 2 borings are recommended along the alignment of the proposed permanent slope and/or retaining wall to the west of the southern portion of the proposed building to estimate the thickness of overburden soil and composition/quality of bedrock. A bedrock core is recommended to be collected for the full elevation range of the potential rock cut.

Site Conditions

Existing – The site is located at 9 Indian Rock Lane in Greenwich, Connecticut, and is currently developed with the existing Central Middle School. The existing site includes an approximately 76,000 square foot school building in the southern portion of the site, parking and driveway areas to the south of the existing building, recreational fields to the north of the existing building, and wooded areas to the west and north of the existing building and recreational fields. Indian Rock Lane borders the site to the south, and Stanwich Road and Orchard Street border the site to the west and east, respectively.

Based on the Property / Boundary & Topographic Survey dated May 22, 2023, and prepared by Martin Surveying Associates, LLC (Martin), ground surface topography in the above-referenced recreational field area is approximately elevation 45 feet, and then slopes upward to the west (toward Stanwich Road) and north to approximately elevation 85 feet to 110 feet at a typical steepness of 4 horizontal to 1 vertical (4H:1V).

Proposed – The proposed project generally consists of demolishing the existing building and construction of a new approximately 110,000 square-foot, multi-story school building in the northern portion of the site. The proposed building is planned to be located partially in the existing recreational field, and to the west into the existing wooded, upward sloping area. The proposed building is planned to have a lowest floor at elevation 47 feet, and a second floor level with a slab at elevation 63 feet. The western portion of the proposed building is planned to be single-story with the slab at elevation 63 feet (i.e., no lower level in the western portion of the building). The eastern-portion of the building with a FFE at elevation 47 feet will require approximately 1 to 4 feet of fill to achieve the FFE, and the western portion of the building with a FFE at elevation 63 feet will require approximately 2 to 18 feet of fill to achieve the FFE.

In addition to the proposed new building, proposed construction includes new parking/driveway areas, retaining walls or cut slopes to the west of the proposed building (cutting into the existing slope for the lower finished roadway grades), new recreational fields to the south of the proposed building (in the footprint of the existing building to be demolished), and stormwater management features. Two primary retaining walls or cut slopes

are planned to the west of the proposed building: the northern wall / cut slope is proposed to be approximately 140 feet in length and is expected to be cut into the existing slope and will have a maximum height of approximately 9 feet; and the southern wall / cut slope is proposed to be approximately 340 feet in length and is expected to be cut into the existing slope and will have a maximum height of approximately 22 feet.

Subsurface Conditions

The generalized subsurface conditions described in the text below summarize trends observed in the explorations. The boundaries between soil strata are approximate and are based on interpretations of widely spaced explorations and samples. Actual conditions could be more variable.

Tighe & Bond Borings and Test Pits – Nine geotechnical borings (T&B-B-1 through T&B-B-9) were drilled by General Borings, Inc. (General Borings) between August 28 and 30, 2023. Borings were advanced with 3.25-inch inside-diameter hollow-stem augers. Split-spoon sampling and Standard Penetration Tests (SPTs) were conducted semi-continuously to a depth of up to 7 feet below ground surface (bgs), and at 5-feet intervals thereafter to the termination depths of the borings. Auger refusal on presumed bedrock was encountered in each of the borings at depths ranging from approximately 3 to 29 feet bgs. At borings T&B-B-4 and T&B-B-8, auger refusal was encountered and the borings were off-set and drilled to deeper depths, and the offset borings were identified as T&B-B-4A and T&B-B-8A, respectively. Bedrock core samples were collected at two borings: T&B-B-1 from a depth of 6.5 to 11.5 feet bgs; and T&B-B-2 from a depth of 3 to 8 feet bgs. Borings were backfilled upon completion with cuttings.

Eleven geotechnical test pits (TP-101 through TP-111) were excavated on November 11 through 17, 2023 by General Borings using a Volvo EC55L excavator to depths ranging from approximately 3 to 8 feet bgs. After completion of the test pits, the pits were backfilled with excavated material in controlled lifts and compacted with the heel of the bucket.

Boring and test pit locations are shown on Figure 2 of Appendix A. Tighe & Bond boring and test pit logs are included in Appendix B.

Explorations by Others – Borings and test pits were performed by ATANE that were documented in a report titled Preliminary Geotechnical Investigation for Central Middle School, dated October 10, 2022. Twenty borings (B-1 through B-20) were drilled by Soil Testing, Inc. on August 23 through 25, 2022, and on September 3, 2022. The borings were drilled using 4.25-inch inside-diameter hollow-stem augers. Split-spoon sampling SPTs were typically conducted continuously or semi-continuously to the termination depths of the borings. Borings were advanced to maximum depths ranging from 3 to 16 feet bgs, and auger refusal was noted on the boring logs at 12 of the borings at depths ranging from 3 to 12 feet bgs.

Twelve test pits (TP-1 through TP-12) were excavated by JJK Electric on August 12, 2022 using a Bobcat E35. Test pits were excavated to maximum depths ranging from 3 to 10 feet bgs.

The ATANE borings logs did not include ground surface elevations, and the test pit logs included ground surface elevations that vary significantly from the existing ground surface

elevations shown on the Martin Property / Boundary & Topographic Survey. Therefore, for this evaluation the ground surface at each of the ATANE borings and test pits were interpolated based on an overlay of the ATANE exploration location plan on the Martin Property / Boundary & Topographic Survey. This assumes there have not been any significant grade changes since ATANE's explorations and the Martin Property / Boundary & Topographic Survey.

Boring and test pit locations are shown on Figure 2 of Appendix A, based on the above-referenced overlay. The ATANE boring and test pit logs are included in Appendix C.

Laboratory Testing – Laboratory tests were performed as part of the ATANE exploration program consisting of nine sieve analysis tests (ASTM C136), eight specific gravity tests (ASTM D854) and two Atterberg limits tests (ASTM D4318). Additionally, laboratory tests were performed on soil and rock samples collected from the Tighe & Bond borings and test pits consisting of four mechanical Particle Size Analysis tests (ASTM D6913), six organic content tests (ASTM D2974), six natural moisture content tests (ASTM D2216) and two uniaxial compressive strength tests (ASTM D7012D). Tighe & Bond and ATANE laboratory test results are included in Appendix D.

Summary of Subsurface Conditions – In general, subsurface conditions encountered in the explorations consisted of surficial topsoil, forest mat or recreational field sand underlain by native granular soils and bedrock, or in the eastern portion of the proposed building and to the east/southeast of the proposed building the surficial materials were underlain by existing granular fill followed by a layer of buried sand with minor organics, followed by native granular soils, a discontinuous layer of sandy clay that was 0.5 to 3 feet thick, and bedrock. The native granular soils were typically medium dense to very dense, with the exception of the upper 2 to 3 feet that was occasionally very loose to loose. The existing fill was variable in density, ranging from very loose to very dense where SPTs were performed. The buried sand with minor organics was loose to medium dense where SPTs were performed.

Table 1 below presents the general stratigraphy encountered at the subsurface exploration locations in descending depth from the ground surface. A tabular summary of subsurface conditions is included as Table B1 in Appendix B.

Table 1
Description of Subsurface Conditions

Strata (In Descending Depth)	General Description [1]
FILL[2,3]	Loose to very dense, brown, gray or black, fine to coarse SAND (portions of which are only fine SAND), up to 50% Gravel, up to 50% Silt, trace Roots, trace Asphalt or trace "debris," *or* SILT, trace Gravel, trace Clay; fill contains Cobbles and Boulders
SAND WITH MINOR ORGANICS[2,3,4]	Loose, brown or tan, fine to coarse or fine to medium SAND, up to 50% Silt, up to 50% Gravel, trace to little Organics; layer contains Cobbles
NATIVE GRANULAR SOIL[5]	Medium dense to very dense, brown, gray or black, fine to coarse SAND (portions of which are only fine SAND), up to 50% Gravel, up to 50% Silt *or* GRAVEL, some fine to coarse Sand, little Silt *or* SILT, some fine to medium Sand; layer contains Cobbles and Boulders
SANDY CLAY[6]	Gray, low plasticity CLAY or Clayey SILT, with minor proportions of Sand, Gravel or Sand-Clay mixtures

1. Definition of Soil Description Terms: "trace" = 0-10%, "little" = 10-20%, "some" = 20-35%, "and" = 35-50%, by weight
2. Encountered at T&B-B-5 and T&B-B-8, TP-101 through TP-111, and interpreted to have been encountered at TP-1, TP-6, and TP-8 through TP-11.
3. The borings and test pits performed by ATANE do not explicitly identify fill, sand with minor organics, and native soils on each of the logs. Fill at the ATANE borings and test pits, as well as the sand with minor organics layer, where not explicitly identified as fill was interpreted by Tighe & Bond as part of this evaluation.
4. Based on six laboratory organic and moisture content tests of soil samples collected from the sand with minor organics layer, the organic content and moisture content of the layer ranged from 1.1% to 10.5% and 20.7% to 52.1%, respectively.
5. The upper 2 feet of the native soil where present directly below ground surface was very loose to loose at some locations, likely the result of seasonal freeze/thaw.
6. Encountered at TP-104, B-4, TP-3, TP-4, and TP-7 through TP-11.

Of the 52 total subsurface explorations, 21 of the explorations terminated upon encountering refusal on presumed bedrock at depths ranging from approximately 3 to 29 feet bgs. A 0.5- to 3.5-feet thick weathered bedrock zone was encountered before apparent intact bedrock at four of the Tighe & Bond borings. In general, refusal elevations were shallower in the western portion of the site (the existing hillside) and deeper in the central portion of the site (south-central portion of the proposed building footprint). Two 5-foot long bedrock cores were collected at borings drilled in the northern portion of the site (T&B-B-1 and T&B-B-2). Based on the rock cores and consistent with the 1985 Bedrock Geological Map of Connecticut, bedrock underlying the site consists of gneiss as part of the Hawley Formation. The Rock Quality Designation (RQD) of samples collected ranged from 70 to 78 percent, indicating fair to good rock quality.

Groundwater was encountered at depths ranging from approximately 6 to 10 feet bgs, corresponding to approximately elevation 39 feet to 33 feet, in explorations performed in the existing recreational field area; groundwater was not encountered in borings drilled on the

existing hillside. Water levels were taken during or shortly after drilling/excavating and may not reflect stabilized conditions. Water levels can fluctuate with season, precipitation, and nearby construction or other below grade activities, such as excavation, dewatering, wells, infiltration basins, etc. The possibility of groundwater level fluctuations should be considered during design.

Geotechnical Evaluation and Recommendations

The analyses and recommendations submitted in this evaluation are based upon the data obtained from the relatively widely spaced subsurface explorations. Subsurface explorations included as part of this evaluation were performed by others (ATANE), not under the observation of Tighe & Bond. The evaluation and recommendations provided herein should be considered only as reliable as the information on which they were based. The nature and extent of variations between explorations may not become evident until construction. If significant variations from these descriptions appear during construction, it will be necessary to re-evaluate these recommendations.

Subsurface conditions encountered in the borings within the footprint of the proposed building generally consisted of native granular soils underlain by bedrock, or (in the eastern portion of the proposed building footprint) existing fill with minor organics underlain by a layer of granular soil with minor organics, followed by native granular soils, a discontinuous layer of sandy clay, and bedrock. The thickness of the organic-containing layer was observed to range from approximately 0.5 to 3.5 feet. Based on six laboratory organic and moisture content tests of soil samples collected from the sand with minor organics layer from Tighe & Bond borings and test pits, the organic content and moisture content of the layer ranged from 1.1% to 10.5% and 20.7% to 52.1%, respectively. ATANE explorations describe "some organic materials" within the fill and granular soil with minor organics layers.

The existing fill and underlying sand with organics layers are not suitable to remain in place below the proposed building footprint (slab and foundations) due to the potential for intolerable settlement of the building foundations and/or slab that may result from the presence of uncontrolled fill of variable composition and density, and organic-containing layers that are expected to decompose over the life of the structure. Existing fill and underlying sand with organics should be completely over-excavated from below the proposed building footprint and foundation bearing zones (defined as the 1H:1V lines extending down and away from the bottom of footing elevation starting at 1 foot away from the footing edge) to the top of suitable native soils, and be replaced with suitable compacted backfill. After completion of over-excavation and replacement of the unsuitable materials, the proposed building can be supported on conventional shallow soil-supported footings and a soil-supported slab-on-grade bearing on native soils or suitable compacted backfill placed over native soils.

In areas outside the proposed building footprint (such as pavement and landscaped areas), the existing fill and underlying sand with organics layers are considered suitable to remain in place.

Foundation and Slab Design – It is recommended the proposed building be designed with conventional soil-supported spread and continuous footing foundations. Per the 2022 Connecticut State Building Code, footings should bear a minimum of 3.5 feet below adjacent ground surface exposed to freezing temperatures for frost protection. Interior footings not

exposed to freezing temperatures should bear a minimum of 1.5 feet below the slab; however, possible building shut downs or power failures should be considered.

Foundations are recommended to bear on native granular soil or compacted Granular Fill, Gravel Borrow or Crushed Stone wrapped in a non-woven geotextile separation fabric, placed over native granular soil after over-excavation of the existing fill and underlying sand with organics layers.

Bedrock is not expected to be encountered at or within 12 inches of footing bearing elevations. Although not expected, if bedrock is encountered above or within 12 inches of footing bearing elevations, the bedrock should be removed to 12 inches below the bottom of footing and be replaced with compacted Crushed Stone. This will help limit differential settlement or concrete cracking that may occur due to bearing on dissimilar materials (bedrock versus soil).

A maximum net allowable bearing pressure of 4 ksf is recommended for footings. The net allowable bearing pressure is based on column and wall footings having a minimum width of 3 feet and 2 feet, respectively. At the recommended bearing pressure, total and differential settlements are anticipated to be less than 1 inch and ½ inch, respectively. Most settlement will occur during construction as dead load is applied.

Where footings are stepped, the maximum steepness of the steps should be 2H:1V.

An ultimate coefficient of friction equal to 0.45 ($\delta = 24$ degrees) should be used for concrete on existing granular soils or on compacted Granular Fill, Gravel Borrow or Crushed Stone. The recommended ultimate passive earth pressure against the sides of footings is 400 pounds per cubic foot as an equivalent fluid unit weight. A factor of safety of 2.0 is recommended to be applied to the ultimate passive earth pressure value.

The floor slab may be designed as a slab-on-grade bearing on 12 inches of compacted Gravel Borrow or Crushed Stone placed over native granular soil or compacted Granular Fill if used as backfill after removal and replacement of the existing fill and underlying sand with organics layers.

Subgrades and required fill to achieve proposed grade should be prepared, placed, and compacted as recommended later in this letter.

Foundation and Underslab Drainage – Groundwater was encountered at depths ranging from 6 to 10 feet bgs, corresponding to approximately elevation 39 feet to 33 feet. Based on this information, foundation and underslab drainage is not likely necessary, with the exception of the foundation/retaining wall that will provide transition between the lower portion of the building with FFE at elevation 47 feet and the upper portion of the building with FFE at 63 feet, which should include a foundation perimeter drain. The foundation perimeter drain should consist of a perforated PVC drain, at least 6 inches in diameter, and should be surrounded by appropriate filters such as crushed stone, gravel, and/or geotextiles. Water collected in pipes should be conveyed to properly filtered sump pumps for discharge or daylighted by gravity, if possible.

Lateral Earth Pressures – Earth-retaining structures should be designed to resist lateral pressures generated by soil backfill material and any temporary or permanent surcharge loads. At-rest conditions can be used for design of walls that are not free to deflect or rotate

(braced walls). Walls that are free to deflect or rotate (unbraced walls) should be designed using active conditions.

Table 2, below, provides recommended lateral loads.

Table 2
Lateral Earth Pressures

Condition	Recommended Value
Braced / At-Rest	At Rest Earth Pressure Coefficient (k_o): 0.50 Equivalent Fluid Pressure: 65 pcf[1] Surcharge: 0.5 times the vertical surcharge load uniformly distributed over the height of the wall (in psf[1])
Unbraced / Active[2]	Active Earth Pressure Coefficient (k_a): 0.33 Equivalent Fluid Pressure: 45 pcf Surcharge: 0.33 times the vertical surcharge load uniformly distributed over the height of the wall

1. pcf = pounds per cubic foot; psf = pounds per square foot
2. For active conditions to be developed, the wall must rotate about its base with lateral top movement of approximately 0.002H, where H is the height of the wall.

The recommended earth pressures above are based on level ground surface at the top of the wall. These design values were calculated using a soil unit weight of 130 pcf and a friction angle of 30 degrees, assuming the use Granular Fill or Gravel Borrow as backfill against the wall. The design values above do not include unbalanced hydrostatic loads; the values provided assume drainage will be included in the design of earth retaining structures. Where the calculated lateral earth pressure is less than 200 psf, it should be increased to 200 psf (as a surcharge) to account for compaction induced stresses.

The resultant earth pressure should be applied at a location of H/3 from the bottom of the wall.

According to the Connecticut State Building Code, seismic lateral earth pressure loads on basement and retaining walls in Seismic Design Categories A through C need not be considered. It is anticipated that Seismic Design Categories A through C will apply for this project, but should be confirmed by the structural engineer.

The recommended minimum factors of safety against sliding and overturning are 1.5. A coefficient of friction equal to 0.45 ($\delta = 24$ degrees) may be used for concrete on existing granular soil or and compacted Granular Fill, Gravel Borrow or Crushed Stone.

Seismic Design – Based on data from the borings, the site is assigned to Site Class D, according to the State of Connecticut Building Code. The design spectral response accelerations at short periods (S_{DS}) and at 1-second period (S_{D1}) are 0.292 and 0.095, respectively. These values were calculated based on mapped spectral response accelerations and the appropriate magnification factors for Site Class D. The structural engineer should determine the Seismic Design Category based upon the assumed seismic use group.

Based on standard penetration test N-values, composition of the soils encountered in the test borings, and depth of groundwater observed, the site soils are not considered susceptible to liquefaction.

Pavement Design – Table 3 provides minimum recommended pavement cross-sections for the proposed pavement areas:

Table 3
Minimum Pavement Sections

Layer Description	Layer Thickness (inches)	
	Light Use	**Heavy Use**
Bituminous Concrete Wearing Course	1.5	2
Bituminous Concrete Binder Course	2	2.5
Processed Aggregate Base (CTDOT M.05.01)	8	12

Permanent Slopes and Site Retaining Walls – Permanent slopes and/or retaining walls are planned to the west of the proposed building. The thickness of overburden soils in the existing hillside where the permanent slopes and/or retaining walls are planned was approximately 3 to 14.5 feet, with an average thickness of approximately 7 feet. It is anticipated that the proposed permanent slopes and/or retaining walls could consist of a combination of permanent rock and soil slopes, or modular block or mechanically-stabilized earth (MSE) retaining walls. Additional subsurface explorations will be necessary to determine the thickness of overburden soil and composition/quality of bedrock at the actual locations of proposed permanent slopes and/or retaining walls. However, preliminary recommendations for permanent soil and rock slopes are as follows.

Permanent soil slopes should be loamed and seeded, and should not be steeper than 2H:1V unless additional slope stabilization measures are provided; however, it is recommended that soil slopes be 3H:1V or flatter as they provide additional slope stability and are easier to mow and maintain.

Bedrock cut slopes should not be steeper than 1H:6V, should be cleared of any loose rock, and should have a 5-foot setback clear of soil at the top of the bedrock before any soil slopes begin. The bedrock should be pre-split for a clean, durable rock face. For rock cut slopes greater than 6 feet in height, the toe of bedrock cut slopes should include a rock fall zone, which should generally consist of a ditch that is at least 12 feet wide and 3.5 feet deep, for rock slopes of up to 20 feet in height. If construction of a rock fall ditch is not feasible due to space limitations, rock fall catchment fencing should be considered.

Additional Subsurface Explorations –Once access is available at the actual locations of proposed permanent slopes and/or retaining walls, at least 2 borings are recommended along the alignment of the proposed permanent slope and/or retaining wall to the west of the southern portion of the proposed building to estimate the thickness of overburden soil and composition/quality of bedrock. A bedrock core is recommended to be collected for the full elevation range of the potential rock cut.

Geotechnical Construction Recommendations

This section provides comments related to foundation construction, earthwork, and other geotechnical aspects of the project that will aid those responsible for preparing construction specifications.

Initial Site Preparation – Initial site preparation should include stripping of vegetation, topsoil and forest mat from areas of proposed work and clearing/grubbing existing trees where they exist in proposed improvement areas. Tree removal should include removal of root systems. Excavations for removal of trees and root systems should be properly backfilled with compacted Granular Fill, Gravel Borrow or Crushed Stone, as described herein.

Excavation and Fill – Conventional heavy construction equipment should be suitable for excavation in existing soil materials. It should be expected that cobbles and boulders will be present within soils at the site. Excavation should conform to OSHA excavation regulations contained in 29 CFR Part 1926, latest edition. Subgrades should be excavated in such a way to minimize disturbance, such as using a smooth faced bucket. Gravel Borrow or Crushed Stone should be used for the slab base course. Other fill needed below the structure, if any, should consist of Granular Fill, Gravel Borrow, or Crushed Stone wrapped in a non-woven geotextile separation fabric. Blast rock fill may be used as fill below the structure, provided it is placed as described in the Reuse of Existing Soils section, herein.

All backfill should be placed in 12-inch maximum lifts and should be compacted to 95 percent of the maximum dry density as determined by the Modified Proctor laboratory test (ASTM D1557). Thinner lifts may be needed depending on the material placed and the type of compactor used. Crushed Stone should be placed in loose lift thicknesses of less than 12 inches and be compacted with heavy compaction equipment to achieve an unyielding subgrade.

Table 4 presents the required gradations for imported materials.

Table 4
Recommended Gradation Requirements for Borrow Materials

Sieve Size	**Percent Finer by Weight**		
	Granular Fill	**Gravel Borrow**	**1-1/2" Crushed Stone**
2/3rd lift thickness	100		
2 inch	--	100	100
1½ inch	--	--	95-100
1 inch	--	--	35-70
¾ inch	--	--	0-25
½ inch	--	50-85	--

Sieve Size	Percent Finer by Weight		
	Granular Fill	**Gravel Borrow**	**1-1/2" Crushed Stone**
No. 4	--	40-75	--
No. 10	30-95	--	--
No. 40	10-70	--	--
No. 50	--	8-28	--
No. 200	0-15	0-10	--

Rock Removal – Bedrock removal should be anticipated to achieve finished grades to the west of the proposed building. It is anticipated that bedrock removal of up to approximately 1 to 2 feet within localized areas can likely be completed efficiently using mechanical methods, such as a hydraulic hoe-ram. Where bedrock removal is required to greater depths (such as the permanent slopes and/or retaining walls are planned to the west of the proposed building), systematic drilling and blasting may be considered in order to efficiently remove rock to reach the required elevations. Controlled blasting with pre-splitting is recommended to form the faces of slopes that will be permanently exposed.

If systematic drilling and blasting is pursued, blast hole depths should be controlled in order to reduce breakage 12 inches below the intended rock removal elevation, to the extent practicable. Controlled blasting procedures are recommended to: limit the charge weight using millisecond delays; limit the peak particle velocity at adjacent structures to acceptable levels; and yield rock sizes suitable for use as fill. Controlled blasting methods also need to maintain vibrations at the nearest residence and nearby existing buildings/utilities within the requirements of State and local codes, with additional consideration given for sensitive structures (if present). A common basis for establishing maximum permissible vibration for residential houses is the criteria published by the United States Bureau of Mines (USBM) "safe levels of blasting vibration for houses using a combination of velocity and displacement."

Pre-blast surveys of existing structures to remain and water supply wells (if any) are recommended within 500 feet of the proposed blast area.

We recommend the contractor familiarize her/himself with bedrock excavation conditions before construction. In addition, project specifications should clearly define bedrock excavation.

Excavation Slopes and Temporary Earth Support – It is anticipated that excavations will be accomplished by sloping or benching the sides of the excavations. Where space is not available to safely lay back excavations, a temporary earth support system will be required. Temporary earth support systems, like slide rail or trench boxes, if required, should be selected by the contractor and be designed by an experienced Professional Engineer registered in the State of Connecticut and retained by the Contractor.

The Owner and the Contractor should make themselves aware of and become familiar with applicable local, state, and federal safety regulations, including the current Occupational

Safety and Health Administration (OSHA) Excavation and Trench Safety Standards. Construction site safety generally is the sole responsibility of the Contractor, who shall also be solely responsible for the means, methods, and sequencing of construction operations.

The Contractor should be aware that slope height, slope inclination, or excavation depths (including utility trench excavations) should in no case exceed those specified in local, state, or federal safety regulations, e.g. OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926, or successor regulations. Such regulations are strictly enforced and, if they are not followed, the Owner, Contractor, and/or earthwork and utility subcontractors could be liable for substantial penalties.

Dewatering – Groundwater may be encountered during excavation to remove existing fill and buried sand with minor organics. If dewatering becomes necessary it can likely be accomplished by pumping from properly filtered sumps and be discharged according to federal, state, and local regulations. If groundwater is encountered, the groundwater level should be temporarily lowered at least two feet below excavations to limit potential "boils", loss of fines, or softening of the ground. Surface water entering the construction area should be diverted away from excavations.

Bearing Surface Preparation – Acceptable subgrades for supporting footings and slabs consist of native granular soil or compacted Granular Fill, Gravel Borrow or Crushed Stone wrapped in a non-woven geotextile separation fabric, placed over native granular soil. Existing fill and sand with organics layers are not suitable to remain in place below the proposed building slab and foundation bearing zones (defined as the 1H:1V lines extending down and away from the bottom of footing elevation starting at 1 foot away from the footing edge) and should be over-excavated to the top of suitable native soils, and be replace with compacted backfill.

The existing fill and sand with organics layers are expected to be suitable to remain in place below landscaped areas, pavements and light ancillary structures (such as transformer pads, dumpster pads or similar).

Prior to placement of fill or backfill, the native granular soil subgrades (within the building footprint or exterior of the building footprint, where present) or existing fill subgrades (outside the building footprint, only) should be proof compacted with either 10 passes of a 10-ton vibratory drum roller for open excavations or 6 passes of a large, reversible, walk behind vibratory compactor capable of exerting a minimum force of 2,000 lbs in trench or pit excavations. Any subgrades that are soft or yielding under proof compaction efforts should be removed to expose suitable subgrades, and should be replaced with compacted Granular Fill, Gravel Borrow or compacted Crushed Stone wrapped in a non-woven geotextile. Any cobbles or boulders protruding the subgrade should be removed and backfilled with Granular Fill or Gravel Borrow prior to proof compaction to ensure proper ground contact with the compaction equipment.

Due to the relatively high fines (silt) content, some of the bearing surfaces may be easily disturbed during foundation construction activities should they become wet from precipitation or groundwater. If desired, the bearing surfaces may be over-excavated by 6 to 12 inches and replaced by a layer of compacted Crushed Stone wrapped in a separation geotextile to provide a stable working surface.

Soil bearing surfaces should be protected against freezing and the elements before and after concrete placement. If construction is performed during freezing weather, footings and foundation walls should be backfilled as soon as possible after they are constructed. Alternatively, insulating blankets or other means may be used for protection against freezing.

Reuse of Existing Soils – Existing subsurface materials, excluding topsoil/forest mat, may be re-used as Granular Fill, regardless of its gradation, provided it is environmentally appropriate, free of organics, debris, stones greater than two thirds the lift thickness in diameter, or other unsuitable material, and they are placed to the required degree of compaction. It should be noted that some of the existing site soils have a relatively high fine-grained content, which could make them difficult to place and compact to the required degree of compaction when excessively wet.

Existing site soils may not be re-used as Gravel Borrow or Crushed Stone unless it meets the gradation requirements presented above, which is unlikely. Existing topsoil/subsoil may be reused in landscaped areas but should be tested for pH, percent organics, and nutrient content and modified as needed to support vegetative growth. It was not within Tighe & Bond's scope of work to evaluate the potential for soil contamination with regard to suitability for reuse or for off-site disposal purposes.

Rock generated during bedrock removal may be used as Blast Rock Fill. Blast Rock Fill should not be used within 12 inches of building foundations, slabs, and utilities. Blast Rock Fill may be used below pavement subbase course and landscape areas, provided it is well graded. If re-used on site, Blast Rock Fill should meet the gradation provided in Table 5. Blast Rock Fill should be placed in loose lift thicknesses of less than 18 inches and be compacted with heavy compaction equipment. A minimum of 12 inches of compacted "choke stone" should be placed over the Blast Rock Fill. Choke stone should be a well-graded mixture of blast rock fragments less than 6 inches in size and Granular Fill, such that it can be readily compacted to fill voids in the Blast Rock Fill below.

Table 5
Gradation Requirements for Blast Rock Fill

Sieve Size	Percent Finer by Weight
12 inch	100
4 inch	0-25
3 inch	--
1½ inch	--
1¼ inch	--
¾ inch	0-10
½ inch	--
No. 4	--
No. 10	--
No. 40	--
No. 50	--
No. 200	--

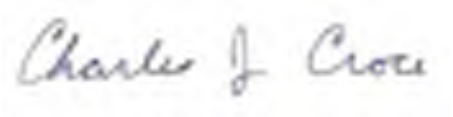
Closing

The preceding recommendations provided herein are for specific application to the Central Middle School at 9 Indian Rock Lane in Greenwich, Connecticut, in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made. In the event that any changes in the design or location of the proposed structure are made, the conclusions and recommendations in this report should not be considered valid unless verified in writing. This report is for design purposes only and may not be sufficient to prepare accurate quantity take-offs. It is discouraged that this report in its entirety be included in the construction documents or be provided to a contractor. Rather, the construction recommendations should be incorporated appropriately into the construction specifications as well as exploration locations, exploration logs, and laboratory test results for the contractor's use under informational purposes only.

Thank you for the opportunity to provide these services. Please contact Brian Nereson at (603) 978-5826 or bnereson@tighebond.com if you should have any questions, comments, or require additional information.

Very truly yours,

TIGHE & BOND, INC.



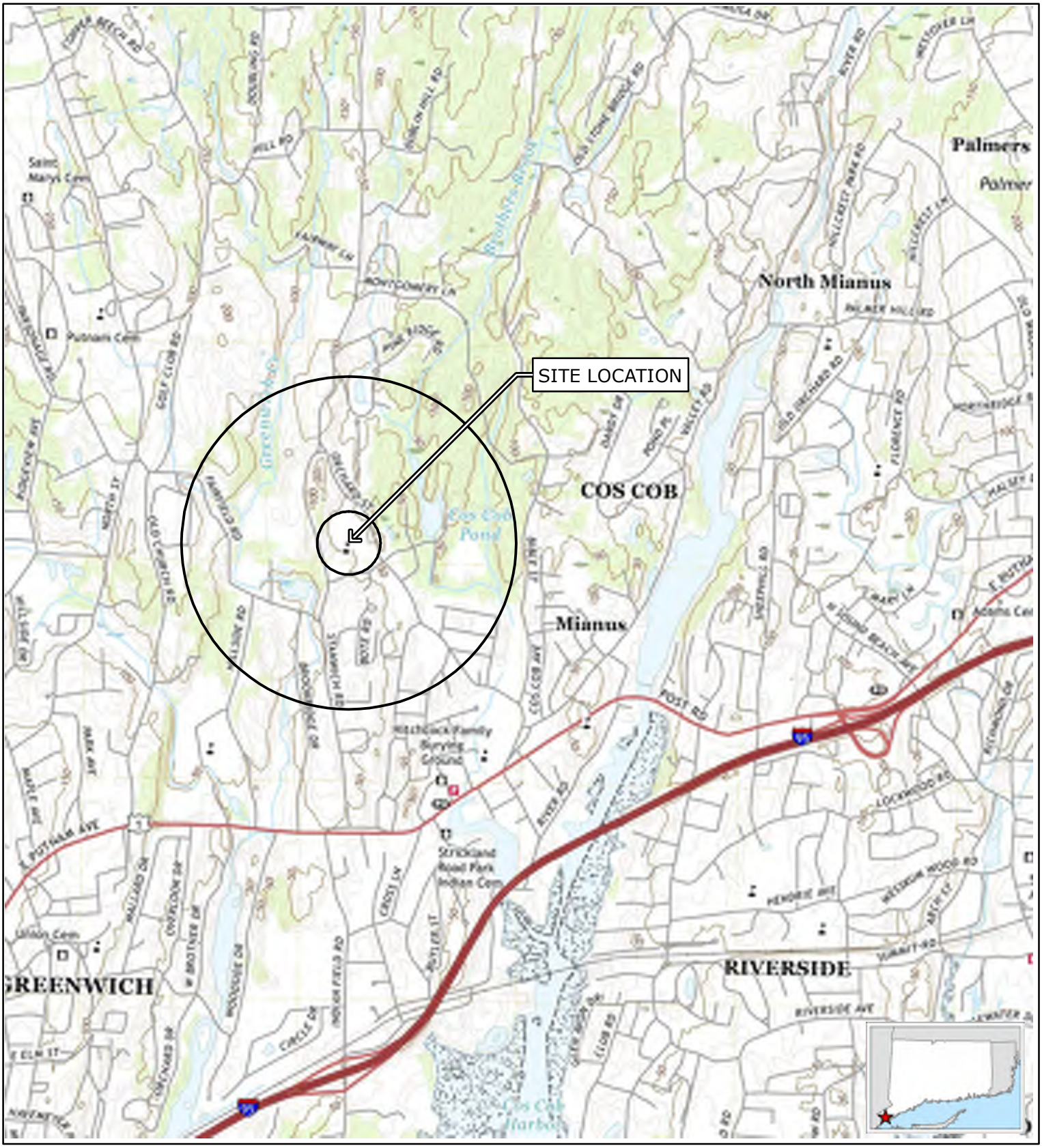
Brian T. Nereson, PE
Principal Engineer

Charles J. Croce, PE
Vice President

Enclosures: Appendix A – Figures
Appendix B – Tighe & Bond Exploration Logs
Appendix C – ATANE Exploration Logs
Appendix D – Laboratory Test Results

J:\G\G5068 Greenwich Public Schools\003 Central Middle School\Geotechnical\Report\Central Middle School Greenwich CT_Geotechnical Report 012624.Doc

Appendix A
Figures



Based on USGS Topographic Map for Stamford, CT Revised 2021.
Contour Interval Equals 10-feet.
Circles indicate 500-foot and half-mile radii.

FIGURE 1
SITE LOCATION

Greenwich Central Middle School
9 Indian Rock Lane
Greenwich, Connecticut

October 2023

G-5086

GENERAL NOTES:

1. EXISTING CONDITIONS SHOWN BASED ON "PROPERTY / BOUNDARY & TOPOGRAPHIC SURVEY" BY MARTIN SURVEYING ASSOCIATES, LLC AND DATED MAY 22, 2023.
2. ELEVATIONS SHOWN REFERENCE NAVD88.
3. TIGHE & BOND EXPLORATION LOCATIONS WERE LAID OUT BY TIGHE & BOND REPRESENTATIVES USING A HANDHELD GPS. LOCATIONS SHOULD BE CONSIDERED APPROXIMATE.
4. ATANE BORINGS AND TEST PITS WERE LOCATED ON THIS PLAN BY OVERLAYING A "BORING AND TEST PIT LOCATION PLAN" ON THE BASE PLAN REFERENCED HEREON. THE LOCATIONS SHOULD BE CONSIDERED APPROXIMATE.
5. REFER TO BORING AND TEST PIT LOGS FOR DETAILED INFORMATION.

LEGEND:

T&B-B5	APPROXIMATE LOCATION OF BORING BY TIGHE & BOND
TP-101	APPROXIMATE LOCATION OF TEST PIT BY TIGHE & BOND
B-02	APPROXIMATE LOCATION OF BORING BY ATANE
TP-03	APPROXIMATE LOCATION OF TEST PIT BY ATANE

GREENWICH CENTRAL MIDDLE SCHOOL
GREENWICH, CT

BORING LOCATION PLAN

DATE:	12/04/2023
SCALE:	AS SHOWN
FIGURE:	BLP-01

Tighe&Bond

Plotted On:Dec 08, 2023-8:14pm By: BNereson
Tighe & Bond:J:\G\G5068 Greenwich Public Schools\003 Central Middle School\Drawings\AutoCAD\figures\BLP-01_120423_rev base.dwg

Appendix B
Tighe & Bond
Exploration Logs

Greenwich Central
Middle School, Greenwich, CT

Table B1
Summary of Subsurface Data

Exploration Identification	Existing Ground Surface Elevation[1] (ft)	Depth to Groundwater (ft bgs)	Groundwater Elevation (ft)	Thickness of Fill (ft)[2]	Thickness of Sand with Minor Organics[3] (ft)	Depth to Refusal (ft bgs)	Refusal Elevation (ft)
T&B-B1	50	--	--	--	--	6.5	43.5 (C) [4]
T&B-B2	69	--	--	--	--	3	66 (C) [4]
T&B-B3	48.5	--	--	--	--	9	39.5
T&B-B4	43	--	--	--	--	--	--
T&B-B4A	43	--	--	--	--	18.5	24.5
T&B-B5	44	8.5	35.5	5.5	2	29	15
T&B-B6	57	--	--	--	--	5	52
T&B-B7	66	--	--	--	--	14.5	51.5
T&B-B8	45.5	--	--	5.5	2	--	--
T&B-B8A	45.5	10	35.5	--	--	15.5	30
T&B-B9	46	7.5	38.5	--	--	15	31
TP-101	46	8	38	3	2	--	--
TP-102	43	6 [5]	37 [5]	2.5	>3.5	--	--
TP-103	45	6 [5]	39 [5]	5	>2	--	--
TP-104	44.5	6 [5]	38.5 [5]	5	0.5	--	--
TP-105	44	5 [5]	39 [5]	3.5	--	--	--
TP-106	42.5	6 [5]	36.5 [5]	4	1	--	--
TP-107	43	7 [5]	36 [5]	4	1	--	--
TP-108	42.5	8 [5]	34.5 [5]	4	1	--	--
TP-109	43	6 [5]	37 [5]	4	--	--	--
TP-110	46	--	--	2.5	>1.5	--	--
TP-111	44	--	--	>3	--	--	--
B01	42	7	35	--	--	10.3	31.7
B02	42	9	33	--	--	>14	<28
B03	44.5	10	34.5	--	--	>14	<30.5
B04	42	7	35	--	--	>16	<26
B05	44.5	8	36.5	--	--	>16	<28.5
B06	42	8	34	--	--	>14	<28
B07	43	8	35	--	--	>11.3	<31.7
B08	45	10	35	11.5	--	>16	<29
B09	46	--	--	--	--	11.5	34.5
B10	46	--	--	--	--	10	36
B11	49	--	--	--	--	7	42
B12	46	--	--	--	--	7	39
B13	44	--	--	--	--	7	37
B14	50	--	--	6	--	12	38
B15	52	--	--	--	--	9	43
B16	52	--	--	6	--	12	40
B17	48	--	--	--	--	8	40
B18	46	9	37	10	--	>13.8	<22.2
B19	42	--	--	--	--	7.3	34.7
B20	44	--	--	--	--	3	41
TP01	42.5	6.5	36	2	1	>10	<32.5
TP02	42	6.5	35.5	3	--	>10	<32
TP03	43	7	36	4	--	>10	<33
TP04	45	8	37	--	--	>10	<35
TP05	42	6.2	35.8	6	--	>10	<32
TP06	43.5	7.5	36	3	2	>10	<33.5
TP07	45	9.5	35.5	--	--	>10	<35
TP08	43	9	34	6.5	0.5	>10	<33
TP09	44	8.5	35.5	2	0.5	>10	<34
TP10	45.5	--	--	5.5	1.5	>10	<35.5
TP11	45	9	36	3	2	>10	<35
TP12	46	--	--	--	--	>3	<46

1. Existing ground surfaces elevations rounded to the nearest 0.5-foot
2. Includes surficial topsoil thickness
3. Sand with minor organics layer is typically of mix of granular soil with minor organic materials
4. (C) indicates rock core collected at refusal elevation
5. Indicates depth / elevation of water seeping into test pit; seepage may or may not represent the groundwater level

Tighe&Bond
Engineers | Environmental Specialists

Boring No. **T&B - B-1**
Page 1 of 1
File No. G-5068-003
Checked by: B Nereson

Project: Greenwich Central Middle School
Location: Greenwich, CT
Client: The SLAM Collaborative

Drilling Co. General Borings, Inc.
Foreman: J. Casson
T&B Rep.: N. Marchetti
Date Start: 08/29/23 End: 08/29/23
Location See Exploration Location Plan
GS. Elev. 50' Datum: NAVD88

	Casing	Sampler
Type	HSA	Split Spoon
I.D./O.D.	3-1/4"/ 6-3/4"	1-3/8"/2"
Hammer Wt.	140#	140#
Hammer Fall	30"	30"
Rig Make/Model	Diedrich D50 ATV	

Groundwater Readings

Date	Time	Depth	Casing	Sta. Time
No Groundwater observed				

Depth (ft.)	Casing Blows Per Ft.	Sample No. / Rec.(in)	Sample Depth (ft.)	Blows Per 6"	PID Reading (ppm)	Sample Description	General Stratigraphy	Notes	Well Construction
		S-1 / 12	0-2	2-1		2" Forest Mat 10" Very loose, brown, SILT, some fine Sand, trace Roots	0.2' **FOREST MAT**	2	
				2-3			**SAND**		
		S-2 / 18	2-4	3-5		Medium dense, brown, fine to coarse SAND, little Silt, trace Gravel	3.5'		
				6-25					
5							**GLACIAL TILL**		
		S-3 / 13	5-6.3	30-45		Very dense, gray to brown, fine to coarse SAND and GRAVEL, little Silt	6.5'		
				50/3					
		C-1 / 60	6.5-11.5	2 min		Hard, slightly to moderate severely weathered, sound to moderately fractured, fine grained, gray, GNEISS, very close to close, shallow to moderate dipping REC: 60"/60" = 100% RQD: 42"/60" = 70%	**BEDROCK**		
				3 min					
10				3 min					
				3 min					
				3 min					
						End of Boring at 11.5 feet			
15									
20									
25									
30									

Notes:
1. Samples taken with a split spoon sampler driven by an autohammer.
2. Auger refusal at 6.5 feet. Switched to 3" I.D. flush joint casing.

Proportions Used

TRACE (TR.)	0 - <10%
LITTLE (LI.)	10 - <20%
SOME (SO.)	20 - <35%
AND	35 - <50%

Density/Consistency

VERY LOOSE	0-4	VERY SOFT	<2
LOOSE	4-10	SOFT	2-4
MEDIUM DENSE	10-30	MEDIUM	4-8
DENSE	30-50	STIFF	8-15
VERY DENSE	>50	VERY STIFF	15-30
		HARD	>30

Tighe&Bond
Engineers | Environmental Specialists

Boring No. **T&B - B-2**
Page 1 of 1
File No. G-5068-003
Checked by: B Nereson

Project: Greenwich Central Middle School
Location: Greenwich, CT
Client: The SLAM Collaborative

Drilling Co. General Borings, Inc.
Foreman: J. Casson
T&B Rep.: N. Marchetti
Date Start: 08/29/23 End: 08/29/23
Location See Exploration Location Plan
GS. Elev. 69' Datum: NAVD88

	Casing	Sampler
Type	HSA	Split Spoon
I.D./O.D.	3-1/4"/ 6-3/4"	1-3/8"/2"
Hammer Wt.	140#	140#
Hammer Fall	30"	30"
Rig Make/Model	Diedrich D50 ATV	

Groundwater Readings

Date	Time	Depth	Casing	Sta. Time
No Groundwater observed				

Depth (ft.)	Casing Blows Per Ft.	Sample No. / Rec.(in)	Sample Depth (ft.)	Blows Per 6"	PID Reading (ppm)	Sample Description	General Stratigraphy	Notes	Well Construction
		S-1 / 12	0-2	2-2		2" Forest Mat 10" Loose, brown, fine to coarse SAND, some Gravel, little Silt, trace Roots	0.2' **FOREST MAT** **SAND** 2'	2	
				2-2					
		S-2 / 4	2-2.5	50-50/0		Very dense, gray, GRAVEL	**WX ROCK** 3'		
		C-1 / 60	3-8	3 min		Hard to moderatly hard, moderately to very severely weathered, sound to moderately fractured, fine to coarse grained, gray, GNEISS, very close to close, shallow to moderate dipping REC: 60"/60" = 100% RQD: 47"/60" = 78%	**BEDROCK**		
5				4 min					
				3.5 min					
				3 min					
				5.5 min					
						End of boring at 8 feet			
10									
15									
20									
25									
30									

Notes:
1. Samples taken with a split spoon sampler driven by an autohammer.
2. Auger refusal at 3 feet. Switched to core barrel.

Proportions Used

TRACE (TR.)	0 - <10%
LITTLE (LI.)	10 - <20%
SOME (SO.)	20 - <35%
AND	35 - <50%

Density/Consistency

VERY LOOSE	0-4	VERY SOFT	<2
LOOSE	4-10	SOFT	2-4
MEDIUM DENSE	10-30	MEDIUM	4-8
DENSE	30-50	STIFF	8-15
VERY DENSE	>50	VERY STIFF	15-30
		HARD	>30

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Boring No. **T&B - B-3**
Page 1 of 1
File No. G-5068-003
Checked by: B Nereson

Project: Greenwich Central Middle School
Location: Greenwich, CT
Client: The SLAM Collaborative

Drilling Co. General Borings, Inc.
Foreman: J. Casson
T&B Rep.: N. Marchetti/K. Gagnon
Date Start: 08/30/23 End: 08/30/23
Location See Exploration Location Plan
GS. Elev. 48.5' Datum: NAVD88

	Casing	Sampler
Type	HSA	Split Spoon
I.D./O.D.	3-1/4"/ 6-3/4"	1-3/8"/2"
Hammer Wt.	140#	140#
Hammer Fall	30"	30"
Rig Make/Model	Diedrich D50 ATV	

Groundwater Readings

Date	Time	Depth	Casing	Sta. Time
No Groundwater observed				

Depth (ft.)	Casing Blows Per Ft.	Sample No. / Rec.(in)	Sample Depth (ft.)	Blows Per 6"	PID Reading (ppm)	Sample Description	General Stratigraphy	Notes	Well Construction
		S-1 / 13	0-2	2-2		3" Forest Mat 10" Loose, brown, fine to medium SAND, some Silt, trace Gravel, trace Roots	0.2' **FOREST MAT** **SILTY SAND**	2	
				3-4			2'		
		S-2 / 14	2-4	5-6		Medium dense, brown, SILT, some fine to medium Sand	**GLACIAL TILL**		
				9-14					
5									
		S-3 / 7	5-5.8	48-50/4		4" Very dense, brown, GRAVEL, some fine to coarse Sand, little Silt 3" Very dense, gray, GRAVEL	5.5' **WEATHERED BEDROCK**		
10						End of Boring at 9 feet. Auger Refusal.			
15									
20									
25									
30									

Notes:
1. Samples taken with a split spoon sampler driven by an autohammer.
2. Auger refusal at 9 feet.

Proportions Used

TRACE (TR.)	0 - <10%
LITTLE (LI.)	10 - <20%
SOME (SO.)	20 - <35%
AND	35 - <50%

Density/Consistency

VERY LOOSE	0-4	VERY SOFT	<2
LOOSE	4-10	SOFT	2-4
MEDIUM DENSE	10-30	MEDIUM	4-8
DENSE	30-50	STIFF	8-15
VERY DENSE	>50	VERY STIFF	15-30
		HARD	>30

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Boring No. **T&B - B-4**
Page 1 of 1
File No. G-5068-003
Checked by: B Nereson

Project: Greenwich Central Middle School
Location: Greenwich, CT
Client: The SLAM Collaborative

Drilling Co. General Borings, Inc.
Foreman: J. Casson
T&B Rep.: N. Marchetti
Date Start: 08/28/23 End: 08/29/23
Location See Exploration Location Plan
GS. Elev. 43' Datum: NAVD88

	Casing	Sampler
Type	HSA	Split Spoon
I.D./O.D.	3-1/4"/ 6-3/4"	1-3/8"/2"
Hammer Wt.	140#	140#
Hammer Fall	30"	30"
Rig Make/Model	Diedrich D50 ATV	

Groundwater Readings

Date	Time	Depth	Casing	Sta. Time
No Groundwater observed				

Depth (ft.)	Casing Blows Per Ft.	Sample No. / Rec.(in)	Sample Depth (ft.)	Blows Per 6"	PID Reading (ppm)	Sample Description	General Stratigraphy	Notes	Well Construction
		S-1 / 23	0-2	2-5		6" Topsoil 17" Medium dense, brown, fine to coarse SAND, some Gravel, little Silt	0.5' **TOPSOIL**	2	
				8-12					
		S-2 / 2	2-2.2	50/2		Very dense, brown, fine to coarse SAND and GRAVEL, little Silt	**SAND**		
5						End of Boring at 4.5 feet. Auger Refusal.			
10									
15									
20									
25									
30									

Notes:
1. Samples taken with a split spoon sampler driven by an autohammer.
2. Auger refusal at 4.5 feet in B-12. Boring was offset 8 feet northwest (See B-12A).

Proportions Used

TRACE (TR.)	0 - <10%
LITTLE (LI.)	10 - <20%
SOME (SO.)	20 - <35%
AND	35 - <50%

Density/Consistency

VERY LOOSE	0-4	VERY SOFT	<2
LOOSE	4-10	SOFT	2-4
MEDIUM DENSE	10-30	MEDIUM	4-8
DENSE	30-50	STIFF	8-15
VERY DENSE	>50	VERY STIFF	15-30
		HARD	>30

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Boring No. **T&B - B-4A**
Page 1 of 1
File No. G-5068-003
Checked by: B Nereson

Project: Greenwich Central Middle School
Location: Greenwich, CT
Client: The SLAM Collaborative

Drilling Co. General Borings, Inc.
Foreman: J. Casson
T&B Rep.: N. Marchetti
Date Start: 08/28/23 End: 08/29/23
Location See Exploration Location Plan
GS. Elev. 43' Datum: NAVD88

	Casing	Sampler
Type	HSA	Split Spoon
I.D./O.D.	3-1/4"/ 6-3/4"	1-3/8"/2"
Hammer Wt.	140#	140#
Hammer Fall	30"	30"
Rig Make/Model	Diedrich D50 ATV	

Groundwater Readings

Date	Time	Depth	Casing	Sta. Time
No Groundwater observed				

Depth (ft.)	Casing Blows Per Ft.	Sample No. / Rec.(in)	Sample Depth (ft.)	Blows Per 6"	PID Reading (ppm)	Sample Description	General Stratigraphy	Notes	Well Construction
						Borehole advanced to 5 feet without sampling. Refer to B-4.	0.5' **TOPSOIL**		
5		S-1 / 9	5-7	10-12		Medium dense, gray, fine to coarse SAND and GRAVEL, little Silt	**SAND**		
				10-7			8'		
10		S-2 / 13	10-12	15-19		Dense, brown, fine to coarse SAND and GRAVEL, little Silt	**GLACIAL TILL**		
				20-18					
15		S-3 / 12	15-17	20-42		Very dense, brown, fine to coarse SAND and GRAVEL, little Silt			
				29-28					
20						End of Boring at 18.5 feet. Auger Refusal.			
25									
30									

Notes:
1. Samples taken with a split spoon sampler driven by an autohammer.
2. Auger refusal at 18.5 feet.

Proportions Used

TRACE (TR.)	0 - <10%
LITTLE (LI.)	10 - <20%
SOME (SO.)	20 - <35%
AND	35 - <50%

Density/Consistency

VERY LOOSE	0-4	VERY SOFT	<2
LOOSE	4-10	SOFT	2-4
MEDIUM DENSE	10-30	MEDIUM	4-8
DENSE	30-50	STIFF	8-15
VERY DENSE	>50	VERY STIFF	15-30
		HARD	>30

Tighe&Bond
Engineers | Environmental Specialists

Boring No. **T&B - B-5**
Page 1 of 1
File No. G-5068-003
Checked by: B Nereson

Project: Greenwich Central Middle School
Location: Greenwich, CT
Client: The SLAM Collaborative

Drilling Co. General Borings, Inc.
Foreman: J. Casson
T&B Rep.: N. Marchetti
Date Start: 08/28/23 End: 08/29/23
Location See Exploration Location Plan
GS. Elev. 44' Datum: NAVD88

	Casing	Sampler
Type	HSA	Split Spoon
I.D./O.D.	3-1/4"/ 6-3/4"	1-3/8"/2"
Hammer Wt.	140#	140#
Hammer Fall	30"	30"
Rig Make/Model	Diedrich D50 ATV	

Groundwater Readings

Date	Time	Depth	Casing	Sta. Time
8/28		8.5'	29'	

Depth (ft.)	Casing Blows Per Ft.	Sample No. / Rec.(in)	Sample Depth (ft.)	Blows Per 6"	PID Reading (ppm)	Sample Description	General Stratigraphy	Notes	Well Construction
		S-1 / 17	0-2	2-3		6" Topsoil 11" Loose, brown, fine to coarse SAND, some Gravel, trace Silt	0.5' **TOPSOIL**		
				6-13					
		S-2 / 24	2-4	10-17		6" Dense, brown, fine to medium SAND, trace Gravel, trace Roots 18" Dense, gray, fine to coarse SAND and GRAVEL, trace Silt	**FILL**		
				19-16					
5		S-3 / 13	5-7	6-4		Loose, brown, fine to medium SAND, trace Gravel, trace Silt, trace Organics (2.0%)	5.5'		
				2-5			**SAND WITH MINOR ORGANICS**		
							7.5'		
10		S-4 / 21	10-12	5-7		Medium dense, brown, fine to coarse SAND, little Gravel, little Silt			
				10-12					
		S-5 / 24	15-17	5-11		Dense, brown, fine to coarse SAND, little Gravel, little Silt			
15				22-36					
							GLACIAL TILL		
20		S-6 / 24	20-22	3-3		Medium dense, brown, fine to coarse SAND, some Silt			
				8-12					
25		S-7 / 3	25-25.3	50/4		Very dense, brown, fine to coarse SAND, little Silt, trace Gravel, Weathered Rock in spoon tip			
							25.5'		
							WEATHERED ROCK	2	
30						End of Boring at 29 feet. Auger Refusal.			

Notes:
1. Samples taken with a split spoon sampler driven by an autohammer.
2. Auger refusal at 29 feet.

Proportions Used

TRACE (TR.)	0 - <10%
LITTLE (LI.)	10 - <20%
SOME (SO.)	20 - <35%
AND	35 - <50%

Density/Consistency

VERY LOOSE	0-4	VERY SOFT	<2
LOOSE	4-10	SOFT	2-4
MEDIUM DENSE	10-30	MEDIUM	4-8
DENSE	30-50	STIFF	8-15
VERY DENSE	>50	VERY STIFF	15-30
		HARD	>30

Tighe&Bond
Engineers | Environmental Specialists

Boring No. **T&B - B-6**
Page 1 of 1
File No. G-5068-003
Checked by: B Nereson

Project: Greenwich Central Middle School
Location: Greenwich, CT
Client: The SLAM Collaborative

Drilling Co. General Borings, Inc.
Foreman: J. Casson
T&B Rep.: N. Marchetti/K. Gagnon
Date Start: 08/30/23 End: 08/30/23
Location See Exploration Location Plan
GS. Elev. 57' Datum: NAVD88

	Casing	Sampler
Type	HSA	Split Spoon
I.D./O.D.	3-1/4"/ 6-3/4"	1-3/8"/2"
Hammer Wt.	140#	140#
Hammer Fall	30"	30"
Rig Make/Model	Diedrich D50 ATV	

Groundwater Readings

Date	Time	Depth	Casing	Sta. Time
No Groundwater observed				

Depth (ft.)	Casing Blows Per Ft.	Sample No. / Rec.(in)	Sample Depth (ft.)	Blows Per 6"	PID Reading (ppm)	Sample Description	General Stratigraphy	Notes	Well Construction
		S-1 / 8	0-2	2-2		2" Forest Mat 6" Loose, brown, fine to medium SAND, some Silt, trace Gravel, trace Roots	0.2' **FOREST MAT** **SILTY SAND** 2'		
				5-4					
		S-2 / 2	2-4	6-9		Medium dense, brown, fine to medium SAND and GRAVEL, little Silt	**GLACIAL TILL**		
				10-11					
							5'	2	
5						End of Boring at 5 feet. Auger Refusal.			
10									
15									
20									
25									
30									

Notes:
1. Samples taken with a split spoon sampler driven by an autohammer.
2. Auger refusal at 5 feet.

Proportions Used

TRACE (TR.)	0 - <10%
LITTLE (LI.)	10 - <20%
SOME (SO.)	20 - <35%
AND	35 - <50%

Density/Consistency

VERY LOOSE	0-4	VERY SOFT	<2
LOOSE	4-10	SOFT	2-4
MEDIUM DENSE	10-30	MEDIUM	4-8
DENSE	30-50	STIFF	8-15
VERY DENSE	>50	VERY STIFF	15-30
		HARD	>30

Tighe&Bond
Engineers | Environmental Specialists

Boring No. **T&B - B-7**
Page 1 of 1
File No. G-5068-003
Checked by: B Nereson

Project: Greenwich Central Middle School
Location: Greenwich, CT
Client: The SLAM Collaborative

Drilling Co. General Borings, Inc.
Foreman: J. Casson
T&B Rep.: N. Marchetti/K. Gagnon
Date Start: 08/30/23 End: 08/30/23
Location See Exploration Location Plan
GS. Elev. 66' Datum: NAVD88

	Casing	Sampler
Type	HSA	Split Spoon
I.D./O.D.	3-1/4"/ 6-3/4"	1-3/8"/2"
Hammer Wt.	140#	140#
Hammer Fall	30"	30"
Rig Make/Model	Diedrich D50 ATV	

Groundwater Readings

Date	Time	Depth	Casing	Sta. Time
No Groundwater observed				

Depth (ft.)	Casing Blows Per Ft.	Sample No. / Rec.(in)	Sample Depth (ft.)	Blows Per 6"	PID Reading (ppm)	Sample Description	General Stratigraphy	Notes	Well Construction
		S-1 / 12	0-2	1-2		1" Forest Mat	0.1'**FOREST MAT**	2	
				15-21		11" Medium dense, brown, fine to coarse SAND, little Silt, trace Roots	**SILTY SAND**		
		S-2 / 13	2-4	10-9		6" Medium dnese, brown, fine to coarse SAND, little Silt	2.5'		
				15-18		7" Medium dense, gray, fine to coarse SAND and GRAVEL, little Silt			
5		S-3 / 13	5-7	15-15		Very dense, gray, fine to coarse SAND, some Gravel, little Silt			
				45-24					
10		S-4 / 15	10-12	15-20		Dense, gray, fine to coarse SAND, little Gravel, little Silt, Weathered Rock in spoon tip	**GLACIAL TILL**		
				23-36					
15						End of boring at 14.5 feet. Auger Refusal.			
20									
25									
30									

Notes:
1. Samples taken with a split spoon sampler driven by an autohammer.
2. Auger refusal at 14.5 feet.

Proportions Used

TRACE (TR.)	0 - <10%
LITTLE (LI.)	10 - <20%
SOME (SO.)	20 - <35%
AND	35 - <50%

Density/Consistency

VERY LOOSE	0-4	VERY SOFT	<2
LOOSE	4-10	SOFT	2-4
MEDIUM DENSE	10-30	MEDIUM	4-8
DENSE	30-50	STIFF	8-15
VERY DENSE	>50	VERY STIFF	15-30
		HARD	>30

Tighe&Bond
Engineers | Environmental Specialists

Boring No. **T&B - B-8**
Page 1 of 1
File No. G-5068-003
Checked by: B Nereson

Project: Greenwich Central Middle School
Location: Greenwich, CT
Client: The SLAM Collaborative

Drilling Co. General Borings, Inc.
Foreman: J. Casson
T&B Rep.: N. Marchetti
Date Start: 08/28/23 End: 08/28/23
Location See Exploration Location Plan
GS. Elev. 45.5' Datum: NAVD88

	Casing	Sampler
Type	HSA	Split Spoon
I.D./O.D.	3-1/4"/ 6-3/4"	1-3/8"/2"
Hammer Wt.	140#	140#
Hammer Fall	30"	30"
Rig Make/Model	Diedrich D50 ATV	

Groundwater Readings

Date	Time	Depth	Casing	Sta. Time
No Groundwater observed				

Depth (ft.)	Casing Blows Per Ft.	Sample No. / Rec.(in)	Sample Depth (ft.)	Blows Per 6"	PID Reading (ppm)	Sample Description	General Stratigraphy	Notes	Well Construction
		S-1 / 21	0-2	2-4		8" Topsoil	0.5' **TOPSOIL**	2	
				8-23		13" Medium dense, brown, fine to coarse SAND, some Gravel, little Silt			
		S-2 / 9	2-4	20-26		Very dense, gray, fine to coarse SAND and GRAVEL, little Silt	**FILL**		
				30-20					
5							5.5'		
		S-3 / 7	5-7	23-6		3" Medium dense, gray, GRAVEL			
				4-10		4" Medium dense, brown, fine to coarse SAND and SILT, trace Organics (3.8%)	**SAND WITH MINOR ORGANICS**		
							7.5'		
							GLACIAL TILL		
10						End of Boring at 9 feet. Auger Refusal.			
15									
20									
25									
30									

Notes:
1. Samples taken with a split spoon sampler driven by an autohammer.
2. Auger refusal at 9 feet in B-10. Boring was offset 5 feet southwest (See B-10A).

Proportions Used

TRACE (TR.)	0 - <10%
LITTLE (LI.)	10 - <20%
SOME (SO.)	20 - <35%
AND	35 - <50%

Density/Consistency

VERY LOOSE	0-4	VERY SOFT	<2
LOOSE	4-10	SOFT	2-4
MEDIUM DENSE	10-30	MEDIUM	4-8
DENSE	30-50	STIFF	8-15
VERY DENSE	>50	VERY STIFF	15-30
		HARD	>30

Tighe&Bond
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Boring No. **T&B - B-8A**
Page 1 of 1
File No. G-5068-003
Checked by: B Nereson

Project: Greenwich Central Middle School
Location: Greenwich, CT
Client: The SLAM Collaborative

Drilling Co. General Borings, Inc.
Foreman: J. Casson
T&B Rep.: N. Marchetti
Date Start: 08/28/23 End: 08/28/23
Location See Exploration Location Plan
GS. Elev. 45.5' Datum: NAVD88

	Casing	Sampler
Type	HSA	Split Spoon
I.D./O.D.	3-1/4"/ 6-3/4"	1-3/8"/2"
Hammer Wt.	140#	140#
Hammer Fall	30"	30"
Rig Make/Model	Diedrich D50 ATV	

Groundwater Readings

Date	Time	Depth	Casing	Sta. Time
8/29		10'	15'	

Depth (ft.)	Casing Blows Per Ft.	Sample No. / Rec.(in)	Sample Depth (ft.)	Blows Per 6"	PID Reading (ppm)	Sample Description	General Stratigraphy	Notes	Well Construction
						Borehole advanced to 10 feet without sampling. Refer to B-8.			
10		S-1 / 12	10-11.1	12-30		Very dense, brown, fine to coarse SAND, some Gravel, little Silt	**GLACIAL TILL**		
				50/1					
15		S-2 / 2	15-15.3	50/4		Very dense, brown, WEATHERED ROCK	15' **WEATHERED ROCK**	2	
						End of Boring at 15.5 feet. Auger Refusal.			

Notes:
1. Samples taken with a split spoon sampler driven by an autohammer.
2. Auger refusal at 15.5 feet.

Proportions Used

TRACE (TR.)	0 - <10%
LITTLE (LI.)	10 - <20%
SOME (SO.)	20 - <35%
AND	35 - <50%

Density/Consistency

VERY LOOSE	0-4	VERY SOFT	<2
LOOSE	4-10	SOFT	2-4
MEDIUM DENSE	10-30	MEDIUM	4-8
DENSE	30-50	STIFF	8-15
VERY DENSE	>50	VERY STIFF	15-30
		HARD	>30

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Boring No. **T&B - B-9**
Page 1 of 1
File No. G-5068-003
Checked by: B Nereson

Project: Greenwich Central Middle School
Location: Greenwich, CT
Client: The SLAM Collaborative

Drilling Co. General Borings, Inc.
Foreman: J. Casson
T&B Rep.: N. Marchetti
Date Start: 08/29/23 End: 08/29/23
Location See Exploration Location Plan
GS. Elev. 46' Datum: NAVD88

	Casing	Sampler
Type	HSA	Split Spoon
I.D./O.D.	3-1/4"/ 6-3/4"	1-3/8"/2"
Hammer Wt.	140#	140#
Hammer Fall	30"	30"
Rig Make/Model	Diedrich D50 ATV	

Groundwater Readings

Date	Time	Depth	Casing	Sta. Time
8/29		7.5'		

Depth (ft.)	Casing Blows Per Ft.	Sample No. / Rec.(in)	Sample Depth (ft.)	Blows Per 6"	PID Reading (ppm)	Sample Description	General Stratigraphy	Notes	Well Construction
		S-1 / 18	0-2	5-6		6" Medium dense, brown, fine to medium SAND, trace Silt	0.5' **FIELD SAND**		
				8-8		12" Medium dense, brown, fine to coarse SAND, little Gravel, little Silt	**SILTY SAND**		
		S-2 / 8	2-4	14-13		Medium dense, brown, fine to coarse SAND, some Gravel, some Silt			
				7-9			4.5'		
5									
		S-3 / 10	5-6.3	38-9		Medium dense, gray, fine to coarse SAND and GRAVEL, little Silt			
				5-50/2					
10							**GLACIAL TILL**		
		S-4 / 12	10-12	12-16		Dense, gray, fine to coarse SAND and GRAVEL, some Silt			
				18-27					
15								2	
						End of boring at 15 feet. Auger Refusal.			
20									
25									
30									

Notes:
1. Samples taken with a split spoon sampler driven by an autohammer.
2. Auger refusal at 15 feet.

Proportions Used

TRACE (TR.)	0 - <10%
LITTLE (LI.)	10 - <20%
SOME (SO.)	20 - <35%
AND	35 - <50%

Density/Consistency

VERY LOOSE	0-4	VERY SOFT	<2
LOOSE	4-10	SOFT	2-4
MEDIUM DENSE	10-30	MEDIUM	4-8
DENSE	30-50	STIFF	8-15
VERY DENSE	>50	VERY STIFF	15-30
		HARD	>30

Tighe&Bond
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G-5068-003 / Greenwich CMS

Greenwich Central Middle School
Greenwich, Connecticut

Test Pit No. **TP-101**
Page No. 1 of 1
Photo Log No. --
Checked By: B. Nereson

T&B Rep.	C.Watts	Contractor	General Borings			Date	11/10/23
		Operator	John Wyatt			Ground Elev.	46.0
Weather	Cloudy, 50s	Make	Volvo	Model	EC55L	Time Started	--
		Capacity	1/3yd	Reach	10 ft.	Time Completed	--

Depth	Soil Description	Sample No.	PID Reading (ppm)	Excav. Effort	Boulder Count/ Class	Note No.
0	0-0.4': Brown, fine to coarse SAND, some Silt, little Roots, moist (Topsoil)			E	A	
1'	0.4-1.5': Brown, fine to coarse SAND and fine to coarse GRAVEL, little Silt, little Wood, frequent Boulders, moist			M	A/B	
2'	1.5-3.0': Light brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt, frequent Boulders, trace Roots at 2', moist (Fill)			M	A	
3'	3.0-5.0: Tan, fine to medium SAND, some Silt, occasional Boulders, trace Roots, moist			M	A	
4'	(Sand with Minor Organics)			M	A	
5'	5.0-8.0': Brown, fine to coarse SAND and fine to coarse GRAVEL, little Silt, frequent Boulders, moist			M	A	
6'				M	A	
7'	(Glacial Till)			M	B	1
8'	End of Test Pit - 8.0'. Refusal not encountered.					
9'						
10'						
11'						
12'						
13'						
14'						
15'						
16'						

Notes:
1. Groundwater encountered at 8'.
2. TP ID for civil design is 1-01.

Test Pit Plan

Volume = _____ cu. yd.

Boulder Class

Letter Designation	Size Range Classification
A	6" - 17"
B	18" - 36"
C	36" +

Excavation Effort
E-----Easy
M-----Moderate
D-----Difficult

Proportions Used

TRACE (TR.)	0 - 10%
LITTLE (LI.)	10 - 20%
SOME (SO.)	20 - 35%
AND	35 - 50%

Abbreviations
F = Fine
M = Medium
C = Coarse
V = Very
F/M = Fine to medium
F/C = Fine to coarse
GR = Gray
BN = Brown
YEL = Yellow

GROUNDWATER
(x) Encountered
( ) Not Encountered

Elapsed Time to Reading (Hours)	Depth to Ground-water

Tighe&Bond
Engineers | Environmental Specialists

G-5068-003 / Greenwich CMS

Greenwich Central Middle School
Greenwich, Connecticut

Test Pit No. **TP-102**
Page No. 1 of 1
Photo Log No. --
Checked By: B. Nereson

T&B Rep.	C.Watts	Contractor	General Borings			Date	11/10/23
		Operator	John Wyatt			Ground Elev.	42.8
Weather	Cloudy, 50s	Make	Volvo	Model	EC55L	Time Started	--
		Capacity	1/3yd	Reach	10 ft.	Time Completed	--

Depth	Soil Description	Sample No.	PID Reading (ppm)	Excav. Effort	Boulder Count/ Class	Note No.
0	0-0.5': Brown, fine to coarse SAND, some Silt, little Roots, moist (Topsoil)			E		
1'	0.5-1.0': Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, moist			M	A	
2'	1.0-2.0': Light brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt, occasional Boulders (Fill)			M	A	
3'	2.0-6.0': Gray, fine to coarse SAND and fine GRAVEL, little Silt, trace Roots, frequent Boulders, moist			M	A	
4'				M	A/B	
5'				M	A/B	
6'	(Sand with Minor Organics) End of Test Pit - 6.0'. Refusal not encountered.					
7'						
8'						
9'						
10'						
11'						
12'						
13'						
14'						
15'						
16'						

Notes:
1. Water seeping into test pit at 6'.
2. TP ID for civil design is 1-18.

Test Pit Plan

Volume = _____ cu. yd.

Boulder Class

Letter Designation	Size Range Classification
A	6" - 17"
B	18" - 36"
C	36" +

Excavation Effort
E-----Easy
M-----Moderate
D-----Difficult

Proportions Used

TRACE (TR.)	0 - 10%
LITTLE (LI.)	10 - 20%
SOME (SO.)	20 - 35%
AND	35 - 50%

Abbreviations
F = Fine
M = Medium
C = Coarse
V = Very
F/M = Fine to medium
F/C = Fine to coarse
GR = Gray
BN = Brown
YEL = Yellow

GROUNDWATER
( ) Encountered
(x) Not Encountered

Elapsed Time to Reading (Hours)	Depth to Ground-water

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G-5068-003 / Greenwich CMS

Greenwich Central Middle School
Greenwich, Connecticut

Test Pit No. **TP-103**
Page No. 1 of 1
Photo Log No. --
Checked By: B. Nereson

T&B Rep.	C.Watts	Contractor	General Borings			Date	11/10/23
		Operator	John Wyatt			Ground Elev.	45.0
Weather	Cloudy, 50s	Make	Volvo	Model	EC55L	Time Started	--
		Capacity	1/3yd	Reach	10 ft.	Time Completed	--

Depth	Soil Description	Sample No.	PID Reading (ppm)	Excav. Effort	Boulder Count/ Class	Note No.
0	0-0.5': Brown, fine to coarse SAND, some Silt, little Roots, moist (Topsoil)			E		
1'	0.5-1.0': Brown, fine to coarse SAND and fine GRAVEL, little Silt, moist 1.0-2.0': Light brown, fine to medium SAND, little Silt, trace fine Gravel, moist			E		
2'	2.0-3.0': Brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt, occasional Boulders, moist			M	B/C	
3'	3.0-5.0': Gray, fine to coarse SAND and fine GRAVEl, little Silt, frequent Boulders, moist			M	B/C	
4'	(Fill)			M	C	
5'	5.0-7.0': Brown, fine to medium SAND, some Silt, little Organics, moist			E		
6'	(Sand with Minor Organics)					1
7'	End of Test Pit - 7.0'. Refusal not encountered.					
8'						
9'						
10'						
11'						
12'						
13'						
14'						
15'						
16'						

Notes:
1. Water seeping into test pit at 6'.
2. TP ID for civil design is 1-03.

Test Pit Plan

Volume = _____ cu. yd.

Boulder Class

Letter Designation	Size Range Classification
A	6" - 17"
B	18" - 36"
C	36" +

Excavation Effort
E-----Easy
M-----Moderate
D-----Difficult

Proportions Used

TRACE (TR.)	0 - 10%
LITTLE (LI.)	10 - 20%
SOME (SO.)	20 - 35%
AND	35 - 50%

Abbreviations
F = Fine
M = Medium
C = Coarse
V = Very
F/M = Fine to medium
F/C = Fine to coarse
GR = Gray
BN = Brown
YEL = Yellow

GROUNDWATER
( ) Encountered
( ) Not Encountered

Elapsed Time to Reading (Hours)	Depth to Ground-water

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Tighe&Bond
Engineers | Environmental Specialists

G-5068-003 / Greenwich CMS

Greenwich Central Middle School
Greenwich, Connecticut

Test Pit No. **TP-104**
Page No. 1 of 1
Photo Log No. --
Checked By: B. Nereson

T&B Rep.	C.Watts	Contractor	General Borings			Date	11/10/23
		Operator	John Wyatt			Ground Elev.	44.4
Weather	Cloudy, 50s	Make	Volvo	Model	EC55L	Time Started	--
		Capacity	1/3yd	Reach	10 ft.	Time Completed	--

Depth	Soil Description	Sample No.	PID Reading (ppm)	Excav. Effort	Boulder Count/ Class	Note No.
0	0-0.5': Brown, fine to coarse SAND, some Silt, little Roots, moist (Topsoil)			E		
1'	0.5-1.0': Brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt, moist			E	A	
2'	1.0-4.0': Light brown, fine to coarse SAND and fine to coarse GRAVEL, little Silt, frequent Boulders, moist			M	A	
3'				M	A	
4'	4.0-5.0': Gray, fine to coarse SAND, little fine to coarse Gravel, trace Silt, frequent Boulders, moist (Fill)			H	B/C	
5'	5.0-6.0': Dark brown, fine to medium SAND, some Silt, little Organi (Sand with Minor Organics)			H		
6'	6.0-8.0': Gray, Clayey SILT, some fine to medium Sand, moist			H		1
7'				H		
8'	(Glacial Till) End of Test Pit - 8.0'. Refusal not encountered.					
9'						
10'						
11'						
12'						
13'						
14'						
15'						
16'						

Notes:
1. Water seeping into test pit at 6'.
2. TP ID for civil design is 1-02.

Test Pit Plan

Volume = _____ cu. yd.

Boulder Class

Letter Designation	Size Range Classification
A	6" - 17"
B	18" - 36"
C	36" +

Excavation Effort
E-----Easy
M-----Moderate
D-----Difficult

Proportions Used

TRACE (TR.)	0 - 10%
LITTLE (LI.)	10 - 20%
SOME (SO.)	20 - 35%
AND	35 - 50%

Abbreviations
F = Fine
M = Medium
C = Coarse
V = Very
F/M = Fine to medium
F/C = Fine to coarse
GR = Gray
BN = Brown
YEL = Yellow

GROUNDWATER
( ) Encountered
(x) Not Encountered

Elapsed Time to Reading (Hours)	Depth to Ground-water

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G-5068-003 / Greenwich CMS

Greenwich Central Middle School
Greenwich, Connecticut

Test Pit No. **TP-105**
Page No. 1 of 1
Photo Log No. --
Checked By: B. Nereson

T&B Rep.	C.Watts	Contractor	General Borings			Date	11/10/23
		Operator	John Wyatt			Ground Elev.	43.8
Weather	Cloudy, 50s	Make	Volvo	Model	EC55L	Time Started	--
		Capacity	1/3yd	Reach	10 ft.	Time Completed	--

Depth	Soil Description	Sample No.	PID Reading (ppm)	Excav. Effort	Boulder Count/ Class	Note No.
0	0-0.5': Brown, fine to coarse SAND, some Silt, little Roots, moist (Topsoil)			M		
1'	0.5-3.5': Light brown, fine to coarse SAND and fine GRAVEL, little Silt, frequent Boulders, moist			M	A/B	
2'				M	A/B	
3'	(Fill)			M		
4'	3.5-5.0': Gray, fine to coarse SAND, little fine to coarse Gravel, trace Silt, frequent Boulders, moist			M	B/C	1
5'	(Glacial Till)					
6'	End of Test Pit - 5.0'. Refusal on apparent Boulders.					
7'						
8'						
9'						
10'						
11'						
12'						
13'						
14'						
15'						
16'						

Notes:
1. Water seeping into test pit at 5'.
2. TP ID for civil design is 1-04.

Test Pit Plan

Volume = _____ cu. yd.

Boulder Class

Letter Designation	Size Range Classification
A	6" - 17"
B	18" - 36"
C	36" +

Excavation Effort
E-----Easy
M-----Moderate
D-----Difficult

Proportions Used

TRACE (TR.)	0 - 10%
LITTLE (LI.)	10 - 20%
SOME (SO.)	20 - 35%
AND	35 - 50%

Abbreviations
F = Fine
M = Medium
C = Coarse
V = Very
F/M = Fine to medium
F/C = Fine to coarse
GR = Gray
BN = Brown
YEL = Yellow

GROUNDWATER
( ) Encountered
( ) Not Encountered

Elapsed Time to Reading (Hours)	Depth to Ground-water

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G-5068-003 / Greenwich CMS

Greenwich Central Middle School
Greenwich, Connecticut

Test Pit No. **TP-106**
Page No. 1 of 1
Photo Log No. --
Checked By: B. Nereson

T&B Rep.	C.Watts	Contractor	General Borings			Date	11/13/23
		Operator	John Wyatt			Ground Elev.	42.3
Weather	Cloudy, 50s	Make	Volvo	Model	EC55L	Time Started	--
		Capacity	1/3yd	Reach	10 ft.	Time Completed	--

Depth	Soil Description	Sample No.	PID Reading (ppm)	Excav. Effort	Boulder Count/ Class	Note No.
0	0-0.5': Brown, fine to coarse SAND, some Silt, little Roots, moist (Topsoil)			E	A	
1'	0.5-2.0': Brown, fine to coarse SAND and fine to coarse GRAVEL, little Silt, trace Roots, occasional Boulders, moist			M	A	
2'	2.0-4.0': Brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt, frequent Boulders, moist			M	A/B	
3'	(Fill)			M	A/B	
4'	4.0-5.0': Gray, fine to medium SAND, some Silt, trace Roots, moist (Sand with Minor Organics)			M	A/B	
5'	5.0-6.0': Brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt, frequent Boulders, moist (Glacial Till)			M	A/B	1
6'	End of Test Pit - 6.0'. Refusal on apparent Boulders.					
7'						
8'						
9'						
10'						
11'						
12'						
13'						
14'						
15'						
16'						

Notes:
1. Water seeping into test pit at 6'.
2. TP ID for civil design is 1-08.

Test Pit Plan

Volume = _____ cu. yd.

Boulder Class

Letter Designation	Size Range Classification
A	6" - 17"
B	18" - 36"
C	36" +

Excavation Effort
E-----Easy
M-----Moderate
D-----Difficult

Proportions Used

TRACE (TR.)	0 - 10%
LITTLE (LI.)	10 - 20%
SOME (SO.)	20 - 35%
AND	35 - 50%

Abbreviations
F = Fine
M = Medium
C = Coarse
V = Very
F/M = Fine to medium
F/C = Fine to coarse
GR = Gray
BN = Brown
YEL = Yellow

GROUNDWATER
( ) Encountered
( ) Not Encountered

Elapsed Time to Reading (Hours)	Depth to Ground-water

Tighe&Bond
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G-5068-003 / Greenwich CMS

Greenwich Central Middle School
Greenwich, Connecticut

Test Pit No.	**TP-107**
Page No.	1 of 1
Photo Log No.	--
Checked By:	B. Nereson

T&B Rep.	C.Watts	Contractor	General Borings			Date	11/13/23
		Operator	John Wyatt			Ground Elev.	43.2
Weather	Cloudy, 50s	Make	Volvo	Model	EC55L	Time Started	--
		Capacity	1/3yd	Reach	10 ft.	Time Completed	--

Depth	Soil Description	Sample No.	PID Reading (ppm)	Excav. Effort	Boulder Count/ Class	Note No.
0	0-0.5': Brown, fine to coarse SAND, little Silt, little Roots, trace fine Gravel, moist (Topsoil)			E	A	
1'	0.5-4.0': Brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt, frequent Boulders, moist			M	A/B	
2'				M	A/B	
3'				M	A/B	
4'	(Fill) 4.0-5.0': Dark brown, fine to medium SAND, some Silt, little Roots, apparent organic odor, moist (Sand with Minor Organics)			M	A/B	
5'	5.0-8.0': Gray, fine to medium SAND, some Silt, little fine to coarse Gravel, occasional Boulders, moist			M	A/B	
6'				M	A/B	1
7'				M	A/B	
8'	(Glacial Till) End of Test Pit - 8.0'. Refusal not encountered.					
9'						
10'						
11'						
12'						
13'						
14'						
15'						
16'						

Notes:
1. Water seeping into test pit at 7'.
2. TP ID for civil design is 1-05.

Test Pit Plan

Volume = _____ cu. yd.

Boulder Class

Letter Designation	Size Range Classification
A	6" - 17"
B	18" - 36"
C	36" +

Excavation Effort
E-----Easy
M-----Moderate
D-----Difficult

Proportions Used

TRACE (TR.)	0 - 10%
LITTLE (LI.)	10 - 20%
SOME (SO.)	20 - 35%
AND	35 - 50%

Abbreviations
F = Fine
M = Medium
C = Coarse
V = Very
F/M = Fine to medium
F/C = Fine to coarse
GR = Gray
BN = Brown
YEL = Yellow

GROUNDWATER
( ) Encountered
(x) Not Encountered

Elapsed Time to Reading (Hours)	Depth to Ground-water

Tighe&Bond
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G-5068-003 / Greenwich CMS

Greenwich Central Middle School
Greenwich, Connecticut

Test Pit No.	**TP-108**
Page No.	1 of 1
Photo Log No.	--
Checked By:	B. Nereson

T&B Rep.	C.Watts	Contractor	General Borings			Date	11/13/23
		Operator	John Wyatt			Ground Elev.	42.7
Weather	Cloudy, 50s	Make	Volvo	Model	EC55L	Time Started	--
		Capacity	1/3yd	Reach	10 ft.	Time Completed	--

Depth	Soil Description	Sample No.	PID Reading (ppm)	Excav. Effort	Boulder Count/ Class	Note No.
0	0-0.5': Brown, fine to coarse SAND, some Silt, little Roots, moist (Topsoil)			E		
1'	0.5-4.0': Light brown, fine to coarse SAND and fine to coarse GRAVEL, little Silt, frequent Boulders, moist			E	A	
2'				E	A	
3'				E	A	
4'	(Fill)			M	A	
5'	4.0-5.0': Dark brown, fine to medium SAND, some Silt, little Roots, apparent organic odor, moist (Sand with Minor Organics)			M	A/B	
6'	5.0-6.0': Gray, fine to coarse SAND and fine to coarse GRAVEL, little Silt, frequent Boulders, moist			M	A/B	
7'	6.0-8.0': Gray, fine to medium SAND, some Silt, trace Roots, occasional Boulders, moist			M	A/B	1
8'	(Glacial Till)					
9'	End of Test Pit - 8.0'. Refusal not encountered.					
10'						
11'						
12'						
13'						
14'						
15'						
16'						

Notes:
1. Water seeping into test pit at 8'.
2. TP ID for civil design is 1-06.

Test Pit Plan

Volume = _____ cu. yd.

Boulder Class

Letter Designation	Size Range Classification
A	6" - 17"
B	18" - 36"
C	36" +

Excavation Effort
E-----Easy
M-----Moderate
D-----Difficult

Proportions Used

TRACE (TR.)	0 - 10%
LITTLE (LI.)	10 - 20%
SOME (SO.)	20 - 35%
AND	35 - 50%

Abbreviations
F = Fine
M = Medium
C = Coarse
V = Very
F/M = Fine to medium
F/C = Fine to coarse
GR = Gray
BN = Brown
YEL = Yellow

GROUNDWATER
( ) Encountered
(x) Not Encountered

Elapsed Time to Reading (Hours)	Depth to Ground-water

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Greenwich Central Middle School
Greenwich, Connecticut

Test Pit No. **TP-109**
Page No. 1 of 1
Photo Log No. --
Checked By: B. Nereson

T&B Rep.	C.Watts	Contractor	General Borings			Date	11/13/23
		Operator	John Wyatt			Ground Elev.	43.0
Weather	Cloudy, 50s	Make	Volvo	Model	EC55L	Time Started	--
		Capacity	1/3yd	Reach	10 ft.	Time Completed	--

Depth	Soil Description	Sample No.	PID Reading (ppm)	Excav. Effort	Boulder Count/ Class	Note No.
0	0-0.5': Brown, fine to coarse SAND, little Silt, little Roots, moist (Topsoil)			E	A	
1'	0.5-4.0': Brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt, frequent Boulders, moist			D	B/C	
2'				D	B/C	
3'				D	B/C	
4'	(Fill)			D	B	
5'	4.0-5.0': Gray, fine to coarse SAND and fine to coarse GRAVEL, trace Silt, frequent Boulders, moist			M	A	
6'	5.0-8.0': Brown, fine to coarse SAND and fine GRAVEL, little Silt, occasional Boulders, moist			M	A	1
7'				M		
8'	(Glacial Till)					
9'	End of Test Pit - 8.0'. Refusal not encountered.					
10'						
11'						
12'						
13'						
14'						
15'						
16'						

Notes:
1. Water seeping into test pit at 6'.
2. TP ID for civil design is 1-07.

Test Pit Plan

Volume = _____ cu. yd.

Boulder Class

Letter Designation	Size Range Classification
A	6" - 17"
B	18" - 36"
C	36" +

Excavation Effort
E-----Easy
M-----Moderate
D-----Difficult

Proportions Used

TRACE (TR.)	0 - 10%
LITTLE (LI.)	10 - 20%
SOME (SO.)	20 - 35%
AND	35 - 50%

Abbreviations
F = Fine
M = Medium
C = Coarse
V = Very
F/M = Fine to medium
F/C = Fine to coarse
GR = Gray
BN = Brown
YEL = Yellow

GROUNDWATER
( ) Encountered
(x) Not Encountered

Elapsed Time to Reading (Hours)	Depth to Ground-water

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Greenwich Central Middle School
Greenwich, Connecticut

Test Pit No. **TP-110**
Page No. 1 of 1
Photo Log No. --
Checked By: B. Nereson

T&B Rep.	N. Greto	Contractor	General Borings			Date	11/17/23
		Operator	John Wyatt			Ground Elev.	45.8
Weather	Clear, 50s	Make	Volvo	Model	EC55L	Time Started	--
		Capacity	1/3yd	Reach	10 ft.	Time Completed	--

Depth	Soil Description	Sample No.	PID Reading (ppm)	Excav. Effort	Boulder Count/ Class	Note No.
0	0-0.5': Brown, fine to coarse SAND, little Silt, little Roots, moist (Topsoil)			E	A	
1'	0.5-2.5': Brown, fine to coarse SAND, some Silt, frequent Cobbles, moist			M	A	
2'	(Fill)			M	A	
3'	2.5-4.0': Gray, fine to medium SAND, some Silt, trace Roots, apparent organic odor, moist			M		
4'	(Sand with Minor Organics)					
5'	End of Test Pit - 4.0'. Refusal not encountered.					
6'						
7'						
8'						
9'						
10'						
11'						
12'						
13'						
14'						
15'						
16'						

Notes:
1. TP ID for civil design is 1-19.

Test Pit Plan

Volume = _____ cu. yd.

Boulder Class

Letter Designation	Size Range Classification
A	6" - 17"
B	18" - 36"
C	36" +

Excavation Effort
E-----Easy
M-----Moderate
D-----Difficult

Proportions Used

TRACE (TR.)	0 - 10%
LITTLE (LI.)	10 - 20%
SOME (SO.)	20 - 35%
AND	35 - 50%

Abbreviations
F = Fine
M = Medium
C = Coarse
V = Very
F/M = Fine to medium
F/C = Fine to coarse
GR = Gray
BN = Brown
YEL = Yellow

GROUNDWATER
( ) Encountered
(x) Not Encountered

Elapsed Time to Reading (Hours)	Depth to Ground-water

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G-5068-003 / Greenwich CMS

Greenwich Central Middle School
Greenwich, Connecticut

Test Pit No.	**TP-111**
Page No.	1 of 1
Photo Log No.	--
Checked By:	B. Nereson

T&B Rep.	N. Greto	Contractor	General Borings			Date	11/17/23
		Operator	John Wyatt			Ground Elev.	44.2
Weather	Clear, 50s	Make	Volvo	Model	EC55L	Time Started	--
		Capacity	1/3yd	Reach	10 ft.	Time Completed	--

Depth	Soil Description	Sample No.	PID Reading (ppm)	Excav. Effort	Boulder Count/ Class	Note No.
0	0-0.5': Brown, fine to coarse SAND, little Silt, little Roots, moist (Topsoil)			E	A	
1'	0.5-3.0': Brown, fine to coarse SAND, some Silt, frequent Cobbles, moist			M	A	
2'				M	A	
3'	(Fill) End of Test Pit - 3.0'. Refusal not encountered.			M		
4'						
5'						
6'						
7'						
8'						
9'						
10'						
11'						
12'						
13'						
14'						
15'						
16'						

Notes:
1. TP ID for civil design is 1-20.

Test Pit Plan

Volume = _____ cu. yd.

Boulder Class

Letter Designation	Size Range Classification
A	6" - 17"
B	18" - 36"
C	36" +

Excavation Effort
E-----Easy
M-----Moderate
D-----Difficult

Proportions Used

TRACE (TR.)	0 - 10%
LITTLE (LI.)	10 - 20%
SOME (SO.)	20 - 35%
AND	35 - 50%

Abbreviations
F = Fine
M = Medium
C = Coarse
V = Very
F/M = Fine to medium
F/C = Fine to coarse
GR = Gray
BN = Brown
YEL = Yellow

GROUNDWATER
( ) Encountered
(x) Not Encountered

Elapsed Time to Reading (Hours)	Depth to Ground-water

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Appendix C
ATANE
Exploration Logs

LOG OF TEST PIT – TP-01

ATANE
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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-01
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 8:00 a.m.
Time Test Pit Ended: 8:35 a.m.

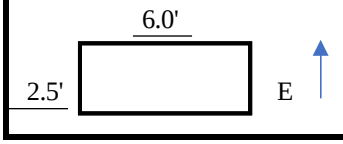
Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Black; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**FILL**	Brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel.	E	None	
3	**Silty SAND**	Black; fine to coarse SAND; dry; loose to medium dense; with some silt, with some organic material.	E	None	
4	**Silty SAND**	Gray; fine to coarse SAND; dry; loose to medium dense; with some silt; with some gravel.	E	None	
5	**Silty SAND**	Gray; fine to coarse SAND; moist to saturated; loose to medium dense; with some silt; with some gravel.			Grab Sample collected at ±6 feet BGS
6	▼				
7					
8					
9					
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 6.5 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.
Note 3: Some cave-in was noticed in the sand at about 7 feet below ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation



BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-01

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-01
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 8:00 a.m.
Time Test Pit Ended: 8:35 a.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-01

Mixture of fine to coarse Sand, some Silt, and some Gravel

Short-term equilibrium groundwater level measured at approximately 6.5 feet below ground surfaces

LOG OF TEST PIT – TP-02

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PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-02
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 8:40 a.m.
Time Test Pit Ended: 9:27 a.m.

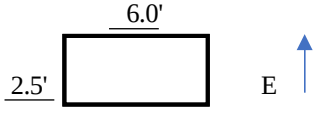
Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**FILL**	Light brown and gray; fine to medium SAND; dry; loose to medium dense; with some silt; with some gravel.	E	None	
3			E	None	
4	**Gravelly SAND**	Dark yellowish brown; mixture of SAND and GRAVEL; dry; loose to medium dense; trace of silt; trace of cobbles.	E	None	
5	**Gravelly SAND**	Dark yellowish brown; mixture of SAND and GRAVEL; moist to saturated; loose to medium dense; trace of silt; trace of cobbles.	E	None	Grab Sample collected at ±6 feet BGS
6	▼				
7					
8					
9					
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 6.5 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation



BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-02

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PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-02
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 8:40 a.m.
Time Test Pit Ended: 9:27 a.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-02. – Short-term equilibrium groundwater level measured at approximately 6.5 feet below ground surfaces

Mixture of fine to coarse Sand, some Silt, some Gravel, and trace of cobbles

Trace of cobbles in mixture of sand and gravel

LOG OF TEST PIT – TP-03

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PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-03
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 9:30 a.m.
Time Test Pit Ended: 10:14 a.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SAND, GRAVEL, and SILT; dry; medium dense; with little Organics.	E	None	
2	**Silty GRAVEL**	Light brown; Mixture of GRAVEL, SAND, and SILT; dry; medium dense; with little cobbles.	E	None	
3	**Silty GRAVEL**	Light brown; Mixture of GRAVEL, SAND, and SILT; dry; medium dense; with little cobbles; with some boulders	M	2/C	
4	**Silty GRAVEL**	Light brown; Mixture of GRAVEL, SAND, and SILT; dry; medium dense; with little cobbles; with some boulders; trace of debris	M	2/C	
5	**SILTS & CLAYS** ▼	Gray; CLAYS of low to medium plasticity; little gravelly clays; little sandy clays; little silty clays; trace of cobbles.	E	None	Grab Sample collected at ±6 feet BGS
6					
7					
8	**Gravelly SAND**	Gray; gravel-SAND-silt mixtures; moist to saturated; medium dense; trace of cobbles.			
9					
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 7.0 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation

6.0'
2.5' E

BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-03

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-03
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 9:30 a.m.
Time Test Pit Ended: 10:14 a.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-03. – Short-term equilibrium groundwater level measured at approximately 7 feet below ground surfaces

Mixture of fine to coarse Sand, some Silt, some clay, some Gravel, little cobbles, little boulders

Boulder ±4.0 feet long

Gravel-sand-silt mixtures; little cobbles

LOG OF TEST PIT – TP-04

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-04
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 10:15 a.m.
Time Test Pit Ended: 11:10 a.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with some Organics; trace of gravel.	E	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; medium dense; with some gravel; with some cobbles; trace of boulders.	M	1/B	
3			M	1/B	
4			M	1/B	
5			M	None	Grab Sample collected at ±6 feet BGS
6					
7					
8 – 8.5	**Clayey SAND** ▼	Gray; sand-clay mixtures; moist; loose to medium dense; with some silt; with some gravel.			
8.5 – 9	**Silty SAND**	Dark yellowish brown; fine to coarse SAND; moist to saturated; loose to medium dense; with some silt; with some gravel; trace of cobbles.			
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 8.0 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation

6.0'
2.5' E

BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-04

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-04
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 10:15 a.m.
Time Test Pit Ended: 11:10 a.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-04. – Short-term equilibrium groundwater level measured at approximately 8 feet below ground surfaces

Mixture of fine to coarse sand, some silt, and some gravel, trace of clay, some cobbles, trace of boulders

Mixture of sand and gravel, trace of silt, some cobbles, trace of boulders

LOG OF TEST PIT – TP-05

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PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-05
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 11:25 a.m.
Time Test Pit Ended: 11:50 a.m.

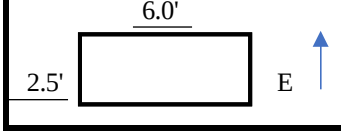
Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
1 – 2.5	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel.	E	None	
2.5 – 3	**Silty SAND**	Gray; fine to coarse SAND; dry to moist; loose to medium dense; with some silt; trace of debris and organics; slightly odorous; trace of gravel; trace of cobbles.	E	None	
4			E	None	
5			E	None	Grab Sample collected at ±6 feet BGS
6 ▼					
7	**Silty SAND**	Gray; fine to coarse SAND; saturated; loose to medium dense; with some silt; trace of clay; trace of gravel.	E	None	
8	**Silty SAND**	Gray; fine to coarse SAND; saturated; loose; with some silt; trace of gravel.	E	None	
9					
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 6.2 feet below ground surface. Water flows from Northwest to Southeast before short-term equilibrium.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.
Note 3: Some cave-in was noticed in the sand at about 7 feet below ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation



BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-05

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PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-05
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10’3”

Weather: Sunny, 84 F
Time Test Pit Started: 11:25 a.m.
Time Test Pit Ended: 11:50 a.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-05. – Short-term equilibrium groundwater level measured at approximately 6.2 feet below ground surfaces

Mixture of fine to coarse Sand, some Silt, some Gravel, some cobbles

Mixture of sand and gravel, trace of silt, trace of cobbles, trace of clay

LOG OF TEST PIT – TP-06

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-06
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 11:50 a.m.
Time Test Pit Ended: 12:10 p.m.

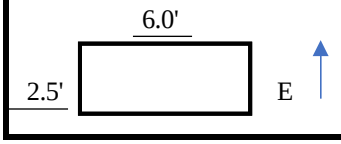
Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel; trace of cobbles.	E	None	
3			E	None	
4	**Silty SAND**	Black and gray; SAND and silt mixture; dry; loose to medium dense; with some organics; trace of gravel.	E	None	
5					
6	**Silty SAND** ▼	Gray; fine to coarse SAND; moist to saturated; loose to medium dense; with some silt; with some gravel; trace of cobbles.	E	None	Grab Sample collected at ±6 feet BGS
7					
8					
9	**Silty SAND**	Gray; fine to coarse SAND; saturated; loose to medium dense; with some silt; with some gravel; trace of cobbles.			
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 7.5 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.
Note 3: Some cave-in was noticed in the sand at about 6 feet below ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation



BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-06

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PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-06
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 11:50 a.m.
Time Test Pit Ended: 12:10 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-06. – Short-term equilibrium groundwater level measured at approximately 7.5 feet below ground surfaces

Mixture of fine to coarse sand, some silt, some gravel; some cobbles

Mixture of sand, silt, gravel, cobbles, trace of organics

Mixture of sand, silt, gravel, and cobbles

LOG OF TEST PIT – TP-07

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PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-07
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 12:20 p.m.
Time Test Pit Ended: 01:15 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel, trace of cobbles, trace of boulders.	M	4/A	
3					
4					
5					Grab Sample collected at ±6 feet BGS
6					
7					
8					
9	**SILT & CLAY** ▼	Gray; sandy and silty CLAY; low to medium plasticity;	E	None	
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 9.5 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation

6.0'
2.5' E

BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-07

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Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-07
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 12:20 p.m.
Time Test Pit Ended: 1:15 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-07. – Short-term equilibrium groundwater level measured at approximately 9.5 feet below ground surfaces

Mixture of fine to coarse Sand, some Silt, some Gravel, Trace of cobbles, trace of boulders

Trace of cobbles and boulders

LOG OF TEST PIT – TP-08

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-08
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 3:35 p.m.
Time Test Pit Ended: 4:03 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel.	E	None	
2.5	**Silty SAND**	Black and gray; Mixture of SAND and Silt; dry; loose to medium dense; with some organic materials.	E	None	
3	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel.			
4			E	None	
5					Grab Sample collected at ±6 feet BGS
6					
6.5					
7	**Silty SAND**	Black and Gray; fine to coarse SAND; dry; loose to medium dense; with some silt; with trace of organics.			
8	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel.			
9	**SILT & CLAY** ▼	Gray; CLAYS of low to medium plasticity; moist to saturated; little sandy clays; little silty clays;			
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 9.0 feet below ground surface.

Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation

BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-08

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PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-08
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

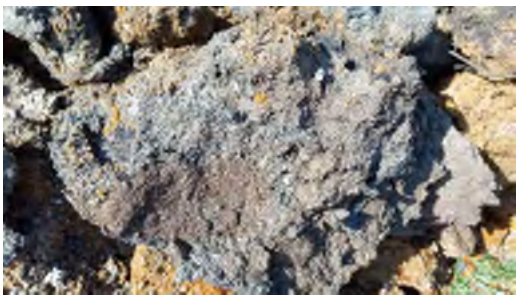
Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 3:35 p.m.
Time Test Pit Ended: 4:03 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-08. – Short-term equilibrium groundwater level measured at approximately 9.0 feet below ground surfaces

Mixture of fine to coarse Sand, some Silt, and some Gravel, some clay



Mixture of Clay, silt, sand, trace of organics

Mixture of Sand, some Silt, some Gravel, some clay

LOG OF TEST PIT – TP-09

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PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-09
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 4:04 p.m.
Time Test Pit Ended: 4:20 p.m.

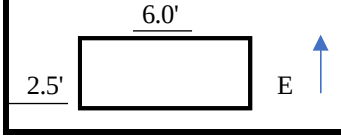
Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel.	E	None	
2.5	**Silty SAND**	Dak brown; Mixture of SAND and Silt; dry; loose to medium dense; with roots and some organic materials.			
3	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel; trace of cobbles.	E	None	
4			E	None	
5					
6					Grab Sample collected at ±6 feet BGS
7	**SILT & CLAY**	Gray; SILTS and CLAYS; dry to moist; low to medium plasticity; little sandy clays; little silty clays; trace of cobbles.	E	None	
8					
9	▼	Gray; CLAYS of low to medium plasticity; moist to saturated; little sandy clays; little silty clays;			
10	**SILT & CLAY**		E	None	
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 8.5 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation



BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-09

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

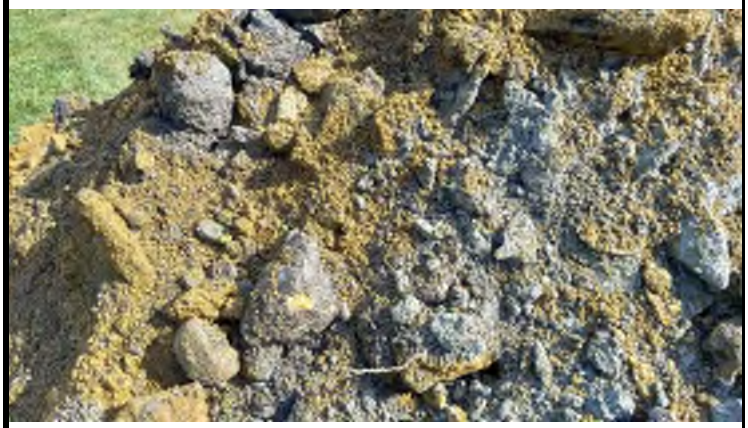
Test Pit No: TP-09
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 4:04 p.m.
Time Test Pit Ended: 4:20 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-09. – Short-term equilibrium groundwater level measured at approximately 8.5 feet below ground surfaces



Mixture of fine to coarse Sand, some Silt, some Gravel; some Cobbles, trace of Clay.

Mixture of Sand, Silt, Gravel, and Cobbles

Mixture of Sand, Silt, Gravel, Cobbles, and trace of Clay

LOG OF TEST PIT – TP-10

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-10
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 1:35 p.m.
Time Test Pit Ended: 2:39 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel, with some cobbles, with some boulders.	M	>4/C	
3					
4					
5.5					
6.5	**Silty SAND**	Dark gray and black; fine to coarse SAND; dry; loose to medium dense; with some silt, with some organic material.	E	None	
7					
8	**SILT & CLAY**	Gray; CLAYS of low to medium plasticity; dry to slightly moist; little sandy clays; little silty clays.	E	None	
9					
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: No groundwater encountered.

Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation

BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-10

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PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-10
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

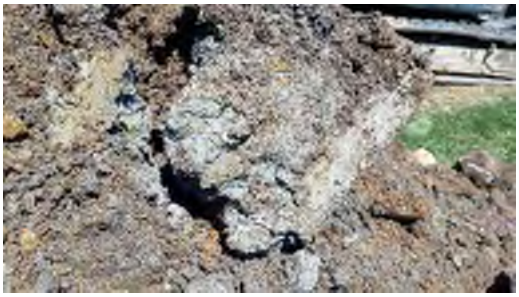
Weather: Sunny, 84 F
Time Test Pit Started: 1:35 p.m.
Time Test Pit Ended: 2:39 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-10

Mixture of fine to coarse Sand, some Silt, some Gravel, some Cobbles, some Boulders, little Clay, trace of Organics.

Class C Boulders



Mixture of Clay, Silt, Sand, and Gravel.

LOG OF TEST PIT – TP-11

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-11
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 4:22 p.m.
Time Test Pit Ended: 4:50 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel; with some cobbles; some boulders.	E	None	
3			E	>2/A	
4	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel; with some cobbles; with some roots.	E	None	
5			M	None	
6	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel; with some cobbles;	M	None	Grab Sample collected at ±6 feet BGS
7	**Silty SAND**	Gray; fine to coarse SAND; dry; loose to medium dense; with some silt; with some gravel.	E	None	
8					
9	▼ **SILT & CLAY**	Gray; CLAYS of low to medium plasticity; moist to saturated; little sandy clays; little silty clays.			
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 9.0 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation

BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-11

ATANE
EXCEL.TOGETHER.
40 Wall Street, 11th Floor, New York, NY 10005
(212) 747-1997 | www.ATANEConsulting.com

PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-01
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 4:22 p.m.
Time Test Pit Ended: 4:50 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-11. – Short-term equilibrium groundwater level measured at approximately 9.0 feet below ground surfaces

Mixture of fine to coarse Sand, some Silt, some Gravel, some Cobbles; some Boulders

Mixture of Clay, Silt, Sand, Gravel

LOG OF TEST PIT – TP-12

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(212) 747-1997 | www.ATANEConsulting.com

PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-12
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 1:20 p.m.
Time Test Pit Ended: 1:35 p.m.

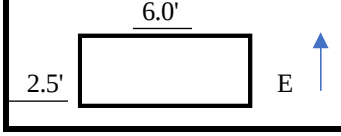
Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	M	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; medium dense; with some gravel; with some cobbles; with some boulders.	M	None	
3			D	>3/C	Grab Sample collected at ±3 feet BGS
4		Bottom of Exploration ±3.0'			
5					
6					
7					
8					
9					
10					
11					
12					

Note 1: No groundwater encountered.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.
Note 3: Excavation stopped at about 3 feet below ground surface. Excavator could not remove the boulders.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation



BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-12

ATANE
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(212) 747-1997 | www.ATANEConsulting.com

PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-12
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 1:20 p.m.
Time Test Pit Ended: 1:35 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-12. – Class C Boulders

Mixture of fine to coarse Sand, some Silt, some Gravel; some Cobbles

Class C Boulders

Mixture of Sand, some Silt, some Gravel; some Cobbles

Phone
(203) 262-9328

Telefax
(203) 264-3414

WHITE PLAINS, N.Y.
(914) 946-4850

SOILTESTING, INC.

90 DONOVAN ROAD - OXFORD, CONN. 06478-1028

GEOTECHNICAL / ENVIRONMENTAL SUBSURFACE INVESTIGATIONS - Test Borings - Core Drilling
Monitoring Wells - Recovery Wells - Direct Push/Probe Sampling
UNDERPINNING - HELICAL PILES - SOIL NAILS

September 19, 2022

ATANE Engineers
40 Wall St., 11th FL
New York NY 10005
Attn.: Paul Sousa

G189-2236-22

Re: 9 Indian Rock Ln.
Greenwich CT

Dear Mr. Sousa,

Attached please find the Test Boring Logs, and location plan for work in Greenwich CT.

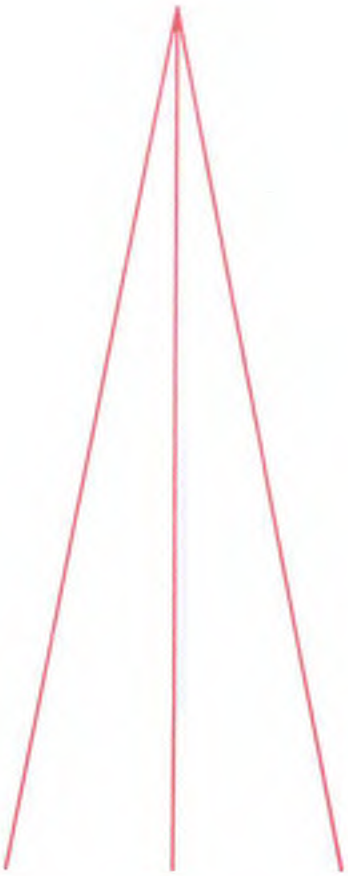
If you have any questions, please do not hesitate to contact us.

Very truly yours,

James A. DeAngelis
President
JAD:mv

SOILTESTING, INC.

TO	ATANE Engineers	DATE	19-Sep-22
ADDRESS	40 Wall St., New York NY 10005		
SITE LOCATION	9 Indian Roack Ln., Greenwich CT		
REPORT SENT TO	Paul Sousa		
SAMPLES SENT TO	Storage (Max 60 days)		



90 Donovan Road
Oxford, Connecticut 06478-1028
203-262-9328

Branch Office:
White Plains, New York 10607
914-946-4850

JOB NO.
G189-2236-22

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-1
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/23/22
	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/23/22
GROUND WATER OBSERVATIONS AT 7 FT AFTER 0 HOURS AT __ FT AFTER __ HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	4"	6'0"	17 / 29		dense		
							20 / 20		dry		Blk F sand, F-C gravel
		2	ss	24"	14"	8'0"	40 / 41		v dense		
							49 / 27		moist/wet		Brn F sand & silt, F-C gravel, trace cobbles
		3	ss	23"	14"	9'11"	14 / 25		dense	9'6"	
10							22 / 100/5"		wet		Poss partly weathered Bedrock or Boulder
		4	ss	4"	4"	10'4"	100/4"		v dense/wet	10'4"	Partly weathered Bedrock
											EOB 10'4"
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-1**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-2
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/23/22
	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/23/22
GROUND WATER OBSERVATIONS AT 9 FT AFTER 0 HOURS AT FT AFTER HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										4"	Topsoil
5		1	ss	24"	16"	6'0"	5 / 5		compact		
							10 / 14		dry		Gry F sand & silt, some F gravel, trace clay
		2	ss	24"	16"	8'0"	35 / 4		dense		
							44 / 31		wet		Gry F-M sand, F-C gravel, trace silt
		3	ss	24"	18"	10'0"	15 / 44		v dense		
10							56 / 72		wet		Gry F sand & silt, F-C gravel, trace cobbles
		4	ss	24"	16"	12'0"	7 / 32		v dense		
							34 / 21		wet		Brn F sand & silt, trace cobbles
		5	ss	24"	14"	14'0"	20 / 28		v dense		
							27 / 27		wet	14'	Brn F-C sand, F-C gravel
15											EOB 14'
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO. B-2

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-3
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 4 ¼" / 1 3/8" HAMMER WT.: 140# / BIT HAMMER FALL: 30"	OFFSET DATE START 8/23/22 DATE FINISH 8/23/22 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT 10_FT AFTER_0_HOURS AT__FT AFTER__HOURS		

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18			CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	14"	6'0"	12	32			dense		
							10	10			dry		Gry/brn F sand & silt, F-C gravel
		2	ss	24"	18"	8'0"	12	6			compact		
							14	17			dry/moist		Brn F-M sand, F-C gravel, some silt
		3	ss	24"	14"	10'0"	13	88			v dense		
10							30	32			dry		Same & cobbles, boulders
		4	ss	24"	14"	12'0"	14	14			dense		
							27	19			wet		Brn F sand & silt, F-C gravel
		5	ss	24"	8"	14'0"	18	17			dense		
							20	23			wet	14'	Same
15													EOB 14'
20													
25													
30													
35													
40													

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO. B-3

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-4
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/23/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/23/22
AT 7 * FT AFTER 0 HOURS	HAMMER WT.: 140# BIT	SURFACE ELEV.
AT __FT AFTER __HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										8"	Topsoil
5		1	ss	24"	22"	6'0"	13 / 11		compact		
							17 / 19		moist		Brn F sand & silt, F-C gravel
		2	ss	24"	20"	8'0"	42 / 53		v dense		
							40 / 34		wet		Brn F-C snd, F-C gravel, some silt
		3	ss	24"	16"	10'0"	12 / 14		dense		
10							24 / 2		wet		Brn F-C sand, F-C gravel, trace cobbles, trace silt
		4	ss	24"	10"	12'0"	5 / 5		compact		
							7 / 5		wet		Same
		5	ss	24"	22"	14'0"	10 / 7		compact		
							7 / 8		wet		Gry F-C sand, F-C gravel
15		6	ss	24"	24"	16'0"	15 / 10		compact		
							10 / 30		wet	16'	Same, gry silt, trace clay
											EOB 16'
20											
25											
30											
35											
40											* Note: Driller log noted 3' observation.

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO. B-4

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-5
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/23/22
GROUND WATER OBSERVATIONS AT 8 FT AFTER 0 HOURS AT __FT AFTER __HOURS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/23/22
	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18			CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	24"	6'0"	8	9			compact		
							7	8			dry		Brn F sand, F-C gravel, some silt
		2	ss	24"	16"	8'0"	16	20			dense		
							11	10			moist		Gry/brn F sand & silt, trace clay
		3	ss	24"	18"	10'0"	14	14			dense		
10							17	19			wet		Gry F sand, some silt
		4	ss	24"	24"	12'0"	20	14			compact		
							14	22			wet		Gry F-M sand, F-C gravel, some silt
		5	ss	24"	24"	14'0"	12	23			dense		
							23	25			wet		Same
15		6	ss	24"	24"	16'0"	15	25			v dense		
							46	23			wet	16'	Same
													EOB 16'
20													
25													
30													
35													
40													

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-5**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-6
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/23/22
GROUND WATER OBSERVATIONS AT 8 FT AFTER 0 HOURS AT FT AFTER HOURS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/23/22
	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										8"	Topsoil
5		1	ss	24"	14"	6'0"	4 / 6		compact		
							22 / 10		dry		Brn F sand, F-C gravel
		2	ss	24"	16"	8'0"	8 / 9		compact		
							10 / 13		dry		Gry F sand & silt
		3	ss	24"	10"	10'0"	10 / 15		dense		
10							20 / 16		wet		Brn F sand & silt, F-C gravel
		4	ss	24"	24"	12'0"	19 / 25		v dense		
							34 / 23		wet		Same
		5	ss	24"	24"	14'0"	10 / 19		dense		
							31 / 31		wet	14'	Same
15											EOB 14'
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO. B-6

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-7
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/24/22
GROUND WATER OBSERVATIONS AT 8 FT AFTER 0 HOURS AT FT AFTER HOURS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/24/22
	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	16"	6'0"	12	11			compact		
							16	31			dry		Brn/lt brn F sand, F-C gravel, some silt
		2	ss	24"	16"	8'0"	95	44			v dense		
							40	39			moist		Brn F-C sand, F-C gravel, trace cobbles
		3	ss	24"	18"	10'0"	35	57			v dense		
10							42	38			wet		Brn F sand & silt, F-C gravel, trace cobbles
		4	ss	15"	10"	11'3"	135	133			v dense		
							100/3"				wet	11'3"	Same
													EOB 11'3"
15													
20													
25													
30													
35													
40													

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-7**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-8
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/24/22
GROUND WATER OBSERVATIONS AT 10 FT AFTER 0 HOURS AT __FT AFTER __HOURS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/24/22
	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	14"	6'0"	15 / 9		compact		
							8 / 15		moist		Gry F sand & silt, F-C gravel
		2	ss	24"	14"	8'0"	105 / 64		v dense		
							65 / 17		dry		Same, cobbles
		3	ss	24"	12"	10'0"	16 / 5		loose		
10							3 / 3		moist		Gry silt, trace F gravel, trace clay
		4	ss	24"	10"	12'0"	4 / 9		compact		Gry F-C sand, some silt
							9 / 10		wet	11'6"	Gry silt, trace clay
		5	ss	24"	20"	14'0"	10 / 8		compact		
							7 / 6		wet		Gry F-C sand & silt, F-C gravel, trace clay
15		6	ss	24"	24"	16'0"	11 / 65		v dense		
							19 / 45		wet	16'	Gry F sand & silt, trace cobbles
											EOB 16'
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-8**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-9
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/24/22
	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/24/22
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT FT AFTER HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	19"	19"	6'7"	95 / 75		v dense		
							95 / 100/1"		dry		Brn F sand, F-C gravel, trace cobbles Cobbles & boulders
10										10'	Cobbles & boulders 6'6" - 10'
		2	ss	4"	4"	10'4"	100/4"		v dense/dry		Partly weathered Bedrock
										11'6"	Auger Refusal
15											EOB 11'6"
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-9**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-10
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/24/22
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT FT AFTER HOURS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/24/22
	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5											
		1	ss	24"	12"	7'0"	25 / 34		v dense / dry		Brn F-M sand, F-C gravel, some silt, trace cobbles
							26 / 26				
		2	ss	24"	14"	9'0"	35 / 64		v dense / dry		Same
							76 / 65				
10										10'	Auger Refusal
											EOB 10'
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-10**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-11
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/24/22
	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/24/22
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT __FT AFTER __HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC.	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	22"	22"	6'8"	18 / 19 52 / 150/4"		v dense dry	7'	Brn/lt brn F sand, F-C gravel, trace cobbles — Auger Refusal
											EOB 7'
10											
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-11**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-12
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/24/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/24/22
AT none FT AFTER 0 HOURS	HAMMER WT.: 140# BIT	SURFACE ELEV.
AT __FT AFTER __HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC.	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5											Boulders from 2' to 7'
										7'	Auger Refusal
10											EOB 7'
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-12**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-13
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER SD/cp	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 4 ¼" / 1 3/8" HAMMER WT.: 140# / BIT HAMMER FALL: 30"	OFFSET DATE START 9/3/22 DATE FINISH 9/3/22 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT__FT AFTER__HOURS		

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	18"	6'0"	9 / 13		dense / dry	5'	Brn F-M sand & F gravel, lit silt
							33 / 45				Bedrock or Boulder Fragments
										7'	Cobbles and/or fractured Bedrock 5-7'
											EOB 7'
10											
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-13**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-14
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/25/22
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT FT AFTER HOURS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/25/22
	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	4"	6'0"	15 / 6		compact / dry		
							7 / 12				Brn F sand, F-C gravel, trace silt, trace asphalt (fill)
		2	ss	24"	16"	8'0"	12 / 12		dense / dry		
							17 / 32				Brn F sand, F-C gravel, trace silt, trace cobbles
		3	ss	24"	18"	10'0"	28 / 25		v dense / dry		
10							30 / 39			10'	Brn F sand, F-C gravel, some silt, some weathered Bedrock frag
		4	ss	4"	4"	10'4"	100/4"		v dense/dry		Partly weathered Bedrock or Boulders
										12'	Auger Refusal
15											EOB 12'
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-14**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-15
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/25/22
	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/25/22
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT FT AFTER HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC.	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	14"	6'0"	18 / 85		v dense dry		Weathered Bedrock fragments
							110 / 102		v dense/dry		No recovery
		2	ss	3"	0"	6'3"	100/3"			9'	Auger Refusal
10											EOB 9'
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-15**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE
M = MEDIUM
F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-16
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/25/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/25/22
AT none FT AFTER 0 HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
AT FT AFTER HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	18"	6'0"	20 / 29		v dense		
							25 / 9		dry		Brn F sand, F-C gravel, trace asphalt (fill)
		2	ss	24"	18"	8'0"	9 / 15		v dense	7'6"	Brn F sand & silt, F-C gravel
							39 / 83		moist/dry		Partly weathered Bedrock
		3	ss	24"	12"	10'0"	20 / 15		dense		
10							32 / 31		dry		Boulders or partly weathered Bedrock
		4	ss	22"	20"	11'10"	44 / 19		v dense		
							32 / 100/4"		dry	12'	Brn F-M sand, F-C sand, trace cobbles (parly weathered Bedrock)
											EOB 12'
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-16**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-17
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER SD	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 4 ¼" / 1 3/8" HAMMER WT.: 140# BIT HAMMER FALL: 30"	OFFSET DATE START 9/3/22 DATE FINISH 9/3/22 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT __FT AFTER __HOURS		

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC.	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										3'	Auger Refusal at 3' (on Boulder) offset 5' to B-17A
	B-17A										
5		1	ss	24"	12"	6'0"	4 / 3		loose		
							2 / 4		dry		Brn F-M sand & silt, some F gravel
		2	ss	23"	14"	7'11"	4 / 31		v dense	7'3"	Same
							33 / 50/5"		dry	8'	Bedrock or boulder fragments Auger Refusal
											EOB 8'
10											
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-17**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-18
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER SD/cp	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 9/3/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 9/3/22
AT 9 FT AFTER 0 HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
AT __FT AFTER __HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	24"	6'0"	14	13			compact dry		
							10	10					Gry F-M sand & F gravel, lit silt
		2	ss	21"	12"	8'0"	11	14			compact	7'6"	Same
							7	5			dry		Gry/blk F sand & silt (gry/blk) trace organics, F gravel-Cobbles 9'-10' (poss fill)
10												10'	
		3	ss	24"	16"	12'0"	9	11			compact wet		
							8	9					Brn/tan F-M sand & F gravel, lit silt
		4	ss	22"	20"	13'10"	7	13			dense wet		
							20	50/4"				13'10"	Same
15													EOB 13'10"
20													
25													
30													
35													
40													

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-18**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-19
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER SD	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 9/3/22
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT __ FT AFTER __ HOURS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 9/3/22
	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	18"	6'0"	9 / 14		compact / dry		
							14 / 14		v dense		Brn F-M sand & silt, lit F gravel
		2	ss	16"	16"	7'4"	30 / 33		v dense		Same, cobbles, boulders and/or decomposed Bedrock
							50/4"		moist	7'4"	Spoon Refusal
10											EOB 7'4"
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-19**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-20
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER SD	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 9/3/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 9/3/22
AT none FT AFTER 0 HOURS	HAMMER WT.: 140# BIT	SURFACE ELEV.
AT FT AFTER HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC.	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										3'	Auger Refusal
											EOB 3' Poss Bedrock
5											
10											
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-20**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

Appendix D
Laboratory Test Results

Thielsch DIVISION OF THE RISE GROUP	195 Frances Avenue Cranston RI, 02910 Phone: (401)-467-6454 Fax: (401)-467-2398 cts.thielsch.com *Let's Build a Solid Foundation*	Client Information: Tighe & Bond Portsmouth, NH Project Manager: B. Nereson Assigned By: B. Nereson Collected By: Client	Project Information: **Central Middle School** **Greenwich, CT** Project Number: G5068 Summary Page: 1 of 1 Report Date: 09.29.23

LABORATORY TESTING DATA SHEET, Report No.: 7423-J-188

Boring No.	Sample ID	Depth (ft)	Laboratory No.	Identification Tests									Proctor / CBR / Permeability Tests								Laboratory Log and Soil Description
				As Rcvd Moisture Content %	LL %	PL %	OD LL	Gravel %	Sand %	Fines %	Org. %	pH	g_d MAX (pcf) W_{opt} (%)	g_d MAX (pcf) W_{opt} (%) (Corr.)	Dry unit wt. (pcf)	Test Moisture Content %	Target Test Setup as % of Proctor	CBR @ 0.1"	CBR @ 0.2"	Permeability cm/sec	
				D2216	D4318			D6913			D2974	D4792	D1557								
B5	-	5.5-7	23-S-3929	42.2							2.0										Organic Content Only
B8	-	5.5-7	23-S-3930	25.1							3.8										Organic Content Only
B-3	-	2-4	23-S-3931					0.0	22.1	77.9											Brown silt with sand
B-4A	-	10-12	23-S-3932					42.0	47.7	10.3											Brown poorly graded sand with silt and gravel
B-7	-	5-7	23-S-3933					20.8	63.1	16.1											Brown silty sand with gravel
B-9	-	5-6.3	23-S-3934					39.0	47.5	13.5											Brown silty sand with gravel
Organic Contents tested by RB on 09.28.23																					

Date Received: **09.26.23** Reviewed By: Date Reviewed: **10.02.23**

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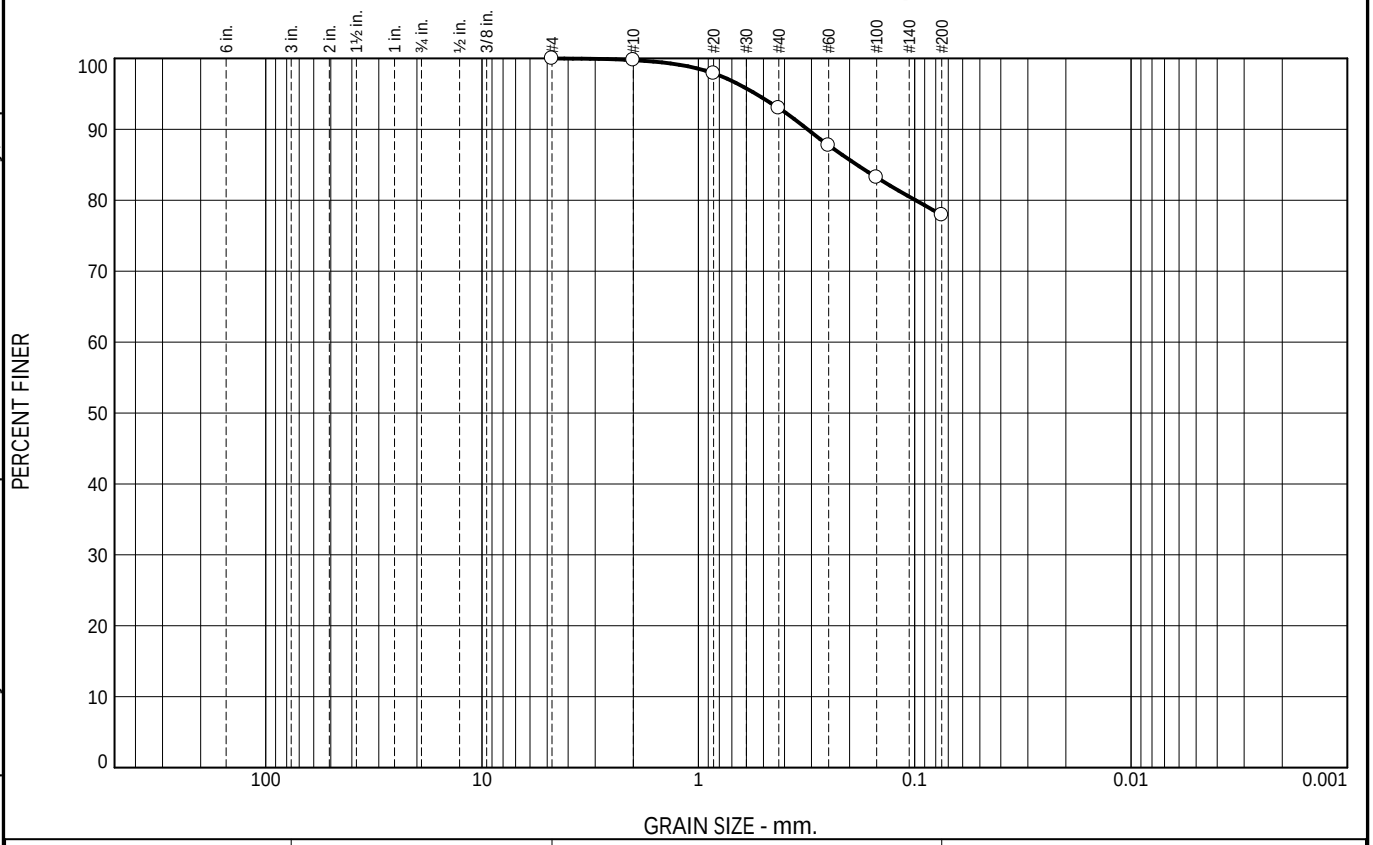
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	6.8	15.1	77.9	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.8		
#20	97.9		
#40	93.0		
#60	87.7		
#100	83.2		
#200	77.9		

* (no specification provided)

Soil Description

Brown silt with sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.3129 D_{85}= 0.1849 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Sample visually classified as non-plastic.

Source of Sample: Boring Depth: 2-4'
Sample Number: B-3

Date: 09.29.23

Thielsch Engineering Inc.

Cranston, RI

Client: Tighe & Bond
Project: Central Middle School
Greenwich, CT
Project No: G5068

Figure 23-S-3931

Tested By: RB Checked By: Andrew Vanasse

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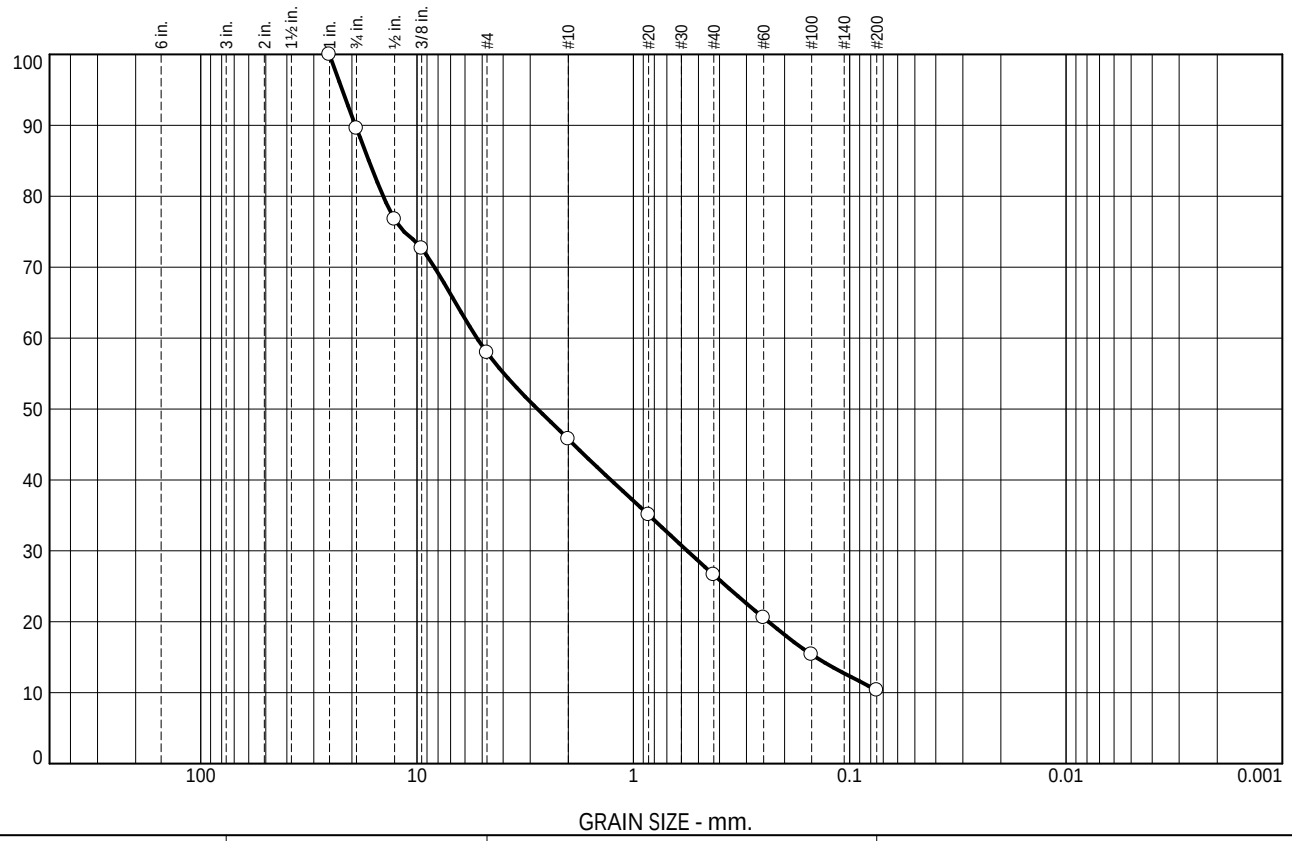
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	10.4	31.6	12.2	19.2	16.3	10.3	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100.0		
3/4"	89.6		
1/2"	76.7		
3/8"	72.6		
#4	58.0		
#10	45.8		
#20	35.1		
#40	26.6		
#60	20.6		
#100	15.4		
#200	10.3		

* (no specification provided)

Source of Sample: Boring Depth: 10-12'
Sample Number: B-4A

Date: 09.29.23

Soil Description

Brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 19.2877 D_{85}= 16.6904 D_{60}= 5.2868
D_{50}= 2.7742 D_{30}= 0.5633 D_{15}= 0.1436
D_{10}= C_u= C_c=

Classification

USCS= SP-SM AASHTO= A-1-a

Remarks

Thielsch Engineering Inc.

Cranston, RI

Client: Tighe & Bond
Project: Central Middle School
Greenwich, CT
Project No: G5068 Figure 23-S-3932

Tested By: RB Checked By: Andrew Vanasse

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Particle Size Distribution Report

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	13.7	7.1	5.5	21.7	35.9	16.1	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100.0		
3/4"	86.3		
1/2"	86.3		
3/8"	84.3		
#4	79.2		
#10	73.7		
#20	65.2		
#40	52.0		
#60	36.8		
#100	25.9		
#200	16.1		

* (no specification provided)

Soil Description

Brown silty sand with gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 21.4531 D_{85}= 10.3553 D_{60}= 0.6205
D_{50}= 0.3930 D_{30}= 0.1858 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Source of Sample: Boring Depth: 5-7'
Sample Number: B-7

Date: 09.29.23

Thielsch Engineering Inc.

Cranston, RI

Client: Tighe & Bond
Project: Central Middle School
Greenwich, CT
Project No: G5068 Figure 23-S-3933

Tested By: RB Checked By: Andrew Vanasse

These results are for the exclusive use of the client for whom they were obtained. This report only relates to items inspect and/or tested. No warranty, expressed or implied, is made.

Particle Size Distribution Report

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	13.2	25.8	9.0	17.4	21.1	13.5	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 1/2"	100.0		
1"	94.3		
3/4"	86.8		
1/2"	79.8		
3/8"	72.1		
#4	61.0		
#10	52.0		
#20	42.5		
#40	34.6		
#60	27.3		
#100	20.3		
#200	13.5		

* (no specification provided)

Source of Sample: Boring Depth: 5-6.3'
Sample Number: B-9

Date: 09.29.23

Soil Description

Brown silty sand with gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 21.5122 D_{85}= 17.3087 D_{60}= 4.3766
D_{50}= 1.6689 D_{30}= 0.3031 D_{15}= 0.0883
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-1-b

Remarks

Thielsch Engineering Inc.

Cranston, RI

Client: Tighe & Bond
Project: Central Middle School
Greenwich, CT
Project No: G5068 Figure 23-S-3934

Tested By: RB Checked By: Andrew Vanasse

Thielsch
DIVISION OF THE RISE GROUP

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Phone: (401)-467-6454
Fax: (401)-467-2398
cts.thielsch.com
Let's Build a Solid Foundation

Client Information:	Project Information:
Tighe & Bond	**Central Middle School**
Portsmouth, NH 03801	**Greenwich, CT**
Project Manager:	Project Number: G5068
Assigned By:	Summary Page: 1 of 1
Collected By:	Report Date: 12.10.23

LABORATORY TESTING DATA SHEET, Report No.: 7423-M-107

Material Source	Sample ID	Depth (ft)	Laboratory No.	Identification Tests									Proctor / CBR / Permeability Tests								Laboratory Log and Soil Description
				As Rcvd Moisture Content %	LL %	PL %	OD LL	Gravel %	Sand %	Fines %	Org. %	pH	g_d MAX (pcf) W_{opt} (%)	g_d MAX (pcf) W_{opt} (%) (Corr.)	Dry unit wt. (pcf)	Test Moisture Content %	Target Test Setup as % of Proctor	CBR @ 0.1"	CBR @ 0.2"	Permeability cm/sec	
				D2216	D4318			D6913			D2974	D4792	D1557								
	TP103	5-7	23-S-4871	52.1							10.5										Organic Content Only
	TP104	5-6	23-S-4872	29.0							3.6										Organic Content Only
	TP106	4-5	23-S-4873	20.7							1.1										Organic Content Only
	TP107	4-5	23-S-4874	40.6							5.4										Organic Content Only

Organic Content tested by RB on 12/6/23.

Date Received: **12.04.23** Reviewed By: Date Reviewed: **12.10.23**

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Let's Build a Solid Foundation

Client Information:		Project Information:	
Tighe & Bond		**Central Middle School**	
Portsmouth, NH		**Greenwich, CT**	
Project Manager:	Brian Nereson	Project Number:	G5068
Assigned By:	Brian Nereson	Summary Page:	1 of 1
Collected By:	Client	Report Date:	10.17.23

LABORATORY TESTING DATA SHEET, Report No.: 7423-J-189

Boring No.	Sample No.	Depth (ft/in)	Laboratory No.	Specimen Data						Compressive Strength Tests								Rock Formation or Description or Remarks
				Mohs Hard-ness	Diameter (in)	Length (in)	(1) Unit Weight (PCF)	(2) Wet Density (PCF)	Bulk G_s	(3) Other Tests	(4) Strength PSI	(5) Strain %	(6) E sec PSI EE+06	(7) Poisson's Ratio	st PSI	Is_{50} PSI	(8) s_c PSI	
B1	Core 6.5-11.5	6.5-11.5	23-S-3935		1.982	4.533	164.3				9859	0.326	2.91	0.04				Grey Granite Schist
Fresh Break																		
B2	Core 3-8'	3-8	23-S-3936		1.985	4.465	162.8				10188	1.334	1.13	0.67				Grey Pegmatite
Fresh Break - minor break at about 1617 psi resulting in a high calculation for Poisson's Ratio																		

(1) Volume Determined By Measuring Dimensions	Notes	(3) PLD=Point Load (diametrical),	Notes	(5) Strain at Peak Deviator Stress
(2) Determined by Measuring Dimensions and Weight of Saturated Sample		PLA= Point Load (Axial) ST= Splitting Tensile		(6) Represents Secant Modulus at 50% of Total Failure Stress
		U= Unconfined Compressive Strength		(7) Represents Secant Poisson's Ratio at 50% of Total Failure Stress
		(4) Taken at Peak Deviator Stress		(8) Estimated UCS from Table 1 of ASTM D5731 for NX cores (Is x 24)

Date Received: **09.26.23** Reviewed By: Date Review **10.17.23**

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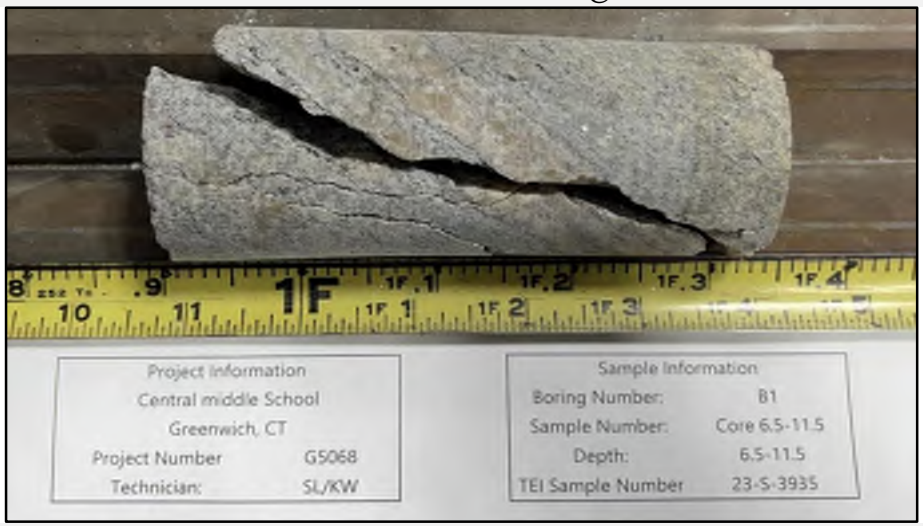
Let's Build a Solid Foundation

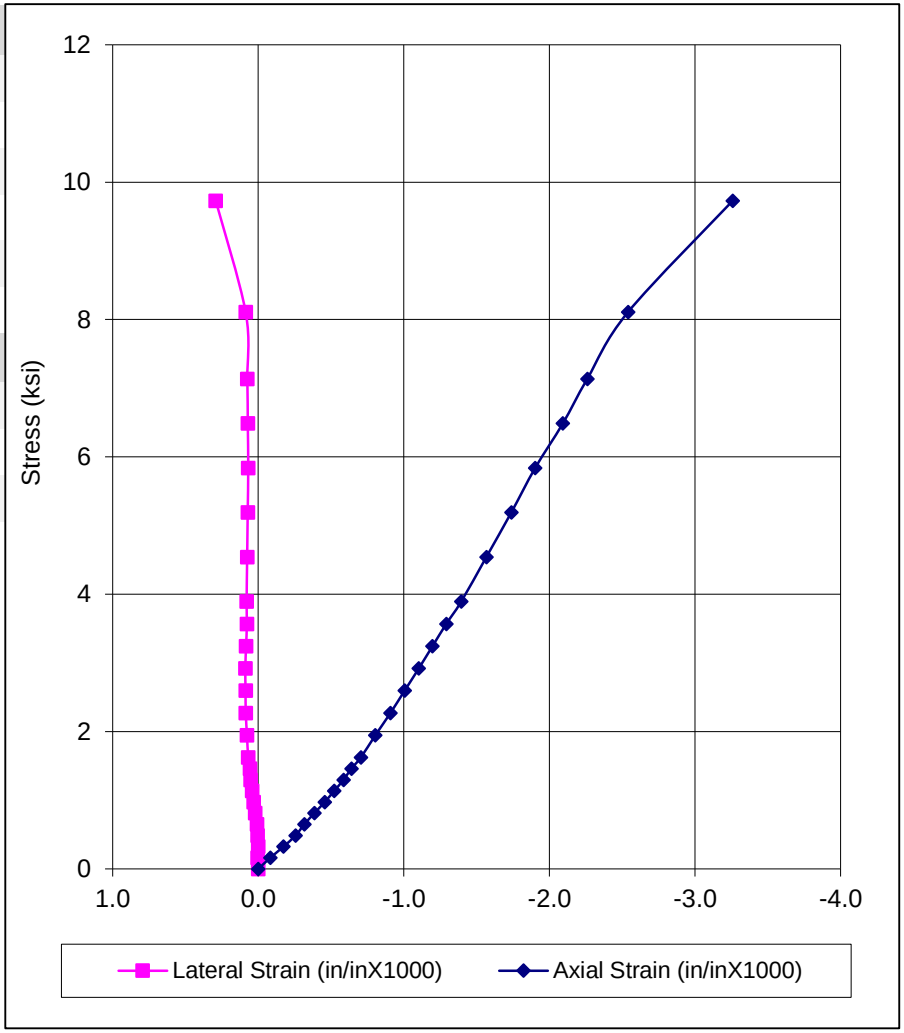
Client Information:	
Tighe & Bond	
Portsmouth, NH	
Project Manager:	Brian Nereson
Assigned by:	Brian Nereson
Collected by:	Client

Project Information:	
Central Middle School	
Greenwich, CT	
Project Number:	G5068
Technician:	KW
Report Date:	10.16.23

ASTM D7012 Compressive Strength and Elastic Moduli of Intact Rock Core Specimens

Sample Information		**Compressive Test Information**	
Boring ID:	B1	**Unit Weight (pcf):**	164.3
Sample #:	Core 6.5-11.5	**Failure Stress (psi):**	9,859
Depth (ft):	6.5-11.5	**Failure Mode:**	Fresh
Tested Depth (ft):	6.9-7.28	**Time to Failure (min)**	8.10
Rock Type:	Grey Granite Schist		
Features:	Fresh Break		
Test Specimen Information		**Elastic Moduli Test Information**	
Diameter, D (in):	1.982	**Poisson's Ratio @ 50%:**	0.04
Length, L (in):	4.533	**Strain %:**	0.326
L:D Ratio:	2.29	**E sec PSI @ 50%:**	2.91E+06





Testing Notes:

Thielsch
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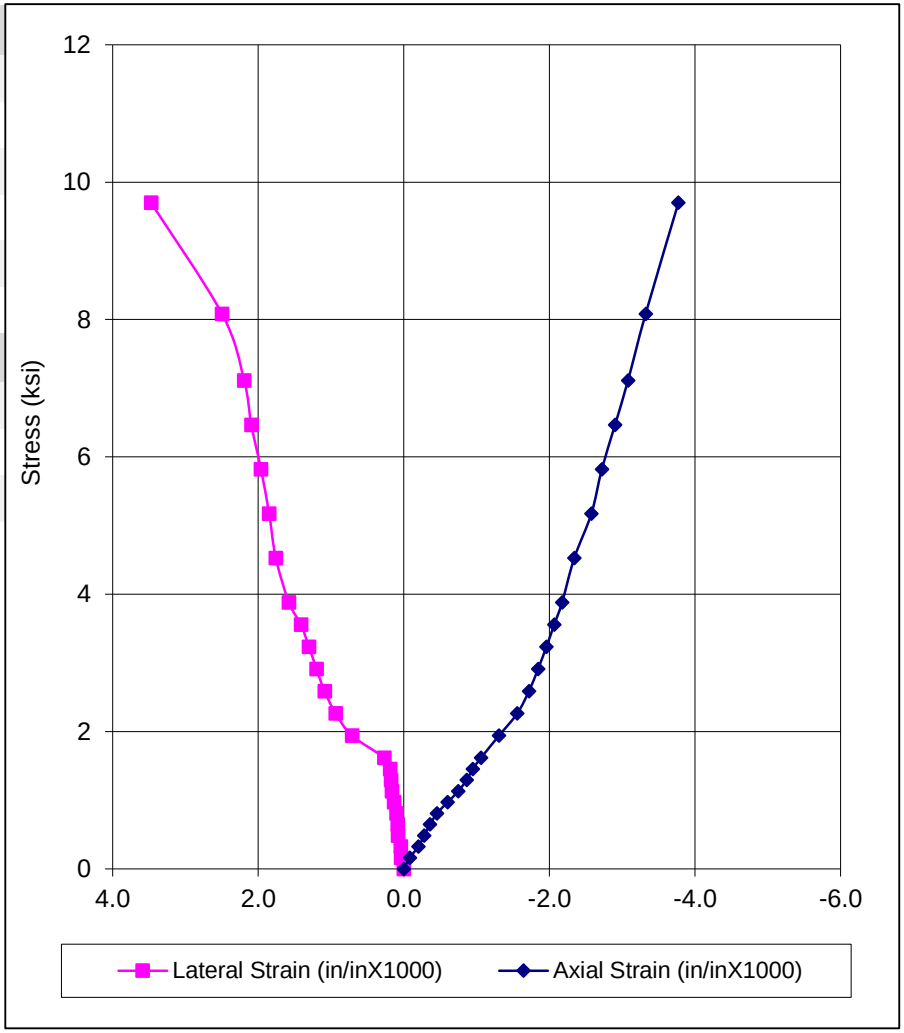
Let's Build a Solid Foundation

Client Information:	
Tighe & Bond	
Portsmouth, NH	
Project Manager:	Brian Nereson
Assigned by:	Brian Nereson
Collected by:	Client

Project Information:	
Central Middle School	
Greenwich, CT	
Project Number:	G5068
Technician:	KW
Report Date:	10.16.23

ASTM D7012 Compressive Strength and Elastic Moduli of Intact Rock Core Specimens

Sample Information		**Compressive Test Information**	
Boring ID:	B2	**Unit Weight (pcf):**	162.8
Sample #:	Core 3-8	**Failure Stress (psi):**	10,188
Depth (ft):	3-8	**Failure Mode:**	Fresh
Tested Depth (ft):	3.17-3.54	**Time to Failure (min)**	9.72
Rock Type:	Grey Pegmatite		
Features:	Fresh Break		
Test Specimen Information		**Elastic Moduli Test Information**	
Diameter, D (in):	1.985	**Poisson's Ratio @ 50%:**	0.67
Length, L (in):	4.465	**Strain %:**	1.334
L:D Ratio:	2.25	**E sec PSI @ 50%:**	1.13E-06



Testing Notes: **Minor break at about 1617 psi, due to this, the calculated Poisson's Ratio is high**

ATANE

ENGINEERS,

P.C.

56 Roland Street
Suite 202
Boston, MA
617/778-7300
FAX 617/268-7832

SIEVE ANALYSIS ASTM DESIGNATION C136

Client: ***Town of Greenwich***
101 Field Point Road
Greenwich , CT 06830

Project: ***Greenwich Cen. Middle Sch.***
9 Indian Rock Lane
Greenwich, CT 06830

Project #: 2021-11-0386A02

Sample Source:	**Sample Date:** *08/12/22*
Test Pit #1	**Sample #:** ***220812-1***
	Lab Tech: *PJM*
	Sampled by: *MH*
Sample Use:	***Material Type:***
Subgrade	*Tan Gravel*

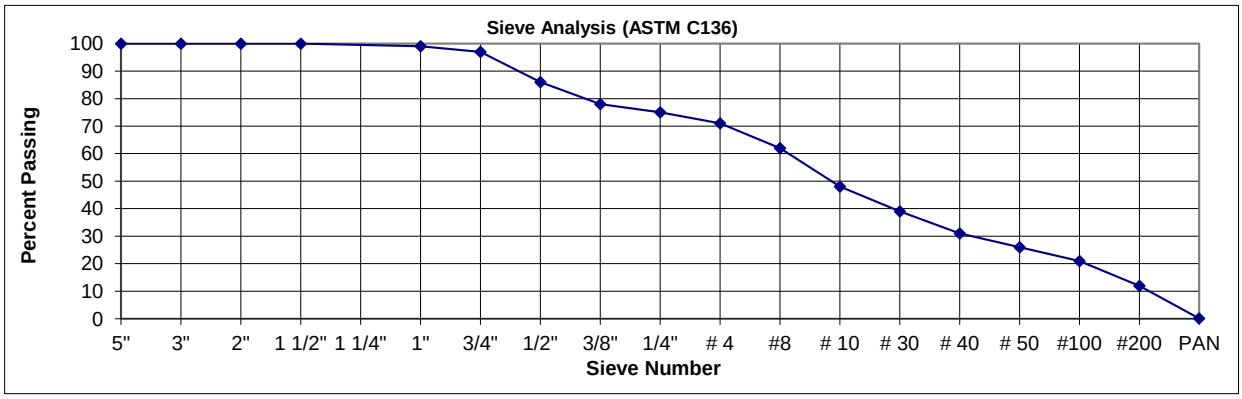
ATANE Report #: MA0386081222-1

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)	SPECIFICATIONS
5"	0.0	100	
3"	0.0	100	
2"	0.0	100	
1 1/2"	0.0	100	
1 1/4"	--		
1"	80.7	99	
3/4"	242.1	97	
1/2"	1022.1	86	
3/8"	1586.4	78	
1/4"	1810.8	75	
# 4	2108.5	71	
#8	2828.6	62	
# 10	3837.5	48	
# 30	4515.2	39	
# 40	5085.9	31	
# 50	5418.1	26	
#100	5854.5	21.0	
#200	6490.6	11.9	
PAN	7358.2	0.1	

Wet Wash: *No*

% Over #4, Under 3": ***29.0***

Reviewed by:



REVIEW **FAIL** **PASS**

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ATANE

ENGINEERS,

P.C.

56 Roland Street
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Boston, MA
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FAX 617/268-7832

SIEVE ANALYSIS ASTM DESIGNATION C136

Client: ***Town of Greenwich*** *101 Field Point Road* *Greenwich, CT 06830* ***Project:*** ***Greenwich Cen. Middle Sch.*** ***9 Indian Rock Lane*** ***Greenwich, CT 06830*** ***Project #: 2021-11-0386A01***	***Sample Source:*** ***Test Pit #2*** ***Sample Use:*** *Subgrade*	**Sample Date:** *08/12/22* **Sample #:** ***220812-7*** **Lab Tech:** *PJM* **Sampled by:** *MH* ***Material Type:*** *Dark Brown Gravel*

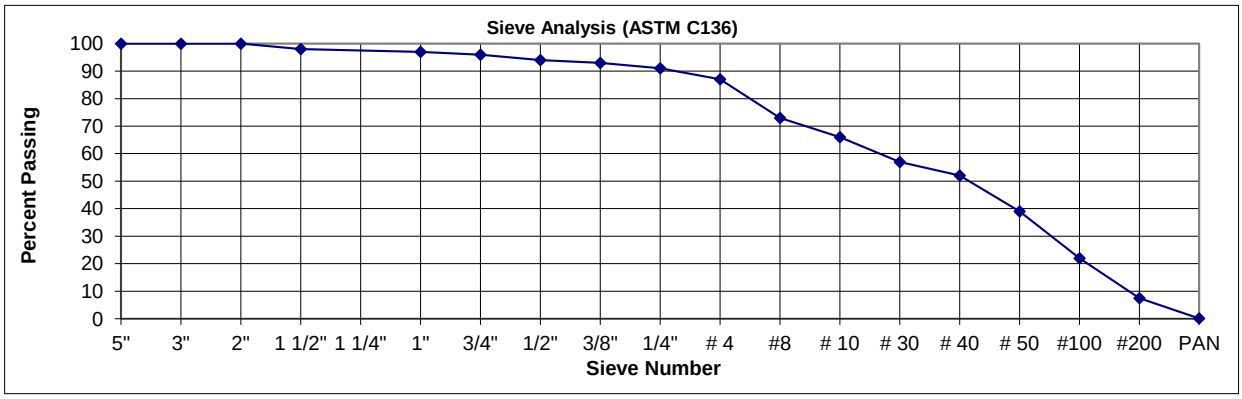
ATANE Report #: MA0386081222-7

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)	SPECIFICATIONS EARTH MOVING 31 20 00 2.01.G.4
5"	0.0	100	
3"	0.0	100	**70-100**
2"	52.1	100	
1 1/2"	212.4	98	
1 1/4"	--		
1"	439.3	97	
3/4"	573.2	96	**45-95**
1/2"	782.1	94	
3/8"	884.7	93	
1/4"	1208.7	91	
# 4	1646.7	87	**30-90**
#8	3508.5	73	
# 10	4334.4	66	**25-80**
# 30	5526.9	57	
# 40	6199.2	52	**10-50**
# 50	7770.4	39	
#100	9997.2	22.0	
#200	11872.6	7.5	**0-10**
PAN	12814.1	0.1	

Wet Wash: *No*

% Over #4, Under 3": ***13.0***

Reviewed by:



REVIEW X **FAIL** **PASS**

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ATANE SIEVE ANALYSIS ASTM DESIGNATION C136 Split Sample

Lab Work Sheet

Client: ***Town of Greenwich*** *101 Field Point Road* *Greenwich, CT 06830* ***Project:*** ***Greenwich Cen. Middle Sch.*** ***9 Indian Rock Lane*** ***Greenwich, CT 06830*** ***Project #: 2021-11-0386A02***	***Sample Source:*** ***Test Pit #3***	**Sample Date:**	8/12/2022
		Sample #:	220812-8
		Lab Tech:	PJM
		Sampled by:	MH
	Sample Use:	***Material Type:***	
	Subgrade	*Tan Gravel*	

ATANE Report #: MA00386081222-8

Sample Initial Dry Weight: 15,289.40

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)
5"	0.0	100.0
3"	0.0	100.0
2"	50.1	99.7
1 1/2"	173.8	98.9
1 1/4"	--	
1"	748.9	95.1
3/4"	878.4	94.3
1/2"	1095.2	92.8
3/8"	1268.1	91.7

Split sample to size appropriate for smaller sieves here

Wt of -3/8":	14021.3
Weight of New Split Sample:	692.7

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	%Passing (Split Sample)	% Passing (Total Sample)
Split Sample			
1/4"	45.3	93.5	85.7
# 4	72.4	89.5	82.1
# 8	169.5	75.5	69.3
# 10	215.3	68.9	63.2
# 30	299.5	56.8	52.1
# 40	338.5	51.1	46.9
# 50	425.7	38.5	35.3
#100	517.8	25.2	23.2
#200	624.7	9.8	9.0
PAN	692.3	0.1	0.1

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SIEVE ANALYSIS ASTM DESIGNATION C136

Client: ***Town of Greenwich***
101 Field Point Road
Greenwich , CT 06830

Project: ***Greenwich Cen. Middle Sch.***
9 Indian Rock Lane
Greenwich, CT 06830

Project #: 2021-11-0386A02

Sample Source:	**Sample Date:** *08/12/22*
Test Pit #4	**Sample #:** ***220812-2***
	Lab Tech: *PJM*
	Sampled by: *MH*
Sample Use:	***Material Type:***
Subgrade	*Tan Gravel*

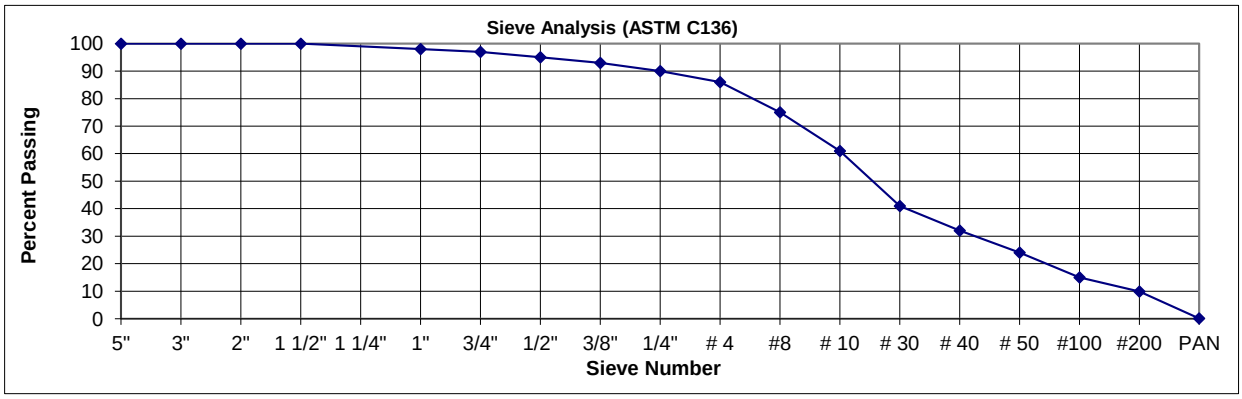
ATANE Report #: MA0386081222-2

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)	SPECIFICATIONS
5"	0.0	100	
3"	0.0	100	
2"	0.0	100	
1 1/2"	0.0	100	
1 1/4"	--		
1"	190.2	98	
3/4"	266.3	97	
1/2"	412.8	95	
3/8"	516.4	93	
1/4"	774.4	90	
# 4	1134.4	86	
#8	1958.4	75	
# 10	3089.4	61	
# 30	4671.9	41	
# 40	5391.8	32	
# 50	6000.5	24	
#100	6742.3	15.0	
#200	7145.0	9.9	
PAN	7927.4	0.1	

Wet Wash: *No*

% Over #4, Under 3": ***14.0***

Reviewed by:



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SIEVE ANALYSIS ASTM DESIGNATION C136

Client: ***Town of Greenwich***
101 Field Point Road
Greenwich, CT 06830

Project: ***Greenwich Cen. Middle Sch.***
9 Indian Rock Lane
Greenwich, CT 06830

Project #: 2022-32-0386A02

Sample Source:	**Sample Date:** *08/12/22*
Test Pit #6	**Sample #:** ***220812-11***
	Lab Tech: *PJM*
	Sampled by: *MH*
Sample Use:	***Material Type:***
Subgrade	*Brown Gravel*

ATANE Report #: MA0386081222-11

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)	SPECIFICATIONS
5"	0.0	100	
3"	0.0	100	
2"	0.0	100	
1 1/2"	0.0	100	
1 1/4"	--		
1"	378.3	97	
3/4"	612.7	96	
1/2"	831.4	94	
3/8"	1072.8	92	
1/4"	2138.9	84	
# 4	2903.8	79	
#8	4136.0	70	
# 10	6483.5	53	
# 30	8181.2	40	
# 40	9338.6	32	
# 50	11169.6	19	
#100	12193.7	11.0	
#200	13073.6	4.8	
PAN	13717.9	0.1	

Wet Wash: *No*

% Over #4, Under 3": ***21.0***

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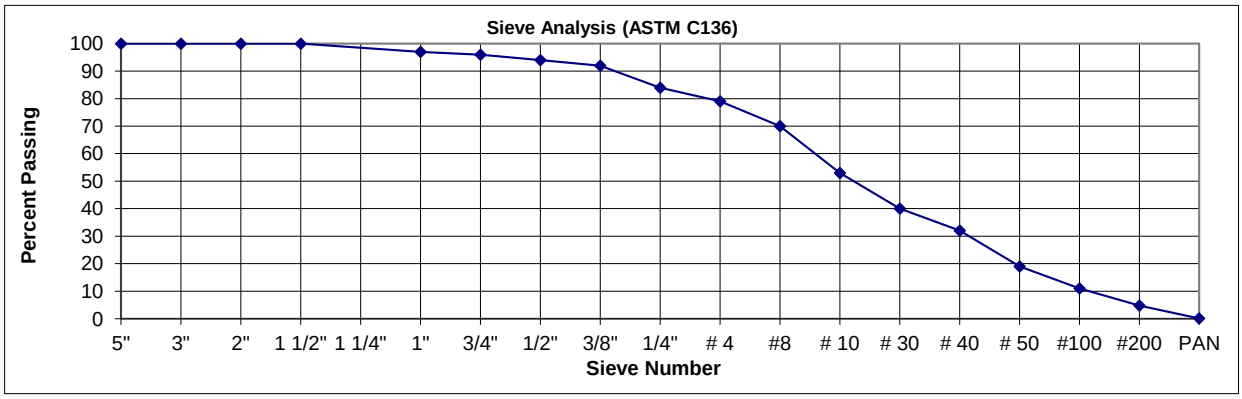

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SIEVE ANALYSIS ASTM DESIGNATION C136

Client: ***Town of Greenwich*** *101 Field Point Road* *Greenwich , CT 06830* ***Project:*** ***Greenwich Cen. Middle Sch.*** ***9 Indian Rock Lane*** ***Greenwich, CT 06830*** ***Project #: 2021-11-0386A02***	***Sample Source:*** ***Test Pit #8***	**Sample Date:** *08/12/22* **Sample #:** ***220812-3*** **Lab Tech:** *PJM* **Sampled by:** *MH*
	Sample Use: *Subgrade*	***Material Type:*** *Tan Gravel*

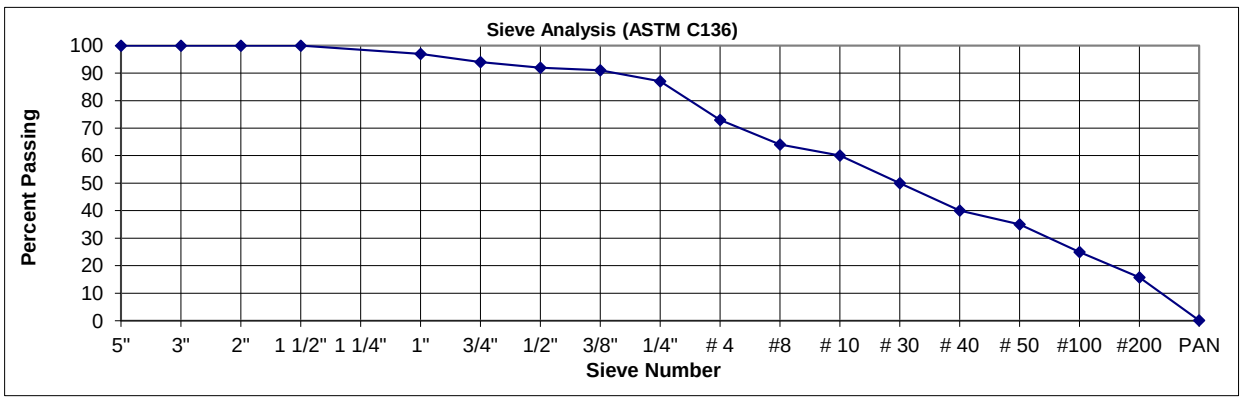
ATANE Report #: MA0386081222-3

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)	SPECIFICATIONS
5"	0.0	100	
3"	0.0	100	
2"	0.0	100	
1 1/2"	0.0	100	
1 1/4"	--		
1"	239.2	97	
3/4"	548.1	94	
1/2"	703.2	92	
3/8"	845.7	91	
1/4"	1232.8	87	
# 4	2556.1	73	
#8	3399.1	64	
# 10	3784.9	60	
# 30	4636.4	50	
# 40	5591.2	40	
# 50	6102.3	35	
#100	6983.4	25.0	
#200	7879.1	15.8	
PAN	9347.5	0.1	

Wet Wash: *No*

% Over #4, Under 3": ***27.0***

Reviewed by:



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SIEVE ANALYSIS ASTM DESIGNATION C136

Client: ***Town of Greenwich***
101 Field Point Road
Greenwich, CT 06830

Project: ***Greenwich Cen. Middle Sch.***
9 Indian Rock Lane
Greenwich, CT 06830

Project #: 2021-11-0386A02

Sample Source:	**Sample Date:** *08/12/22*
Test Pit #9	**Sample #:** ***220812-9***
	Lab Tech: *PJM*
	Sampled by: *MH*
Sample Use:	***Material Type:***
Subgrade	*Brown Gravel*

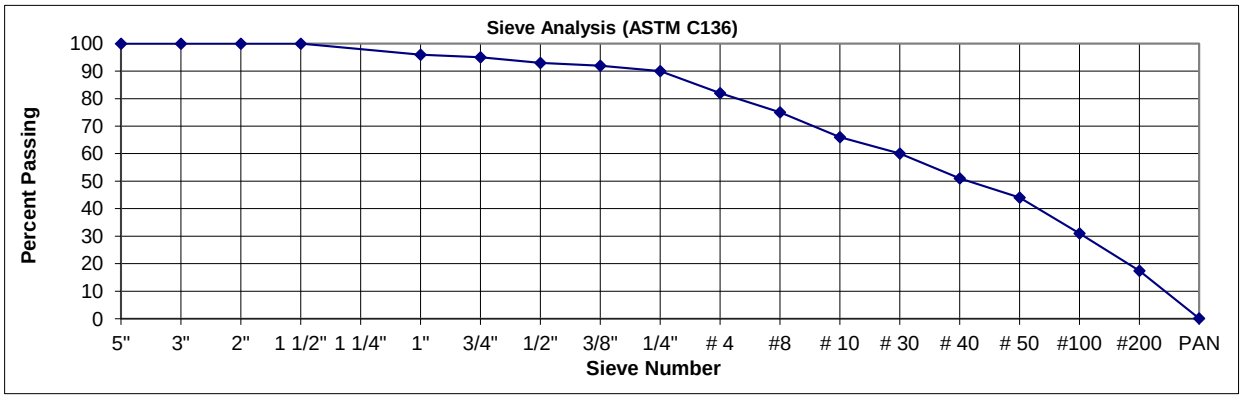
ATANE Report #: MA0386081222-9

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)	SPECIFICATIONS
5"	0.0	100	
3"	0.0	100	
2"	0.0	100	
1 1/2"	0.0	100	
1 1/4"	--		
1"	482.3	96	
3/4"	567.8	95	
1/2"	789.2	93	
3/8"	893.1	92	
1/4"	1074.0	90	
# 4	2077.5	82	
#8	2813.3	75	
# 10	3840.6	66	
# 30	4498.6	60	
# 40	5496.1	51	
# 50	6311.1	44	
#100	7797.6	31.0	
#200	9315.5	17.4	
PAN	11261.0	0.1	

Wet Wash: *No*

% Over #4, Under 3": ***18.0***

Reviewed by:



REVIEW | X **FAIL** | **PASS**

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SIEVE ANALYSIS ASTM DESIGNATION C136

Client: ***Town of Greenwich***
101 Field Post Road
Greenwich, CT 06830

Project: ***Greenwich Cen. Middle Sch.***
9 Indian Rock Lane
Greenwich, CT 06830

Project #: 2021-11-0386A02

Sample Source:	**Sample Date:** *08/12/22*
Test Pit #12	**Sample #:** ***220812-12***
	Lab Tech: *PJM*
	Sampled by: *MH*
Sample Use:	***Material Type:***
Subgrade	*Tan Gravel*

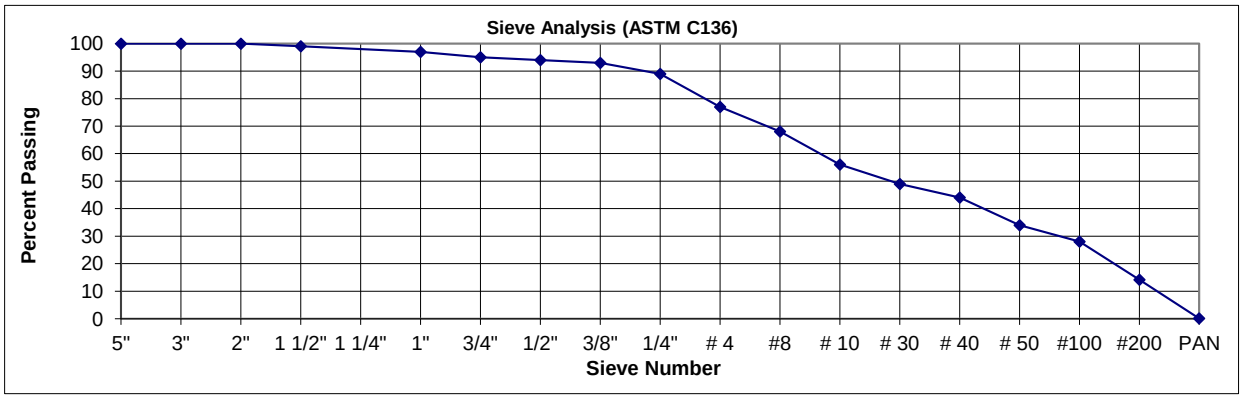
ATANE Report #: MA0386081222-12

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)	SPECIFICATIONS
5"	0.0	100	
3"	0.0	100	
2"	0.0	100	
1 1/2"	143.2	99	
1 1/4"	--		
1"	387.1	97	
3/4"	589.2	95	
1/2"	677.3	94	
3/8"	802.4	93	
1/4"	1338.8	89	
# 4	2699.6	77	
#8	3702.3	68	
# 10	5218.0	56	
# 30	6042.4	49	
# 40	6523.3	44	
# 50	7707.2	34	
#100	8421.9	28.0	
#200	10067.7	14.2	
PAN	11731.1	0.1	

Wet Wash: *No*

% Over #4, Under 3": ***23.0***

Reviewed by:



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MATERIAL TESTING GROUP

47 HUDSON STREET
OSSINING, NY 10562

TEL: (914) 945- 9010
FAX: (914) 945-9012

SIEVE ANALYSIS

Report: G-008
Sample Date
Test Date: 10/7/2022
Sample Id: Sample #8
Source: Composite/ combined sample B-17-B-18& B-19

ATANE Project #: 2111-386A02
General Location: Greenwich Central Middle School Greenwich CT

Sieve #	Weight, gms	% Retained	% Passing
2"	0.0	0.0	100
11/2"	0.0	0.0	100
1"	0.0	0.0	100
3/4"	60.4	3.8	96.2
1/2"	96.9	6.2	90.0
3/8"	64.0	4.1	85.9
1/4"	81.5	5.2	80.7
#4	47.8	3.0	77.7
#8	105.1	6.7	71.0
#16	109.4	*7.0*	*64.0*
#20	64.6	*4.1*	*59.9*
#30	66.7	4.2	55.7
#40	94.6	6.0	49.7
#60	151.0	9.5	40.2
#80	28.5	1.8	38.4
#100	99.3	6.3	32.0
#200	232.1	14.7	17.3
Material passing No 200 sieve by washing	258.6		
PAN	12.4	17.3	
TOTAL	1573.9		

Nature: Natural Soil. (Moisture Content # 5.3 %)
Color/ Odor / Impurities: Brownish /None /None
Sample free from larger gravel, debris, waste vegetation, frozen materials, organic materials & other deleterious matter.

Submitted by ATANE

ATANE **MATERIAL TESTING GROUP**

47 HUDSON STREET, TEL: (914)945-9010
OSSINING, NY 10562 FAX: (914)945-9012

SPECIFIC GRAVITY SOILS TEST REPORT (ASTM D 854)

Client:	Town of Greenwich
Project:	Greenwich Central Middle School
Address:	9, Indian rock Lane, Greenwich CT.
Date Sampled:	Various Dates
Test Date:	10/05/22 & 10/06/22
Report #:	01
HAKS Project #	2021-11-0386A02

SAMPLE No.	LOCATION	Specific Gravity
1	Test Pit # 1	2.653
2	Test Pit # 2	2.659
3	Test Pit # 3	2.681
4	Test Pit # 4	2.677
5	Test Pit # 5	2.668
6	Test Pit # 9	2.680
7	Test Pit # 12	2.678
8	Composite / Combined Sample of B-17, B-18 & B-19	2.695

Lab Tech: __NK___ **Lab Director: ___SG_____**

ATANE

MATERIAL TESTING GROUP

47 HUDSON STREET,
OSSINING, NY 10562

TEL: (914)945-9010
FAX: (914)945-9012

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX OF SOILS TEST REPORT (ASTM D 4318)

Client:	Town of Greenwich
Project:	Greenwich Central Middle School
Address:	9, Indian rock Lane, Greenwich CT.
Date Sampled:	Various Dates
Test Date:	10/07/22 & 10/10/22
Report #:	02
HAKS Project #	2021-11-0386A02

LOCATION	Test Pit # 8	Test Pit # 9
Liquid Limit	21.1	22.5
Plastic Limit	18.3	19.1
Plasticity Index	2.8	3.4

Lab Tech: __NK___ **Lab Director: ____SG_____**

SECTION 05 5000 - METAL FABRICATIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Miscellaneous framing and supports.
   1. General: Provide miscellaneous steel framing and equipment support framing not specified in other Sections as needed to complete the work. Applications include but are not limited to:
      a) Secondary support framing for basketball backstop assemblies.
      b) Support of equipment, ducts, piping, and other items indicated to be suspended from the floor/roof deck above.
         1) Slotted channel framing.
      c) Above ceiling support of cubicle curtain track.
      d) Miscellaneous steel trim.
      e) Elevator machine beams, hoist beam, and /or divider beams.
      f) Supports for overhead doors and grilles.
      g) Tube reinforcement for low partitions.
      h) Miscellaneous steel angles, plates, and channels.
      i) Tower stanchion for automatic door operator activation device.

B. Metal ladders ~~and ships ladders:~~
   1. Roof ladder with platform.
   2. Roof hatch ladder(s).
   3. Elevator pit ladder.

C. Products furnished, but not installed, under this section include the following:
   1. Loose steel lintels.
   2. Shelf (relieving) angles.
   3. Anchor bolts, steel pipe sleeves, slotted-channel inserts, and wedge type inserts indicated to be cast into concrete or built into unit masonry.

1.2 RELATED REQUIREMENTS

A. Section 01 3573 - Delegated Design Procedures.

B. Section 01 3566.42 - Sustainability Compliance Procedures.

C. Section 01 7419 – Construction Waste Management and Disposal.

D. Section 05 0805 - Factory-Applied Coatings For Metal: Requirements for shop-priming, and /or shop finishing galvanized steel.

1.3 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2014 (2015 Errata).

B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

C. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2022.

D. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.

E. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2018.

F. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.

G. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2021.

H. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

I. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2023.

J. ASTM B210/B210M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes; 2019a.

K. ASTM B211/B211M - Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire; 2019.

L. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

M. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength; 2023.

N. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2023).

O. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 2004.

P. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

1.4 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data:
   1. Slotted channel framing.
   2. Manufactured metal ladders and ships ladders.

C. CTHPB Documentation Submittals: Comply with Section 01 3566.42 - Sustainability Compliance Procedures and provide the following in addition to other submittals:
   1. Product Data for Credit d8: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
   2. Product Data for Credit d10: For products and materials required to comply with requirements for regional materials, documentation indicating location and distance from Project of manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

D. Shop Drawings: Show fabrication and installation details. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable. Provide shop drawings for the following:
   1. Miscellaneous framing and supports for applications where framing and supports are not specified in other sections. These may include, but are not limited to:
      a) Secondary support framing for gymnasium equipment (basketball backstop assemblies and gymnasium divider).
      b) Above-ceiling support of cubicle ceiling track.
      c) Supports for overhead coiling doors and grilles.
   2. Elevator machine beams, hoist beams, and/or divider beams.
   3. Metal ladders.
   4. Shelf angles.
   5. Miscellaneous steel trim including steel angle bases and edging.
   6. Loose steel lintels.
   7. Design data: Submit drawings and supporting calculations, signed and sealed by a qualified professional structural engineer.

E. Designer's Qualification Statement.

1.5 QUALITY ASSURANCE

A. Design ladders, backstop and equipment supports, and elevator beams under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance of ~~Aluminum~~ Ladders: Ladders, including landings, are to withstand the effects of loads and stresses within limits and under conditions specified in ANSI/ASC A14.3.

2.2 MATERIALS - STEEL

A. Steel Sections: ASTM A36/A36M.

B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.

C. Plates: ASTM A283/A283M.

D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.

E. Slotted Channel Framing: ASTM A653/A653M, Grade 33.

F. Slotted Channel Fittings: ASTM A1011/A1011M.

G. Bolts, Nuts, and Washers: ASTM A307, Grade A, plain.

H. Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, plain.

I. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

J. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

K. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.3 ~~MATERIALS - ALUMINUM~~

A. ~~Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.~~

B. ~~Sheet Aluminum: ASTM B209 (ASTM B209M), 5052 alloy, H32 or H22 temper.ladder~~

C. ~~Aluminum-Alloy Drawn Seamless Tubes: ASTM B210/B210M, 6063 alloy, T6 temper.~~

D. ~~Aluminum-Alloy Bars: ASTM B211/B211M, 6061 alloy, T6 temper.~~

E. ~~Bolts, Nuts, and Washers: Stainless steel.~~

2.4 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Fabricate items with joints tightly fitted and secured.

C. Continuously seal joined members by intermittent welds and plastic filler.

D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

F. Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.5 FABRICATED ITEMS

A. Shelf Angles, Channels, and Plates Not Attached to Structural Framing.

B. Lintels: As detailed.

C. Elevator Hoistway Divider Beams: Beam sections; prime paint finish.

D. Slotted Channel Framing: Fabricate channels and fittings from structural steel complying with the referenced standards; hot-dipped galvanized per ASTM A1 Grade G65. finish.

2.6 METAL LADDERS

A. General:
   1. Comply with ANSI A14.3, except for elevator pit ladders.
   2. For elevator pit ladders, comply with ASME A17.1/CSA B44.

B. Steel Ladders:~~Elevator pit ladder.~~
   1. Space siderails 18 inches apart unless otherwise indicated.
   2. Siderails: Continuous, 3/8-by-2-1/2-inch steel flat bars, with eased edges.
   3. Rungs: 3/4-inch steel bars.
   4. Fit rungs in centerline of siderails; plug-weld and grind smooth on outer rail faces.
   5. Provide nonslip surfaces on top of each rung, either by coating rung with aluminum-oxide granules set in epoxy-resin adhesive or by using a type of manufactured rung filled with aluminum-oxide grout.
   6. Provide platforms as indicated fabricated from welded or pressure-locked steel bar grating, supported by steel angles. Limit openings in gratings to no more than 1/2-inch in least dimension.
   7. Support each ladder at top and bottom with welded or bolted steel brackets. Refer to Drawing A531 for spacing of intermediate brackets.
   8. Galvanize ladders, including brackets. No additional finish required.

C. ~~Ships Ladders: Provide metal ships' ladders where indicated. Fabricate of open-type construction with channel or plate stringers and pipe and tube railings unless otherwise indicated. Provide brackets and fittings for installation.~~

2.7 MISCELLANEOUS STEEL TRIM

A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.

B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.

2.8 LOOSE STEEL LINTELS AND SHELF ANGLES

A. Fabricate loose steel lintels from steel angles and shelf angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated. Fabricate in single lengths for each opening unless otherwise indicated. Weld adjoining members together to form a single unit where indicated.
   1. Shop-galvanize and shop-prime loose steel lintels and shelf angles located in exterior walls.

2.9 FINISHES - STEEL

A. Prime paint steel items.
   1. Exceptions: Galvanize items to be embedded in concrete and items to be embedded in masonry.
   2. Exceptions: Galvanize all steel ladders.
   3. Galvanize loose lintels and shelf angles.

B. Prime Painting Non-Galvanized Items: One coat. Shop prime with universal shop primer.
   1. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

C. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A153/A153M for steel and iron hardware and with ASTM A123/A123M for other steel and iron products.
   1. Lintels: Do not quench or apply post galvanizing treatments that might interfere with paint adhesion. Refer to Section 05 0805 for more detailed information on shop-coating these items

D. ~~Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements.~~

E. Preparation for Shop Priming Galvanized Items: See Section 05 0805.

2.10 ~~FINISHES - ALUMINUM~~

A. ~~As-Fabricated Finish: AA-M12.~~

B. ~~Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils thick.~~

2.11 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch.

C. Maximum Misalignment of Adjacent Members: 1/16 inch.

D. Maximum Bow: 1/8 inch in 48 inches.

E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.2 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

3.3 INSTALLATION

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.

C. Install items plumb and level, accurately fitted, free from distortion or defects.

D. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

E. Field weld components as indicated on drawings.

F. Perform field welding in accordance with AWS D1.1/D1.1M.

G. Obtain approval prior to site cutting or making adjustments not scheduled.

H. After erection, prime welds, abrasions, and surfaces not shop primed , except surfaces to be in contact with concrete.

I. Metal Framing and Supports: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.
   1. Anchor supports for operable partitions, overhead doors, and overhead grilles securely to, and rigidly brace from, building structure.

3.4 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION 05 5000

SECTION 08 5653 - SECURITY AND SERVICE WINDOWS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Security transaction windows with pass-through device.

B. Sliding service window for nurse's office.

1.2 RELATED REQUIREMENTS

A. Section 01 3566.42 - Sustainability Compliance Procedures.

B. Section 01 7419 – Construction Waste Management and Disposal.

C. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.

1.3 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2014 (2015 Errata).

B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

C. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

D. SSPC-Paint 33 - Coal-Tar Mastic Coating, Cold Applied; 2015.

E. UL 752 - Standard for Bullet-Resisting Equipment; Current Edition, Including All Revisions.

1.4 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's published data showing materials, construction details, dimensions of components, and finishes. Include product description for window assemblies including bullet-resistant ratings.

C. Include manufactuer's written installlation instructions.

D. CTHPB Documentation Submittals: Comply with Section 01 3566.42 - Sustainability Compliance Procedures and provide the following in addition to other submittals:
   1. Product Data for Credit 5d: For adhesives and sealants, documentation including printed statement of VOC content.
   2. Product Data for Credit d8: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.

3. Product Data for Credit d10: For products and materials required to comply with requirements for regional materials, documentation indicating location and distance from Project of manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

E. Shop Drawings: Drawings prepared specifically for this project, showing plans, elevations, sections, details of construction, anchorage to other work, hardware, and glazing.
1. For new work show required opening dimensions and allowance for field deviation.
2. For field glazed windows, include detailed instructions for glazing installation.

F. Test Reports: Test reports for specific window model and glazing to be furnished, showing compliance with specified requirements; window and glazing may be tested separately, provided window test sample adequately simulates the glazing to be used.
1. Include testing agency qualifications.
2. For structural, forced entry, and ballistic tests, provide details on method of anchorage to test frame.

G. Samples of Color Anodized Finishes: Frame member sections showing range of color to be expected in finished work.

H. Coordination Drawings: For each window opening, show locations and details of items necessary to anchor windows that must be installed by others, in sufficient detail that installer of those items can do so correctly without reference to the actual window itself.

I. Manufacturer's Qualification Statement.

J. Installer's Qualification Statement.

1.5 QUALITY ASSURANCE

A. Fixed Window Assemblies: Ballistic Level 3, tested to UL 752.

B. Manufacturer Qualifications: Firm with at least 10 years experience in the manufacture of windows of the type specified and able to provide test reports showing that their standard manufactured products meet the specified requirements; custom designed products not acceptable.

C. Testing Agency Qualifications: Independent testing agency able to show experience in conducting tests of the type specified and:

D. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.6 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Provide window manufactuer's standard one-year warranty against defects in materials and workmanship.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store window assemblies upright in protected, dry area, off ground or floor, with at least 1/4 inch space between individual units.

B. Do not cover with non vented coverings that create excessive humidity.

C. Remove wet coverings immediately.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Security Transaction Windows with Pass-Through Device:
   1. Basis of Design: **Armortex**: www.armortex.com.
   2. Substitutions: See Section 01 6000 - Product Requirements.

2.2 ASSEMBLIES

A. Security Windows:
   1. Dimensions, profiles, features, and performance specified and indicated on drawings are required; do not deviate unless specifically approved by Architect under substitution procedures; see Section 01 6000.
   2. Design to fit openings indicated on drawings; design to accommodate deviation of actual construction from dimensions indicated on drawings.
   3. Fabricate frames and sash with corners mitered or coped full depth with concealed welded joints.
   4. Design anchorages to provide performance equivalent to that required for window unit; provide anchorages at least equivalent to those by which the tested units were anchored to the test frame.
   5. Separate dissimilar metals to prevent corrosion by galvanic action by painting contact surfaces with primer or with sealant or tape recommended by manufacturer for the purpose.
   6. Weld components before finishing and in concealed locations, to greatest extent possible; minimize distortion and discoloration of finish; remove residue of welding; grind exposed welds smooth and finish to match.
   7. Label units to indicate which side is which, such as inside/outside or secure/non-secure; use labels that are removable after installation but durable enough not to be lost during delivery, storage, handling, and installation.

2.3 SECURITY TRANSACTION WINDOWS WITH PASS-THROUGH DEVICE

A. Security Transaction Windows with Pass-Though Device:
   1. Location: Built within exterior wall, as indicated on drawings.
   2. Ballistic Resistance: Tested to meet UL 752, Level 3.
   3. Window Type: Fixed.
      a) Overall Window Frame Size: As indicated on drawings.
      b) Frame Material: Aluminum.
   4. Glazing: Single (monolithic), clear, and ballistic resistant.

5. Pass-Through Device: Deal tray mounted below window..
6. Communication: Integrated speaker.
7. Products:
   a) Basis of Design: **Armortex**; **Aluminum Transaction Window w/ Speaker.**

2.4 SERVICE WINDOW UNIT

A. Location: Built within interior wall, as indicated on drawings.

B. Type of Use: As indicated on drawings.

C. Window Type: Sliding, single horizontal.
   1. Configuration: XOX (fixed, sliding, fixed).
   2. Operation: Manual. Window rolls on top-hung ball bering rollers.
   3. Track: Double overhead enclosed track for by-passing sliding glass panels.
      a) Include all hangers, rollers, guides, and glass panel hardware for a complete installaiton.
   4. Mounting: Flush with wall surface.
   5. Window Size: As indicated on drawings.
   6. Frame Material: Aluminum. 6063-T5 extrusions.
      a) Finish: Clear anodized.
   7. Sidelights: _____.
   8. Header: Manufacturer's standard type.
   9. Sill: Manufacturer's standard type.

D. Glazing: Single (monolithic), clear.
   1. Tempered safety glazing. See Section 08 8000, Glass Type TS.

E. Lock: Provide sliding glass door lock for each operable glass panel, catch style for installation in track, equipped with a keyed cylinder.

F. Products:
   1. Basis of Design: **CR Laurence Co. (CRL)**; **Barbara Model Pass-Thru, D1030A**: www.crlaurence.com.
   2. Substitutions: See 01 6000 - Product Requirements.

2.5 ASSEMBLY COMPONENTS - SECURITY WINDOW

A. Aluminum Framing: ASTM B221 (ASTM B221M) extrusions of alloy and temper selected by manufacturer for strength, corrosion resistance, and finish required; not less that 1/8 inch thick at any location of frame and sash members.
   1. Bullet Resistant Composite: Manufactuer's UL-listed propoetery bullet-resistant material integrated into frame, to achieve level of bullet resistance indicated.

B. Frame Anchors: Mild steel plates, shapes, or bars, concealed in completed construction; provide anchorage devices as necessary to securely fasten windows to adjacent construction; use security fasteners for exposed anchors.
   1. Provide minimum of two anchors per side of window plus one additional anchor for each 18 inches or fraction thereof more than 36 inches in height or width.

C. Glazing: UL-listed laminated glass or glass/polycarbonate. composite.

D. Glazing Seals: Factory installed; molded EPDM or neoprene compressible gaskets and compression strips.

E. Glazing Tape: Manufacturer's standard.

F. Neoprene Setting Block: Manufacturer's standard.

G. Stainless Steel Caps for Window (Glass) Edges: Manufacturer's standard.

H. Deal Trays: Formed stainless steel, recessed into counter or sill for mounting under glazing frame.
   1. Style: Plain curved recess with exposed flanges for flush mounting in counter or sill.
   2. Clear Opening Height: Nominal 1-1/2 inches.
   3. Tray Dimensions: Manufactuer's standard for window size.

I. Shelf for Deal Tray: Manufacturer's standard high-pressure laminated shelf, Color: black.

J. Bituminous Paint: Cold-applied asbestos-free asphalt mastic, complying with SSPC-Paint 33; 30 mils, 0.030 inch minimum thickness per coat.

2.6 FINISHES

A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils thick.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that window openings are ready for installation of windows.

B. Notify Architect if conditions are not suitable for installation of windows; do not proceed until conditions are satisfactory.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions, approved shop drawings, and drawing details.

B. Install windows in correct orientation (inside/outside or secure/non-secure).

C. Anchor windows securely in manner so as to achieve performance specified.

D. Separate metal members from concrete and masonry using bituminous paint.

E. Set sill members and sill flashing in continuous bead of sealant.

3.3 CLEANING

A. Clean exposed surfaces promptly after installation without damaging finishes.

B. Remove and replace defective work.

END OF SECTION 08 5653

SECTION 08 7100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.
2. Sliding doors.
3. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Automatic operators.
4. Cylinders specified for doors in other sections.

C. Related Sections:

1. Division 08 Section “Hollow Metal Doors and Frames”.
2. Division 08 Section “Bullet Resistant Doors and Frame”.
3. Division 08 Section “Aluminum-Framed Entrances and Storefronts”.

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. UL/ULC and CSA C22.2 - Standards for Automatic Door Operators Used on Fire and Smoke Barrier Doors and Systems of Doors.
8. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:

1. ANSI/BHMA Certified Product Standards - A156 Series.
2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
3. ANSI/UL 294 - Access Control System Units.
4. UL 305 - Panic Hardware.
5. ANSI/UL 437- Key Locks.

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
3. Content: Include the following information:

    a. Type, style, function, size, label, hand, and finish of each door hardware item.
    b. Manufacturer of each item.
    c. Fastenings and other pertinent information.
    d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    e. Explanation of abbreviations, symbols, and codes contained in schedule.
    f. Mounting locations for door hardware.
    g. Door and frame sizes and materials.
    h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

   a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
   b. Complete (risers, point-to-point) access control system block wiring diagrams.
   c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

E. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

1.4 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).

C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

F. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.

G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.

5. Review the required inspecting, testing, commissioning, and demonstration procedures

I. At completion of installation, provide written documentation that components were applied according to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship

within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:

1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 BUTT HINGES

A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity:

a. Two Hinges: For doors with heights up to 60 inches.
b. Three Hinges: For doors with heights 61 to 90 inches.
c. Four Hinges: For doors with heights 91 to 120 inches.
d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

    a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
    b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

    a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
    b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4. Hinge Options: Comply with the following:

    a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.

5. Manufacturers:

    a. Basis of Design: McKinney (MK) - TA/T4A Series, 5-knuckle.
    b. Hager Companies (HA) – BB Series, 5-knuckle.
    c. Dormakaba BEST (ST) – F/FBB Series, 5-knuckle.

2.3 CONTINUOUS HINGES

A. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 continuous geared hinge. with minimum 0.120-inch thick extruded 6063-T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.

1. Where specified, provide modular continuous geared hinges that ship in two or three pieces and form a single continuous hinge upon installation.
2. Manufacturers:.

    a. Basis of Design: Pemko (PE).
    b. Dormakaba BEST (ST).

2.4 SLIDING AND FOLDING HARDWARE

A. Sliding and Folding Door Hardware: Hardware is to be of type and design as specified and should conform with ANSI/BHMA A156.14.

1. Sliding Bi-Passing Pocket Door Hardware: Provide complete sets consisting of track, hangers, stops, bumpers, floor channel, guides, and accessories indicated.
2. Cascading: Provide a bi-parting or single direction telescoping system as required with a minimum 200 lb. per door capacity.
3. Bi-folding Door Hardware: Rated for door panels weighing up to 125 lb.
4. Pocket Sliding Door Hardware: Rated for doors weighing up to 200 lb.
5. Manufacturers:

    a. Basis of Design: Pemko (PE) or equal as described above.

2.5 POWER TRANSFER DEVICES

A. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Manufacturers:

    a. Pemko (PE) - EL-CEPT Series.
    b. Securitron (SU) - EL-CEPT Series.

B. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

1. Provide one each of the following tools as part of the base bid contract:

    a. McKinney (MK) - Electrical Connecting Kit: QC-R001.
    b. McKinney (MK) - Connector Hand Tool: QC-R003.

2. Manufacturers:

    a. Basis of Design: McKinney (MK) - QC-C Series.
    b. Hager Companies (HA)- Quick Connect.
    c. Dormakaba BEST (ST) – WH Series.

2.6 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: Provide products conforming to ANSI/BHMA A156.3 and A156.16, Grade 1.

1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
2. Furnish dust proof strikes for bottom bolts.
3. Surface bolts to be minimum 8” in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
5. Manufacturers:

    a. Basis of Design: Rockwood (RO).
    b. Trimco (TC)

B. Coordinators: ANSI/BHMA A156.3 door coordinators consisting of active-leaf, hold-open lever and inactive-leaf release trigger. Model as indicated in hardware sets.

1. Manufacturers:

    a. Basis of Design: Rockwood (RO).
    b. Trimco (TC)
    c. Ives.

C. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.

1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
4. Pulls, where applicable, shall be provided with a 10” clearance from the finished floor on the push side to accommodate wheelchair accessibility.
5. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
6. Manufacturers:

    a. Basis of Design: Rockwood (RO).
    b. Trimco (TC).

2.7 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:

1. Threaded mortise cylinders with rings and cams to suit hardware application.
2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
4. Tubular deadlocks and other auxiliary locks.
5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
6. Keyway: Match Facility Standard.

C. Patented Cylinders: ANSI/BHMA A156.5, Grade 1 Certified Products Directory (CPD) listed cylinders employing a utility patented and restricted keyway requiring the use of a patented key. Cylinders are to be protected from unauthorized manufacture and distribution by manufacturer's United States patents.

1. Patented key systems shall not be established with products that have an expired patent. Expired systems shall only be specified and supplied to support existing systems.
2. Manufacturers:

    a. Medeco (MC) - X4.
    b. No substitution.

D. Keying System: Each type of lock and cylinders to be factory keyed.

1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. Existing System: Field verify and key cylinders to match Owner's existing system.

E. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Two (2)
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Control Keys (where required): Two (2).
4. Permanent Control Keys (where required): Two (2).

F. Construction Keying: Provide temporary keyed construction cores.

G. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

2.8 MORTISE LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): Provide ANSI/BHMA A156.13, Series 1000, Operational and Security Grade 1 Certified Products Directory (CPD) listed mortise locksets. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide locksets with functions and features as follows:

a. Heavy duty 12-gauge wrought steel case.
b. Stainless steel 3/4" one-piece anti-friction reversible latchbolt with a one-piece hardened stainless steel 1” projection deadbolt.
c. Where required by code, provide knurling or abrasive coating on all levers leading to hazardous areas.
d. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
e. Meets UL Certification Directory ZHLL.R21744 for products used in windstorm rated assemblies.
f. Status indicators inside, outside, or on both sides of doors as specified; available with wording for “locked/unlocked”, “vacant/occupied” or custom wording options. Indicator to be located above the cylinder with the inside thumb-turn not blocking the visibility of the indicator status.
g. Ten-year limited warranty for mechanical functions.

2. Manufacturers:

a. Basis of Design: Sargent Manufacturing (SA) - 8200 Series.
b. Corbin Russwin Hardware (COR) – ML2000 Series.
c. Schlage (SC) – L9000 Series.

2.9 CYLINDRICAL LOCKS AND LATCHING DEVICES

A. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Operational Grade 1 Certified Products Directory (CPD) listed cylindrical locksets. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide locksets with functions and features as follows:

a. Meets ANSI/BHMA A156.41 for single motion egress.

b. Where required by code, provide knurling or abrasive coating on all levers leading to hazardous areas.
c. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
d. Exceeds ANSI/BHMA A156.2 requirements by 2.6 times for 3,100 in-lb. abusive locked lever torque with no entry while maintaining egress.
e. Exceeds ANSI/BHMA A156.2 requirements by 8 times for 1,600 lbs. offset lever pull with no entry for protection against attacks.
f. Exceeds ANSI/BHMA A156.3 requirements by 2 times for latch retraction with 100 lb. preload while maintaining operation in warped doors.
g. Exceeds ANSI/BHMA A156.3 requirements by 20 times for no access with minimum 100 vertical impacts for protection against vandalism attempts.
h. Independent return springs allow lock to exceed ANSI/BHMA A156.2 Grade 1 cycle requirements without lever sag.
i. Ten-year limited warranty for mechanical functions.

2. Manufacturers:

a. Basis of Design: Sargent Manufacturing (SA) - 10X Line.
b. Corbin Russwin Hardware (COR) – CLX3300 Series.
c. Schlage (SC) – ND Series.

2.10 DEADLOCKS AND LATCHES

A. Cylindrical Deadlocks: ANSI/BHMA A156.36 Grade 1 Certified Products Directory (CPD) listed deadlocks to fit standard ANSI 161 preparation. Provide tapered collars to resist vandalism and 1" throw solid steel bolt with hardened steel roller pins. Deadlocks to be products of the same source manufacturer and keyway as other locksets.

1. Manufacturers:

a. Basis of Design: Sargent Manufacturing (SA) - 480 Series.
b. Corbin Russwin Hardware (COR) – DL4000 Series.
c. Schlage (SC) L460 Series.

B. Narrow Case Deadlocks and Deadlatches: ANSI/BHMA 156.13 Series 1000 Grade 1 narrow case deadlocks and deadlatches for swinging or sliding door applications. All functions shall be manufactured in a single sized case formed from 12 gauge minimum, corrosion resistant steel (option for fully stainless steel case and components). Provide minimum 2 7/8" throw laminated stainless steel bolt. Bottom rail deadlocks to have 3/8” diameter bolts.

1. Manufacturers:

a. Basis of Design: Adams Rite Manufacturing (AD) - MS1850S / MS1950 Series or equal as described above.

2.11 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.12 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. Exit devices shall have a five-year warranty.
2. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
3. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer’s catalog and template book for specific requirements.
4. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
5. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
6. Flush End Caps: Provide flush end caps made of architectural metal in the same finish as the devices as in the Hardware Sets. Plastic end caps will not be acceptable.
7. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

8. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
9. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
10. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
11. Rail Sizing: Provide exit device rails factory sized for proper door width application.
12. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed exit devices. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide exit devices with functions and features as follows:

a. Where required by code, provide knurling or abrasive coating on all levers leading to hazardous areas.
b. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
c. Five-year limited warranty for mechanical features.

2. Electromechanical exit devices shall have the following functions and features:

a. Universal Molex plug-in connectors that have standardized color-coded wiring and are field configurable in fail safe or fail secure and operate from 12vdc to 24vdc regulated.
b. EcoFlex or equivalent technology that reduces energy consumption up to 92% as certified by GreenCircle.
c. Options to be available for request-to-exit or enter signaling, latchbolt and touchbar monitoring.
d. Field configurable electrified trim to fail-safe or fail-secure that operates from 12-24VDC.
e. Five-year limited warranty for electromechanical features.

3. Manufacturers:

a. Basis of Design: Sargent Manufacturing (SA) - 80 Series.
b. Corbin Russwin Hardware (COR) – ED4000 / ED5000 Series.
c. Precision (PR) – Apex 2000 Series.

2.13 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.

1. Heavy duty surface mounted door closers shall have a 30-year warranty.

2. Manufacturers:

a. Sargent Manufacturing (SA) - 351 Series.
~~b. Dorma 8900 Series.~~
~~c. LCN Closers (LC) 4040XP Series.~~
d. No substitution.

2.14 ELECTROHYDRAULIC DOOR OPERATORS

A. Electrohydraulic Door Operators (High Traffic): Provide ANSI/BHMA A156.19 Certified Products Directory (CPD) listed low energy operators that meet ANSI/BHMA A156.4 requirements and are UL listed for use on fire rated doors and UL10C certified that comply with requirements for the Americans with Disabilities Act (ADA). Operators shall be verified by GreenCircle to offer energy savings of 19% when compared to similar products to accommodate openings up 250 pounds and 48” wide.

1. Provide operators with features as follows:

    a. Non-handed with push and pull side mounting.
    b. Operates as mechanical surface closer during close cycles, when door is opened manually or if power is off.
    c. Activation by push button, hands-free or radio frequency devices.
    d. On board electronics to collect usage and cycle count data to facilitate preventative maintenance/diagnostics.
    e. Two-year limited warranty.
    f. Wi-Fi interface where the operator is a secure, password protected WiFi hot spot with no connection to building's IT required.
        1) Simple setup with no app required.
        2) View status and make adjustments without removing the cover.
        3) Built-in logic to support single use restroom applications with no external relay boards, logic modules, position switches required.
    g. Mounting backplate to simplify and speed up installation.

2. Operators shall have the following functionality:

    a. Adjustable Hold Open: Amount of time a door will stay in the full open position after an activation.
    b. Blow Open for Smoke Ventilation: Door opens when signal is received from alarm system allowing air or smoke to flow through opening. Door will stay open until signal from alarm system is stopped.
    c. Infinite Hold Open: Door will hold open at set position until power is turned off.
    d. Obstruction Detection: Door closes if it hits an obstruction while opening; door will reverse to open position if it hits an obstruction while closing. Door will stop once it hits an obstruction and will rest against the obstruction until removed.
    e. Open Delay: Delays operator opening for locking hardware.
    f. Overload Safety Shut-Off: After two minutes of receiving a door activation signal, inverter times out and door closes to prevent motor/inverter damage.
    g. Presence Detector Input: Input for external sensor to detect presence at door open or close position only.
    h. Push & Go: As the door is manually opened, the operator "senses" movement and opens door to the full-open position.
    i. Selector Mode Switch: Off disables the signal inputs unless Blow Open is activated, on activates the signal inputs, hold open activates the unit (unless Blow Closed is activated) to the hold open position.
    j. Vestibule Delay: When the wall switch is pressed, first door in vestibule will open. Second door will open once vestibule door delay has expired. Delay is adjustable.

3. Manufacturers:

    a. Basis of Design: Norton Rixson (NO) - 6000 Series.
    b. Stanley – Magic Force Series.

2.15 SURFACE MOUNTED CLOSER HOLDERS

A. Electromagnetic Door Holders: ANSI A156.15 electromagnetic door holder/releases with a minimum 20 to 40 pounds holding power and single coil construction able to accommodate.12VDC, 24VAC, 24VDC and 120VAC. Coils to be independently wound, employing an integral fuse and armatures to include a positive release button.

1. Manufacturers:

   a. Basis of Design: Norton Rixson (RF) - 980/990 Series.
   b. Sargent Manufacturing (SA) 1560 Series.
   c. LCN Door Closers (LC) – SEM7800 Series.

2.16 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1” LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
3. Where plates are applied to fire rated doors with the top of the plate more than 16” above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer’s catalog and template book for specific requirements for size and applications.
4. Protection Plates: ANSI/BHMA A156.6 protection plates (kick, armor, or mop), fabricated from the following:

   a. Stainless Steel: 300 grade, 050-inch thick.

5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
6. Manufacturers:

   a. Basis of Design: Rockwood (RO).
   b. Trimco (TC).

2.17 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Manufacturers:

a. Basis of Design: Rockwood (RO).
b. Trimco (TC).

C. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.

1. Manufacturers:

a. Basis of Design: Norton Rixson (RF).
b. Sargent Manufacturing.

2.18 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Manufacturers:

1. Basis of Design: Pemko (PE).
2. Reese Enterprises Inc. (RE).
3. National Guard Products (NG)>

2.19 ELECTRONIC ACCESSORIES

A. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.

1. Manufacturers:

a. Basis of Design: Securitron (SU) - DPS Series or equal as described above.

B. Intelligent Switching Power Supplies: Provide power supplies with single, dual or multi-voltage configurations at 12 and/or 24VDC. Power Supply shall have battery backup function with an integrated battery charging circuit. The power supply shall have a standard, integrated Fire Alarm Interface (FAI). The power supply shall provide capability for secondary voltage, power distribution, direct lock control and network monitoring through add on modules. The power supply shall be expandable up to 16 individually protected outputs. Output modules shall provide individually protected, continuous outputs and/or individually protected, relay controlled outputs. Network modules shall provide remote monitoring functions such as status reporting, fault reporting and information logging.

1. Manufacturers:

a. Basis of Design: Securitron (SU) - AQL Series or equal as described above.

2.20 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.21 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. DHI TDH-007-20: Installation Guide for Doors and Hardware.
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

A. Field Inspection (Punch Report): Reference Division 01 Sections “Closeout Procedures”. Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.

1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

1. Quantities listed are for each pair of doors, or for each single door.
2. The supplier is responsible for handing and sizing all products.
3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

B. Refer to Section 08 7101, Door Hardware Sets, for hardware sets.

END OF SECTION 087100

SECTION 12 3553.19 - WOOD LABORATORY CASEWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Standard and custom wood cabinets and cabinet hardware.

B. ~~Tables.~~

C. ~~Acid storage cabinets.~~

D. ~~Solvent storage cabinets.~~

E. Laboratory sinks.

F. Pegboards.

1.2 RELATED REQUIREMENTS

A. Section 01 3566.42 - Sustainability Compliance Procedures.

B. Section 06 1000 - Rough Carpentry: Blocking and nailers for anchoring casework.

C. Section 07 9200 - Joint Sealants: Sealing joints between casework and countertops and adjacent walls, floors, and ceilings.

D. Section 12 3600 - Countertops: Epoxy resin countertops for laboratory casework.

1.3 DEFINITIONS

A. Exposed: Portions of casework visible when drawers and cabinet doors are closed, including end panels, bottoms of cases more than 42 inches above finished floor, tops of cases less than 72 inches above finished floor and all members visible in open cases or behind glass doors.

B. Semi-Exposed: Portions of casework and surfaces behind solid doors, tops of cases more than 72 inches above finished floor and bottoms of cabinets more than 30 inches but less than 42 inches above finished floor.

C. Concealed: Sleepers, web frames, dust panels and other surfaces not generally visible after installation and cabinets less than 30 inches above finished floor.

1.4 REFERENCE STANDARDS

A. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2023.

B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

D. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2022.

E. BHMA A156.9 - American National Standard for Cabinet Hardware; 2015.

F. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2016.

G. NFPA 30 - Flammable and Combustible Liquids Code; 2018.

H. SEFA 1 - Laboratory Fume Hoods; 2010.

I. SEFA 2 - Installations; 2010.

J. SEFA 3 - Laboratory Work Surfaces; 2010.

K. SEFA 7 - Laboratory Fixtures; 2010.

L. SEFA 8W - Laboratory Grade Wood Casework; 2016.

M. SEFA 11 - Liquid Chemical Storage Cabinets; 2012.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate installation of casework with related items.

B. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by all affected installers.

1.6 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Component dimensions, configurations, construction details, joint details, attachments; manufacturer's catalog literature on hardware, accessories, and service fittings, if any.

C. CTHPB Documentation Submittals: Comply with Section 01 3566.42 - Sustainability Compliance Procedures and provide the following in addition to other submittals:
   1. Product Data for Credit b4: For composite wood products, documentation indicating that product contains no urea formaldehyde.
   2. Laboratory Test Reports for Credit b4: For ccomposite wood and agrifiber products, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
   3. Product Data for Credit d10: For products and materials required to comply with requirements for regional materials, documentation indicating location and distance from Project of manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

4. Certificates for Credit d13: Chain-of-custody certificates indicating that products specified to be made from certified wood comply with forest certification requirements. Include documentation that manufacturer is certified for chain of custody by an FSC-accredited certification body. Inlcude statement indicating cost for each certified wood product.

D. Shop Drawings: Indicate casework types, sizes, and locations, using large scale plans, elevations, and cross sections. Include rough-in and anchors and reinforcements placement dimensions and tolerances, clearances required, and utility locations, if any. Include coordinated information for laboratory equipment specified in another section and/or furnished by Owner.

E. Samples For Color Selection: Wood samples, fully finished, for color and species selection. Minimum Sample Size: 2 inches by 3 inches.

F. Test Reports: From independent laboratory indicating compliance with referenced chemical-resistance standards for cabinet finish and liner materials.

G. Installer's qualification statement.

H. Maintenance Data: Manufacturer's recommendations for care and cleaning.

I. Finish touch-up kit for each type and color of materials provided.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than 7 years of documented experience and approved by manufacturer.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Protect items provided by this section, including finished surfaces and hardware items during handling and installation. For metal surfaces, use polyethylene film or other protective material standard with the manufacturer.

B. Acceptance at Site:
1. Do not deliver or install casework until the conditions specified under Part 3, Examination Article of this section have been met. Products delivered to sites that are not enclosed and/or improperly conditioned will not be accepted if warping or damage due to unsatisfactory conditions occurs.

C. Storage:
1. Store casework in the area of installation. If necessary, prior to installation, temporarily store in another area, meeting the environmental requirements specified under Part 3, "Site Verification of Conditions" paragraph of this section.

1.9 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Correct defective work within a five year period after Date of Substantial Completion, at no additional cost to Owner. Defects include, but are not limited to:
   1. Ruptured, cracked, or stained finish coating.
   2. Discoloration, or lack of finish integrity.
   3. Cracking or peeling of finish.
   4. Failure of hardware.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Wood Laboratory Casework:
   1. CiF Lab Solutions LP: www.cifsolutions.com/#sle.
   2. Kewaunee Scientific Corp: www.kewaunee.com/#sle.
   3. Mott Manufacturing: www.mott.ca/#sle.

B. Countertops:
   1. Durcon (Epoxy resin, Solid phenolic): www.durcon.com/#sle.

2.2 WOOD LABORATORY CASEWORK

A. Wood Laboratory Casework: Solid wood and wood panel construction; each unit self-contained and not dependent on adjacent units or building structure for rigidity; in sizes necessary to avoid field cutting except for scribes and filler panels. Include adjustable levelers for base cabinets.
   1. Style: Flush overlay. Ease doors and drawer fronts slightly at edges.
   2. Cabinet Nominal Dimensions: Unless otherwise indicated, provide cabinets of widths and heights indicated on drawings, and with following front-to-back dimensions:
      a) Base Cabinets: 22 inches.
      b) Tall Cabinets: 22 inches.
      c) Upper Cabinets: 16 inches.
   3. Construction: Joints doweled, glued and screwed, except drawers may be lock-shoulder jointed; with interior of units smooth and flush; cabinet bottom flush with top of face frame; without gaps or inaccessible spaces or areas where dirt or moisture could accumulate.
   4. Structural Performance: In addition to the requirements of SEFA 3, SEFA 7, and SEFA 8W, components safely support the following minimum loads:
      a) Base Units: 500 pounds per linear foot across the cabinet ends.
      b) Suspended Units: 300 pounds static load.
      c) Tables: 300 pounds, minimum, on four legs.
      d) Drawers: 125 pounds, minimum.
      e) Hanging Wall Cases: 300 pounds.
   5. Fittings and Fixture Locations: Cut and drill counter tops, backs, and other components for service outlets and fixtures.
   6. Removable back panels on base cabinets. Provide partial height back panels at sink cabinets.
   7. Factory-finish all exposed and semi-exposed surfaces with the same finish.

a) Finish Performance: Provide finish on all surfaces having chemical resistance of Level 0 (no change) or Level 1 (slight change of gloss or slight discoloration) according to SEFA 8W and no visible effect when surface is exposed to:
   1) Hot water at temperature between 190 degrees F and 205 degrees F trickled down the test surface at 45 degree angle for 5 minutes.
   2) Constant moisture in the form of 2 by 3 by 1 inch thick cellulose sponge kept continually saturated with water and in contact with test surface for 100 hours.
b) Preparation: Wood sanded smooth, free from dust and mill marks.
c) Stain: Single application of clean, manufacturer-recommended stain of selected color; tinted coating not acceptable.
d) Coating: Clear, superior-quality, chemical-resistant acyclic urethane; applied in accordance with manufacturer instructions, force-dried, sanded and wiped clean.
e) Coats: Multiple coats as required to achieve minimum 1.5 mil dry film thickness.
f) Appearance: Clear satin gloss; not cloudy or muddy.

B. ~~Acid Storage Cabinets: Construction identical to other cabinets, with following exceptions:~~
   1. ~~Completely lined with corrosion-resistant liner material; stainless steel fasteners for all connections and hardware inside cabinets.~~
   2. ~~Shelves: Removable, same material as cabinet, covered with corrosion-resistant liner.~~
   3. ~~Bottom Pan: Liquid-tight liner covering entire bottom of acid storage cabinet.~~
   4. ~~Vents: Comply with SEFA 1.~~

C. ~~Solvent (Flammable and Combustible Liquids) Storage Cabinets: Construction identical to other cabinets, with following exceptions:~~
   1. ~~Construct to NFPA 30 and applicable OSHA requirements.~~
   2. ~~Comply with SEFA 11.~~
   3. ~~Fire Resistance: Maximum internal temperature of 325 degrees F at the center, and 1 inch from top of the cabinet when cabinet is subjected to a ten minute fire test that simulates fire exposure of a standard time-temperature curve specified in ASTM E119.~~
   4. ~~Shelves: Full depth, adjustable.~~
   5. ~~Bottom Pan: 2 inches deep, liquid-tight pan covering entire bottom of cabinet.~~
   6. ~~Cabinet Hardware: UL-listed.~~
      a) ~~Hinges: Full-length stainless steel continuous (piano) hinges.~~
      b) ~~Door Handles: Manufacturer's standard, with slip-resistant grip.~~
   7. ~~Vents: Provide venting capable of achieving ten air changes per hour.~~
      a) ~~Tie into building hazardous exhaust system.~~
      b) ~~Vent Connections: 1-1/2 inch minimum diameter, corrosion-resistant piping having flame spread index of 25 or less when tested in accordance with ASTM E84.~~
      c) ~~Vent each cabinet separately with sufficient mixing distance for incompatible chemicals.~~
      d) ~~Provide minimum of two vents with fire arrestor for each cabinet.~~
   8. ~~Signage: Provide manufacturer's standard signage reading "FLAMMABLE - KEEP FIRE AWAY" or similar message in bright red color.~~

D. ~~Mobile Tables: With standard aprons manufactured of not less than 3/4 by 3-1/2 inch solid lumber, machined to receive corner blocks, and bolted to 2-1/8 by 2-1/8 inch solid hardwood legs. 3/8 inch leveling devices, and slip-on type black PVC shoes.~~
   1. ~~Provide table legs designed to receive locking swivel casters.~~
      a) ~~Caster wheels of non-marring type urethane tires in gray or black color.~~

2. ~~Table Drawers: Where indicated, manufacturer's standard drawers. Single drawer for tables up to 48 inches wide, two drawers for wider tables.~~

2.3 CABINET HARDWARE

A. Manufacturer's standard types, styles, and finishes.

B. Comply with BHMA A156.9 requirements.

C. Finish of exposed stainless steel components: No.4 finish.

D. Locks: Provide locks on casework drawers and doors where indicated. Lock with 5 pin cylinder and 2 keys per lock.

E. Shelves in Cabinets:
   1. Shelf Standards and Rests: Vertical standards with rubber button fitted rests, satin chromium plated over nickel on base material.

F. Swinging Doors:
   1. Hinges: Offset pin, number as required by referenced standards for width, height, and weight of door.
   2. Catches: Magnetic.
   3. Pulls: Chrome wire pulls, 4 inches wide.
   4. Drawers:
      a) Pulls: Chrome wire pulls, 4 inches wide.
      b) Slides: Steel, full extension arms, ball bearings; self-closing; capacity as recommended by manufacturer for drawer height and width.

2.4 COUNTERTOPS

A. Countertops: Epoxy resin countertops - see Section 12 3600.

2.5 SINKS

A. Laboratory sinks.
   1. General: Manufacturer's adjustable support system for undermount sink installation.
   2. Sink : Single-bowl.
      a) Material: Stainless Steel

2.6 PEGBOARDS

A. Drying Rack **ES02**: Stainless steel pegboards with pre-drilled or punched holes in a staggered pattern, designed to accept removable white polypropylene pegs. With each pegboard include a stainless steel drip-trough with drain outlet and matching diameter 36 inches long PVC drain hose.
   1. Size: As indicated on drawings.
   2. Basis of Design Product: See Specialty Equipment Schedule on Drawing A912.

2.7 GOGGLE SANITIZING CABINETS

A. Goggle Cabinet Metal **ES01**: Lockable cabinet with UV lamp and power cord for sanitizing goggles and safety glasses.
   1. Capacity: (36) goggles minimum.
   2. Operation: Lamp automatically switches off if door is opened during sanitizing process.
   3. Basis of Design Product: See Specialty Equipment Schedule on Drawing A912.

2.8 MATERIALS

A. Wood-Based Materials:
   1. Solid Wood: Air-dried to 4.5 percent moisture content, then tempered to 6 percent moisture content before use.
   2. Composite Wood Panels: Containing no urea-formaldehyde resin binders.

B. Exposed Solid Wood: Clear, dry, sound, plain sawn, selected for compatible grain and color, no defects.

C. Exposed Hardwood Plywood: Veneer core; HPVA HP-1 Grade AA, Type I; same species as exposed solid wood, clear, compatible grain and color, no defects. Band exposed edges with solid wood of same species as veneer.

D. Stainless Steel Sheet: ASTM A666 Type 304.

E. ~~Solvent-Resistant Liner Material: High-density, asbestos-free, non-combustible, calcium-silicate-based panel consisting of autoclaved Portland cement, mineral fillers and synthetic fibers.~~

F. ~~Solvent-Resistant Liner Material: Polypropylene.~~

G. Sealant for Use in Casework Installation:
   1. One component, clear silicone base sealant, chemical curing complying with ASTM C920, Type S, Grade NS, Class 25, Use NT, when tested to glass and aluminum, anti-fungus composition.

2.9 ACCESSORIES

A. Toespace Grilles: Manufacturer's standard grille.

PART 3 EXECUTION

3.1 EXAMINATION

A. Site Verification of Environmental Conditions:
   1. Do not deliver casework until the following conditions have been met:
      a) Building has been enclosed (windows and doors sealed and weather-tight).
      b) An operational HVAC system that maintains temperature and humidity at occupancy levels has been put in place.
      c) Ceiling, overhead ductwork, piping, and lighting have been installed.

d) Installation areas do not require further "wet work" construction.

B. Verify adequacy of support framing and anchors.

C. Verify that service connections are correctly located and of proper characteristics.

3.2 INSTALLATION

A. Perform installation in accordance with manufacturer's instructions, approved shop drawings, and with SEFA 2.

B. Use anchoring devices to suit conditions and substrate materials encountered. Use concealed fasteners to the greatest degree possible. Use exposed fasteners only where allowed by approved shop drawings, or where concealed fasteners are impracticable.

C. Set casework items plumb and square, securely anchored to building structure.
1. Base Cabinets: Examine floor levelness and flatness of installation space. Do not proceed with installation if encountered floor conditions required more than 3/4 inch leveling adjustment. When installation conditions are acceptable, for each space, establish the high point of the floor. Set and make level and plumb first cabinet in relation to this high point.
2. Wall Cabinets: Examine wall surfaces in installation space. Do not proceed with installation if the following conditions are encountered:
   a) Maximum variation from plane of masonry wall exceeds 1/4 inch in 10 ft and 1/2 inch in 20 ft or more, and/or maximum variation from plumb exceeds 1/4 inch per story.
   b) Maximum Variation of finished gypsum board surface from true flatness exceeds 1/8 inch in 10 feet in any direction.

D. Align cabinets to adjoining components, install filler and/or scribe panels where necessary to close gaps.

E. Fasten together cabinets in continuous runs, with joints flush, uniform and tight. Misalignment of adjacent units not to exceed 1/16 inch. In addition, do not exceed the following tolerances:
1. Variation of Tops of Base Cabinets from Level: 1/16 inch in 10 feet.
2. Variation of Faces of Cabinets from a True Plane: 1/8 inch in 10 feet.
3. Variation of Adjacent Surfaces from a True Plane (Lippage): 1/32 inch.
4. Variation in Alignment of Adjacent Door and Drawer Edges: 1/16 inch.

F. Secure upper and floor cabinets to concealed blocking at gypsum board assemblies.

G. Separate dissimilar metals to prevent galvanic action.

H. Base Cabinets: Fasten cabinets to service space framing and/or wall substrates, with fasteners spaced not more than 16 inches on center. Bolt adjacent cabinets together with joints flush, tight, and uniform.
1. Where base cabinets are installed away from walls or service space framing, anchor to floor at toe space at not more than 24 inches on center, and at sides of cabinets with not less than two fasteners per side.

I. Wall Cabinets: Fasten to hanging strips, and/or wall substrates. Fasten each cabinet through back, near top, at not less than 16 inches on center.

J. Install hardware uniformly and precisely. Set hinges snug and flat in mortises.

K. ~~Vented Cabinets: Install in strict compliance with manufacturer's written installation instructions.~~
   1. ~~Use only rigid materials for venting. No flexible materials permitted.~~

L. Countertops:
   1. Coordinate installation of the work of this section with the installation of laboratory casework countertops specified in Section 12 3600.
   2. Install countertops in one true plane, with ends abutting at hairline joints, and no raised edges.

M. Replace units that are damaged, including those that have damaged finishes.

3.3 ADJUSTING

A. Adjust operating parts, including doors, drawers, hardware, and fixtures to function smoothly.

3.4 CLEANING

A. Clean casework and other installed surfaces thoroughly.

3.5 PROTECTION

A. Do not permit finished casework to be exposed to continued construction activity.

B. Protect casework and countertops from ongoing construction activities. Prevent installers from standing on or storing tools and materials on casework or countertops.

C. Repair damage that occurs prior to Date of Substantial Completion, including finishes, using methods prescribed by manufacturer; replace units that cannot be repaired to like-new condition.

END OF SECTION 12 3553.19

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SECTION 14 2100 - ELECTRIC TRACTION ELEVATORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Complete electric traction elevator systems.
   1. Passenger type.
   2. The work required under this section consists of all labor, materials and services required for the complete installation (including operational verification) of all the equipment required for the elevator(s) as herein specified.

1.2 RELATED REQUIREMENTS

A. Section 01 3566.42 - Sustainability Compliance Procedures.

B. Section 03 3000 - Cast-in-Place Concrete.

C. Section 05 50 00 – Metal Fabrications: Delegated design requirements for pit ladder, ~~divider beams~~, supports for entrances and rails, and hoisting beam at top of elevator hoistway.

D. Section 07 1300 - Sheet Waterproofing: Waterproofing of elevator pit.

E. Section 21 1300 - Fire-Suppression Sprinkler Systems.

F. Section 26 0533.13 - Conduit for Electrical Systems: Electrical conduit requirements.

G. Section 26 0583 - Wiring Connections: Wiring connection requirements.

1.3 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2014 (2015 Errata).

B. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.

C. AISC 360 - Specification for Structural Steel Buildings; 2022.

D. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.

E. ASME A17.1 - Safety Code for Elevators and Escalators Includes Requirements for Elevators, Escalators, Dumbwaiters, Moving Walks, Material Lifts, and Dumbwaiters with Automatic Transfer Devices; 2022.

F. ASME A17.2 - Guide for Inspection of Elevators, Escalators, and Moving Walks Includes Inspection Procedures for Electric Traction and Winding Drum Elevators, Hydraulic Elevators, Inclined Elevators, Limited-Use/Limited-Application Elevators, Private Residence Elevators, Escalators, Moving Walks, and Dumbwaiters; 2020.

G. ASME QEI-1 - Standard for the Qualification of Elevator Inspectors; 2018.

H. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

I. ASTM A276/A276M - Standard Specification for Stainless Steel Bars and Shapes; 2023.

J. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

K. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2023.

L. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

M. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

N. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification; 2021.

O. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2023).

P. ITS (DIR) - Directory of Listed Products; Current Edition.

Q. NEMA MG 1 - Motors and Generators; 2018.

R. NFPA 13 - Standard for the Installation of Sprinkler Systems; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

S. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

T. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2019.

U. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

V. UL (DIR) - Online Certifications Directory; Current Edition.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate work with other installers to provide necessary conduits for proper installation of wiring, including but not limited to the following:
      a) Elevator pit for lighting and sump pump.
      b) Automatic transfer switch from controller cabinet.
      c) Fire alarm panel from controller cabinet.
   2. Coordinate work with other installers for equipment provisions necessary for proper elevator operation, including but not limited to the following:
      a) Automatic transfer switches with auxiliary contacts for emergency power transfer status indication.

b) Shunt trip devices for automatic disconnection of elevator power prior to fire suppression system activation; include provisions for shunt trip power monitoring.

B. Preinstallation Meeting: Convene meeting at least one week prior to start of this work.
1. Review schedule of installation, proper procedures and conditions, and coordination with related work.
2. Review use of elevator for construction purposes, hours of use, scheduling of use, cleanliness of car, employment of operator, and maintenance of system.

C. Construction Use of Elevator: Not permitted.

1.5 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Submit data on following items:
1. Car, guide rails, buffers, and other components in hoistway.
2. Maximum rail bracket spacing.
3. Maximum loads imposed on guide rails requiring load transfer to building structure.
4. Signal and operating fixtures, operating panels, and indicators.
5. Car design, dimensions, layout, and components.
6. Car and hoistway door and frame details.
7. Clearances and travel of car.
8. Clear inside hoistway and pit dimensions.
9. Electrical characteristics and connection requirements.

C. CTHPB Documentation Submittals: Comply with Section 01 3566.42 - Sustainability Compliance Procedures and provide the following in addition to other submittals:
1. Product Data for Credit d8: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
2. Product Data for Credit d10: For products and materials required to comply with requirements for regional materials, documentation indicating location and distance from Project of manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

D. Shop Drawings: Include appropriate plans, elevations, sections, diagrams, and details on following items:
1. Elevator Equipment and Machines: Size and location of driving machines, power units, controllers, governors, and other components.
2. Hoistway Components: Size and location of car machine beams, guide rails, buffers, ropes, and other components.
3. Rail bracket spacing; maximum loads imposed on guide rails requiring load transfer to building structural framing.
4. Individual weight of principal components; load reaction at points of support.
5. Loads on hoisting beams.
6. Clearances and over-travel of car and counterweight.
7. Locations in hoistway and machine room of traveling cables and connections for car lighting and telephone.

8. Location and sizes of hoistway and car doors and frames.
9. Calculated heat dissipation of elevator equipment in machine room.
10. Interface with building security system.
11. Electrical characteristics and connection requirements.
12. Indicate arrangement of elevator equipment and allow for clear passage of equipment through access openings.

E. Delegated Design Submittal: Design data: Submit drawings and supporting calculations, signed and sealed by a qualified professional structural engineer, for the following:
   1. Hoisting beam or machine beam.
   2. Supports for entrances and rails:
      a) Structural steel shapes for subsills.
      b) Attachment plates and angles for subsills at entrances.
      c) Pit ladders.

F. Samples: Submit samples illustrating car floor material, car interior finishes, car and hoistway door and frame finishes, and handrail material and finish in the form of cut sheets, finish color selection brochures, or physical samples.

G. Designer's qualification statement.

H. Manufacturer's qualification statement.

I. Installer's qualification statement.

J. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated no more than 12 months before start of scheduled welding work.

K. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

L. Operation and Maintenance Data:
   1. Parts catalog with complete list of equipment replacement parts; identify each entry with equipment description and identifying code.
   2. Operation and maintenance manual.
   3. Schematic drawings of equipment and wiring diagrams of installed electrical equipment with list of corresponding symbols to identify markings on machine room and hoistway apparatus.

1.6 QUALITY ASSURANCE

A. Designer Qualifications: Design guide rails under direct supervision of a licensed Professional Structural Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum ten years documented experience.

C. Installer Qualifications: Supervisor along with trained elevator installation personnel on staff of elevator equipment manufacturer.

D. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and no more than 12 months before start of scheduled welding work.

E. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of type specified in this section.

F. Products Requiring Fire Resistance Rating: Listed and classified by ITS (DIR), UL (DIR), or testing agency acceptable to authorities having jurisdiction.

G. Products Requiring Electrical Connection: Listed and classified by UL (DIR) or testing agency acceptable to authorities having jurisdiction as suitable for the purpose indicated in construction documents.

1.7 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Provide manufacturer's warranty for defective material and workmanship for one year from Date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Electric Traction Elevators:
   1. Basis-of-Design: **Otis Elevator Company; Gen3 Edge:** www.otis.com/#sle.
   2. Other Acceptable Manufacturers:
      a) KONE: www.kone.us/#sle.
      b) ThyssenKrupp Elevator: www.thyssenkruppelevator.com/#sle.

B. Substitutions: See Section 01 6000 - Product Requirements.

C. Source Limitations: Provide elevator and associated equipment and components produced by a single manufacturer and obtained from a single supplier.

2.2 ELECTRIC TRACTION ELEVATORS

A. Electric Traction Passenger Elevator: Gearless machine-room-less elevator where all components fit inside the hoistway with the controller in the top landing entrance frame.
   1. Drive System: Regenerative.
   2. Operation Control Type:
      a) Selective Collective Automatic Operation Control.
   3. Service Control Type:
      a) Standard service control only.
   4. Interior Car Height: 93 inch.
   5. Rated Net Capacity: 3500 pounds.
   6. Rated Speed: 150 feet per minute.
   7. Hoistway Size: As indicated on drawings.
   8. Interior Car Platform Size: 77-9/16 inch wide by 77-9/16 inch deep.

9. Elevator Pit Depth: 48 inch.
10. Overhead Clearance at Top Floor to Hoist Beam: 127 inches.
11. Travel Distance: As indicated on drawings.
12. Number of Stops: As indicated on drawings.
13. Number of Openings: One Front; one Rear.

2.3 COMPONENTS

A. Elevator Equipment:
   1. Motors, Controllers, Controls, Buttons, Wiring, Devices, and Indicators: Comply with NFPA 70 requirements; see Section 26 0583 for additional information.
   2. Guide Rails, Cables, Counterweights, Sheaves, Buffers, Attachment Brackets, and Anchors: Design criteria for components includes safety factors in accordance with applicable requirements of Elevator Code, ASME A17.1.
   3. Buffers:
      a) Spring type for elevators with speed less than or equal to 200 feet per minute.
   4. Lubrication Equipment: Manufacturer's standard, as required.

B. Electrical Equipment:
   1. Motors: NEMA MG 1.
   2. Spare Conductors: Provide ten percent in extra conductors and two pairs of shielded audio cables in traveling cables.
   3. Include wiring and connections to elevator devices remote from hoistway and between elevator machine room. Provide additional components and wiring to suit machine room layout. See Section 26 0583.

2.4 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with ASME A17.1, applicable local codes, and authorities having jurisdiction (AHJ).

B. Accessibility Requirements: Comply with ADA Standards.

C. Perform structural steel design, fabrication, and installation in accordance with AISC 360.

D. Comply with seismic design requirements in accordance with ASME A17.1, applicable local codes, and authorities having jurisdiction (AHJ).
   1. Comply with Elevator Safety Requirements for Seismic Risk Zone in accordance with ASME A17.1, ASCE 7, and other related requirements.

E. Perform welding of steel in accordance with AWS D1.1/D1.1M.

F. Fabricate and install door and frame assemblies in accordance with NFPA 80 and complying with requirements of authorities having jurisdiction (AHJ).

G. Perform electrical work in accordance with NFPA 70.

H. Comply with venting or pressurization of hoistway design in accordance with HVAC system requirements and authorities having jurisdiction (AHJ).

I. Comply with fire protection sprinkler system of hoistway design in accordance with NFPA 13 requirements and authorities having jurisdiction (AHJ). See Section 21 1300.

2.5 OPERATION CONTROLS

A. Elevator Controls: Provide landing operating panels and landing indicator panels.
   1. Landing Operating Panels: Metallic type, one for originating "Up" and one for originating "Down" calls, one button only at terminating landings; with illuminating indicators.
   2. Landing Indicator Panels: Illuminating.
   3. Comply with ADA Standards for elevator controls.

B. Interconnect elevator control system with building security, fire alarm, card access, smoke alarm, and building management control systems.

C. Door Operation Controls:
   1. Program door control to open doors automatically when car arrives at floor landing.
   2. Render "Door Close" button inoperative when car is standing at dispatch landing with doors open.
   3. Door Safety Devices: Moveable, retractable safety edges, quiet in operation; equipped with photo-electric light rays.

D. Provide "Firefighter's Emergency Operation" in accordance with ASME A17.1, applicable building codes, and authorities having jurisdiction (AHJ).
   1. Designated Landing: Main Lobby.

2.6 OPERATION CONTROL TYPE

A. Selective Collective Automatic Operation Control: Applies to car in single elevator shaft.
   1. Refer to description provided in ASME A17.1.
   2. Automatic operation by means of one button in the car for each landing served and by "UP" and "DOWN" buttons at the landings.
   3. Stops are registered by momentary actuation of landing car buttons without consideration of the number of buttons actuated or the sequence buttons actuated, but the stops are made in the order that landings are reached in each direction of travel.
   4. All "UP" landing calls are made when car is traveling in the up direction.
   5. All "DOWN" landing calls are made when car is traveling in the down direction.
   6. Uppermost and lowermost calls are answered as soon as they are reached without consideration of the car travel direction.

2.7 EMERGENCY POWER

A. Set-up elevator operation to run with elevator emergency power supply when the normal building power supply fails, and in compliance with ASME A17.1 requirements.

B. Elevator Emergency Power Supply: Supplied by battery backup; provide elevator system components as required for emergency power characteristics.

C. Emergency Lighting: Comply with ASME A17.1 elevator lighting requirements.

D. Provide operational control circuitry for adapting the change from normal to emergency power.

E. Upon transfer to emergency power, advance one elevator at a time to a preselected landing, stop car, open doors, disable operating circuits, and hold in standby condition.

2.8 MATERIALS

A. Rolled Steel Sections, Shapes, Rods: ASTM A36/A36M.

B. Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G90/Z275 coating.

C. Stainless Steel Sheet: ASTM A666, Type 304; No. 4 Brushed finish unless otherwise indicated.

D. Stainless Steel Bars, Shapes and Moldings: ASTM A276/A276M, Type 304.

E. Extruded Aluminum: ASTM B221 (ASTM B221M), natural anodized finish unless otherwise indicated.

2.9 CAR AND HOISTWAY ENTRANCES

A. Elevator, Passenger:
   1. Car and Hoistway Entrances, Each Elevator Floor Lobby:
      a) Hoistway Fire Rating: As indicated on drawings.
      b) Elevator Door Fire Rating: 1 Hour.
      c) Framed Opening Finish and Material: Brushed stainless steel.
      d) Car Door Material: Stainless steel, with rigid sandwich panel construction.
      e) Hoistway Door Material: Stainless steel, with rigid sandwich panel construction.
      f) Door Type: Double leaf.
      g) Door Operation: Side opening, two speed.
      h) Door Width: 42 inch.
      i) Door Height: 84 inch.
      j) Sills: Extruded aluminum.

B. Sills/Thresholds: Configure to align with frame return and coordinate with floor finish.

2.10 CAR EQUIPMENT AND MATERIALS

A. Elevator Car, Passenger:
   1. Car Operating Panel: Provide main; flush-mounted applied face plate, with illuminated call buttons corresponding to floors served with "Door Open" button, "Door Close" button, and alarm button.
      a) Panel Material: Stainless steel; one per car.
      b) Car Floor Position Indicator: Above door with illuminating position indicators.
      c) Locate alarm button where it is unlikely to be accidentally actuated; not more than 54 inch above car finished floor.
      d) Provide matching service cabinet integral with front return panel, with hinged door and keyed lock in each car.
      e) Provide following within service cabinet as part of car operating panel:
         1) Switch for each auxiliary operational control, keyed.
         2) Switches for fan, light, and inspection control.
         3) Emergency light.
         4) Telephone cabinet and hard-wired connection with telephone.

5) Control for each other special feature specified.
6) Convenience outlet receptacle; 110 VAC, 15 amps.

2. Ventilation: Single-speed fan with grille in ceiling.
3. Flooring: Resilient tile, type as indicated on the Finish Product List on the drawings.
4. Wall Base: Recessed stainless steel, 4 inch high.
5. Front Return Panel: Stainless steel.
6. Door Wall: Stainless steel.
7. Side Walls: Plastic laminate, as selected by Architect..
8. Rear Wall: Plastic laminate, as selected by Architect.
9. Ceiling:
   a) Canopy Ceiling: Stainless steel.
   b) Lighting: Four LED fixtures, recessed.

B. Car Accessories:
   1. Certificate Frame: Stainless steel frame glazed with clear tempered glass, and attached with tamper-proof screws.
   2. Protective Pads: Canvas cover, padded with impact-resistant fill material, sewn with piping edges; fire resistant in compliance with ASME A17.1; brass grommets for supports, covering side and rear walls and front return, with cut-out for control panel; provide one set for each elevator.
      a) Color: Tan.
      b) Provide at least 4 inch clearance from bottom of pad to finished floor.
      c) Pad Supports: Stainless steel studs, and mounted from ceiling frame.

2.11 FINISHES

A. Powder Coat on Steel: Clean and degrease metal surface; apply one coat of primer; two coats of powder coat.

B. Baked Enamel on Steel: Clean and degrease metal surface; apply one coat of primer sprayed and baked; two coats of enamel sprayed and baked.

C. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20 Type I - Inorganic, comply with VOC limitations of authorities having jurisdiction (AHJ).

D. Clear Anodized Finish: Class I, AAMA 611 AA-M12C22A41 clear anodic coating with electrolytically deposited organic seal; not less than 0.7 mils, 0.0007 inch thick.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting this work.

B. Verify that hoistway and pit are ready for work of this section.

C. Verify hoistway shaft and openings are of correct size and within tolerance.

D. Verify location and size of machine foundation and position of machine foundation bolts.

E. Verify that electrical power is available and of correct characteristics.

3.2 PREPARATION

A. Arrange for temporary electrical power for installation work and testing of elevator components. See Section 01 5000 - Temporary Facilities and Controls for additional requirements.

B. Maintain elevator pit excavation free of water.

3.3 INSTALLATION

A. Coordinate this work with installation of hoistway wall construction.

B. Install system components, and connect equipment to building utilities.

C. Provide conduit, electrical boxes, wiring, and accessories; see Sections 26 0533.13 and 26 0583.

D. Mount machines and motors on vibration and acoustic isolators.
   1. Place on structural supports and bearing plates.
   2. Securely fasten to building supports.
   3. Prevent lateral displacement.

E. Install hoistway, elevator equipment, and components in accordance with approved shop drawings.

F. Install guide rails to allow for expansion and contraction movement of guide rails.

G. Accurately machine and align guide rails, forming smooth joints with machined splice plates.

H. Bolt or weld brackets directly to structural steel hoistway framing.

I. Field Welds: Chip and clean away oxidation and residue with wire brush; spot prime with two coats.

J. Install hoistway door sills, frames, and headers in hoistway walls; grout sills in place, set hoistway floor entrances in alignment with car openings, and align plumb with hoistway.

K. Structural Metal Surfaces: Clean surfaces of rust, oil, or grease; wipe clean with solvent; prime with two coats.

L. Adjust equipment for smooth and quiet operation.

3.4 TOLERANCES

A. Guide Rail Alignment: Plumb and parallel to each other in accordance with ASME A17.1 and ASME A17.2.

B. Car Movement on Aligned Guide Rails: Smooth movement, without any objectionable lateral or oscillating movement or vibration.

3.5 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements for additional requirements.

B. Testing and inspection by regulatory agencies will be performed at their discretion.
   1. Schedule tests with agencies and notify Owner and Architect.
   2. Obtain permits as required to perform tests.
   3. Document regulatory agency tests and inspections in accordance with requirements.
   4. Perform tests required by regulatory agencies.
   5. Furnish test and approval certificates issued by authorities having jurisdiction (AHJ).

C. Perform testing and inspection in accordance with requirements.
   1. Inspectors shall be certified in accordance with ASME QEI-1.
   2. Perform tests in accordance with ASME A17.2.
   3. Provide at least two weeks written notice of date and time of tests and inspections.
   4. Supply instruments and execute specific tests.

D. Operational Tests:
   1. Perform operational tests in the presence of Owner and Architect.
   2. At an agreed time, and the building occupied with normal building traffic, conduct tests to verify performance.
      a) Furnish event recording of each landing call registrations, time initiated, and response time throughout entire working day.

3.6 ADJUSTING

A. Adjust for smooth acceleration and deceleration of car to minimize passenger discomfort.

B. Adjust with automatic floor leveling feature at each floor landing to reach 1/4 inch maximum from flush with sill.

3.7 CLEANING

A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.

B. Remove protective coverings from finished surfaces.

C. Clean surfaces and components in accordance with manufacturers written instructions.

3.8 CLOSEOUT ACTIVITIES

A. See Section 01 7800 - Closeout Submittals for closeout submittals.

B. Demonstrate proper operation of equipment to Owner's designated representative.

3.9 PROTECTION

A. Do not permit construction traffic within car after cleaning.

B. Protect installed products until Date of Substantial Completion.

C. Touch up, repair, or replace damaged products and materials before Date of Substantial Completion.

END OF SECTION 14 2100

SECTION 26 2726 - WIRING DEVICES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Wall switches.

B. Receptacles.

C. Wall plates.

1.2 RELATED REQUIREMENTS

A. Division 01 – General Requirements

B. Division 09 - Finishes

C. Section 260400 – General Conditions for Electrical Trades

D. Section 260519 - Electrical Power Conductors and Cables.

E. Section 260526 - Grounding and Bonding for Electrical Systems.

F. Section 260503 – Equipment Wiring Connections.

G. Section 260533 – Raceways and Boxes for Electrical Systems.

H. Section 260553 - Identification for Electrical Systems.

I. Section 260943 - Networked Lighting Controls.

J. Section 262913 - Enclosed Controllers.

1.3 REFERENCE STANDARDS

A. FS W-C-596 - Connector, Electrical, Power, General Specification for; Revision H.

B. FS W-S-896 - Switches, Toggle (Toggle and Lock), Flush-mounted (General Specification); Revision G.

C. NECA 1 - Standard for Good Workmanship in Electrical Construction.

D. NECA 130 - Standard for Installing and Maintaining Wiring Devices.

E. NEMA WD 1 - General Color Requirements for Wiring Devices.

F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

G. UL 20 - General-Use Snap Switches; Current Edition, Including All Revisions.

H. UL 498 - Attachment Plugs and Receptacles; Current Edition, Including All Revisions.

I. UL 514D - Cover Plates for Flush-Mounted Wiring Devices; Current Edition, Including All Revisions.

J. UL 943 - Ground-Fault Circuit-Interrupters; Current Edition, Including All Revisions.

K. UL 1310 - Class 2 Power Units; Current Edition, Including All Revisions.

L. UL 1449 - Standard for Surge Protective Devices; Current Edition, Including All Revisions.

M. UL 1472 - Solid-State Dimming Controls; Current Edition, Including All Revisions.

N. UL 1917 - Solid-State Fan Speed Controls; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
2. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.
3. Coordinate the placement of outlet boxes for wall switches with actual installed door swings.
4. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
5. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

B. Sequencing:
1. Do not install wiring devices until final surface finishes and painting are complete.

1.5 SUBMITTALS

A. See Division 01 - General Requirements.

B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.
1. Wall Dimmers: Include derating information for ganged multiple devices.
2. Surge Protection Receptacles: Include surge current rating, voltage protection rating (VPR) for each protection mode, and diagnostics information.

C. Samples: One for each type and color of device and wall plate specified.

D. Certificates for Surge Protection Receptacles: Manufacturer's documentation of listing for compliance with UL 1449.

E. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

F. Operation and Maintenance Data:
1. Wall Dimmers: Include information on operation and setting of presets.
2. GFCI Receptacles: Include information on status indicators.
3. Surge Protection Receptacles: Include information on status indicators.

G. Project Record Documents: Record actual installed locations of wiring devices.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Division 01 - General Requirements, for additional provisions.
2. Screwdrivers for Tamper-Resistant Screws: Two for each type of screw.
3. Extra Keys for Locking Switches: Two of each type.
4. Extra Surge Protection Receptacles: Two of each type.
5. Extra Wall Plates: One of each style, size, and finish.

1.6 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

D. Products: Listed, classified, and labeled as suitable for the purpose intended.

E. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.7 DELIVERY, STORAGE, AND PROTECTION

A. Store in a clean, dry space in original manufacturer's packaging until ready for installation.

PART 2 PRODUCTS

2.1 WIRING DEVICE APPLICATIONS

A. Provide wiring devices suitable for intended use and with ratings adequate for load served.

B. For single receptacles installed on an individual branch circuit, provide receptacle with ampere rating not less than that of the branch circuit.

C. Provide weather resistant GFCI receptacles with specified weatherproof covers for receptacles installed outdoors or in damp or wet locations.

D. Provide tamper resistant receptacles for receptacles where indicated on the drawings.

E. Provide GFCI protection for receptacles installed within 6 feet of water source.

F. Provide GFCI protection for receptacles installed in dwelling unit kitchens.

G. Provide GFCI protection in other than dwelling units for all single-phase receptacles rated 150 volts to ground or less and all three-phase receptacles rated 150 volts to ground or less, 100 amperes of less in: Bathrooms, Kitchens and on Rooftops

H. Provide GFCI protection for receptacles serving electric drinking fountains.

I. Unless noted otherwise, do not use combination switch/receptacle devices.

2.2 WALL SWITCHES:

A. See Section 260943 – Networked Lighting Controls for specifications.

2.3 RECEPTACLES

A. Manufacturers:
   1. Hubbell Incorporated
   2. Leviton Manufacturing Company, Inc.
   3. Pass & Seymour, a brand of Legrand North America, Inc.
   4. Substitutions: See Division 01 - General Requirements.
   5. Source Limitations: Where wall controls are furnished as part of lighting control system, provide accessory matching receptacles and wallplates by the same manufacturer in locations indicated.

B. Receptacles - General Requirements: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.
   1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.
   2. NEMA configurations specified are according to NEMA WD 6.

3. Hospital Grade Receptacles: Listed as complying with UL 498 Supplement SD, with green dot hospital grade mark on device face.
4. Body color:
   a. General Purpose Receptacles: color by Architect.
   b. Emergency, [Critical Branch], [Equipment Branch] receptacles: Red.

C. Convenience Receptacles:
1. Standard Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R; single or duplex as indicated on the drawings.
2. Automatically Controlled Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R; controlled receptacle marking on device face per NFPA 70; single or duplex as indicated on the drawings.
3. Isolated Ground Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R, with ground contacts isolated from mounting strap; isolated ground triangle mark on device face; single or duplex as indicated on the drawings.
4. Weather Resistant Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations; single or duplex as indicated on the drawings.
5. Tamper Resistant Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R, listed and labeled as tamper resistant type; single or duplex as indicated on the drawings.
6. Tamper Resistant and Weather Resistant Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R, listed and labeled as tamper resistant type and as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations; single or duplex as indicated on the drawings.
7. Illuminated Convenience Receptacles: Hospital grade, 20A, 125V, NEMA 5-20R; illuminated face or indicator light to indicate power is being supplied to receptacle; single or duplex as indicated on the drawings.

D. GFCI Receptacles:
1. GFCI Receptacles - General Requirements: Self-testing, with feed-through protection and light to indicate ground fault tripped condition and loss of protection; listed as complying with UL 943, class A.
   a. Provide test and reset buttons of same color as device.
2. Standard GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style.
3. Weather Resistant GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations.
4. Tamper Resistant GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as tamper resistant type.
5. Tamper Resistant and Weather Resistant GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as tamper resistant type and as weather resistant type

complying with UL 498 Supplement SE suitable for installation in damp or wet locations.

E. USB Charging Devices:
1. USB Charging Devices - General Requirements: Listed as complying with UL 1310.
   a. Charging Capacity - Two-Port Devices: 2.1 A, minimum.
   b. Charging Capacity - Four-Port Devices: 4.2 A, minimum.
2. USB Charging/Tamper Resistant Receptacle Combination Devices: Two-port USB charging device and receptacle, commercial specification grade, duplex, 20A, 125V, NEMA 5-20R, listed and labeled as tamper resistant type; rectangular decorator style.
3. USB Charging Noncombination Devices: Four-port; rectangular decorator style.

F. Surge Protection Receptacles:
1. Surge Protection Receptacles - General Requirements: Listed and labeled as complying with UL 1449, Type 2 or 3.
   a. Energy Dissipation: Not less than 240 J per mode.
   b. Protected Modes: L-N, L-G, N-G.
   c. UL 1449 Voltage Protection Rating (VPR): Not more than 700 V for L-N, L-G modes and 1200 V for N-G mode.
   d. Diagnostics:
      1) Visual Notification: Provide indicator light to report functional status of surge protection.
      2) Audible Notification: Provide switchable audible alarm to report that surge protection is not functional.
2. Standard Surge Protection Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style.

G. Locking Receptacles: Industrial specification grade, configuration as indicated on the drawings.
1. Standard Locking Convenience Receptacles: Single, 20A, 125V, NEMA L5-20R.
2. Special Purpose Locking Receptacles: refer to drawings and schedules for NEMA locking configuration.

H. Special Purpose Receptacles: Industrial specification grade, straight blade grounding devices.
1. Refer to drawings and schedules for NEMA configuration.

I. Clock Hanger Receptacles: Single, 15A, 125V, NEMA 5-15R.

~~I.~~J. Overhead Cord Reel: Industrial cord reel, with Hubbell HBL4729C twist-lock input connector, 25' SJO Cable Jacket, 12/3, Nema 5-20R connector for use by owner. White housing. Shall be provided with the following: Pivot Base Hubbell #HBLI340PH; Mounting Bracket Hubbell #HBLIMB; Ball Stop Hubbell #HLI12BS

2.4 WALL PLATES

A. Manufacturers:
1. Hubbell Incorporated
2. Leviton Manufacturing Company, Inc.
3. Pass & Seymour, a brand of Legrand North America, Inc.
4. Substitutions: See Division 01 - General Requirements.
5. Source Limitations: Where wall controls are furnished as part of lighting control system, provide accessory matching receptacles and wallplates by the same manufacturer in locations indicated.

B. Wall Plates: Comply with UL 514D.
1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
2. Screws: Metal with slotted heads finished to match wall plate finish.
3. Provide screwless wallplates with concealed mounting hardware where indicated.

C. Nylon Wall Plates: Smooth finish, high-impact thermoplastic.

D. Stainless Steel Wall Plates: Brushed satin finish, Type 302 stainless steel.

E. Brass Wall Plates: Brushed satin finish, factory-coated to inhibit oxidation.

F. Aluminum Wall Plates: Smooth satin finish, clear anodized, factory-coated to inhibit oxidation.

G. Chrome Wall Plates: Smooth finish, chrome plated steel.

H. Galvanized Steel Wall Plates: Rounded corners and edges, with corrosion resistant screws.

I. Premarked Wall Plates: Factory labeled as indicated; hot stamped for nylon wall plates and engraved for metal wall plates.

J. Weatherproof Covers for Damp Locations: Gasketed, cast aluminum, with self-closing hinged cover and corrosion-resistant screws; listed as suitable for use in wet locations with cover closed.

K. Weatherproof Covers for Wet Locations: Gasketed, cast aluminum, with hinged lockable cover and corrosion-resistant screws; listed as suitable for use in wet locations while in use with attachment plugs connected and identified as extra-duty type.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as shown on the drawings.

B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.

C. Verify that wall openings are neatly cut and will be completely covered by wall plates.

D. Verify that final surface finishes are complete, including painting.

E. Verify that floor boxes are adjusted properly.

F. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

G. Verify that conditions are satisfactory for installation prior to starting work.

3.2 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.3 INSTALLATION

A. Perform work in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.

B. Coordinate locations of outlet boxes provided under Section 260533 as required for installation of wiring devices provided under this section.
   1. Mounting Heights: Unless otherwise indicated, as follows:
      a. Wall Switches: 48 inches above finished floor.
      b. Wall Dimmers: 48 inches above finished floor.
      c. Fan Speed Controllers: 48 inches above finished floor.
      d. Receptacles: 18 inches above finished floor or 6 inches above counter.
         1) Install convenience GFCI type receptacles 36 to 48 inches above roof deck. Or at designated heights as indicated on drawings.
   2. Orient outlet boxes for vertical installation of wiring devices unless otherwise indicated.
   3. Where multiple receptacles, wall switches, or wall dimmers are installed at the same location and at the same mounting height, gang devices together under a common wall plate.
   4. Locate wall switches on strike side of door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.
   5. Locate receptacles for electric drinking fountains concealed behind drinking fountain according to manufacturer's instructions.

C. Install wiring devices in special application enclosures per manufacturer’s instructions, provide stainless steel cover plates.

D. Install wiring devices in accordance with manufacturer's instructions.

E. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.

F. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.

G. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.

H. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper. When stranded conductors are used in lieu of solid, use insulated crimp on fork terminals for device terminations. Do not place bare stranded conductors directly under screw terminals.

I. For isolated ground receptacles, connect wiring device grounding terminal only to identified branch circuit isolated equipment grounding conductor. Do not connect grounding terminal to outlet box or normal branch circuit equipment grounding conductor.

J. Provide GFCI receptacles with integral GFCI protection at each location indicated. Do not use feed-through wiring to protect downstream devices.

K. Where split-wired duplex receptacles are indicated, remove tabs connecting top and bottom receptacles.

L. Install wiring devices plumb and level with mounting yoke held rigidly in place.

M. Install wall switches with OFF position down.

N. Install wall dimmers to achieve full rating specified and indicated after derating for ganging as instructed by manufacturer.

O. Do not share neutral conductor on branch circuits utilizing wall dimmers.

P. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.

Q. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.

R. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

S. Identify wiring devices in accordance with Section 260553.

3.4 FIELD QUALITY CONTROL

A. See Division 01 - General Requirements.

B. Inspect each wiring device for damage and defects.

C. Operate each wall switch, wall dimmer, and fan speed controller with circuit energized to verify proper operation.

D. Test each receptacle to verify operation and proper polarity.

E. Test each GFCI protected receptacle for proper tripping operation according to manufacturer's instructions.

F. Inspect each surge protection receptacle to verify surge protection is active.

G. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.5 ADJUSTING

A. Adjust devices and wall plates to be flush and level.

B. Adjust presets for wall dimmers according to manufacturer's instructions as directed by Architect.

3.6 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

END OF SECTION

SECTION 32 0529 - GLACIAL BOULDERS FOR EXTERIOR IMPROVEMENTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Glacial Boulders.

B. Related Requirements:

1. Section 017419 - Construction and Demolition Waste Management and Disposal.

2. Division 01 Section(s) "Construction Waste Management and Disposal" and "Sustainability Compliance Procedures" for sustainability requirements

3. Section 31 2200 - Grading: Preparation of site for boulder placement.

4. Section 31 2300 Excavation, Backfill, Compaction and Dewatering: Excavation for installing concrete footings.

1.3 SUBMITTALS

A. CTHPB Documentation Submittals: Comply with Section 01 3566.42 – Sustainability Compliance Procedures and provide the following in addition to other submittals:

1. Product Data for Credit d8: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
2. Product Data for Credit d10: For products and materials required to comply with requirements for regional materials, documentation indicating location and distance from Project of manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

B. Photographs for Initial Selection: For each source of glacial boulders, provide at least ten photographs of all sizes of boulders. Provide at least three sources from which the Landscape Architect is to select.

C. Photographs for Verification:
1. For each boulder indicated, include at least four photographs of three potential boulders

considered for use. Photographs are to exhibiting extremes of the full range of color and other visual characteristics. If fewer than the required number of boulders are selected from the submitted photographs, additional photographs shall be submitted for selection.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain boulders through one source from a single supplier.

B. Boulder Review and Selection: Landscape Architect may observe review and select individual boulders either at the source or at site before placement for compliance with requirements and may reject unsatisfactory boulders at any time during progress of work. Remove rejected boulders immediately from Project site.

1. Notify Landscape Architect of sources of boulders seven days in advance of delivery to site.

C. Pre-installation conference: Conduct conference at project site to comply with requirements in Section 01 3000 - Administrative Requirements. The purpose of the conference is to meet with Landscape Architect on-site to select boulders to be used.

PART 2 PRODUCTS

2.1 LEED PERFORMANCE REQUIREMENTS

A. For all permanently installed products and materials related to the work of this Section, provide products and materials that meet the Project's LEED performance criteria as outlined in PART 2–PRODUCTS of Section 018113 – Sustainable Design Requirements.

2.2 STONE SOURCE

A. Varieties and Sources: Boulders to be sourced on site, as possible. If insufficient quality or quantity can be extracted from the site, obtain materials of each type from same source for the entire project. Approval of stone supplier is required prior to purchase.

2.3 GLACIAL BOULDERS

A. Boulders: ~~Off-site~~ Shall be selected from on-Site boulders and shall be randomly sized. Boulder size shall vary from the maximum size to the minimum size. No boulders shall be obtained from ~~on-~~off-site unless approved by the Landscape Architect.
   1. Boulders shall be naturally rounded glacial erratics as found in glacial till deposits on-site, and to be of solid basalt, sedimentary or granitic naturally occurring stone, free from flaking, decomposition or weathering.
   2. Boulders shall not be stone material from ledge excavations.
   3. Minimum Size: 4 feet by 3 feet by 3 feet.
   4. Maximum Size: No maximum however some of the largest should be at least be 8 feet by 6 feet by 6 feet.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance.
   1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 GLACIAL BOULDERS

A. Install boulders at locations, elevations and height as indicated on the Drawings and as directed by Landscape Architect.

B. Set firmly in place with approximately half the boulder exposed as indicated on the Drawings.

3.3 CLEANUP AND PROTECTION

A. After completing installation of boulders, remove spots, dirt, and debris.

END OF SECTION

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SECTION 32 3113 - CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.2 SUMMARY

A. Section Includes:

1. Chain Link Fence.

a. Chicanes.

b. Baseball/Softball backstop with hood.

c. Baseball/Softball sideline and dugout fences.

d. Field Perimeter fence

e. Synthetic Turf fence (Alternate No. S1).

f. Tennis court fence.

2. Posts, rails, and frames - polymer coated.

3. Wire fabric - polymer coated.

4. Concrete for footings.

5. Manual swing and / or slide gates with related hardware.

a. Swing gates.

b. Slide gates.

B. Related Requirements:

a. Division 01 Section(s) "Construction Waste Management and Disposal" and "Sustainability Compliance Procedures" for sustainability requirements

b. Section 03 3000 - Cast-in-Place Concrete: Concrete anchorage for posts.

1.3 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.

B. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength 2018a.

C. ASTM F567 - Standard Practice for Installation of Chain-Link Fence 2014a.

D. ASTM F668 - Standard Specification for Polyvinyl Chloride (PVC) and Other Organic Polymer-Coated Steel Chain-Link Fence Fabric 2017.

E. ASTM F1043 - Standard Specification for Strength and Protective Coatings on Steel Industrial Fence Framework 2018.

F. ASTM F1083 - Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures 2018.

G. CLFMI CLF-FIG0111 - Field Inspection Guide 2014.

H. CLFMI CLF-PM0610 - Product Manual 2017.

I. CLFMI WLG 2445 - Wind Load Guide for the Selection of Line Post and Line Post Spacing 2018.

J. FS RR-F-191/1D - Fencing, Wire and Post Metal (Chain-Link Fence Fabric) 1990.

1.4 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on fabric, posts, accessories, fittings and hardware.

C. CTHPB Documentation Submittals: Comply with Section 01 3566.42 – Sustainability Compliance Procedures and provide the following in addition to other submittals:

1. Product Data for Credit d8: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
2. Product Data for Credit d10: For products and materials required to comply with requirements for regional materials, documentation indicating location and distance from Project of manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

D. Design Calculations: For high wind load areas, provide calculations for fence fabric and accessory selection as well as line post spacing and foundation details. See CLFMI WLG 2445 for line post and spacing guidance.

E. Manufacturer's Installation Instructions: Indicate installation requirements and procedures.

F. Field Inspection Records: Provide installation inspection records that include post settings, framework, fabric, barbed wire, fittings and accessories, gates, and workmanship.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

B. Fence Installer: Company with demonstrated successful experience installing similar projects and products, with not less than five years of documented experience.

1.6 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within a one year period after Date of Substantial Completion.

C. Provide manufacturer’s standard warranty for vinyl-coated chain link fence system, minimum of one year.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: Master Halco, www.masterhalco.com

1. Substitutions:
   a. Stevens Pipe and Steel, www.spsfence.com
   b. Merchants Metals, www.merchantsmetals.com

2.2 COMPONENTS

A. Line Posts: 1.9 inch (48 mm) diameter w/ cap.

B. Corner and Terminal Posts: 2.38 inch (60 mm) diameter w/ cap.

C. Gate Posts: 3-1/2 inch (89 mm) diameter w/ cap.

D. Top and Brace Rail: 1.66 inch (42 mm) diameter, plain end, sleeve coupled.

E. Bottom Rail: 1.66 inch (42 mm) diameter, plain end, sleeve coupled.

F. Gate Frame: 1.66 inch (42 mm) diameter for welded fabrication.

G. Fabric: diamond mesh interwoven wire, top selvage knuckle end closed, bottom selvage twisted tight.

a. Standard Fence Fabric:

1. Mesh Size: 2-inch (50mm).
2. Mesh Gauge: 9-gauge core wire with a dia. of 0.148 inch (3.76mm).

H. Tension Wire: 6 gauge, 0.1920 inch (4.9 mm) thick steel, single strand.

I. Tension and Brace Bands: Pressed steel.

J. Tension Bars: Steel, length not less than 2 inches (50 mm) shorter than full height of chain-link fabric.

K. Tie Wire: Hot-dip galvanized steel wire according to ASTM F626 for attaching chain-link fabric to posts, rails and frames.

2.3 MATERIALS

A. Posts, Rails, and Frames:

a. ASTM A1011/A1011M, Designation SS; hot-rolled steel strip, cold formed to pipe configuration, longitudinally welded construction, minimum yield strength of 50 ksi (345 MPa); zinc coating complying with ASTM F1043 and ASTM F1083.
b. Line Posts: Type I round in accordance with FS RR-F-191/1D.
c. Terminal, Corner, Rail, Brace, and Gate Posts: Type I round in accordance with FS RR-F-191/1D.
d. Comply with CLFMI CLF-PM0610.
e. ASTM F668 polymer-coated

B. Wire Fabric:

a. ASTM F668 polymer-coated steel chain link fabric.
b. Comply with CLFMI CLF-PM0610.
c. Standard Fence:

1. Mesh Size: 2-inch (50mm).
2. Mesh Gauge: 9-gauge core wire with a dia. of 0.148 inch (3.76mm).

C. Concrete for Bases:

a. Shall be as specified in Section 03 3005.

2.4 FENCE COMPONENTS

A. Line Posts: 1.9 inch (48 mm) diameter.

B. Corner and Terminal Posts: 2.38 inch (60 mm) diameter.

C. Fabric: 1-3/4 inch (44 mm) diamond mesh interwoven wire, 6 gage, 0.1920 inch (4.9 mm) thick, top selvage knuckle end closed, bottom selvage knuckle end closed.

2.5 MANUAL GATES AND RELATED HARDWARE

A. Hardware for Single Swinging Gates: 180 degree hinges, 2 for gates up to 60 inches (1,525 mm) high, 3 for taller gates; fork latch with gravity drop and padlock hasp; keeper to hold gate in fully open position.

B. Hardware for Double Swinging Gates: 180 degree hinges, 2 for gates up to 60 inches (1,525 mm) high, 3 for taller gates; drop bolt on inactive leaf engaging socket stop set in concrete, active leaf latched to inactive leaf preventing raising of drop bolt, padlock hasp; keepers to hold gate in fully open position.

C. Hardware for Cantilever Slide Gates, Class 1 with external roller assemblies:

   a. Hangers, Roller Assemblies, and Stops.
   b. Latch: Permitting operation from both sides of gate with provisions for padlocking accessible from both sides of gate.

D. Hinges: Finished to match fence components.

E. Latches: Finished to match fence components.

2.6 ACCESSORIES

A. Caps: Cast steel galvanized; sized to post diameter, set screw retainer and finished to match fence components.

B. Fittings: Sleeves, bands, clips, rail ends, tension bars, fasteners and fittings; steel.

2.7 CHAIN LINK FENCE FINISHES

A. Posts, Components, and Fabric: Vinyl coated over coating of 1.8 ounces per square foot galvanizing (over coating of 550 g/sq m galvanizing).

B. Hardware: Hot-dip galvanized to weight required by ASTM A153/A153M.

C. Accessories: Same finish as fabric.

D. Color(s): Black.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: Verify that areas are clear of obstructions or debris.

B. Preinstallation Testing: Test areas for ledge.

3.2 PREPARATION

A. Removal: Obstructions or debris.

B. Ground Preparation:

a. Grading shall be completed prior to beginning of installation.

3.3 INSTALLATION

A. Install framework, fabric, accessories and gates to heights indicated on drawings and in accordance with ASTM F567.

B. Set intermediate, terminal, and gate posts plumb, in concrete footings with top of footing 6 inches below finish grade. Slope top of concrete for water runoff.

C. Provide top rail through line post tops and splice with 6 inch (150 mm) long rail sleeves.

D. Install center brace rail on corner gate leaves.

E. Do not stretch fabric until concrete foundation has cured 28 days.

F. Stretch fabric between terminal posts or at intervals of 100 feet (30 m) maximum, whichever is less.

G. Position bottom of fabric 2 inches (50 mm) above finished grade.

H. Fasten fabric to top rail, line posts, braces, and bottom tension wire with tie wire at maximum 15 inches (380 mm) on centers.

I. Attach fabric to end, corner, and gate posts with tension bars and tension bar clips.

J. Install bottom tension wire stretched taut between terminal posts.

K. Do not attach the hinged side of gate to building wall; provide gate posts.

L. Install hardware and gate with fabric to match fence.

M. Provide concrete center drop to footing depth and drop rod retainers at center of double gate openings.

N. Peen all bolts upon installation.

O. Perform three random field inspections confirming proper installation.

3.4 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch (6 mm).

B. Maximum Offset From True Position: 1 inch (25 mm).

C. Do not infringe on adjacent property lines.

3.5 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements, for additional requirements.

B. Layout: Verify that fence installation markings are accurate to design, paying attention to gate locations, underground utilities, and property lines.

C. Post Settings: Randomly inspect three locations against design for:

a. Hole diameter.
b. Hole depth.
c. Hole spacing.

D. Fence Height: Randomly measure fence height at three locations or at areas that appear out of compliance with design.

E. Gates: Inspect for level, plumb, and alignment.

F. Workmanship: Verify neat installation free of defects. See CLFMI CLF-FIG0111 for field inspection guidance.

3.6 CLEANING

A. Leave immediate work area neat at end of each work day.

B. Clean jobsite of excess materials; scatter excess material from post hole excavations uniformly away from posts. Remove excess material if required.

C. Clean fence with mild household detergent and clean water rinse well.

D. Remove mortar from exposed posts and other fencing material using a 10 percent solution of muriatic acid followed immediately by several rinses with clean water.

E. Touch up scratched surfaces using materials recommended by manufacturer. Match touched-up paint color to factory-applied finish.

F. See Section 01 7419 - Construction Waste Management and Disposal, for additional requirements.

3.7 CLOSEOUT ACTIVITIES

A. See Section 01 7800 - Closeout Submittals, for closeout submittals.

END OF SECTION 32 3113

SECTION 333115 – TELEVISION INSPECTION OF PIPELINES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. Closed-circuit television (CCTV) inspection of pipelines

1.2 SUBMITTALS

A. Manufacturer's product data for the television inspection equipment, including camera, television monitor, carriage, recording device, signal conductor cable, etc.

B. Information on database/software that will be used to store and review inspection data.

C. Sample of television inspection log that will be used. Provide a legend for all abbreviations, symbols, codes, etc. used on the logs.

D. Documentation submittals

1. Two printed copies of the television inspection reports, provided weekly during the course of the CCTV inspection work.

2. Two copies of the television inspection video and voice audio recordings saved onto DVD media, provided weekly during the course of the CCTV inspection work. The electronic file names must be labeled to identify the sewer segment televised by street and upstream and downstream manholes (for example "Washington Avenue SMH 1 – SMH 2").

1.3 QUALITY ASSURANCE

A. Personnel shall have confined space entry and other training as appropriate for the work to be performed.

PART 2 PRODUCTS

2.1 EQUIPMENT

A. Provide all equipment necessary to complete the video inspections with voice audio recordings, including, but not limited to, inspection studio, television camera, and video capture equipment.

B. The inspection equipment shall be capable of inspecting a minimum of 700 feet of pipe where entry into the pipe can only be made from one end. The equipment shall be capable of providing a picture of acceptable quality at these maximum lengths, regardless of the vibration caused by normal movement of the camera and the length of the signal conductor cable between the camera and the recording device.

C. The inspection equipment shall be capable of clearly televising the interior of a six inch diameter pipe and all larger sizes.

D. The television camera used for the inspection shall be one specifically designed and constructed for such inspection.

E. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe.

F. The camera shall be waterproof and operative in 100% humidity conditions.

G. The camera, television monitor, and other components of the video system shall be capable of producing a high quality color image with clear definition of pipe internal features.

H. A pan and tilt camera shall be used for the television inspection to provide the ability to view into the laterals to determine the accessibility of the lateral by the lateral inspection system (LIS) camera.

I. The pan and tilt camera shall be capable of 360 degree rotational scan. The tilt arc shall not be less than 225 degrees and the viewing angle shall be a minimum of 300 degrees. The lens position shall be operated remotely. Cameras incorporating mirrors for viewing sides or cameras using exposed rotating heads are not acceptable.

J. The camera shall be an auto-iris type with remote controlled manual override. The adjustment of focus and iris shall provide a minimum focal range of from 6 inches in front of the camera lens to infinity.

K. The distance along the pipe in focus from the initial point of observation shall be a minimum of twice the vertical height of the pipe.

L. The illumination must be such as to allow an even distribution of light, which will produce a clear picture around the pipe perimeter, regardless of diameter and without the loss of contrast, flare out of picture, or shadowing. The lighting system shall also minimize reflective glare and the intensity shall be fully adjustable. The camera lighthead shall include a high-intensity side viewing lighting system to allow illumination of internal sections of lateral pipe connections.

M. The television studio shall be insulated against noise and extremes in temperature and shall be large enough for two people for the purpose of viewing the television monitor while the inspection is in progress. The television studio shall be mounted on a mobile vehicle which allows safe and orderly movement of the inspection equipment.

N. The television monitor screen shall be not less than 17 inches, measured on the diagonal.

O. The television camera, monitor, and other components of the video system shall be capable of receiving and transmitting a picture having not less than 500 lines of resolution.

P. The camera shall be mounted on a self-propelled vehicle or skid assembly that is able to ride over obstructions and cushion the camera against shock. The skid shall also have guards to keep the camera in line in the event of a turnover due to an obstruction.

Q. The television inspection equipment shall meet the following criteria:

1. Color: The following colors shall be clearly differentiated: white, yellow, cyan, green, red, blue, and black.

2. Linearity: The background grid shall show squares of equal size, without convergence or divergence over the whole picture. The center circle shall appear round and have the correct height and width relationship.

3. Resolution: The live picture shall be displayed on a monitor capable of providing a clear, stable image free of electrical interference with a minimum horizontal resolution not less than 500 lines.

4. Color Consistency: To ensure that the camera shall provide similar results when used with its own illumination source, the lighting shall be fixed in intensity prior to commencing the survey. In order to ensure color consistency, generally no variation in illumination shall take place during the survey.

R. The monitor display shall incorporate an automatically updated record in feet and tenths of a foot of the distance along the pipe from the cable calibration point to the center point of the camera. Use a suitable metering device which enables the length of the pipe being inspected to be accurately measured to within ±0.2 feet.

PART 3 EXECUTION

3.1 PREPARATION

A. Reduce flow level in pipe being inspected by bypass pumping or by jetting to meet the requirements described below, unless otherwise agreed to:

Maximum Depth of Flow for Television Inspection	
6 inch to 10 inch pipe	20% of pipe diameter
12 inch to 24 inch pipe	25% of pipe diameter
Greater than 24 inch pipe	30% of pipe diameter

B. Alternatively, perform television inspection during off-peak hours when flow depths are lower.

3.2 INSPECTION

A. Television inspect pipes of main line sewers as shown on the Drawings.

B. Move the camera through the pipe at a moderate rate, stopping where necessary to permit proper documentation of all pertinent features/defects. In no case will the television camera be pulled at a speed greater than 30 feet per minute.

C. Use manual winches, power winches, TV cable, powered rewinds or other devices to move the camera through the pipe that do not obstruct the camera view or interfere with proper documentation of the pipe conditions. All winches shall be stable with either locking or ratcheting drums.

D. If, during the inspection operation, the television camera will not pass through the entire pipe section from one direction, set up equipment so that the inspection can be performed from the opposite direction, if possible.

E. When manually operated winches are used to pull the television camera through the pipe, use portable radios, telephones or other suitable means of communication between members of the crew located at each end of the pipe section being inspected to insure good communications.

F. The importance of accurate distance measurements is emphasized. Measurement for location of pipe features/defects shall be by means of a meter device. Marking on the

cable or a similar method will not be allowed. Accuracy of the distance meter shall be checked by use of a measuring wheel, tape, or other suitable distance measuring device.

G. Record the following pipe features/defects, at a minimum, and report them on the inspection logs in accordance with National Association of Sewer Service Companies (NASSCO) developed Pipeline Assessment Certification Program (PACP) methodology:

1. Pipe diameter and material of construction.

2. Joint spacing and the location of joints which appear to be damaged, incorrectly installed, shifted, open, or in any way deficient.

3. Location, size and orientation (clock position) of connecting pipes (such as building services in a sewer).

4. Description of severity and location of pipe structural deficiencies such as cracks, breaks, collapses, corrosion/erosion, etc.

5. Description of severity and location of pipe obstructions (such as sediment, roots or grease).

6. Description of severity and location of grade concerns, such as pipe sags, especially in gravity pipes.

7. The locations where infiltration is entering the pipe and/or connecting pipes and an estimated infiltration rate at each location.

H. Position the camera at the location of connecting pipes, and pan/tilt appropriately in order to obtain a clear view of the interior of the connecting pipe. Make note of any defects or infiltration visible within the connecting pipes.

I. Indicate direction of survey and distance to each feature/defect from the beginning of the inspection.

J. Provide an audio description of each feature/defect observed.

K. Report on the logs weather conditions, ground conditions, and surface cover.

L. Repair pipe damaged as a result of the inspections at no cost to the Owner.

M. Position camera head to reduce risk of picture distortion and along the longitudinal axis of the pipe. In circular pipes, position camera lens centrally, ±10% of the vertical sewer dimension. In non-circular pipes, position camera lens at mid-height and centered horizontally.

3.3 DOCUMENTATION

A. Television Inspection Logs

1. Prepare television inspection logs describing features/defects identified and their locations.

B. Video Recordings

1. Provide continuous digital video recordings of the inspection view as it appears on the television monitor. The image recorded shall be equal to or better than the quality of the original picture on the television monitor.

2. Provide a visual and voice audio description record of the pipe features/defects observed recorded simultaneously as original live recordings.

3. The audio portion of the recording shall be sufficiently free of electrical interference and background noise to produce an oral report that is clear, complete, and easily discernable. The audio portion of the video report shall include the location and identification of the pipe section inspected, the direction of travel, a description of the features/defects encountered, and the distance traveled.

4. Provide digitally formatted television inspection video/audio recordings saved onto DVD media with individual digital files for each recording completed. DVDs shall be properly identified by video numbers, locations, and project name.

5. Video recordings shall, by electronic means, display continuously and simultaneously generated transparent digital information as described below:

    a. At the start of each pipe section inspected:

        1) Size and length of pipe and pipe material

        2) Pipe section reference number

        3) Date of inspection

        4) Road name/location (city/town)

        5) Direction of inspection (upstream or downstream)

        6) Starting time of inspection

    b. Continuously during the inspection:

        1) Automatic update of the camera's position, in feet and tenths of feet from the beginning of the pipe section

        2) Upstream and downstream locations (manholes reference numbers for sewers and drains).

END OF SECTION

APPENDIX A - PHASE I ENVIRONMENTAL SITE ASSESSMENT, DATED MAY 30, 2023

PHASE I ENVIRONMENTAL SITE ASSESSMENT

for

Central Middle School
9 Indian Rock Lane
Greenwich, Connecticut

Prepared For:

Construction Solutions Group, LLC
1137 Main Street
East Hartford, CT 06108

Prepared By:

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Report Date: 30 May 2023
180-Day Viability Date: 19 September 2023
140265101

LANGAN

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EXECUTIVE SUMMARY

Langan CT, Inc. (Langan) completed a Phase I Environmental Site Assessment (ESA) of the Central Middle School property at 9 Indian Rock Lane in Greenwich, Fairfield County, Connecticut (the "subject property") under the written authorization of Construction Solutions Group, LLC (the "Client" and "user").

The Phase I ESA was completed following the guidelines of ASTM International Standard Practice E1527-21 (ASTM E1527-21), the U.S. Environmental Protection Agency's (EPA) All Appropriate Inquiries (AAI) Rule, and industry standard practice. The user requested this ESA as part of their environmental due diligence related to a potential transaction involving the subject property.

Subject Property Layout

The subject property is improved with an approximately 77,500-square-foot school building. The northeastern portion of the building is two stories; the rest of the building is one story. The building is on slab with no basements. The building is in the southern portion of the subject property along Indian Rock Lane.

The school grounds are developed with parking lots along the western and southern building exteriors, tennis courts adjoining to the east of the building, and an approximately 5.4-acre field with two baseball diamonds adjoining to the north. The rest of the parcel is undeveloped.

Subject Property Current Use

Central Middle School operates as a middle school, with approximately 500 students and 90 staff members from 6th to 8th grade. The subject property is owned by the "Town of Greenwich c/o Finance Dept."

Subject Property History

Prior to the 1920s, the subject property was undeveloped. From the 1920s to the 1950s, the subject property was developed with a house and what appears to be barn or garage in the southwestern portion. The rest of the parcel was undeveloped, though portions appeared to be cleared, and what appeared to be a stream was depicted in the southern and central portions of the subject property in aerial photographs. The subject property was first developed with a portion of the current school building in the 1950s; the school was expanded in the early 2000s. No transfers of ownership are listed in town records.

Langan completed environmental due diligence of the subject property using the scope guidelines and inherent limitations of ASTM E1527-21. Table ES-1 presents the conclusions of the Phase I ESA.

Table ES-1 Conclusions, Findings and Opinions

ASTM E1527-21 Scope Items
Recognized Environmental Conditions (RECs)
Underground Storage Tank (UST): A 7,200-gallon heating oil UST (identification "T1", installation date July 1, 1958) is listed as "currently in use" at the subject property. According to the site contact, the UST was removed, and the building is heated with natural gas; however, they were not aware of when the tank removal had taken place and no closure documentation was available for review. Therefore, the UST is considered a recognized environmental condition (REC) based on a material threat of a release due its age, construction details, lack of tightness testing results, and lack of closure reporting.
Controlled Recognized Environmental Conditions (CRECs)
Langan did not identify controlled RECs (CRECs).
Historical Recognized Environmental Conditions (HRECs)
Langan did not identify historical RECs (HRECs).
De Minimis Conditions
Langan did not identify de minimis conditions.
Significant Data Gaps
As noted above, information regarding the location and removal of UST T1 previously located on the subject property was requested but not available for review.

1. INTRODUCTION

Langan CT, Inc. (Langan) completed a Phase I Environmental Site Assessment (ESA) of the Central Middle School property at 9 Indian Rock Lane in Greenwich, Fairfield County, Connecticut (the "subject property") under the written authorization of Construction Solutions Group, LLC (the "Client" and "user").

The Phase I ESA was completed following the guidelines of ASTM International Standard Practice E1527-21 (ASTM E1527-21), the U.S. Environmental Protection Agency's (EPA) All Appropriate Inquiries (AAI) Rule, and industry standard practice. The user requested this ESA as part of their environmental due diligence associated with a potential transaction involving the subject property.

1.1. Purpose

The purpose of this Phase I ESA is to identify recognized environmental conditions (RECs) associated with the subject property. This purpose also includes identifying controlled recognized environmental conditions (CRECs), historical recognized environmental conditions (HRECs), de minimis conditions, and significant data gaps. The definitions of REC, CREC, HREC, de minimis condition and other select ASTM terms used in this report are in Section 8.

1.2. Scope of Services

Langan's scope of services consisted of the completion of a Phase I ESA following the guidelines of ASTM E1527-21. Langan's scope of services as it pertains to the elements of a Phase I ESA as specified in ASTM E1527-21 is described below.

1.2.1 Records Review and Local Government Interviews

Langan contracted a third-party provider to search environmental regulatory databases and provide historical records. The database search included select federal, state, local and tribal standard source environmental databases within the approximate search radii specified by ASTM E1527-21.

Langan submitted Freedom of Information Act (FOIA) requests to supplement environmental database listing information. The FOIA requests were submitted to the town of Greenwich town clerk, fire marshal, and health department, as well as to the Connecticut Department of Energy and Environmental Protection (CTDEEP) file room. Langan also reviewed online records including the CTDEEP Document Online Search Portal (DOSP), Environmental Land Use Restriction (ELUR) Map, Spill Incidents database, CTDEEP Registered Underground Storage Tanks (USTs) and Hazardous Waste Manifest databases, U.S. Geological Survey (USGS) mapping, and EPA databases. Agency FOIA-requested information, where received, is discussed in relevant sections of this report and referenced in Section 7.

Langan supplemented the third-party-provided historical records with review of online historical record sources including Google Earth Pro and NETR Online.

1.2.2 Site Reconnaissance and Owner/Operator/Occupant Interviews

Langan completed the site reconnaissance on November 12, 2023. A member of the custodial staff accompanied Elyssa Schwendy of Langan during the site reconnaissance and answered interview questions. The site reconnaissance focused on the spatial extent of the subject property and associated structures and progressed to the adjoining and surrounding properties. The adjoining properties were observed from the subject property or from public right-of-ways. The weather at the time of the site reconnaissance was approximately 80 degrees Fahrenheit (°F) and sunny. Limiting conditions encountered during the site reconnaissance, if any, are discussed in Section 8.3.

1.2.3 Evaluation, Report and Parts Used in Concert

Langan evaluated the pieces of information obtained from the records reviews, site reconnaissance and interviews described above, and from the user as described in Section 1.3 in concert with each other. Langan's findings, opinions, and conclusions are discussed throughout this report. Significant assumptions, or deletions, deviations or exceptions to ASTM E1527-21 are noted in Section 5. and Section 8.3, respectively.

1.2.4 Non-ASTM Scope Services

The scope of services for the Phase I ESA did not include non-scope ASTM considerations, including per- and polyfluoroalkyl substances (PFAS).

1.3. User Responsibilities

Langan requested that the user provide the results of tasks the user is responsible for completing in order to satisfy the requirements of AAI. The tasks include: searching for known environmental liens and activity and use limitations (AULs) filed or recorded against the subject property, and provision of information related to specialized knowledge or experience of the user or the degree of obviousness relative to conditions indicative of releases or threatened releases; actual knowledge of the user regarding environmental liens or AULs related to the subject property; specialized knowledge or experience of the user; reasons for significantly lower purchase prices, and commonly known or reasonably ascertainable information within the local community about the subject property. Langan also requested that the user state the reason the Phase I ESA was requested. A summary of the user's responses is provided in Appendix B and relevant information provided by the user is discussed in applicable sections of this report.

Unless specifically included in the scope of services, Langan did not complete a title search or a search for environmental liens or AULs, as that is the responsibility of the user. If the user requested that Langan complete such searches on the user's behalf, the information was supplied to Langan by a vendor, and to the vendor by government sources; therefore, neither Langan nor the vendor can verify the completeness or accuracy of the title search, or AUL searches.

2. SUBJECT PROPERTY DESCRIPTION AND CURRENT USE

2.1. Location, Legal Description, and Ownership

The approximately 22.3-acre subject property is accessed from Indian Rock Lane, which adjoins to the south; the parcel is adjoined to the west by Stanwich Road and to the east by Orchard Street. The subject property is described by the town of Greenwich with Parcel ID 08-4598/S and is owned by the "Town of Greenwich c/o Finance Dept".

A Subject Property Location Map (Figure 1) is included in Appendix A of this report.

2.2. Physical Setting

The physical setting that includes the geologic, hydrogeologic, hydrologic, and topographic characteristics of the subject property and surrounding area are discussed below.

2.2.1. Topography

The 2018 USGS 7.5-minute quadrangle topographic map for Stamford depicts the developed area of the subject property at an elevation of approximately 50 feet above mean sea level (amsl). The undeveloped portions of the property slope down steeply to the developed portions from an elevation of approximately 90 feet amsl. The regional topography slopes downward to the east-southeast.

2.2.2. Geology

According to the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) data for Fairfield County, soils at the subject property are primarily comprised of Charlton-Chatfield complex, udorthents (smoothed), and udorthents-urban land complex.

According to a geotechnical investigation conducted by Atane Engineers, PC (Atane) in 2022, soils encountered at the subject property were largely consistent with the published geologic descriptions of thin till generally less than 10 to 15 feet thick and including areas of bedrock outcrop where till is absent. It consists predominantly of moderate compact mixture of gray and brown sand, silt, and gravel with inclusion of cobbles and boulders. Trace of organic matter and trace of clay were encountered as well.

According to review of the Bedrock Map of Connecticut, the subject property is within the Harrison Gneiss of the Hawley Formation, which consists of interlayered dark- and light-gray, medium-grained, well-foliated gneiss, composted of andesine, quartz, hornblende, and biotite.

Bedrock outcroppings were observed throughout the undeveloped portions of the subject property.

2.2.3. Hydrogeology

According to the CTDEEP Water Quality Map for Greenwich (dated October 2018), groundwater beneath the subject property is classified as "GA". Class GA designated uses

are "the existing private and potential public or private supplies of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies."

The closest surface water bodies to the subject property are an unnamed pond approximately 240 feet to the east and an unnamed pond associated with Greenwich Creek, approximately 250 feet southwest of the subject property. These ponds and Greenwich Creek are classified as "A". Class A designated uses are "habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; navigation; and water supply for industry and agriculture."

According to the CTDEEP Connecticut Aquifer Protection Areas (APAs) Interactive Map, the subject property is not in a mapped APA.

Information regarding subject property-specific groundwater flow direction is unavailable. Groundwater flow can be influenced by a number of factors such as surface water bodies, wetlands, hydrogeologic and anthropogenic variables. However, based on topographic gradient, it is expected that groundwater generally flows to the east-southeast.

According to a geotechnical investigation conducted by Atane in 2022, groundwater at the subject property was encountered between 6.2 to 10 feet below ground surface (bgs).

A review of the Geocheck section of the Environmental Data Resources (EDR) Regulatory Database Report (Appendix F) did not identify any groundwater monitoring wells on the subject property or within a 1-mile radius.

2.3. Subject Property Description

The subject property is improved with an approximately 77,500-square-foot school building. The northeastern portion of the building is two stories; the rest of the building is one story. The building is on slab with no basements. The building is in the southern portion of the subject property along Indian Rock Lane.

The school grounds are developed with parking lots along the western and southern building exteriors, tennis courts adjoining to the east of the building, and an approximately 5.4-acre field with two baseball diamonds adjoining to the north. The rest of the parcel is undeveloped.

A Subject Property Layout Map is provided in Figure 2 of Appendix A. Photographs of the subject property and a checklist documenting Langan's observations relative to the features, activities, uses and conditions outlined in Section 9.4 of ASTM E1527-21 are in Appendix C.

2.4. Current Subject Property Use

Central Middle School operates as a middle school, with approximately 500 students and 90 staff members from 6th to 8th grade.

The following table summarizes subject property utility providers.

Table 2-1 Utility Providers

Utility	Providers
Electricity	Eversource
Natural gas (used for heating)	Connecticut Natural Gas
Water	Aquarion
Sewer	Town of Greenwich

2.5. Hazardous Substances and Petroleum Products

Hazardous substance and petroleum product use was not identified at the subject property. Langan did not observe evidence of leaks, spills, pools of liquid or releases such as staining, or sheens. Additionally, key site managers were unaware of historical uses or releases of hazardous substances or petroleum products at the subject property, other than as described below.

2.5.1. Underground Storage Tanks (USTs)

Historical USTs are discussed in Section 3.2.

2.5.2. Aboveground Storage Tanks (ASTs)

Langan observed a septic holding tank in the boiler room of the school building. According to the site contact, the subject property has always been connected to the public sanitary system; the holding tank was installed when the addition to the school was constructed (see Section 3.1) as part of the expansion of the sanitary system. The tank connects to the rest of the building system and ultimately to the public sanitary system.

2.5.3. Drums, Totes, and Intermediate Bulk Containers

Langan did not observe any drums, totes, or intermediate bulk containers at the subject property.

2.5.4. Other Chemical Storage, Containers, or Equipment

Two locked flammable materials cabinets were observed in a storage area in the school building. The cabinets are used to store chemicals for science experiments. The cabinets were observed to be in good condition with no evidence of any releases, and no floor drains were present in the area.

Langan observed shelves and storage cabinets containing retail-size containers of maintenance-related products and janitorial products throughout the interior of the building. The containers appeared to be in good condition, and no evidence of release was noted. Minor staining was noted on the concrete floor of one of the storage areas; no floor drains were noted in this area and the concrete was observed to be in good condition.

The building contains an electric lift and a hydraulic elevator. The site contact was not sure if the hydraulic fluid was polychlorinated biphenyl (PCB)-containing. Both appeared to be in

good condition, and no evidence of staining or releases was noted within the elevator control room.

Langan observed a pad-mounted transformer along the northwestern exterior of the building. The transformer was not labeled to indicate whether it contained PCBs. Langan did not observe indications of leaks or releases from the transformer.

Minor staining was observed in asphalt-paved parking areas throughout the subject property. The staining appeared consistent with regular use, and the asphalt was observed to be in good condition.

2.6. Air Emissions

Air emission sources at the subject property include heating, ventilation, and air conditioning (HVAC) equipment and natural gas-fired boiler units. Langan did not identify obvious impacts, such as visible emissions or odors, from air emission sources at the subject property.

Langan does not consider the air emissions an environmental concern for the subject property.

2.7. Waste Management

2.7.1. Hazardous Waste

Langan did not observe any hazardous waste on the subject property.

2.7.2. Non-Hazardous Waste

Non-hazardous municipal waste generated at the subject property is collected in trash cans throughout the interior and exterior of the subject property and disposed of in dumpsters at the northwestern exterior of the school building. Some staining was observed on the outside of the dumpsters; however, Langan observed the non-hazardous waste containers to be intact without obvious indications of a release or material threat of a future release.

An aboveground grease trap was observed in the kitchen of the cafeteria. The grease trap appeared to be in good condition with no evidence of a release noted.

2.7.3. Fill Areas or Solid Waste

Langan did not observe areas that were apparently filled or graded by non-natural causes (or filled with material of unknown origin) that suggest the presence of garbage, construction debris, demolition debris, or other solid waste disposal, or mounds or depressions suggesting solid waste disposal.

Historical fill material is discussed in Section 3.3.

2.8. Wastewater

As noted above, sanitary wastewater is discharged to the public sewer system. Floor drains were noted within the boiler room and within the bathrooms throughout the building. No chemicals or petroleum products were noted in these areas, and no evidence of release was observed in the vicinity of the floor drains. A sump is present in the boiler room; it was covered by a metal sheet, which appeared to be in good condition. No evidence of release

was noted in the vicinity of the sump. According to the site contact, additional sumps are in tunnels underneath the school building. These sumps could not be accessed; however, it is considered unlikely that any releases have impacted these areas due to their location.

Langan did not identify evidence of septic systems or cesspools at the subject property.

2.9. Storm Water

Storm water at the subject property percolates through pervious areas or sheet flows to on-site storm drains or the adjoining roadways into the municipal storm sewer system.

Langan did not observe obvious evidence of impacts to storm water pathways such as sheens, residue, or stressed vegetation at the subject property.

3. SUBJECT PROPERTY HISTORY AND RECORDS REVIEW

3.1. Historical Summary

Langan compiled the following summary of the subject property history based on a review of readily available and reasonably ascertainable sources and interviews. Historical resources are provided in Appendix E.

Table 3-1 Subject Property History

Time Period	Historical Discussion
1892 – 1920	The subject property is depicted as undeveloped on topographic maps. A Sanborn map from 1920 suggests that the subject property was subdivided into at least two parcels at this time; however, no development is shown.
1930s – 1950	The earliest available aerial photograph depicts a house and what appears to be a barn or garage in the southwestern portion of the subject property. The rest of the parcel is undeveloped, though portions appear to be cleared. What appears to be a stream is depicted in the southern and central portions of the subject property.
1950 – 2000s	The current school building is first shown in the 1959 aerial photograph, the 1960 topographic map, and a Sanborn map from 1990. According to the Greenwich property card, the first building associated with the school was constructed in 1950, though this is not shown on the 1950 Sanborn map, and the 1990 Sanborn notes that that the building was constructed in 1957. The school building is shown in the southern portion of the subject property, with a circular parking area in the southwest. An approximately 5.4-acre field is depicted northeast of the school in the area where the stream was previously shown, and the northern portion of the subject property is undeveloped and forested. By 1960, the field is shown to include a baseball diamond and tennis courts are depicted to the west of the school building. The 1961 city directory lists Central Junior High School at Stanwich Road with no street address; the listing is between 59 and 99 Stanwich Road. In 1967, 1972, 1977, and 1980, Central Junior High School is listed at 77 Stanwich Road. No entity is listed at this address in 1988 or 1992, and there are no listings for 9 Indian Rock Lane in these years. Central Junior High School is listed as 9 Indian Rock Lane in 1995.
2000s – Present	The aerial photograph from 2006 shows an addition to the northwestern portion of the school. The field has gone through several iterations, and now includes two baseball diamonds. Central Middle School is listed as 9 Indian Rock Lane in 2005, 2010, and 2020. The subject property is listed as "Town of Greenwich" at 9 Indian Rock Lane in 2014 and 2017. The owner of the subject property is identified as "Town of Greenwich c/o Finance Dept." No transfers of ownership are indicated on the property card, and the subject property is zoned as "R-12 single family."

Environmental concerns related to historical operations are discussed further in Section 3.3.

3.2. Regulatory Database Review

The subject property is identified on the CT UST (under the address "Stanwich Road" with no street number) and CT Asbestos databases.

One 7,200-gallon heating oil UST (identification "T1", installation date July 1, 1958) and one 8,000-gallon heating oil UST ("T1R1", installation date October 1, 1990). Both USTs are listed as "currently in use."

According to a UST Removal Closure Report prepared by Big East Environmental and dated August 13, 2019, UST T1R1 was removed from the subject property in August 2019. A figure associated with the report indicates that the UST was located at the western exterior of the school building, in an area immediately west of the area indicated by the site contact as the previous UST location. Upon removal. the tank, which contained product, was observed to be in good condition with no evidence of release. Four sidewall samples and one bottom sample were collected from the UST grave and analyzed for extractable total petroleum hydrocarbons (ETPH), semi-volatile organic compounds (SVOCs), and volatile organic compounds (VOCs). No contamination was detected in the soil samples. Based on this information, UST T1R1 is not considered a REC.

According to the site contact, no USTs remain on the subject property, and the building is heated with natural gas; however, no closure documentation for UST T1 was available for review, and it is unknown if the two USTs were located in the same area. Therefore, UST T1 is considered a REC based on a material threat of a release due to its age, construction details, lack of tightness testing results, and lack of closure reporting.

The following CT Asbestos projects are associated with the subject property:

- ID 723: Start date July 17, end date August 18, 2006
- ID 5618: Start date August 14, end date August 18, 2007
- ID 8608: Start date June 19, end date August 29, 2008
- ID 10123: Start date September 26, end date September 28, 2008
- ID 12006: Start date June 20, end date August 29, 2009
- ID 12500: Start date June 25, end date July 3, 2009
- ID 15840: Start date July 6, end date August 3, 2010
- ID 16151: Start date July 22, end date July 23, 2010
- ID 19184: Start date June 27, end date July 27, 2011
- ID 43399: Start date June 30, end date September 5, 2012
- ID 47033: Start date July 6, end date August 6, 2013
- ID 59008: Start date June 24, end date July 1, 2016
- ID 79832: Start date April 9, end date April 17, 2021

In addition to the above-described review, Langan also queried or reviewed the following CTDEEP online resources – the DOSP, ELU) Map, Spill Incidents database, Registered USTs and Hazardous Waste Manifest databases on March 24, 2023. No ELURs, spills, USTS, or manifests were found to be associated with the subject property.

3.3. Prior Report Review

Langan was provided with a soil sampling report and a preliminary geotechnical investigation report. The reports are referenced in Section 7. and summarized below and in Section 2.2, as applicable.

A preliminary environmental investigation was conducted by Milone & MacBroom, Inc. (MMI) in 2019. The purpose of the investigation was to determine if any fill material was imported and/or placed in the playing field at the subject property. MMI installed 12 test pits across the field area between 4 to 6 feet bgs. MMI concluded that "other than the trace presence of construction-related materials, the fill material consisted entirely of earthen materials with no apparent environmental impact such as staining, discoloration, or odor." One soil sample was collected from 0 to 2 feet bgs in each test pit and analyzed for Resource Conservation and Recovery Act (RCRA) List Metals, PCBs, and polynuclear aromatic hydrocarbons (PAHs). No PCBs or PAHs were detected in any sample, and MMI concluded that levels of metals reflected background conditions.

4. ADJOINING PROPERTIES AND SURROUNDING AREA

4.1. Current Use of Adjoining Properties and Surrounding Area

The use of adjoining and surrounding properties is summarized as follows

Table 4-1 Current Use of Adjoining Properties and Surrounding Area

Direction	Adjoining Properties	Surrounding Area
North	Residential properties (95 Stanwich Road and, 300 and 302 Orchard Street)	Residential properties and Greenwich Country Club
East	Orchard Street followed by residential properties (1 and 6 Coachlamp Lane; 215, 219, and 221 Orchard Street; 115 Bible Street) and Montgomery Pinetum (Bible Street)	Residential properties and undeveloped land
South	Indian Rock Lane followed by a preschool (10 Indian Rock Lane), residential properties (12, 14, and 16 Indian Rock Lane), and an undeveloped parcel (4 Ponderosa Drive)	Residential properties and synagogue
West	Country club (19 Doubling Road) and residential properties (72 and 80 Stanwich Road)	Skating club and baseball field

Langan did not observe obvious conditions likely to represent environmental concerns for the subject property from current uses of adjoining or surrounding properties.

4.2. Adjoining Properties and Surrounding Area History

Langan compiled the following summaries of the adjoining properties and surrounding area history based on a review of historical resources and interviews. Historical resources are provided in Appendix E.

Table 4-2 Historical Use of Adjoining Properties

Direction	Adjoining Properties
North	Sanborn maps from 1920 and 1950 indicate that a structure identified as a sanitarium was previously adjoining to the north. Aerial photographs indicate that the northern adjoining properties were undeveloped or developed with residential properties from the 1930s and 1940s. Langan does not consider the historical use of the northern adjoining properties an environmental concern for the subject property.
East	Aerial photographs indicate that the eastern adjoining properties were undeveloped or developed with residential buildings from the 1930s, with increased residential development shown through the 1960s. Langan does not consider the historical use of the eastern adjoining properties an environmental concern for the subject property.

Direction	Adjoining Properties
South	Indian Rock Road is first shown on the 1959 aerial photograph. Prior to the road's construction, the southern adjoining area is shown to be largely undeveloped, with some structures that appear to be residential and a building that may be a church. Increased residential development is shown through the 1960s. Langan does not consider the historical use of the southern adjoining properties an environmental concern for the subject property.
West	The western adjoining properties are depicted as agricultural land in the 1930s through the late 1940s, after which residential development is shown. According to the country club website, the club was first founded in 1892 but moved locations to the present property at an unspecified date. What appears to be a golf course is shown on the earliest available aerial photograph. Langan does not consider the historical use of the western adjoining properties an environmental concern for the subject property.

The surrounding area was depicted as developed with mostly residential properties, with increased development through the 1970s. Surrounding business include a synagogue, a skating club, and athletic facilities.

4.3. Regulatory Database Review

Langan reviewed the environmental database report to evaluate if adjoining or surrounding area properties identified in the database report are suspected to represent an environmental concern for the subject property. If further information was deemed necessary to evaluate a potential REC for the subject property, Langan contacted an applicable regulatory agency to obtain additional records. Database and agency record information associated with adjoining properties are discussed in Section 4.3.1 and database and agency record information for surrounding properties of potential environmental concern for the subject property (see Section 8.2) are discussed in Section 4.3.2.

4.3.1. Adjoining Properties

None of the adjoining properties were listed in any regulatory database, as identified by the radius report

4.3.2. Surrounding Area

Langan evaluated each of the database listings for surrounding area properties. None of the properties were determined to warrant further discussion in the context of potential to represent an environmental concern for the subject property.

5. CONCLUSIONS, FINDINGS, AND OPINIONS

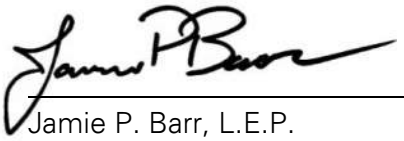
Langan completed a Phase I ESA in conformance with the scope and limitations of ASTM E1527-21 for the subject property at 9 Indian Rock Lane in Greenwich, Fairfield County, Connecticut. Exceptions to, or deletions from, ASTM E1527-21 are described in Section 8 of this report. This assessment has revealed the RECs, CRECs, HRECs, de minimis conditions, and significant data gaps presented in Table 5-1.

Table 5-1 Conclusions, Findings, and Opinions

ASTM E1527-21 Scope Items
Recognized Environmental Conditions (RECs)
Underground Storage Tank (UST): A 7,200-gallon heating oil UST (identification "T1", installation date July 1, 1958) is listed as "currently in use" at the subject property. According to the site contact, the UST was removed, and the building is heated with natural gas; however, they were not aware of when the tank removal had taken place and no closure documentation was available for review. Therefore, the UST is considered a recognized environmental condition (REC) based on a material threat of a release due its age, construction details, lack of tightness testing results, and lack of closure reporting.
Controlled Recognized Environmental Conditions (CRECs)
Langan did not identify CRECs.
Historical Recognized Environmental Conditions (HRECs)
Langan did not identify HRECs.
De Minimis Conditions
Langan did not identify de minimis conditions.
Significant Data Gaps
As noted above, information regarding the location and removal of UST T1 previously located on the subject property was requested but not available for review.

6. ENVIRONMENTAL PROFESSIONAL STATEMENT

I declare that to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in Section 312.10 of 40 Code of Federal Regulations (CFR) Part 312 and I have the specific qualifications based on my education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Jamie P. Barr, L.E.P.
Principal/Vice President (Environmental Professional)

20 April 2023

Date

7. REFERENCES

Langan used the following sources to complete this Phase I ESA.

- ASTM E1527-21, Standard Practice for Environmental Property Assessments: Phase I Environmental Property Assessment Process, published 16 November 2021
- EDR, Inc., Radius Map Report with GeoCheck, 27 March 2023
- EDR, Inc., City Directory Image Report, 27 March 2023
- EDR, Inc., Aerial Photographs, 24 March 2023
- EDR, Inc., Historical Topographic Map Report, 24 March 2023
- EDR, Inc., Sanborn Map Report, 27 March 2023
- CTDEEP EUR Map, https://ctdeep.maps.arcgis.com/apps/webappviewer/index.html?id=d37eccb2a5c3491d8f0d389a96d9a912 (searched 23 March 2023)
- CTDEEP Aquifer Protection Areas Map, https://ctdeep.maps.arcgis.com/apps/webappviewer/index.html?id=6b33fc05fcce4c5286fafae1b2cccbfb (searched 23 March 2023)
- CTDEEP Document Online Search Portal, https://filings.deep.ct.gov/DEEPDocumentSearchPortal/ (searched 23 March 2023)
- CTDEEP CT Hazardous Waste Manifest Data 1984-2008, https://data.ct.gov/Environment-and-Natural-Resources/Hazardous-Waste-Manifest-Data-CT-1984-2008/h6d8-qiar/data (searched 23 March 2023)
- CTDEEP Spill Incidents Dataset, https://data.ct.gov/Environment-and-Natural-Resources/Spill-Incidents/wr2a-rnsg (searched 23 March 2023)
- Bedrock Geological Map of Connecticut compiled by John Rodgers, Yale University, dated 1985.
- Surficial Materials Map of Connecticut, United States Geological Survey/State of Connecticut Department of Environmental Protection, Connecticut Geological and Natural History Survey, 1992.
- CTDEEP, Water Quality Classifications Map, Greenwich, Connecticut, October 2018.
- US EPA ECHO database: http://echo.epa.gov/facilities searched (searched 23 March 2023)
- US EPA ENVIROFACTS database: https://www3.epa.gov/enviro/ searched (searched 23 March 2023)
- US EPA MyProperty database: https://www3.epa.gov/enviro/facts/myproperty/ searched (searched 23 March 2023)
- Milone & MacBroom, Inc., Preliminary Environmental Investigation at Central Middle School, 31 July 2019
- Atane Engineers, P.C., Preliminary Geotechnical Investigation for Central Middle School, 10 October 2022

Table 7-1 Dates of Assessment Components

COMPONENT	DATE
Interviews	12 April 2023
Review of government records	23 March 2023
Site reconnaissance	12 April 2023
Declaration by Environmental Professional	20 April 2023

8. LIMITATIONS AND DEFINITIONS

This Phase I ESA report was prepared for the Client and is intended to be used in its entirety. Excerpts taken from this report are not necessarily representative of the assessment findings. The Client is the sole intended beneficiary of the report. The user requested no special terms or conditions regarding this Phase I ESA.

Langan's scope of services, which is described in Section 1.2 and in the contract executed between Langan and the Client, was limited to that agreed to with the Client/user and no other services beyond those explicitly stated are implied. To the extent possible, the services performed and agreed upon for this Phase I ESA are consistent with the guidelines of ASTM E1527-21.

This report is not intended to be an exhaustive assessment of the subject property. The purpose of the Phase I ESA is to reduce uncertainty about unknown conditions at the subject property. No environmental site assessment can wholly eliminate uncertainty regarding the potential for RECs in connection with a subject property. Therefore, Langan cannot "verify", "insure", "certify", or "guarantee" that the subject property is free of environmental concerns.

No expressed or implied representation or warranty is included or intended in this report, except that our services were completed using the care and skill ordinarily followed by professionals providing similar services under similar circumstances in similar locations at the same point in time.

The conclusions provided in this report are based solely on information obtained through completing the standard activities required by ASTM E1527-21 and are intended exclusively for the purpose stated herein, at the specified subject property, as it existed at the point in time the assessment was completed. The conclusions provided in this report do not apply to conditions and features of which Langan was not made aware of through good faith efforts to complete the activities required by ASTM E1527-21 and did not have the opportunity to evaluate.

8.1. ASTM Definitions

The following definitions are provided in ASTM E1527-21 and presented below for reference. This section is not a comprehensive list of definitions provided in ASTM E1527-21 and is intended to summarize those pertinent to this Phase I ESA report.

Activity and use limitations (AULs): legal or physical restrictions or limitations on the use of, or access to, a site or facility: (1) to reduce or eliminate potential exposure to hazardous substances or petroleum products in the soil, soil vapor, groundwater, and/or surface water on the property, or (2) to prevent activities that could interfere with the effective-ness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. These legal or physical restrictions, which may include institutional and/or engineering controls, are intended to prevent adverse impacts to individuals or populations that may be exposed to hazardous substances and petroleum products in the soil, soil vapor, groundwater, and/or surface water on a property.

Adjoining properties: any real property or properties the border of which is contiguous partially contiguous with that of the subject property, or that would be contiguous or partially contiguous with that of the subject property but for a street, road, or other public thoroughfare separating them.

All Appropriate Inquiries: that inquiry constituting all appropriate inquiries into the previous ownership and uses of the subject property consistent with good commercial and customary practice as defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S. Code (USC) § 9601(35)(B) and 40 CFR. Part 312, that will qualify a party to a commercial real estate transaction for one of the threshold criteria for satisfying the Landowner Liability Protections (LLPs) to CERCLA liability (42 USC §§ 9601(35)(A) & (B), § 9607(b)(3), § 9607(q), and§ 9607(r)), assuming compliance with other elements of the defense.

Approximate minimum search distance: the area for which records must be obtained and reviewed pursuant to ASTM E1527-21 Section 8 subject to the limitations provided in that section. This may include areas outside the subject property and shall be measured from the nearest subject property boundary. This term is used in lieu of radius to include irregularly shaped properties.

Business environmental risk (BER): a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of commercial real estate, not necessarily related to those environmental issues required to be investigated in this practice. Consideration of BER issues may involve addressing one or more non-scope considerations.

Controlled recognized environmental condition (CREC): recognized environmental condition affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to implementation of required controls (for example, activity and use limitations or other property use limitations).

Data gap: a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information. Data gaps may result from incompleteness in any of the activities required by this practice, including, but not limited to, site reconnaissance (for example, an inability to conduct the site visit), and interviews (for example, an inability to interview the key site manager, regulatory officials, etc.).

De minimis condition: a condition related to a release that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. A condition determined to be a de minimis condition is not a REC nor a CREC.

Engineering controls (ECs): physical modifications to a site or facility (for example, capping, slurry walls, or point of use water treatment) to reduce or eliminate the potential for

exposure to hazardous substances or petroleum products in the soil or groundwater on a property. ECs are a type of AUL.

Environment: environment shall have the same meaning as the definition of environment in CERCLA 42 USC § 9601(8).

Historical recognized environmental condition (HREC): previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations). An HREC is not a REC.

Institutional controls (ICs): a legal or administrative mechanism (for example, "deed restrictions," restrictive covenants, easements, or zoning) on the use of, or access to, a site or facility to (1) reduce or eliminate potential exposure to hazardous substances or petroleum products in the soil or groundwater on the property, or (2) to prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. An IC is a type of AUL.

Key site manager: the person identified by the owner or operator of a subject property as having good knowledge of the uses and physical characteristics of the subject property.

Material threat: obvious threat which is likely to lead to a release and that, in the opinion of the environmental professional, would likely result in impact to public health or the environment.

Obvious: that which is plain or evident; a condition or fact that could not be ignored or overlooked by a reasonable observer.

Property use limitation: limitation or restriction on current or future use of a property in connection with a response to a release, in accordance with the applicable regulatory authority or authorities that allows hazardous sub-stances or petroleum products to remain in place at concentrations exceeding unrestricted use criteria.

Reasonably ascertainable: information that is (1) publicly available, (2) obtainable from its source within reasonable time and cost constraints, and (3) practically reviewable.

Recognized environmental conditions (RECs): (1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment. For the purposes of this definition, "likely" is that which is neither certain nor proved, but can be expected or believed by a reasonable observer based on the logic and/or experience of the environmental professional, and/or available evidence, as stated in the report to support the opinions given therein.

Release: a release of any hazardous substance or petroleum product shall have the same meaning as the definition of "release" in CERCLA 42 USC § 9601(22). There are a number of statutory exclusions from the definition of release that may impact the environmental professional's opinions and conclusions, such as the normal application of fertilizer.

Significant data gap: a data gap that affects the ability of the environmental professional to identify a recognized environmental condition.

Site reconnaissance: that part that is contained in Section 9 of ASTM E1527-21 and addresses what should be done in connection with the site visit. The site reconnaissance includes, but is not limited to, the site visit done in connection with such a Phase I Environmental Site Assessment.

Site visit: the visit of the subject property during which observations are made constituting the site reconnaissance section of this practice.

Subject property: the property that is the subject of the environmental site assessment described in this practice.

User: the party seeking to use ASTM E1527-21 to complete an environmental site assessment of the subject property.

8.2. Standard Environmental Record Sources

Langan reviewed an environmental database search report prepared by an environmental database search provider for the subject property and surrounding area. The database search report includes a listing of properties identified on select federal, state, local and tribal standard source environmental databases within the approximate minimum search radii outlined in ASTM E1527-21. This information was supplied to Langan by the environmental database search provider, and to the environmental database search provider by government sources; therefore, neither Langan nor the environmental database search provider can verify the completeness and accuracy of the database information. Appendix F contains a copy of the report, with specific source and property descriptions, and the dates of the last update for each database searched. Langan reviewed the database search report on a record-by-record basis to evaluate if certain properties identified in the database report are likely to represent an environmental concern for the subject property. The evaluation criteria included factors such as distance, groundwater gradient, nature of the listing, and regulatory status. Unless specifically discussed in the body of this report, the facilities listed on the database do not appear to represent an environmental concern to the subject property.

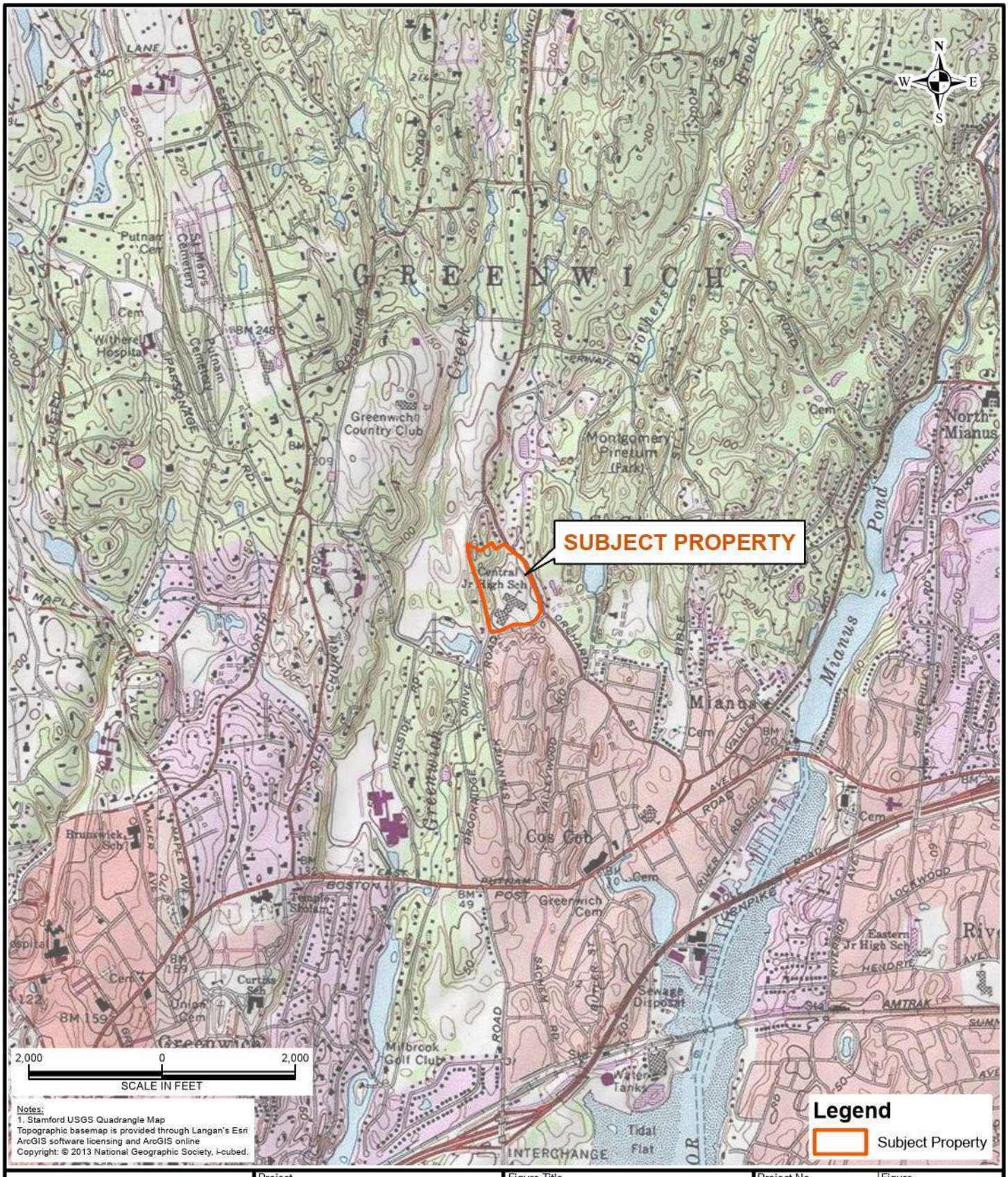
8.3. Limiting Conditions/Deviations

Langan did not encounter any limiting conditions or delete or deviate from the ASTM E1527-21 guidelines during this Phase I ESA.

8.4. Data Gaps

Langan identified one significant data gap related to a historical UST, which is summarized in Section 5.

Appendix A Figures



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Project	Figure Title	Project No.	Figure
CENTRAL MIDDLE SCHOOL 9 INDIAN ROCK LANE GREENWICH FAIRFIELD COUNTY CT	SUBJECT PROPERTY LOCATION MAP	140265101 Date 3/27/2023 Scale 1" = 2,000 feet Drawn By BLA	1

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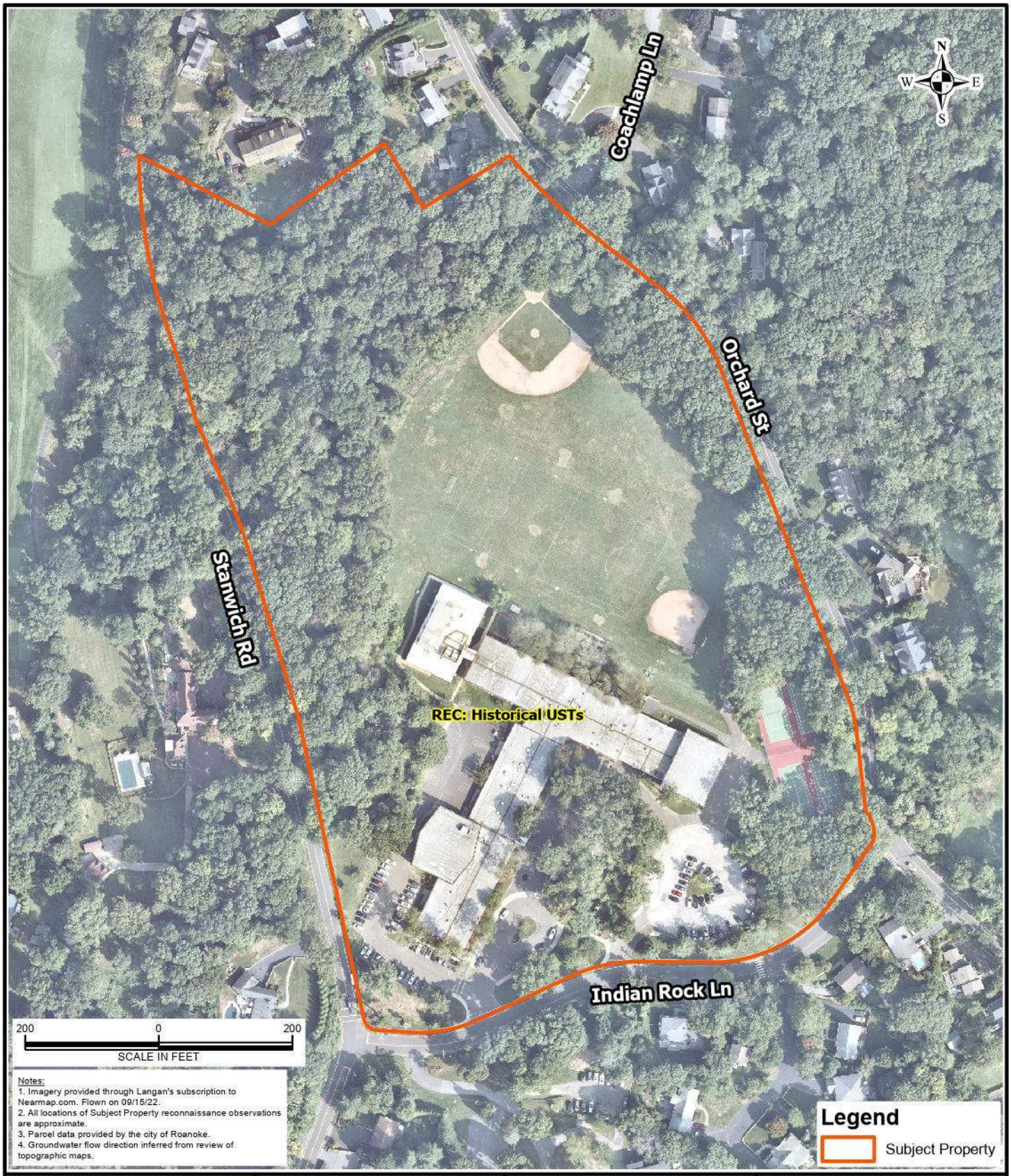

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Project
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH
FAIRFIELD COUNTY CT

Figure Title
SUBJECT PROPERTY LAYOUT

Project No. 140265101
Date 4/20/2023
Scale 1" = 200 feet
Drawn By BLA

Figure 2

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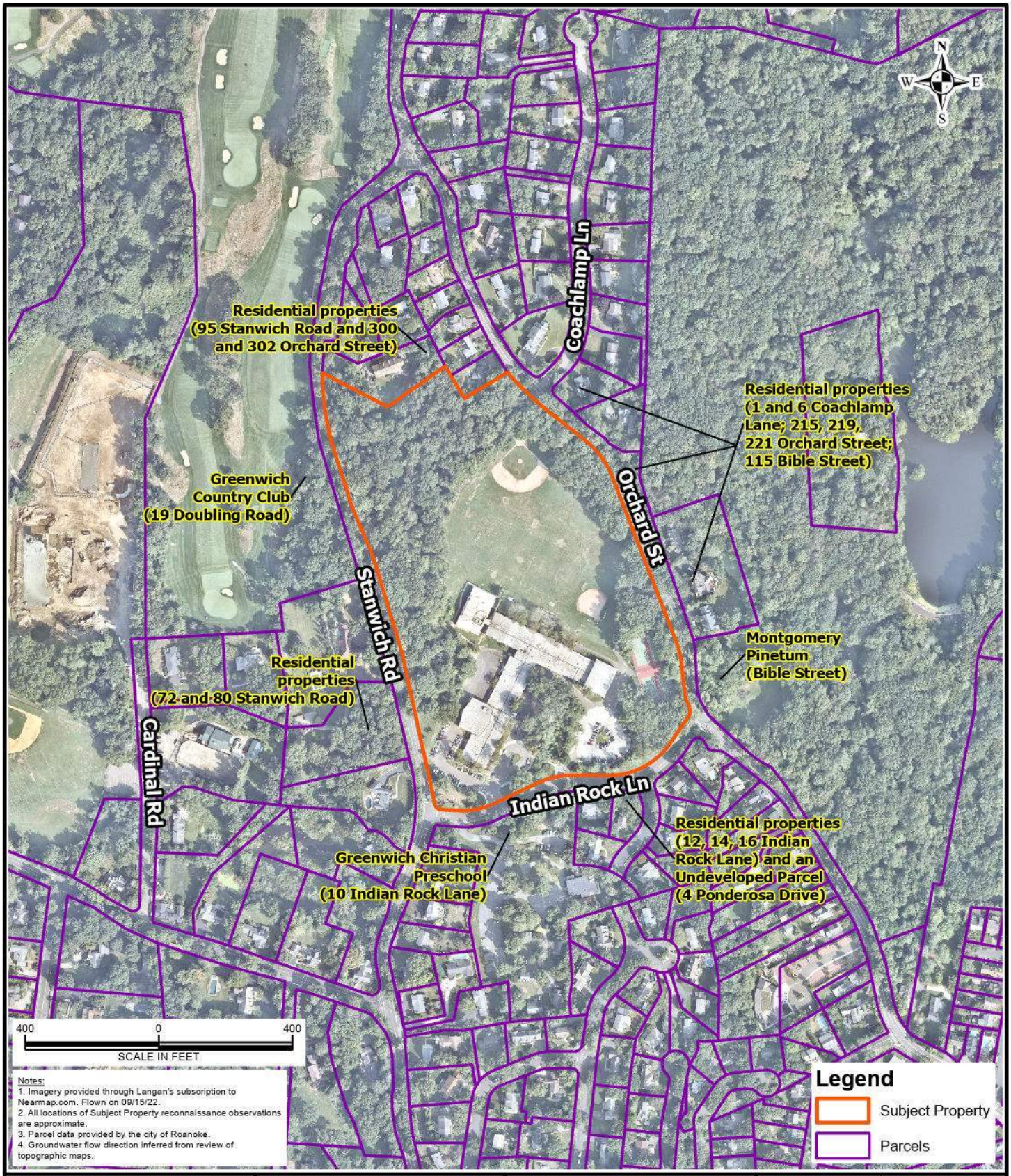

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Project	CENTRAL MIDDLE SCHOOL 9 INDIAN ROCK LANE GREENWICH FAIRFIELD COUNTY CT
Figure Title	NEARBY PROPERTIES MAP
Project No.	140265101
Date	4/20/2023
Scale	1" = 400 feet
Drawn By	BLA
Figure	3

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Appendix B User Provided Information

MILONE & MACBROOM

July 31, 2019

Mr. Daniel M. Watson, Director of School Facilities
Greenwich Public Schools
290 Greenwich Avenue
Greenwich, CT 06830

RE: Preliminary Environmental Investigation at Central Middle School
Greenwich, Connecticut
MMI #5062-10-02

Dear Mr. Watson:

Milone & MacBroom, Inc. (MMI) conducted a limited investigation of information and files pertaining to past construction activities associated with the playing field at Central Middle School located at 9 Indian Rock Lane in Greenwich, Connecticut. This work was performed in an effort to determine if, and potentially when, additional fill material was imported and/or placed at the field. Concurrently with this investigation, MMI also collected soil samples from 12 test pits located throughout the field area. This work was completed in an effort to inform the design process for the proposed field improvements.

Background Investigation Summary

The background research on the history of field construction included a review of historical aerial photography, a request to review pertinent town documentation, and in-person interviews of staff at the Town Hall of Greenwich. The following departments were contacted and interviewed: Department of Public Works (Building Inspection), the Board of Education Department, Planning & Zoning Department (includes Land Use and Environmental Affairs), Engineering Department, Assessor and Clerk Offices, and Parks & Recreation.

None of the town departments had any documentation pertaining to the construction of the playing field.

The in-person and phone interviews conducted with Town Hall staff resulted in no new or additional information.

Historical aerials from Connecticut Environmental Conditions Online (CT ECO) covering the following years were reviewed: 1934, 1951, 1970, 1985, 1990, 1996, 2004, 2008, 2012, and 2016. The aerial photography review indicated that the field may have been used for residential purposes with a few cleared areas in 1934. By 1951, the site appeared almost completely covered in woods and unused. In the 1970 aerial photo, the school building and playing field with one ballfield in the northern corner are apparent. The 1985, 1990, and 1996 aerial photographs show three ballfields on the athletic field, one each on the northern, western, and southeastern corners. By the 2004 aerial photo, only two ballfields remain, the ones in the northern and southeastern corners. In addition, the 2004 aerial photo also shows a structural addition to the northwestern side of the school building. The 2004 and forward photographs showed the field and the school building as it appears in the present.

The August 31, 2018, Topographic Survey completed by MMI indicated similar topographic conditions on the field as existing conditions.

Soil Sampling Activities

MMI observed and logged 12 test pits (TP-1 through TP-12) that were excavated by A. Vitti Excavators, LLC on July 15, 2019. The test pits were made to explore the subsurface conditions in the project area using a Caterpillar 420D backhoe to depths ranging between 4 and 6 feet below existing grades. Explorations were observed and logged by an MMI Environmental Scientist and an MMI Geotechnical Engineer. Refer to the attached exploration location plan for approximate locations of the test pits and attached logs of the test pits for the subsurface conditions encountered.

The generalized subsurface profile generally consists of fill or topsoil over fill over silt. Bedrock was not encountered in any of the test pits.

At Test Pits TP-5 and TP-11, fill was encountered at existing grade and extended to the depths explored. The fill consisted of reddish-brown, fine to medium sand, some silt, trace fine gravel over brown, fine to medium sand, some fine to coarse gravel, little to some silt, with cobbles and boulders.

Topsoil was encountered at each test pit location (excluding TP-5 and TP-11) and consisted of approximately 6 to 12 inches of dark brown, fine to medium sand, some silt, trace fine gravel, with trace roots. Fill was encountered below the topsoil that consisted of between 1.0 and at least 4.7 feet of brown/gray/gray-brown, fine to coarse sand, little to some fine to coarse gravel, little to some silt, with trace debris (e.g., rebar, asphalt, plastic), cobbles, and boulders. Where the fill is completely penetrated, silt was encountered below that consisted of gray, clayey silt, little fine to coarse gravel, trace to and fine to coarse sand, and trace roots to the depths explored.

Other than the trace presence of construction-related materials, the fill material consisted entirely of earthen materials with no apparent environmental impact such as staining, discoloration, or odor.

The current plans for the field reconstruction call for the installation of a synthetic turf playing surface. Construction of these types of surfaces typically involves the removal of existing soils to a depth of at least 2 feet so that drainage piping and base material can be installed. As such, soil samples were collected from the upper 2 feet and analyzed for selected parameters to help determine if special disposal measures will be necessary for the excess soil.

The samples were submitted to Complete Environmental Testing, Inc. (CET), a State of Connecticut certified laboratory for analysis of the following parameters:

- Resource Conservation and Recovery Act (RCRA) List of 8 Metals by the Environmental Protection Agency (EPA) 6010C Method (including total mercury by the EPA 7471B Method)
- Polychlorinated biphenyls (PCBs) by the EPA 8082A Method
- Polynuclear aromatic hydrocarbons (PAHs) by the EPA 8270D Method

Soil Sampling Results

The laboratory results indicated the following:

- No PCBs were detected in any of the samples.
- No PAH compounds were detected in any of the samples.
- Several metals were detected in all the soil samples at trace concentrations, which is likely indicative of naturally occurring levels.

Based upon the laboratory results and the observations made during the test pit advancements, the soil at the Central Middle School playing field does not contain contaminants and would be considered "clean fill" if excavated and removed from the site.

Very truly yours,

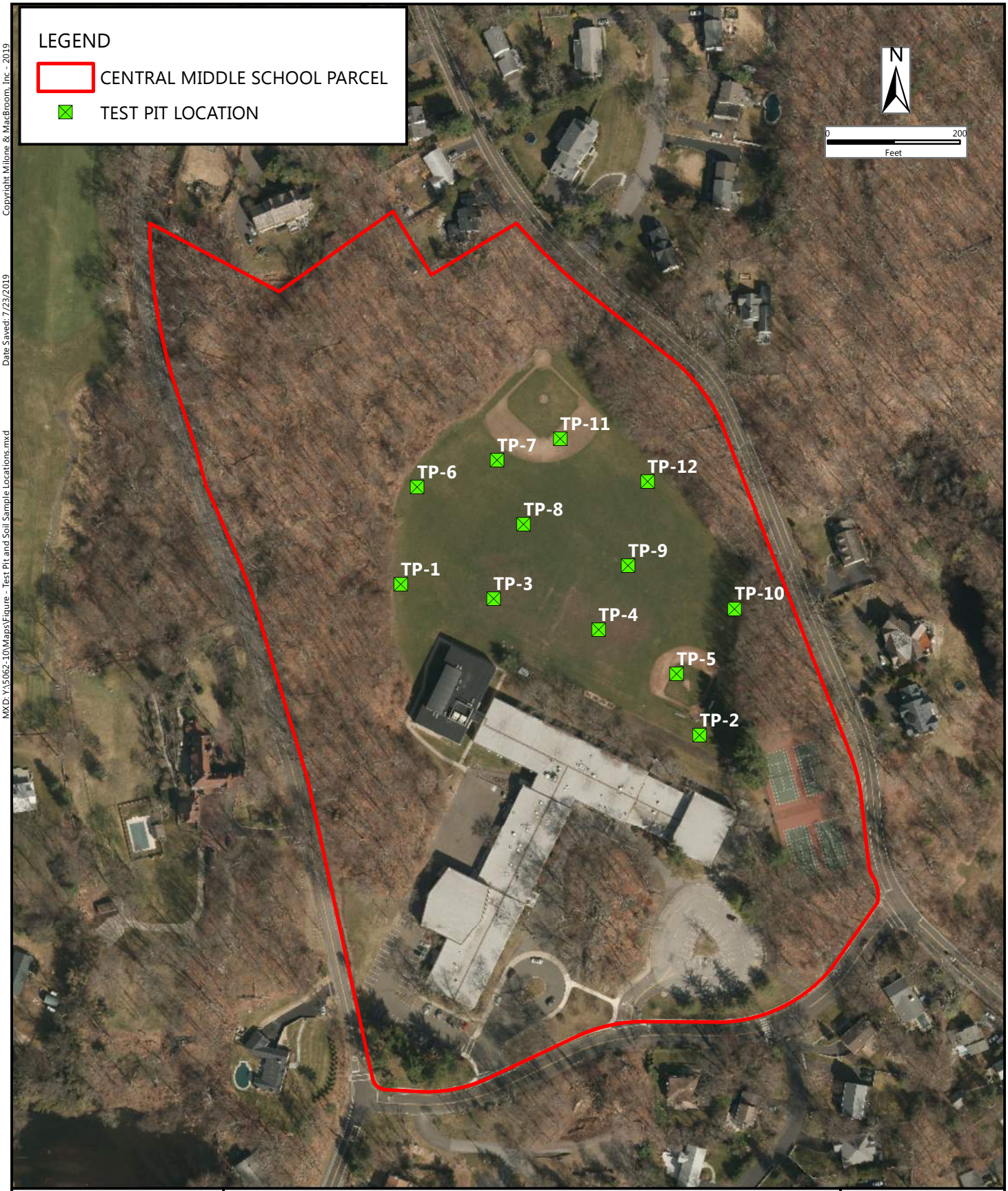
MILONE & MACBROOM, INC.

Scott G. Bristol, LEP, PG
Associate, Manager of Environmental Services

Enclosures

5062-10-02-jl3119-ltr.docx

FIGURE



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TEST PIT LOCATION MAP

CENTRAL MIDDLE SCHOOL ENVIRONMENTAL SOIL INVESTIGATION
GREENWICH PUBLIC SCHOOLS
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

SCALE	1 " = 200 '
DATE	7/23/2019
PROJ. NO.	5062-10-02

FIGURE

TABLE

Summary Table of Results
Central Middle School
Greenwich, Connecticut

Soil Samples Collected July 15, 2019

				Sample ID	TP-1	TP-2	TP-3	TP-4	TP-5	TP-6	TP-7	TP-8	TP-9	TP-10	TP-11	TP-12
Parameter	GA PMC	GB PMC	I/C DEC	RES DEC	0-2ft	0-2ft	0-2ft	0-2ft	0-2ft	0-2ft	0-2ft	0-2ft	0-2ft	0-2ft	0-2ft	0-2ft
RCRA 8 Metals, Total by EPA 6010C (mg/kg)																
Arsenic	NA	NA	10	10	2.7	2.6	3.2	4.5	3.4	2.5	3.5	4.2	2.4	4.8	5	2.9
Barium	NA	NA	140,000	4,700	150	86	140	120	72	110	110	120	110	250	75	85
Cadmium	NA	NA	1,000	34	ND<0.57	ND<0.53	ND<0.57	ND<0.56	ND<0.55	ND<0.58	ND<0.60	ND<0.56	ND<0.59	ND<0.58	ND<0.54	ND<0.54
Chromium	NA	NA	NE	NE	39	23	36	31	21	25	37	33	29	77	22	25
Lead	NA	NA	1,000	400	16	17	21	23	15	14	18	21	20	28	12	12
Selenium	NA	NA	10,000	340	1.7	1.3	1.7	2.3	1.1	1.5	1.9	1.5	1.5	1.7	ND<1.1	ND<1.1
Silver	NA	NA	10,000	340	ND<2.3	ND<2.1	ND<2.3	ND<2.2	ND<2.2	ND<2.3	ND<2.4	ND<2.2	ND<2.4	ND<2.3	ND<2.2	ND<2.2
Mercury, Total by EPA 7471B (mg/kg)																
Mercury	NA	NA	610	20	ND<0.15	ND<0.15	ND<0.15	ND<0.14	ND<0.13	ND<0.15	ND<0.16	ND<0.14	ND<0.14	ND<0.14	ND<0.13	ND<0.14
PCBs by EPA 8082A (mg/kg)																
PCB-1016	NA	NA	10	1	ND<0.12	ND<0.11	ND<0.11	ND<0.11	ND<0.11	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.11	ND<0.11
PCB-1221	NA	NA	10	1	ND<0.12	ND<0.11	ND<0.11	ND<0.11	ND<0.11	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.11	ND<0.11
PCB-1232	NA	NA	10	1	ND<0.12	ND<0.11	ND<0.11	ND<0.11	ND<0.11	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.11	ND<0.11
PCB-1242	NA	NA	10	1	ND<0.12	ND<0.11	ND<0.11	ND<0.11	ND<0.11	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.11	ND<0.11
PCB-1248	NA	NA	10	1	ND<0.12	ND<0.11	ND<0.11	ND<0.11	ND<0.11	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.11	ND<0.11
PCB-1254	NA	NA	10	1	ND<0.12	ND<0.11	ND<0.11	ND<0.11	ND<0.11	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.11	ND<0.11
PCB-1260	NA	NA	10	1	ND<0.12	ND<0.11	ND<0.11	ND<0.11	ND<0.11	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.11	ND<0.11
PCB-1262	NA	NA	10	1	ND<0.12	ND<0.11	ND<0.11	ND<0.11	ND<0.11	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.11	ND<0.11
PCB-1268	NA	NA	10	1	ND<0.12	ND<0.11	ND<0.11	ND<0.11	ND<0.11	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.12	ND<0.11	ND<0.11
PAHs by EPA 8270D (ug/Kg)																
Acenaphthene	8,400	84,000	2,500,000	1,000,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Acenaphthylene	8,400	84,000	2,500,000	1,000,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Anthracene	40,000	400,000	2,500,000	1,000,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Benzo[a]anthracene	1,000	1,000	7,800	1,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Benzo[a]pyrene	1,000	1,000	1,000	1,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Benzo[b]fluoranthene	1,000	1,000	7,800	1,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Benzo[g,h,i]perylene	1,000	1,000	78,000	8,400	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Benzo[k]fluoranthene	1,000	1,000	78,000	8,400	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Chrysene	1,000	1,000	780,000	84,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Dibenz[a,h]anthracene	1,000	1,000	1,000	1,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Fluoranthene	5,600	56,000	2,500,000	1,000,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Fluorene	5,600	56,000	2,500,000	1,000,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Indeno[1,2,3-cd]pyrene	1,000	1,000	7,800	1,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
2-Methyl Naphthalene	560	5,600	1,000,000	270,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Phenanthrene	4,000	40,000	2,500,000	1,000,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Pyrene	4,000	40,000	2,500,000	1,000,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Naphthalene	5,600	56,000	2,500,000	1,000,000	ND<360	ND<330	ND<350	ND<340	ND<330	ND<350	ND<360	ND<350	ND<360	ND<350	ND<330	ND<330
Percent Solids by SM 2540 G (%)																
Percent Solids	NA	NA	NA	NA	84	90	86	87	89	85	84	85	84	84	90	90

EPA	Environmental Protection Agency	GA PMC	GA Pollutant Mobility Criteria	NA	Not applicable
RCRA	Resource Conservation & Recovery Act	GB PMC	GB Pollutant Mobility Criteria	NE	Not established
PCBs	Polychlorinated biphenyls (PCBs)	I/C DEC	Industrial/Commercial DEC		
PAHs	Polynuclear Aromatic Hydrocarbons	RES DEC	Residential Direct Exposure Criteria		
ug/kg	Micrograms per kilogram	ND<5.5	Not detected above indicated laboratory reporting limit		
mg/kg	Milligrams per kilogram				

AERIAL IMAGERY

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1934 AERIAL

CENTRAL MIDDLE SCHOOL ENVIRONMENTAL SOIL INVESTIGATION
GREENWICH PUBLIC SCHOOLS

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

SCALE	1 " = 175 '
DATE	7/23/2019
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FIG. 1

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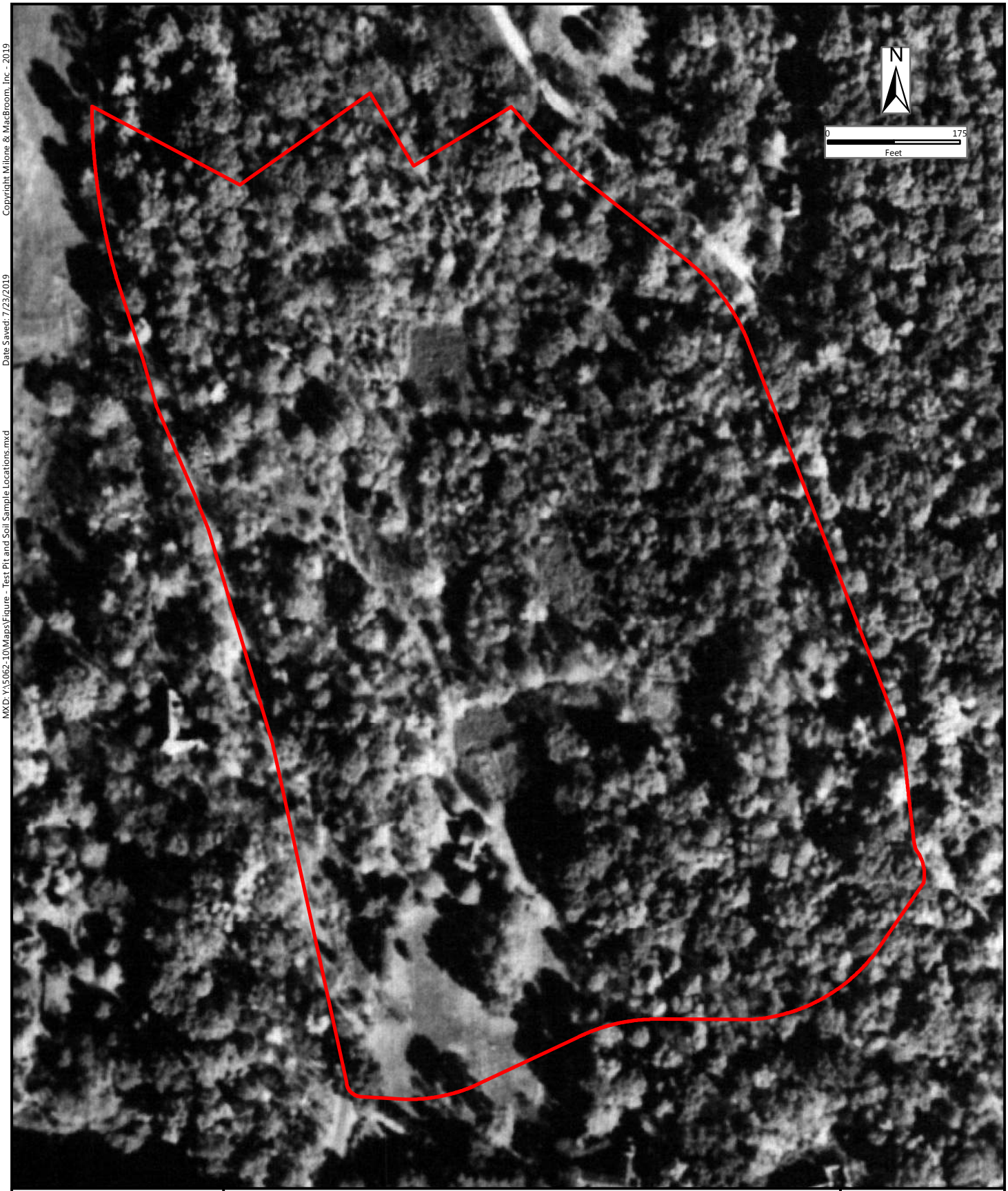

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1951 AERIAL

CENTRAL MIDDLE SCHOOL ENVIRONMENTAL SOIL INVESTIGATION
GREENWICH PUBLIC SCHOOLS

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

SCALE	1 " = 175 '
DATE	7/23/2019
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FIG. 2

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1970 AERIAL

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GREENWICH PUBLIC SCHOOLS

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

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FIG. 3

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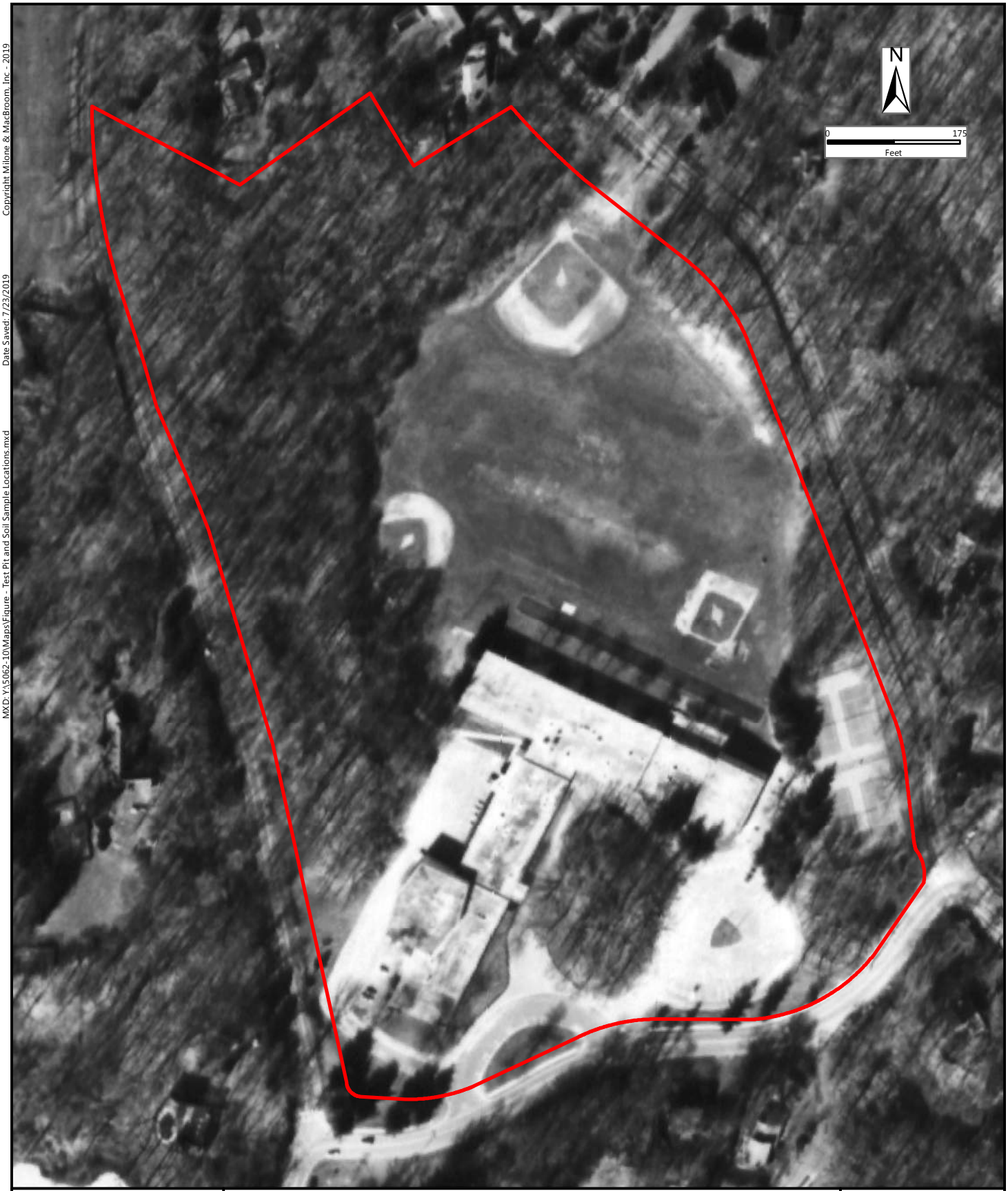

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FIG. 4

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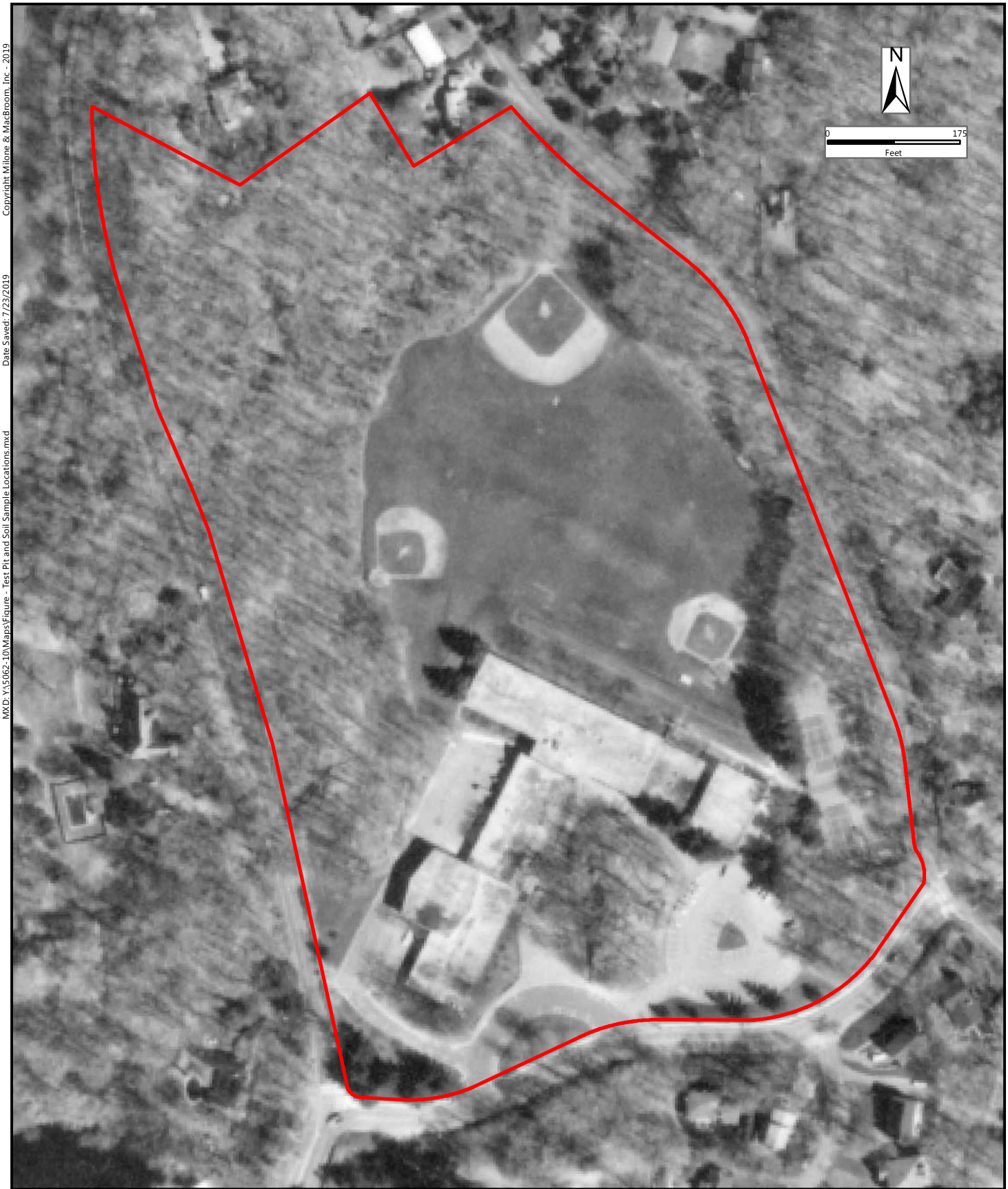

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1990 AERIAL

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FIG. 5

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FIG. 6

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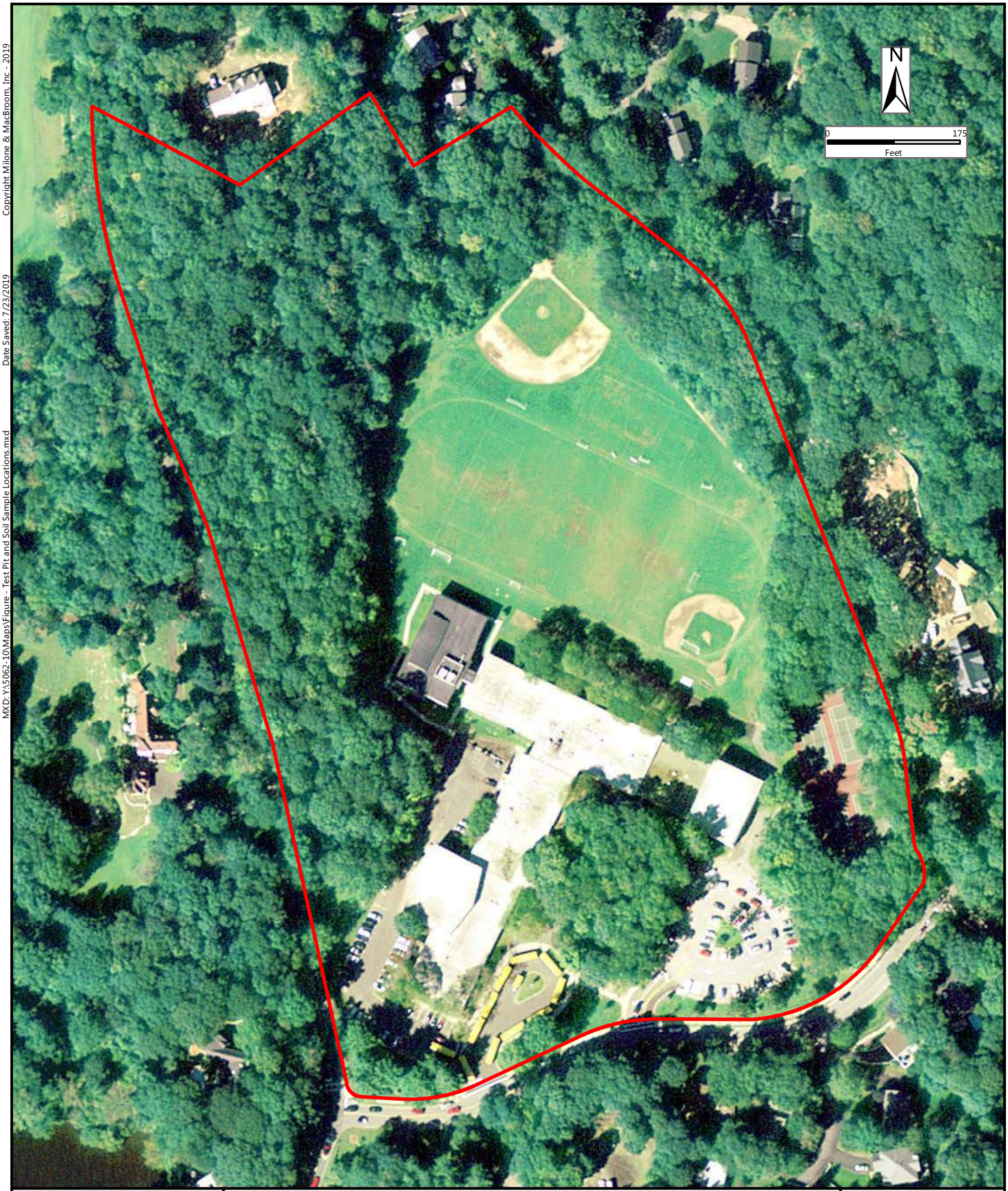

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FIG. 7

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FIG. 8

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2012 AERIAL

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FIG. 9

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FIG. 10

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October 10, 2022

Mr. Eugene H. Watts
Senior Buyer
Purchasing Department
Greenwich Public Schools
290 Greenwich Avenue
Greenwich, CT 06830

Reference: Preliminary Geotechnical Investigation for Central Middle School – Greenwich Public Schools, Connecticut

Object: Transmission of the Preliminary Geotechnical Investigation Report

Dear Mr. Watts:

Atane Engineers, P.C. is pleased to submit the report of finding, analysis, and recommendations related to the preliminary geotechnical investigation for the referenced project site. Our work was initiated and conducted in accordance with Contract Supplement 7061-3 CS Soil (22404) dated June 8th, 2022, and Contract Supplement 7201-01 CS CMS (22404) dated August 24th, 2022.

Should you have any questions or need any additional information, I can be reached at 617-655-4758, or psousa@ataneconsulting.com. We thank you for the opportunity to assist you on this project and look forward to continuing our successful working relationship with Greenwich Public Schools on future projects.

Sincerely,

Paul Sousa 10-10-22

Paul G. Sousa, Jr.
Assistant Vice President
Director of Materials – New England Region
ATANE Engineers, Architects and Land Surveyors, P.C.

OCTOBER 10, 2022

CENTRAL MIDDLE SCHOOL

PRELIMINARY GEOTECHNICAL INVESTIGATION REPORT

Prepared for:

Greenwich Public Schools
290 Greenwich Avenue
Greenwich, CT 06830

Prepared by:

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1. INTRODUCTION

ATANE Engineers, P.C., was retained by the client to perform a preliminary geotechnical investigation to gather initial geotechnical data regarding the possible location for the construction of a new building to locate the Central Middle School of Greenwich Public Schools.

Currently, no specific building layout or location was provided from the client for the construction of the proposed building. The preliminary geotechnical investigation was conducted at the site identified by KGD, the Master Plan Architect, as a possible location to construct the proposed middle school building. Also, it is important to note that the architectural and structural drawings are not yet finalized and are not considered for this preliminary geotechnical investigation.

The main goal of this preliminary geotechnical investigation is to inform the design team and client of the basic geotechnical properties and parameters of the areas under consideration for the construction of the proposed building and to determine whether a specific location warrants the completion of all investigations required to be in accordance with Sections 1803.3 through 1803.5 of the International Building Code (IBC).

2. SITE LOCATION

The location under consideration for the construction of the proposed school building consists of the areas within the property lines that surround the existing Central Middle School building located at 9 Indian Rock Lane, Greenwich, CT 06830 (see Site Location Map in Appendix 1). The buildings main access is located on Indian Rock Lane. However, pedestrians can access the athletic field from the North using Orchard Street. The site is situated in the Residential Zone R-12 as per the "*Town of Greenwich, Connecticut, Building Zone Regulations Map, Rev. January 31, 2022*".

3. SCOPE OF SERVICES

This report presents the findings regarding the preliminary geotechnical investigation performed as required and in accordance with our scope of work, which consists of the following:

a) Geotechnical surface reconnaissance:
   - Identification of the type of soil
   - The strength and density of the soil
   - Identification of any organic material or contamination present
   - Recording of any shallow groundwater or perched water table encountered
b) Limited subsurface exploration using soil borings and test pits,
c) Representative soil samples collection,
d) Laboratory testing including chemical testing,
e) Analysis of the field and laboratory data, and
f) A review of available geologic literature.

Limited soil borings and test pits were to be performed at specific locations to evaluate the geotechnical conditions beneath the proposed site for implantation of eventual shallow foundations.

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Currently, a deep pile foundation system is not under consideration for support of the proposed structures.

3.1. Exclusions

The executed scope of work and the associated cost do not include services not specifically listed in the Contract including the following:

a) Preparation of drawings or specifications,
b) Design services,
c) Any additional borings or permeability tests, if and as warranted or required,
d) Any pavement cores, temporary or permanent wells, additional test pits, if and as warranted or required,
e) Site specific seismic evaluation,
f) Review of shop drawings or Request for Information (RFIs), and
g) Construction oversight or inspection services.

4. GEOTECHNICAL INVESTIGATION

As part of this preliminary geotechnical investigation, twelve (12) Test Pits were excavated to a maximum depth of twelve (12) feet below ground surface (BGS) and fifteen (15) Boreholes were drilled to a maximum depth of sixteen (16) BGS were performed in the Athletic Field on the North side of the existing school building, and five (5) more Boreholes were completed in the South and Southwest sides of the existing school building.

All borings were drilled using a 4-¼ inch hollow stem auger to advance and maintain the hole. Soil samples were collected using a 1-3/8 inch split-barrel sampler (SS) driven by a 140 pound hammer falling 30 inch for each hammer blow. The number of blows for each 6-inch increment was recorded, in accordance with procedures outlined in ASTM D1586, Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils. An experienced geologist from SOILTESTING, INC. performed the classification of the soil samples. Most borings were sampled continuously from a depth of four (4) feet BGS to the depth of completion of the boring, except where large boulders or bedrock were encountered. The groundwater level BGS was recorded when encountered in each exploration.

Also, samples were collected at twelve (12) different locations for chemical testing (see Boring, Test Pit, and Sampling Location Plan in Appendix 2). Five of these twelve samples collected from Test Pit Locations were marked TP-SL-01 through TP-SL-05 and the remaining seven samples collected from Boreholes locations were marked B-SL-01 through B-SL-07. Additionally, other soil samples were collected for each type of soil encountered at potential shallow foundation depths (4 to 6 feet BGS) to identify geotechnical properties. The samples for identification of geotechnical properties were collected at the locations indicated below.

a. For moisture content, grain size analyses and specific gravity testing; samples were collected from the following locations: TP-1, TP-2, TP-3, TP-4, TP-5, TP-9, TP-12 and from B-17, B-18 and B-19 for a composite sample.

b. For Atterberg limits (plasticity indices) related to the clay materials encountered, samples were selected from the following locations: TP-8 and TP-9

Furthermore, all possible efforts were made to gather available pertinent data susceptible to help develop a broad understanding of the prevalent surface and subsurface materials in the vicinity of the existing school building. Among others, the following documents were reviewed:

- **Bedrock Geological Map of Connecticut** (1:125,000 scale), published in 1985 on behalf of the Connecticut Geological and Natural History Survey of the Connecticut Department of Environmental Protection, in Cooperation with the U.S. Geological Survey.
- **Generalized Bedrock Geologic Map of Connecticut**, published in 1990, reprinted 1996, revised 2013, Connecticut Geological Survey, Department of Energy and Environmental Protection.
- **Connecticut Quaternary Geology Long Island Sound End Moraine Deposits**, published in 2005, by Janet Radway Stone, John P. Schafer, Elizabeth Haley London, Mary L. DiGiacomo-Cohen, Ralph S. Lewis, and Woodrow B. Thompson on behalf of U.S. Geological Survey, State of Connecticut, Department of Environmental Protection, Geological and Natural History Survey
- **Superficial Materials Map of Connecticut,** published in 1992, by Janet Radway Stone, John P. Schafer, Elizabeth Haley London, and Woodrow B. Thompson, prepared in cooperation with the State of Connecticut, Department of Environmental Protection, Geological and Natural History Survey.
- **The Geology of Greenwich, Connecticut** (Reed A. Schwimmer), published in 1987 by The Greenwich Conservation Commission, Greenwich, Connecticut.
- **Building Zone Regulations Map** (1:2,000 scale), zoning district boundaries in the Town of Greenwich Building Zone Regulations as of December 31, 2002, revised January 31, 2022, Town of Greenwich, Connecticut
- **Connecticut's 2010 Natural Hazard Mitigation Plan Update**, published in December 2010, Prepared by the Department of Environmental Protection, Inland Water Resources Division, Bureau of Water Protection and Land Reuse, with Assistance from The Connecticut Department of Emergency Management and Homeland Security.
- **Natural Hazard Mitigation Plan, 2016-2021 Update for the South Western Region**, published in February 2016, prepared by the Western Connecticut Council of Governments (WCCOG).
- **Water-Resources Investigations Report 03-4300**, published in 2004, by John R. Mullaney, in cooperation with the town of Greenwich, Connecticut, U.S. Department of the Interior, U.S. Geological Survey.
- **Historical aerials from Connecticut Environmental Conditions Online (CT ECO)** covering the years: 1934, 1990, 1996, 2004, 2005, 2006, 2008, 2012, 2010, 2014, 2016, 2017, 2018, and 2019
- **Preliminary Environmental Investigation at Central Middle School, Greenwich, Connecticut,** MMI #5062-10-02, prepare in July 2019 by Milone & Macbroom, Inc.

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5. GEOTECHNICAL CONDITIONS

5.1. Geology

As identified in the Bedrock Geologic Map of Connecticut (1985) by John Rodgers, the Central Middle School site is situated in the Iapetos (Oceanic) Terrane – Connecticut Valley Synclinorium. The Harrison Gneiss (interlayered dark-and light-gray, medium grain, foliated gneiss) is the dominant rock in the areas surrounding the existing building. As per the Bedrock Geologic Map of Connecticut (1985), foliation of bedrock typically strikes N-NE and dips west at 34 to 82 degrees. Apart from the Cameron's fault line on the Northeast of Greenwich, a High-Angle Fault (mostly Jurassic) is located in the vicinity of the site on the West side.

Based on their geographic coordinates and available geologic information collected, the superficial soil in areas surrounding the Central Middle School building can be assessed as glacial ice-laid deposits (tills) which consist of non-sorted, generally non-stratified mixtures of grain-sizes ranging from clay to large boulders. The matrix is composed dominantly of sand and silt.

As described in the "*Superficial Materials Map of Connecticut (1992)*" by Janet Radway Stone, John P. Schafer, Elizabeth Haley London, and Woodrow B. Thompson, the thickness of superficial materials in Connecticut varies considerably because of such factors as the high relief of the bedrock surface, changing conditions of deposition during deglaciation, and various effects of postglacial erosion and removal of glacial sediments. Glacial ice-laid deposits (tills) in Connecticut are grouped into upper till and lower till. The matrix of most tills is composed dominantly of sand and silt. The most extensive till is commonly observed in surface exposures. It is described as thin till in areas where till is generally less than 10 to 15 feet thick and including areas of bedrock outcrop where till is absent. It consists predominantly of upper till which is loose to moderate compact, generally sandy, commonly stony. The lower till (thick till) is generally overlain by upper till. Lower till does constitute the bulk of material in the areas where till thickness is greater than 15 feet. It has a patchier distribution and is principally a subsurface deposit. Lower till is moderately to very compact and is commonly finer-grained and less stony than upper till.

The Water-Resources Investigations Report 03-4300 By John R. Mullaney records that two types of aquifers are present in the Greenwich area: (1) aquifers in surficial deposits; and (2) aquifers in the fractured crystalline bedrock. Report 03-4300 furthermore points out that "*The stream-drainage network apparently is strongly controlled by the underlying rock structure, and many streams are parallel to the strike of the foliation*".

No landslide, rockfall or debris flow were identified at the site during the preliminary investigation.

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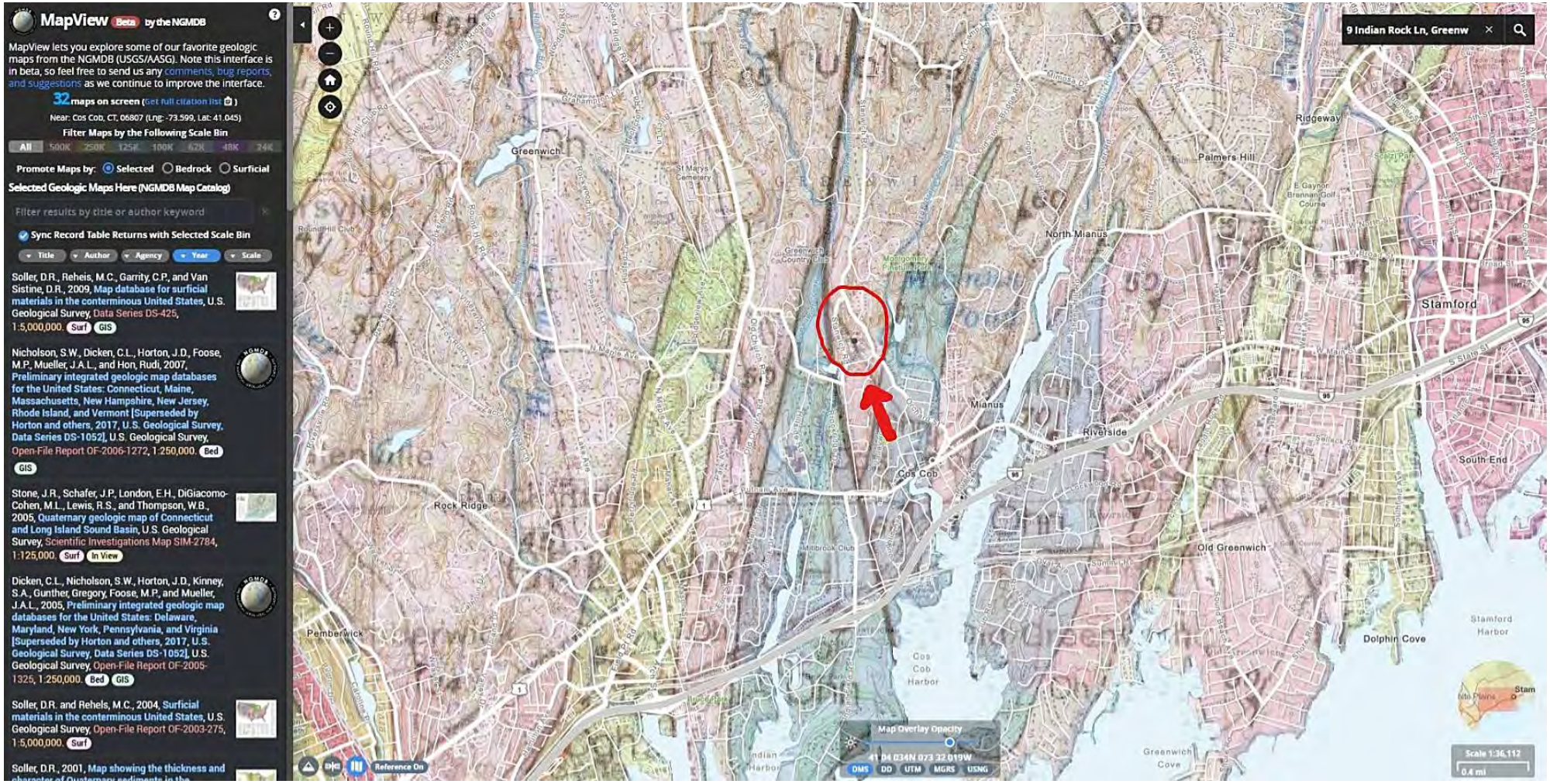
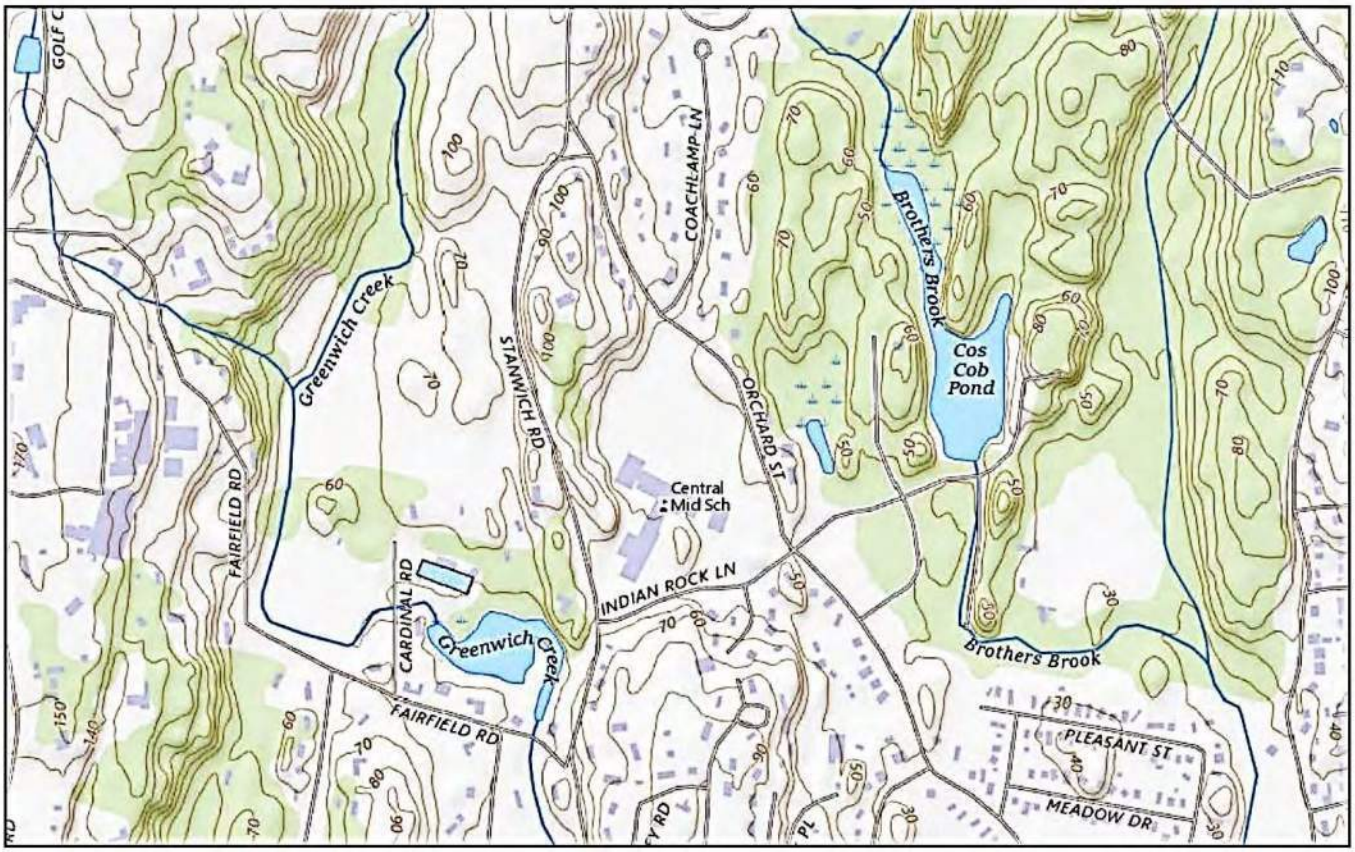


Central Middle School at 9 Indian Rock Ln, Greenwich, CT
Near: Cos Cob, CT, 06807 (Lng: -73.599, Lat: 41.045)
Extract from: MapView Beta by the NGMDB

5.2. Surface Conditions

The areas surrounding the existing Central Middle School Building can be sorted in four main subareas consisting of: (1) the flat Athletic field, North of the existing Building; (2) the parking areas in the Southwest and the Southeast including an outcrop next to the building on the Southeast; (3) a hillock on the West side with some outcrops in the periphery of the property; and (4) a hillock located East including the existing tennis court and some outcrops in the periphery of the property as well. The subareas 3 and 4 are relatively wooded.

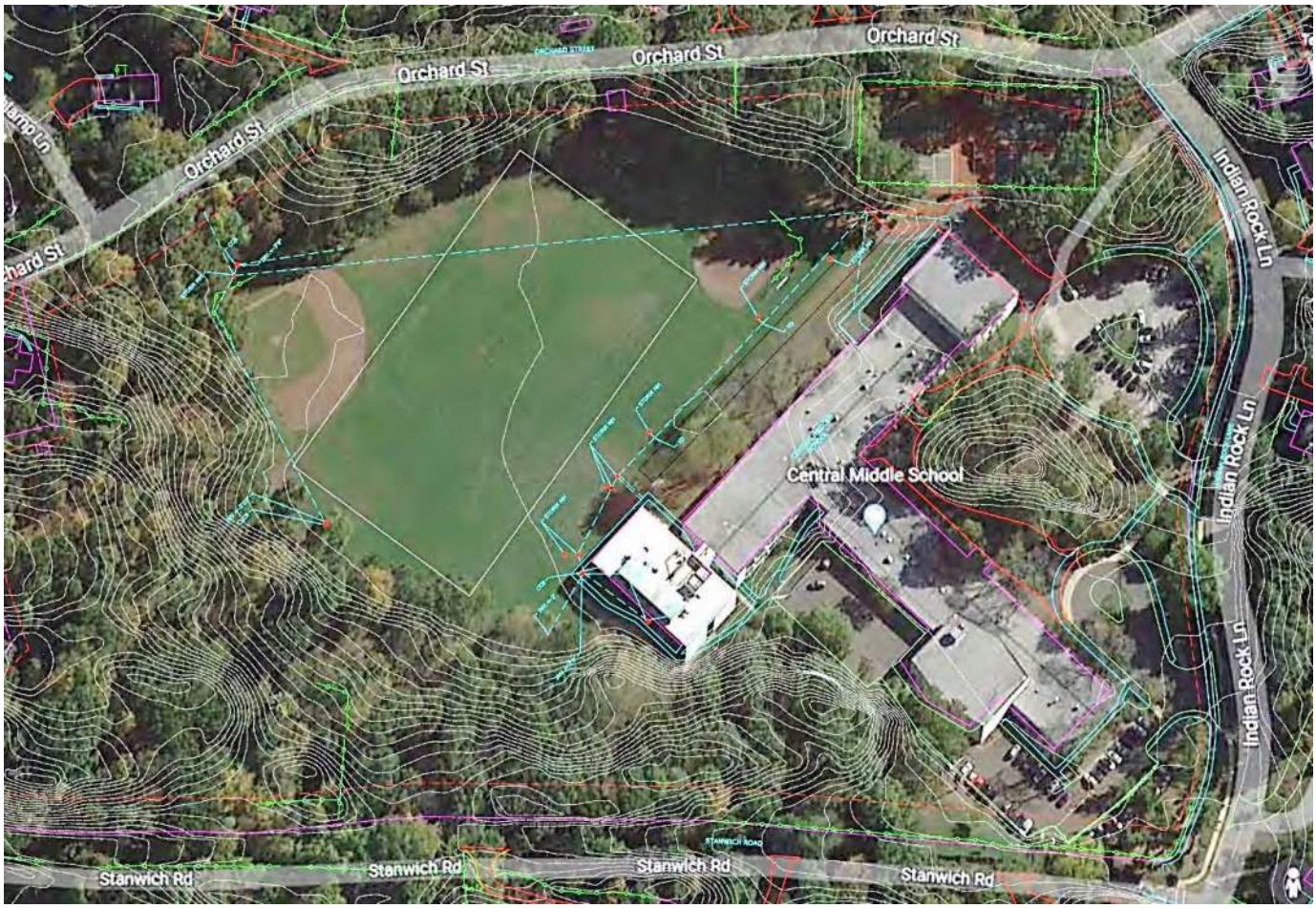


Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830
Map Source: USGS The National Map

Based on data from "*USGS The National Map*", the athletic field on the North side of the existing school building has an average elevation of about 50 feet. The parking locations on the South of the building have an average elevation of about 60 feet with an outcrop on the Southeast of the existing school building. In general, the ground surface elevation increases when moving away from the existing building on the East and West sides of the property. Outcrops were noted as well on the East and West sides of the property.

	Outcrop on the Southeast of the existing school building
	Outcrop on the West side of the existing school building
	Outcrop on the East side of the existing school building

Some stormwater drains were identified in the Athletic Field as shown in the drawing provided by the client. These stormwater drains are shown in the figure below using a Google Map background.



Blue lines showing the locations of the stormwater drains by the Athletic Field

The Athletic Field is relatively depressed below the surrounding areas which makes it prone to flooding in the event of heavy and prolonged storms. The area is of minimal flood hazard as per the FEMA National Flood Hazard Layer FIRMette (see Appendix 3).

5.3. Subsurface Conditions

The soils encountered beneath this site are largely consistent with the published geologic descriptions of thin till generally less than 10 to 15 feet thick and including areas of bedrock outcrop where till is absent. It consists predominantly of moderate compact mixture of gray and brown sand, silt, and gravel with inclusion of cobbles and boulders. Trace of organic matter and trace of clay were encountered as well.

In subarea (1) around the middle of the flat Athletic field on the North side of the existing school building, mostly dense dry and dense wet granular soils were encountered in boreholes B-02, B-03, B-04, B-05, B-06, and B-08 below the topsoil layer of the athletic field. Trace of cobbles and trace boulders were noted. These boreholes generally ended at 14 feet to 16 feet BGS. Ground water table was measured at 9 feet BGS in B-02, 10 feet BGS in B-03, 7 feet BGS in B-04, 8 feet BGS in B-05 & B-06, 10 feet BGS in B-08. The soils above a depth of 4 feet to 6 feet could be described as possible fill. The information collected using Test Pits performed in the athletic field is consistent with these findings (see APPENDIX 4: Test Pit Logs and APPENDIX 5: Boring Logs). Standard penetration test N-values were typically around 30 blows per foot (bpf) on average. N-Values greater than 50 blows per foot generally indicated the presence of cobbles and boulders. However, Boreholes B-04 and B-08 in the middle of the athletic field exhibited some layers with N-Values between 6 and 15 blows per foot at depth greater than 9 feet BGS. This can be correlated with the presence clay of low to medium plasticity, debris, and organics identified in the Test Pits TP-05, TP-08, and TP-09 located in the vicinity of Boreholes B-04 and B-08.

In subarea (2) by the parking areas in the Southwest and the Southeast of the existing school building, mostly brown and gray mixtures of sand, silt, and gravel were encountered in boreholes B-15, B-16, B-17, and B-18. No Test Pits was performed in this subarea with auger refusal in large boulders of bedrock. Trace of asphalt was noted in the top layers. The boreholes in subarea (2) generally ended at 8 feet to 14 feet BGS. Auger refusal was noted at 9 feet BGS in B-15 with no ground water observation. Partly weathered bedrock was noted at 12 feet BGS for B-16 with no ground water observation. Auger refusal was noted at 8 feet BGS for B-17 with no ground water observation. However, B-18 ended at nearly 14 feet BGS with ground water table observed at 9 feet BGS. Trace of organics along with cobbles (possible fill materials) were noted in B-18. Standard penetration test N-values were typically above 30 blows per foot on average for B-15 and B-16. On the Southeast side, N-values were typically about 7 blows per foot for B-15 upper soil layers, and between 12 and 27 blows per foot for B-16 upper soil layers.

In subarea (3) by the hillock on the West side with some outcrops in the periphery of the property, mostly brown mixtures of sand, silt, and gravel were encountered with trace of cobbles and boulders in boreholes B-09, B-10, B-11, B-12, B-13, and B-14. No ground water was observed in these boreholes. The boreholes in subarea (3) generally ended with auger refusal at 7 feet to 12 feet BGS in large boulders of bedrock. Standard penetration test N-values

were typically around 50 blows per foot on average at 8 feet or more BGS. N-Values recorded for the upper soil layers were between 20 to 30 blows per foot.

In subarea (4) by the hillock on the East side and some outcrops in the periphery of the property, mostly brown mixtures of sand, silt, and gravel were encountered with trace of cobbles and boulders in boreholes B-01, B-07, B-19, and B-20. Ground water table was observed at 7 feet BGS in B-01 and at 8 feet BGS in B-07. No ground water table was observed in B-19 and B-20. Bedrock refusal was noted at about 10.5 feet BGS in B-01. Refusal was noted at about 11.5 feet in B-07. Spoon refusal was noted at about 7.5 feet BGS in B-19. Auger refusal in bedrock was noted at 3 feet BGS in B-20. Standard penetration test N-values were typically above 30 blows per foot on average for the upper soil layers.

The individual boring logs containing specific information at each boring location are included in APPENDIX 5: Boring Logs.

5.4. Groundwater

The following table summarize the observed groundwater conditions from information collected during the explorations of the boreholes and test pits. The depth below ground surface provided represents the value measured when the anticipated water table was first encountered. Given the distribution of the different sizes of individual particles within the in-situ soils, and considering the relative consistency in readings, we expect these ground water table surface readings to properly represent stable groundwater conditions, and not perched conditions.

The approximative ground surface elevation is based on the "*USGS The National Map*". If more accurate elevation data are needed, the service of a third-party surveyor should be engaged by the owner. Ground water monitoring wells and soil permeability evaluation are not included in the scope of this preliminary geotechnical investigation.

Table 1 – Measured Groundwater Table

Location: Borehole or Test Pit No.	Approximate Ground Surface Elevation (feet)	Groundwater Table Depth BGS (feet)	Date Measured	Notes
B-01	±50	7	08/23/2022	
B-02	±50	9	08/23/2022	
B-03	±50	10	08/23/2022	
B-04	±50	7	08/23/2022	
B-05	±50	8	08/23/2022	
B-06	±50	8	08/23/2022	
B-07	±50	8	08/24/2022	

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Location: Borehole or Test Pit No.	Approximate Ground Surface Elevation (feet)	Groundwater Table Depth BGS (feet)	Date Measured	Notes
B-08	±50	10	08/24/2022	
B-09	±50	-	08/24/2022	No ground water observation
B-10	±50	-	08/24/2022	No ground water observation
B-11	±60	-	08/24/2022	No ground water observation
B-12	±50	-	08/24/2022	No ground water observation
B-13	±50	-	09/03/2022	No ground water observation
B-14	±60	-	08/25/2022	No ground water observation
B-15	±60	-	08/25/2022	No ground water observation
B-16	±60	-	08/25/2022	No ground water observation
B-17	±60	-	09/03/2022	No ground water observation
B-18	±60	9	09/03/2022	
B-19	±50	-	09/03/2022	No ground water observation
B-20	±50	-	09/03/2022	No ground water observation
TP-01	±50	6.5	08/12/2022	
TP-02	±50	6.5	08/12/2022	
TP-03	±50	7	08/12/2022	
TP-04	±50	8	08/12/2022	
TP-05	±50	6.2	08/12/2022	
TP-06	±50	7.5	08/12/2022	
TP-07	±50	9.5	08/12/2022	
TP-08	±50	9	08/12/2022	
TP-09	±50	8.5	08/12/2022	
TP-10	±50	-	08/12/2022	No ground water observation
TP-11	±50	9	08/12/2022	
TP-12	±50	-	08/12/2022	No ground water observation

Preliminary interpreted groundwater table elevations for design would require additional investigation not part of this preliminary investigation to identify the following information:

- Direction and gradient of groundwater, artesian conditions, and confined aquifers
- Eventual perched water tables
- Potentially significant seasonal variations
- Observed influences on the groundwater table
- Other features related to groundwater, streams, springs, seeps.

5.5. Seismic Hazards

The determination of the Seismic Design Category (SDC) involves the following three parameters: geographic location, underlying soils, and building use or occupancy category. Seismic hazard assessment is not included in the contract scope for this preliminary geotechnical investigation.

5.6. Site Seismic Parameters

The evaluation of the following site seismic parameters may be needed in relation with the SDC.

- Geospatial information (latitude/longitude in decimal degrees) of representative location(s) where VS30 values are evaluated.
- The time-averaged shear-wave velocity (VS30) for the top 30 m of the earth materials, and how it was determined (e.g., CPT or SPT correlations, Seismic CPT, and geophysical methods).

However, evaluation of site seismic parameters is not included in the contract scope for this preliminary geotechnical investigation.

5.7. Ground Motion Parameters

The evaluation of the following ground motion parameters may be needed in relation with the SDC.

- Design Horizontal Peak Ground Acceleration (HPGA),
- Mean earthquake moment magnitude (M), and
- Mean site to fault source distance (R) based on procedures described in Design Acceleration Response Spectrum

However, evaluation of ground motion parameters is not included in the contract scope for this preliminary geotechnical investigation.

5.8. Identification of contamination present

The chemical testing data are summarized in the following table. See APPENDIX 6 for Laboratory Test Results – Chemical Test Results

Table 2 – Chemical testing data summary

Parameter	Comments
Dibromotoluene-FID for samples B-SL-01 through B-SL -06 and samples TP-SL-01 through TP-SL-05	Potential high bias
CT RCP Volatile Organics for samples B-SL-01 through B-SL -06 and samples TP-SL-01 through TP-SL-05	Not detected (ND) at the reporting limit (RL) for the sample
CT RCP PAHs for samples B-SL-01 through B-SL -06 and samples TP-SL-01 through TP-SL-05	Not detected (ND) at the reporting limit (RL) for the sample
CT RCP Semivolatile Organics for samples B-SL-01 through B-SL -06 and samples TP-SL-01 through TP-SL-05	Within the percentage recovery limits
Gasoline Range Organics for samples B-SL-01 through B-SL -06 and samples TP-SL-01 through TP-SL-05	Not detected (ND) at the reporting limit (RL) for the sample
Diesel Range Organics for samples B-SL-01 through B-SL -06 and samples TP-SL-01 through TP-SL-05	Not detected (ND) at the reporting limit (RL) for the sample
Volatile Petroleum Hydrocarbons for samples B-SL-01 through B-SL -06 and samples TP-SL-01 through TP-SL-05	Not detected (ND) at the reporting limit (RL) for the sample
Extractable Petroleum Hydrocarbons for samples B-SL-01 through B-SL -06 and samples TP-SL-01 through TP-SL-05 except for samples B-SL-04, B-SL-06, TP-SL-03	Not detected (ND) at the reporting limit (RL) for the sample
CT RCP Total Metals - Associated samples B-SL-01 through B-SL -06 and samples TP-SL-01 through TP-SL-05	Within the percentage recovery limits
Ignitability of Solids for samples B-SL-01 through B-SL -06 and samples TP-SL-01 through TP-SL-05	Not ignitable (NI)
pH for samples B-SL-01 through B-SL -06 and samples TP-SL-01 through TP-SL-05	Between 5.9 and 8.4

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5.9. Strength and density of the soil

Initial value of the compressive strength of the cohesive soil and modulus of elasticity of granular soil (Es) can be approximated based on the Standard Penetration Test N-Values data collected during Boreholes explorations. However, a given soil does not have a unique bearing capacity; the bearing capacity is a function of the footing shape, depth, and width as well as load eccentricity.

As described in Table 4-1 of the Manual on Subsurface Investigations (Publication No. FHWA NHI-01-031, July 2001), for the coarse-grained soils with a standard penetration test N-values around 30 blows per foot, the coarse-grain soils can be described as firm to dense with a relative density of about 70%. Based on the boring logs, this is representative of most of the soil layers located at 6 to 7 feet BGS, with exception in boreholes B-14 and B-18. Using the Peck, Hanson, and Thornburn (1974) correlation, the average pick friction angle, ϕ'(deg), can be approximated to roughly 36 degrees. Based on a first order estimation given by Kulhawy and Mayne (1990), the modulus of elasticity of the granular soils (E_s) is found to be approximately between 10,000 and 18,000 kPa for depth around 6 feet BGS. Also, based on the 2021 IBC Table 1806.2, the presumptive load-bearing values can be approximated between 95 and 140 kPa.

Similarly, as described in Table 4-2 of the Manual on Subsurface Investigations (Publication No. FHWA NHI-01-031, July 2001), for the fine-grained soils with a standard penetration test N-values around 6 and 10 blows per foot, the fine-grained soils can be described as firm to stiff with an unconfined compressive strength between 50 and 125 kPa. Based on the boring logs, this is representative of soil layers located at 10 to 12 feet BGS in borehole B-04 and at 9 to 11 feet BGS in borehole B-08.

Coarse-grained soils have high permeability which typically leads to immediate settlements. However, long term settlements can occur due to submergence, change in water level, blasting, machine vibration or earthquake loading. For the samples collected at depth ranging from 4 feet to 6 feet BGS, the average specific gravity was 2.674 and the natural moisture content was found to be between 4% and 6%. Since the sieve analysis revealed that more than 10 percent of the soil particles pass a No.200 sieve (75 µm) for samples collected in boreholes B-17, B-18 and B-19 and in Test Pits TP-01, TP-08, TP-09 and TP-12, it is likely to have expansive soil on the North and East side portions of the athletic field in subarea (1) and on the Southeast side of the existing school building in subarea (2). However, the values of 2.8 and 3.4 obtained for the plasticity index (PI) of the soil samples tested for TP-08 and TP-09 are indicative of low expansion potential. Hence, additional geotechnical investigations will be required in accordance with the 2021 IBC Section 1803.5.3 in case portion of the footprint of the proposed new building would have to be situated in said areas.

Also, fine-grained soils have very low permeability. The underlying silty clay soils layers in the vicinity of boreholes B-04 and B-08 on the North and East side portions of the athletic field in subarea (1) will require additional investigations to determine the magnitude and duration of settlement to be expected in said area.

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As the range of applied loads for consolidation testing should cover the smallest and largest effective stresses anticipated in the field and will depend on depth, foundation loads, and excavations, additional investigations based on design information are needed to perform consolidation testing. Indeed, performance of consolidation tests can provide additional data that will be needed by the design engineer to estimate the magnitude and rate of both differential and total settlement if the decision was to be made to locate portion of the footprint of the proposed new school building structure or earthfill by the location of Test Pits TP-05, TP-08, and TP-09 and Boreholes B-04 and B-08 in the North and East side portions of the athletic field in subarea (1).

6. RECOMMENDATIONS

All soils and foundation work shall comply with the Chapter 18 of the 2022 Connecticut State Building Code and of the 2021 International Building Code (IBC). Additional studies shall be made as recommended to evaluate slope stability, soil strength, position and adequacy of load-bearing soils, the effect of moisture variation on soil-bearing capacity, compressibility, liquefaction, and expansiveness in accordance with the requirements of the 2021 IBC.

6.1. Recommendations for frost protection

As per the 2022 Connecticut State Building Code Section (Amd) 1809.5, except where otherwise protected from frost, foundations and other permanent supports of buildings and structures shall be protected from frost by one or more of the following methods:

1) Extending a minimum of 42 inches (1067 mm) below finished grade;
2) Constructing in accordance with ASCE 32; or
3) Erecting on solid rock.

Shallow foundations shall not bear or be installed on frozen soil.

6.2. Recommendations for excavation and controlled fill

The depth and slope of excavation and ground water conditions control the overall stability of open excavations. One of the main concerns would be the fluctuation of the ground water level, specifically ground water lowering. It is not yet known how the ground water table will fluctuate over time. Dewatering may be required during excavations if portions of the existing athletic field will be included in the footprint of the proposed new building. Additional investigation including permeability testing and ground water monitoring wells would be warranted.

In general, we recommend installing drainage to keep the depth of the water table dw > D (depth of footing). Shoring should be provided for excavation depth of 5 feet or greater unless the excavation is made entirely in stable rock.

The effects of excavation on adjacent structures should be evaluated by the design engineer to determine whether existing buildings in the vicinity are protected.

6.2.1. Excavation Difficulties

Cobbles and boulders encountered in subarea (1) – the flat Athletic field on the North side of the existing Building – will likely present excavation difficulties. Excavation difficulties will be particularly affected by the anticipated excavation size and depth. The speed and ease of excavation will depend on the type of equipment used and the skill of the operator.

The same level of difficulties is to be expected for the upper layers of soil in the remaining subareas (2), (3), and (4). In addition, the presence of the bedrock at shallow depth (3 to 7 feet BGS) may require additional heavier equipment.

6.2.2. Excavation near foundations

In accordance with 2021 IBC Section 1803.5.7, where excavations will reduce support from any foundation, a registered design professional shall prepare an assessment of the structure and shall determine the requirements for support and protection of any existing foundation and prepare site-specific plans, details and sequence of work for submission. Such support shall be provided by underpinning, bracing, excavation retention systems, or by other means acceptable to the local building official.

6.2.3. Surface Preparation/Proofrolling

In general, large size particles interfere with compaction of the finer soil fraction. It is recommended that the maximum cobble size should not exceed 3 inches or 50 percent of the compacted layer thickness.

All organics and any other deleterious material should be stripped and removed from the surface. All subsurface structures or debris which will interfere with the compaction of the area to be prepared should be removed. The soil should be scarified as needed and brought to optimum moisture content. Before performing fill placement, the newly exposed soil surface should be compacted to a firm and unyielding surface with several passes in two perpendicular directions. Additional investigations based on design information is needed to determine the minimum vibratory compactor needed to meet the requirements of the specifications.

6.2.4. Compacted fill material

As per 2021 IBC Section 1803.5.8, where shallow foundations will bear on compacted fill material more than 12 inches (305 mm) in depth, a geotechnical investigation shall be conducted and shall include Specifications for the preparation of the site prior to placement of compacted fill material, specifications for said fill material, the various test methods to be used and their frequency, maximum allowable thickness of each lift of compacted fill material, and the minimum acceptable in-place dry density. Additional investigations based on design information is needed regarding the proposed new building (such as loads, type and shape of proposed foundation system, etc.) to meet the requirements of the specifications.

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6.3. Recommendations for further investigations to be performed

As per 2021 IBC Section 1803.6, where geotechnical investigations are required, a written report of the investigations shall be submitted to the building official by the permit applicant at the time of permit application. Among other requirements, the geotechnical report shall include bearing capacity of natural or compacted soil, expected total and differential settlement, effects of any adjacent loads, provisions to mitigate the effects of expansive soils, mitigation of the effects of liquefaction, differential settlement, and varying soil strength.

6.3.1. Ground-water table

According to 2021 IBC Section 1803.5.4 Ground-water table, "*A subsurface soil investigation shall be performed to determine whether the existing ground-water table is above or within 5 feet (1524 mm) below the elevation of the lowest floor level where such floor is located below the finished ground level adjacent to the foundation*." However, such subsurface soil investigation shall not be required where waterproofing is provided in accordance with Section 1805. Hence, unless the decision is made to provide waterproofing, ground water monitoring wells are recommended for estimation of the degree of fluctuation of the groundwater table elevations for design that would require the identification of the following information:

- Direction and gradient of groundwater, artesian conditions, and confined aquifers
- Eventual perched water tables
- Potentially significant seasonal variations
- Observed influences on the groundwater table
- Other features related to groundwater such as streams, springs, seeps.

6.3.2. Seismic hazard assessment and design wind speed

Preliminary seismic hazard assessment is not included in the contract scope for this preliminary geotechnical investigation. The evaluation of the site seismic parameters and the evaluation of the ground motion parameters would require additional geotechnical investigation.

Determination of wind characteristics is not part of this preliminary geotechnical investigation. However, it is worth noting that some basic design wind speed, V, for use in the design of Risk Category III buildings and structures can be obtained from Figures 1609.3(2), 1609.3(7) and 1609.3(8) of the 2021 International Building Code. (Ref.: 2021 International Building Code®)

6.3.3. Allowable bearing pressures

Allowable bearing pressures for shallow foundations are limited by two considerations. The safety factor against ultimate shear failure must be adequate, and settlements under allowable bearing pressure should not exceed tolerable values. In most cases, settlement governs the foundation pressures. (Ref.: *pp151, Naval Facilities Engineering Command, Foundations & Earth Structures, Design Manual 7.02, September 1986*)

In dense coarse-grained soils failure typically occurs along a well-defined failure surface. In loose coarse-grained soils, volumetric compression dominates and punching failures are common. Increased depth of overburden can change a dense sand to behave more like loose sand. In (homogeneous) fine-grained cohesive soils, failure occurs along an approximately circular surface.

However, as previously stated, a given soil does not have a unique bearing capacity; the bearing capacity is a function of the footing shape, depth, and width as well as load eccentricity. Since the bearing capacity is based on effective stress analysis, fluctuation of the groundwater table is expected to affect the value of the soil unit weight. Hence, additional design information regarding the proposed new building (such as loads, type and shape of proposed foundation system, etc.) will be needed to determine the expected settlement and the bearing capacity of the proposed footprint of the eventual new school building.

7. CONCLUSION

A preliminary geotechnical investigation was performed to inform the design process by identifying some basic geotechnical properties of the areas under consideration for the construction of the proposed building to allow the design engineer to determine whether a specific location warrants the completion of all investigations required in accordance with Sections 1803.3 through 1803.5 of the IBC.

The data collected suggests that the North and East side portions of the athletic field in subarea (1) and Southeast of the existing school building in subarea (2) may contain layers of expansive soil. Additional geotechnical investigations will be required in accordance with the 2021 IBC Section 1803.5.3 if the proposed new building would be located in said portions of the athletic field or by the Southeast of the existing school building.

The boreholes performed in subareas (2), (3), and (4) generally terminated with auger refusal at 7 to 12 feet BGS in large boulders of weathered bedrock. However, it is worth noting that in subarea (2), standard penetration test N-values were typically above 30 blows per foot on average for B-15 and B-16. On the Southeast side, N-values were typically about 7 blows per foot for B-15 upper soil layers, and between 12 and 27 blows per foot for B-16 upper soil layers. In subareas (3) and (4), N-Values recorded for the upper soil layers were between 20 to 30 blows per foot. Additional information regarding the proposed new building (such as loads, type and shape of proposed foundation system, etc.) will be needed to assess the allowable bearing capacity.

Also, it was determined that additional geotechnical investigation may be required to assess the seasonal degree of fluctuation of the underground water table level. Furthermore, additional investigation may be needed to assess seismic hazard and design wind speed along with specific recommendations for compacted fill and excavations. In addition, more investigations will be necessary to finalize specific recommendations to meet all requirements stipulated in the 2021 IBC Section 1803.6.

8. PERMITS

Any permit application shall be the responsibility of the owner. However, ATANE may provide some assistance regarding permit application, if warranted.

9. APPENDICES

APPENDIX 1: Site Location Map

APPENDIX 2: Boring and Test Pit Location Plan

APPENDIX 3: FEMA National Flood Hazard Layer FIRMette

APPENDIX 4: Test Pit Logs

APPENDIX 5: Boring Logs

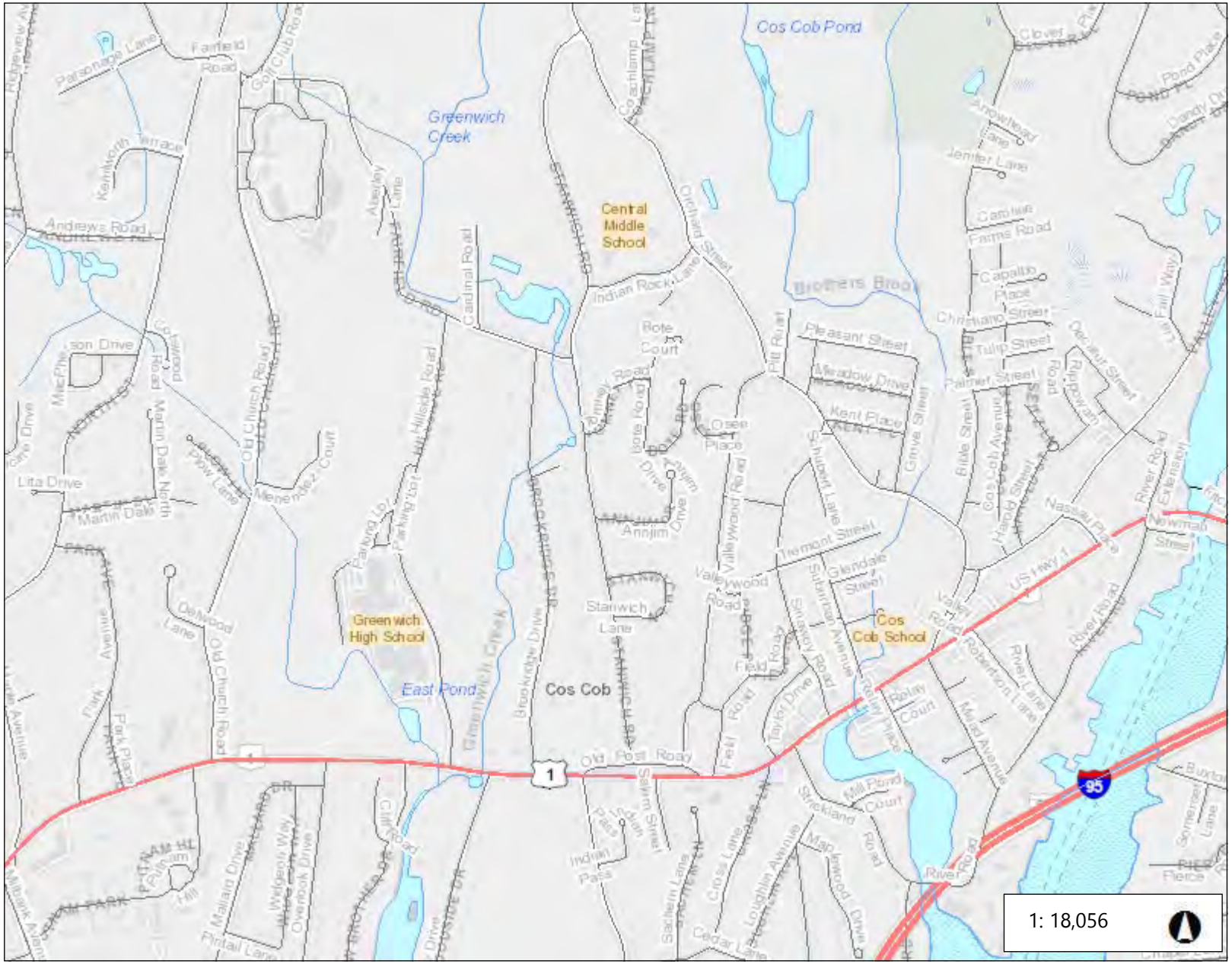
APPENDIX 6: Laboratory Test Results

- **Geotechnical Test Results**
- **Chemical Test Results**

APPENDIX 1:

Site Location Map

Central Middle School - Site Location Map

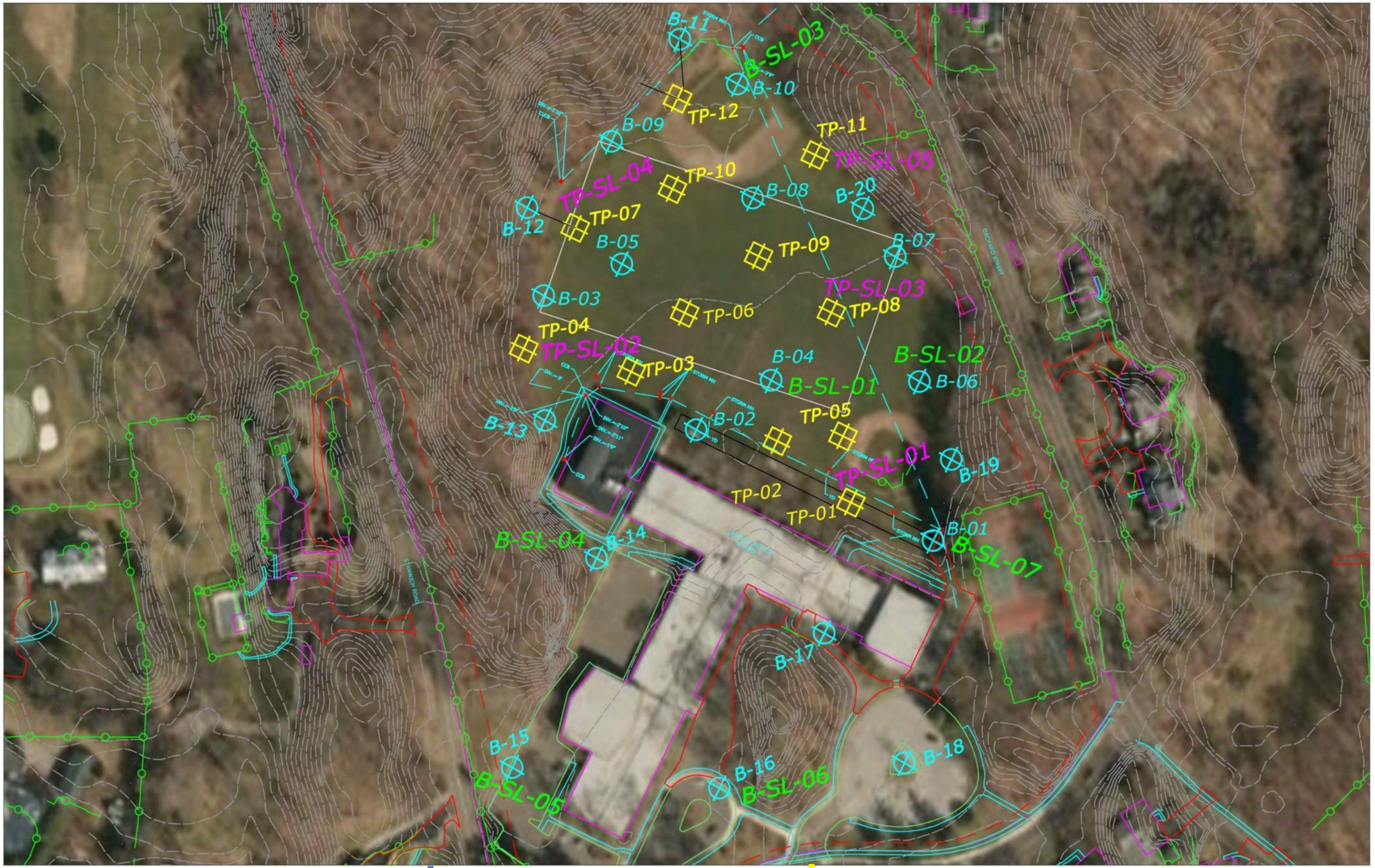

Cos Cob Pond
Greenwich Creek
Central Middle School
Greenwich High School
East Pond
Cos Cob
Cos Cob School
Old Post Road
1
95
US Hwy 1
Fairfield Road
Andrews Road
Pleasant Street
Tremont Street
Valleywood Road
Indian Rock Lane
Stanwich Lane
Orchard Street
Strickland Road
Mead Avenue
River Road
Nassau Place
Glendale Street
Meadow Drive
Kent Place
Tulip Street
Palmer Street
Bible Street
Newman Street
Field Road
Taylor Drive
Robertson Lane
Mill Pond Court
Cross Lane
Loughlie Avenue
Cedar Lane
Indian Path
Stanwich Road
Brookridge Drive
Old Church Road
Lita Drive
Martin Dale North
Martin Dale
Park Avenue
Park Place
Delwood Lane
Pintail Lane
Mallard Drive
Overlook Drive
Wedgewood Way
Sachem Lane
Sherwood Drive
Map
Pond Place
Jennifer Lane
Camelot Farms Road
Capalbo Place
Christiano Street
Fall Way
Ridgewood Road
Rote Court
Osee Place
Annjim Drive
Valleywood Drive
Schubert Lane
Shawsky Road
Valley Road
Field Road
Riverbend Road
Cherrywood Lane
Buxton Lane
Somerset Lane
Pleasant Street
Brothers Brook
Greenwich Creek
Stanwich Road
Old Church Road
Hillside Road
Cardinal Road
Golf Club Road
Parsonage Lane
Kenilworth Terrace
Alwyley Lane
Coachlamp Lane
Arrowhead Lane
Clover Road
Pond Place
Dandy Drive
Coventry Road
Menemsha Court
Parking Lot
Parking Lot
Drive
Drive
Drive

APPENDIX 2:

Boring and Test Pit Location Plan

GREENWICH PUBLIC SCHOOLS

CENTRAL MIDDLE SCHOOL



BORING AND TEST PIT LOCATION PLAN

BORING (20 LOCATIONS)

TEST PIT (12 LOCATIONS)

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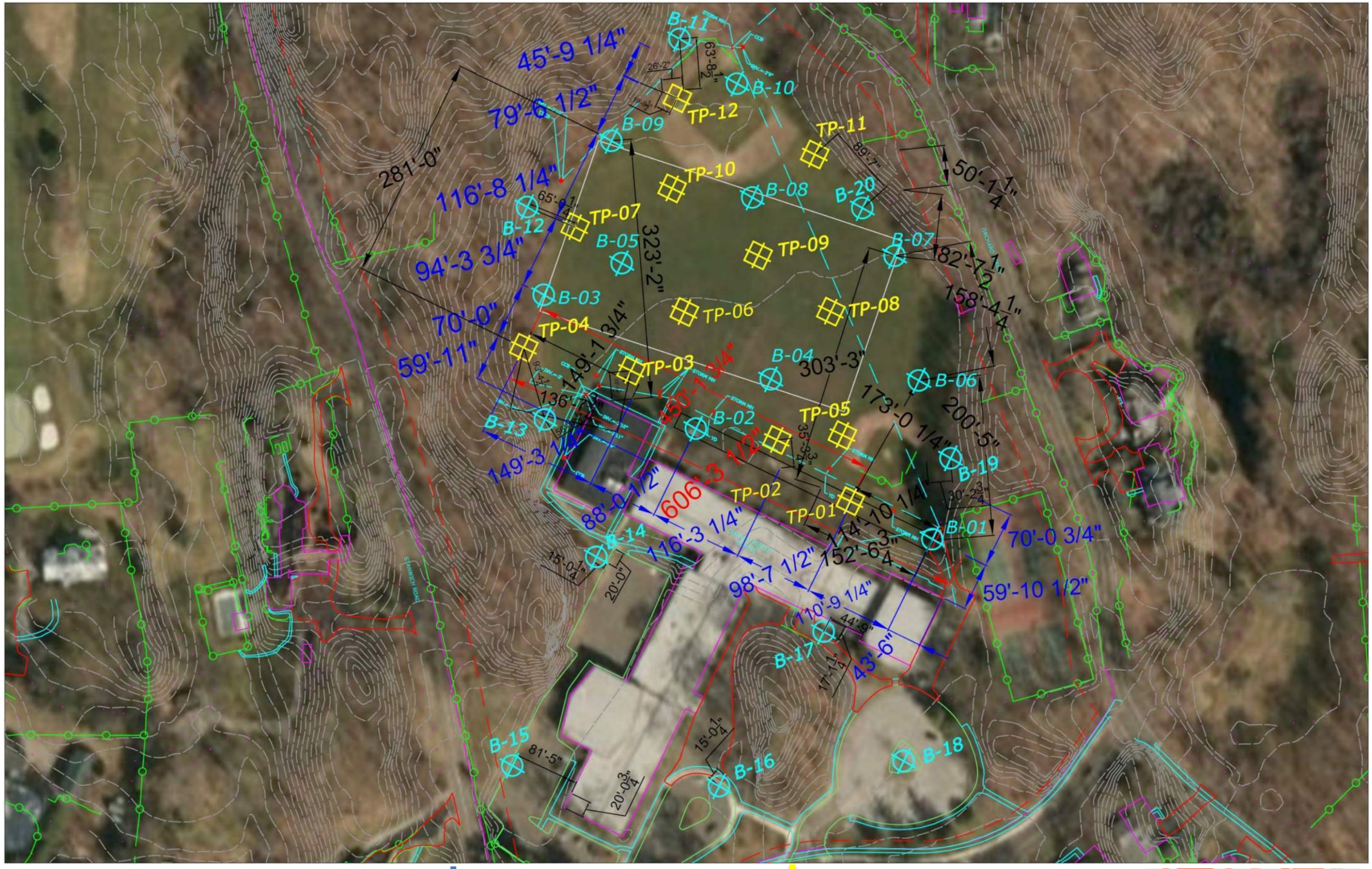
GREENWICH PUBLIC SCHOOLS

CENTRAL MIDDLE SCHOOL



BORING AND TEST PIT LOCATION PLAN

BORING (20 LOCATIONS)

TEST PIT (12 LOCATIONS)

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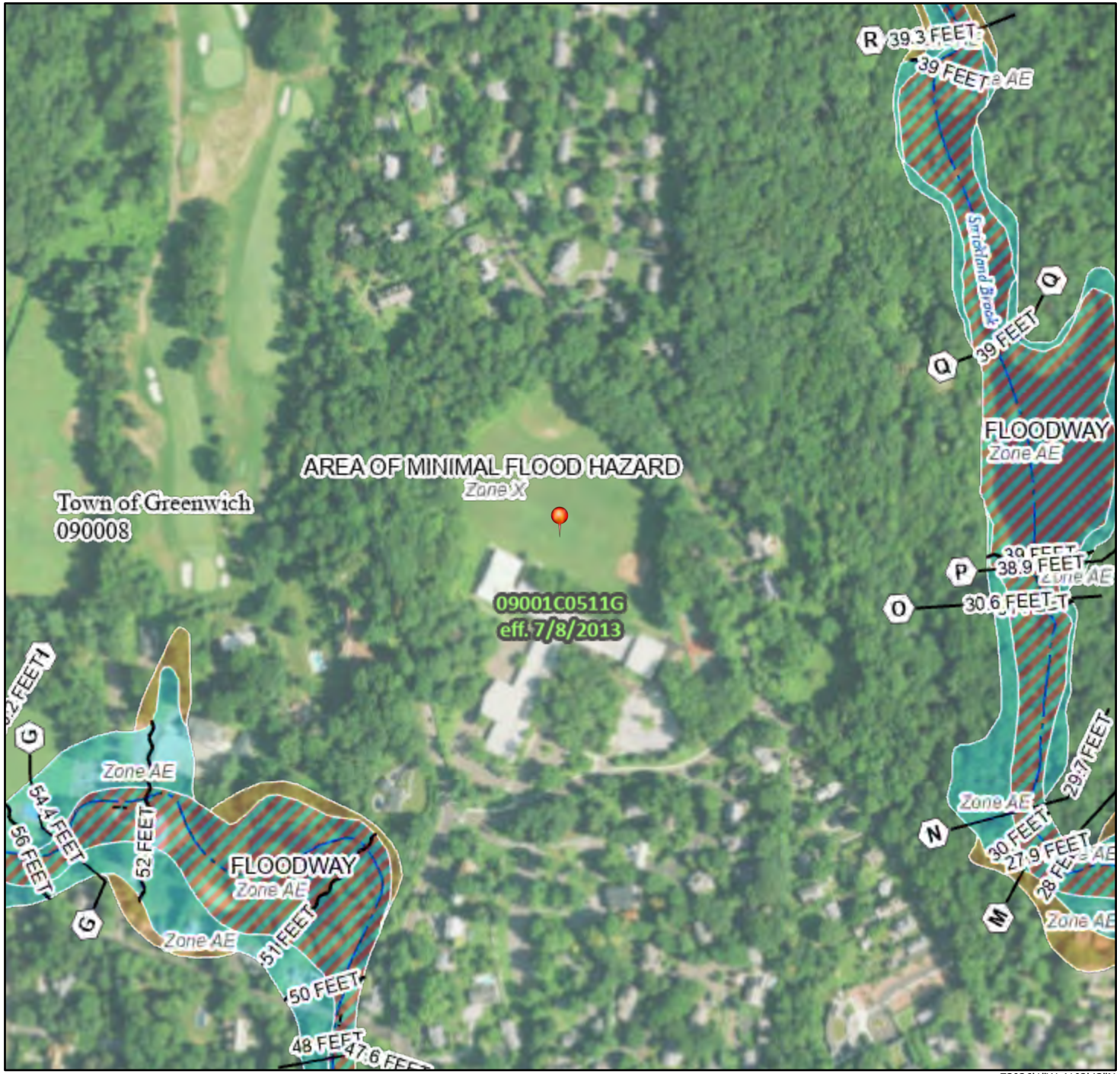
APPENDIX 3:

FEMA National Flood Hazard Layer FIRMette

National Flood Hazard Layer FIRMette

FEMA

73°36'39"W 41°3'10"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

73°36'1"W 41°2'43"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/22/2022 at 3:50 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX 4:

Test Pit Logs

LOG OF TEST PIT – TP-01

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-01
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 8:00 a.m.
Time Test Pit Ended: 8:35 a.m.

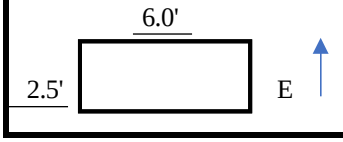
Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Black; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**FILL**	Brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel.	E	None	
3	**Silty SAND**	Black; fine to coarse SAND; dry; loose to medium dense; with some silt, with some organic material.	E	None	
4	**Silty SAND**	Gray; fine to coarse SAND; dry; loose to medium dense; with some silt; with some gravel.	E	None	
5	**Silty SAND**	Gray; fine to coarse SAND; moist to saturated; loose to medium dense; with some silt; with some gravel.			Grab Sample collected at ±6 feet BGS
6	▼				
7					
8					
9					
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 6.5 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.
Note 3: Some cave-in was noticed in the sand at about 7 feet below ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation



BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-01

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-01
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 8:00 a.m.
Time Test Pit Ended: 8:35 a.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-01

Mixture of fine to coarse Sand, some Silt, and some Gravel

Short-term equilibrium groundwater level measured at approximately 6.5 feet below ground surfaces

LOG OF TEST PIT – TP-02

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-02
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 8:40 a.m.
Time Test Pit Ended: 9:27 a.m.

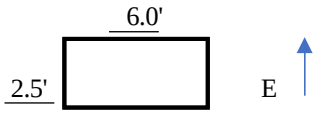
Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**FILL**	Light brown and gray; fine to medium SAND; dry; loose to medium dense; with some silt; with some gravel.	E	None	
3			E	None	
4	**Gravelly SAND**	Dark yellowish brown; mixture of SAND and GRAVEL; dry; loose to medium dense; trace of silt; trace of cobbles.	E	None	
5	**Gravelly SAND**	Dark yellowish brown; mixture of SAND and GRAVEL; moist to saturated; loose to medium dense; trace of silt; trace of cobbles.	E	None	Grab Sample collected at ±6 feet BGS
6	▼				
7					
8					
9					
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 6.5 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation



BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-02

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-02
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 8:40 a.m.
Time Test Pit Ended: 9:27 a.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-02. – Short-term equilibrium groundwater level measured at approximately 6.5 feet below ground surfaces

Mixture of fine to coarse Sand, some Silt, some Gravel, and trace of cobbles

Trace of cobbles in mixture of sand and gravel

LOG OF TEST PIT – TP-03

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-03
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 9:30 a.m.
Time Test Pit Ended: 10:14 a.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SAND, GRAVEL, and SILT; dry; medium dense; with little Organics.	E	None	
2	**Silty GRAVEL**	Light brown; Mixture of GRAVEL, SAND, and SILT; dry; medium dense; with little cobbles.	E	None	
3	**Silty GRAVEL**	Light brown; Mixture of GRAVEL, SAND, and SILT; dry; medium dense; with little cobbles; with some boulders	M	2/C	
4	**Silty GRAVEL**	Light brown; Mixture of GRAVEL, SAND, and SILT; dry; medium dense; with little cobbles; with some boulders; trace of debris	M	2/C	
5	**SILTS & CLAYS** ▼	Gray; CLAYS of low to medium plasticity; little gravelly clays; little sandy clays; little silty clays; trace of cobbles.	E	None	Grab Sample collected at ±6 feet BGS
6					
7					
8	**Gravelly SAND**	Gray; gravel-SAND-silt mixtures; moist to saturated; medium dense; trace of cobbles.			
9					
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 7.0 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation

BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-03

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-03
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 9:30 a.m.
Time Test Pit Ended: 10:14 a.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-03. – Short-term equilibrium groundwater level measured at approximately 7 feet below ground surfaces

Mixture of fine to coarse Sand, some Silt, some clay, some Gravel, little cobbles, little boulders

Boulder ±4.0 feet long

Gravel-sand-silt mixtures; little cobbles

LOG OF TEST PIT – TP-04

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-04
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 10:15 a.m.
Time Test Pit Ended: 11:10 a.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with some Organics; trace of gravel.	E	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; medium dense; with some gravel; with some cobbles; trace of boulders.	M	1/B	
3			M	1/B	
4			M	1/B	
5			M	None	Grab Sample collected at ±6 feet BGS
6					
7					
8 – 8.5	**Clayey SAND** ▼	Gray; sand-clay mixtures; moist; loose to medium dense; with some silt; with some gravel.			
8.5 – 9	**Silty SAND**	Dark yellowish brown; fine to coarse SAND; moist to saturated; loose to medium dense; with some silt; with some gravel; trace of cobbles.			
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 8.0 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation

6.0'
2.5' E

BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-04

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-04
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 10:15 a.m.
Time Test Pit Ended: 11:10 a.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-04. – Short-term equilibrium groundwater level measured at approximately 8 feet below ground surfaces

Mixture of fine to coarse sand, some silt, and some gravel, trace of clay, some cobbles, trace of boulders

Mixture of sand and gravel, trace of silt, some cobbles, trace of boulders

LOG OF TEST PIT – TP-05

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-05
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 11:25 a.m.
Time Test Pit Ended: 11:50 a.m.

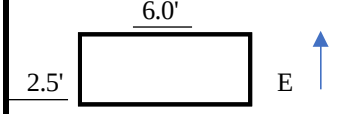
Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
1 – 2.5	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel.	E	None	
2.5 – 3	**Silty SAND**	Gray; fine to coarse SAND; dry to moist; loose to medium dense; with some silt; trace of debris and organics; slightly odorous; trace of gravel; trace of cobbles.	E	None	
4			E	None	
5			E	None	Grab Sample collected at ±6 feet BGS
6	▼				
7	**Silty SAND**	Gray; fine to coarse SAND; saturated; loose to medium dense; with some silt; trace of clay; trace of gravel.	E	None	
8	**Silty SAND**	Gray; fine to coarse SAND; saturated; loose; with some silt; trace of gravel.	E	None	
9					
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 6.2 feet below ground surface. Water flows from Northwest to Southeast before short-term equilibrium.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.
Note 3: Some cave-in was noticed in the sand at about 7 feet below ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation



BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-05

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PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-05
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 11:25 a.m.
Time Test Pit Ended: 11:50 a.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-05. – Short-term equilibrium groundwater level measured at approximately 6.2 feet below ground surfaces

Mixture of fine to coarse Sand, some Silt, some Gravel, some cobbles

Mixture of sand and gravel, trace of silt, trace of cobbles, trace of clay

LOG OF TEST PIT – TP-06

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-06
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 11:50 a.m.
Time Test Pit Ended: 12:10 p.m.

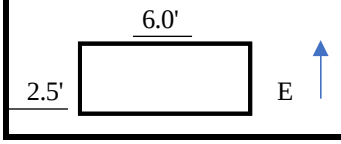
Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel; trace of cobbles.	E	None	
3			E	None	
4	**Silty SAND**	Black and gray; SAND and silt mixture; dry; loose to medium dense; with some organics; trace of gravel.	E	None	
5					
6	**Silty SAND** ▼	Gray; fine to coarse SAND; moist to saturated; loose to medium dense; with some silt; with some gravel; trace of cobbles.	E	None	Grab Sample collected at ±6 feet BGS
7					
8					
9	**Silty SAND**	Gray; fine to coarse SAND; saturated; loose to medium dense; with some silt; with some gravel; trace of cobbles.			
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 7.5 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.
Note 3: Some cave-in was noticed in the sand at about 6 feet below ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation



BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-06

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PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-06
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 11:50 a.m.
Time Test Pit Ended: 12:10 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-06. – Short-term equilibrium groundwater level measured at approximately 7.5 feet below ground surfaces

Mixture of fine to coarse sand, some silt, some gravel; some cobbles

Mixture of sand, silt, gravel, cobbles, trace of organics

Mixture of sand, silt, gravel, and cobbles

LOG OF TEST PIT – TP-07

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-07
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 12:20 p.m.
Time Test Pit Ended: 01:15 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel, trace of cobbles, trace of boulders.	M	4/A	Grab Sample collected at ±6 feet BGS
3					
4					
5					
6					
7					
8					
9	**SILT & CLAY** ▼	Gray; sandy and silty CLAY; low to medium plasticity;	E	None	
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 9.5 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation

6.0'
2.5' E

BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-07

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-07
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 12:20 p.m.
Time Test Pit Ended: 1:15 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-07. – Short-term equilibrium groundwater level measured at approximately 9.5 feet below ground surfaces

Mixture of fine to coarse Sand, some Silt, some Gravel, Trace of cobbles, trace of boulders

Trace of cobbles and boulders

LOG OF TEST PIT – TP-08

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-08
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 3:35 p.m.
Time Test Pit Ended: 4:03 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel.	E	None	
2.5	**Silty SAND**	Black and gray; Mixture of SAND and Silt; dry; loose to medium dense; with some organic materials.	E	None	
3	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel.			
4			E	None	
5					Grab Sample collected at ±6 feet BGS
6					
6.5					
7	**Silty SAND**	Black and Gray; fine to coarse SAND; dry; loose to medium dense; with some silt; with trace of organics.			
8	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel.			
9	**SILT & CLAY** ▼	Gray; CLAYS of low to medium plasticity; moist to saturated; little sandy clays; little silty clays;			
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 9.0 feet below ground surface.

Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation

BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-08

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-08
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 3:35 p.m.
Time Test Pit Ended: 4:03 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-08. – Short-term equilibrium groundwater level measured at approximately 9.0 feet below ground surfaces

Mixture of fine to coarse Sand, some Silt, and some Gravel, some clay

Mixture of Clay, silt, sand, trace of organics

Mixture of Sand, some Silt, some Gravel, some clay

LOG OF TEST PIT – TP-09

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-09
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 4:04 p.m.
Time Test Pit Ended: 4:20 p.m.

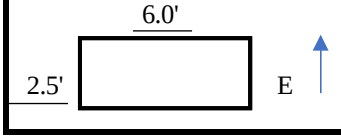
Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel.	E	None	
2.5	**Silty SAND**	Dak brown; Mixture of SAND and Silt; dry; loose to medium dense; with roots and some organic materials.			
3	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel; trace of cobbles.	E	None	
4			E	None	
5					
6					Grab Sample collected at ±6 feet BGS
7	**SILT & CLAY**	Gray; SILTS and CLAYS; dry to moist; low to medium plasticity; little sandy clays; little silty clays; trace of cobbles.	E	None	
8					
9	▼	Gray; CLAYS of low to medium plasticity; moist to saturated; little sandy clays; little silty clays;			
10	**SILT & CLAY**		E	None	
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 8.5 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation



BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-09

ATANE
EXCEL.TOGETHER.
40 Wall Street, 11th Floor, New York, NY 10005
(212) 747-1997 | www.ATANEConsulting.com

PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-09
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 4:04 p.m.
Time Test Pit Ended: 4:20 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-09. – Short-term equilibrium groundwater level measured at approximately 8.5 feet below ground surfaces

Mixture of fine to coarse Sand, some Silt, some Gravel; some Cobbles, trace of Clay.

Mixture of Sand, Silt, Gravel, and Cobbles

Mixture of Sand, Silt, Gravel, Cobbles, and trace of Clay

LOG OF TEST PIT – TP-10

ATANE
EXCEL.TOGETHER.
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(212) 747-1997 | www.ATANEConsulting.com

PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-10
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 1:35 p.m.
Time Test Pit Ended: 2:39 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

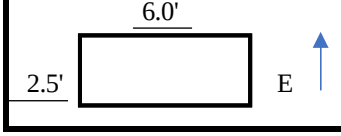
Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel, with some cobbles, with some boulders.	M	>4/C	
3					
4					
5.5					
6.5	**Silty SAND**	Dark gray and black; fine to coarse SAND; dry; loose to medium dense; with some silt, with some organic material.	E	None	
7					
8	**SILT & CLAY**	Gray; CLAYS of low to medium plasticity; dry to slightly moist; little sandy clays; little silty clays.	E	None	
9					
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: No groundwater encountered.

Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation



BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-10

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EXCEL.TOGETHER.
40 Wall Street, 11th Floor, New York, NY 10005
(212) 747-1997 | www.ATANEConsulting.com

PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-10
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 1:35 p.m.
Time Test Pit Ended: 2:39 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-10

Mixture of fine to coarse Sand, some Silt, some Gravel, some Cobbles, some Boulders, little Clay, trace of Organics.

Class C Boulders

Mixture of Clay, Silt, Sand, and Gravel.

LOG OF TEST PIT – TP-11

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(212) 747-1997 | www.ATANEConsulting.com

PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-11
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 4:22 p.m.
Time Test Pit Ended: 4:50 p.m.

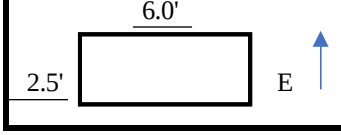
Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	E	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel; with some cobbles; some boulders.	E	None	
3			E	>2/A	
4	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel; with some cobbles; with some roots.	E	None	
5			M	None	
6	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; loose to medium dense; with some gravel; with some cobbles;	M	None	Grab Sample collected at ±6 feet BGS
7	**Silty SAND**	Gray; fine to coarse SAND; dry; loose to medium dense; with some silt; with some gravel.	E	None	
8					
9	▼ **SILT & CLAY**	Gray; CLAYS of low to medium plasticity; moist to saturated; little sandy clays; little silty clays.			
10					
11		Bottom of Exploration ±10.0'			
12					

Note 1: Short-term equilibrium groundwater level measured at approximately 9.0 feet below ground surface.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation



BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-11

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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-01
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 4:22 p.m.
Time Test Pit Ended: 4:50 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-11. – Short-term equilibrium groundwater level measured at approximately 9.0 feet below ground surfaces

Mixture of fine to coarse Sand, some Silt, some Gravel, some Cobbles; some Boulders

Mixture of Clay, Silt, Sand, Gravel

LOG OF TEST PIT – TP-12

ATANE
EXCEL.TOGETHER.
40 Wall Street, 11th Floor, New York, NY 10005
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PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-12
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10'3"

Weather: Sunny, 84 F
Time Test Pit Started: 1:20 p.m.
Time Test Pit Ended: 1:35 p.m.

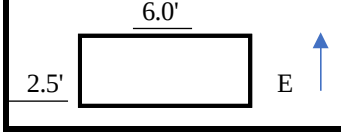
Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

Depth Below Ground Surface (BGS) in feet	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Comments
1	**TOPSOIL**	Light brown; SILT; dry; loose to medium dense; with some fine Sand, with little Organics.	M	None	
2	**Silty SAND**	Light brown; fine to medium SAND and SILT; dry; medium dense; with some gravel; with some cobbles; with some boulders.	M	None	
3			D	>3/C	Grab Sample collected at ±3 feet BGS
4		Bottom of Exploration ±3.0'			
5					
6					
7					
8					
9					
10					
11					
12					

Note 1: No groundwater encountered.
Note 2: Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.
Note 3: Excavation stopped at about 3 feet below ground surface. Excavator could not remove the boulders.

Water Symbols ▼ = Groundwater

Test Pit Dimensions & Orientation



BOULDER COUNT

Boulder	Class
12"-24"	A
24"-36"	B
>36"	C

PROPORTIONS USED

< 10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy
M = Moderate
D = Difficult

LOG OF TEST PIT – TP-12

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(212) 747-1997 | www.ATANEConsulting.com

PROJECT

PRELIMINARY GEOTECHNICAL INVESTIGATION
Greenwich Public Schools – Central Middle School
9, Indian Rock Lane, Greenwich, CT 06830

Test Pit No: TP-12
Surface Elevation: ~ 50 Feet
Drilling Method: Trench Excavation
Sampling Method: Grab
Completion depth: 10.0 Feet BGS

Test Pit Subcontractor: J.J.K. Electric
Compact Excavators: Bobcat E35
Excavator Dig Depth in feet: 10’3”

Weather: Sunny, 84 F
Time Test Pit Started: 1:20 p.m.
Time Test Pit Ended: 1:35 p.m.

Date Test Pit Started: 08/12/2022
Date Test Pit Completed: 08/12/2022

In progress TP-12. – Class C Boulders

Mixture of fine to coarse Sand, some Silt, some Gravel; some Cobbles

Class C Boulders

Mixture of Sand, some Silt, some Gravel; some Cobbles

APPENDIX 5:

Boring Logs

Phone
(203) 262-9328

Telefax
(203) 264-3414

WHITE PLAINS, N.Y.
(914) 946-4850

SOILTESTING, INC.

90 DONOVAN ROAD - OXFORD, CONN. 06478-1028

GEOTECHNICAL / ENVIRONMENTAL SUBSURFACE INVESTIGATIONS - Test Borings - Core Drilling
Monitoring Wells - Recovery Wells - Direct Push/Probe Sampling
UNDERPINNING - HELICAL PILES - SOIL NAILS

September 19, 2022

ATANE Engineers
40 Wall St., 11th FL
New York NY 10005
Attn.: Paul Sousa

G189-2236-22

Re: 9 Indian Rock Ln.
Greenwich CT

Dear Mr. Sousa,

Attached please find the Test Boring Logs, and location plan for work in Greenwich CT.

If you have any questions, please do not hesitate to contact us.

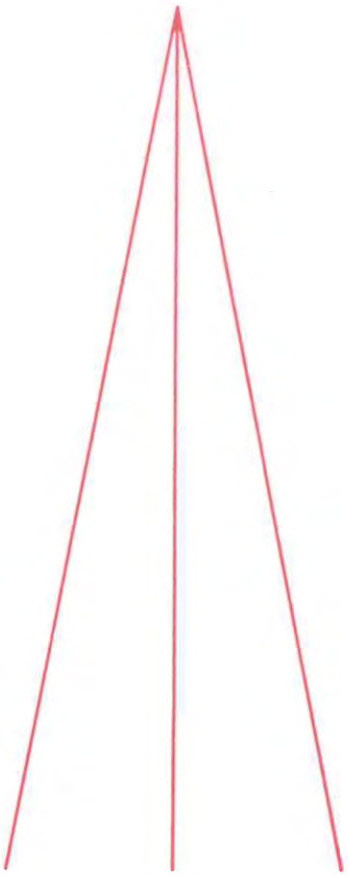
Very truly yours,

James DeAngelis

James A. DeAngelis
President
JAD:mv

SOILTESTING, INC.

TO	ATANE Engineers	DATE	19-Sep-22
ADDRESS	40 Wall St., New York NY 10005		
SITE LOCATION	9 Indian Roack Ln., Greenwich CT		
REPORT SENT TO	Paul Sousa		
SAMPLES SENT TO	Storage (Max 60 days)		



90 Donovan Road
Oxford, Connecticut 06478-1028
203-262-9328

Branch Office:
White Plains, New York 10607
914-946-4850

JOB NO.
G189-2236-22

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-1
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/23/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/23/22
AT 7 FT AFTER 0 HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
AT __ FT AFTER __ HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC.	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	4"	6'0"	17 / 29		dense		
							20 / 20		dry		Blk F sand, F-C gravel
		2	ss	24"	14"	8'0"	40 / 41		v dense		
							49 / 27		moist/wet		Brn F sand & silt, F-C gravel, trace cobbles
		3	ss	23"	14"	9'11"	14 / 25		dense	9'6"	
10							22 / 100/5"		wet		Poss partly weathered Bedrock or Boulder
		4	ss	4"	4"	10'4"	100/4"		v dense/wet	10'4"	Partly weathered Bedrock
											EOB 10'4"
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-1**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-2
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/23/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/23/22
AT 9 FT AFTER 0 HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
AT FT AFTER HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										4"	Topsoil
5		1	ss	24"	16"	6'0"	5 / 5		compact		
							10 / 14		dry		Gry F sand & silt, some F gravel, trace clay
		2	ss	24"	16"	8'0"	35 / 4		dense		
							44 / 31		wet		Gry F-M sand, F-C gravel, trace silt
		3	ss	24"	18"	10'0"	15 / 44		v dense		
10							56 / 72		wet		Gry F sand & silt, F-C gravel, trace cobbles
		4	ss	24"	16"	12'0"	7 / 32		v dense		
							34 / 21		wet		Brn F sand & silt, trace cobbles
		5	ss	24"	14"	14'0"	20 / 28		v dense		
							27 / 27		wet	14'	Brn F-C sand, F-C gravel
15											EOB 14'
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-2**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-3
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/23/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/23/22
AT 10_FT AFTER_0_HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
AT__FT AFTER__HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12- 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	14"	6'0"	12	32			dense		
							10	10			dry		Gry/brn F sand & silt, F-C gravel
		2	ss	24"	18"	8'0"	12	6			compact		
							14	17			dry/moist		Brn F-M sand, F-C gravel, some silt
		3	ss	24"	14"	10'0"	13	88			v dense		
10							30	32			dry		Same & cobbles, boulders
		4	ss	24"	14"	12'0"	14	14			dense		
							27	19			wet		Brn F sand & silt, F-C gravel
		5	ss	24"	8"	14'0"	18	17			dense		
							20	23			wet	14'	Same
15													EOB 14'
20													
25													
30													
35													
40													

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-3**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-4
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/23/22
GROUND WATER OBSERVATIONS AT 7 * FT AFTER 0 HOURS AT __ FT AFTER __ HOURS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/23/22
	HAMMER WT.: 140# BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
												8"	Topsoil
5		1	ss	24"	22"	6'0"	13	11			compact		
							17	19			moist		Brn F sand & silt, F-C gravel
		2	ss	24"	20"	8'0"	42	53			v dense		
							40	34			wet		Brn F-C snd, F-C gravel, some silt
		3	ss	24"	16"	10'0"	12	14			dense		
10							24	2			wet		Brn F-C sand, F-C gravel, trace cobbles, trace silt
		4	ss	24"	10"	12'0"	5	5			compact		
							7	5			wet		Same
		5	ss	24"	22"	14'0"	10	7			compact		
							7	8			wet		Gry F-C sand, F-C gravel
15		6	ss	24"	24"	16'0"	15	10			compact		
							10	30			wet	16'	Same, gry silt, trace clay
													EOB 16'
20													
25													
30													
35													
40													* Note: Driller log noted 3' observation.

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO. B-4

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE
M = MEDIUM
F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-5
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 4 ¼" / 1 3/8" HAMMER WT.: 140# / BIT HAMMER FALL: 30"	OFFSET DATE START 8/23/22 DATE FINISH 8/23/22 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT 8 FT AFTER 0 HOURS AT FT AFTER HOURS		

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	24"	6'0"	8 / 9		compact		
							7 / 8		dry		Brn F sand, F-C gravel, some silt
		2	ss	24"	16"	8'0"	16 / 20		dense		
							11 / 10		moist		Gry/brn F sand & silt, trace clay
		3	ss	24"	18"	10'0"	14 / 14		dense		
10							17 / 19		wet		Gry F sand, some silt
		4	ss	24"	24"	12'0"	20 / 14		compact		
							14 / 22		wet		Gry F-M sand, F-C gravel, some silt
		5	ss	24"	24"	14'0"	12 / 23		dense		
							23 / 25		wet		Same
15		6	ss	24"	24"	16'0"	15 / 25		v dense		
							46 / 23		wet	16'	Same
											EOB 16'
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-5**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-6
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/23/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/23/22
AT 8 FT AFTER 0 HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
AT FT AFTER HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
												8"	Topsoil
5		1	ss	24"	14"	6'0"	4	6			compact		
							22	10			dry		Brn F sand, F-C gravel
		2	ss	24"	16"	8'0"	8	9			compact		
							10	13			dry		Gry F sand & silt
		3	ss	24"	10"	10'0"	10	15			dense		
10							20	16			wet		Brn F sand & silt, F-C gravel
		4	ss	24"	24"	12'0"	19	25			v dense		
							34	23			wet		Same
		5	ss	24"	24"	14'0"	10	19			dense		
							31	31			wet	14'	Same
15													EOB 14'
20													
25													
30													
35													
40													

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-6**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-7
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 4 ¼" / 1 3/8" HAMMER WT.: 140# / BIT HAMMER FALL: 30"	OFFSET DATE START 8/24/22 DATE FINISH 8/24/22 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT 8 FT AFTER 0 HOURS AT FT AFTER HOURS		

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	16"	6'0"	12 / 11		compact / dry		Brn/lt brn F sand, F-C gravel, some silt
							16 / 31		v dense		
		2	ss	24"	16"	8'0"	95 / 44		v dense / moist		Brn F-C sand, F-C gravel, trace cobbles
							40 / 39		v dense		
		3	ss	24"	18"	10'0"	35 / 57		v dense / wet		Brn F sand & silt, F-C gravel, trace cobbles
10							42 / 38		v dense		
		4	ss	15"	10"	11'3"	135 / 133		v dense / wet	11'3"	Same
							100/3"				EOB 11'3"
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-7**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE
M = MEDIUM
F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-8
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/24/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/24/22
AT 10 FT AFTER 0 HOURS	HAMMER WT.: 140# BIT	SURFACE ELEV.
AT __FT AFTER __HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC.	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12- 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	14"	6'0"	15	9			compact		
							8	15			moist		Gry F sand & silt, F-C gravel
		2	ss	24"	14"	8'0"	105	64			v dense		
							65	17			dry		Same, cobbles
		3	ss	24"	12"	10'0"	16	5			loose		
10							3	3			moist		Gry silt, trace F gravel, trace clay
		4	ss	24"	10"	12'0"	4	9			compact		Gry F-C sand, some silt
							9	10			wet	11'6"	Gry silt, trace clay
		5	ss	24"	20"	14'0"	10	8			compact		
							7	6			wet		Gry F-C sand & silt, F-C gravel, trace clay
15		6	ss	24"	24"	16'0"	11	65			v dense		
							19	45			wet	16'	Gry F sand & silt, trace cobbles
													EOB 16'
20													
25													
30													
35													
40													

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-8**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-9
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/24/22
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT FT AFTER HOURS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/24/22
	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	19"	19"	6'7"	95 / 75		v dense / dry		Brn F sand, F-C gravel, trace cobbles
							95 / 100/1"				Cobbles & boulders
10										10'	Cobbles & boulders 6'6" - 10'
		2	ss	4"	4"	10'4"	100/4"		v dense/dry	11'6"	Partly weathered Bedrock Auger Refusal
15											EOB 11'6"
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-9**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-10
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/24/22
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT FT AFTER HOURS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/24/22
	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	12"	7'0"	25 / 34		v dense / dry		Brn F-M sand, F-C gravel, some silt, trace cobbles
							26 / 26				
		2	ss	24"	14"	9'0"	35 / 64		v dense / dry		Same
10							76 / 65			10'	Auger Refusal
											EOB 10'
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-10**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-11
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/24/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/24/22
AT none FT AFTER 0 HOURS	HAMMER WT.: 140# BIT	SURFACE ELEV.
AT __FT AFTER __HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC.	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	22"	22"	6'8"	18 / 19 52 / 150/4"		v dense dry	7'	Brn/lt brn F sand, F-C gravel, trace cobbles Auger Refusal
											EOB 7'
10											
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-11**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-12
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/24/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/24/22
AT none FT AFTER 0 HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
AT __FT AFTER __HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC.	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12- 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5											Boulders from 2' to 7'
										7'	Auger Refusal
											EOB 7'
10											
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-12**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-13
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER SD/cp	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 9/3/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 9/3/22
AT none FT AFTER 0 HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
AT__FT AFTER__HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC.	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	18"	6'0"	9	13			dense	5'	Brn F-M sand & F gravel, lit silt
							33	45			dry		Bedrock or Boulder Fragments
												7'	Cobbles and/or fractured Bedrock 5-7'
													EOB 7'
10													
15													
20													
25													
30													
35													
40													

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-13**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-14
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/25/22
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT FT AFTER HOURS	SIZE I.D.: 4 ¼" / 1 3/8" HAMMER WT.: 140# BIT HAMMER FALL: 30"	DATE FINISH 8/25/22 SURFACE ELEV. GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	4"	6'0"	15 / 6		compact / dry		
							7 / 12				Brn F sand, F-C gravel, trace silt, trace asphalt (fill)
		2	ss	24"	16"	8'0"	12 / 12		dense / dry		
							17 / 32				Brn F sand, F-C gravel, trace silt, trace cobbles
		3	ss	24"	18"	10'0"	28 / 25		v dense / dry		
10							30 / 39			10'	Brn F sand, F-C gravel, some silt, some weathered Bedrock frag
		4	ss	4"	4"	10'4"	100/4"		v dense/dry		Partly weathered Bedrock or Boulders
										12'	Auger Refusal
											EOB 12'
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-14**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-15
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/25/22
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT __FT AFTER __HOURS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/25/22
	HAMMER WT.: 140# / BIT	SURFACE ELEV.
	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	14"	6'0"	18 / 85		v dense dry		Weathered Bedrock fragments
							110 / 102				
		2	ss	3"	0"	6'3"	100/3"		v dense/dry		No recovery
										9'	Auger Refusal
10											EOB 9'
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-15**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE
M = MEDIUM
F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-16
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER AO/aa	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 8/25/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 8/25/22
AT none FT AFTER 0 HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
AT FT AFTER HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	18"	6'0"	20 / 29		v dense		
							25 / 9		dry		Brn F sand, F-C gravel, trace asphalt (fill)
		2	ss	24"	18"	8'0"	9 / 15		v dense	7'6"	Brn F sand & silt, F-C gravel
							39 / 83		moist/dry		Partly weathered Bedrock
		3	ss	24"	12"	10'0"	20 / 15		dense		
10							32 / 31		dry		Boulders or partly weathered Bedrock
		4	ss	22"	20"	11'10"	44 / 19		v dense		
							32 / 100/4"		dry	12'	Brn F-M sand, F-C sand, trace cobbles (parly weathered Bedrock)
											EOB 12'
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-16**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-17
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER SD	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 4 ¼" / 1 3/8" HAMMER WT.: 140# BIT HAMMER FALL: 30"	OFFSET DATE START 9/3/22 DATE FINISH 9/3/22 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT __FT AFTER __HOURS		

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										3'	Auger Refusal at 3' (on Boulder) offset 5' to B-17A
	B-17A										
5		1	ss	24"	12"	6'0"	4 / 3		loose		
							2 / 4		dry		Brn F-M sand & silt, some F gravel
		2	ss	23"	14"	7'11"	4 / 31		v dense	7'3"	Same
							33 / 50/5"		dry	8'	Bedrock or boulder fragments Auger Refusal
											EOB 8'
10											
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-17**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE
M = MEDIUM
F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-18
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER SD/cp	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 9/3/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 9/3/22
AT 9 FT AFTER 0 HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
AT __FT AFTER __HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC.	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	24"	6'0"	14	13			compact		
							10	10			dry		Gry F-M sand & F gravel, lit silt
		2	ss	21"	12"	8'0"	11	14			compact	7'6"	Same
							7	5			dry		Gry/blk F sand & silt (gry/blk) trace organics, F gravel-Cobbles 9'-10' (poss fill)
10												10'	
		3	ss	24"	16"	12'0"	9	11			compact		
							8	9			wet		Brn/tan F-M sand & F gravel, lit silt
		4	ss	22"	20"	13'10"	7	13			dense		
							20	50/4"			wet	13'10"	Same
15													EOB 13'10"
20													
25													
30													
35													
40													

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-18**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-19
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER SD	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 9/3/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 9/3/22
AT none FT AFTER 0 HOURS	HAMMER WT.: 140# / BIT	SURFACE ELEV.
AT FT AFTER HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC.	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
5		1	ss	24"	18"	6'0"	9 / 14		compact		
							14 / 14		dry		Brn F-M sand & silt, lit F gravel
		2	ss	16"	16"	7'4"	30 / 33		v dense		Same, cobbles, boulders and/or decomposed Bedrock
							50/4"		moist	7'4"	Spoon Refusal
											EOB 7'4"
10											
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-19**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: ATANE Engineers	SHEET 1 OF 1 HOLE NO. B-20
	PROJECT NO. G189-2236-22	
	PROJECT NAME Central Middle School	BORING LOCATIONS Per Plan
FOREMAN - DRILLER SD	LOCATION 9 Indian Rock Lane Greenwich CT	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS	DATE START 9/3/22
GROUND WATER OBSERVATIONS	SIZE I.D.: 4 ¼" / 1 3/8"	DATE FINISH 9/3/22
AT none FT AFTER 0 HOURS	HAMMER WT.: 140# BIT	SURFACE ELEV.
AT FT AFTER HOURS	HAMMER FALL: 30"	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC.	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										3'	Auger Refusal
											EOB 3' Poss Bedrock
5											
10											
15											
20											
25											
30											
35											
40											

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO. B-20**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

APPENDIX 6:

Laboratory Test Results – Geotechnical Test Results

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SIEVE ANALYSIS ASTM DESIGNATION C136

Client: ***Town of Greenwich***
101 Field Point Road
Greenwich , CT 06830

Project: ***Greenwich Cen. Middle Sch.***
9 Indian Rock Lane
Greenwich, CT 06830

Project #: 2021-11-0386A02

Sample Source:	**Sample Date:** *08/12/22*
Test Pit #1	**Sample #:** ***220812-1***
	Lab Tech: *PJM*
	Sampled by: *MH*
Sample Use:	***Material Type:***
Subgrade	*Tan Gravel*

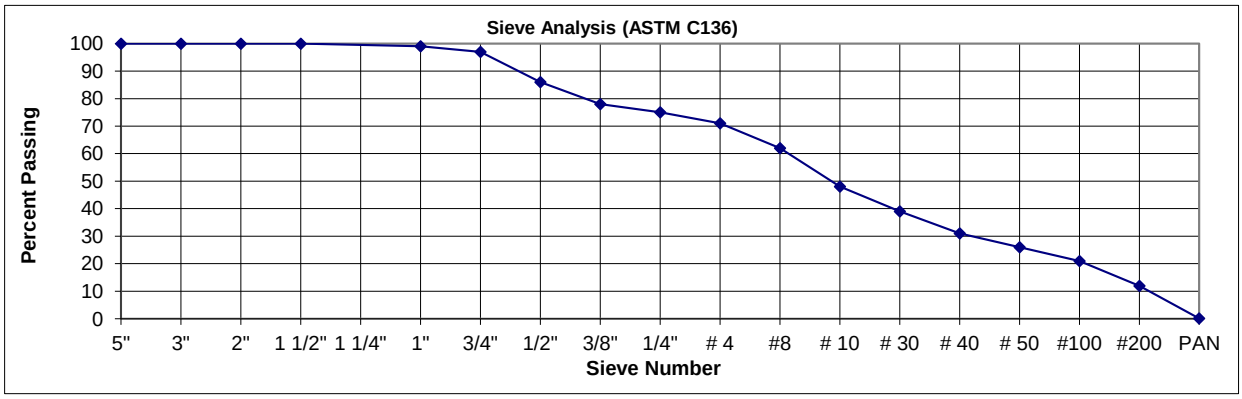
ATANE Report #: MA0386081222-1

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)	SPECIFICATIONS
5"	0.0	100	
3"	0.0	100	
2"	0.0	100	
1 1/2"	0.0	100	
1 1/4"	--		
1"	80.7	99	
3/4"	242.1	97	
1/2"	1022.1	86	
3/8"	1586.4	78	
1/4"	1810.8	75	
# 4	2108.5	71	
#8	2828.6	62	
# 10	3837.5	48	
# 30	4515.2	39	
# 40	5085.9	31	
# 50	5418.1	26	
#100	5854.5	21.0	
#200	6490.6	11.9	
PAN	7358.2	0.1	

Wet Wash: *No*

% Over #4, Under 3": ***29.0***

Reviewed by:



REVIEW **FAIL** **PASS**

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SIEVE ANALYSIS ASTM DESIGNATION C136

Client: ***Town of Greenwich***
101 Field Point Road
Greenwich, CT 06830

Project: ***Greenwich Cen. Middle Sch.***
9 Indian Rock Lane
Greenwich, CT 06830

Project #: 2021-11-0386A01

Sample Source:	**Sample Date:** *08/12/22*
Test Pit #2	**Sample #:** ***220812-7***
	Lab Tech: *PJM*
	Sampled by: *MH*
Sample Use:	***Material Type:***
Subgrade	*Dark Brown Gravel*

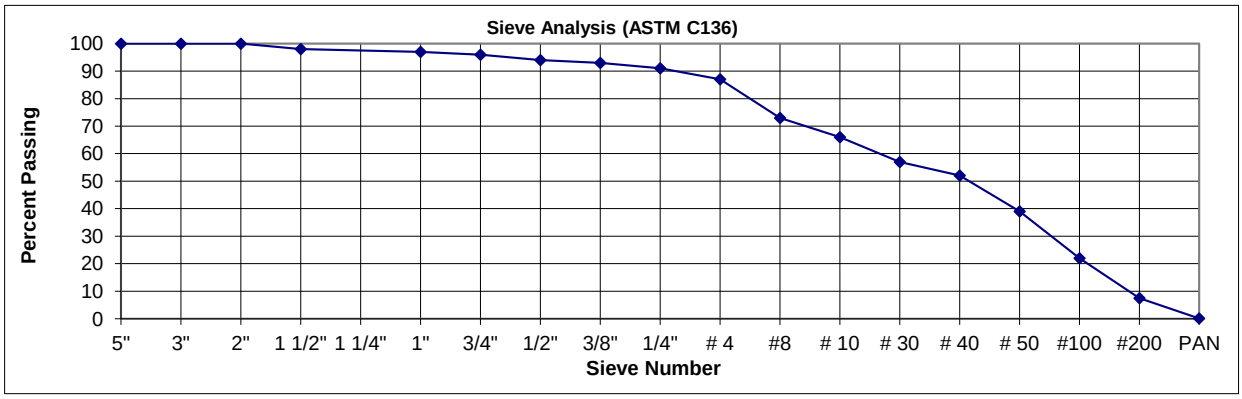
ATANE Report #: MA0386081222-7

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)	SPECIFICATIONS EARTH MOVING 31 20 00 2.01.G.4
5"	0.0	100	
3"	0.0	100	**70-100**
2"	52.1	100	
1 1/2"	212.4	98	
1 1/4"	--		
1"	439.3	97	
3/4"	573.2	96	**45-95**
1/2"	782.1	94	
3/8"	884.7	93	
1/4"	1208.7	91	
# 4	1646.7	87	**30-90**
#8	3508.5	73	
# 10	4334.4	66	**25-80**
# 30	5526.9	57	
# 40	6199.2	52	**10-50**
# 50	7770.4	39	
#100	9997.2	22.0	
#200	11872.6	7.5	**0-10**
PAN	12814.1	0.1	

Wet Wash: *No*

% Over #4, Under 3": ***13.0***

Reviewed by:



REVIEW X FAIL PASS

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ATANE SIEVE ANALYSIS ASTM DESIGNATION C136 Split Sample

Lab Work Sheet

Client: ***Town of Greenwich*** *101 Field Point Road* *Greenwich, CT 06830* ***Project:*** ***Greenwich Cen. Middle Sch.*** ***9 Indian Rock Lane*** ***Greenwich, CT 06830*** ***Project #: 2021-11-0386A02***	***Sample Source:*** ***Test Pit #3***	**Sample Date:**	8/12/2022
		Sample #:	220812-8
		Lab Tech:	PJM
		Sampled by:	MH
	Sample Use:	***Material Type:***	
	Subgrade	*Tan Gravel*	

ATANE Report #: MA00386081222-8

Sample Initial Dry Weight: 15,289.40

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)
5"	0.0	100.0
3"	0.0	100.0
2"	50.1	99.7
1 1/2"	173.8	98.9
1 1/4"	--	
1"	748.9	95.1
3/4"	878.4	94.3
1/2"	1095.2	92.8
3/8"	1268.1	91.7

Split sample to size appropriate for smaller sieves here

Wt of -3/8":	14021.3
Weight of New Split Sample:	692.7

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	%Passing (Split Sample)	% Passing (Total Sample)
Split Sample			
1/4"	45.3	93.5	85.7
# 4	72.4	89.5	82.1
# 8	169.5	75.5	69.3
# 10	215.3	68.9	63.2
# 30	299.5	56.8	52.1
# 40	338.5	51.1	46.9
# 50	425.7	38.5	35.3
#100	517.8	25.2	23.2
#200	624.7	9.8	9.0
PAN	692.3	0.1	0.1

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SIEVE ANALYSIS ASTM DESIGNATION C136

Client: ***Town of Greenwich***
101 Field Point Road
Greenwich , CT 06830

Project: ***Greenwich Cen. Middle Sch.***
9 Indian Rock Lane
Greenwich, CT 06830

Project #: 2021-11-0386A02

Sample Source:	**Sample Date:** *08/12/22*
Test Pit #4	**Sample #:** ***220812-2***
	Lab Tech: *PJM*
	Sampled by: *MH*
Sample Use:	***Material Type:***
Subgrade	*Tan Gravel*

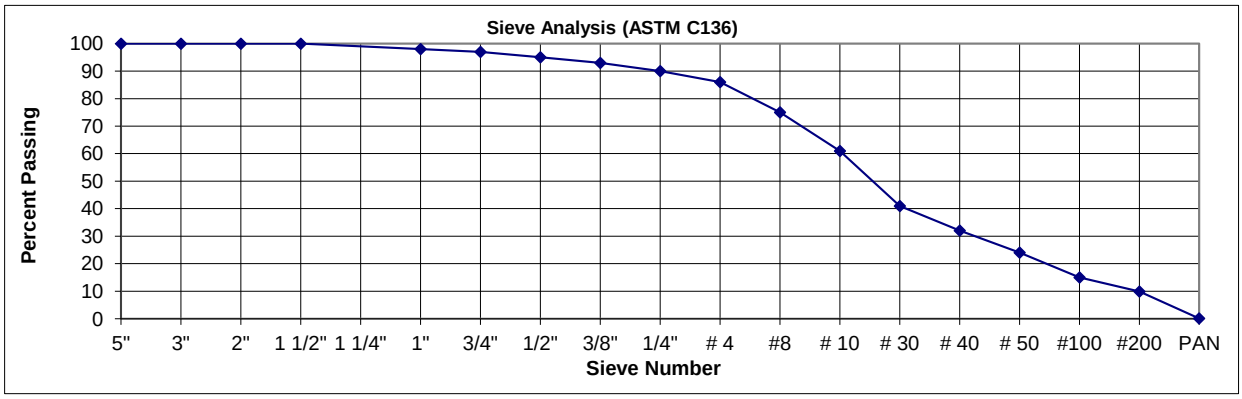
ATANE Report #: MA0386081222-2

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)	SPECIFICATIONS
5"	0.0	100	
3"	0.0	100	
2"	0.0	100	
1 1/2"	0.0	100	
1 1/4"	--		
1"	190.2	98	
3/4"	266.3	97	
1/2"	412.8	95	
3/8"	516.4	93	
1/4"	774.4	90	
# 4	1134.4	86	
#8	1958.4	75	
# 10	3089.4	61	
# 30	4671.9	41	
# 40	5391.8	32	
# 50	6000.5	24	
#100	6742.3	15.0	
#200	7145.0	9.9	
PAN	7927.4	0.1	

Wet Wash: *No*

% Over #4, Under 3": ***14.0***

Reviewed by:



REVIEW **FAIL** **PASS**

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SIEVE ANALYSIS ASTM DESIGNATION C136

Client: ***Town of Greenwich***
101 Field Point Road
Greenwich, CT 06830

Project: ***Greenwich Cen. Middle Sch.***
9 Indian Rock Lane
Greenwich, CT 06830

Project #: ***2022-32-0386A02***

Sample Source:	**Sample Date:** *08/12/22*
Test Pit #6	**Sample #:** ***220812-11***
	Lab Tech: *PJM*
	Sampled by: *MH*
Sample Use:	***Material Type:***
Subgrade	*Brown Gravel*

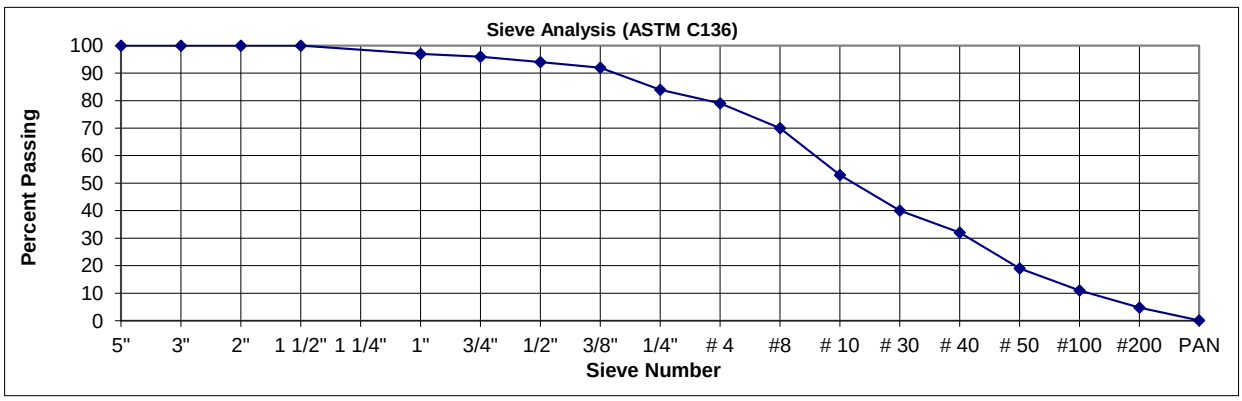
ATANE Report #: MA0386081222-11

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)	SPECIFICATIONS
5"	0.0	100	
3"	0.0	100	
2"	0.0	100	
1 1/2"	0.0	100	
1 1/4"	--		
1"	378.3	97	
3/4"	612.7	96	
1/2"	831.4	94	
3/8"	1072.8	92	
1/4"	2138.9	84	
# 4	2903.8	79	
#8	4136.0	70	
# 10	6483.5	53	
# 30	8181.2	40	
# 40	9338.6	32	
# 50	11169.6	19	
#100	12193.7	11.0	
#200	13073.6	4.8	
PAN	13717.9	0.1	

Wet Wash: *No*

% Over #4, Under 3": ***21.0***

Reviewed by:



REVIEW **FAIL** **PASS**

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SIEVE ANALYSIS ASTM DESIGNATION C136

Client: ***Town of Greenwich***
101 Field Point Road
Greenwich , CT 06830

Project: ***Greenwich Cen. Middle Sch.***
9 Indian Rock Lane
Greenwich, CT 06830

Project #: 2021-11-0386A02

Sample Source:	**Sample Date:** *08/12/22*
Test Pit #8	**Sample #:** ***220812-3***
	Lab Tech: *PJM*
	Sampled by: *MH*
Sample Use:	***Material Type:***
Subgrade	*Tan Gravel*

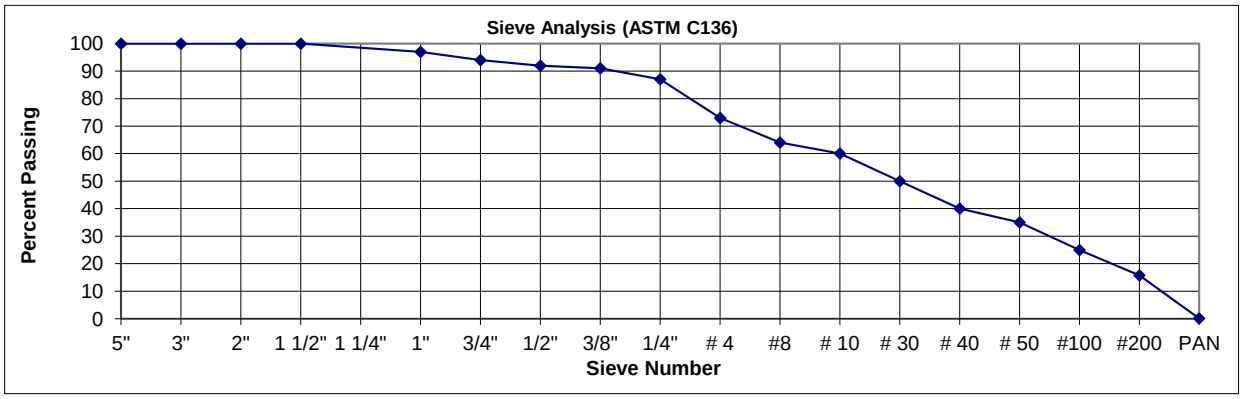
ATANE Report #: MA0386081222-3

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)	SPECIFICATIONS
5"	0.0	100	
3"	0.0	100	
2"	0.0	100	
1 1/2"	0.0	100	
1 1/4"	--		
1"	239.2	97	
3/4"	548.1	94	
1/2"	703.2	92	
3/8"	845.7	91	
1/4"	1232.8	87	
# 4	2556.1	73	
#8	3399.1	64	
# 10	3784.9	60	
# 30	4636.4	50	
# 40	5591.2	40	
# 50	6102.3	35	
#100	6983.4	25.0	
#200	7879.1	15.8	
PAN	9347.5	0.1	

Wet Wash: *No*

% Over #4, Under 3": ***27.0***

Reviewed by:



REVIEW **FAIL** **PASS**

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ATANE

ENGINEERS,

P.C.

56 Roland Street
Suite 202
Boston, MA
617/778-7300
FAX 617/268-7832

SIEVE ANALYSIS ASTM DESIGNATION C136

Client: ***Town of Greenwich*** *101 Field Point Road* *Greenwich, CT 06830* ***Project:*** ***Greenwich Cen. Middle Sch.*** ***9 Indian Rock Lane*** ***Greenwich, CT 06830*** ***Project #: 2021-11-0386A02***	***Sample Source:*** ***Test Pit #9***	**Sample Date:** *08/12/22* **Sample #:** ***220812-9*** **Lab Tech:** *PJM* **Sampled by:** *MH*
	Sample Use: *Subgrade*	***Material Type:*** *Brown Gravel*

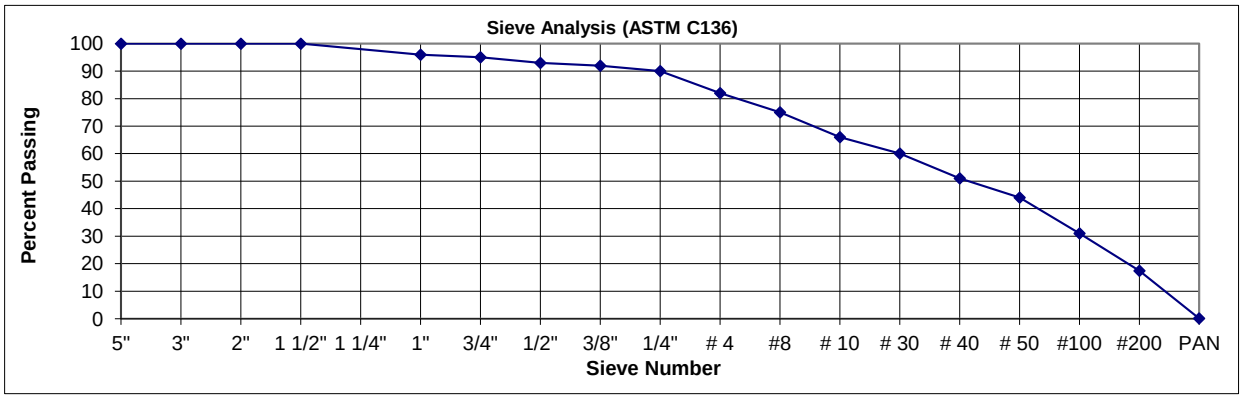
ATANE Report #: MA0386081222-9

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)	SPECIFICATIONS
5"	0.0	100	
3"	0.0	100	
2"	0.0	100	
1 1/2"	0.0	100	
1 1/4"	--		
1"	482.3	96	
3/4"	567.8	95	
1/2"	789.2	93	
3/8"	893.1	92	
1/4"	1074.0	90	
# 4	2077.5	82	
#8	2813.3	75	
# 10	3840.6	66	
# 30	4498.6	60	
# 40	5496.1	51	
# 50	6311.1	44	
#100	7797.6	31.0	
#200	9315.5	17.4	
PAN	11261.0	0.1	

Wet Wash: *No*

% Over #4, Under 3": ***18.0***

Reviewed by:



REVIEW | X **FAIL** | **PASS**

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ATANE

ENGINEERS,

P.C.

56 Roland Street
Suite 202
Boston, MA
617/778-7300
FAX 617/268-7832

SIEVE ANALYSIS ASTM DESIGNATION C136

Client: ***Town of Greenwich***
101 Field Post Road
Greenwich, CT 06830

Project: ***Greenwich Cen. Middle Sch.***
9 Indian Rock Lane
Greenwich, CT 06830

Project #: 2021-11-0386A02

Sample Source:	**Sample Date:** *08/12/22*
Test Pit #12	**Sample #:** ***220812-12***
	Lab Tech: *PJM*
	Sampled by: *MH*
Sample Use:	***Material Type:***
Subgrade	*Tan Gravel*

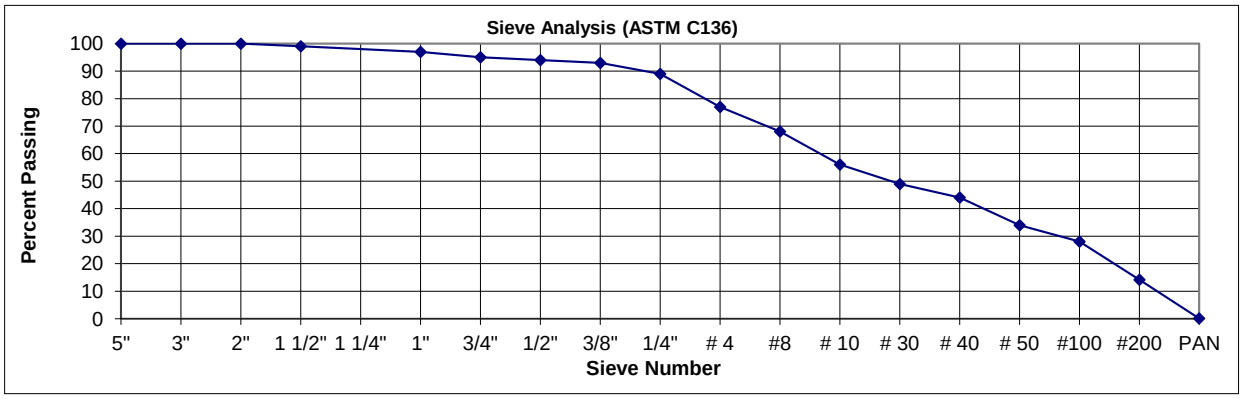
ATANE Report #: MA0386081222-12

SIEVE SIZE (IN / NO.)	WEIGHT (Retained)	% PASSING (Total Sample)	SPECIFICATIONS
5"	0.0	100	
3"	0.0	100	
2"	0.0	100	
1 1/2"	143.2	99	
1 1/4"	--		
1"	387.1	97	
3/4"	589.2	95	
1/2"	677.3	94	
3/8"	802.4	93	
1/4"	1338.8	89	
# 4	2699.6	77	
#8	3702.3	68	
# 10	5218.0	56	
# 30	6042.4	49	
# 40	6523.3	44	
# 50	7707.2	34	
#100	8421.9	28.0	
#200	10067.7	14.2	
PAN	11731.1	0.1	

Wet Wash: *No*

% Over #4, Under 3": ***23.0***

Reviewed by:



REVIEW **FAIL** **PASS**

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ATANE

MATERIAL TESTING GROUP

47 HUDSON STREET
OSSINING, NY 10562

TEL: (914) 945- 9010
FAX: (914) 945-9012

SIEVE ANALYSIS

Report: G-008
Sample Date
Test Date: 10/7/2022
Sample Id: Sample #8
Source: Composite/ combined sample B-17-B-18& B-19

ATANE Project #: 2111-386A02
General Location: Greenwich Central Middle School Greenwich CT

Sieve #	Weight, gms	% Retained	% Passing
2"	0.0	0.0	100
11/2"	0.0	0.0	100
1"	0.0	0.0	100
3/4"	60.4	3.8	96.2
1/2"	96.9	6.2	90.0
3/8"	64.0	4.1	85.9
1/4"	81.5	5.2	80.7
#4	47.8	3.0	77.7
#8	105.1	6.7	71.0
#16	109.4	*7.0*	*64.0*
#20	64.6	*4.1*	*59.9*
#30	66.7	4.2	55.7
#40	94.6	6.0	49.7
#60	151.0	9.5	40.2
#80	28.5	1.8	38.4
#100	99.3	6.3	32.0
#200	232.1	14.7	17.3
Material passing No 200 sieve by washing	258.6		
PAN	12.4	17.3	
TOTAL	1573.9		

Nature: Natural Soil. (Moisture Content # 5.3 %)
Color/ Odor / Impurities: Brownish /None /None
Sample free from larger gravel, debris, waste vegetation, frozen materials, organic materials & other deleterious matter.

Submitted by ATANE

ATANE **MATERIAL TESTING GROUP**

47 HUDSON STREET, TEL: (914)945-9010
OSSINING, NY 10562 FAX: (914)945-9012

SPECIFIC GRAVITY SOILS TEST REPORT (ASTM D 854)

Client:	Town of Greenwich
Project:	Greenwich Central Middle School
Address:	9, Indian rock Lane, Greenwich CT.
Date Sampled:	Various Dates
Test Date:	10/05/22 & 10/06/22
Report #:	01
HAKS Project #	2021-11-0386A02

SAMPLE No.	LOCATION	Specific Gravity
1	Test Pit # 1	2.653
2	Test Pit # 2	2.659
3	Test Pit # 3	2.681
4	Test Pit # 4	2.677
5	Test Pit # 5	2.668
6	Test Pit # 9	2.680
7	Test Pit # 12	2.678
8	Composite / Combined Sample of B-17, B-18 & B-19	2.695

Lab Tech: __NK___ **Lab Director: ___SG_____**

ATANE

MATERIAL TESTING GROUP

47 HUDSON STREET,
OSSINING, NY 10562

TEL: (914)945-9010
FAX: (914)945-9012

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX OF SOILS TEST REPORT (ASTM D 4318)

Client:	Town of Greenwich
Project:	Greenwich Central Middle School
Address:	9, Indian rock Lane, Greenwich CT.
Date Sampled:	Various Dates
Test Date:	10/07/22 & 10/10/22
Report #:	02
HAKS Project #	2021-11-0386A02

LOCATION	Test Pit # 8	Test Pit # 9
Liquid Limit	21.1	22.5
Plastic Limit	18.3	19.1
Plasticity Index	2.8	3.4

Lab Tech: __NK___ **Lab Director: ____SG_____**

APPENDIX 6:

Laboratory Test Results – Chemical Test Results

ANALYTICAL REPORT

Lab Number:	L2243810
Client:	ATANE Engineering PC 56 Roland Street, Suite 202 Boston, MA 02129
ATTN:	Peter McCarthy
Phone:	(617) 778-7300
Project Name:	CENTRAL MIDDLE SCHOOL
Project Number:	Not Specified
Report Date:	09/07/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2243810-01	TP-SL1	SOIL	GREENWICH, CT	08/12/22 08:30	08/13/22
L2243810-02	TP-SL2	SOIL	GREENWICH, CT	08/12/22 10:30	08/13/22
L2243810-03	TP-SL3	SOIL	GREENWICH, CT	08/12/22 12:30	08/13/22
L2243810-04	TP-SL4	SOIL	GREENWICH, CT	08/12/22 14:30	08/13/22
L2243810-05	TP-SL5	SOIL	GREENWICH, CT	08/12/22 16:30	08/13/22

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

CT DEP Reasonable Confidence Protocols
Laboratory Analysis
QA/QC Certification Form

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed (including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP method-specific Reasonable Confidence Protocol documents)?	YES
1a	Were the method specified preservation and holding time requirements met?	YES
1b	VPH & EPH Methods Only: Was the VPH or EPH Method conducted without significant modifications (see Section 11.3 of respective Methods)?	YES
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	YES
3	Were all samples received at an appropriate temperature (<6°C)?	NO
4	Were all QA/QC performance criteria specified in the CT DEP Reasonable Confidence Protocol documents achieved?	NO
5a	Were reporting limits specified or referenced on the chain-of-custody?	NO
5b	Were these reporting limits met?	N/A
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	NO
7	Are project-specific matrix spikes and laboratory duplicates included in this data set?	NO

Note: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or question B is "No", the data package does not meet the requirements for "Reasonable Confidence".

Project Name:	CENTRAL MIDDLE SCHOOL	**Lab Number:**	L2243810
Project Number:	Not Specified	**Report Date:**	09/07/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	CENTRAL MIDDLE SCHOOL	**Lab Number:**	L2243810
Project Number:	Not Specified	**Report Date:**	09/07/22

Case Narrative (continued)

RCP Related Narratives

Report Submission

In reference to question 5a:

Reporting limits were not specified.

Sample Receipt

In reference to question 3:

The samples were received at the laboratory above the required temperature range and were not on ice.

Volatile Organics

In reference to question 4:

L2243810-01 through -05: Initial Calibration Verification outside criteria: dichlorodifluoromethane (124%)

PAHs

In reference to question 6:

At the client's request, all submitted samples were not analyzed for the full RCP list of constituents identified in the method specific analyte list presented in the RCP documents.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 09/07/22

QC OUTLIER SUMMARY REPORT

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Volatile Petroleum Hydrocarbons - Westborough Lab								
VPH-18-2.1	TP-SL1	L2243810-01	2,5-Dibromotoluene-FID	Surrogate	137	70-130	-	potential high bias
VPH-18-2.1	TP-SL3	L2243810-03	2,5-Dibromotoluene-FID	Surrogate	131	70-130	-	potential high bias
VPH-18-2.1	TP-SL4	L2243810-04	2,5-Dibromotoluene-FID	Surrogate	137	70-130	-	potential high bias
VPH-18-2.1	TP-SL5	L2243810-05	2,5-Dibromotoluene-FID	Surrogate	133	70-130	-	potential high bias

ORGANICS

VOLATILES

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2243810
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-01
Client ID: TP-SL1
Sample Location: GREENWICH, CT
Date Collected: 08/12/22 08:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8260C
Analytical Date: 08/23/22 20:18
Analyst: JC
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.3	--	1
1,1-Dichloroethane	ND		ug/kg	0.86	--	1
Chloroform	ND		ug/kg	1.3	--	1
Carbon tetrachloride	ND		ug/kg	0.86	--	1
1,2-Dichloropropane	ND		ug/kg	0.86	--	1
Dibromochloromethane	ND		ug/kg	0.86	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.86	--	1
Tetrachloroethene	ND		ug/kg	0.43	--	1
Chlorobenzene	ND		ug/kg	0.43	--	1
Trichlorofluoromethane	ND		ug/kg	3.4	--	1
1,2-Dichloroethane	ND		ug/kg	0.86	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.43	--	1
Bromodichloromethane	ND		ug/kg	0.43	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.86	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.43	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.43	--	1
1,1-Dichloropropene	ND		ug/kg	0.43	--	1
Bromoform	ND		ug/kg	3.4	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.43	--	1
Benzene	ND		ug/kg	0.43	--	1
Toluene	ND		ug/kg	0.86	--	1
Ethylbenzene	ND		ug/kg	0.86	--	1
Chloromethane	ND		ug/kg	3.4	--	1
Bromomethane	ND		ug/kg	1.7	--	1
Vinyl chloride	ND		ug/kg	0.86	--	1
Chloroethane	ND		ug/kg	1.7	--	1
1,1-Dichloroethene	ND		ug/kg	0.86	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.3	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-01 Date Collected: 08/12/22 08:30

Client ID: TP-SL1 Date Received: 08/13/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.43	--	1
1,2-Dichlorobenzene	ND		ug/kg	1.7	--	1
1,3-Dichlorobenzene	ND		ug/kg	1.7	--	1
1,4-Dichlorobenzene	ND		ug/kg	1.7	--	1
Methyl tert butyl ether	ND		ug/kg	1.7	--	1
p/m-Xylene	ND		ug/kg	1.7	--	1
o-Xylene	ND		ug/kg	0.86	--	1
Xylenes, Total	ND		ug/kg	0.86	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.86	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.86	--	1
Dibromomethane	ND		ug/kg	1.7	--	1
1,2,3-Trichloropropane	ND		ug/kg	1.7	--	1
Styrene	ND		ug/kg	0.86	--	1
Dichlorodifluoromethane	ND		ug/kg	8.6	--	1
Acetone	ND		ug/kg	22	--	1
Carbon disulfide	ND		ug/kg	8.6	--	1
2-Butanone	ND		ug/kg	8.6	--	1
4-Methyl-2-pentanone	ND		ug/kg	8.6	--	1
2-Hexanone	ND		ug/kg	8.6	--	1
Acrylonitrile	ND		ug/kg	3.4	--	1
Tetrahydrofuran	ND		ug/kg	3.4	--	1
2,2-Dichloropropane	ND		ug/kg	1.7	--	1
1,2-Dibromoethane	ND		ug/kg	0.86	--	1
1,3-Dichloropropane	ND		ug/kg	1.7	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.43	--	1
Bromobenzene	ND		ug/kg	1.7	--	1
n-Butylbenzene	ND		ug/kg	0.86	--	1
sec-Butylbenzene	ND		ug/kg	0.86	--	1
tert-Butylbenzene	ND		ug/kg	1.7	--	1
o-Chlorotoluene	ND		ug/kg	1.7	--	1
p-Chlorotoluene	ND		ug/kg	1.7	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.6	--	1
Hexachlorobutadiene	ND		ug/kg	3.4	--	1
Isopropylbenzene	ND		ug/kg	0.86	--	1
p-Isopropyltoluene	ND		ug/kg	0.86	--	1
Naphthalene	ND		ug/kg	3.4	--	1
n-Propylbenzene	ND		ug/kg	0.86	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-01 Date Collected: 08/12/22 08:30

Client ID: TP-SL1 Date Received: 08/13/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	1.7	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.7	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.7	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.7	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	4.3	--	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	3.4	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	103		70-130

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-02 Date Collected: 08/12/22 10:30
Client ID: TP-SL2 Date Received: 08/13/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8260C
Analytical Date: 08/23/22 20:45
Analyst: JC
Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	2.1	--	1
1,1-Dichloroethane	ND		ug/kg	0.42	--	1
Chloroform	ND		ug/kg	0.63	--	1
Carbon tetrachloride	ND		ug/kg	0.42	--	1
1,2-Dichloropropane	ND		ug/kg	0.42	--	1
Dibromochloromethane	ND		ug/kg	0.42	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.42	--	1
Tetrachloroethene	ND		ug/kg	0.21	--	1
Chlorobenzene	ND		ug/kg	0.21	--	1
Trichlorofluoromethane	ND		ug/kg	1.7	--	1
1,2-Dichloroethane	ND		ug/kg	0.42	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.21	--	1
Bromodichloromethane	ND		ug/kg	0.21	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.42	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.21	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.21	--	1
1,1-Dichloropropene	ND		ug/kg	0.21	--	1
Bromoform	ND		ug/kg	1.7	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.21	--	1
Benzene	ND		ug/kg	0.21	--	1
Toluene	ND		ug/kg	0.42	--	1
Ethylbenzene	ND		ug/kg	0.42	--	1
Chloromethane	ND		ug/kg	1.7	--	1
Bromomethane	ND		ug/kg	0.84	--	1
Vinyl chloride	ND		ug/kg	0.42	--	1
Chloroethane	ND		ug/kg	0.84	--	1
1,1-Dichloroethene	ND		ug/kg	0.42	--	1
trans-1,2-Dichloroethene	ND		ug/kg	0.63	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-02 Date Collected: 08/12/22 10:30

Client ID: TP-SL2 Date Received: 08/13/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.21	--	1
1,2-Dichlorobenzene	ND		ug/kg	0.84	--	1
1,3-Dichlorobenzene	ND		ug/kg	0.84	--	1
1,4-Dichlorobenzene	ND		ug/kg	0.84	--	1
Methyl tert butyl ether	ND		ug/kg	0.84	--	1
p/m-Xylene	ND		ug/kg	0.84	--	1
o-Xylene	ND		ug/kg	0.42	--	1
Xylenes, Total	ND		ug/kg	0.42	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.42	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.42	--	1
Dibromomethane	ND		ug/kg	0.84	--	1
1,2,3-Trichloropropane	ND		ug/kg	0.84	--	1
Styrene	ND		ug/kg	0.42	--	1
Dichlorodifluoromethane	ND		ug/kg	4.2	--	1
Acetone	ND		ug/kg	10	--	1
Carbon disulfide	ND		ug/kg	4.2	--	1
2-Butanone	ND		ug/kg	4.2	--	1
4-Methyl-2-pentanone	ND		ug/kg	4.2	--	1
2-Hexanone	ND		ug/kg	4.2	--	1
Acrylonitrile	ND		ug/kg	1.7	--	1
Tetrahydrofuran	ND		ug/kg	1.7	--	1
2,2-Dichloropropane	ND		ug/kg	0.84	--	1
1,2-Dibromoethane	ND		ug/kg	0.42	--	1
1,3-Dichloropropane	ND		ug/kg	0.84	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.21	--	1
Bromobenzene	ND		ug/kg	0.84	--	1
n-Butylbenzene	ND		ug/kg	0.42	--	1
sec-Butylbenzene	ND		ug/kg	0.42	--	1
tert-Butylbenzene	ND		ug/kg	0.84	--	1
o-Chlorotoluene	ND		ug/kg	0.84	--	1
p-Chlorotoluene	ND		ug/kg	0.84	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	1.2	--	1
Hexachlorobutadiene	ND		ug/kg	1.7	--	1
Isopropylbenzene	ND		ug/kg	0.42	--	1
p-Isopropyltoluene	ND		ug/kg	0.42	--	1
Naphthalene	ND		ug/kg	1.7	--	1
n-Propylbenzene	ND		ug/kg	0.42	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-02 Date Collected: 08/12/22 10:30

Client ID: TP-SL2 Date Received: 08/13/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	0.84	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	0.84	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	0.84	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	0.84	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	2.1	--	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	1.7	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	105		70-130

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-03 Date Collected: 08/12/22 12:30
Client ID: TP-SL3 Date Received: 08/13/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8260C
Analytical Date: 08/23/22 21:12
Analyst: JC
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	9.3	--	1
1,1-Dichloroethane	ND		ug/kg	1.9	--	1
Chloroform	ND		ug/kg	2.8	--	1
Carbon tetrachloride	ND		ug/kg	1.9	--	1
1,2-Dichloropropane	ND		ug/kg	1.9	--	1
Dibromochloromethane	ND		ug/kg	1.9	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.9	--	1
Tetrachloroethene	ND		ug/kg	0.93	--	1
Chlorobenzene	ND		ug/kg	0.93	--	1
Trichlorofluoromethane	ND		ug/kg	7.4	--	1
1,2-Dichloroethane	ND		ug/kg	1.9	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.93	--	1
Bromodichloromethane	ND		ug/kg	0.93	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.9	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.93	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.93	--	1
1,1-Dichloropropene	ND		ug/kg	0.93	--	1
Bromoform	ND		ug/kg	7.4	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.93	--	1
Benzene	ND		ug/kg	0.93	--	1
Toluene	ND		ug/kg	1.9	--	1
Ethylbenzene	ND		ug/kg	1.9	--	1
Chloromethane	ND		ug/kg	7.4	--	1
Bromomethane	ND		ug/kg	3.7	--	1
Vinyl chloride	ND		ug/kg	1.9	--	1
Chloroethane	ND		ug/kg	3.7	--	1
1,1-Dichloroethene	ND		ug/kg	1.9	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.8	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-03 Date Collected: 08/12/22 12:30

Client ID: TP-SL3 Date Received: 08/13/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.93	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.7	--	1
1,3-Dichlorobenzene	ND		ug/kg	3.7	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.7	--	1
Methyl tert butyl ether	ND		ug/kg	3.7	--	1
p/m-Xylene	ND		ug/kg	3.7	--	1
o-Xylene	ND		ug/kg	1.9	--	1
Xylenes, Total	ND		ug/kg	1.9	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.9	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.9	--	1
Dibromomethane	ND		ug/kg	3.7	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.7	--	1
Styrene	ND		ug/kg	1.9	--	1
Dichlorodifluoromethane	ND		ug/kg	19	--	1
Acetone	ND		ug/kg	46	--	1
Carbon disulfide	ND		ug/kg	19	--	1
2-Butanone	ND		ug/kg	19	--	1
4-Methyl-2-pentanone	ND		ug/kg	19	--	1
2-Hexanone	ND		ug/kg	19	--	1
Acrylonitrile	ND		ug/kg	7.4	--	1
Tetrahydrofuran	ND		ug/kg	7.4	--	1
2,2-Dichloropropane	ND		ug/kg	3.7	--	1
1,2-Dibromoethane	ND		ug/kg	1.9	--	1
1,3-Dichloropropane	ND		ug/kg	3.7	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.93	--	1
Bromobenzene	ND		ug/kg	3.7	--	1
n-Butylbenzene	ND		ug/kg	1.9	--	1
sec-Butylbenzene	ND		ug/kg	1.9	--	1
tert-Butylbenzene	ND		ug/kg	3.7	--	1
o-Chlorotoluene	ND		ug/kg	3.7	--	1
p-Chlorotoluene	ND		ug/kg	3.7	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.6	--	1
Hexachlorobutadiene	ND		ug/kg	7.4	--	1
Isopropylbenzene	ND		ug/kg	1.9	--	1
p-Isopropyltoluene	ND		ug/kg	1.9	--	1
Naphthalene	ND		ug/kg	7.4	--	1
n-Propylbenzene	ND		ug/kg	1.9	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-03 Date Collected: 08/12/22 12:30

Client ID: TP-SL3 Date Received: 08/13/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	3.7	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.7	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.7	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.7	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	9.3	--	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	7.4	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	107		70-130

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-04 Date Collected: 08/12/22 14:30
Client ID: TP-SL4 Date Received: 08/13/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8260C
Analytical Date: 08/23/22 21:38
Analyst: JC
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.9	--	1
1,1-Dichloroethane	ND		ug/kg	1.4	--	1
Chloroform	ND		ug/kg	2.1	--	1
Carbon tetrachloride	ND		ug/kg	1.4	--	1
1,2-Dichloropropane	ND		ug/kg	1.4	--	1
Dibromochloromethane	ND		ug/kg	1.4	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.4	--	1
Tetrachloroethene	ND		ug/kg	0.69	--	1
Chlorobenzene	ND		ug/kg	0.69	--	1
Trichlorofluoromethane	ND		ug/kg	5.5	--	1
1,2-Dichloroethane	ND		ug/kg	1.4	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.69	--	1
Bromodichloromethane	ND		ug/kg	0.69	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.4	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.69	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.69	--	1
1,1-Dichloropropene	ND		ug/kg	0.69	--	1
Bromoform	ND		ug/kg	5.5	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.69	--	1
Benzene	ND		ug/kg	0.69	--	1
Toluene	ND		ug/kg	1.4	--	1
Ethylbenzene	ND		ug/kg	1.4	--	1
Chloromethane	ND		ug/kg	5.5	--	1
Bromomethane	ND		ug/kg	2.8	--	1
Vinyl chloride	ND		ug/kg	1.4	--	1
Chloroethane	ND		ug/kg	2.8	--	1
1,1-Dichloroethene	ND		ug/kg	1.4	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.1	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-04 Date Collected: 08/12/22 14:30
Client ID: TP-SL4 Date Received: 08/13/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.69	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.8	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.8	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.8	--	1
Methyl tert butyl ether	ND		ug/kg	2.8	--	1
p/m-Xylene	ND		ug/kg	2.8	--	1
o-Xylene	ND		ug/kg	1.4	--	1
Xylenes, Total	ND		ug/kg	1.4	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.4	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.4	--	1
Dibromomethane	ND		ug/kg	2.8	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.8	--	1
Styrene	ND		ug/kg	1.4	--	1
Dichlorodifluoromethane	ND		ug/kg	14	--	1
Acetone	ND		ug/kg	35	--	1
Carbon disulfide	ND		ug/kg	14	--	1
2-Butanone	ND		ug/kg	14	--	1
4-Methyl-2-pentanone	ND		ug/kg	14	--	1
2-Hexanone	ND		ug/kg	14	--	1
Acrylonitrile	ND		ug/kg	5.5	--	1
Tetrahydrofuran	ND		ug/kg	5.5	--	1
2,2-Dichloropropane	ND		ug/kg	2.8	--	1
1,2-Dibromoethane	ND		ug/kg	1.4	--	1
1,3-Dichloropropane	ND		ug/kg	2.8	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.69	--	1
Bromobenzene	ND		ug/kg	2.8	--	1
n-Butylbenzene	ND		ug/kg	1.4	--	1
sec-Butylbenzene	ND		ug/kg	1.4	--	1
tert-Butylbenzene	ND		ug/kg	2.8	--	1
o-Chlorotoluene	ND		ug/kg	2.8	--	1
p-Chlorotoluene	ND		ug/kg	2.8	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.2	--	1
Hexachlorobutadiene	ND		ug/kg	5.5	--	1
Isopropylbenzene	ND		ug/kg	1.4	--	1
p-Isopropyltoluene	ND		ug/kg	1.4	--	1
Naphthalene	ND		ug/kg	5.5	--	1
n-Propylbenzene	ND		ug/kg	1.4	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-04 Date Collected: 08/12/22 14:30

Client ID: TP-SL4 Date Received: 08/13/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.8	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.8	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.8	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.8	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	6.9	--	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	5.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	107		70-130

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-05 Date Collected: 08/12/22 16:30
Client ID: TP-SL5 Date Received: 08/13/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8260C
Analytical Date: 08/23/22 22:05
Analyst: JC
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.0	--	1
1,1-Dichloroethane	ND		ug/kg	1.0	--	1
Chloroform	ND		ug/kg	1.5	--	1
Carbon tetrachloride	ND		ug/kg	1.0	--	1
1,2-Dichloropropane	ND		ug/kg	1.0	--	1
Dibromochloromethane	ND		ug/kg	1.0	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.0	--	1
Tetrachloroethene	ND		ug/kg	0.50	--	1
Chlorobenzene	ND		ug/kg	0.50	--	1
Trichlorofluoromethane	ND		ug/kg	4.0	--	1
1,2-Dichloroethane	ND		ug/kg	1.0	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.50	--	1
Bromodichloromethane	ND		ug/kg	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.50	--	1
1,1-Dichloropropene	ND		ug/kg	0.50	--	1
Bromoform	ND		ug/kg	4.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	--	1
Benzene	ND		ug/kg	0.50	--	1
Toluene	ND		ug/kg	1.0	--	1
Ethylbenzene	ND		ug/kg	1.0	--	1
Chloromethane	ND		ug/kg	4.0	--	1
Bromomethane	ND		ug/kg	2.0	--	1
Vinyl chloride	ND		ug/kg	1.0	--	1
Chloroethane	ND		ug/kg	2.0	--	1
1,1-Dichloroethene	ND		ug/kg	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-05 Date Collected: 08/12/22 16:30
Client ID: TP-SL5 Date Received: 08/13/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.50	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.0	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.0	--	1
Methyl tert butyl ether	ND		ug/kg	2.0	--	1
p/m-Xylene	ND		ug/kg	2.0	--	1
o-Xylene	ND		ug/kg	1.0	--	1
Xylenes, Total	ND		ug/kg	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--	1
Dibromomethane	ND		ug/kg	2.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.0	--	1
Styrene	ND		ug/kg	1.0	--	1
Dichlorodifluoromethane	ND		ug/kg	10	--	1
Acetone	ND		ug/kg	25	--	1
Carbon disulfide	ND		ug/kg	10	--	1
2-Butanone	ND		ug/kg	10	--	1
4-Methyl-2-pentanone	ND		ug/kg	10	--	1
2-Hexanone	ND		ug/kg	10	--	1
Acrylonitrile	ND		ug/kg	4.0	--	1
Tetrahydrofuran	ND		ug/kg	4.0	--	1
2,2-Dichloropropane	ND		ug/kg	2.0	--	1
1,2-Dibromoethane	ND		ug/kg	1.0	--	1
1,3-Dichloropropane	ND		ug/kg	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	--	1
Bromobenzene	ND		ug/kg	2.0	--	1
n-Butylbenzene	ND		ug/kg	1.0	--	1
sec-Butylbenzene	ND		ug/kg	1.0	--	1
tert-Butylbenzene	ND		ug/kg	2.0	--	1
o-Chlorotoluene	ND		ug/kg	2.0	--	1
p-Chlorotoluene	ND		ug/kg	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--	1
Hexachlorobutadiene	ND		ug/kg	4.0	--	1
Isopropylbenzene	ND		ug/kg	1.0	--	1
p-Isopropyltoluene	ND		ug/kg	1.0	--	1
Naphthalene	ND		ug/kg	4.0	--	1
n-Propylbenzene	ND		ug/kg	1.0	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-05 Date Collected: 08/12/22 16:30

Client ID: TP-SL5 Date Received: 08/13/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	--	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	4.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	104		70-130

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 79,8260C
Analytical Date: 08/23/22 19:52
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-05 Batch: WG1679071-5					
Methylene chloride	ND		ug/kg	5.0	--
1,1-Dichloroethane	ND		ug/kg	1.0	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	1.0	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.0	--
Tetrachloroethene	ND		ug/kg	0.50	--
Chlorobenzene	ND		ug/kg	0.50	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	0.50	--
Bromodichloromethane	ND		ug/kg	0.50	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	0.50	--
1,3-Dichloropropene, Total	ND		ug/kg	0.50	--
1,1-Dichloropropene	ND		ug/kg	0.50	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	--
Benzene	ND		ug/kg	0.50	--
Toluene	ND		ug/kg	1.0	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	1.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	0.50	--

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 79,8260C
Analytical Date: 08/23/22 19:52
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-05 Batch: WG1679071-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	--
1,3-Dichlorobenzene	ND		ug/kg	2.0	--
1,4-Dichlorobenzene	ND		ug/kg	2.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	1.0	--
Xylenes, Total	ND		ug/kg	1.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	2.0	--
1,2,3-Trichloropropane	ND		ug/kg	2.0	--
Styrene	ND		ug/kg	1.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	25	--
Carbon disulfide	ND		ug/kg	10	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Acrylonitrile	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	2.0	--
1,2-Dibromoethane	ND		ug/kg	1.0	--
1,3-Dichloropropane	ND		ug/kg	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	--
Bromobenzene	ND		ug/kg	2.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	2.0	--
o-Chlorotoluene	ND		ug/kg	2.0	--

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 79,8260C
Analytical Date: 08/23/22 19:52
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-05 Batch: WG1679071-5					
p-Chlorotoluene	ND		ug/kg	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	--
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	4.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	102		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-05 Batch: WG1679071-3 WG1679071-4								
Methylene chloride	96		96		70-130	0		30
1,1-Dichloroethane	104		104		70-130	0		30
Chloroform	106		104		70-130	2		30
Carbon tetrachloride	110		108		70-130	2		30
1,2-Dichloropropane	105		104		70-130	1		30
Dibromochloromethane	110		109		70-130	1		30
1,1,2-Trichloroethane	109		108		70-130	1		30
Tetrachloroethene	115		116		70-130	1		30
Chlorobenzene	107		107		70-130	0		30
Trichlorofluoromethane	112		110		70-130	2		30
1,2-Dichloroethane	102		101		70-130	1		30
1,1,1-Trichloroethane	111		109		70-130	2		30
Bromodichloromethane	104		105		70-130	1		30
trans-1,3-Dichloropropene	113		112		70-130	1		30
cis-1,3-Dichloropropene	98		98		70-130	0		30
1,1-Dichloropropene	115		116		70-130	1		30
Bromoform	105		106		70-130	1		30
1,1,2,2-Tetrachloroethane	102		106		70-130	4		30
Benzene	107		109		70-130	2		30
Toluene	108		107		70-130	1		30
Ethylbenzene	111		111		70-130	0		30
Chloromethane	109		110		52-130	1		30
Bromomethane	104		104		57-147	0		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-05 Batch: WG1679071-3 WG1679071-4								
Vinyl chloride	120		120		70-130	0		30
Chloroethane	112		112		70-130	0		30
1,1-Dichloroethene	110		112		70-130	2		30
trans-1,2-Dichloroethene	107		107		70-130	0		30
Trichloroethene	113		112		70-130	1		30
1,2-Dichlorobenzene	105		106		70-130	1		30
1,3-Dichlorobenzene	107		107		70-130	0		30
1,4-Dichlorobenzene	105		105		70-130	0		30
Methyl tert butyl ether	104		104		70-130	0		30
p/m-Xylene	115		115		70-130	0		30
o-Xylene	116		114		70-130	2		30
cis-1,2-Dichloroethene	105		106		70-130	1		30
Dibromomethane	104		103		70-130	1		30
1,2,3-Trichloropropane	100		101		70-130	1		30
Styrene	107		107		70-130	0		30
Dichlorodifluoromethane	117		117		30-146	0		30
Acetone	105		104		54-140	1		30
Carbon disulfide	98		99		59-130	1		30
2-Butanone	108		104		70-130	4		30
4-Methyl-2-pentanone	94		95		70-130	1		30
2-Hexanone	92		94		70-130	2		30
Acrylonitrile	98		97		70-130	1		30
Tetrahydrofuran	96		96		70-130	0		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-05 Batch: WG1679071-3 WG1679071-4

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
2,2-Dichloropropane	111		110		70-130	1		30
1,2-Dibromoethane	100		101		70-130	1		30
1,3-Dichloropropane	106		107		70-130	1		30
1,1,1,2-Tetrachloroethane	110		108		70-130	2		30
Bromobenzene	104		104		70-130	0		30
n-Butylbenzene	114		114		70-130	0		30
sec-Butylbenzene	112		114		70-130	2		30
tert-Butylbenzene	111		112		70-130	1		30
o-Chlorotoluene	105		106		70-130	1		30
p-Chlorotoluene	109		108		70-130	1		30
1,2-Dibromo-3-chloropropane	102		105		68-130	3		30
Hexachlorobutadiene	108		109		70-130	1		30
Isopropylbenzene	111		112		70-130	1		30
p-Isopropyltoluene	115		116		70-130	1		30
Naphthalene	110		112		70-130	2		30
n-Propylbenzene	110		111		70-130	1		30
1,2,3-Trichlorobenzene	109		110		70-130	1		30
1,2,4-Trichlorobenzene	111		113		70-130	2		30
1,3,5-Trimethylbenzene	109		110		70-130	1		30
1,2,4-Trimethylbenzene	110		110		70-130	0		30
trans-1,4-Dichloro-2-butene	106		105		70-130	1		30
1,1,2-Trichloro-1,2,2-Trifluoroethane	113		113		70-130	0		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-05 Batch: WG1679071-3 WG1679071-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		96		70-130
Toluene-d8	101		100		70-130
4-Bromofluorobenzene	99		100		70-130
Dibromofluoromethane	97		97		70-130

SEMIVOLATILES

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-01
Client ID: TP-SL1
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 08:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8270D
Analytical Date: 08/27/22 01:26
Analyst: CMM
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 08/25/22 23:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	100		30-130
2-Fluorobiphenyl	73		30-130
4-Terphenyl-d14	59		30-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-02
Client ID: TP-SL2
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 10:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8270D
Analytical Date: 08/27/22 01:50
Analyst: CMM
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 08/25/22 23:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		30-130
2-Fluorobiphenyl	73		30-130
4-Terphenyl-d14	65		30-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-03
Client ID: TP-SL3
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 12:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8270D
Analytical Date: 08/27/22 03:49
Analyst: CMM
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/25/22 23:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	119		30-130
2-Fluorobiphenyl	86		30-130
4-Terphenyl-d14	76		30-130

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2243810
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-04
Client ID: TP-SL4
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 14:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8270D
Analytical Date: 08/27/22 03:02
Analyst: CMM
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/25/22 23:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	92		30-130
2-Fluorobiphenyl	67		30-130
4-Terphenyl-d14	57		30-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-05
Client ID: TP-SL5
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 16:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8270D
Analytical Date: 08/27/22 02:38
Analyst: CMM
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 08/25/22 23:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	96		30-130
2-Fluorobiphenyl	71		30-130
4-Terphenyl-d14	63		30-130

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2243810
Report Date: 09/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 79,8270D
Analytical Date: 08/26/22 22:14
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 08/25/22 23:35

Parameter	Result	Qualifier	Units	RL	MDL
CT RCP Semivolatile Organics - Westborough Lab for sample(s): 01-05 Batch: WG1679889-1					
Acenaphthene	ND		ug/kg	130	--
Fluoranthene	ND		ug/kg	98	--
Naphthalene	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
2-Methylnaphthalene	ND		ug/kg	200	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	92		30-130
2-Fluorobiphenyl	72		30-130
4-Terphenyl-d14	70		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-05 Batch: WG1679889-2 WG1679889-3								
Acenaphthene	74		68		40-140	8		30
Fluoranthene	74		68		40-140	8		30
Naphthalene	76		69		40-140	10		30
Benzo(a)anthracene	74		66		40-140	11		30
Benzo(a)pyrene	79		74		40-140	7		30
Benzo(b)fluoranthene	82		76		40-140	8		30
Benzo(k)fluoranthene	75		70		40-140	7		30
Chrysene	72		69		40-140	4		30
Acenaphthylene	79		72		40-140	9		30
Anthracene	78		71		40-140	9		30
Benzo(ghi)perylene	79		72		40-140	9		30
Fluorene	75		69		40-140	8		30
Phenanthrene	75		68		40-140	10		30
Dibenzo(a,h)anthracene	78		70		40-140	11		30
Indeno(1,2,3-cd)pyrene	85		78		40-140	9		30
Pyrene	75		69		40-140	8		30
2-Methylnaphthalene	76		69		40-140	10		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-05 Batch: WG1679889-2 WG1679889-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	107		97		30-130
2-Fluorobiphenyl	80		73		30-130
4-Terphenyl-d14	78		72		30-130

PETROLEUM HYDROCARBONS

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-01
Client ID: TP-SL1
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 08:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 08/24/22 23:53
Analyst: BAD
Percent Solids: 90%

Extraction Method:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Gasoline Range Organics - Westborough Lab						
Gasoline Range Organics	ND		ug/kg	2900	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	99		70-130
4-Bromofluorobenzene	87		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-01
Client ID: TP-SL1
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 08:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 08/26/22 21:40
Analyst: JB
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 08/26/22 00:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel Range Organics - Westborough Lab						
DRO (C10-C28)	ND		ug/kg	36000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	76		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-02
Client ID: TP-SL2
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 10:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 08/25/22 00:23
Analyst: BAD
Percent Solids: 95%

Extraction Method:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Gasoline Range Organics - Westborough Lab						
Gasoline Range Organics	ND		ug/kg	3200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	100		70-130
4-Bromofluorobenzene	88		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-02
Client ID: TP-SL2
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 10:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 08/26/22 22:49
Analyst: JB
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 08/26/22 00:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel Range Organics - Westborough Lab						
DRO (C10-C28)	ND		ug/kg	35000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	67		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-03
Client ID: TP-SL3
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 12:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 08/25/22 00:54
Analyst: BAD
Percent Solids: 89%

Extraction Method:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Gasoline Range Organics - Westborough Lab						
Gasoline Range Organics	ND		ug/kg	3400	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	99		70-130
4-Bromofluorobenzene	86		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-03
Client ID: TP-SL3
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 12:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 08/26/22 23:24
Analyst: JB
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/26/22 00:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel Range Organics - Westborough Lab						
DRO (C10-C28)	ND		ug/kg	37000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	54		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-04
Client ID: TP-SL4
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 14:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 08/25/22 01:24
Analyst: BAD
Percent Solids: 89%

Extraction Method:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Gasoline Range Organics - Westborough Lab						
Gasoline Range Organics	ND		ug/kg	3200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	99		70-130
4-Bromofluorobenzene	89		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-04
Client ID: TP-SL4
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 14:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 08/26/22 23:59
Analyst: JB
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/26/22 00:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel Range Organics - Westborough Lab						
DRO (C10-C28)	ND		ug/kg	36000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	61		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-05
Client ID: TP-SL5
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 16:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 08/25/22 01:55
Analyst: BAD
Percent Solids: 90%

Extraction Method:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Gasoline Range Organics - Westborough Lab						
Gasoline Range Organics	ND		ug/kg	2300	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	100		70-130
4-Bromofluorobenzene	89		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-05
Client ID: TP-SL5
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 16:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 08/26/22 23:24
Analyst: JB
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 08/26/22 00:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel Range Organics - Westborough Lab						
DRO (C10-C28)	ND		ug/kg	36000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	60		40-140

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 08/24/22 20:17
Analyst: BAD

Parameter	Result	Qualifier	Units	RL	MDL
Gasoline Range Organics - Westborough Lab for sample(s): 01-04 Batch: WG1679588-10					
Gasoline Range Organics	ND		ug/kg	2500	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	100		70-130
4-Bromofluorobenzene	82		70-130

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 08/24/22 20:17
Analyst: BAD

Parameter	Result	Qualifier	Units	RL	MDL
Gasoline Range Organics - Westborough Lab for sample(s): 05 Batch: WG1679592-4					
Gasoline Range Organics	ND		ug/kg	2500	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	100		70-130
4-Bromofluorobenzene	82		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2243810
Report Date: 09/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 08/26/22 21:05
Analyst: JB

Extraction Method: EPA 3546
Extraction Date: 08/26/22 00:00

Parameter	Result	Qualifier	Units	RL	MDL
Diesel Range Organics - Westborough Lab for sample(s): 01-05 Batch: WG1679890-1					
DRO (C10-C28)	ND		ug/kg	32000	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	61		40-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL

Project Number: Not Specified

Lab Number: L2243810

Report Date: 09/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Gasoline Range Organics - Westborough Lab	Associated sample(s): 01-04		Batch: WG1679588-8		WG1679588-9			
Gasoline Range Organics	81		89		80-120	9		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,1,1-Trifluorotoluene	100		100		70-130
4-Bromofluorobenzene	82		84		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL

Project Number: Not Specified

Lab Number: L2243810

Report Date: 09/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Gasoline Range Organics - Westborough Lab	Associated sample(s): 05		Batch: WG1679592-2		WG1679592-3			
Gasoline Range Organics	81		89		80-120	9		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,1,1-Trifluorotoluene	100		100		70-130
4-Bromofluorobenzene	82		84		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL

Project Number: Not Specified

Lab Number: L2243810

Report Date: 09/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Diesel Range Organics - Westborough Lab	Associated sample(s): 01-05		Batch: WG1679890-2					
DRO (C10-C28)	93		-		60-140	-		

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
o-Terphenyl	64				40-140

Matrix Spike Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL

Project Number: Not Specified

Lab Number: L2243810

Report Date: 09/07/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Gasoline Range Organics - Westborough Lab Associated sample(s): 05 QC Batch ID: WG1679592-6 QC Sample: L2243810-05 Client ID: TP-SL5												
Gasoline Range Organics	ND	18700	16000	86		-	-		80-120	-		20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	92				70-130
4-Bromofluorobenzene	80				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Gasoline Range Organics - Westborough Lab Associated sample(s): 05 QC Batch ID: WG1679592-5 QC Sample: L2243810-05 Client ID: TP-SL5						
Gasoline Range Organics	ND	ND	ug/kg	NC		20

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	100		101		70-130
4-Bromofluorobenzene	89		90		70-130

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Diesel Range Organics - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1679890-3 QC Sample: L2243810-01 Client ID: TP-SL1						
DRO (C10-C28)	ND	ND	ug/kg	NC		20

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	76		63		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID:	L2243810-01	Date Collected:	08/12/22 08:30
Client ID:	TP-SL1	Date Received:	08/13/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	08/24/22 17:20		
Analyst:	BAD		
Percent Solids:	90%		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		mg/kg	6.38	--	1
C9-C12 Aliphatics	ND		mg/kg	6.38	--	1
C9-C10 Aromatics	ND		mg/kg	6.38	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	6.38	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	6.38	--	1
Benzene	ND		mg/kg	0.128	--	1
Toluene	ND		mg/kg	0.128	--	1
Ethylbenzene	ND		mg/kg	0.128	--	1
p/m-Xylene	ND		mg/kg	0.128	--	1
o-Xylene	ND		mg/kg	0.128	--	1
Methyl tert butyl ether	ND		mg/kg	0.064	--	1
Naphthalene	ND		mg/kg	0.255	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	118		70-130
2,5-Dibromotoluene-FID	**137**	Q	70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID:	L2243810-01	Date Collected:	08/12/22 08:30
Client ID:	TP-SL1	Date Received:	08/13/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	135,EPH-19-2.1	Extraction Date:	08/25/22 09:59
Analytical Date:	08/29/22 14:14	Cleanup Method1:	EPH-19-2.1
Analyst:	AL	Cleanup Date1:	08/26/22
Percent Solids:	90%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		mg/kg	7.13	--	1
C19-C36 Aliphatics	ND		mg/kg	7.13	--	1
C11-C22 Aromatics	ND		mg/kg	7.13	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	7.13	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	72		40-140
o-Terphenyl	87		40-140
2-Fluorobiphenyl	109		40-140
2-Bromonaphthalene	109		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID:	L2243810-02	Date Collected:	08/12/22 10:30
Client ID:	TP-SL2	Date Received:	08/13/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	08/24/22 17:51		
Analyst:	BAD		
Percent Solids:	95%		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		mg/kg	6.62	--	1
C9-C12 Aliphatics	ND		mg/kg	6.62	--	1
C9-C10 Aromatics	ND		mg/kg	6.62	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	6.62	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	6.62	--	1
Benzene	ND		mg/kg	0.132	--	1
Toluene	ND		mg/kg	0.132	--	1
Ethylbenzene	ND		mg/kg	0.132	--	1
p/m-Xylene	ND		mg/kg	0.132	--	1
o-Xylene	ND		mg/kg	0.132	--	1
Methyl tert butyl ether	ND		mg/kg	0.066	--	1
Naphthalene	ND		mg/kg	0.265	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	113		70-130
2,5-Dibromotoluene-FID	130		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID:	L2243810-02	Date Collected:	08/12/22 10:30
Client ID:	TP-SL2	Date Received:	08/13/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	135,EPH-19-2.1	Extraction Date:	08/25/22 09:59
Analytical Date:	08/26/22 10:07	Cleanup Method1:	EPH-19-2.1
Analyst:	JB	Cleanup Date1:	08/26/22
Percent Solids:	95%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		mg/kg	6.74	--	1
C19-C36 Aliphatics	ND		mg/kg	6.74	--	1
C11-C22 Aromatics	ND		mg/kg	6.74	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.74	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	72		40-140
o-Terphenyl	71		40-140
2-Fluorobiphenyl	85		40-140
2-Bromonaphthalene	84		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID:	L2243810-03	Date Collected:	08/12/22 12:30
Client ID:	TP-SL3	Date Received:	08/13/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	08/24/22 18:21		
Analyst:	BAD		
Percent Solids:	89%		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		mg/kg	7.48	--	1
C9-C12 Aliphatics	ND		mg/kg	7.48	--	1
C9-C10 Aromatics	ND		mg/kg	7.48	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	7.48	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	7.48	--	1
Benzene	ND		mg/kg	0.150	--	1
Toluene	ND		mg/kg	0.150	--	1
Ethylbenzene	ND		mg/kg	0.150	--	1
p/m-Xylene	ND		mg/kg	0.150	--	1
o-Xylene	ND		mg/kg	0.150	--	1
Methyl tert butyl ether	ND		mg/kg	0.075	--	1
Naphthalene	ND		mg/kg	0.299	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	114		70-130
2,5-Dibromotoluene-FID	**131**	Q	70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID:	L2243810-03	Date Collected:	08/12/22 12:30
Client ID:	TP-SL3	Date Received:	08/13/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	135,EPH-19-2.1	Extraction Date:	08/25/22 09:59
Analytical Date:	08/26/22 08:51	Cleanup Method1:	EPH-19-2.1
Analyst:	JB	Cleanup Date1:	08/26/22
Percent Solids:	89%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		mg/kg	7.17	--	1
C19-C36 Aliphatics	ND		mg/kg	7.17	--	1
C11-C22 Aromatics	10.3		mg/kg	7.17	--	1
C11-C22 Aromatics, Adjusted	10.3		mg/kg	7.17	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	65		40-140
o-Terphenyl	67		40-140
2-Fluorobiphenyl	83		40-140
2-Bromonaphthalene	81		40-140

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

SAMPLE RESULTS

Lab ID:	L2243810-04	Date Collected:	08/12/22 14:30
Client ID:	TP-SL4	Date Received:	08/13/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	08/24/22 18:51		
Analyst:	BAD		
Percent Solids:	89%		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		mg/kg	7.07	--	1
C9-C12 Aliphatics	ND		mg/kg	7.07	--	1
C9-C10 Aromatics	ND		mg/kg	7.07	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	7.07	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	7.07	--	1
Benzene	ND		mg/kg	0.141	--	1
Toluene	ND		mg/kg	0.141	--	1
Ethylbenzene	ND		mg/kg	0.141	--	1
p/m-Xylene	ND		mg/kg	0.141	--	1
o-Xylene	ND		mg/kg	0.141	--	1
Methyl tert butyl ether	ND		mg/kg	0.071	--	1
Naphthalene	ND		mg/kg	0.283	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	119		70-130
2,5-Dibromotoluene-FID	**137**	Q	70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID:	L2243810-04	Date Collected:	08/12/22 14:30
Client ID:	TP-SL4	Date Received:	08/13/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	135,EPH-19-2.1	Extraction Date:	08/25/22 09:59
Analytical Date:	08/26/22 09:16	Cleanup Method1:	EPH-19-2.1
Analyst:	JB	Cleanup Date1:	08/26/22
Percent Solids:	89%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		mg/kg	7.45	--	1
C19-C36 Aliphatics	ND		mg/kg	7.45	--	1
C11-C22 Aromatics	ND		mg/kg	7.45	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	7.45	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	65		40-140
o-Terphenyl	63		40-140
2-Fluorobiphenyl	84		40-140
2-Bromonaphthalene	87		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID:	L2243810-05	Date Collected:	08/12/22 16:30
Client ID:	TP-SL5	Date Received:	08/13/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	08/24/22 19:22		
Analyst:	BAD		
Percent Solids:	90%		
Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		mg/kg	5.23	--	1
C9-C12 Aliphatics	ND		mg/kg	5.23	--	1
C9-C10 Aromatics	ND		mg/kg	5.23	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	5.23	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	5.23	--	1
Benzene	ND		mg/kg	0.104	--	1
Toluene	ND		mg/kg	0.104	--	1
Ethylbenzene	ND		mg/kg	0.104	--	1
p/m-Xylene	ND		mg/kg	0.104	--	1
o-Xylene	ND		mg/kg	0.104	--	1
Methyl tert butyl ether	ND		mg/kg	0.052	--	1
Naphthalene	ND		mg/kg	0.209	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	116		70-130
2,5-Dibromotoluene-FID	**133**	Q	70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID:	L2243810-05	Date Collected:	08/12/22 16:30
Client ID:	TP-SL5	Date Received:	08/13/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	135,EPH-19-2.1	Extraction Date:	08/25/22 09:59
Analytical Date:	08/26/22 09:42	Cleanup Method1:	EPH-19-2.1
Analyst:	JB	Cleanup Date1:	08/26/22
Percent Solids:	90%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		mg/kg	7.38	--	1
C19-C36 Aliphatics	ND		mg/kg	7.38	--	1
C11-C22 Aromatics	ND		mg/kg	7.38	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	7.38	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	67		40-140
o-Terphenyl	66		40-140
2-Fluorobiphenyl	81		40-140
2-Bromonaphthalene	81		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 08/26/22 09:53
Analyst: SR

Extraction Method: EPA 3546
Extraction Date: 08/25/22 09:59
Cleanup Method: EPH-19-2.1
Cleanup Date: 08/26/22

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-05 Batch: WG1679595-1					
C9-C18 Aliphatics	ND		mg/kg	6.47	--
C19-C36 Aliphatics	ND		mg/kg	6.47	--
C11-C22 Aromatics	ND		mg/kg	6.47	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.47	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	59		40-140
o-Terphenyl	65		40-140
2-Fluorobiphenyl	74		40-140
2-Bromonaphthalene	78		40-140

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 131,VPH-18-2.1
Analytical Date: 08/24/22 11:27
Analyst: BAD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-05 Batch: WG1679604-4					
C5-C8 Aliphatics	ND		mg/kg	5.00	--
C9-C12 Aliphatics	ND		mg/kg	5.00	--
C9-C10 Aromatics	ND		mg/kg	5.00	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	5.00	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	5.00	--
Benzene	ND		mg/kg	0.100	--
Toluene	ND		mg/kg	0.100	--
Ethylbenzene	ND		mg/kg	0.100	--
p/m-Xylene	ND		mg/kg	0.100	--
o-Xylene	ND		mg/kg	0.100	--
Methyl tert butyl ether	ND		mg/kg	0.050	--
Naphthalene	ND		mg/kg	0.200	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	106		70-130
2,5-Dibromotoluene-FID	121		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-05 Batch: WG1679595-2 WG1679595-3								
C9-C18 Aliphatics	48		43		40-140	11		25
C19-C36 Aliphatics	71		64		40-140	10		25
C11-C22 Aromatics	70		67		40-140	4		25
Naphthalene	61		58		40-140	5		25
2-Methylnaphthalene	63		60		40-140	5		25
Acenaphthylene	62		62		40-140	0		25
Acenaphthene	64		64		40-140	0		25
Fluorene	66		66		40-140	0		25
Phenanthrene	66		66		40-140	0		25
Anthracene	67		67		40-140	0		25
Fluoranthene	65		65		40-140	0		25
Pyrene	67		67		40-140	0		25
Benzo(a)anthracene	67		66		40-140	2		25
Chrysene	65		65		40-140	0		25
Benzo(b)fluoranthene	63		63		40-140	0		25
Benzo(k)fluoranthene	61		61		40-140	0		25
Benzo(a)pyrene	65		65		40-140	0		25
Indeno(1,2,3-cd)Pyrene	62		62		40-140	0		25
Dibenzo(a,h)anthracene	65		65		40-140	0		25
Benzo(ghi)perylene	58		58		40-140	0		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-05 Batch: WG1679595-2 WG1679595-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	58		56		40-140
o-Terphenyl	66		64		40-140
2-Fluorobiphenyl	77		74		40-140
2-Bromonaphthalene	80		77		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-05 Batch: WG1679604-2 WG1679604-3								
C5-C8 Aliphatics	108		109		70-130	1		25
C9-C12 Aliphatics	115		115		70-130	0		25
C9-C10 Aromatics	104		104		70-130	0		25
Benzene	104		104		70-130	0		25
Toluene	102		102		70-130	0		25
Ethylbenzene	105		104		70-130	1		25
p/m-Xylene	103		102		70-130	1		25
o-Xylene	100		99		70-130	1		25
Methyl tert butyl ether	98		96		70-130	3		25
Naphthalene	102		102		70-130	0		25
1,2,4-Trimethylbenzene	104		104		70-130	0		25
Pentane	98		98		70-130	0		25
2-Methylpentane	111		112		70-130	1		25
2,2,4-Trimethylpentane	112		113		70-130	1		25
n-Nonane	113		114		30-130	1		25
n-Decane	117		116		70-130	1		25
n-Butylcyclohexane	116		116		70-130	0		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	108		106		70-130
2,5-Dibromotoluene-FID	122		121		70-130

METALS

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-01
Client ID: TP-SL1
Sample Location: GREENWICH, CT
Date Collected: 08/12/22 08:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
CT RCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	2.12	--	1	08/16/22 12:20	09/04/22 13:13	EPA 3050B	79,6010D	DL
Arsenic, Total	3.51		mg/kg	0.425	--	1	08/16/22 12:20	09/04/22 13:13	EPA 3050B	79,6010D	DL
Barium, Total	90.3		mg/kg	0.425	--	1	08/16/22 12:20	09/04/22 13:13	EPA 3050B	79,6010D	DL
Beryllium, Total	0.632		mg/kg	0.212	--	1	08/16/22 12:20	09/04/22 13:13	EPA 3050B	79,6010D	DL
Cadmium, Total	ND		mg/kg	0.425	--	1	08/16/22 12:20	09/04/22 13:13	EPA 3050B	79,6010D	DL
Chromium, Total	17.8		mg/kg	0.425	--	1	08/16/22 12:20	09/04/22 13:13	EPA 3050B	79,6010D	DL
Copper, Total	5.47		mg/kg	0.425	--	1	08/16/22 12:20	09/04/22 13:13	EPA 3050B	79,6010D	DL
Lead, Total	6.40		mg/kg	2.12	--	1	08/16/22 12:20	09/04/22 13:13	EPA 3050B	79,6010D	DL
Nickel, Total	10.0		mg/kg	1.06	--	1	08/16/22 12:20	09/04/22 13:13	EPA 3050B	79,6010D	DL
Selenium, Total	ND		mg/kg	2.12	--	1	08/16/22 12:20	09/04/22 13:13	EPA 3050B	79,6010D	DL
Silver, Total	ND		mg/kg	0.425	--	1	08/16/22 12:20	09/04/22 13:13	EPA 3050B	79,6010D	DL
Thallium, Total	ND		mg/kg	2.12	--	1	08/16/22 12:20	09/04/22 13:13	EPA 3050B	79,6010D	DL
Vanadium, Total	24.8		mg/kg	0.425	--	1	08/16/22 12:20	09/04/22 13:13	EPA 3050B	79,6010D	DL
Zinc, Total	28.3		mg/kg	2.12	--	1	08/16/22 12:20	09/04/22 13:13	EPA 3050B	79,6010D	DL

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-02
Client ID: TP-SL2
Sample Location: GREENWICH, CT
Date Collected: 08/12/22 10:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
CT RCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	2.05	--	1	08/16/22 12:20	09/04/22 13:19	EPA 3050B	79,6010D	DL
Arsenic, Total	0.800		mg/kg	0.411	--	1	08/16/22 12:20	09/04/22 13:19	EPA 3050B	79,6010D	DL
Barium, Total	76.0		mg/kg	0.411	--	1	08/16/22 12:20	09/04/22 13:19	EPA 3050B	79,6010D	DL
Beryllium, Total	0.295		mg/kg	0.205	--	1	08/16/22 12:20	09/04/22 13:19	EPA 3050B	79,6010D	DL
Cadmium, Total	ND		mg/kg	0.411	--	1	08/16/22 12:20	09/04/22 13:19	EPA 3050B	79,6010D	DL
Chromium, Total	13.0		mg/kg	0.411	--	1	08/16/22 12:20	09/04/22 13:19	EPA 3050B	79,6010D	DL
Copper, Total	10.3		mg/kg	0.411	--	1	08/16/22 12:20	09/04/22 13:19	EPA 3050B	79,6010D	DL
Lead, Total	3.04		mg/kg	2.05	--	1	08/16/22 12:20	09/04/22 13:19	EPA 3050B	79,6010D	DL
Nickel, Total	6.58		mg/kg	1.03	--	1	08/16/22 12:20	09/04/22 13:19	EPA 3050B	79,6010D	DL
Selenium, Total	ND		mg/kg	2.05	--	1	08/16/22 12:20	09/04/22 13:19	EPA 3050B	79,6010D	DL
Silver, Total	ND		mg/kg	0.411	--	1	08/16/22 12:20	09/04/22 13:19	EPA 3050B	79,6010D	DL
Thallium, Total	ND		mg/kg	2.05	--	1	08/16/22 12:20	09/04/22 13:19	EPA 3050B	79,6010D	DL
Vanadium, Total	12.5		mg/kg	0.411	--	1	08/16/22 12:20	09/04/22 13:19	EPA 3050B	79,6010D	DL
Zinc, Total	16.4		mg/kg	2.05	--	1	08/16/22 12:20	09/04/22 13:19	EPA 3050B	79,6010D	DL

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-03
Client ID: TP-SL3
Sample Location: GREENWICH, CT
Date Collected: 08/12/22 12:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
CT RCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	2.14	--	1	08/16/22 12:20	09/04/22 13:23	EPA 3050B	79,6010D	DL
Arsenic, Total	6.61		mg/kg	0.427	--	1	08/16/22 12:20	09/04/22 13:23	EPA 3050B	79,6010D	DL
Barium, Total	101		mg/kg	0.427	--	1	08/16/22 12:20	09/04/22 13:23	EPA 3050B	79,6010D	DL
Beryllium, Total	1.01		mg/kg	0.214	--	1	08/16/22 12:20	09/04/22 13:23	EPA 3050B	79,6010D	DL
Cadmium, Total	ND		mg/kg	0.427	--	1	08/16/22 12:20	09/04/22 13:23	EPA 3050B	79,6010D	DL
Chromium, Total	20.8		mg/kg	0.427	--	1	08/16/22 12:20	09/04/22 13:23	EPA 3050B	79,6010D	DL
Copper, Total	30.8		mg/kg	0.427	--	1	08/16/22 12:20	09/04/22 13:23	EPA 3050B	79,6010D	DL
Lead, Total	9.56		mg/kg	2.14	--	1	08/16/22 12:20	09/04/22 13:23	EPA 3050B	79,6010D	DL
Nickel, Total	11.2		mg/kg	1.07	--	1	08/16/22 12:20	09/04/22 13:23	EPA 3050B	79,6010D	DL
Selenium, Total	ND		mg/kg	2.14	--	1	08/16/22 12:20	09/04/22 13:23	EPA 3050B	79,6010D	DL
Silver, Total	ND		mg/kg	0.427	--	1	08/16/22 12:20	09/04/22 13:23	EPA 3050B	79,6010D	DL
Thallium, Total	ND		mg/kg	2.14	--	1	08/16/22 12:20	09/04/22 13:23	EPA 3050B	79,6010D	DL
Vanadium, Total	39.4		mg/kg	0.427	--	1	08/16/22 12:20	09/04/22 13:23	EPA 3050B	79,6010D	DL
Zinc, Total	34.2		mg/kg	2.14	--	1	08/16/22 12:20	09/04/22 13:23	EPA 3050B	79,6010D	DL

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-04
Client ID: TP-SL4
Sample Location: GREENWICH, CT
Date Collected: 08/12/22 14:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
CT RCP Total Metals - Mansfield Lab											
Antimony, Total	2.98		mg/kg	2.11	--	1	08/16/22 12:20	09/04/22 13:43	EPA 3050B	79,6010D	DL
Arsenic, Total	5.12		mg/kg	0.422	--	1	08/16/22 12:20	09/04/22 13:43	EPA 3050B	79,6010D	DL
Barium, Total	332		mg/kg	2.11	--	5	08/16/22 12:20	09/07/22 10:47	EPA 3050B	79,6010D	NB
Beryllium, Total	1.20		mg/kg	0.211	--	1	08/16/22 12:20	09/04/22 13:43	EPA 3050B	79,6010D	DL
Cadmium, Total	ND		mg/kg	0.422	--	1	08/16/22 12:20	09/04/22 13:43	EPA 3050B	79,6010D	DL
Chromium, Total	68.6		mg/kg	0.422	--	1	08/16/22 12:20	09/04/22 13:43	EPA 3050B	79,6010D	DL
Copper, Total	27.1		mg/kg	2.11	--	5	08/16/22 12:20	09/07/22 10:47	EPA 3050B	79,6010D	NB
Lead, Total	7.49		mg/kg	2.11	--	1	08/16/22 12:20	09/04/22 13:43	EPA 3050B	79,6010D	DL
Nickel, Total	28.4		mg/kg	1.06	--	1	08/16/22 12:20	09/04/22 13:43	EPA 3050B	79,6010D	DL
Selenium, Total	ND		mg/kg	2.11	--	1	08/16/22 12:20	09/04/22 13:43	EPA 3050B	79,6010D	DL
Silver, Total	ND		mg/kg	0.422	--	1	08/16/22 12:20	09/04/22 13:43	EPA 3050B	79,6010D	DL
Thallium, Total	ND		mg/kg	2.11	--	1	08/16/22 12:20	09/04/22 13:43	EPA 3050B	79,6010D	DL
Vanadium, Total	66.1		mg/kg	0.422	--	1	08/16/22 12:20	09/04/22 13:43	EPA 3050B	79,6010D	DL
Zinc, Total	64.3		mg/kg	2.11	--	1	08/16/22 12:20	09/04/22 13:43	EPA 3050B	79,6010D	DL

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2243810
Project Number: Not Specified
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-05
Client ID: TP-SL5
Sample Location: GREENWICH, CT
Date Collected: 08/12/22 16:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
CT RCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	2.09	--	1	08/16/22 12:20	09/04/22 13:48	EPA 3050B	79,6010D	DL
Arsenic, Total	3.91		mg/kg	0.418	--	1	08/16/22 12:20	09/04/22 13:48	EPA 3050B	79,6010D	DL
Barium, Total	77.4		mg/kg	0.418	--	1	08/16/22 12:20	09/07/22 10:40	EPA 3050B	79,6010D	NB
Beryllium, Total	0.687		mg/kg	0.209	--	1	08/16/22 12:20	09/04/22 13:48	EPA 3050B	79,6010D	DL
Cadmium, Total	ND		mg/kg	0.418	--	1	08/16/22 12:20	09/04/22 13:48	EPA 3050B	79,6010D	DL
Chromium, Total	18.0		mg/kg	0.418	--	1	08/16/22 12:20	09/04/22 13:48	EPA 3050B	79,6010D	DL
Copper, Total	2.66		mg/kg	0.418	--	1	08/16/22 12:20	09/07/22 10:40	EPA 3050B	79,6010D	NB
Lead, Total	5.12		mg/kg	2.09	--	1	08/16/22 12:20	09/04/22 13:48	EPA 3050B	79,6010D	DL
Nickel, Total	9.03		mg/kg	1.04	--	1	08/16/22 12:20	09/04/22 13:48	EPA 3050B	79,6010D	DL
Selenium, Total	ND		mg/kg	2.09	--	1	08/16/22 12:20	09/04/22 13:48	EPA 3050B	79,6010D	DL
Silver, Total	ND		mg/kg	0.418	--	1	08/16/22 12:20	09/04/22 13:48	EPA 3050B	79,6010D	DL
Thallium, Total	ND		mg/kg	2.09	--	1	08/16/22 12:20	09/04/22 13:48	EPA 3050B	79,6010D	DL
Vanadium, Total	26.4		mg/kg	0.418	--	1	08/16/22 12:20	09/04/22 13:48	EPA 3050B	79,6010D	DL
Zinc, Total	26.3		mg/kg	2.09	--	1	08/16/22 12:20	09/04/22 13:48	EPA 3050B	79,6010D	DL

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
CT RCP Total Metals - Mansfield Lab for sample(s): 01-05 Batch: WG1675470-1										
Antimony, Total	ND		mg/kg	2.00	--	1	08/16/22 12:20	09/04/22 12:42	79,6010D	DL
Arsenic, Total	ND		mg/kg	0.400	--	1	08/16/22 12:20	09/04/22 12:42	79,6010D	DL
Barium, Total	ND		mg/kg	0.400	--	1	08/16/22 12:20	09/04/22 12:42	79,6010D	DL
Beryllium, Total	ND		mg/kg	0.200	--	1	08/16/22 12:20	09/04/22 12:42	79,6010D	DL
Cadmium, Total	ND		mg/kg	0.400	--	1	08/16/22 12:20	09/04/22 12:42	79,6010D	DL
Chromium, Total	ND		mg/kg	0.400	--	1	08/16/22 12:20	09/04/22 12:42	79,6010D	DL
Copper, Total	ND		mg/kg	0.400	--	1	08/16/22 12:20	09/04/22 12:42	79,6010D	DL
Lead, Total	ND		mg/kg	2.00	--	1	08/16/22 12:20	09/04/22 12:42	79,6010D	DL
Nickel, Total	ND		mg/kg	1.00	--	1	08/16/22 12:20	09/04/22 12:42	79,6010D	DL
Selenium, Total	ND		mg/kg	2.00	--	1	08/16/22 12:20	09/04/22 12:42	79,6010D	DL
Silver, Total	ND		mg/kg	0.400	--	1	08/16/22 12:20	09/04/22 12:42	79,6010D	DL
Thallium, Total	ND		mg/kg	2.00	--	1	08/16/22 12:20	09/04/22 12:42	79,6010D	DL
Vanadium, Total	ND		mg/kg	0.400	--	1	08/16/22 12:20	09/04/22 12:42	79,6010D	DL
Zinc, Total	ND		mg/kg	2.00	--	1	08/16/22 12:20	09/04/22 12:42	79,6010D	DL

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL

Project Number: Not Specified

Lab Number: L2243810

Report Date: 09/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1675470-2 SRM Lot Number: D113-540								
Antimony, Total	127		-		20-250	-		30
Arsenic, Total	99		-		70-130	-		30
Barium, Total	100		-		75-125	-		30
Beryllium, Total	94		-		75-125	-		30
Cadmium, Total	91		-		75-125	-		30
Chromium, Total	91		-		70-130	-		30
Copper, Total	100		-		75-125	-		30
Lead, Total	89		-		72-128	-		30
Nickel, Total	95		-		70-130	-		30
Selenium, Total	93		-		66-134	-		30
Silver, Total	91		-		70-131	-		30
Thallium, Total	92		-		70-130	-		30
Vanadium, Total	89		-		74-126	-		30
Zinc, Total	91		-		70-130	-		30

INORGANICS
&
MISCELLANEOUS

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2243810
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-01
Client ID: TP-SL1
Sample Location: GREENWICH, CT
Sample Depth:
Matrix: Soil

Date Collected: 08/12/22 08:30
Date Received: 08/13/22
Field Prep: Not Specified

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Coarse
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/24/22 16:03	1,1030	MD

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2243810
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-02
Client ID: TP-SL2
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 10:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Coarse
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/24/22 16:03	1,1030	MD

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2243810
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-03
Client ID: TP-SL3
Sample Location: GREENWICH, CT
Date Collected: 08/12/22 12:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Medium
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/24/22 16:03	1,1030	MD

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2243810
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-04
Client ID: TP-SL4
Sample Location: GREENWICH, CT
Sample Depth:
Matrix: Soil

Date Collected: 08/12/22 14:30
Date Received: 08/13/22
Field Prep: Not Specified

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Medium
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/24/22 16:03	1,1030	MD

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2243810
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-05
Client ID: TP-SL5
Sample Location: GREENWICH, CT
Sample Depth:
Matrix: Soil

Date Collected: 08/12/22 16:30
Date Received: 08/13/22
Field Prep: Not Specified

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Medium
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/24/22 16:03	1,1030	MD

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-01
Client ID: TP-SL1
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 08:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.5		%	0.100	NA	1	-	08/15/22 19:37	121,2540G	MF
pH (H)	6.5		SU	-	NA	1	-	08/15/22 20:16	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/16/22 12:25	08/16/22 15:19	125,7.3	MJ
Sulfide, Reactive	ND		mg/kg	10	--	1	08/16/22 12:25	08/16/22 14:43	125,7.3	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-02
Client ID: TP-SL2
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 10:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.5		%	0.100	NA	1	-	08/15/22 19:37	121,2540G	MF
pH (H)	6.6		SU	-	NA	1	-	08/15/22 20:16	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/16/22 12:25	08/16/22 15:20	125,7.3	MJ
Sulfide, Reactive	ND		mg/kg	10	--	1	08/16/22 12:25	08/16/22 14:43	125,7.3	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-03
Client ID: TP-SL3
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 12:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.3		%	0.100	NA	1	-	08/15/22 19:37	121,2540G	MF
pH (H)	6.6		SU	-	NA	1	-	08/15/22 20:16	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/16/22 12:25	08/16/22 15:20	125,7.3	MJ
Sulfide, Reactive	ND		mg/kg	10	--	1	08/16/22 12:25	08/16/22 14:44	125,7.3	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-04
Client ID: TP-SL4
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 14:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.0		%	0.100	NA	1	-	08/15/22 19:37	121,2540G	MF
pH (H)	5.9		SU	-	NA	1	-	08/15/22 20:16	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/16/22 12:25	08/16/22 15:21	125,7.3	MJ
Sulfide, Reactive	ND		mg/kg	10	--	1	08/16/22 12:25	08/16/22 14:44	125,7.3	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

SAMPLE RESULTS

Lab ID: L2243810-05
Client ID: TP-SL5
Sample Location: GREENWICH, CT

Date Collected: 08/12/22 16:30
Date Received: 08/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.2		%	0.100	NA	1	-	08/15/22 19:37	121,2540G	MF
pH (H)	6.0		SU	-	NA	1	-	08/15/22 20:16	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/16/22 12:25	08/16/22 15:21	125,7.3	MJ
Sulfide, Reactive	ND		mg/kg	10	--	1	08/16/22 12:25	08/16/22 14:45	125,7.3	MJ

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-05 Batch: WG1675408-1										
Sulfide, Reactive	ND		mg/kg	10	--	1	08/16/22 12:25	08/16/22 14:32	125,7.3	MJ
General Chemistry - Westborough Lab for sample(s): 01-05 Batch: WG1675651-1										
Cyanide, Reactive	ND		mg/kg	10	--	1	08/16/22 12:25	08/16/22 15:07	125,7.3	MJ

Lab Control Sample Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL

Project Number: Not Specified

Lab Number: L2243810

Report Date: 09/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 Batch: WG1675408-2								
Sulfide, Reactive	106		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01-05 Batch: WG1675488-1								
pH	99		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01-05 Batch: WG1675651-2								
Cyanide, Reactive	93		-		30-125	-		40

Lab Duplicate Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1675408-3 QC Sample: L2243810-05 Client ID: TP-SL5						
Sulfide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1675651-3 QC Sample: L2243810-05 Client ID: TP-SL5						
Cyanide, Reactive	ND	ND	mg/kg	NC		40

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

Sample Receipt and Container Information

Were project specific reporting limits specified? NO

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2243810-01A	Vial MeOH preserved	A	NA		22.4	Y	Absent		TPH-GRO(14),VPH-DELUX-18(28),CT-8260HLW(14)
L2243810-01B	Vial water preserved	A	NA		22.4	Y	Absent	13-AUG-22 16:10	CT-8260HLW(14)
L2243810-01C	Vial water preserved	A	NA		22.4	Y	Absent	13-AUG-22 16:10	CT-8260HLW(14)
L2243810-01D	Plastic 2oz unpreserved for TS	A	NA		22.4	Y	Absent		TS(7)
L2243810-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		22.4	Y	Absent		CT-V-6010T(180),CT-AG-6010T(180),CT-SE-6010T(180),CT-AS-6010T(180),CT-CU-6010T(180),CT-SB-6010T(180),CT-NI-6010T(180),CT-PB-6010T(180),CT-CR-6010T(180),CT-ZN-6010T(180),CT-BA-6010T(180),CT-CD-6010T(180),CT-BE-6010T(180),CT-TL-6010T(180)
L2243810-01F	Glass 500ml/16oz unpreserved	A	NA		22.4	Y	Absent		IGNIT-1030(14),REACTS(14),CT-PAH(14),EPH-20(14),PH-9045(1),REACTCN(14)
L2243810-02A	Vial MeOH preserved	A	NA		22.4	Y	Absent		TPH-GRO(14),VPH-DELUX-18(28),CT-8260HLW(14)
L2243810-02B	Vial water preserved	A	NA		22.4	Y	Absent	13-AUG-22 16:10	CT-8260HLW(14)
L2243810-02C	Vial water preserved	A	NA		22.4	Y	Absent	13-AUG-22 16:10	CT-8260HLW(14)
L2243810-02D	Plastic 2oz unpreserved for TS	A	NA		22.4	Y	Absent		TS(7)
L2243810-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		22.4	Y	Absent		CT-AG-6010T(180),CT-V-6010T(180),CT-SE-6010T(180),CT-AS-6010T(180),CT-CU-6010T(180),CT-SB-6010T(180),CT-PB-6010T(180),CT-NI-6010T(180),CT-ZN-6010T(180),CT-BA-6010T(180),CT-CR-6010T(180),CT-CD-6010T(180),CT-TL-6010T(180),CT-BE-6010T(180)
L2243810-02F	Glass 500ml/16oz unpreserved	A	NA		22.4	Y	Absent		IGNIT-1030(14),REACTS(14),CT-PAH(14),EPH-20(14),PH-9045(1),REACTCN(14)
L2243810-03A	Vial MeOH preserved	A	NA		22.4	Y	Absent		TPH-GRO(14),VPH-DELUX-18(28),CT-8260HLW(14)
L2243810-03B	Vial water preserved	A	NA		22.4	Y	Absent	13-AUG-22 16:10	CT-8260HLW(14)
L2243810-03C	Vial water preserved	A	NA		22.4	Y	Absent	13-AUG-22 16:10	CT-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2243810
Report Date: 09/07/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2243810-03D	Plastic 2oz unpreserved for TS	A	NA		22.4	Y	Absent		TS(7)
L2243810-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		22.4	Y	Absent		CT-AG-6010T(180),CT-V-6010T(180),CT-CU-6010T(180),CT-SE-6010T(180),CT-AS-6010T(180),CT-SB-6010T(180),CT-NI-6010T(180),CT-PB-6010T(180),CT-CR-6010T(180),CT-ZN-6010T(180),CT-BA-6010T(180),CT-BE-6010T(180),CT-CD-6010T(180),CT-TL-6010T(180)
L2243810-03F	Glass 500ml/16oz unpreserved	A	NA		22.4	Y	Absent		REACTS(14),IGNIT-1030(14),CT-PAH(14),EPH-20(14),PH-9045(1),REACTCN(14)
L2243810-04A	Vial MeOH preserved	A	NA		22.4	Y	Absent		TPH-GRO(14),VPH-DELUX-18(28),CT-8260HLW(14)
L2243810-04B	Vial water preserved	A	NA		22.4	Y	Absent	13-AUG-22 16:10	CT-8260HLW(14)
L2243810-04C	Vial water preserved	A	NA		22.4	Y	Absent	13-AUG-22 16:10	CT-8260HLW(14)
L2243810-04D	Plastic 2oz unpreserved for TS	A	NA		22.4	Y	Absent		TS(7)
L2243810-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		22.4	Y	Absent		CT-AG-6010T(180),CT-V-6010T(180),CT-CU-6010T(180),CT-SE-6010T(180),CT-AS-6010T(180),CT-SB-6010T(180),CT-NI-6010T(180),CT-PB-6010T(180),CT-CR-6010T(180),CT-ZN-6010T(180),CT-BA-6010T(180),CT-BE-6010T(180),CT-CD-6010T(180),CT-TL-6010T(180)
L2243810-04F	Glass 500ml/16oz unpreserved	A	NA		22.4	Y	Absent		IGNIT-1030(14),REACTS(14),EPH-20(14),CT-PAH(14),PH-9045(1),REACTCN(14)
L2243810-05A	Vial MeOH preserved	A	NA		22.4	Y	Absent		TPH-GRO(14),VPH-DELUX-18(28),CT-8260HLW(14)
L2243810-05B	Vial water preserved	A	NA		22.4	Y	Absent	13-AUG-22 16:10	CT-8260HLW(14)
L2243810-05C	Vial water preserved	A	NA		22.4	Y	Absent	13-AUG-22 16:10	CT-8260HLW(14)
L2243810-05D	Plastic 2oz unpreserved for TS	A	NA		22.4	Y	Absent		TS(7)
L2243810-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		22.4	Y	Absent		CT-V-6010T(180),CT-AG-6010T(180),CT-AS-6010T(180),CT-CU-6010T(180),CT-SE-6010T(180),CT-SB-6010T(180),CT-PB-6010T(180),CT-NI-6010T(180),CT-BA-6010T(180),CT-CR-6010T(180),CT-ZN-6010T(180),CT-TL-6010T(180),CT-BE-6010T(180),CT-CD-6010T(180)
L2243810-05F	Glass 500ml/16oz unpreserved	A	NA		22.4	Y	Absent		REACTS(14),IGNIT-1030(14),CT-PAH(14),EPH-20(14),PH-9045(1),REACTCN(14)

*Values in parentheses indicate holding time in days

Project Name:	CENTRAL MIDDLE SCHOOL	**Lab Number:**	L2243810
Project Number:	Not Specified	**Report Date:**	09/07/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	CENTRAL MIDDLE SCHOOL	**Lab Number:**	L2243810
Project Number:	Not Specified	**Report Date:**	09/07/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

Report Format: Data Usability Report

Project Name:	CENTRAL MIDDLE SCHOOL	**Lab Number:**	L2243810
Project Number:	Not Specified	**Report Date:**	09/07/22

Data Qualifiers

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2243810

Project Number: Not Specified **Report Date:** 09/07/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

79 Connecticut DEP Quality Assurance and Quality Control Requirements for SW-846 Methods. CTDEP Reasonable Confidence Protocols (RCPs). Versions 2.0 and 3.0, July and December 2006.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

125 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates IIIA, April 1998.

131 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, February 2018, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, June 1, 2018.

135 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, December 2019, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, March 1, 2020.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 8/13/22

ALPHA Job #: L2243810

Client Information

Client: ATANE Engineers
Address: 56 Roland St.
Charlestown, MA 02129
Phone: (617)838-7668
Fax:
Email: pmccarthy@ataneconsulting.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Central Middel School
Project Location: Greenwich, CT
Project #: --
Project Manager: Peter McCarthy
ALPHA Quote #: 19562

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: 8/15/22 Time: 12:00

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

please send report to the following:
hrameau@ataneconsulting.com
psousa@ataneconsulting.com
pmccarthy@ataneconsulting.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260	EPH, CT-PAH	VPH	TPH-DRO	TPH-GRO	CT-15METALS (MINUS HG)	pH, Ignitability, Reactivity						
43810-01	TP-SL1	8/12/22	0830	S	MH	☒	☒	☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	
02	TP-SL2	8/12/22	1030	S	MH	☒	☒	☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	
03	TP-SL3	8/12/22	1230	S	MH	☒	☒	☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	
04	TP-SL4	8/12/22	1430	S	MH	☒	☒	☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	
05	TP-SL5	8/12/22	1630	S	MH	☒	☒	☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	
				S		☒	☒	☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	
				S		☒	☒	☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	
				S		☒	☒	☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	
				S		☒	☒	☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	
				S		☒	☒	☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	

Container Type
Preservative

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

FORM NO. 01-01(i) (rev. 9-JAN-12)

Relinquished By:	Date/Time	Received By:	Date/Time
PM/AA (ATANE)	8-13 15:20	Kem for ANL	8/13/22 1520

C. D.t. M

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

ANALYTICAL REPORT

Lab Number:	L2246257
Client:	ATANE Engineering PC 56 Roland Street, Suite 202 Boston, MA 02129
ATTN:	Peter McCarthy
Phone:	(617) 778-7300
Project Name:	CENTRAL MIDDLE SCHOOL
Project Number:	Not Specified
Report Date:	09/12/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2246257-01	B-SL-01	SOIL	GREENWICH, CT	08/23/22 12:00	08/25/22
L2246257-02	B-SL-02	SOIL	GREENWICH, CT	08/23/22 15:30	08/25/22
L2246257-03	B-SL-03	SOIL	GREENWICH, CT	08/24/22 12:30	08/25/22
L2246257-04	B-SL-04	SOIL	GREENWICH, CT	08/25/22 08:45	08/25/22
L2246257-05	B-SL-05	SOIL	GREENWICH, CT	08/25/22 10:15	08/25/22
L2246257-06	B-SL-06	SOIL	GREENWICH, CT	08/25/22 11:45	08/25/22
L2246257-07	B-SL-07	SOIL	GREENWICH, CT	08/23/22 08:45	08/25/22

Project Name:	CENTRAL MIDDLE SCHOOL	**Lab Number:**	L2246257
Project Number:	Not Specified	**Report Date:**	09/12/22

CT DEP Reasonable Confidence Protocols
Laboratory Analysis
QA/QC Certification Form

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed (including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP method-specific Reasonable Confidence Protocol documents)?	YES
1a	Were the method specified preservation and holding time requirements met?	YES
1b	VPH & EPH Methods Only: Was the VPH or EPH Method conducted without significant modifications (see Section 11.3 of respective Methods)?	YES
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	YES
3	Were all samples received at an appropriate temperature (<6°C)?	YES
4	Were all QA/QC performance criteria specified in the CT DEP Reasonable Confidence Protocol documents achieved?	NO
5a	Were reporting limits specified or referenced on the chain-of-custody?	NO
5b	Were these reporting limits met?	N/A
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	NO
7	Are project-specific matrix spikes and laboratory duplicates included in this data set?	NO

Note: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or question B is "No", the data package does not meet the requirements for "Reasonable Confidence".

Project Name:	CENTRAL MIDDLE SCHOOL	**Lab Number:**	L2246257
Project Number:	Not Specified	**Report Date:**	09/12/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	CENTRAL MIDDLE SCHOOL	**Lab Number:**	L2246257
Project Number:	Not Specified	**Report Date:**	09/12/22

Case Narrative (continued)

RCP Related Narratives

Report Submission

In reference to question 5a:

Reporting limits were not specified.

Volatile Organics

In reference to question 4:

L2246257-01 through -07: Initial Calibration Verification outside criteria: dichlorodifluoromethane (124%)

Semivolatile Organics

In reference to question 6:

At the client's request, all submitted samples were not analyzed for the full RCP list of constituents identified in the method specific analyte list presented in the RCP documents.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Michelle M. Morris

Title: Technical Director/Representative Date: 09/12/22

QC OUTLIER SUMMARY REPORT

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Volatile Petroleum Hydrocarbons - Westborough Lab								
VPH-18-2.1	B-SL-01	L2246257-01	2,5-Dibromotoluene-FID	Surrogate	132	70-130	-	potential high bias
VPH-18-2.1	B-SL-03	L2246257-03	2,5-Dibromotoluene-PID	Surrogate	138	70-130	-	potential high bias
VPH-18-2.1	B-SL-03	L2246257-03	2,5-Dibromotoluene-FID	Surrogate	147	70-130	-	potential high bias
VPH-18-2.1	B-SL-04	L2246257-04	2,5-Dibromotoluene-PID	Surrogate	140	70-130	-	potential high bias
VPH-18-2.1	B-SL-04	L2246257-04	2,5-Dibromotoluene-FID	Surrogate	149	70-130	-	potential high bias
VPH-18-2.1	B-SL-06	L2246257-06	2,5-Dibromotoluene-FID	Surrogate	134	70-130	-	potential high bias

ORGANICS

VOLATILES

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-01 Date Collected: 08/23/22 12:00
Client ID: B-SL-01 Date Received: 08/25/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8260C
Analytical Date: 09/01/22 12:34
Analyst: JC
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	7.3	--	1
1,1-Dichloroethane	ND		ug/kg	1.4	--	1
Chloroform	ND		ug/kg	2.2	--	1
Carbon tetrachloride	ND		ug/kg	1.4	--	1
1,2-Dichloropropane	ND		ug/kg	1.4	--	1
Dibromochloromethane	ND		ug/kg	1.4	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.4	--	1
Tetrachloroethene	ND		ug/kg	0.73	--	1
Chlorobenzene	ND		ug/kg	0.73	--	1
Trichlorofluoromethane	ND		ug/kg	5.8	--	1
1,2-Dichloroethane	ND		ug/kg	1.4	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.73	--	1
Bromodichloromethane	ND		ug/kg	0.73	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.4	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.73	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.73	--	1
1,1-Dichloropropene	ND		ug/kg	0.73	--	1
Bromoform	ND		ug/kg	5.8	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.73	--	1
Benzene	ND		ug/kg	0.73	--	1
Toluene	ND		ug/kg	1.4	--	1
Ethylbenzene	ND		ug/kg	1.4	--	1
Chloromethane	ND		ug/kg	5.8	--	1
Bromomethane	ND		ug/kg	2.9	--	1
Vinyl chloride	ND		ug/kg	1.4	--	1
Chloroethane	ND		ug/kg	2.9	--	1
1,1-Dichloroethene	ND		ug/kg	1.4	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.2	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-01 Date Collected: 08/23/22 12:00
Client ID: B-SL-01 Date Received: 08/25/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.73	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.9	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.9	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.9	--	1
Methyl tert butyl ether	ND		ug/kg	2.9	--	1
p/m-Xylene	ND		ug/kg	2.9	--	1
o-Xylene	ND		ug/kg	1.4	--	1
Xylenes, Total	ND		ug/kg	1.4	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.4	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.4	--	1
Dibromomethane	ND		ug/kg	2.9	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.9	--	1
Styrene	ND		ug/kg	1.4	--	1
Dichlorodifluoromethane	ND		ug/kg	14	--	1
Acetone	ND		ug/kg	36	--	1
Carbon disulfide	ND		ug/kg	14	--	1
2-Butanone	ND		ug/kg	14	--	1
4-Methyl-2-pentanone	ND		ug/kg	14	--	1
2-Hexanone	ND		ug/kg	14	--	1
Acrylonitrile	ND		ug/kg	5.8	--	1
Tetrahydrofuran	ND		ug/kg	5.8	--	1
2,2-Dichloropropane	ND		ug/kg	2.9	--	1
1,2-Dibromoethane	ND		ug/kg	1.4	--	1
1,3-Dichloropropane	ND		ug/kg	2.9	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.73	--	1
Bromobenzene	ND		ug/kg	2.9	--	1
n-Butylbenzene	ND		ug/kg	1.4	--	1
sec-Butylbenzene	ND		ug/kg	1.4	--	1
tert-Butylbenzene	ND		ug/kg	2.9	--	1
o-Chlorotoluene	ND		ug/kg	2.9	--	1
p-Chlorotoluene	ND		ug/kg	2.9	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.4	--	1
Hexachlorobutadiene	ND		ug/kg	5.8	--	1
Isopropylbenzene	ND		ug/kg	1.4	--	1
p-Isopropyltoluene	ND		ug/kg	1.4	--	1
Naphthalene	ND		ug/kg	5.8	--	1
n-Propylbenzene	ND		ug/kg	1.4	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-01 Date Collected: 08/23/22 12:00

Client ID: B-SL-01 Date Received: 08/25/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.9	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.9	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.9	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.9	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	7.3	--	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	5.8	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	96		70-130

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-02 Date Collected: 08/23/22 15:30
Client ID: B-SL-02 Date Received: 08/25/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8260C
Analytical Date: 09/01/22 13:01
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	10	--	1
1,1-Dichloroethane	ND		ug/kg	2.1	--	1
Chloroform	ND		ug/kg	3.1	--	1
Carbon tetrachloride	ND		ug/kg	2.1	--	1
1,2-Dichloropropane	ND		ug/kg	2.1	--	1
Dibromochloromethane	ND		ug/kg	2.1	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.1	--	1
Tetrachloroethene	ND		ug/kg	1.0	--	1
Chlorobenzene	ND		ug/kg	1.0	--	1
Trichlorofluoromethane	ND		ug/kg	8.3	--	1
1,2-Dichloroethane	ND		ug/kg	2.1	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.0	--	1
Bromodichloromethane	ND		ug/kg	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.1	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--	1
1,1-Dichloropropene	ND		ug/kg	1.0	--	1
Bromoform	ND		ug/kg	8.3	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--	1
Benzene	ND		ug/kg	1.0	--	1
Toluene	ND		ug/kg	2.1	--	1
Ethylbenzene	ND		ug/kg	2.1	--	1
Chloromethane	ND		ug/kg	8.3	--	1
Bromomethane	ND		ug/kg	4.2	--	1
Vinyl chloride	ND		ug/kg	2.1	--	1
Chloroethane	ND		ug/kg	4.2	--	1
1,1-Dichloroethene	ND		ug/kg	2.1	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.1	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-02 Date Collected: 08/23/22 15:30
Client ID: B-SL-02 Date Received: 08/25/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	1.0	--	1
1,2-Dichlorobenzene	ND		ug/kg	4.2	--	1
1,3-Dichlorobenzene	ND		ug/kg	4.2	--	1
1,4-Dichlorobenzene	ND		ug/kg	4.2	--	1
Methyl tert butyl ether	ND		ug/kg	4.2	--	1
p/m-Xylene	ND		ug/kg	4.2	--	1
o-Xylene	ND		ug/kg	2.1	--	1
Xylenes, Total	ND		ug/kg	2.1	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.1	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.1	--	1
Dibromomethane	ND		ug/kg	4.2	--	1
1,2,3-Trichloropropane	ND		ug/kg	4.2	--	1
Styrene	ND		ug/kg	2.1	--	1
Dichlorodifluoromethane	ND		ug/kg	21	--	1
Acetone	ND		ug/kg	52	--	1
Carbon disulfide	ND		ug/kg	21	--	1
2-Butanone	ND		ug/kg	21	--	1
4-Methyl-2-pentanone	ND		ug/kg	21	--	1
2-Hexanone	ND		ug/kg	21	--	1
Acrylonitrile	ND		ug/kg	8.3	--	1
Tetrahydrofuran	ND		ug/kg	8.3	--	1
2,2-Dichloropropane	ND		ug/kg	4.2	--	1
1,2-Dibromoethane	ND		ug/kg	2.1	--	1
1,3-Dichloropropane	ND		ug/kg	4.2	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--	1
Bromobenzene	ND		ug/kg	4.2	--	1
n-Butylbenzene	ND		ug/kg	2.1	--	1
sec-Butylbenzene	ND		ug/kg	2.1	--	1
tert-Butylbenzene	ND		ug/kg	4.2	--	1
o-Chlorotoluene	ND		ug/kg	4.2	--	1
p-Chlorotoluene	ND		ug/kg	4.2	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	6.2	--	1
Hexachlorobutadiene	ND		ug/kg	8.3	--	1
Isopropylbenzene	ND		ug/kg	2.1	--	1
p-Isopropyltoluene	ND		ug/kg	2.1	--	1
Naphthalene	ND		ug/kg	8.3	--	1
n-Propylbenzene	ND		ug/kg	2.1	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-02 Date Collected: 08/23/22 15:30

Client ID: B-SL-02 Date Received: 08/25/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	4.2	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	4.2	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	4.2	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	4.2	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	10	--	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	8.3	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	96		70-130

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-03 Date Collected: 08/24/22 12:30
Client ID: B-SL-03 Date Received: 08/25/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8260C
Analytical Date: 09/01/22 13:27
Analyst: NLK
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	13	--	1
1,1-Dichloroethane	ND		ug/kg	2.7	--	1
Chloroform	ND		ug/kg	4.0	--	1
Carbon tetrachloride	ND		ug/kg	2.7	--	1
1,2-Dichloropropane	ND		ug/kg	2.7	--	1
Dibromochloromethane	ND		ug/kg	2.7	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.7	--	1
Tetrachloroethene	ND		ug/kg	1.3	--	1
Chlorobenzene	ND		ug/kg	1.3	--	1
Trichlorofluoromethane	ND		ug/kg	11	--	1
1,2-Dichloroethane	ND		ug/kg	2.7	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.3	--	1
Bromodichloromethane	ND		ug/kg	1.3	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.7	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.3	--	1
1,1-Dichloropropene	ND		ug/kg	1.3	--	1
Bromoform	ND		ug/kg	11	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Benzene	ND		ug/kg	1.3	--	1
Toluene	ND		ug/kg	2.7	--	1
Ethylbenzene	ND		ug/kg	2.7	--	1
Chloromethane	ND		ug/kg	11	--	1
Bromomethane	ND		ug/kg	5.4	--	1
Vinyl chloride	ND		ug/kg	2.7	--	1
Chloroethane	ND		ug/kg	5.4	--	1
1,1-Dichloroethene	ND		ug/kg	2.7	--	1
trans-1,2-Dichloroethene	ND		ug/kg	4.0	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-03 Date Collected: 08/24/22 12:30
Client ID: B-SL-03 Date Received: 08/25/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.4	--	1
1,3-Dichlorobenzene	ND		ug/kg	5.4	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.4	--	1
Methyl tert butyl ether	ND		ug/kg	5.4	--	1
p/m-Xylene	ND		ug/kg	5.4	--	1
o-Xylene	ND		ug/kg	2.7	--	1
Xylenes, Total	ND		ug/kg	2.7	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.7	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.7	--	1
Dibromomethane	ND		ug/kg	5.4	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.4	--	1
Styrene	ND		ug/kg	2.7	--	1
Dichlorodifluoromethane	ND		ug/kg	27	--	1
Acetone	ND		ug/kg	67	--	1
Carbon disulfide	ND		ug/kg	27	--	1
2-Butanone	ND		ug/kg	27	--	1
4-Methyl-2-pentanone	ND		ug/kg	27	--	1
2-Hexanone	ND		ug/kg	27	--	1
Acrylonitrile	ND		ug/kg	11	--	1
Tetrahydrofuran	ND		ug/kg	11	--	1
2,2-Dichloropropane	ND		ug/kg	5.4	--	1
1,2-Dibromoethane	ND		ug/kg	2.7	--	1
1,3-Dichloropropane	ND		ug/kg	5.4	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Bromobenzene	ND		ug/kg	5.4	--	1
n-Butylbenzene	ND		ug/kg	2.7	--	1
sec-Butylbenzene	ND		ug/kg	2.7	--	1
tert-Butylbenzene	ND		ug/kg	5.4	--	1
o-Chlorotoluene	ND		ug/kg	5.4	--	1
p-Chlorotoluene	ND		ug/kg	5.4	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	8.1	--	1
Hexachlorobutadiene	ND		ug/kg	11	--	1
Isopropylbenzene	ND		ug/kg	2.7	--	1
p-Isopropyltoluene	ND		ug/kg	2.7	--	1
Naphthalene	ND		ug/kg	11	--	1
n-Propylbenzene	ND		ug/kg	2.7	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-03 Date Collected: 08/24/22 12:30

Client ID: B-SL-03 Date Received: 08/25/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	5.4	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.4	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.4	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.4	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	13	--	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	11	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	98		70-130

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-04 Date Collected: 08/25/22 08:45
Client ID: B-SL-04 Date Received: 08/25/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8260C
Analytical Date: 09/01/22 13:53
Analyst: NLK
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	12	--	1
1,1-Dichloroethane	ND		ug/kg	2.4	--	1
Chloroform	ND		ug/kg	3.6	--	1
Carbon tetrachloride	ND		ug/kg	2.4	--	1
1,2-Dichloropropane	ND		ug/kg	2.4	--	1
Dibromochloromethane	ND		ug/kg	2.4	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.4	--	1
Tetrachloroethene	ND		ug/kg	1.2	--	1
Chlorobenzene	ND		ug/kg	1.2	--	1
Trichlorofluoromethane	ND		ug/kg	9.7	--	1
1,2-Dichloroethane	ND		ug/kg	2.4	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.2	--	1
Bromodichloromethane	ND		ug/kg	1.2	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.4	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.2	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.2	--	1
1,1-Dichloropropene	ND		ug/kg	1.2	--	1
Bromoform	ND		ug/kg	9.7	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.2	--	1
Benzene	ND		ug/kg	1.2	--	1
Toluene	ND		ug/kg	2.4	--	1
Ethylbenzene	ND		ug/kg	2.4	--	1
Chloromethane	ND		ug/kg	9.7	--	1
Bromomethane	ND		ug/kg	4.8	--	1
Vinyl chloride	ND		ug/kg	2.4	--	1
Chloroethane	ND		ug/kg	4.8	--	1
1,1-Dichloroethene	ND		ug/kg	2.4	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.6	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-04 Date Collected: 08/25/22 08:45

Client ID: B-SL-04 Date Received: 08/25/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	1.2	--	1
1,2-Dichlorobenzene	ND		ug/kg	4.8	--	1
1,3-Dichlorobenzene	ND		ug/kg	4.8	--	1
1,4-Dichlorobenzene	ND		ug/kg	4.8	--	1
Methyl tert butyl ether	ND		ug/kg	4.8	--	1
p/m-Xylene	ND		ug/kg	4.8	--	1
o-Xylene	ND		ug/kg	2.4	--	1
Xylenes, Total	ND		ug/kg	2.4	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.4	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.4	--	1
Dibromomethane	ND		ug/kg	4.8	--	1
1,2,3-Trichloropropane	ND		ug/kg	4.8	--	1
Styrene	ND		ug/kg	2.4	--	1
Dichlorodifluoromethane	ND		ug/kg	24	--	1
Acetone	ND		ug/kg	61	--	1
Carbon disulfide	ND		ug/kg	24	--	1
2-Butanone	ND		ug/kg	24	--	1
4-Methyl-2-pentanone	ND		ug/kg	24	--	1
2-Hexanone	ND		ug/kg	24	--	1
Acrylonitrile	ND		ug/kg	9.7	--	1
Tetrahydrofuran	ND		ug/kg	9.7	--	1
2,2-Dichloropropane	ND		ug/kg	4.8	--	1
1,2-Dibromoethane	ND		ug/kg	2.4	--	1
1,3-Dichloropropane	ND		ug/kg	4.8	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.2	--	1
Bromobenzene	ND		ug/kg	4.8	--	1
n-Butylbenzene	ND		ug/kg	2.4	--	1
sec-Butylbenzene	ND		ug/kg	2.4	--	1
tert-Butylbenzene	ND		ug/kg	4.8	--	1
o-Chlorotoluene	ND		ug/kg	4.8	--	1
p-Chlorotoluene	ND		ug/kg	4.8	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	7.3	--	1
Hexachlorobutadiene	ND		ug/kg	9.7	--	1
Isopropylbenzene	ND		ug/kg	2.4	--	1
p-Isopropyltoluene	ND		ug/kg	2.4	--	1
Naphthalene	ND		ug/kg	9.7	--	1
n-Propylbenzene	ND		ug/kg	2.4	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-04 Date Collected: 08/25/22 08:45

Client ID: B-SL-04 Date Received: 08/25/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	4.8	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	4.8	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	4.8	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	4.8	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	12	--	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	9.7	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	99		70-130

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-05 Date Collected: 08/25/22 10:15
Client ID: B-SL-05 Date Received: 08/25/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8260C
Analytical Date: 09/01/22 14:20
Analyst: NLK
Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.2	--	1
1,1-Dichloroethane	ND		ug/kg	1.2	--	1
Chloroform	ND		ug/kg	1.8	--	1
Carbon tetrachloride	ND		ug/kg	1.2	--	1
1,2-Dichloropropane	ND		ug/kg	1.2	--	1
Dibromochloromethane	ND		ug/kg	1.2	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.2	--	1
Tetrachloroethene	ND		ug/kg	0.62	--	1
Chlorobenzene	ND		ug/kg	0.62	--	1
Trichlorofluoromethane	ND		ug/kg	5.0	--	1
1,2-Dichloroethane	ND		ug/kg	1.2	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.62	--	1
Bromodichloromethane	ND		ug/kg	0.62	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.2	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.62	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.62	--	1
1,1-Dichloropropene	ND		ug/kg	0.62	--	1
Bromoform	ND		ug/kg	5.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.62	--	1
Benzene	ND		ug/kg	0.62	--	1
Toluene	ND		ug/kg	1.2	--	1
Ethylbenzene	ND		ug/kg	1.2	--	1
Chloromethane	ND		ug/kg	5.0	--	1
Bromomethane	ND		ug/kg	2.5	--	1
Vinyl chloride	ND		ug/kg	1.2	--	1
Chloroethane	ND		ug/kg	2.5	--	1
1,1-Dichloroethene	ND		ug/kg	1.2	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.8	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-05 Date Collected: 08/25/22 10:15

Client ID: B-SL-05 Date Received: 08/25/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.62	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.5	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.5	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.5	--	1
Methyl tert butyl ether	ND		ug/kg	2.5	--	1
p/m-Xylene	ND		ug/kg	2.5	--	1
o-Xylene	ND		ug/kg	1.2	--	1
Xylenes, Total	ND		ug/kg	1.2	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.2	--	1
Dibromomethane	ND		ug/kg	2.5	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.5	--	1
Styrene	ND		ug/kg	1.2	--	1
Dichlorodifluoromethane	ND		ug/kg	12	--	1
Acetone	ND		ug/kg	31	--	1
Carbon disulfide	ND		ug/kg	12	--	1
2-Butanone	ND		ug/kg	12	--	1
4-Methyl-2-pentanone	ND		ug/kg	12	--	1
2-Hexanone	ND		ug/kg	12	--	1
Acrylonitrile	ND		ug/kg	5.0	--	1
Tetrahydrofuran	ND		ug/kg	5.0	--	1
2,2-Dichloropropane	ND		ug/kg	2.5	--	1
1,2-Dibromoethane	ND		ug/kg	1.2	--	1
1,3-Dichloropropane	ND		ug/kg	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.62	--	1
Bromobenzene	ND		ug/kg	2.5	--	1
n-Butylbenzene	ND		ug/kg	1.2	--	1
sec-Butylbenzene	ND		ug/kg	1.2	--	1
tert-Butylbenzene	ND		ug/kg	2.5	--	1
o-Chlorotoluene	ND		ug/kg	2.5	--	1
p-Chlorotoluene	ND		ug/kg	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.7	--	1
Hexachlorobutadiene	ND		ug/kg	5.0	--	1
Isopropylbenzene	ND		ug/kg	1.2	--	1
p-Isopropyltoluene	ND		ug/kg	1.2	--	1
Naphthalene	ND		ug/kg	5.0	--	1
n-Propylbenzene	ND		ug/kg	1.2	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-05 Date Collected: 08/25/22 10:15

Client ID: B-SL-05 Date Received: 08/25/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	6.2	--	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	98		70-130

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-06 Date Collected: 08/25/22 11:45
Client ID: B-SL-06 Date Received: 08/25/22
Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8260C
Analytical Date: 09/01/22 14:46
Analyst: KJD
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.0	--	1
1,1-Dichloroethane	ND		ug/kg	0.80	--	1
Chloroform	ND		ug/kg	1.2	--	1
Carbon tetrachloride	ND		ug/kg	0.80	--	1
1,2-Dichloropropane	ND		ug/kg	0.80	--	1
Dibromochloromethane	ND		ug/kg	0.80	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.80	--	1
Tetrachloroethene	ND		ug/kg	0.40	--	1
Chlorobenzene	ND		ug/kg	0.40	--	1
Trichlorofluoromethane	ND		ug/kg	3.2	--	1
1,2-Dichloroethane	ND		ug/kg	0.80	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.40	--	1
Bromodichloromethane	ND		ug/kg	0.40	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.80	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.40	--	1
1,1-Dichloropropene	ND		ug/kg	0.40	--	1
Bromoform	ND		ug/kg	3.2	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.40	--	1
Benzene	ND		ug/kg	0.40	--	1
Toluene	ND		ug/kg	0.80	--	1
Ethylbenzene	ND		ug/kg	0.80	--	1
Chloromethane	ND		ug/kg	3.2	--	1
Bromomethane	ND		ug/kg	1.6	--	1
Vinyl chloride	ND		ug/kg	0.80	--	1
Chloroethane	ND		ug/kg	1.6	--	1
1,1-Dichloroethene	ND		ug/kg	0.80	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.2	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-06 Date Collected: 08/25/22 11:45

Client ID: B-SL-06 Date Received: 08/25/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.40	--	1
1,2-Dichlorobenzene	ND		ug/kg	1.6	--	1
1,3-Dichlorobenzene	ND		ug/kg	1.6	--	1
1,4-Dichlorobenzene	ND		ug/kg	1.6	--	1
Methyl tert butyl ether	ND		ug/kg	1.6	--	1
p/m-Xylene	ND		ug/kg	1.6	--	1
o-Xylene	ND		ug/kg	0.80	--	1
Xylenes, Total	ND		ug/kg	0.80	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.80	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.80	--	1
Dibromomethane	ND		ug/kg	1.6	--	1
1,2,3-Trichloropropane	ND		ug/kg	1.6	--	1
Styrene	ND		ug/kg	0.80	--	1
Dichlorodifluoromethane	ND		ug/kg	8.0	--	1
Acetone	ND		ug/kg	20	--	1
Carbon disulfide	ND		ug/kg	8.0	--	1
2-Butanone	ND		ug/kg	8.0	--	1
4-Methyl-2-pentanone	ND		ug/kg	8.0	--	1
2-Hexanone	ND		ug/kg	8.0	--	1
Acrylonitrile	ND		ug/kg	3.2	--	1
Tetrahydrofuran	ND		ug/kg	3.2	--	1
2,2-Dichloropropane	ND		ug/kg	1.6	--	1
1,2-Dibromoethane	ND		ug/kg	0.80	--	1
1,3-Dichloropropane	ND		ug/kg	1.6	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.40	--	1
Bromobenzene	ND		ug/kg	1.6	--	1
n-Butylbenzene	ND		ug/kg	0.80	--	1
sec-Butylbenzene	ND		ug/kg	0.80	--	1
tert-Butylbenzene	ND		ug/kg	1.6	--	1
o-Chlorotoluene	ND		ug/kg	1.6	--	1
p-Chlorotoluene	ND		ug/kg	1.6	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.4	--	1
Hexachlorobutadiene	ND		ug/kg	3.2	--	1
Isopropylbenzene	ND		ug/kg	0.80	--	1
p-Isopropyltoluene	ND		ug/kg	0.80	--	1
Naphthalene	ND		ug/kg	3.2	--	1
n-Propylbenzene	ND		ug/kg	0.80	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-06 Date Collected: 08/25/22 11:45

Client ID: B-SL-06 Date Received: 08/25/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	1.6	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.6	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.6	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.6	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	4.0	--	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	3.2	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	101		70-130

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-07
Client ID: B-SL-07
Sample Location: GREENWICH, CT

Date Collected: 08/23/22 08:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8260C
Analytical Date: 09/01/22 15:13
Analyst: KJD
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.9	--	1
1,1-Dichloroethane	ND		ug/kg	0.98	--	1
Chloroform	ND		ug/kg	1.5	--	1
Carbon tetrachloride	ND		ug/kg	0.98	--	1
1,2-Dichloropropane	ND		ug/kg	0.98	--	1
Dibromochloromethane	ND		ug/kg	0.98	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.98	--	1
Tetrachloroethene	ND		ug/kg	0.49	--	1
Chlorobenzene	ND		ug/kg	0.49	--	1
Trichlorofluoromethane	ND		ug/kg	3.9	--	1
1,2-Dichloroethane	ND		ug/kg	0.98	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.49	--	1
Bromodichloromethane	ND		ug/kg	0.49	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.98	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.49	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.49	--	1
1,1-Dichloropropene	ND		ug/kg	0.49	--	1
Bromoform	ND		ug/kg	3.9	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.49	--	1
Benzene	ND		ug/kg	0.49	--	1
Toluene	ND		ug/kg	0.98	--	1
Ethylbenzene	ND		ug/kg	0.98	--	1
Chloromethane	ND		ug/kg	3.9	--	1
Bromomethane	ND		ug/kg	2.0	--	1
Vinyl chloride	ND		ug/kg	0.98	--	1
Chloroethane	ND		ug/kg	2.0	--	1
1,1-Dichloroethene	ND		ug/kg	0.98	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-07 Date Collected: 08/23/22 08:45

Client ID: B-SL-07 Date Received: 08/25/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.49	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.0	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.0	--	1
Methyl tert butyl ether	ND		ug/kg	2.0	--	1
p/m-Xylene	ND		ug/kg	2.0	--	1
o-Xylene	ND		ug/kg	0.98	--	1
Xylenes, Total	ND		ug/kg	0.98	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.98	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.98	--	1
Dibromomethane	ND		ug/kg	2.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.0	--	1
Styrene	ND		ug/kg	0.98	--	1
Dichlorodifluoromethane	ND		ug/kg	9.8	--	1
Acetone	ND		ug/kg	24	--	1
Carbon disulfide	ND		ug/kg	9.8	--	1
2-Butanone	ND		ug/kg	9.8	--	1
4-Methyl-2-pentanone	ND		ug/kg	9.8	--	1
2-Hexanone	ND		ug/kg	9.8	--	1
Acrylonitrile	ND		ug/kg	3.9	--	1
Tetrahydrofuran	ND		ug/kg	3.9	--	1
2,2-Dichloropropane	ND		ug/kg	2.0	--	1
1,2-Dibromoethane	ND		ug/kg	0.98	--	1
1,3-Dichloropropane	ND		ug/kg	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.49	--	1
Bromobenzene	ND		ug/kg	2.0	--	1
n-Butylbenzene	ND		ug/kg	0.98	--	1
sec-Butylbenzene	ND		ug/kg	0.98	--	1
tert-Butylbenzene	ND		ug/kg	2.0	--	1
o-Chlorotoluene	ND		ug/kg	2.0	--	1
p-Chlorotoluene	ND		ug/kg	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.9	--	1
Hexachlorobutadiene	ND		ug/kg	3.9	--	1
Isopropylbenzene	ND		ug/kg	0.98	--	1
p-Isopropyltoluene	ND		ug/kg	0.98	--	1
Naphthalene	ND		ug/kg	3.9	--	1
n-Propylbenzene	ND		ug/kg	0.98	--	1

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-07 Date Collected: 08/23/22 08:45

Client ID: B-SL-07 Date Received: 08/25/22

Sample Location: GREENWICH, CT Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	4.9	--	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	3.9	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	101		70-130

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 79,8260C
Analytical Date: 09/01/22 09:02
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-07 Batch: WG1682649-5					
Methylene chloride	ND		ug/kg	5.0	--
1,1-Dichloroethane	ND		ug/kg	1.0	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	1.0	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.0	--
Tetrachloroethene	ND		ug/kg	0.50	--
Chlorobenzene	ND		ug/kg	0.50	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	0.50	--
Bromodichloromethane	ND		ug/kg	0.50	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	0.50	--
1,3-Dichloropropene, Total	ND		ug/kg	0.50	--
1,1-Dichloropropene	ND		ug/kg	0.50	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	--
Benzene	ND		ug/kg	0.50	--
Toluene	ND		ug/kg	1.0	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	1.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	0.50	--

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 79,8260C
Analytical Date: 09/01/22 09:02
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-07 Batch: WG1682649-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	--
1,3-Dichlorobenzene	ND		ug/kg	2.0	--
1,4-Dichlorobenzene	ND		ug/kg	2.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	1.0	--
Xylenes, Total	ND		ug/kg	1.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	2.0	--
1,2,3-Trichloropropane	ND		ug/kg	2.0	--
Styrene	ND		ug/kg	1.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	25	--
Carbon disulfide	ND		ug/kg	10	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Acrylonitrile	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	2.0	--
1,2-Dibromoethane	ND		ug/kg	1.0	--
1,3-Dichloropropane	ND		ug/kg	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	--
Bromobenzene	ND		ug/kg	2.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	2.0	--
o-Chlorotoluene	ND		ug/kg	2.0	--

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 79,8260C
Analytical Date: 09/01/22 09:02
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-07 Batch: WG1682649-5					
p-Chlorotoluene	ND		ug/kg	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	--
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	4.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	80		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	89		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-07 Batch: WG1682649-3 WG1682649-4								
Methylene chloride	94		96		70-130	2		30
1,1-Dichloroethane	90		90		70-130	0		30
Chloroform	85		86		70-130	1		30
Carbon tetrachloride	74		75		70-130	1		30
1,2-Dichloropropane	95		98		70-130	3		30
Dibromochloromethane	89		92		70-130	3		30
1,1,2-Trichloroethane	100		104		70-130	4		30
Tetrachloroethene	96		95		70-130	1		30
Chlorobenzene	94		94		70-130	0		30
Trichlorofluoromethane	70		70		70-130	0		30
1,2-Dichloroethane	72		75		70-130	4		30
1,1,1-Trichloroethane	79		80		70-130	1		30
Bromodichloromethane	83		85		70-130	2		30
trans-1,3-Dichloropropene	96		99		70-130	3		30
cis-1,3-Dichloropropene	86		87		70-130	1		30
1,1-Dichloropropene	97		97		70-130	0		30
Bromoform	94		99		70-130	5		30
1,1,2,2-Tetrachloroethane	104		108		70-130	4		30
Benzene	99		100		70-130	1		30
Toluene	98		98		70-130	0		30
Ethylbenzene	95		95		70-130	0		30
Chloromethane	76		76		52-130	0		30
Bromomethane	86		84		57-147	2		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-07 Batch: WG1682649-3 WG1682649-4								
Vinyl chloride	94		94		70-130	0		30
Chloroethane	97		97		70-130	0		30
1,1-Dichloroethene	103		102		70-130	1		30
trans-1,2-Dichloroethene	97		97		70-130	0		30
Trichloroethene	94		97		70-130	3		30
1,2-Dichlorobenzene	92		93		70-130	1		30
1,3-Dichlorobenzene	93		93		70-130	0		30
1,4-Dichlorobenzene	92		92		70-130	0		30
Methyl tert butyl ether	93		98		70-130	5		30
p/m-Xylene	98		98		70-130	0		30
o-Xylene	99		99		70-130	0		30
cis-1,2-Dichloroethene	95		96		70-130	1		30
Dibromomethane	86		90		70-130	5		30
1,2,3-Trichloropropane	96		101		70-130	5		30
Styrene	90		91		70-130	1		30
Dichlorodifluoromethane	67		66		30-146	2		30
Acetone	85		93		54-140	9		30
Carbon disulfide	93		93		59-130	0		30
2-Butanone	88		98		70-130	11		30
4-Methyl-2-pentanone	93		99		70-130	6		30
2-Hexanone	83		89		70-130	7		30
Acrylonitrile	90		97		70-130	7		30
Tetrahydrofuran	88		98		70-130	11		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-07 Batch: WG1682649-3 WG1682649-4								
2,2-Dichloropropane	84		84		70-130	0		30
1,2-Dibromoethane	91		95		70-130	4		30
1,3-Dichloropropane	99		102		70-130	3		30
1,1,1,2-Tetrachloroethane	88		90		70-130	2		30
Bromobenzene	95		96		70-130	1		30
n-Butylbenzene	96		95		70-130	1		30
sec-Butylbenzene	97		96		70-130	1		30
tert-Butylbenzene	95		94		70-130	1		30
o-Chlorotoluene	96		95		70-130	1		30
p-Chlorotoluene	97		97		70-130	0		30
1,2-Dibromo-3-chloropropane	92		100		68-130	8		30
Hexachlorobutadiene	86		85		70-130	1		30
Isopropylbenzene	102		101		70-130	1		30
p-Isopropyltoluene	97		97		70-130	0		30
Naphthalene	100		103		70-130	3		30
n-Propylbenzene	100		99		70-130	1		30
1,2,3-Trichlorobenzene	93		94		70-130	1		30
1,2,4-Trichlorobenzene	96		96		70-130	0		30
1,3,5-Trimethylbenzene	96		96		70-130	0		30
1,2,4-Trimethylbenzene	96		97		70-130	1		30
trans-1,4-Dichloro-2-butene	89		94		70-130	5		30
1,1,2-Trichloro-1,2,2-Trifluoroethane	95		94		70-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-07 Batch: WG1682649-3 WG1682649-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	76		78		70-130
Toluene-d8	104		102		70-130
4-Bromofluorobenzene	107		105		70-130
Dibromofluoromethane	89		89		70-130

SEMIVOLATILES

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-01
Client ID: B-SL-01
Sample Location: GREENWICH, CT

Date Collected: 08/23/22 12:00
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8270D
Analytical Date: 09/07/22 18:22
Analyst: SLR
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 09/05/22 02:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	230	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	67		30-130
2-Fluorobiphenyl	61		30-130
4-Terphenyl-d14	65		30-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-02
Client ID: B-SL-02
Sample Location: GREENWICH, CT

Date Collected: 08/23/22 15:30
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8270D
Analytical Date: 09/07/22 18:46
Analyst: SLR
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 09/05/22 02:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	230	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		30-130
2-Fluorobiphenyl	74		30-130
4-Terphenyl-d14	74		30-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-03
Client ID: B-SL-03
Sample Location: GREENWICH, CT

Date Collected: 08/24/22 12:30
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8270D
Analytical Date: 09/08/22 17:19
Analyst: JG
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 09/07/22 18:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		30-130
2-Fluorobiphenyl	88		30-130
4-Terphenyl-d14	88		30-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-04
Client ID: B-SL-04
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 08:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8270D
Analytical Date: 09/08/22 17:43
Analyst: JG
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 09/07/22 18:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	110		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		30-130
2-Fluorobiphenyl	74		30-130
4-Terphenyl-d14	73		30-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-05
Client ID: B-SL-05
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 10:15
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8270D
Analytical Date: 09/08/22 18:06
Analyst: JG
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 09/07/22 18:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	93		30-130
2-Fluorobiphenyl	92		30-130
4-Terphenyl-d14	90		30-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-06
Client ID: B-SL-06
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 11:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8270D
Analytical Date: 09/08/22 18:30
Analyst: JG
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 09/07/22 18:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	140		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	110		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	110		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		30-130
2-Fluorobiphenyl	75		30-130
4-Terphenyl-d14	66		30-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-07
Client ID: B-SL-07
Sample Location: GREENWICH, CT

Date Collected: 08/23/22 08:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 79,8270D
Analytical Date: 09/07/22 19:09
Analyst: SLR
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 09/05/22 02:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
CT RCP PAHs - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	230	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	88		30-130
2-Fluorobiphenyl	82		30-130
4-Terphenyl-d14	84		30-130

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2246257
Report Date: 09/12/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 79,8270D
Analytical Date: 09/06/22 12:04
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 09/04/22 19:30

Parameter	Result	Qualifier	Units	RL	MDL
CT RCP Semivolatile Organics - Westborough Lab for sample(s): 01-02,07 Batch: WG1683541-1					
Acenaphthene	ND		ug/kg	130	--
Fluoranthene	ND		ug/kg	100	--
Naphthalene	ND		ug/kg	170	--
Benzo(a)anthracene	ND		ug/kg	100	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	100	--
Benzo(k)fluoranthene	ND		ug/kg	100	--
Chrysene	ND		ug/kg	100	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	100	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	170	--
Phenanthrene	ND		ug/kg	100	--
Dibenzo(a,h)anthracene	ND		ug/kg	100	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	100	--
2-Methylnaphthalene	ND		ug/kg	200	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	92		30-130
2-Fluorobiphenyl	86		30-130
4-Terphenyl-d14	101		30-130

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2246257
Report Date: 09/12/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 79,8270D
Analytical Date: 09/08/22 09:55
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 09/07/22 18:07

Parameter	Result	Qualifier	Units	RL	MDL
CT RCP Semivolatile Organics - Westborough Lab for sample(s): 03-06 Batch: WG1684604-1					
Acenaphthene	ND		ug/kg	130	--
Fluoranthene	ND		ug/kg	98	--
Naphthalene	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
2-Methylnaphthalene	ND		ug/kg	200	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	93		30-130
2-Fluorobiphenyl	89		30-130
4-Terphenyl-d14	104		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,07 Batch: WG1683541-2 WG1683541-3								
Acenaphthene	84		82		40-140	2		30
Fluoranthene	87		85		40-140	2		30
Naphthalene	80		79		40-140	1		30
Benzo(a)anthracene	82		82		40-140	0		30
Benzo(a)pyrene	88		90		40-140	2		30
Benzo(b)fluoranthene	87		87		40-140	0		30
Benzo(k)fluoranthene	87		89		40-140	2		30
Chrysene	84		84		40-140	0		30
Acenaphthylene	81		78		40-140	4		30
Anthracene	88		86		40-140	2		30
Benzo(ghi)perylene	87		86		40-140	1		30
Fluorene	84		82		40-140	2		30
Phenanthrene	85		84		40-140	1		30
Dibenzo(a,h)anthracene	86		85		40-140	1		30
Indeno(1,2,3-cd)pyrene	95		93		40-140	2		30
Pyrene	86		86		40-140	0		30
2-Methylnaphthalene	81		78		40-140	4		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,07 Batch: WG1683541-2 WG1683541-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	80		81		30-130
2-Fluorobiphenyl	78		77		30-130
4-Terphenyl-d14	85		85		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Semivolatile Organics - Westborough Lab Associated sample(s): 03-06 Batch: WG1684604-2 WG1684604-3								
Acenaphthene	76		68		40-140	11		30
Fluoranthene	78		70		40-140	11		30
Naphthalene	75		66		40-140	13		30
Benzo(a)anthracene	74		68		40-140	8		30
Benzo(a)pyrene	80		70		40-140	13		30
Benzo(b)fluoranthene	82		70		40-140	16		30
Benzo(k)fluoranthene	75		70		40-140	7		30
Chrysene	75		68		40-140	10		30
Acenaphthylene	76		68		40-140	11		30
Anthracene	79		71		40-140	11		30
Benzo(ghi)perylene	71		68		40-140	4		30
Fluorene	77		68		40-140	12		30
Phenanthrene	75		68		40-140	10		30
Dibenzo(a,h)anthracene	71		67		40-140	6		30
Indeno(1,2,3-cd)pyrene	77		74		40-140	4		30
Pyrene	78		71		40-140	9		30
2-Methylnaphthalene	76		66		40-140	14		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL

Project Number: Not Specified

Lab Number: L2246257

Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Semivolatile Organics - Westborough Lab Associated sample(s): 03-06 Batch: WG1684604-2 WG1684604-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	79		71		30-130
2-Fluorobiphenyl	78		68		30-130
4-Terphenyl-d14	84		73		30-130

PETROLEUM HYDROCARBONS

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-01
Client ID: B-SL-01
Sample Location: GREENWICH, CT

Date Collected: 08/23/22 12:00
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 09/01/22 14:06
Analyst: BAD
Percent Solids: 88%

Extraction Method:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Gasoline Range Organics - Westborough Lab						
Gasoline Range Organics	ND		ug/kg	2700	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	104		70-130
4-Bromofluorobenzene	94		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-01
Client ID: B-SL-01
Sample Location: GREENWICH, CT

Date Collected: 08/23/22 12:00
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 09/05/22 10:39
Analyst: MC
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 09/05/22 03:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel Range Organics - Westborough Lab						
DRO (C10-C28)	ND		ug/kg	36000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	75		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-02
Client ID: B-SL-02
Sample Location: GREENWICH, CT

Date Collected: 08/23/22 15:30
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 09/01/22 15:38
Analyst: BAD
Percent Solids: 85%

Extraction Method:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Gasoline Range Organics - Westborough Lab						
Gasoline Range Organics	ND		ug/kg	3000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	106		70-130
4-Bromofluorobenzene	97		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-02
Client ID: B-SL-02
Sample Location: GREENWICH, CT

Date Collected: 08/23/22 15:30
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 09/05/22 11:04
Analyst: MC
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 09/05/22 03:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel Range Organics - Westborough Lab						
DRO (C10-C28)	ND		ug/kg	37000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	66		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-03
Client ID: B-SL-03
Sample Location: GREENWICH, CT

Date Collected: 08/24/22 12:30
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 09/01/22 16:09
Analyst: BAD
Percent Solids: 90%

Extraction Method:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Gasoline Range Organics - Westborough Lab						
Gasoline Range Organics	ND		ug/kg	2500	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	102		70-130
4-Bromofluorobenzene	93		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-03
Client ID: B-SL-03
Sample Location: GREENWICH, CT

Date Collected: 08/24/22 12:30
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 09/08/22 10:13
Analyst: JB
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 09/07/22 13:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel Range Organics - Westborough Lab						
DRO (C10-C28)	ND		ug/kg	36000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	66		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-04
Client ID: B-SL-04
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 08:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 09/01/22 16:40
Analyst: BAD
Percent Solids: 94%

Extraction Method:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Gasoline Range Organics - Westborough Lab						
Gasoline Range Organics	ND		ug/kg	1900	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	103		70-130
4-Bromofluorobenzene	93		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-04
Client ID: B-SL-04
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 08:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 09/08/22 11:23
Analyst: JB
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 09/07/22 13:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel Range Organics - Westborough Lab						
DRO (C10-C28)	ND		ug/kg	35000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	86		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-05
Client ID: B-SL-05
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 10:15
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 09/01/22 17:11
Analyst: BAD
Percent Solids: 96%

Extraction Method:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Gasoline Range Organics - Westborough Lab						
Gasoline Range Organics	ND		ug/kg	2600	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	103		70-130
4-Bromofluorobenzene	94		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-05
Client ID: B-SL-05
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 10:15
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 09/08/22 10:48
Analyst: JB
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 09/07/22 13:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel Range Organics - Westborough Lab						
DRO (C10-C28)	ND		ug/kg	33000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	72		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-06
Client ID: B-SL-06
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 11:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 09/01/22 17:42
Analyst: BAD
Percent Solids: 89%

Extraction Method:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Gasoline Range Organics - Westborough Lab						
Gasoline Range Organics	ND		ug/kg	2600	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	101		70-130
4-Bromofluorobenzene	90		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-06
Client ID: B-SL-06
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 11:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 09/08/22 11:58
Analyst: JB
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 09/07/22 13:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel Range Organics - Westborough Lab						
DRO (C10-C28)	ND		ug/kg	36000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	61		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-07
Client ID: B-SL-07
Sample Location: GREENWICH, CT

Date Collected: 08/23/22 08:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 09/01/22 18:12
Analyst: BAD
Percent Solids: 85%

Extraction Method:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Gasoline Range Organics - Westborough Lab						
Gasoline Range Organics	ND		ug/kg	5100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	101		70-130
4-Bromofluorobenzene	90		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-07
Client ID: B-SL-07
Sample Location: GREENWICH, CT

Date Collected: 08/23/22 08:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 09/07/22 19:16
Analyst: JB
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 09/05/22 03:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel Range Organics - Westborough Lab						
DRO (C10-C28)	ND		ug/kg	38000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	65		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2246257
Report Date: 09/12/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 09/01/22 13:02
Analyst: BAD

Parameter	Result	Qualifier	Units	RL	MDL
Gasoline Range Organics - Westborough Lab for sample(s): 01-07 Batch: WG1682950-4					
Gasoline Range Organics	ND		ug/kg	2500	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	104		70-130
4-Bromofluorobenzene	89		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2246257
Report Date: 09/12/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 09/05/22 09:24
Analyst: MC

Extraction Method: EPA 3546
Extraction Date: 09/05/22 03:17

Parameter	Result	Qualifier	Units	RL	MDL
Diesel Range Organics - Westborough Lab for sample(s): 01-02,07 Batch: WG1683577-1					
DRO (C10-C28)	ND		ug/kg	32000	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	75		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2246257
Report Date: 09/12/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 09/08/22 08:28
Analyst: JB

Extraction Method: EPA 3546
Extraction Date: 09/07/22 13:47

Parameter	Result	Qualifier	Units	RL	MDL
Diesel Range Organics - Westborough Lab for sample(s): 03-06 Batch: WG1684496-1					
DRO (C10-C28)	ND		ug/kg	32000	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	74		40-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL

Project Number: Not Specified

Lab Number: L2246257

Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Gasoline Range Organics - Westborough Lab	Associated sample(s): 01-07		Batch: WG1682950-2		WG1682950-3			
Gasoline Range Organics	88		93		80-120	6		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,1,1-Trifluorotoluene	106		105		70-130
4-Bromofluorobenzene	102		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Diesel Range Organics - Westborough Lab	Associated sample(s): 01-02,07		Batch: WG1683577-2					
DRO (C10-C28)	70		-		60-140	-		

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
o-Terphenyl	60				40-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL

Project Number: Not Specified

Lab Number: L2246257

Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Diesel Range Organics - Westborough Lab	Associated sample(s): 03-06		Batch: WG1684496-2					
DRO (C10-C28)	86		-		60-140	-		

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
o-Terphenyl	70				40-140

Matrix Spike Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL

Project Number: Not Specified

Lab Number: L2246257

Report Date: 09/12/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Gasoline Range Organics - Westborough Lab Associated sample(s): 01-07 QC Batch ID: WG1682950-6 QC Sample: L2246257-01 Client ID: B-SL-01												
Gasoline Range Organics	ND	21600	19000	88		-	-		80-120	-		20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	93				70-130
4-Bromofluorobenzene	84				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Gasoline Range Organics - Westborough Lab Associated sample(s): 01-07 QC Batch ID: WG1682950-5 QC Sample: L2246257-01 Client ID: B-SL-01						
Gasoline Range Organics	ND	ND	ug/kg	NC		20

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,1,1-Trifluorotoluene	104		104		70-130
4-Bromofluorobenzene	94		95		70-130

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Diesel Range Organics - Westborough Lab Associated sample(s): 01-02,07 QC Batch ID: WG1683577-3 QC Sample: L2246257-07 Client ID: B-SL-07						
DRO (C10-C28)	ND	ND	ug/kg	NC		20

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	65		79		40-140

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Diesel Range Organics - Westborough Lab Associated sample(s): 03-06 QC Batch ID: WG1684496-3 QC Sample: L2246257-03 Client ID: B-SL-03						
DRO (C10-C28)	ND	ND	ug/kg	NC		20

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	66		63		40-140

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID:	L2246257-01	Date Collected:	08/23/22 12:00
Client ID:	B-SL-01	Date Received:	08/25/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	09/03/22 20:59		
Analyst:	KJD		
Percent Solids:	88%		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		mg/kg	6.10	--	1
C9-C12 Aliphatics	ND		mg/kg	6.10	--	1
C9-C10 Aromatics	ND		mg/kg	6.10	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	6.10	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	6.10	--	1
Benzene	ND		mg/kg	0.122	--	1
Toluene	ND		mg/kg	0.122	--	1
Ethylbenzene	ND		mg/kg	0.122	--	1
p/m-Xylene	ND		mg/kg	0.122	--	1
o-Xylene	ND		mg/kg	0.122	--	1
Methyl tert butyl ether	ND		mg/kg	0.061	--	1
Naphthalene	ND		mg/kg	0.244	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	124		70-130
2,5-Dibromotoluene-FID	**132**	Q	70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID:	L2246257-01	Date Collected:	08/23/22 12:00
Client ID:	B-SL-01	Date Received:	08/25/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	135,EPH-19-2.1	Extraction Date:	09/05/22 04:27
Analytical Date:	09/06/22 10:26	Cleanup Method1:	EPH-19-2.1
Analyst:	AL	Cleanup Date1:	09/05/22
Percent Solids:	88%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		mg/kg	7.34	--	1
C19-C36 Aliphatics	ND		mg/kg	7.34	--	1
C11-C22 Aromatics	ND		mg/kg	7.34	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	7.34	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	52		40-140
o-Terphenyl	54		40-140
2-Fluorobiphenyl	62		40-140
2-Bromonaphthalene	63		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID:	L2246257-02	Date Collected:	08/23/22 15:30
Client ID:	B-SL-02	Date Received:	08/25/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	09/03/22 21:28		
Analyst:	KJD		
Percent Solids:	85%		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		mg/kg	6.79	--	1
C9-C12 Aliphatics	ND		mg/kg	6.79	--	1
C9-C10 Aromatics	ND		mg/kg	6.79	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	6.79	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	6.79	--	1
Benzene	ND		mg/kg	0.136	--	1
Toluene	ND		mg/kg	0.136	--	1
Ethylbenzene	ND		mg/kg	0.136	--	1
p/m-Xylene	ND		mg/kg	0.136	--	1
o-Xylene	ND		mg/kg	0.136	--	1
Methyl tert butyl ether	ND		mg/kg	0.068	--	1
Naphthalene	ND		mg/kg	0.272	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	120		70-130
2,5-Dibromotoluene-FID	128		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID:	L2246257-02	Date Collected:	08/23/22 15:30
Client ID:	B-SL-02	Date Received:	08/25/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	135,EPH-19-2.1	Extraction Date:	09/05/22 04:27
Analytical Date:	09/06/22 11:01	Cleanup Method1:	EPH-19-2.1
Analyst:	AL	Cleanup Date1:	09/05/22
Percent Solids:	85%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		mg/kg	7.54	--	1
C19-C36 Aliphatics	ND		mg/kg	7.54	--	1
C11-C22 Aromatics	ND		mg/kg	7.54	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	7.54	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	54		40-140
o-Terphenyl	52		40-140
2-Fluorobiphenyl	60		40-140
2-Bromonaphthalene	61		40-140

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID:	L2246257-03	Date Collected:	08/24/22 12:30
Client ID:	B-SL-03	Date Received:	08/25/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	09/03/22 21:58		
Analyst:	KJD		
Percent Solids:	90%		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		mg/kg	5.54	--	1
C9-C12 Aliphatics	ND		mg/kg	5.54	--	1
C9-C10 Aromatics	ND		mg/kg	5.54	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	5.54	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	5.54	--	1
Benzene	ND		mg/kg	0.111	--	1
Toluene	ND		mg/kg	0.111	--	1
Ethylbenzene	ND		mg/kg	0.111	--	1
p/m-Xylene	ND		mg/kg	0.111	--	1
o-Xylene	ND		mg/kg	0.111	--	1
Methyl tert butyl ether	ND		mg/kg	0.055	--	1
Naphthalene	ND		mg/kg	0.221	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	**138**	Q	70-130
2,5-Dibromotoluene-FID	**147**	Q	70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID:	L2246257-03	Date Collected:	08/24/22 12:30
Client ID:	B-SL-03	Date Received:	08/25/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	135,EPH-19-2.1	Extraction Date:	09/06/22 15:07
Analytical Date:	09/11/22 19:19	Cleanup Method1:	EPH-19-2.1
Analyst:	JB	Cleanup Date1:	09/10/22
Percent Solids:	90%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		mg/kg	7.29	--	1
C19-C36 Aliphatics	ND		mg/kg	7.29	--	1
C11-C22 Aromatics	ND		mg/kg	7.29	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	7.29	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	67		40-140
o-Terphenyl	67		40-140
2-Fluorobiphenyl	80		40-140
2-Bromonaphthalene	79		40-140

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID:	L2246257-04	Date Collected:	08/25/22 08:45
Client ID:	B-SL-04	Date Received:	08/25/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	09/03/22 22:28		
Analyst:	KJD		
Percent Solids:	94%		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1.4

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		mg/kg	4.14	--	1
C9-C12 Aliphatics	ND		mg/kg	4.14	--	1
C9-C10 Aromatics	ND		mg/kg	4.14	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	4.14	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	4.14	--	1
Benzene	ND		mg/kg	0.083	--	1
Toluene	ND		mg/kg	0.083	--	1
Ethylbenzene	ND		mg/kg	0.083	--	1
p/m-Xylene	ND		mg/kg	0.083	--	1
o-Xylene	ND		mg/kg	0.083	--	1
Methyl tert butyl ether	ND		mg/kg	0.041	--	1
Naphthalene	ND		mg/kg	0.166	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	**140**	Q	70-130
2,5-Dibromotoluene-FID	**149**	Q	70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID:	L2246257-04	Date Collected:	08/25/22 08:45
Client ID:	B-SL-04	Date Received:	08/25/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	135,EPH-19-2.1	Extraction Date:	09/07/22 09:15
Analytical Date:	09/08/22 09:11	Cleanup Method1:	EPH-19-2.1
Analyst:	SR	Cleanup Date1:	09/08/22
Percent Solids:	94%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Extractable Petroleum Hydrocarbons - Westborough Lab

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
C9-C18 Aliphatics	ND		mg/kg	7.06	--	1
C19-C36 Aliphatics	15.6		mg/kg	7.06	--	1
C11-C22 Aromatics	10.1		mg/kg	7.06	--	1
C11-C22 Aromatics, Adjusted	10.1		mg/kg	7.06	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	61		40-140
o-Terphenyl	65		40-140
2-Fluorobiphenyl	83		40-140
2-Bromonaphthalene	85		40-140

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID:	L2246257-05	Date Collected:	08/25/22 10:15
Client ID:	B-SL-05	Date Received:	08/25/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	09/03/22 22:58		
Analyst:	KJD		
Percent Solids:	96%		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		mg/kg	5.39	--	1
C9-C12 Aliphatics	ND		mg/kg	5.39	--	1
C9-C10 Aromatics	ND		mg/kg	5.39	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	5.39	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	5.39	--	1
Benzene	ND		mg/kg	0.108	--	1
Toluene	ND		mg/kg	0.108	--	1
Ethylbenzene	ND		mg/kg	0.108	--	1
p/m-Xylene	ND		mg/kg	0.108	--	1
o-Xylene	ND		mg/kg	0.108	--	1
Methyl tert butyl ether	ND		mg/kg	0.054	--	1
Naphthalene	ND		mg/kg	0.216	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	107		70-130
2,5-Dibromotoluene-FID	115		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID:	L2246257-05	Date Collected:	08/25/22 10:15
Client ID:	B-SL-05	Date Received:	08/25/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	135,EPH-19-2.1	Extraction Date:	09/07/22 09:15
Analytical Date:	09/08/22 08:46	Cleanup Method1:	EPH-19-2.1
Analyst:	SR	Cleanup Date1:	09/08/22
Percent Solids:	96%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Extractable Petroleum Hydrocarbons - Westborough Lab

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
C9-C18 Aliphatics	ND		mg/kg	6.81	--	1
C19-C36 Aliphatics	ND		mg/kg	6.81	--	1
C11-C22 Aromatics	ND		mg/kg	6.81	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.81	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	63		40-140
o-Terphenyl	71		40-140
2-Fluorobiphenyl	84		40-140
2-Bromonaphthalene	89		40-140

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

SAMPLE RESULTS

Lab ID:	L2246257-06	Date Collected:	08/25/22 11:45
Client ID:	B-SL-06	Date Received:	08/25/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	09/03/22 23:27		
Analyst:	KJD		
Percent Solids:	89%		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		mg/kg	5.89	--	1
C9-C12 Aliphatics	ND		mg/kg	5.89	--	1
C9-C10 Aromatics	ND		mg/kg	5.89	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	5.89	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	5.89	--	1
Benzene	ND		mg/kg	0.118	--	1
Toluene	ND		mg/kg	0.118	--	1
Ethylbenzene	ND		mg/kg	0.118	--	1
p/m-Xylene	ND		mg/kg	0.118	--	1
o-Xylene	ND		mg/kg	0.118	--	1
Methyl tert butyl ether	ND		mg/kg	0.059	--	1
Naphthalene	ND		mg/kg	0.235	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	125		70-130
2,5-Dibromotoluene-FID	**134**	Q	70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID:	L2246257-06	Date Collected:	08/25/22 11:45
Client ID:	B-SL-06	Date Received:	08/25/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	135,EPH-19-2.1	Extraction Date:	09/07/22 09:15
Analytical Date:	09/08/22 08:21	Cleanup Method1:	EPH-19-2.1
Analyst:	SR	Cleanup Date1:	09/08/22
Percent Solids:	89%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		mg/kg	7.36	--	1
C19-C36 Aliphatics	ND		mg/kg	7.36	--	1
C11-C22 Aromatics	10.2		mg/kg	7.36	--	1
C11-C22 Aromatics, Adjusted	10.2		mg/kg	7.36	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	70		40-140
o-Terphenyl	73		40-140
2-Fluorobiphenyl	84		40-140
2-Bromonaphthalene	86		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID:	L2246257-07	Date Collected:	08/23/22 08:45
Client ID:	B-SL-07	Date Received:	08/25/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	09/03/22 23:57		
Analyst:	KJD		
Percent Solids:	85%		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1.7:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		mg/kg	11.1	--	1
C9-C12 Aliphatics	ND		mg/kg	11.1	--	1
C9-C10 Aromatics	ND		mg/kg	11.1	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	11.1	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	11.1	--	1
Benzene	ND		mg/kg	0.221	--	1
Toluene	ND		mg/kg	0.221	--	1
Ethylbenzene	ND		mg/kg	0.221	--	1
p/m-Xylene	ND		mg/kg	0.221	--	1
o-Xylene	ND		mg/kg	0.221	--	1
Methyl tert butyl ether	ND		mg/kg	0.111	--	1
Naphthalene	ND		mg/kg	0.443	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	101		70-130
2,5-Dibromotoluene-FID	108		70-130

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID:	L2246257-07	Date Collected:	08/23/22 08:45
Client ID:	B-SL-07	Date Received:	08/25/22
Sample Location:	GREENWICH, CT	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	135,EPH-19-2.1	Extraction Date:	09/05/22 04:27
Analytical Date:	09/06/22 11:35	Cleanup Method1:	EPH-19-2.1
Analyst:	AL	Cleanup Date1:	09/05/22
Percent Solids:	85%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		mg/kg	7.54	--	1
C19-C36 Aliphatics	ND		mg/kg	7.54	--	1
C11-C22 Aromatics	ND		mg/kg	7.54	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	7.54	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	52		40-140
o-Terphenyl	59		40-140
2-Fluorobiphenyl	71		40-140
2-Bromonaphthalene	72		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 09/06/22 09:51
Analyst: AL

Extraction Method: EPA 3546
Extraction Date: 09/05/22 04:27
Cleanup Method: EPH-19-2.1
Cleanup Date: 09/05/22

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-02,07 Batch: WG1683581-1					
C9-C18 Aliphatics	ND		mg/kg	6.32	--
C19-C36 Aliphatics	ND		mg/kg	6.32	--
C11-C22 Aromatics	ND		mg/kg	6.32	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.32	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	58		40-140
o-Terphenyl	55		40-140
2-Fluorobiphenyl	59		40-140
2-Bromonaphthalene	60		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 09/11/22 17:13
Analyst: JB

Extraction Method: EPA 3546
Extraction Date: 09/06/22 15:07
Cleanup Method: EPH-19-2.1
Cleanup Date: 09/10/22

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 03 Batch: WG1684032-1					
C9-C18 Aliphatics	ND		mg/kg	6.37	--
C19-C36 Aliphatics	ND		mg/kg	6.37	--
C11-C22 Aromatics	ND		mg/kg	6.37	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.37	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	71		40-140
o-Terphenyl	75		40-140
2-Fluorobiphenyl	89		40-140
2-Bromonaphthalene	89		40-140

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2246257
Report Date: 09/12/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 09/08/22 08:35
Analyst: SR

Extraction Method: EPA 3546
Extraction Date: 09/07/22 09:15
Cleanup Method: EPH-19-2.1
Cleanup Date: 09/08/22

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 04-06 Batch: WG1684337-1					
C9-C18 Aliphatics	ND		mg/kg	6.34	--
C19-C36 Aliphatics	ND		mg/kg	6.34	--
C11-C22 Aromatics	ND		mg/kg	6.34	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.34	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	53		40-140
o-Terphenyl	58		40-140
2-Fluorobiphenyl	69		40-140
2-Bromonaphthalene	71		40-140

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 131,VPH-18-2.1
Analytical Date: 09/03/22 14:28
Analyst: BAD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-07 Batch: WG1684904-4					
C5-C8 Aliphatics	ND		mg/kg	5.00	--
C9-C12 Aliphatics	ND		mg/kg	5.00	--
C9-C10 Aromatics	ND		mg/kg	5.00	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	5.00	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	5.00	--
Benzene	ND		mg/kg	0.100	--
Toluene	ND		mg/kg	0.100	--
Ethylbenzene	ND		mg/kg	0.100	--
p/m-Xylene	ND		mg/kg	0.100	--
o-Xylene	ND		mg/kg	0.100	--
Methyl tert butyl ether	ND		mg/kg	0.050	--
Naphthalene	ND		mg/kg	0.200	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	103		70-130
2,5-Dibromotoluene-FID	108		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02,07 Batch: WG1683581-2 WG1683581-3								
C9-C18 Aliphatics	50		48		40-140	4		25
C19-C36 Aliphatics	69		73		40-140	6		25
C11-C22 Aromatics	65		74		40-140	13		25
Naphthalene	57		62		40-140	8		25
2-Methylnaphthalene	59		65		40-140	10		25
Acenaphthylene	60		65		40-140	8		25
Acenaphthene	61		68		40-140	11		25
Fluorene	63		70		40-140	11		25
Phenanthrene	64		72		40-140	12		25
Anthracene	64		74		40-140	14		25
Fluoranthene	63		72		40-140	13		25
Pyrene	65		75		40-140	14		25
Benzo(a)anthracene	64		75		40-140	16		25
Chrysene	63		74		40-140	16		25
Benzo(b)fluoranthene	61		71		40-140	15		25
Benzo(k)fluoranthene	59		69		40-140	16		25
Benzo(a)pyrene	62		73		40-140	16		25
Indeno(1,2,3-cd)Pyrene	59		70		40-140	17		25
Dibenzo(a,h)anthracene	60		70		40-140	15		25
Benzo(ghi)perylene	56		66		40-140	16		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02,07 Batch: WG1683581-2 WG1683581-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	58		62		40-140
o-Terphenyl	60		67		40-140
2-Fluorobiphenyl	61		68		40-140
2-Bromonaphthalene	60		68		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 03 Batch: WG1684032-2 WG1684032-3								
C9-C18 Aliphatics	59		58		40-140	2		25
C19-C36 Aliphatics	82		81		40-140	1		25
C11-C22 Aromatics	73		76		40-140	4		25
Naphthalene	63		67		40-140	6		25
2-Methylnaphthalene	64		68		40-140	6		25
Acenaphthylene	64		67		40-140	5		25
Acenaphthene	66		69		40-140	4		25
Fluorene	68		71		40-140	4		25
Phenanthrene	70		73		40-140	4		25
Anthracene	71		74		40-140	4		25
Fluoranthene	74		75		40-140	1		25
Pyrene	73		75		40-140	3		25
Benzo(a)anthracene	73		75		40-140	3		25
Chrysene	72		74		40-140	3		25
Benzo(b)fluoranthene	70		71		40-140	1		25
Benzo(k)fluoranthene	67		69		40-140	3		25
Benzo(a)pyrene	71		72		40-140	1		25
Indeno(1,2,3-cd)Pyrene	64		65		40-140	2		25
Dibenzo(a,h)anthracene	66		67		40-140	2		25
Benzo(ghi)perylene	61		61		40-140	0		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 03 Batch: WG1684032-2 WG1684032-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	69		67		40-140
o-Terphenyl	67		69		40-140
2-Fluorobiphenyl	79		81		40-140
2-Bromonaphthalene	80		82		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 04-06 Batch: WG1684337-2 WG1684337-3								
C9-C18 Aliphatics	44		44		40-140	0		25
C19-C36 Aliphatics	66		63		40-140	5		25
C11-C22 Aromatics	68		59		40-140	14		25
Naphthalene	61		54		40-140	12		25
2-Methylnaphthalene	63		55		40-140	14		25
Acenaphthylene	63		55		40-140	14		25
Acenaphthene	65		56		40-140	15		25
Fluorene	67		58		40-140	14		25
Phenanthrene	67		58		40-140	14		25
Anthracene	68		59		40-140	14		25
Fluoranthene	67		57		40-140	16		25
Pyrene	68		59		40-140	14		25
Benzo(a)anthracene	68		59		40-140	14		25
Chrysene	67		58		40-140	14		25
Benzo(b)fluoranthene	64		56		40-140	13		25
Benzo(k)fluoranthene	62		54		40-140	14		25
Benzo(a)pyrene	66		57		40-140	15		25
Indeno(1,2,3-cd)Pyrene	62		55		40-140	12		25
Dibenzo(a,h)anthracene	64		56		40-140	13		25
Benzo(ghi)perylene	58		53		40-140	9		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 04-06 Batch: WG1684337-2 WG1684337-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	59		55		40-140
o-Terphenyl	65		55		40-140
2-Fluorobiphenyl	75		65		40-140
2-Bromonaphthalene	77		67		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis
Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-07 Batch: WG1684904-2 WG1684904-3								
C5-C8 Aliphatics	96		98		70-130	2		25
C9-C12 Aliphatics	110		111		70-130	1		25
C9-C10 Aromatics	100		100		70-130	0		25
Benzene	100		101		70-130	1		25
Toluene	101		102		70-130	1		25
Ethylbenzene	102		103		70-130	1		25
p/m-Xylene	102		102		70-130	0		25
o-Xylene	99		99		70-130	0		25
Methyl tert butyl ether	90		90		70-130	1		25
Naphthalene	94		95		70-130	1		25
1,2,4-Trimethylbenzene	100		100		70-130	0		25
Pentane	82		85		70-130	4		25
2-Methylpentane	96		98		70-130	2		25
2,2,4-Trimethylpentane	105		107		70-130	2		25
n-Nonane	110		112		30-130	2		25
n-Decane	108		110		70-130	2		25
n-Butylcyclohexane	110		112		70-130	2		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	99		97		70-130
2,5-Dibromotoluene-FID	103		102		70-130

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

Fractionation Check Standard
Quality Control

Fractionation check standard for 070219

Parameter	% Recovery	QC Criteria
C9-C18 Aliphatics	92	40-140
C19-C36 Aliphatics	89	40-140
C11-C22 Aromatics	75	40-140
Naphthalene	59	40-140
2-Methylnaphthalene	60	40-140
Acenaphthylene	59	40-140
Acenaphthene	61	40-140
Fluorene	63	40-140
Phenanthrene	63	40-140
Anthracene	67	40-140
Fluoranthene	65	40-140
Pyrene	64	40-140
Benzo(a)anthracene	63	40-140
Chrysene	66	40-140
Benzo(b)fluoranthene	62	40-140
Benzo(k)fluoranthene	70	40-140
Benzo(a)pyrene	58	40-140
Indeno(1,2,3-cd)Pyrene	63	40-140
Dibenzo(a,h)anthracene	64	40-140
Benzo(g,h,i)perylene	64	40-140
Nonane	73	30-140
Decane	75	40-140
Dodecane	80	40-140
Tetradecane	84	40-140
Hexadecane	90	40-140
Octadecane	88	40-140
Nonadecane	83	40-140
Eicosane	86	40-140
Docosane	83	40-140
Tetracosane	82	40-140
Hexacosane	82	40-140
Octacosane	82	40-140
Triacontane	81	40-140
Hexatriacontane	80	40-140
% Naphthalene Breakthrough	0	0-5
% 2-Methylnaphthalene Breakthrough	0	0-5

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2246257
Report Date: 09/12/22

Fractionation Check Standard
Quality Control

Fractionation check standard for 070219

Surrogate	% Recovery	QC Criteria
Chloro-Octadecane	58	40-140
o-Terphenyl	69	40-140
2-Fluorobiphenyl	59	40-140
2-Bromonaphthalene	61	40-140

METALS

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-01
Client ID: B-SL-01
Sample Location: GREENWICH, CT
Date Collected: 08/23/22 12:00
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
CT RCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	2.18	--	1	08/26/22 23:30	09/01/22 16:54	EPA 3050B	79,6010D	MC
Arsenic, Total	1.59		mg/kg	0.436	--	1	08/26/22 23:30	09/01/22 16:54	EPA 3050B	79,6010D	MC
Barium, Total	55.9		mg/kg	0.436	--	1	08/26/22 23:30	09/01/22 16:54	EPA 3050B	79,6010D	MC
Beryllium, Total	0.279		mg/kg	0.218	--	1	08/26/22 23:30	09/01/22 16:54	EPA 3050B	79,6010D	MC
Cadmium, Total	ND		mg/kg	0.436	--	1	08/26/22 23:30	09/01/22 16:54	EPA 3050B	79,6010D	MC
Chromium, Total	12.7		mg/kg	0.436	--	1	08/26/22 23:30	09/01/22 16:54	EPA 3050B	79,6010D	MC
Copper, Total	7.59		mg/kg	0.436	--	1	08/26/22 23:30	09/01/22 16:54	EPA 3050B	79,6010D	MC
Lead, Total	4.87		mg/kg	2.18	--	1	08/26/22 23:30	09/01/22 16:54	EPA 3050B	79,6010D	MC
Nickel, Total	7.53		mg/kg	1.09	--	1	08/26/22 23:30	09/01/22 16:54	EPA 3050B	79,6010D	MC
Selenium, Total	ND		mg/kg	2.18	--	1	08/26/22 23:30	09/01/22 16:54	EPA 3050B	79,6010D	MC
Silver, Total	ND		mg/kg	0.436	--	1	08/26/22 23:30	09/01/22 16:54	EPA 3050B	79,6010D	MC
Thallium, Total	ND		mg/kg	2.18	--	1	08/26/22 23:30	09/01/22 16:54	EPA 3050B	79,6010D	MC
Vanadium, Total	13.9		mg/kg	0.436	--	1	08/26/22 23:30	09/01/22 16:54	EPA 3050B	79,6010D	MC
Zinc, Total	20.0		mg/kg	2.18	--	1	08/26/22 23:30	09/01/22 16:54	EPA 3050B	79,6010D	MC

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-02
Client ID: B-SL-02
Sample Location: GREENWICH, CT
Date Collected: 08/23/22 15:30
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
CT RCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	2.30	--	1	08/26/22 23:30	09/01/22 16:57	EPA 3050B	79,6010D	MC
Arsenic, Total	2.17		mg/kg	0.461	--	1	08/26/22 23:30	09/01/22 16:57	EPA 3050B	79,6010D	MC
Barium, Total	71.0		mg/kg	0.461	--	1	08/26/22 23:30	09/01/22 16:57	EPA 3050B	79,6010D	MC
Beryllium, Total	0.328		mg/kg	0.230	--	1	08/26/22 23:30	09/01/22 16:57	EPA 3050B	79,6010D	MC
Cadmium, Total	ND		mg/kg	0.461	--	1	08/26/22 23:30	09/01/22 16:57	EPA 3050B	79,6010D	MC
Chromium, Total	16.7		mg/kg	0.461	--	1	08/26/22 23:30	09/01/22 16:57	EPA 3050B	79,6010D	MC
Copper, Total	12.4		mg/kg	0.461	--	1	08/26/22 23:30	09/01/22 16:57	EPA 3050B	79,6010D	MC
Lead, Total	3.90		mg/kg	2.30	--	1	08/26/22 23:30	09/01/22 16:57	EPA 3050B	79,6010D	MC
Nickel, Total	8.64		mg/kg	1.15	--	1	08/26/22 23:30	09/01/22 16:57	EPA 3050B	79,6010D	MC
Selenium, Total	ND		mg/kg	2.30	--	1	08/26/22 23:30	09/01/22 16:57	EPA 3050B	79,6010D	MC
Silver, Total	ND		mg/kg	0.461	--	1	08/26/22 23:30	09/01/22 16:57	EPA 3050B	79,6010D	MC
Thallium, Total	ND		mg/kg	2.30	--	1	08/26/22 23:30	09/01/22 16:57	EPA 3050B	79,6010D	MC
Vanadium, Total	15.4		mg/kg	0.461	--	1	08/26/22 23:30	09/01/22 16:57	EPA 3050B	79,6010D	MC
Zinc, Total	18.7		mg/kg	2.30	--	1	08/26/22 23:30	09/01/22 16:57	EPA 3050B	79,6010D	MC

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-03
Client ID: B-SL-03
Sample Location: GREENWICH, CT
Date Collected: 08/24/22 12:30
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
CT RCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	2.10	--	1	08/26/22 23:30	09/01/22 17:01	EPA 3050B	79,6010D	MC
Arsenic, Total	1.00		mg/kg	0.419	--	1	08/26/22 23:30	09/01/22 17:01	EPA 3050B	79,6010D	MC
Barium, Total	94.3		mg/kg	0.419	--	1	08/26/22 23:30	09/01/22 17:01	EPA 3050B	79,6010D	MC
Beryllium, Total	0.538		mg/kg	0.210	--	1	08/26/22 23:30	09/01/22 17:01	EPA 3050B	79,6010D	MC
Cadmium, Total	ND		mg/kg	0.419	--	1	08/26/22 23:30	09/01/22 17:01	EPA 3050B	79,6010D	MC
Chromium, Total	18.2		mg/kg	0.419	--	1	08/26/22 23:30	09/01/22 17:01	EPA 3050B	79,6010D	MC
Copper, Total	8.58		mg/kg	0.419	--	1	08/26/22 23:30	09/01/22 17:01	EPA 3050B	79,6010D	MC
Lead, Total	4.32		mg/kg	2.10	--	1	08/26/22 23:30	09/01/22 17:01	EPA 3050B	79,6010D	MC
Nickel, Total	7.41		mg/kg	1.05	--	1	08/26/22 23:30	09/01/22 17:01	EPA 3050B	79,6010D	MC
Selenium, Total	ND		mg/kg	2.10	--	1	08/26/22 23:30	09/01/22 17:01	EPA 3050B	79,6010D	MC
Silver, Total	ND		mg/kg	0.419	--	1	08/26/22 23:30	09/01/22 17:01	EPA 3050B	79,6010D	MC
Thallium, Total	ND		mg/kg	2.10	--	1	08/26/22 23:30	09/01/22 17:01	EPA 3050B	79,6010D	MC
Vanadium, Total	16.4		mg/kg	0.419	--	1	08/26/22 23:30	09/01/22 17:01	EPA 3050B	79,6010D	MC
Zinc, Total	26.1		mg/kg	2.10	--	1	08/26/22 23:30	09/01/22 17:01	EPA 3050B	79,6010D	MC

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-04
Client ID: B-SL-04
Sample Location: GREENWICH, CT
Date Collected: 08/25/22 08:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
CT RCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	2.06	--	1	08/26/22 23:30	09/01/22 17:04	EPA 3050B	79,6010D	MC
Arsenic, Total	2.22		mg/kg	0.412	--	1	08/26/22 23:30	09/01/22 17:04	EPA 3050B	79,6010D	MC
Barium, Total	220		mg/kg	0.412	--	1	08/26/22 23:30	09/01/22 17:04	EPA 3050B	79,6010D	MC
Beryllium, Total	0.412		mg/kg	0.206	--	1	08/26/22 23:30	09/01/22 17:04	EPA 3050B	79,6010D	MC
Cadmium, Total	ND		mg/kg	0.412	--	1	08/26/22 23:30	09/01/22 17:04	EPA 3050B	79,6010D	MC
Chromium, Total	41.3		mg/kg	0.412	--	1	08/26/22 23:30	09/01/22 17:04	EPA 3050B	79,6010D	MC
Copper, Total	28.7		mg/kg	0.412	--	1	08/26/22 23:30	09/01/22 17:04	EPA 3050B	79,6010D	MC
Lead, Total	8.04		mg/kg	2.06	--	1	08/26/22 23:30	09/01/22 17:04	EPA 3050B	79,6010D	MC
Nickel, Total	18.2		mg/kg	1.03	--	1	08/26/22 23:30	09/01/22 17:04	EPA 3050B	79,6010D	MC
Selenium, Total	ND		mg/kg	2.06	--	1	08/26/22 23:30	09/01/22 17:04	EPA 3050B	79,6010D	MC
Silver, Total	ND		mg/kg	0.412	--	1	08/26/22 23:30	09/01/22 17:04	EPA 3050B	79,6010D	MC
Thallium, Total	ND		mg/kg	2.06	--	1	08/26/22 23:30	09/01/22 17:04	EPA 3050B	79,6010D	MC
Vanadium, Total	36.6		mg/kg	0.412	--	1	08/26/22 23:30	09/01/22 17:04	EPA 3050B	79,6010D	MC
Zinc, Total	32.7		mg/kg	2.06	--	1	08/26/22 23:30	09/01/22 17:04	EPA 3050B	79,6010D	MC

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-05
Client ID: B-SL-05
Sample Location: GREENWICH, CT
Date Collected: 08/25/22 10:15
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
CT RCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	2.00	--	1	08/26/22 23:30	09/01/22 21:20	EPA 3050B	79,6010D	MC
Arsenic, Total	0.821		mg/kg	0.401	--	1	08/26/22 23:30	09/01/22 21:20	EPA 3050B	79,6010D	MC
Barium, Total	575		mg/kg	0.401	--	1	08/26/22 23:30	09/01/22 21:20	EPA 3050B	79,6010D	MC
Beryllium, Total	0.444		mg/kg	0.200	--	1	08/26/22 23:30	09/01/22 21:20	EPA 3050B	79,6010D	MC
Cadmium, Total	ND		mg/kg	0.401	--	1	08/26/22 23:30	09/01/22 21:20	EPA 3050B	79,6010D	MC
Chromium, Total	79.2		mg/kg	0.401	--	1	08/26/22 23:30	09/01/22 21:20	EPA 3050B	79,6010D	MC
Copper, Total	27.9		mg/kg	0.401	--	1	08/26/22 23:30	09/01/22 21:20	EPA 3050B	79,6010D	MC
Lead, Total	5.86		mg/kg	2.00	--	1	08/26/22 23:30	09/01/22 21:20	EPA 3050B	79,6010D	MC
Nickel, Total	27.9		mg/kg	1.00	--	1	08/26/22 23:30	09/01/22 21:20	EPA 3050B	79,6010D	MC
Selenium, Total	ND		mg/kg	2.00	--	1	08/26/22 23:30	09/01/22 21:20	EPA 3050B	79,6010D	MC
Silver, Total	ND		mg/kg	0.401	--	1	08/26/22 23:30	09/01/22 21:20	EPA 3050B	79,6010D	MC
Thallium, Total	ND		mg/kg	2.00	--	1	08/26/22 23:30	09/01/22 21:20	EPA 3050B	79,6010D	MC
Vanadium, Total	66.1		mg/kg	0.401	--	1	08/26/22 23:30	09/01/22 21:20	EPA 3050B	79,6010D	MC
Zinc, Total	46.3		mg/kg	2.00	--	1	08/26/22 23:30	09/01/22 21:20	EPA 3050B	79,6010D	MC

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-06
Client ID: B-SL-06
Sample Location: GREENWICH, CT
Date Collected: 08/25/22 11:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
CT RCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	2.17	--	1	08/26/22 23:30	09/01/22 21:24	EPA 3050B	79,6010D	MC
Arsenic, Total	3.38		mg/kg	0.435	--	1	08/26/22 23:30	09/01/22 21:24	EPA 3050B	79,6010D	MC
Barium, Total	176		mg/kg	0.435	--	1	08/26/22 23:30	09/01/22 21:24	EPA 3050B	79,6010D	MC
Beryllium, Total	0.500		mg/kg	0.217	--	1	08/26/22 23:30	09/01/22 21:24	EPA 3050B	79,6010D	MC
Cadmium, Total	ND		mg/kg	0.435	--	1	08/26/22 23:30	09/01/22 21:24	EPA 3050B	79,6010D	MC
Chromium, Total	32.0		mg/kg	0.435	--	1	08/26/22 23:30	09/01/22 21:24	EPA 3050B	79,6010D	MC
Copper, Total	16.6		mg/kg	0.435	--	1	08/26/22 23:30	09/01/22 21:24	EPA 3050B	79,6010D	MC
Lead, Total	26.5		mg/kg	2.17	--	1	08/26/22 23:30	09/01/22 21:24	EPA 3050B	79,6010D	MC
Nickel, Total	14.3		mg/kg	1.09	--	1	08/26/22 23:30	09/01/22 21:24	EPA 3050B	79,6010D	MC
Selenium, Total	ND		mg/kg	2.17	--	1	08/26/22 23:30	09/01/22 21:24	EPA 3050B	79,6010D	MC
Silver, Total	ND		mg/kg	0.435	--	1	08/26/22 23:30	09/01/22 21:24	EPA 3050B	79,6010D	MC
Thallium, Total	ND		mg/kg	2.17	--	1	08/26/22 23:30	09/01/22 21:24	EPA 3050B	79,6010D	MC
Vanadium, Total	32.2		mg/kg	0.435	--	1	08/26/22 23:30	09/01/22 21:24	EPA 3050B	79,6010D	MC
Zinc, Total	41.4		mg/kg	2.17	--	1	08/26/22 23:30	09/01/22 21:24	EPA 3050B	79,6010D	MC

Project Name: CENTRAL MIDDLE SCHOOL
Lab Number: L2246257
Project Number: Not Specified
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-07
Client ID: B-SL-07
Sample Location: GREENWICH, CT
Date Collected: 08/23/22 08:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
CT RCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	2.30	--	1	08/26/22 23:30	09/01/22 21:27	EPA 3050B	79,6010D	MC
Arsenic, Total	3.08		mg/kg	0.460	--	1	08/26/22 23:30	09/01/22 21:27	EPA 3050B	79,6010D	MC
Barium, Total	156		mg/kg	0.460	--	1	08/26/22 23:30	09/01/22 21:27	EPA 3050B	79,6010D	MC
Beryllium, Total	0.991		mg/kg	0.230	--	1	08/26/22 23:30	09/01/22 21:27	EPA 3050B	79,6010D	MC
Cadmium, Total	ND		mg/kg	0.460	--	1	08/26/22 23:30	09/01/22 21:27	EPA 3050B	79,6010D	MC
Chromium, Total	56.0		mg/kg	0.460	--	1	08/26/22 23:30	09/01/22 21:27	EPA 3050B	79,6010D	MC
Copper, Total	20.7		mg/kg	0.460	--	1	08/26/22 23:30	09/01/22 21:27	EPA 3050B	79,6010D	MC
Lead, Total	6.94		mg/kg	2.30	--	1	08/26/22 23:30	09/01/22 21:27	EPA 3050B	79,6010D	MC
Nickel, Total	20.0		mg/kg	1.15	--	1	08/26/22 23:30	09/01/22 21:27	EPA 3050B	79,6010D	MC
Selenium, Total	ND		mg/kg	2.30	--	1	08/26/22 23:30	09/01/22 21:27	EPA 3050B	79,6010D	MC
Silver, Total	ND		mg/kg	0.460	--	1	08/26/22 23:30	09/01/22 21:27	EPA 3050B	79,6010D	MC
Thallium, Total	ND		mg/kg	2.30	--	1	08/26/22 23:30	09/01/22 21:27	EPA 3050B	79,6010D	MC
Vanadium, Total	46.4		mg/kg	0.460	--	1	08/26/22 23:30	09/01/22 21:27	EPA 3050B	79,6010D	MC
Zinc, Total	37.9		mg/kg	2.30	--	1	08/26/22 23:30	09/01/22 21:27	EPA 3050B	79,6010D	MC

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
CT RCP Total Metals - Mansfield Lab for sample(s): 01-07 Batch: WG1680151-1										
Antimony, Total	ND		mg/kg	2.00	--	1	08/26/22 23:30	09/01/22 16:42	79,6010D	MC
Arsenic, Total	ND		mg/kg	0.400	--	1	08/26/22 23:30	09/01/22 16:42	79,6010D	MC
Barium, Total	ND		mg/kg	0.400	--	1	08/26/22 23:30	09/01/22 16:42	79,6010D	MC
Beryllium, Total	ND		mg/kg	0.200	--	1	08/26/22 23:30	09/01/22 16:42	79,6010D	MC
Cadmium, Total	ND		mg/kg	0.400	--	1	08/26/22 23:30	09/01/22 16:42	79,6010D	MC
Chromium, Total	ND		mg/kg	0.400	--	1	08/26/22 23:30	09/01/22 16:42	79,6010D	MC
Copper, Total	ND		mg/kg	0.400	--	1	08/26/22 23:30	09/01/22 16:42	79,6010D	MC
Lead, Total	ND		mg/kg	2.00	--	1	08/26/22 23:30	09/01/22 16:42	79,6010D	MC
Nickel, Total	ND		mg/kg	1.00	--	1	08/26/22 23:30	09/01/22 16:42	79,6010D	MC
Selenium, Total	ND		mg/kg	2.00	--	1	08/26/22 23:30	09/01/22 16:42	79,6010D	MC
Silver, Total	ND		mg/kg	0.400	--	1	08/26/22 23:30	09/01/22 16:42	79,6010D	MC
Thallium, Total	ND		mg/kg	2.00	--	1	08/26/22 23:30	09/01/22 16:42	79,6010D	MC
Vanadium, Total	ND		mg/kg	0.400	--	1	08/26/22 23:30	09/01/22 16:42	79,6010D	MC
Zinc, Total	ND		mg/kg	2.00	--	1	08/26/22 23:30	09/01/22 16:42	79,6010D	MC

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL

Project Number: Not Specified

Lab Number: L2246257

Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
CT RCP Total Metals - Mansfield Lab Associated sample(s): 01-07 Batch: WG1680151-2 SRM Lot Number: D113-540								
Antimony, Total	122		-		20-250	-		30
Arsenic, Total	88		-		70-130	-		30
Barium, Total	95		-		75-125	-		30
Beryllium, Total	116		-		75-125	-		30
Cadmium, Total	93		-		75-125	-		30
Chromium, Total	93		-		70-130	-		30
Copper, Total	86		-		75-125	-		30
Lead, Total	82		-		72-128	-		30
Nickel, Total	88		-		70-130	-		30
Selenium, Total	90		-		66-134	-		30
Silver, Total	88		-		70-131	-		30
Thallium, Total	95		-		70-130	-		30
Vanadium, Total	86		-		74-126	-		30
Zinc, Total	81		-		70-130	-		30

INORGANICS
&
MISCELLANEOUS

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-01
Client ID: B-SL-01
Sample Location: GREENWICH, CT
Sample Depth:
Matrix: Soil

Date Collected: 08/23/22 12:00
Date Received: 08/25/22
Field Prep: Not Specified

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Coarse
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	09/06/22 09:14	1,1030	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-02
Client ID: B-SL-02
Sample Location: GREENWICH, CT

Date Collected: 08/23/22 15:30
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Coarse
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	09/06/22 09:14	1,1030	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-03
Client ID: B-SL-03
Sample Location: GREENWICH, CT

Date Collected: 08/24/22 12:30
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Medium
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	09/06/22 11:13	1,1030	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-04
Client ID: B-SL-04
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 08:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Medium
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	09/07/22 14:52	1,1030	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-05
Client ID: B-SL-05
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 10:15
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Medium
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	09/07/22 14:52	1,1030	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-06
Client ID: B-SL-06
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 11:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Medium
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	09/07/22 14:52	1,1030	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-07
Client ID: B-SL-07
Sample Location: GREENWICH, CT

Date Collected: 08/23/22 08:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Coarse
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	09/06/22 09:14	1,1030	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-01
Client ID: B-SL-01
Sample Location: GREENWICH, CT

Date Collected: 08/23/22 12:00
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.7		%	0.100	NA	1	-	08/26/22 17:27	121,2540G	TR
pH (H)	6.0		SU	-	NA	1	-	08/29/22 18:36	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/29/22 10:55	08/29/22 12:44	125,7.3	MJ
Sulfide, Reactive	ND		mg/kg	10	--	1	08/29/22 10:55	08/29/22 12:12	125,7.3	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified
Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-02
Client ID: B-SL-02
Sample Location: GREENWICH, CT
Sample Depth:
Matrix: Soil

Date Collected: 08/23/22 15:30
Date Received: 08/25/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.4		%	0.100	NA	1	-	08/26/22 17:27	121,2540G	TR
pH (H)	6.3		SU	-	NA	1	-	08/29/22 18:36	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	09/02/22 13:10	09/02/22 15:32	125,7.3	MJ
Sulfide, Reactive	ND		mg/kg	10	--	1	09/02/22 13:10	09/02/22 14:59	125,7.3	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-03
Client ID: B-SL-03
Sample Location: GREENWICH, CT

Date Collected: 08/24/22 12:30
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.6		%	0.100	NA	1	-	08/26/22 17:27	121,2540G	TR
pH (H)	6.7		SU	-	NA	1	-	08/29/22 18:36	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	09/02/22 17:50	09/02/22 19:55	125,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	09/02/22 17:50	09/02/22 20:05	125,7.3	TL

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-04
Client ID: B-SL-04
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 08:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.7		%	0.100	NA	1	-	08/26/22 17:27	121,2540G	TR
pH (H)	8.4		SU	-	NA	1	-	08/29/22 18:36	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/30/22 10:10	08/30/22 12:48	125,7.3	MJ
Sulfide, Reactive	ND		mg/kg	10	--	1	08/30/22 10:10	08/30/22 12:18	125,7.3	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-05
Client ID: B-SL-05
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 10:15
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	95.6		%	0.100	NA	1	-	08/26/22 17:27	121,2540G	TR
pH (H)	8.0		SU	-	NA	1	-	08/29/22 18:36	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/30/22 10:10	08/30/22 12:48	125,7.3	MJ
Sulfide, Reactive	ND		mg/kg	10	--	1	08/30/22 10:10	08/30/22 12:19	125,7.3	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-06
Client ID: B-SL-06
Sample Location: GREENWICH, CT

Date Collected: 08/25/22 11:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.8		%	0.100	NA	1	-	08/26/22 17:27	121,2540G	TR
pH (H)	7.9		SU	-	NA	1	-	08/29/22 18:36	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/30/22 10:10	08/30/22 12:49	125,7.3	MJ
Sulfide, Reactive	ND		mg/kg	10	--	1	08/30/22 10:10	08/30/22 12:20	125,7.3	MJ

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

SAMPLE RESULTS

Lab ID: L2246257-07
Client ID: B-SL-07
Sample Location: GREENWICH, CT

Date Collected: 08/23/22 08:45
Date Received: 08/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.3		%	0.100	NA	1	-	08/26/22 17:27	121,2540G	TR
pH (H)	7.4		SU	-	NA	1	-	08/29/22 18:36	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/29/22 10:55	08/29/22 12:45	125,7.3	MJ
Sulfide, Reactive	ND		mg/kg	10	--	1	08/29/22 10:55	08/29/22 12:13	125,7.3	MJ

Project Name: CENTRAL MIDDLE SCHOOL **Lab Number:** L2246257

Project Number: Not Specified **Report Date:** 09/12/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,07 Batch: WG1680859-1										
Sulfide, Reactive	ND		mg/kg	10	--	1	08/29/22 10:55	08/29/22 12:09	125,7.3	MJ
General Chemistry - Westborough Lab for sample(s): 01,07 Batch: WG1680861-1										
Cyanide, Reactive	ND		mg/kg	10	--	1	08/29/22 10:55	08/29/22 12:42	125,7.3	MJ
General Chemistry - Westborough Lab for sample(s): 04-06 Batch: WG1680963-1										
Sulfide, Reactive	ND		mg/kg	10	--	1	08/30/22 10:10	08/30/22 12:14	125,7.3	MJ
General Chemistry - Westborough Lab for sample(s): 04-06 Batch: WG1681314-1										
Cyanide, Reactive	ND		mg/kg	10	--	1	08/30/22 10:10	08/30/22 12:44	125,7.3	MJ
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG1682992-1										
Sulfide, Reactive	ND		mg/kg	10	--	1	09/02/22 13:10	09/02/22 14:58	125,7.3	MJ
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG1682996-1										
Cyanide, Reactive	ND		mg/kg	10	--	1	09/02/22 13:10	09/02/22 15:31	125,7.3	MJ
General Chemistry - Westborough Lab for sample(s): 03 Batch: WG1683095-1										
Sulfide, Reactive	ND		mg/kg	10	--	1	09/02/22 17:50	09/02/22 20:04	125,7.3	TL
General Chemistry - Westborough Lab for sample(s): 03 Batch: WG1683096-1										
Cyanide, Reactive	ND		mg/kg	10	--	1	09/02/22 17:50	09/02/22 19:54	125,7.3	TL

Lab Control Sample Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,07 Batch: WG1680859-2								
Sulfide, Reactive	110		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01,07 Batch: WG1680861-2								
Cyanide, Reactive	89		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 04-06 Batch: WG1680963-2								
Sulfide, Reactive	102		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01-07 Batch: WG1681032-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 04-06 Batch: WG1681314-2								
Cyanide, Reactive	69		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG1682992-2								
Sulfide, Reactive	101		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG1682996-2								
Cyanide, Reactive	71		-		30-125	-		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 03 Batch: WG1683095-2					
Sulfide, Reactive	115	-	60-125	-	40
General Chemistry - Westborough Lab Associated sample(s): 03 Batch: WG1683096-2					
Cyanide, Reactive	70	-	30-125	-	40

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Sample Receipt and Container Information

Were project specific reporting limits specified? NO

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2246257-01A	Vial MeOH preserved	A	NA		2.4	Y	Absent		TPH-GRO(14),VPH-DELUX-18(28),CT-8260HLW(14)
L2246257-01B	Vial water preserved	A	NA		2.4	Y	Absent	23-AUG-22 15:35	CT-8260HLW(14)
L2246257-01C	Vial water preserved	A	NA		2.4	Y	Absent	23-AUG-22 15:35	CT-8260HLW(14)
L2246257-01D	Plastic 2oz unpreserved for TS	A	NA		2.4	Y	Absent		TS(7)
L2246257-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		CT-AG-6010T(180),CT-V-6010T(180),CT-CU-6010T(180),CT-SE-6010T(180),CT-AS-6010T(180),CT-SB-6010T(180),CT-PB-6010T(180),CT-NI-6010T(180),CT-ZN-6010T(180),CT-BA-6010T(180),CT-CR-6010T(180),CT-BE-6010T(180),CT-TL-6010T(180),CT-CD-6010T(180)
L2246257-01F	Glass 500ml/16oz unpreserved	A	NA		2.4	Y	Absent		IGNIT-1030(14),REACTS(14),CT-PAH(14),EPH-20(14),TPH-DRO(14),PH-9045(1),REACTCN(14)
L2246257-02A	Vial MeOH preserved	A	NA		2.4	Y	Absent		TPH-GRO(14),VPH-DELUX-18(28),CT-8260HLW(14)
L2246257-02B	Vial water preserved	A	NA		2.4	Y	Absent	23-AUG-22 15:35	CT-8260HLW(14)
L2246257-02C	Vial water preserved	A	NA		2.4	Y	Absent	23-AUG-22 15:35	CT-8260HLW(14)
L2246257-02D	Plastic 2oz unpreserved for TS	A	NA		2.4	Y	Absent		TS(7)
L2246257-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		CT-AG-6010T(180),CT-V-6010T(180),CT-SB-6010T(180),CT-AS-6010T(180),CT-CU-6010T(180),CT-SE-6010T(180),CT-PB-6010T(180),CT-NI-6010T(180),CT-CR-6010T(180),CT-BA-6010T(180),CT-ZN-6010T(180),CT-TL-6010T(180),CT-BE-6010T(180),CT-CD-6010T(180)
L2246257-02F	Glass 500ml/16oz unpreserved	A	NA		2.4	Y	Absent		REACTS(14),IGNIT-1030(14),CT-PAH(14),EPH-20(14),TPH-DRO(14),PH-9045(1),REACTCN(14)
L2246257-03A	Vial MeOH preserved	A	NA		2.4	Y	Absent		TPH-GRO(14),VPH-DELUX-18(28),CT-8260HLW(14)
L2246257-03B	Vial water preserved	A	NA		2.4	Y	Absent	26-AUG-22 06:39	CT-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2246257-03C	Vial water preserved	A	NA		2.4	Y	Absent	26-AUG-22 06:39	CT-8260HLW(14)
L2246257-03D	Plastic 2oz unpreserved for TS	A	NA		2.4	Y	Absent		TS(7)
L2246257-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		CT-AG-6010T(180),CT-V-6010T(180),CT-SE-6010T(180),CT-AS-6010T(180),CT-SB-6010T(180),CT-CU-6010T(180),CT-PB-6010T(180),CT-NI-6010T(180),CT-CR-6010T(180),CT-BA-6010T(180),CT-ZN-6010T(180),CT-BE-6010T(180),CT-CD-6010T(180),CT-TL-6010T(180)
L2246257-03F	Glass 500ml/16oz unpreserved	A	NA		2.4	Y	Absent		IGNIT-1030(14),REACTS(14),EPH-20(14),CT-PAH(14),TPH-DRO(14),PH-9045(1),REACTCN(14)
L2246257-04A	Vial MeOH preserved	A	NA		2.4	Y	Absent		TPH-GRO(14),VPH-DELUX-18(28),CT-8260HLW(14)
L2246257-04B	Vial water preserved	A	NA		2.4	Y	Absent	26-AUG-22 06:39	CT-8260HLW(14)
L2246257-04C	Vial water preserved	A	NA		2.4	Y	Absent	26-AUG-22 06:39	CT-8260HLW(14)
L2246257-04D	Plastic 2oz unpreserved for TS	A	NA		2.4	Y	Absent		TS(7)
L2246257-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		CT-AG-6010T(180),CT-V-6010T(180),CT-SB-6010T(180),CT-CU-6010T(180),CT-SE-6010T(180),CT-AS-6010T(180),CT-PB-6010T(180),CT-NI-6010T(180),CT-CR-6010T(180),CT-ZN-6010T(180),CT-BA-6010T(180),CT-CD-6010T(180),CT-BE-6010T(180),CT-TL-6010T(180)
L2246257-04F	Glass 500ml/16oz unpreserved	A	NA		2.4	Y	Absent		IGNIT-1030(14),REACTS(14),EPH-20(14),CT-PAH(14),TPH-DRO(14),PH-9045(1),REACTCN(14)
L2246257-05A	Vial MeOH preserved	A	NA		2.4	Y	Absent		TPH-GRO(14),VPH-DELUX-18(28),CT-8260HLW(14)
L2246257-05B	Vial water preserved	A	NA		2.4	Y	Absent	26-AUG-22 06:39	CT-8260HLW(14)
L2246257-05C	Vial water preserved	A	NA		2.4	Y	Absent	26-AUG-22 06:39	CT-8260HLW(14)
L2246257-05D	Plastic 2oz unpreserved for TS	A	NA		2.4	Y	Absent		TS(7)
L2246257-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		CT-AG-6010T(180),CT-V-6010T(180),CT-CU-6010T(180),CT-AS-6010T(180),CT-SE-6010T(180),CT-SB-6010T(180),CT-NI-6010T(180),CT-PB-6010T(180),CT-BA-6010T(180),CT-CR-6010T(180),CT-ZN-6010T(180),CT-CD-6010T(180),CT-BE-6010T(180),CT-TL-6010T(180)
L2246257-05F	Glass 500ml/16oz unpreserved	A	NA		2.4	Y	Absent		IGNIT-1030(14),REACTS(14),EPH-20(14),CT-PAH(14),TPH-DRO(14),PH-9045(1),REACTCN(14)

*Values in parentheses indicate holding time in days

Project Name: CENTRAL MIDDLE SCHOOL
Project Number: Not Specified

Lab Number: L2246257
Report Date: 09/12/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2246257-06A	Vial MeOH preserved	A	NA		2.4	Y	Absent		TPH-GRO(14),VPH-DELUX-18(28),CT-8260HLW(14)
L2246257-06B	Vial water preserved	A	NA		2.4	Y	Absent	26-AUG-22 06:39	CT-8260HLW(14)
L2246257-06C	Vial water preserved	A	NA		2.4	Y	Absent	26-AUG-22 06:39	CT-8260HLW(14)
L2246257-06D	Plastic 2oz unpreserved for TS	A	NA		2.4	Y	Absent		TS(7)
L2246257-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		CT-AG-6010T(180),CT-V-6010T(180),CT-SB-6010T(180),CT-AS-6010T(180),CT-CU-6010T(180),CT-SE-6010T(180),CT-NI-6010T(180),CT-PB-6010T(180),CT-ZN-6010T(180),CT-BA-6010T(180),CT-CR-6010T(180),CT-TL-6010T(180),CT-BE-6010T(180),CT-CD-6010T(180)
L2246257-06F	Glass 500ml/16oz unpreserved	A	NA		2.4	Y	Absent		REACTS(14),IGNIT-1030(14),EPH-20(14),CT-PAH(14),TPH-DRO(14),PH-9045(1),REACTCN(14)
L2246257-07A	Vial MeOH preserved	A	NA		2.4	Y	Absent		TPH-GRO(14),VPH-DELUX-18(28),CT-8260HLW(14)
L2246257-07B	Vial water preserved	A	NA		2.4	Y	Absent	23-AUG-22 15:35	CT-8260HLW(14)
L2246257-07C	Vial water preserved	A	NA		2.4	Y	Absent	23-AUG-22 15:35	CT-8260HLW(14)
L2246257-07D	Plastic 2oz unpreserved for TS	A	NA		2.4	Y	Absent		TS(7)
L2246257-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		CT-V-6010T(180),CT-AG-6010T(180),CT-SB-6010T(180),CT-SE-6010T(180),CT-CU-6010T(180),CT-AS-6010T(180),CT-NI-6010T(180),CT-PB-6010T(180),CT-BA-6010T(180),CT-CR-6010T(180),CT-ZN-6010T(180),CT-BE-6010T(180),CT-CD-6010T(180),CT-TL-6010T(180)
L2246257-07F	Glass 500ml/16oz unpreserved	A	NA		2.4	Y	Absent		IGNIT-1030(14),REACTS(14),CT-PAH(14),EPH-20(14),TPH-DRO(14),PH-9045(1),REACTCN(14)

*Values in parentheses indicate holding time in days

Project Name:	CENTRAL MIDDLE SCHOOL	**Lab Number:**	L2246257
Project Number:	Not Specified	**Report Date:**	09/12/22

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	CENTRAL MIDDLE SCHOOL	**Lab Number:**	L2246257
Project Number:	Not Specified	**Report Date:**	09/12/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

Report Format: Data Usability Report

Project Name:	CENTRAL MIDDLE SCHOOL	**Lab Number:**	L2246257
Project Number:	Not Specified	**Report Date:**	09/12/22

Data Qualifiers

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report

Project Name:	CENTRAL MIDDLE SCHOOL	**Lab Number:**	L2246257
Project Number:	Not Specified	**Report Date:**	09/12/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

79 Connecticut DEP Quality Assurance and Quality Control Requirements for SW-846 Methods. CTDEP Reasonable Confidence Protocols (RCPs). Versions 2.0 and 3.0, July and December 2006.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

125 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates IIIA, April 1998.

131 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, February 2018, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, June 1, 2018.

135 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, December 2019, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, March 1, 2020.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE ____ OF ____

Date Rec'd in Lab: 8/26/22

ALPHA Job #: L2246257

ALPHA ANALYTICAL
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: ATANE
Address: 56 Roland St.
Suite 202 Charlestown MA 02129
Phone: (617) 838 7668
Email:

Project Information

Project Name: Central Middle Sch.
Project Location: Greenwich, CT
Project #: —
Project Manager: Paul Sousa
ALPHA Quote #: —

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program ____ Criteria ____

Additional Project Information:
hrameau@ataneconsulting.com
psousa@ataneconsulting.com
pmccarthy@ataneconsulting.com

ANALYSIS: VOC: ☒ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only (CT-PAH); VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; EPH CT-PAH; VPH; TPH-DRO; TPH-GRO; CT-15METALS (Minus HG); pH, Ignitability, Reactivity

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☒ 8260	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13	METALS: ☐ RCRA5	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	EPH CT-PAH	VPH	TPH-DRO	TPH-GRO	CT-15METALS (Minus HG)	pH, Ignitability, Reactivity	Sample Comments	TOTAL # BOTTLES
46257-01	B-SL-01	8/23/22	1200	SOIL	PJM	X								X	X	X	X	X	X		
02	B-SL-02	8/23/22	1530	↓	↓	X								X	X	X	X	X	X		
03	B-SL-03	8/24/22	1230	↓	↓	X								X	X	X	X	X	X		
04	B-SL-04	8/25/22	0845	↓	↓	X								X	X	X	X	X	X		
05	B-SL-05	8/25/22	1015	↓	↓	X								X	X	X	X	X	X		
06	B-SL-06	8/25/22	1145	↓	↓	X								X	X	X	X	X	X		
07	B-SL-07	8/23/22	0845	↓	↓	X								X	X	X	X	X	X		

Container Type
Preservative

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Paul McCarthy	8/25/22 @1555	USM # (mail)	8/25/22 1555
USM # (mail)	8/25/22 1800	[illegible]	8/25/22 19:30
[illegible]	8/25/22 [illegible]	[illegible]	8/25/22 [illegible]

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12 Mar 2012)

Greenwich Public Schools

UST Removal Closure Report

Central Middle School

Big East Environmental
Project 19433.002

SUBJECT SITE:	Central Middle School 9 Indian Rock Road Greenwich, CT
CLIENT:	Greenwich Public Schools 290 Greenwich Avenue Greenwich, CT 06830 203.625.7412 Eric_haaga@greenwich.k12.ct.us
INSPECTION DATE:	August 13, 2019
BIG EAST PROJECT #:	19433.002

UST REMOVAL CLOSURE REPORT

Central Middle School State ID: 57-4741
CT DEEP Tank ID: T1R1

INTRODUCTION

Big East Environmental, LLC was retained by *the client* to oversee the removal of one 8,000-gallon underground storage tank (UST) and collect soil samples at the above referenced subject site. The subject site is a public-school facility known as Central Middle School that lies in an area with GA classified groundwater. The area of the underground storage tank (UST) is located north west portion of the subject site property north of the back-parking lot. The UST was utilized for the storage of #2 fuel oil.

METHODS

Soil samples were collected by hand with the aid of the onsite excavator. Soil samples were collected from each side wall and the tank grave/ bottom and field screened on site with a photovoltaic ionization device (PID meter). Samples were analyzed at Phoenix Environmental Laboratories for extractable total petroleum hydrocarbons (ETPH), semi-volatile organic compounds (PAH 8270) and volatile organic compounds (EPA 8260). All lab reports can be found in appendices.

FINDINGS

Steve DiNapoli of Big East Environmental was present upon the excavation of the UST on August 13, 2019. Prior to excavation, the UST was cut open for sludge and product removal. The UST was composed of double wall steel and was buried beneath soil and grass. The tank did contain fuel oil which was removed by the excavation contractor. Upon excavation, the tanks were thoroughly inspected for any signs of holes, cracks, or other indications of tank failure. No signs of tank failure were found. Ground and rain water was encountered during the excavation, this water was removed for disposal by the excavation contractor.

FIELD SCREENING RESULTS

Sample ID	PID Readings
S1	0.0
S2	0.0
S3	0.0
S4	0.0

S5 0.0

TABLE I – LABORATORY ANALYSIS

550-GALLON UST

SAMPLE ID	DEPTH	TARGET ANALYSIS	RESULT	CT DEEP RSRs	
				RES DEC	GAPMC
S1	9.5’	CT ETPH	ND	500	500
		VOC 8260	ND	-	-
		SVOC 8270	ND	-	-
S2	9.5’	CT ETPH	ND	500	500
		VOC 8260	ND	-	-
		SVOC 8270	ND	-	-
S3	9.5’	CT ETPH	ND	500	500
		VOC 8260	ND	-	-
		SVOC 8270	ND	-	-
S4	10.0’	CT ETPH	ND	500	500
		VOC 8260	ND	-	-
		SVOC 8270	ND	-	-
S5	9.5’	CT ETPH	ND	500	500
		VOC 8260	1,2,4-Trimethylbenzene – 0.011	500	7
			m&p-xylene – 0.0046	500	19.5
			Naphthalene – 0.011	1000	5.6
		SVOC 8270	ND	-	-

Soil Sample Locations Can Be Found on The Attached Diagram.
***** CT DEEP RSR’s (CT Dept. of Environmental & Energy Protection Remediation Standard Regulations)
RES DEC – Residential Direct Exposure Criteria
GA PMC –Groundwater (GA Area) Pollutant Mobility Criteria
ND – None Detected
All Results are in PPM – parts per million

CONCLUSION

- No soil contamination has been detected.

If you have any questions regarding this report please feel free to contact me directly at any time.

Sincerely,

Stephen DiNapoli

Stephen E. DiNapoli, LEED AP, CMC
Environmental Professional
Big East Environmental, LLC

EXCLUSIONS and LIMITATIONS

While Big East Environmental strives to conduct a thorough, comprehensive inspection, some exclusion is warranted. For 100% accuracy in the determination of soil contamination or the presence of any buried object full excavation would be necessary. There is always a possibility that contamination is present within areas that we could not access. Client acknowledges that this report is limited and all hazardous materials may only become apparent during the course of future demolition/ renovation/ excavation. Big East shall not be held liable for abatement/ remediation costs related to additional contaminants not identified in this report.

If a leak has been detected the responsible party(ies) must notify the Connecticut DEP of any contamination over the DEC as described in Public Act 95-190. ***(Chemical Spills -24hr- 860-424-3338).***

Connecticut Department of
Energy & Environmental Protection
Bureau of Materials Management & Compliance Assurance
Emergency Response & Spill Prevention Division

Notification of Scheduled Permanent Closure of Underground Storage Tanks

Submit one notification form per site. This notification must be submitted at least 30 days before beginning permanent closure of a commercial underground storage tank (UST) pursuant to the UST Regulations; section 22a-449(d)-107 of the Regulations of State Agencies.

Important Information:

1) ***At least 30 days before beginning permanent closure, please submit this completed form to: DEEP.30DayUST@ct.gov. A separate notification is required and submitted through ezFile when the tank is completely closed.***
2) ***Please review DEEP Guidance on Sampling and Analytical Methods for UST Closure: www.ct.gov/deep/cwp/view.asp?a=2692&q=322592&deepNav_GID=1652.***
3) ***If a release is discovered during a pre-tank removal assessment or during the tank removal the release must be reported to DEEP pursuant to Connecticut General Statutes section 22a-450 (please call 860-424-3338 or toll free at 1-866-337-7745).***
4) ***DEEP may be onsite to inspect the removal activities, but whether an inspection is performed or not, please proceed on your submitted schedule.***
5) ***If the submitted schedule changes please e-mail details of the schedule change to: DEEP.30DayUST@ct.gov. Enter "Schedule Change" on the email subject line.***

Part I: Site Information

1. LOCATION of UST(s)

Name of site: **Central Middle School**

Street Address or Location Description: **9 Indian Rock Lane**

City/Town: **Greenwich** State: **CT** Zip Code: **06830**

2. Site ID Number: 57-4741

Part II: Owner/Operator Information

1. UST Owner Name: Greenwich Public Schools

Mailing Address: 290 Greenwich Avenue

City/Town: Greenwich State: CT Zip Code: 06830

Business Phone: 203-625-7412 ext.:

Contact Person: Eric Haaga Phone: 203-724-7953 ext.

*E-mail: eric_haaga@greenwich.ct.us

*By providing this e-mail address you are agreeing to receive official correspondence from the department, at this electronic address, concerning the subject application. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes.

Part II: Owner/Operator Information (continued)

2. UST Operator, if different than UST owner

Name:

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.:

Contact Person: Phone: ext.

*E-mail:

*By providing this e-mail address you are agreeing to receive official correspondence from the department, at this electronic address, concerning the subject application. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes.

3. Contractor or person responsible for removing the UST System:

Name: ACV Enviro

Mailing Address: 118 Burr Street

City/Town: Bridgeport State: CT Zip Code: 06605

Business Phone: 203-384-6020 ext.:

Contact Person: Tim Firla Phone: 203-496-8853 ext.

E-mail: tfirla@acvenviro.com

4. Contractor or environmental consultant responsible for conducting sampling:

Name: Big East Environmental

Mailing Address: 57 Chestnut Street, Unit 10

City/Town: Norwalk State: CT Zip Code: 06854

Business Phone: 203-354-4955 ext.:

Contact Person: Steve DiNapoli Phone: 203.354.4955 ext.

E-mail: steve@bigeastlabs.com

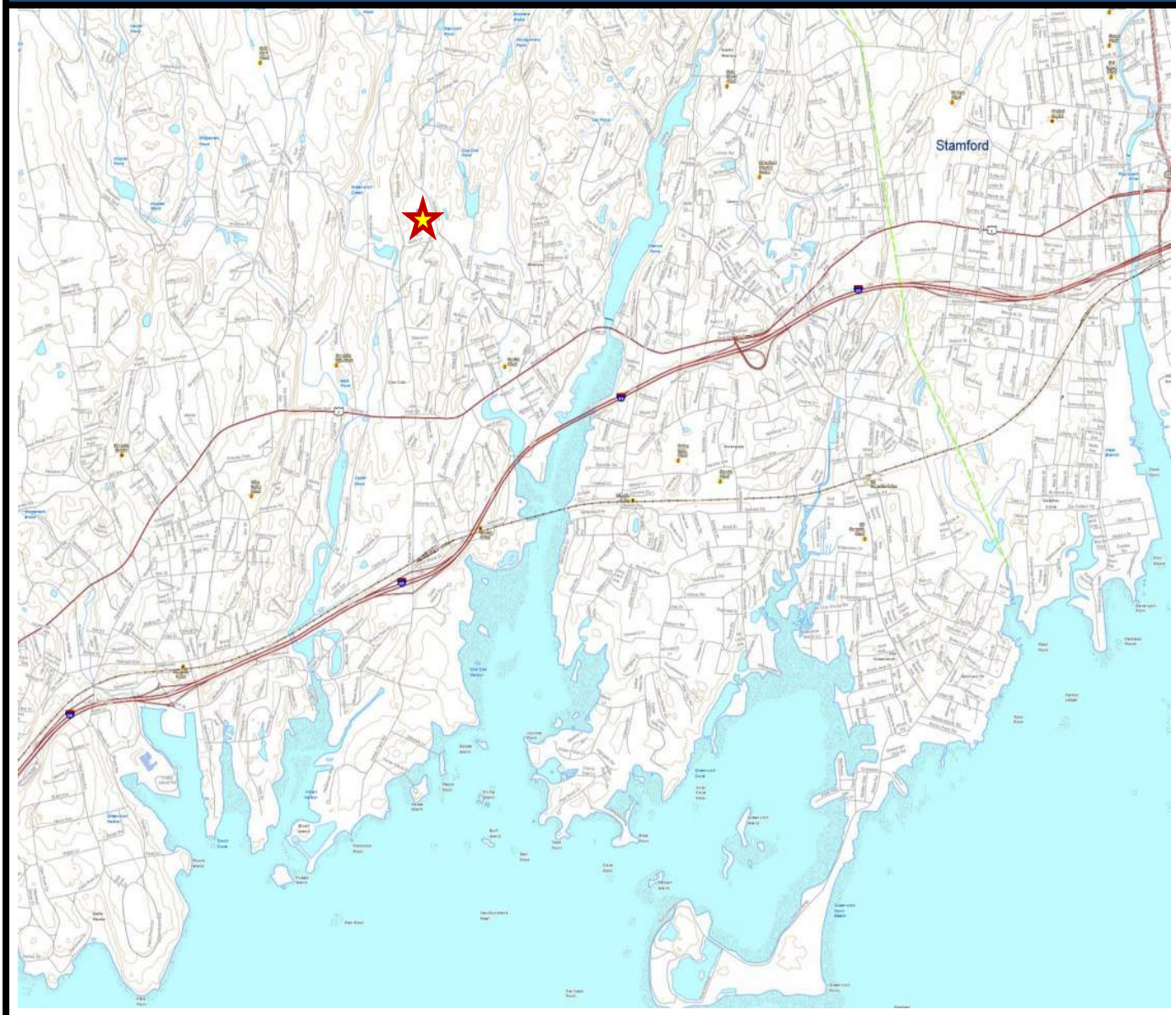
Part III: Underground Storage Tank Information

Complete for all tanks being permanently closed at the subject location.

Tank Identification Number	Tank No.: T1-R1	Tank No.:	Tank No.:	Tank No.:	Tank No.:
1. Estimated Date Tank will be Closed (month/day/year)	August 24, 2019				
2. Estimated Total Capacity (gallons)	8,000				
3a. Will a pre- tank removal assessment be undertaken (or was it already undertaken)?	☐ yes ☒ no	☐ yes ☐ no	☐ yes ☐ no	☐ yes ☐ no	☐ yes ☐ no
3b. If yes, was a release discovered and reported?	☐ yes ☒ no	☐ yes ☐ no	☐ yes ☐ no	☐ yes ☐ no	☐ yes ☐ no
4. Is this a piping only removal?	☐ yes ☒ no	☐ yes ☐ no	☐ yes ☐ no	☐ yes ☐ no	☐ yes ☐ no
5. Substance Currently Stored (or last stored) *check one per compartment/tank*					
Gasoline	☐	☐	☐	☐	☐
Diesel	☐	☐	☐	☐	☐
Kerosene (for resale)	☐	☐	☐	☐	☐
Kerosene (on-site consumption)	☐	☐	☐	☐	☐
Heating Oil (on-site consumption)	☒	☐	☐	☐	☐
Heating Oil (for resale)	☐	☐	☐	☐	☐
Used Oil	☐	☐	☐	☐	☐
Biodiesel	☐	☐	☐	☐	☐
E-85	☐	☐	☐	☐	☐
E-15	☐	☐	☐	☐	☐
If Other, please specify here					
Hazardous Substance	☐	☐	☐	☐	☐
CERCLA name					
CAS Number					

If you have any questions, please contact the Site Assessment and Support Unit at 860-424-3376 or by e-mail: (DEEP.30DayUST@ct.gov).

SUBJECT SITE LOCATION



CENTRAL MIDDLE SCHOOL 9 INDIAN ROCK ROAD GREENWICH, CT	N	Map prepared by CT DEP, May 2011. This map replaces a similar contour map that was dated August 2010. STATE OF CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 79 Elm Street Hartford, CT 06106-5127
	Figure 1	BigEast ENVIRONMENTAL

UST LOCATION

CENTRAL MIDDLE SCHOOL 9 INDIAN ROCK ROAD GREENWICH, CT	N	Imagery ©2019 Google, Map data ©2019 Google United States
	Figure 2	BigEast ENVIRONMENTAL

SOIL SAMPLE LOCATIONS

CENTRAL MIDDLE SCHOOL 9 INDIAN ROCK ROAD GREENWICH, CT	N	Not To Scale
	Figure 3	BigEast ENVIRONMENTAL

SITE PHOTOGRAPHS

Post- Excavation of UST

UST Grave

UST Grave

UST Grave

Bottom of UST

UST – South End

LABORATORY ANALYSIS REPORT

203.354.4955 | contact@bigeastlabs.com | www.bigeastlabs.com
Big East Environmental, 57 Chestnut Street, Unit 10, Norwalk, CT 06854

Thursday, August 22, 2019

Attn: Mr. Steve Dinapoli
Big East Environmental LLC
57 Chestnut Street Unit 10
Norwalk, CT 06854

Project ID: CENTRAL MS
SDG ID: GCD85047
Sample ID#s: CD85047 - CD85051

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

August 22, 2019

SDG I.D.: GCD85047

Project ID: CENTRAL MS

Client Id	Lab Id	Matrix
S1	CD85047	SOIL
S2	CD85048	SOIL
S3	CD85049	SOIL
S4	CD85050	SOIL
S5	CD85051	SOIL

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

August 22, 2019

FOR: Attn: Mr. Steve Dinapoli
Big East Environmental LLC
57 Chestnut Street Unit 10
Norwalk, CT 06854

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		08/13/19	12:00
Location Code:	BIG-EAST	Received by:	CP	08/14/19	17:14
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCD85047
Phoenix ID: CD85047

Project ID: CENTRAL MS
Client ID: S1

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Percent Solid	83		%		08/14/19	VT	SW846-%Solid
Soil Extraction SVOA PAH	Completed				08/14/19	NM/NT/VL	SW3545A
Extraction of CT ETPH	Completed				08/15/19	NM/G/LV	SW3545A
TPH by GC (Extractable Products)							
Ext. Petroleum H.C. (C9-C36)	ND	60	mg/Kg	1	08/16/19	JRB	CTETPH 8015D
Identification	ND		mg/Kg	1	08/16/19	JRB	CTETPH 8015D
QA/QC Surrogates							
% n-Pentacosane	74		%	1	08/16/19	JRB	50 - 150 %
Volatiles							
1,1,1,2-Tetrachloroethane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,1-Trichloroethane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,2,2-Tetrachloroethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,2-Trichloroethane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloroethane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloroethene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloropropene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,3-Trichlorobenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,3-Trichloropropane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,4-Trichlorobenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,4-Trimethylbenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dibromo-3-chloropropane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dibromoethane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichlorobenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichloroethane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichloropropane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,3,5-Trimethylbenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C

Project ID: CENTRAL MS
Client ID: S1

Phoenix I.D.: CD85047

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,3-Dichlorobenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,3-Dichloropropane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
1,4-Dichlorobenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
2,2-Dichloropropane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
2-Chlorotoluene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
2-Hexanone	ND	26	ug/Kg	1	08/20/19	JLI	SW8260C
2-Isopropyltoluene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
4-Chlorotoluene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
4-Methyl-2-pentanone	ND	26	ug/Kg	1	08/20/19	JLI	SW8260C
Acetone	ND	260	ug/Kg	1	08/20/19	JLI	SW8260C
Acrylonitrile	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Benzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Bromobenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Bromochloromethane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Bromodichloromethane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Bromoform	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Bromomethane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Carbon Disulfide	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Carbon tetrachloride	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Chlorobenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Chloroethane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Chloroform	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Chloromethane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
cis-1,2-Dichloroethene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
cis-1,3-Dichloropropene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Dibromochloromethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Dibromomethane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Dichlorodifluoromethane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Ethylbenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Hexachlorobutadiene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Isopropylbenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
m&p-Xylene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Methyl Ethyl Ketone	ND	31	ug/Kg	1	08/20/19	JLI	SW8260C
Methyl t-butyl ether (MTBE)	ND	10	ug/Kg	1	08/20/19	JLI	SW8260C
Methylene chloride	ND	10	ug/Kg	1	08/20/19	JLI	SW8260C
Naphthalene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
n-Butylbenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
n-Propylbenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
o-Xylene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
p-Isopropyltoluene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
sec-Butylbenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Styrene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
tert-Butylbenzene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Tetrachloroethene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Tetrahydrofuran (THF)	ND	10	ug/Kg	1	08/20/19	JLI	SW8260C
Toluene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Total Xylenes	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
trans-1,2-Dichloroethene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
trans-1,3-Dichloropropene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C

Project ID: CENTRAL MS
Client ID: S1

Phoenix I.D.: CD85047

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
trans-1,4-dichloro-2-butene	ND	10	ug/Kg	1	08/20/19	JLI	SW8260C
Trichloroethene	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Trichlorofluoromethane	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
Trichlorotrifluoroethane	ND	10	ug/Kg	1	08/20/19	JLI	SW8260C
Vinyl chloride	ND	5.2	ug/Kg	1	08/20/19	JLI	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	100		%	1	08/20/19	JLI	70 - 130 %
% Bromofluorobenzene	93		%	1	08/20/19	JLI	70 - 130 %
% Dibromofluoromethane	95		%	1	08/20/19	JLI	70 - 130 %
% Toluene-d8	97		%	1	08/20/19	JLI	70 - 130 %
Polynuclear Aromatic HC							
2-Methylnaphthalene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Acenaphthene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Acenaphthylene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Anthracene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Benz(a)anthracene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Benzo(a)pyrene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Benzo(b)fluoranthene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Benzo(ghi)perylene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Benzo(k)fluoranthene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Chrysene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Dibenz(a,h)anthracene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Fluoranthene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Fluorene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Indeno(1,2,3-cd)pyrene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Naphthalene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Phenanthrene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
Pyrene	ND	280	ug/Kg	1	08/15/19	WB	SW8270D
QA/QC Surrogates							
% 2-Fluorobiphenyl	45		%	1	08/15/19	WB	30 - 130 %
% Nitrobenzene-d5	58		%	1	08/15/19	WB	30 - 130 %
% Terphenyl-d14	49		%	1	08/15/19	WB	30 - 130 %
Field Extraction	Completed				08/13/19		SW5035A

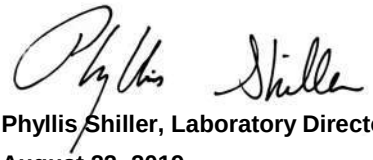
Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director
August 22, 2019
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

August 22, 2019

FOR: Attn: Mr. Steve Dinapoli
Big East Environmental LLC
57 Chestnut Street Unit 10
Norwalk, CT 06854

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		08/13/19	12:00
Location Code:	BIG-EAST	Received by:	CP	08/14/19	17:14
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCD85047
Phoenix ID: CD85048

Project ID: CENTRAL MS
Client ID: S2

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Percent Solid	92		%		08/14/19	VT	SW846-%Solid
Soil Extraction SVOA PAH	Completed				08/14/19	NM/NT/VL	SW3545A
Extraction of CT ETPH	Completed				08/15/19	NM/G/LV	SW3545A
TPH by GC (Extractable Products)							
Ext. Petroleum H.C. (C9-C36)	ND	54	mg/Kg	1	08/16/19	JRB	CTETPH 8015D
Identification	ND		mg/Kg	1	08/16/19	JRB	CTETPH 8015D
QA/QC Surrogates							
% n-Pentacosane	82		%	1	08/16/19	JRB	50 - 150 %
Volatiles							
1,1,1,2-Tetrachloroethane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,1-Trichloroethane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,2,2-Tetrachloroethane	ND	3.6	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,2-Trichloroethane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloroethane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloroethene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloropropene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,3-Trichlorobenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,3-Trichloropropane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,4-Trichlorobenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,4-Trimethylbenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dibromo-3-chloropropane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dibromoethane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichlorobenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichloroethane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichloropropane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,3,5-Trimethylbenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C

Project ID: CENTRAL MS
Client ID: S2

Phoenix I.D.: CD85048

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,3-Dichlorobenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,3-Dichloropropane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
1,4-Dichlorobenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
2,2-Dichloropropane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
2-Chlorotoluene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
2-Hexanone	ND	30	ug/Kg	1	08/20/19	JLI	SW8260C
2-Isopropyltoluene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
4-Chlorotoluene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
4-Methyl-2-pentanone	ND	30	ug/Kg	1	08/20/19	JLI	SW8260C
Acetone	ND	300	ug/Kg	1	08/20/19	JLI	SW8260C
Acrylonitrile	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Benzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Bromobenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Bromochloromethane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Bromodichloromethane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Bromoform	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Bromomethane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Carbon Disulfide	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Carbon tetrachloride	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Chlorobenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Chloroethane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Chloroform	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Chloromethane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
cis-1,2-Dichloroethene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
cis-1,3-Dichloropropene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Dibromochloromethane	ND	3.6	ug/Kg	1	08/20/19	JLI	SW8260C
Dibromomethane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Dichlorodifluoromethane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Ethylbenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Hexachlorobutadiene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Isopropylbenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
m&p-Xylene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Methyl Ethyl Ketone	ND	36	ug/Kg	1	08/20/19	JLI	SW8260C
Methyl t-butyl ether (MTBE)	ND	12	ug/Kg	1	08/20/19	JLI	SW8260C
Methylene chloride	ND	12	ug/Kg	1	08/20/19	JLI	SW8260C
Naphthalene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
n-Butylbenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
n-Propylbenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
o-Xylene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
p-Isopropyltoluene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
sec-Butylbenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Styrene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
tert-Butylbenzene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Tetrachloroethene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Tetrahydrofuran (THF)	ND	12	ug/Kg	1	08/20/19	JLI	SW8260C
Toluene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Total Xylenes	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
trans-1,2-Dichloroethene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
trans-1,3-Dichloropropene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C

Project ID: CENTRAL MS
Client ID: S2

Phoenix I.D.: CD85048

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
trans-1,4-dichloro-2-butene	ND	12	ug/Kg	1	08/20/19	JLI	SW8260C
Trichloroethene	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Trichlorofluoromethane	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
Trichlorotrifluoroethane	ND	12	ug/Kg	1	08/20/19	JLI	SW8260C
Vinyl chloride	ND	5.9	ug/Kg	1	08/20/19	JLI	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	99		%	1	08/20/19	JLI	70 - 130 %
% Bromofluorobenzene	94		%	1	08/20/19	JLI	70 - 130 %
% Dibromofluoromethane	96		%	1	08/20/19	JLI	70 - 130 %
% Toluene-d8	96		%	1	08/20/19	JLI	70 - 130 %
Polynuclear Aromatic HC							
2-Methylnaphthalene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Acenaphthene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Acenaphthylene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Anthracene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Benz(a)anthracene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Benzo(a)pyrene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Benzo(b)fluoranthene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Benzo(ghi)perylene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Benzo(k)fluoranthene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Chrysene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Dibenz(a,h)anthracene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Fluoranthene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Fluorene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Indeno(1,2,3-cd)pyrene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Naphthalene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Phenanthrene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
Pyrene	ND	250	ug/Kg	1	08/15/19	WB	SW8270D
QA/QC Surrogates							
% 2-Fluorobiphenyl	49		%	1	08/15/19	WB	30 - 130 %
% Nitrobenzene-d5	60		%	1	08/15/19	WB	30 - 130 %
% Terphenyl-d14	52		%	1	08/15/19	WB	30 - 130 %
Field Extraction	Completed				08/13/19		SW5035A

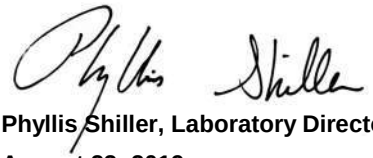
Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director
August 22, 2019
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

August 22, 2019

FOR: Attn: Mr. Steve Dinapoli
Big East Environmental LLC
57 Chestnut Street Unit 10
Norwalk, CT 06854

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		08/13/19	12:00
Location Code:	BIG-EAST	Received by:	CP	08/14/19	17:14
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCD85047
Phoenix ID: CD85049

Project ID: CENTRAL MS
Client ID: S3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Percent Solid	86		%		08/14/19	VT	SW846-%Solid
Soil Extraction SVOA PAH	Completed				08/15/19	Q/NT/VL	SW3545A
Extraction of CT ETPH	Completed				08/15/19	NM/G/LV	SW3545A
TPH by GC (Extractable Products)							
Ext. Petroleum H.C. (C9-C36)	ND	57	mg/Kg	1	08/16/19	JRB	CTETPH 8015D
Identification	ND		mg/Kg	1	08/16/19	JRB	CTETPH 8015D
QA/QC Surrogates							
% n-Pentacosane	69		%	1	08/16/19	JRB	50 - 150 %
Volatiles							
1,1,1,2-Tetrachloroethane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,1-Trichloroethane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,2,2-Tetrachloroethane	ND	2.8	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,2-Trichloroethane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloroethane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloroethene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloropropene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,3-Trichlorobenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,3-Trichloropropane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,4-Trichlorobenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,4-Trimethylbenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dibromo-3-chloropropane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dibromoethane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichlorobenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichloroethane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichloropropane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,3,5-Trimethylbenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C

Project ID: CENTRAL MS
Client ID: S3

Phoenix I.D.: CD85049

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,3-Dichlorobenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,3-Dichloropropane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
1,4-Dichlorobenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
2,2-Dichloropropane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
2-Chlorotoluene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
2-Hexanone	ND	23	ug/Kg	1	08/20/19	JLI	SW8260C
2-Isopropyltoluene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
4-Chlorotoluene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
4-Methyl-2-pentanone	ND	23	ug/Kg	1	08/20/19	JLI	SW8260C
Acetone	ND	230	ug/Kg	1	08/20/19	JLI	SW8260C
Acrylonitrile	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Benzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Bromobenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Bromochloromethane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Bromodichloromethane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Bromoform	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Bromomethane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Carbon Disulfide	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Carbon tetrachloride	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Chlorobenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Chloroethane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Chloroform	20	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Chloromethane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
cis-1,2-Dichloroethene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
cis-1,3-Dichloropropene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Dibromochloromethane	ND	2.8	ug/Kg	1	08/20/19	JLI	SW8260C
Dibromomethane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Dichlorodifluoromethane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Ethylbenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Hexachlorobutadiene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Isopropylbenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
m&p-Xylene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Methyl Ethyl Ketone	ND	28	ug/Kg	1	08/20/19	JLI	SW8260C
Methyl t-butyl ether (MTBE)	ND	9.3	ug/Kg	1	08/20/19	JLI	SW8260C
Methylene chloride	ND	9.3	ug/Kg	1	08/20/19	JLI	SW8260C
Naphthalene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
n-Butylbenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
n-Propylbenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
o-Xylene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
p-Isopropyltoluene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
sec-Butylbenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Styrene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
tert-Butylbenzene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Tetrachloroethene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Tetrahydrofuran (THF)	ND	9.3	ug/Kg	1	08/20/19	JLI	SW8260C
Toluene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Total Xylenes	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
trans-1,2-Dichloroethene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
trans-1,3-Dichloropropene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C

Project ID: CENTRAL MS
Client ID: S3

Phoenix I.D.: CD85049

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
trans-1,4-dichloro-2-butene	ND	9.3	ug/Kg	1	08/20/19	JLI	SW8260C
Trichloroethene	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Trichlorofluoromethane	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
Trichlorotrifluoroethane	ND	9.3	ug/Kg	1	08/20/19	JLI	SW8260C
Vinyl chloride	ND	4.7	ug/Kg	1	08/20/19	JLI	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	100		%	1	08/20/19	JLI	70 - 130 %
% Bromofluorobenzene	95		%	1	08/20/19	JLI	70 - 130 %
% Dibromofluoromethane	97		%	1	08/20/19	JLI	70 - 130 %
% Toluene-d8	99		%	1	08/20/19	JLI	70 - 130 %
Polynuclear Aromatic HC							
2-Methylnaphthalene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Acenaphthene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Acenaphthylene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Anthracene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Benz(a)anthracene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Benzo(a)pyrene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Benzo(b)fluoranthene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Benzo(ghi)perylene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Benzo(k)fluoranthene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Chrysene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Dibenz(a,h)anthracene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Fluoranthene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Fluorene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Indeno(1,2,3-cd)pyrene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Naphthalene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Phenanthrene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
Pyrene	ND	270	ug/Kg	1	08/16/19	WB	SW8270D
QA/QC Surrogates							
% 2-Fluorobiphenyl	59		%	1	08/16/19	WB	30 - 130 %
% Nitrobenzene-d5	52		%	1	08/16/19	WB	30 - 130 %
% Terphenyl-d14	54		%	1	08/16/19	WB	30 - 130 %
Field Extraction	Completed				08/13/19		SW5035A

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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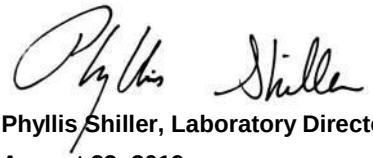


Phyllis Shiller, Laboratory Director
August 22, 2019
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

August 22, 2019

FOR: Attn: Mr. Steve Dinapoli
Big East Environmental LLC
57 Chestnut Street Unit 10
Norwalk, CT 06854

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		08/13/19	12:00
Location Code:	BIG-EAST	Received by:	CP	08/14/19	17:14
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCD85047
Phoenix ID: CD85050

Project ID: CENTRAL MS
Client ID: S4

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Percent Solid	80		%		08/14/19	VT	SW846-%Solid
Soil Extraction SVOA PAH	Completed				08/15/19	Q/NT/VL	SW3545A
Extraction of CT ETPH	Completed				08/15/19	NM/G/LV	SW3545A
TPH by GC (Extractable Products)							
Ext. Petroleum H.C. (C9-C36)	ND	62	mg/Kg	1	08/16/19	JRB	CTETPH 8015D
Identification	ND		mg/Kg	1	08/16/19	JRB	CTETPH 8015D
QA/QC Surrogates							
% n-Pentacosane	95		%	1	08/16/19	JRB	50 - 150 %
Volatiles							
1,1,1,2-Tetrachloroethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,1-Trichloroethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,2,2-Tetrachloroethane	ND	1.8	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,2-Trichloroethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloroethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloroethene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloropropene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,3-Trichlorobenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,3-Trichloropropane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,4-Trichlorobenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,4-Trimethylbenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dibromo-3-chloropropane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dibromoethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichlorobenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichloroethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichloropropane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,3,5-Trimethylbenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C

Project ID: CENTRAL MS
Client ID: S4

Phoenix I.D.: CD85050

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,3-Dichlorobenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,3-Dichloropropane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,4-Dichlorobenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
2,2-Dichloropropane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
2-Chlorotoluene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
2-Hexanone	ND	15	ug/Kg	1	08/20/19	JLI	SW8260C
2-Isopropyltoluene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
4-Chlorotoluene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
4-Methyl-2-pentanone	ND	15	ug/Kg	1	08/20/19	JLI	SW8260C
Acetone	ND	150	ug/Kg	1	08/20/19	JLI	SW8260C
Acrylonitrile	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Benzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Bromobenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Bromochloromethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Bromodichloromethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Bromoform	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Bromomethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Carbon Disulfide	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Carbon tetrachloride	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Chlorobenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Chloroethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Chloroform	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Chloromethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
cis-1,2-Dichloroethene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
cis-1,3-Dichloropropene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Dibromochloromethane	ND	1.8	ug/Kg	1	08/20/19	JLI	SW8260C
Dibromomethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Dichlorodifluoromethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Ethylbenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Hexachlorobutadiene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Isopropylbenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
m&p-Xylene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Methyl Ethyl Ketone	ND	18	ug/Kg	1	08/20/19	JLI	SW8260C
Methyl t-butyl ether (MTBE)	ND	6.1	ug/Kg	1	08/20/19	JLI	SW8260C
Methylene chloride	ND	6.1	ug/Kg	1	08/20/19	JLI	SW8260C
Naphthalene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
n-Butylbenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
n-Propylbenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
o-Xylene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
p-Isopropyltoluene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
sec-Butylbenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Styrene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
tert-Butylbenzene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Tetrachloroethene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Tetrahydrofuran (THF)	ND	6.1	ug/Kg	1	08/20/19	JLI	SW8260C
Toluene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Total Xylenes	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
trans-1,2-Dichloroethene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
trans-1,3-Dichloropropene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C

Project ID: CENTRAL MS
Client ID: S4

Phoenix I.D.: CD85050

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
trans-1,4-dichloro-2-butene	ND	6.1	ug/Kg	1	08/20/19	JLI	SW8260C
Trichloroethene	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Trichlorofluoromethane	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
Trichlorotrifluoroethane	ND	6.1	ug/Kg	1	08/20/19	JLI	SW8260C
Vinyl chloride	ND	3.1	ug/Kg	1	08/20/19	JLI	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	98		%	1	08/20/19	JLI	70 - 130 %
% Bromofluorobenzene	91		%	1	08/20/19	JLI	70 - 130 %
% Dibromofluoromethane	99		%	1	08/20/19	JLI	70 - 130 %
% Toluene-d8	99		%	1	08/20/19	JLI	70 - 130 %
Polynuclear Aromatic HC							
2-Methylnaphthalene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Acenaphthene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Acenaphthylene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Anthracene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Benz(a)anthracene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Benzo(a)pyrene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Benzo(b)fluoranthene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Benzo(ghi)perylene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Benzo(k)fluoranthene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Chrysene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Dibenz(a,h)anthracene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Fluoranthene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Fluorene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Indeno(1,2,3-cd)pyrene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Naphthalene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Phenanthrene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
Pyrene	ND	290	ug/Kg	1	08/16/19	WB	SW8270D
QA/QC Surrogates							
% 2-Fluorobiphenyl	58		%	1	08/16/19	WB	30 - 130 %
% Nitrobenzene-d5	54		%	1	08/16/19	WB	30 - 130 %
% Terphenyl-d14	54		%	1	08/16/19	WB	30 - 130 %
Field Extraction	Completed				08/13/19		SW5035A

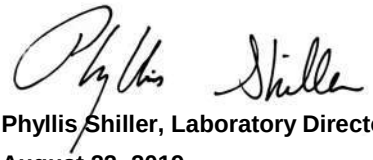
Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director
August 22, 2019
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

August 22, 2019

FOR: Attn: Mr. Steve Dinapoli
Big East Environmental LLC
57 Chestnut Street Unit 10
Norwalk, CT 06854

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		08/13/19	12:00
Location Code:	BIG-EAST	Received by:	CP	08/14/19	17:14
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCD85047
Phoenix ID: CD85051

Project ID: CENTRAL MS
Client ID: S5

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Percent Solid	92		%		08/14/19	VT	SW846-%Solid
Soil Extraction SVOA PAH	Completed				08/15/19	Q/NT/VL	SW3545A
Extraction of CT ETPH	Completed				08/15/19	NM/G/LV	SW3545A
TPH by GC (Extractable Products)							
Ext. Petroleum H.C. (C9-C36)	ND	54	mg/Kg	1	08/16/19	JRB	CTETPH 8015D
Identification	ND		mg/Kg	1	08/16/19	JRB	CTETPH 8015D
QA/QC Surrogates							
% n-Pentacosane	70		%	1	08/16/19	JRB	50 - 150 %
Volatiles							
1,1,1,2-Tetrachloroethane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,1-Trichloroethane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,2,2-Tetrachloroethane	ND	2.5	ug/Kg	1	08/20/19	JLI	SW8260C
1,1,2-Trichloroethane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloroethane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloroethene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,1-Dichloropropene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,3-Trichlorobenzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,3-Trichloropropane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,4-Trichlorobenzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2,4-Trimethylbenzene	11	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dibromo-3-chloropropane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dibromoethane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichlorobenzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichloroethane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,2-Dichloropropane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,3,5-Trimethylbenzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C

Project ID: CENTRAL MS
Client ID: S5

Phoenix I.D.: CD85051

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,3-Dichlorobenzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,3-Dichloropropane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
1,4-Dichlorobenzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
2,2-Dichloropropane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
2-Chlorotoluene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
2-Hexanone	ND	21	ug/Kg	1	08/20/19	JLI	SW8260C
2-Isopropyltoluene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
4-Chlorotoluene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
4-Methyl-2-pentanone	ND	21	ug/Kg	1	08/20/19	JLI	SW8260C
Acetone	ND	210	ug/Kg	1	08/20/19	JLI	SW8260C
Acrylonitrile	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Benzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Bromobenzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Bromochloromethane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Bromodichloromethane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Bromoform	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Bromomethane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Carbon Disulfide	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Carbon tetrachloride	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Chlorobenzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Chloroethane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Chloroform	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Chloromethane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
cis-1,2-Dichloroethene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
cis-1,3-Dichloropropene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Dibromochloromethane	ND	2.5	ug/Kg	1	08/20/19	JLI	SW8260C
Dibromomethane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Dichlorodifluoromethane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Ethylbenzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Hexachlorobutadiene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Isopropylbenzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
m&p-Xylene	4.6	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Methyl Ethyl Ketone	ND	25	ug/Kg	1	08/20/19	JLI	SW8260C
Methyl t-butyl ether (MTBE)	ND	8.3	ug/Kg	1	08/20/19	JLI	SW8260C
Methylene chloride	ND	8.3	ug/Kg	1	08/20/19	JLI	SW8260C
Naphthalene	11	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
n-Butylbenzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
n-Propylbenzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
o-Xylene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
p-Isopropyltoluene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
sec-Butylbenzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Styrene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
tert-Butylbenzene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Tetrachloroethene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Tetrahydrofuran (THF)	ND	8.3	ug/Kg	1	08/20/19	JLI	SW8260C
Toluene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Total Xylenes	4.6	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
trans-1,2-Dichloroethene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
trans-1,3-Dichloropropene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C

Project ID: CENTRAL MS
Client ID: S5

Phoenix I.D.: CD85051

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
trans-1,4-dichloro-2-butene	ND	8.3	ug/Kg	1	08/20/19	JLI	SW8260C
Trichloroethene	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Trichlorofluoromethane	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
Trichlorotrifluoroethane	ND	8.3	ug/Kg	1	08/20/19	JLI	SW8260C
Vinyl chloride	ND	4.1	ug/Kg	1	08/20/19	JLI	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	100		%	1	08/20/19	JLI	70 - 130 %
% Bromofluorobenzene	98		%	1	08/20/19	JLI	70 - 130 %
% Dibromofluoromethane	96		%	1	08/20/19	JLI	70 - 130 %
% Toluene-d8	98		%	1	08/20/19	JLI	70 - 130 %
Polynuclear Aromatic HC							
2-Methylnaphthalene	430	250	ug/Kg	1	08/16/19	WB	SW8270D
Acenaphthene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Acenaphthylene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Anthracene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Benz(a)anthracene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Benzo(a)pyrene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Benzo(b)fluoranthene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Benzo(ghi)perylene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Benzo(k)fluoranthene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Chrysene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Dibenz(a,h)anthracene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Fluoranthene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Fluorene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Indeno(1,2,3-cd)pyrene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Naphthalene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Phenanthrene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
Pyrene	ND	250	ug/Kg	1	08/16/19	WB	SW8270D
QA/QC Surrogates							
% 2-Fluorobiphenyl	64		%	1	08/16/19	WB	30 - 130 %
% Nitrobenzene-d5	59		%	1	08/16/19	WB	30 - 130 %
% Terphenyl-d14	58		%	1	08/16/19	WB	30 - 130 %
Field Extraction	Completed				08/13/19		SW5035A

Project ID: CENTRAL MS
Client ID: S5

Phoenix I.D.: CD85051

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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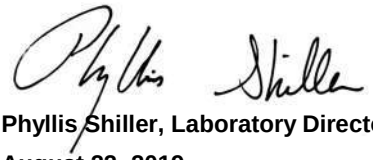

Phyllis Shiller, Laboratory Director
August 22, 2019
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

August 22, 2019

QA/QC Data

SDG I.D.: GCD85047

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 492581 (mg/Kg), QC Sample No: CD84840 (CD85047, CD85048, CD85049, CD85050, CD85051)										
TPH by GC (Extractable Products) - Soil										
Ext. Petroleum H.C. (C9-C36)	ND	50	89	88	1.1	87	92	5.6	60 - 120	30
% n-Pentacosane	71	%	77	74	4.0	70	82	15.8	50 - 150	30
Comment:										
Additional surrogate criteria: LCS acceptance range is 60-120% MS acceptance range 50-150%. The ETPH/DRO LCS has been normalized based on the alkane calibration.										
QA/QC Batch 492374 (ug/kg), QC Sample No: CD84115 (CD85047, CD85048)										
Polynuclear Aromatic HC - Soil										
2-Methylnaphthalene	ND	230	58	58	0.0	63	66	4.7	30 - 130	30
Acenaphthene	ND	230	62	64	3.2	66	69	4.4	30 - 130	30
Acenaphthylene	ND	230	61	63	3.2	67	70	4.4	30 - 130	30
Anthracene	ND	230	65	66	1.5	71	72	1.4	30 - 130	30
Benz(a)anthracene	ND	230	64	68	6.1	70	72	2.8	30 - 130	30
Benzo(a)pyrene	ND	230	66	69	4.4	73	75	2.7	30 - 130	30
Benzo(b)fluoranthene	ND	230	68	68	0.0	71	74	4.1	30 - 130	30
Benzo(ghi)perylene	ND	230	60	63	4.9	65	67	3.0	30 - 130	30
Benzo(k)fluoranthene	ND	230	66	70	5.9	74	76	2.7	30 - 130	30
Chrysene	ND	230	64	67	4.6	69	71	2.9	30 - 130	30
Dibenz(a,h)anthracene	ND	230	66	69	4.4	72	74	2.7	30 - 130	30
Fluoranthene	ND	230	67	69	2.9	72	74	2.7	30 - 130	30
Fluorene	ND	230	65	66	1.5	68	71	4.3	30 - 130	30
Indeno(1,2,3-cd)pyrene	ND	230	66	69	4.4	71	72	1.4	30 - 130	30
Naphthalene	ND	230	56	57	1.8	62	64	3.2	30 - 130	30
Phenanthrene	ND	230	63	65	3.1	67	69	2.9	30 - 130	30
Pyrene	ND	230	68	70	2.9	73	75	2.7	30 - 130	30
% 2-Fluorobiphenyl	56	%	56	59	5.2	63	66	4.7	30 - 130	30
% Nitrobenzene-d5	54	%	55	57	3.6	63	69	9.1	30 - 130	30
% Terphenyl-d14	62	%	58	61	5.0	64	65	1.6	30 - 130	30
Comment:										
Additional 8270 criteria: 20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)										
QA/QC Batch 492575 (ug/kg), QC Sample No: CD85325 (CD85049, CD85050, CD85051)										
Polynuclear Aromatic HC - Soil										
2-Methylnaphthalene	ND	230	60	55	8.7	61	65	6.3	30 - 130	30
Acenaphthene	ND	230	64	64	0.0	64	68	6.1	30 - 130	30
Acenaphthylene	ND	230	63	64	1.6	64	69	7.5	30 - 130	30
Anthracene	ND	230	64	67	4.6	63	69	9.1	30 - 130	30
Benz(a)anthracene	ND	230	61	65	6.3	62	67	7.8	30 - 130	30
Benzo(a)pyrene	ND	230	58	64	9.8	59	64	8.1	30 - 130	30
Benzo(b)fluoranthene	ND	230	63	68	7.6	61	65	6.3	30 - 130	30
Benzo(ghi)perylene	ND	230	55	59	7.0	60	59	1.7	30 - 130	30

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Benzo(k)fluoranthene	ND	230	65	74	12.9	66	72	8.7	30 - 130	30	
Chrysene	ND	230	62	66	6.3	64	69	7.5	30 - 130	30	
Dibenz(a,h)anthracene	ND	230	63	70	10.5	64	63	1.6	30 - 130	30	
Fluoranthene	ND	230	62	65	4.7	64	76	17.1	30 - 130	30	
Fluorene	ND	230	63	67	6.2	66	73	10.1	30 - 130	30	
Indeno(1,2,3-cd)pyrene	ND	230	60	66	9.5	63	62	1.6	30 - 130	30	
Naphthalene	ND	230	61	57	6.8	61	62	1.6	30 - 130	30	
Phenanthrene	ND	230	61	64	4.8	60	66	9.5	30 - 130	30	
Pyrene	ND	230	63	66	4.7	65	77	16.9	30 - 130	30	
% 2-Fluorobiphenyl	62	%	60	59	1.7	59	62	5.0	30 - 130	30	
% Nitrobenzene-d5	56	%	56	53	5.5	62	72	14.9	30 - 130	30	
% Terphenyl-d14	61	%	57	59	3.4	56	66	16.4	30 - 130	30	

Comment:

Additional 8270 criteria: 20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

QA/QC Batch 493191 (ug/kg), QC Sample No: CD85316 (CD85047, CD85048, CD85049, CD85050, CD85051)

Volatiles - Soil (Low Level)

1,1,1,2-Tetrachloroethane	ND	5.0	101	102	1.0	94	91	3.2	70 - 130	30	
1,1,1-Trichloroethane	ND	5.0	88	87	1.1	86	87	1.2	70 - 130	30	
1,1,2,2-Tetrachloroethane	ND	3.0	101	95	6.1	101	93	8.2	70 - 130	30	
1,1,2-Trichloroethane	ND	5.0	97	95	2.1	90	86	4.5	70 - 130	30	
1,1-Dichloroethane	ND	5.0	91	91	0.0	90	91	1.1	70 - 130	30	
1,1-Dichloroethene	ND	5.0	97	94	3.1	93	98	5.2	70 - 130	30	
1,1-Dichloropropene	ND	5.0	94	91	3.2	91	89	2.2	70 - 130	30	
1,2,3-Trichlorobenzene	ND	5.0	99	97	2.0	65	49	28.1	70 - 130	30	m
1,2,3-Trichloropropane	ND	5.0	98	91	7.4	97	90	7.5	70 - 130	30	
1,2,4-Trichlorobenzene	ND	5.0	99	94	5.2	69	55	22.6	70 - 130	30	m
1,2,4-Trimethylbenzene	ND	1.0	97	94	3.1	93	93	0.0	70 - 130	30	
1,2-Dibromo-3-chloropropane	ND	5.0	109	101	7.6	95	84	12.3	70 - 130	30	
1,2-Dibromoethane	ND	5.0	99	96	3.1	94	89	5.5	70 - 130	30	
1,2-Dichlorobenzene	ND	5.0	94	91	3.2	83	73	12.8	70 - 130	30	
1,2-Dichloroethane	ND	5.0	92	91	1.1	88	86	2.3	70 - 130	30	
1,2-Dichloropropane	ND	5.0	98	97	1.0	95	94	1.1	70 - 130	30	
1,3,5-Trimethylbenzene	ND	1.0	96	94	2.1	94	92	2.2	70 - 130	30	
1,3-Dichlorobenzene	ND	5.0	95	91	4.3	86	77	11.0	70 - 130	30	
1,3-Dichloropropane	ND	5.0	100	97	3.0	95	91	4.3	70 - 130	30	
1,4-Dichlorobenzene	ND	5.0	93	90	3.3	84	74	12.7	70 - 130	30	
2,2-Dichloropropane	ND	5.0	90	91	1.1	83	88	5.8	70 - 130	30	
2-Chlorotoluene	ND	5.0	95	93	2.1	94	89	5.5	70 - 130	30	
2-Hexanone	ND	25	95	90	5.4	78	67	15.2	70 - 130	30	m
2-Isopropyltoluene	ND	5.0	100	97	3.0	97	92	5.3	70 - 130	30	
4-Chlorotoluene	ND	5.0	95	91	4.3	90	86	4.5	70 - 130	30	
4-Methyl-2-pentanone	ND	25	103	97	6.0	90	82	9.3	70 - 130	30	
Acetone	ND	10	79	74	6.5	NC	NC	NC	70 - 130	30	
Acrylonitrile	ND	5.0	93	86	7.8	84	77	8.7	70 - 130	30	
Benzene	ND	1.0	96	94	2.1	91	90	1.1	70 - 130	30	
Bromobenzene	ND	5.0	97	95	2.1	95	89	6.5	70 - 130	30	
Bromochloromethane	ND	5.0	96	93	3.2	91	92	1.1	70 - 130	30	
Bromodichloromethane	ND	5.0	98	98	0.0	92	90	2.2	70 - 130	30	
Bromoform	ND	5.0	105	104	1.0	90	81	10.5	70 - 130	30	
Bromomethane	ND	5.0	96	95	1.0	95	95	0.0	70 - 130	30	
Carbon Disulfide	ND	5.0	94	92	2.2	90	93	3.3	70 - 130	30	

QA/QC Data

SDG I.D.: GCD85047

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Carbon tetrachloride	ND	5.0	93	91	2.2	86	88	2.3	70 - 130	30	
Chlorobenzene	ND	5.0	96	94	2.1	92	86	6.7	70 - 130	30	
Chloroethane	ND	5.0	92	90	2.2	92	95	3.2	70 - 130	30	
Chloroform	ND	5.0	89	87	2.3	85	87	2.3	70 - 130	30	
Chloromethane	ND	5.0	88	87	1.1	86	88	2.3	70 - 130	30	
cis-1,2-Dichloroethene	ND	5.0	91	92	1.1	89	91	2.2	70 - 130	30	
cis-1,3-Dichloropropene	ND	5.0	96	96	0.0	89	86	3.4	70 - 130	30	
Dibromochloromethane	ND	3.0	104	105	1.0	96	93	3.2	70 - 130	30	
Dibromomethane	ND	5.0	98	96	2.1	92	87	5.6	70 - 130	30	
Dichlorodifluoromethane	ND	5.0	95	91	4.3	92	93	1.1	70 - 130	30	
Ethylbenzene	ND	1.0	98	96	2.1	92	89	3.3	70 - 130	30	
Hexachlorobutadiene	ND	5.0	102	94	8.2	78	66	16.7	70 - 130	30	m
Isopropylbenzene	ND	1.0	98	93	5.2	100	99	1.0	70 - 130	30	
m&p-Xylene	ND	2.0	97	95	2.1	89	86	3.4	70 - 130	30	
Methyl ethyl ketone	ND	5.0	89	83	7.0	76	72	5.4	70 - 130	30	
Methyl t-butyl ether (MTBE)	ND	1.0	95	96	1.0	92	92	0.0	70 - 130	30	
Methylene chloride	ND	5.0	83	81	2.4	129	124	4.0	70 - 130	30	
Naphthalene	ND	5.0	110	105	4.7	82	65	23.1	70 - 130	30	m
n-Butylbenzene	ND	1.0	96	90	6.5	88	84	4.7	70 - 130	30	
n-Propylbenzene	ND	1.0	95	91	4.3	96	95	1.0	70 - 130	30	
o-Xylene	ND	2.0	99	98	1.0	90	86	4.5	70 - 130	30	
p-Isopropyltoluene	ND	1.0	98	93	5.2	95	91	4.3	70 - 130	30	
sec-Butylbenzene	ND	1.0	105	99	5.9	102	98	4.0	70 - 130	30	
Styrene	ND	5.0	100	97	3.0	87	76	13.5	70 - 130	30	
tert-Butylbenzene	ND	1.0	97	93	4.2	97	94	3.1	70 - 130	30	
Tetrachloroethene	ND	5.0	98	94	4.2	91	88	3.4	70 - 130	30	
Tetrahydrofuran (THF)	ND	5.0	91	88	3.4	62	58	6.7	70 - 130	30	m
Toluene	ND	1.0	96	94	2.1	86	81	6.0	70 - 130	30	
trans-1,2-Dichloroethene	ND	5.0	94	94	0.0	93	95	2.1	70 - 130	30	
trans-1,3-Dichloropropene	ND	5.0	96	94	2.1	86	82	4.8	70 - 130	30	
trans-1,4-dichloro-2-butene	ND	5.0	102	96	6.1	90	83	8.1	70 - 130	30	
Trichloroethene	ND	5.0	96	97	1.0	92	89	3.3	70 - 130	30	
Trichlorofluoromethane	ND	5.0	94	91	3.2	89	92	3.3	70 - 130	30	
Trichlorotrifluoroethane	ND	5.0	97	92	5.3	93	94	1.1	70 - 130	30	
Vinyl chloride	ND	5.0	87	84	3.5	84	86	2.4	70 - 130	30	
% 1,2-dichlorobenzene-d4	100	%	101	99	2.0	99	98	1.0	70 - 130	30	
% Bromofluorobenzene	97	%	99	97	2.0	96	95	1.0	70 - 130	30	
% Dibromofluoromethane	99	%	101	102	1.0	97	99	2.0	70 - 130	30	
% Toluene-d8	98	%	99	99	0.0	99	97	2.0	70 - 130	30	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%, 25-160% for Chloroethane-HL and Trichlorofluoromethane-HL.

m = This parameter is outside laboratory MS/MSD specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
August 22, 2019

Thursday, August 22, 2019

Criteria: None

State: CT

Sample Criteria Exceedances Report

GCD85047 - BIG-EAST

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

REASONABLE CONFIDENCE PROTOCOL
LABORATORY ANALYSIS QA/QC CERTIFICATION FORM

Laboratory Name: Phoenix Environmental Labs, Inc. ***Client:*** Big East Environmental LLC

Project Location: CENTRAL MS ***Project Number:***

Laboratory Sample ID(s): CD85047-CD85051 ***Sampling Date(s):*** 8/13/2019

List RCP Methods Used (e.g., 8260, 8270, et cetera) 8260, 8270, ETPH

1	**For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP method-specific Reasonable Confidence Protocol documents?**	☑ Yes ☐ No
1A	**Were the method specified preservation and holding time requirements met?**	☑ Yes ☐ No
1B	***VPH and EPH methods only:*** **Was the VPH or EPH method conducted without significant modifications (see section 11.3 of respective RCP methods)**	☐ Yes ☐ No ☑ NA
2	**Were all samples received by the laboratory in a condition consistent with that described on the associated Chain-of-Custody document(s)?**	☑ Yes ☐ No
3	**Were samples received at an appropriate temperature (< 6 Degrees C)?**	☑ Yes ☐ No ☐ NA
4	**Were all QA/QC performance criteria specified in the CTDEP Reasonable Confidence Protocol documents achieved?**	☑ Yes ☐ No
5	**a) Were reporting limits specified or referenced on the chain-of-custody?** **b) Were these reporting limits met?**	☐ Yes ☑ No ☑ Yes ☐ No
6	**For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?**	☐ Yes ☑ No
7	**Are project-specific matrix spikes and laboratory duplicates included in the data set?**	☐ Yes ☑ No

Notes: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or 1B is "No", the data package does not meet the requirements for "Reasonable Confidence". This form may not be altered and all questions must be answered.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized Signature: Rashmi Makol **Position:** Project Manager

Printed Name: Rashmi Makol **Date:** Thursday, August 22, 2019

Name of Laboratory Phoenix Environmental Labs, Inc.

This certification form is to be used for RCP methods only.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

RCP Certification Report

August 22, 2019

SDG I.D.: GCD85047

SDG Comments

8270 Semi-volatile Organics:
The client requested a short list for 8270 RCP Semivolatile. Only the PAH constituents are reported as requested on the chain-of-custody.

ETPH Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument:

AU-FID1 08/16/19-1 Jeff Bucko, Chemist 08/16/19

CD85047, CD85051

The initial calibration (ETPH808I) RSD for the compound list was less than 30% except for the following compounds: None.
As per section 7.2.3, a discrimination check standard was run (816A003A) and contained the following outliers: None.
The continuing calibration %D for the compound list was less than 30% except for the following compounds:None.

AU-FID21 08/15/19-1 Jeff Bucko, Chemist 08/15/19

CD85048, CD85049, CD85050

The initial calibration (ETPH709I) RSD for the compound list was less than 30% except for the following compounds: None.
As per section 7.2.3, a discrimination check standard was run (815A003_1) and contained the following outliers: None.
The continuing calibration %D for the compound list was less than 30% except for the following compounds:None.

QC (Batch Specific):

Batch 492581 (CD84840)

CD85047, CD85048, CD85049, CD85050, CD85051

All LCS recoveries were within 60 - 120 with the following exceptions: None.
All LCSD recoveries were within 60 - 120 with the following exceptions: None.
All LCS/LCSD RPDs were less than 30% with the following exceptions: None.
Additional surrogate criteria: LCS acceptance range is 60-120% MS acceptance range 50-150%. The ETPH/DRO LCS has been normalized based on the alkane calibration.

SVOA Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument:

CHEM04 08/15/19-2 Matt Richard, Chemist 08/15/19

CD85049, CD85050, CD85051

For 8270 full list, the DDT breakdown and pentachlorophenol & benzidine peak tailing were evaluated in the DFTPP tune and were found to be in control.
For 8270 BN list, benzidine peak tailing was evaluated in the DFTPP tune and was found to be in control.

Initial Calibration Evaluation (CHEM04/4_BN_0814):
100% of target compounds met criteria.
The following compounds had %RSDs >20%: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet a minimum response factors: None.

Continuing Calibration Verification (CHEM04/0815_23-4_BN_0814):

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RCP Certification Report

August 22, 2019

SDG I.D.: GCD85047

SVOA Narration

Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
100% of target compounds met criteria.
The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

CHEM28 08/15/19-1 Matt Richard, Chemist 08/15/19

CD85047, CD85048

For 8270 full list, the DDT breakdown and pentachlorophenol & benzidine peak tailing were evaluated in the DFTPP tune and were found to be in control.
For 8270 BN list, benzidine peak tailing was evaluated in the DFTPP tune and was found to be in control.

Initial Calibration Evaluation (CHEM28/28_BN_0807):
100% of target compounds met criteria.
The following compounds had %RSDs >20%: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet a minimum response factors: None.

Continuing Calibration Verification (CHEM28/0815_04-28_BN_0807):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
100% of target compounds met criteria.
The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

QC (Batch Specific):

Batch 492374 (CD84115)

CD85047, CD85048

All LCS recoveries were within 30 - 130 with the following exceptions: None.
All LCSD recoveries were within 30 - 130 with the following exceptions: None.
All LCS/LCSD RPDs were less than 30% with the following exceptions: None.
Additional 8270 criteria: 20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

Batch 492575 (CD85325)

CD85049, CD85050, CD85051

All LCS recoveries were within 30 - 130 with the following exceptions: None.
All LCSD recoveries were within 30 - 130 with the following exceptions: None.
All LCS/LCSD RPDs were less than 30% with the following exceptions: None.
Additional 8270 criteria: 20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

VOA Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument:

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

RCP Certification Report

August 22, 2019

SDG I.D.: GCD85047

VOA Narration

CHEM18 08/19/19-2 Jane Li, Chemist 08/19/19

CD85047, CD85048, CD85049, CD85050, CD85051

Initial Calibration Evaluation (CHEM18/VT-M081319):
98% of target compounds met criteria.
The following compounds had %RSDs >20%: Bromoform 25% (20%), trans-1,4-dichloro-2-butene 21% (20%)
The following compounds did not meet recommended response factors: Bromoform 0.097 (0.1)
The following compounds did not meet a minimum response factors: None.

Continuing Calibration Verification (CHEM18/0819M36-VT-M081319):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
100% of target compounds met criteria.
The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

QC (Batch Specific):

Batch 493191 (CD85316)

CD85047, CD85048, CD85049, CD85050, CD85051

All LCS recoveries were within 70 - 130 with the following exceptions: None.
All LCSD recoveries were within 70 - 130 with the following exceptions: None.
All LCS/LCSD RPDs were less than 30% with the following exceptions: None.
Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%, 25-160% for Chloroethane-HL and Trichlorofluoromethane-HL.

Temperature Narration

The samples were received at 2.2C with cooling initiated.
(Note acceptance criteria for relevant matrices is above freezing up to 6°C)

Cooler: Yes [X] No [ ]
Coolant: IPK [X] ICE [ ] No [ ]
Temp 2.2 Pg of

CHAIN OF CUSTODY RECORD

PHOENIX Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Data Delivery/Contact Options:
[ ] Fax:
[ ] Phone:
[ ] Email:

Customer: Bay East
Address: 57 Chestnut St
Norwalk CT

Project: Central M.S.
Report to:
Invoice to:
QUOTE #

Project P.O:

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature: [signature] Date: 8.13.19

Matrix Code:
DW=Drinking Water **GW**=Ground Water **SW**=Surface Water **WW**=Waste Water
RW=Raw Water **SE**=Sediment **SL**=Sludge **S**=Soil **SD**=Solid **W**=Wipe **OIL**=Oil
B=Bulk **L**=Liquid **X** = _____(Other)

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	CT ETPH	VOL 8260	SVOL 8270 BAHK	GL Amber 8 oz. w/H3PO4	Soil VOA Vials [ ] methanol [ ] H2O	GL Soil container (8) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [ ] 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
85047	S1	S	8.13	1200	X	X	X			3	1								
85048	S2	S	↓	↓	X	X	X			3	1								
85049	S3	S			X	X	X			3	1								
85050	S4	S			X	X	X			3	1								
85051	S5	S			X	X	X			3	1								

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	8/14/19	1:40
[signature]	Kristal Hall	8/14/19	17:14

Comments, Special Requirements or Regulations:

use as original

Turnaround Time:
[ ] 1 Day*
[ ] 2 Days*
[ ] 3 Days*
[X] Standard
[ ] Other
* SURCHARGE APPLIES

RI
[ ] Direct Exposure (Residential)
[ ] GW
[ ] Other

CT
[X] RCP Cert
[ ] GW Protection
[ ] SW Protection
[ ] GA Mobility
[ ] GB Mobility
[ ] Residential DEC
[ ] I/C DEC
[ ] Other

MA
[ ] MCP Certification
[ ] GW-1
[ ] GW-2
[ ] GW-3
[ ] S-1 GW-1 [ ] S-1 GW-2 [ ] S-1 GW-3
[ ] S-2 GW-1 [ ] S-2 GW-2 [ ] S-2 GW-3
[ ] S-3 GW-1 [ ] S-3 GW-2 [ ] S-3 GW-3
[ ] MWRA eSMART [ ] Other

Data Format
[ ] Excel
[ ] PDF
[ ] GIS/Key
[ ] EQuIS
[ ] Other

Data Package
[ ] Tier II Checklist
[ ] Full Data Package*
[ ] Phoenix Std Report
[ ] Other
* SURCHARGE APPLIES

State where samples were collected: CT

GCD85047

Christine Paradise

From: Sarah Bell
Sent: Wednesday, August 14, 2019 3:32 PM
To: Shannon Wilhelm; Lori Bailey; Christine Paradise
Subject: FW: Scan for samples picked up today
Attachments: scan0120.pdf

From: Erienne Murphy [mailto:emurphy@bigeastlabs.com]
Sent: Wednesday, August 14, 2019 3:24 PM
To: Sarah Bell
Subject: Scan for samples picked up today

Hey Sarah,

Please see attached.

Thanks,
Erienne

Erienne Murphy
Operations
Big East Environmental
57 Chestnut St. Unit 10
Norwalk, CT 06854
203.354.4955
www.bigeastlabs.com

WASTE MANIFESTS

90485907 NHWM081319-1 2095437

2095437

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	CRW024248900	1	203-384-6020	NHWM081319-1

5. Generator's Name and Mailing Address
Town of Greenwich BOE
290 Greenwich Ave, Greenwich Ct 06830
Generator's Phone: (203) 625-7454

Generator's Site Address (if different than mailing address)
9 Indian Rock Lane
Greenwich Ct

6. Transporter 1 Company Name
ALLSTATE POWER VAC
U.S. EPA ID Number
NJD003812047

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Tradebe Treatment and Recycling of Bridgeport
50 Cross Street
Bridgeport CT 06610
Facility's Phone: 203 334-1666
U.S. EPA ID Number
CTD002593887

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1	Non-DOT, Non-RCRA Regulated Material None, None, None	001	TT	X335	G	NONE #135
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
1) Profile# 8155ALH ACV#

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Mr. David Rose
Signature: [signature]
Month 08 Day 13 Year 19

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Brian Connecty
Signature: Brian Connecty
Month 08 Day 13 Year 19

Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Annette Garcia
Signature: Annette Garcia
Month 08 Day 13 Year 19

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

169-BLC-O 5 11977 (Rev. 9/09)

DESIGNATED FACILITY TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	CRW024248900	1		NHWM 080519 GB6E

GENERATOR

5. Generator's Name and Mailing Address
~~STAMFORD~~ GREENWICH BOARD OF EDUCATION
290 GREENWICH AVE
Generator's Phone: 203-625-7451

Generator's Site Address (if different than mailing address)
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LN
GREENWICH CT

6. Transporter 1 Company Name: ALLSTATE POWER VAC — U.S. EPA ID Number: NJD003812047

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
~~Tradebe Treatment and Recycling of Bridgeport~~ JG Paradise Energy
~~50 Cross Street~~ 2 Quimby Street
~~Bridgeport CT 06610~~ Ossining, NY 10562 914 945 0528
Facility's Phone: ~~203-334-1666~~

U.S. EPA ID Number: NYD000041830 ~~CTD002593887~~ JG

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Non-DOT, Non-RCRA Regulated Material None, None, None (0,1)	001	TT	5337	G	NONE
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
1) Profile# ACV#

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: CHRIS JORDAN — Signature: [signature] — Month 08 Day 05 Year 19

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: ROB RADCLIFFE — Signature: [signature] — Month 08 Day 05 Year 19

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: [signature] — Signature: [signature] — Month 8 Day 5 Year 19

TRANSPORTER #2

Straight Bill of Lading

Please type or print

ACV ENVIRO

1. Generator EPA ID # (if applicable)	2. Page 1 of	3. Emergency Response #	4. Document Tracking Number
CTD024248900	1	203 384-6020	ACV029561

Generator

5. Generator Name and Mailing Address
Town of Greenwich BOE
290 Greenwich Ave
Greenwich CT 06830
Generator Phone: 203 625 7454

Generator's Site Address (If different)
9 Indian Rock Lane
Greenwich, CT 06830
ACV Job Number: #CT 100843

6. Transporter 1 Company Name: Allstate Power Vac, Inc.
US EPA ID Number (If applicable): NJD003612047

7. Transporter 2 Company Name
US EPA ID Number (If applicable)

8. Designated Facility Name and Mailing Address
Paradise Energy
~~Tradebe Treatment and Recycling of Bridgeport~~
~~50 Cross St~~
~~Bridgeport CT 06610~~ 1 Quimby Street Ossining, NY 10562 914 945 0728
US EPA ID Number (If applicable)
~~CTD002993887~~ NYD000041830
8. Designated Facility Phone: ~~203-334-1666~~

9a. HM	9b. Material Description (Proper shipping name required if DOT Hazardous Material)	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit (Wt/Vol)	13. Waste Codes
	1. Non DOT Non RCRA Regulated Material None, None, None	XX1	TT	X1717	G	
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

16. Generator/Offeror's Certification: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labeled/placarded and are in all respects proper condition for transport according to applicable international and national governmental regulations.

Printed/Typed Name: [illegible] Signature: [signature] Month: 8 Day: 12 Year: 19

Transporter

17. Transporter 1 Acknowledgment of Receipt of Materials
Printed/Typed Name: Jorge A. Morales Signature: [signature] Month: 8 Day: 12 Year: 19

18. Transporter 2 Acknowledgment of Receipt of Materials
Printed/Typed Name: Signature: Month: Day: Year:

Facility

19. Discrepancy Indication Space (to be completed by Designated Facility)

20. Discrepancy Facility: Certification of receipt of the materials covered by this shipping paper except as noted in item 19
Printed/Typed Name: [illegible] Signature: [signature] Month: Day: Year:

CENTRAL

Greenwich BOE Central

SCALE PURCHASE TICKET

LaJoie's Auto Wrecking
40 Meadow Street
Norwalk, CT 06854
203-854-0767

Ticket: 352072
Customer: 5278

Weigh In: 08/14/2019 10:37
Weigh Out: 08/14/2019 10:57

ACV Enviro
118 Burr Ct
Bridgeport, CT 06605

Vehicle: White

Commodity	Gross	Tare	Net	Price	TOTAL $
Tanks	53970	40320	13650		

Buyer: ts

Ticket Total

I certify that I have the right to possess and sell this scrap. This is a Bill of Sale to the above described scrap. I hereby acknowledge payment in full and understand it is my responsibility to report any earnings and should consult my tax advisor.

Customer Signature

Please do not lose this ticket.
Ticket required for payment.

August 23, 2019

Town of Greenwich – Division of Buildings
101 Field Point Road
P.O. Box 2540
Greenwich, CT 06830

To whom it may concern:

On August 14, 2019, ACV Enviro (ACV) removed a 8,000-gallon underground storage tank from Central Middle School, located at 9 Indian Rock Lane in Greenwich, CT. The tank was transported to LaJoie's Auto Wrecking, located at 40 Meadow Street in Norwalk, CT for recycling. ACV will provide a receipt the disposal as needed.

Thank You,

Timothy Firla

Timothy Firla
Project Coordinator
ACV Enviro

CENTRAL

Greenwich BOE Central

SCALE PURCHASE TICKET

LaJoie's Auto Wrecking
40 Meadow Street
Norwalk, CT 06854
203-854-0767

Ticket: 352072
Customer: 5278

ACV Enviro
118 Burr Ct
Bridgeport, CT 06605

Vehicle: White

Weigh In: 08/14/2019 10:37
Weigh Out: 08/14/2019 10:57

Commodity	Gross	Tare	Net	Price	TOTAL $
Tanks	53970	40320	13650		

Buyer: ts

Ticket Total

I certify that I have the right to possess and sell this scrap. This is a Bill of Sale to the above described scrap. I hereby acknowledge payment in full and understand it is my responsibility to report any earnings and should consult my tax advisor.

Customer Signature

Please do not lose this ticket.
Ticket required for payment.

JULIAN

Greenwich BOE CT 100848

SCALE PURCHASE TICKET

LaJoie's Auto Wrecking
40 Meadow Street
Norwalk, CT 06854
203-854-0767

Ticket: 351697
Customer: 5278

Weigh In: 08/09/2019 15:10
Weigh Out: 08/09/2019 15:31

ACV Enviro
118 Burr Ct
Bridgeport, CT 06605

Vehicle: White

Commodity	Gross	Tare	Net	Price	TOTAL $
Tanks	50210	40480	9730	1	

Ticket Total

Buyer: ts

I certify that I have the right to possess and sell this scrap. This is a Bill of Sale to the above described scrap. I hereby acknowledge payment in full and understand it is my responsibility to report any earnings and should consult my tax advisor.

Customer Signature

Please do not lose this ticket.
Ticket required for payment.

Appendix C Site Reconnaissance Photographs

LANGAN

PHASE I ESA SITE RECONNAISSANCE CHECKLIST

GENERAL INFORMATION
Langan personnel: Elyssa S. Schwendy
Date of site reconnaissance: April 12, 2023
Business name / subject property occupant: Central Middle School
Full subject property address: 9 Indian Rock Lane, Greenwich Connecticut
Weather conditions: 80s °F, clear

Features, Activities, Uses, and Conditions	Identified/Observed?		Report Section(s)
General Subject Property Setting	**Yes**	**No**	
Current use(s) of the subject property	☒	☐	2.
Past use(s) of the subject property	☒	☐	3.1
Current use(s) of adjoining properties	☒	☐	4.1
Past use(s) of adjoining properties	☐	☒	4.2
Current or past uses in the surrounding area	☒	☐	4.1 and 4.2
Geologic, hydrogeologic, hydrologic, and topographic conditions	☒	☐	2.2
Structures and other improvements at the subject property	☒	☐	2.3
Roads	☒	☐	2.3
Potable water supply/source for the subject property	☒	☐	2.4
Sewage disposal system for the subject property	☒	☐	2.4

Interior/Exterior Features	**At Interior?**		**At Exterior?**		**Report Section(s) (if yes)**
	Yes	**No**	**Yes**	**No**	
Hazardous substances and petroleum products in connection with identified uses	☐	☒	☐	☒	2.5
Storage tanks	☒	☐	☐	☒	2.5.1 and 2.5.2
Strong, pungent, or noxious odors and their sources	☐	☒	☐	☒	2.6
Standing surface water and pools or sumps containing liquids likely to be hazardous substances or petroleum products	☐	☒	☐	☒	2.5
Drums, totes, and intermediate bulk containers	☐	☒	☐	☒	2.5.3
Hazardous substance and petroleum product containers not in connection with identified uses	☐	☒	☐	☒	2.5.4
Unidentified substance containers	☐	☒	☐	☒	2.5.4
PCB-containing items	☐	☒	☐	☒	2.5.4
Heating/cooling	☒	☐	☐	☒	2.4
Stains or corrosion on floors, walls, or ceilings	☒	☐	☐	☒	2.5 and 2.7
Drains and sumps	☒	☐	☐	☒	2.8
Pits, ponds, or lagoons	☐	☒	☐	☒	2.2.3
Stained soil or pavement	☐	☒	☒	☐	2.5 and 2.7
Stressed vegetation	☐	☒	☐	☒	2.9
Solid waste	☒	☐	☒	☐	2.7
Water/wastewater	☐	☒	☒	☐	2.8 and 2.9
Wells	☐	☒	☐	☒	2.2.3
Septic systems or cesspools	☐	☒	☐	☒	2.8

LANGAN

Site Reconnaissance Photographs

Client Name:	Subject Property Location:	Project No.
Construction Solutions Group, LLC	Central Middle School, 9 Indian Rock Lane, Greenwich CT	140265101

Date	Photo No.
13 April 2023	1

Direction Photo Taken:

Northeast

Description:

Subject property building from entrance along Indian Rock Lane

Date	Photo No.
13 April 2023	2

Direction Photo Taken:

Northeast

Description:

Hallway within the school building

Client Name:	Subject Property Location:	Project No.
Construction Solutions Group, LLC	Central Middle School, 9 Indian Rock Lane, Greenwich CT	140265101

Date	Photo No.
13 April 2023	3

Direction Photo Taken:

Northwest

Description:

Gymnasium in the school building

Date	Photo No.
13 April 2023	4

Direction Photo Taken:

Southwest

Description:

Typical classroom in the school building

Client Name:	Subject Property Location:	Project No.
Construction Solutions Group, LLC	Central Middle School, 9 Indian Rock Lane, Greenwich CT	140265101

Date	Photo No.
13 April 2023	5

Direction Photo Taken:

Northeast

Description:

Auditorium in the school building

Date	Photo No.
13 April 2023	6

Direction Photo Taken:

Southeast

Description:

Janitorial storage room in the school building

Client Name:	Subject Property Location:	Project No.
Construction Solutions Group, LLC	Central Middle School, 9 Indian Rock Lane, Greenwich CT	140265101

Date	Photo No.
13 April 2023	7

Direction Photo Taken:

East

Description:

Typical janitorial closet in the school building

Date	Photo No.
13 April 2023	8

Direction Photo Taken:

West

Description:

Grease trap in the kitchen area of the cafeteria in the school building

Date	Photo No.
13 April 2023	9

Direction Photo Taken:

Southeast

Description:

Electric lift in the school building

Date	Photo No.
13 April 2023	10

Direction Photo Taken:

Southwest

Description:

Maintenance chemical storage in a janitorial room of the school building

Client Name:	Subject Property Location:	Project No.
Construction Solutions Group, LLC	Central Middle School, 9 Indian Rock Lane, Greenwich CT	140265101

Date	Photo No.
13 April 2023	11

Direction Photo Taken:

Northwest

Description:

Maintenance chemical storage in a janitorial room of the school building

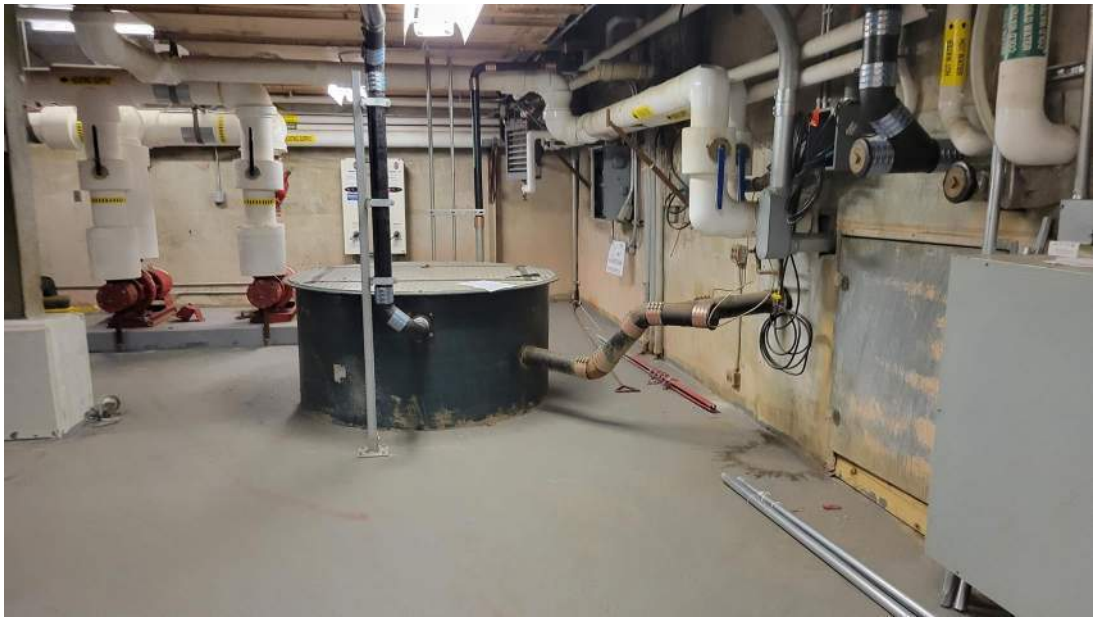
Date	Photo No.
13 April 2023	12

Direction Photo Taken:

North

Description:

Septic holding tank in the boiler room of the school building (connected to the public sanitary sewer)



Client Name:	Subject Property Location:	Project No.
Construction Solutions Group, LLC	Central Middle School, 9 Indian Rock Lane, Greenwich CT	140265101

Date	Photo No.
13 April 2023	13

Direction Photo Taken:

South

Description:

Sump pump in the boiler room of the school building

Date	Photo No.
13 April 2023	14

Direction Photo Taken:

North

Description:

Boiler room of the school building

Client Name:	Subject Property Location:	Project No.
Construction Solutions Group, LLC	Central Middle School, 9 Indian Rock Lane, Greenwich CT	140265101

Date	Photo No.
13 April 2023	15

Direction Photo Taken:

Northwest

Description:

Floor drain in a bathroom in the school building

Date	Photo No.
13 April 2023	16

Direction Photo Taken:

Southeast

Description:

Elevator control room in the school building

Client Name:	Subject Property Location:	Project No.
Construction Solutions Group, LLC	Central Middle School, 9 Indian Rock Lane, Greenwich CT	140265101

Date	Photo No.
13 April 2023	17

Direction Photo Taken:

Northeast

Description:

Locked flammable material cabinets in the school building

Date	Photo No.
13 April 2023	18

Direction Photo Taken:

Southwest

Description:

Woodshop in the school building

LANGAN

Site Reconnaissance Photographs

Client Name:	Subject Property Location:	Project No.
Construction Solutions Group, LLC	Central Middle School, 9 Indian Rock Lane, Greenwich CT	140265101

Date	Photo No.
13 April 2023	19

Direction Photo Taken:

Northeast

Description:

Storm drain and bedrock outcropping to the southeast of the school building

Date	Photo No.
13 April 2023	20

Direction Photo Taken:

West

Description:

Reported location of former underground storage tanks (USTs) to the west of the school building

LANGAN		Site Reconnaissance Photographs
Client Name: Construction Solutions Group, LLC	**Subject Property Location:** Central Middle School, 9 Indian Rock Lane, Greenwich CT	**Project No.** 140265101

Date	**Photo No.**
13 April 2023	21

Direction Photo Taken:

Southeast

Description:

Dumpsters and transformer at the western exterior of the school building

Date	**Photo No.**
13 April 2023	22

Direction Photo Taken:

Southeast

Description:

Transformer at the western exterior of the school building

Client Name:	Subject Property Location:	Project No.
Construction Solutions Group, LLC	Central Middle School, 9 Indian Rock Lane, Greenwich CT	140265101

Date	Photo No.
13 April 2023	23

Direction Photo Taken:

Northwest

Description:

Athletic fields north of the school building

Date	Photo No.
13 April 2023	24

Direction Photo Taken:

Southwest

Description:

Athletic fields north of the school building

LANGAN

Site Reconnaissance Photographs

Client Name:	Subject Property Location:	Project No.
Construction Solutions Group, LLC	Central Middle School, 9 Indian Rock Lane, Greenwich CT	140265101

Date	Photo No.
13 April 2023	25

Direction Photo Taken:

East

Description:

Tennis courts west of the school building

Date	Photo No.
13 April 2023	26

Direction Photo Taken:

East

Description:

Athletic fields north of the school building

LANGAN

Site Reconnaissance Photographs

Client Name:	Subject Property Location:	Project No.
Construction Solutions Group, LLC	Central Middle School, 9 Indian Rock Lane, Greenwich CT	140265101

Date	Photo No.
13 April 2023	27

Direction Photo Taken:

Northeast

Description:

Undeveloped northwestern portion of the subject property

Date	Photo No.
13 April 2023	28

Direction Photo Taken:

Northeast

Description:

Northern adjoining residential properties

LANGAN	Site Reconnaissance Photographs	
Client Name: Construction Solutions Group, LLC	**Subject Property Location:** Central Middle School, 9 Indian Rock Lane, Greenwich CT	**Project No.** 140265101

Date	**Photo No.**
13 April 2023	29

Direction Photo Taken:

Southeast

Description:

Eastern adjoining residential properties

Date	**Photo No.**
13 April 2023	30

Direction Photo Taken:

East

Description:

Eastern adjoining residential properties

LANGAN		Site Reconnaissance Photographs
Client Name: Construction Solutions Group, LLC	**Subject Property Location:** Central Middle School, 9 Indian Rock Lane, Greenwich CT	**Project No.** 140265101

Date	**Photo No.**
13 April 2023	31

Direction Photo Taken:

South

Description:

Southern adjoining residential properties

Date	**Photo No.**
13 April 2023	32

Direction Photo Taken:

South

Description:

Southern adjoining preschool (10 Indian Rock Lane)

LANGAN

Site Reconnaissance Photographs

Client Name:	Subject Property Location:	Project No.
Construction Solutions Group, LLC	Central Middle School, 9 Indian Rock Lane, Greenwich CT	140265101

Date	Photo No.
13 April 2023	33

Direction Photo Taken:

Northwest

Description:

Western adjoining residential properties

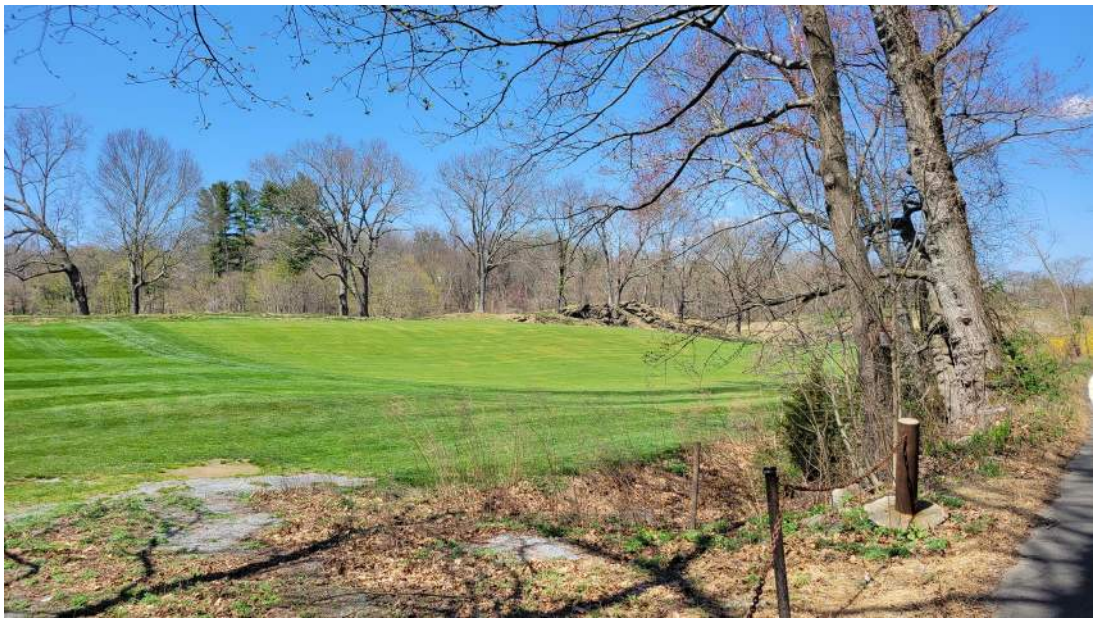
Date	Photo No.
13 April 2023	34

Direction Photo Taken:

Northwest

Description:

Western adjoining country club (19 Doubling Road)



Appendix D Agency Records and Other Reports

Tax ID 340/056 Printed 12/14/2022 Card No. 1 of 1

ADMINISTRATIVE INFORMATION

PARCEL NUMBER
08-4598/S

Parent Parcel Number

Property Address
INDIAN ROCK LANE 0009

Neighborhood
2300 EAST PUTNAM

Property Class
299 Exempt Commercial

TAXING DISTRICT INFORMATION

Jurisdiction	57	Greenwich, CT
Area	001	
Corporation	057	
District	08	
Section & Plat	271	
Routing Number	8129E0035	

Site Description

Topography:

Public Utilities:
Sewer, Electric

Street or Road:

Neighborhood:

Zoning:
R-12 Single Fam 12,000 SF

Legal Acres:
22.3000

OWNERSHIP

TOWN OF GREENWICH
C/O FINANCE DEPT
101 FIELD POINT RD
GREENWICH, CT 06830

LOT NO 5A STANWICH RD INDIAN ROCK LA E35

TRANSFER OF OWNERSHIP

Date			
01/20/1960	NA		$0
		Bk/Pg: 627, 433	

EXEMPT

VALUATION RECORD

Assessment Year		10/01/2017	10/01/2018	10/01/2019	10/01/2020	10/01/2021	10/01/2021	10/01/2022
Reason for Change		2017 List	2018 List	2019 List	2020 List	2021 Prelim	2021 Final	2022 List
VALUATION	L	22243900	22243900	22243900	22243900	22626200	22626200	22626200
Market	B	33024200	33426600	33426600	33426600	34744900	34744900	34744900
	T	55268100	55670500	55670500	55670500	57371100	57371100	57371100
VALUATION	L	15570730	15570730	15570730	15570730	15838340	15838340	15838340
70% Assessed	B	23116940	23398620	23398620	23398620	24321430	24321430	24321430
	T	38687670	38969350	38969350	38969350	40159770	40159770	40159770

LAND DATA AND CALCULATIONS

Land Type	Rating Soil ID -or- Actual Frontage	Measured Acreage -or- Effective Frontage	Table Effective Depth	Prod. Factor -or- Depth Factor -or- Square Feet	Base Rate	Adjusted Rate	Extended Value	Influence Factor	Value
1 Primary Commercial				971388.00	35.83	35.83	34809600 B	-35%	22626200

BP15: 15-1954: nvc $300,000: int renov
BP18: 18-2148: $225,000 Structural Steel Repairs
17-2323; Media Room Windows, New wing Roof $200,000
17-2230: Staff Lavatory Reno. $25,000
BP19: 19-2131: $28,000 Remove Underground Oil Tank
BP21: 20-6332: $45,000 Back Flow Preventor
BP22: 22-0328: $264,000 Exigent Facade Repairs
DBA: Central Middle School
P: 105 spcs

Permit Number / Type	FilingDate	Est. Cost / Est. SqFt	Field Visit

Supplemental Cards

TRUE TAX VALUE 22626200

Supplemental Cards
TOTAL LAND VALUE 22626200

IMPROVEMENT DATA

PHYSICAL CHARACTERISTICS

ROOFING

Built-up

WALLS

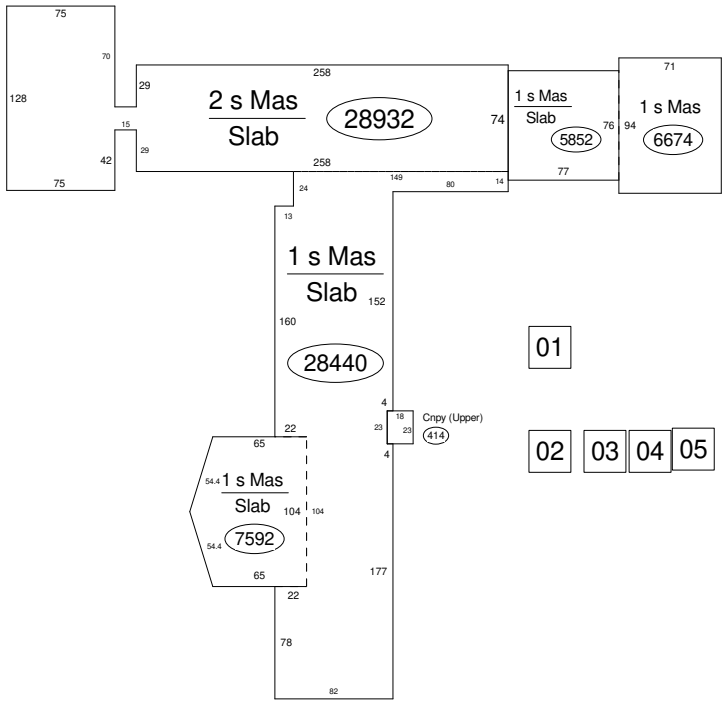
	B	1	2	U
Frame		Yes	Yes	
Brick				
Metal				
Guard				

FRAMING

	B	1	2	U
F Res	0	77490	28932	0

HEATING AND AIR CONDITIONING

	B	1	2	U
Heat	0	77490	28932	0
A/C	0	25416	11572	0



Item Description	Units	Cost	Total	Pct
M & S Cost Database Date: 07/2020				
Base Cost	106422	170.73	18169545	
Exterior Walls	106422	37.12	3950063	
Heating & Cooling	143410	15.05	2157685	
Basic Structure Cost	106422	228.12	24277293	
Physical	0	0.00	1606985	6.62
Depreciated Cost	106422	213.02	22670308	
Rounded Total	0	0.00	22670300	
CNPY/	414	13.79	5710	
Total Exterior Features Value				5710
Depreciated Ext Features			5330	
Total Before Adjustments			22675630	
Neighborhood Adjustment			11337770	50.00
TOTAL VALUE			34013400	

(LCM: 150.00)

SPECIAL FEATURES

Description	Value
C : Remod 2012	

SUMMARY OF IMPROVEMENTS

ID	Use	Stry Hgt	Const Type	Grade	Year Const	Eff Year	Cond	Base Rate	Feat-ures	Adj Rate	Size or Area	Computed Value	Phys Depr	Obsol Depr	Market Adj	% Comp	Value
C	SCHCLASS	0.00		Gd+	1950	2008	VG	0.00	N	0.00	77490	0	0	0	150	100	34013400
01	PAVING	0.00	85	Avg	1980	1985	AV	2.90	N	4.35	160000	696000	45	0	100	100	382800
02	UTLSHED	1.00	5	Avg	1980	1985	AV	16.00	N	24.00	12x 16	4610	45	0	100	100	2500
03	TENNISS	0.00	85	Avg	2000	2000	GD	27820	N	41730	4	166920	12	0	100	100	146900
04	FENCECL	10.00	51C	Avg	2000	2000	AV	30.65	N	45.97	780	35860	30	0	100	100	25100
05	ELEVCOM	2.00	2H	Avg	1981	1995	AV	178685	N	268028	1@ 0	268030	35	0	100	100	174200

Data Collector/Date	Appraiser/Date	Neighborhood	Supplemental Cards
TD 09/14/2022	TOG 10/01/2021	Neigh 2300 AV	

TOTAL IMPROVEMENT VALUE 34744900

Elyssa Schwendy

From: Pratico, Christopher <Christopher.Pratico@greenwichct.org>
Sent: Wednesday, April 5, 2023 11:50 AM
To: Elyssa Schwendy
Subject: [External] Central Middle School - 9 Indian Rock Lane, Greenwich, CT

Elyssa,

In regards to your F.O.I.A. request for Central Middle School, 9 Indian Rock Lane, a search of our system did not yield any records of underground storage tanks. We do not have records of any hazardous materials spills or discharges for this location.

Chris Pratico
Fire Marshal
Greenwich Fire Department
15 Havemeyer Place
Greenwich, CT 06830
203-618-8830

Elyssa Schwendy

From: Long, Michael <Michael.Long@greenwichct.org>
Sent: Wednesday, April 5, 2023 8:43 AM
To: Elyssa Schwendy
Cc: Baisley, Caroline; Ceglio, Patricia
Subject: [External] ESL - Environmental Reports for GREENWICH PUBLIC SCHOOLS, - 9 INDIAN ROCK LANE - 3/15/2021 - ASBESTOS
Attachments: ESL - Environmental Reports for GREENWICH PUBLIC SCHOOLS, - 9 INDIAN ROCK LANE - 3-15-2021 - ASBESTOS.pdf; ESL - Environmental Reports for GREENWICH BOARD OF EDUCATION, - 9 INDIAN ROCK LANE - 8-17-2017 - ASBESTOS.pdf; ESL - Environmental Reports for , - 9 INDIAN ROCK LANE - 06-16-2011 - ASBESTOS.pdf; ESL - Environmental Reports for , - 9 INDIAN ROCK LANE - 06-22-2006 - ASBESTOS.pdf

Elyssa, in response to your request, see the attached

Michael Long
Greenwich Health Department

STATE OF CONNECTICUT
DEPARMENT OF PUBLIC HEALTH

Town greenwich

ASBESTOS ABATEMENT NOTIFICATION FORM

See Instructions on our program website.
Checks made payable to "Treasurer, State of Connecticut"

State Use Only

Post Mark 3/15/2021
Check No 1452
Check Amt $ 148.40
Trans 21-205
Rec #

1. TYPE OF NOTIFICATION

☑ A. New ☐ B. Blanket ☐ C. Cancelation ☐ Revision # ☐ D. Revised ☐ E. Emergency ☐ F. Postponed

ITEMS REVISED

Explain Emergency

2. ABATEMENT CONTRACTOR

Contractor_Name: AAIS, a division of Spectrum — License # 53.000 017
Contractor_Address: P.O. Box 26066
Contractor_City: West Haven — C_Contact: Keith Godreau
Contractor_State: CT — C_Zipcode: 06516 — C_Phone: (203) 932-2992

3. FACILITY OWNER

Owner_Name: Greenwich Public Schools
Owner_Address: 290 Greenwich Ave
Owner_City: Greenwich — O_Contact: Daniel Watson
Owner_State: CT — O_Zipcode: 06830-6508 — O_Phone: 2035851777

4. PROJECT

Name of Facility: Central Middle School
Project_Address: 9 Indian Rock Ln,
Project_City: greenwich — P_Contact: Daniel Watson
Project State: CT — Project_Zipcode: 06860 — Project_Phone: 2035851777

5A. ABATEMENT START DATE 2021-04-09 **5B. ABATEMENT END DATE** 2021-04-17

REVISED START REVISED END

6. ONLY FOR PROJECTS OF 160 SQUARE FEET OR GREATER TOTAL COST $4,840.00

6A. 1% of TOTAL COST $48.40 plus $100 6B.=(Notification Fee Due) $148.40

FOR REVISIONS, ADDITIONAL COST $0.00 Additional 1% Fee Owed $0.00 Paid to Date

7. FACILITY USE

A. School (K-12) ☑ B. Public ☐ C. Manufacturing ☐ D. Office ☐ E. College ☐ F. Commercial ☐ G. Religious ☐ H. Residential ☐ I. Other, Specify ☐ # of Units

8. BUILDING DATA Sq. Ft. 106422 Age 71 Years Number Floors 2

9. CLASSIFICATION Renovation ☑ Demolition ☐ Ordered Demo ☐ (ATTACH ORDER)

10. TECHNIQUE

A. Full Containment with Neg Pressure ☑ C. Exterior ☐
B. Alternative Work Practice (pre-approved) ☐ D. Spot Repair ☐

If AWP, Name of Project Designer Lic #

11. METHOD

A. Removal ☑ B. Encapsulation ☐ C. Enclosure ☐

12. TYPE of DECONTAMINATION A. Contiguous ☑ B. Remote ☐ C. Both ☐

RECEIVED MAR 16 2021 Department of Public Health Asbestos Program

HAS CONTRACTOR PROVIDED US EPA with A TEN WORKING DAY or EMERGENCY NOTIFICATION? YES ☑ NO ☐

Phone (860) 509-7367 / Fax (860) 509-7378
410 Capitol Avenue- MS #12AIR PO Box 340308

ADDRESS 9 Indian Rock Ln, CITY/TOWN greenwich

13. TYPE AND AMOUNT OF ASBESTOS CONTAINING MATERIAL TO BE ABATED

FRIABLE MATERIAL (report in square footage)

A. Sprayed/Troweled on		E. Duct Insul	
B. Boiler Insulation		F. Ceiling Tiles	
C. Tank Insulation		G. Other (Specify) Other	
D. Breeching Insulation			

PIPE INSULATION: Measure outside diameter (OD) of pipe, multiply the length of pipe (linear feet) times the CF to report total pipe insulation in square feet (add all SF quantities below)

Conversion Factor

OD	QTY LF	x CF	= SQ FT
1	0	0.26	0
2	0	0.52	0
3	0	0.78	0

OD	QTY LF	x CF	= SQ FT
0	0	0	0
0	0	0	0
0	0	0	0

Total Columns 0 — H. Pipe Insulation SF

NONFRIABLE CATEGORY 1	SQ FT	SPECIFY TYPE	NONFRIABLE CATEGORY 2	SQ FT	SPECIFY TYPE
I. Floor Coverings/Tiles	963		L. Transite board		
J. Roofing, Specify			M. Other NF, Specify		
K. Packings, Gaskets			N. Other NF, Specify		

14. HAULER *list up to 3 haulers

Hauler 1 Name	TRANSWASTE, Inc.	Hauler 2 Name	ITS ABOUT TIME LOGISTICS (IAT)
Hauler 1 Address	3 Barker Drive	Hauler 2 Address	174 South Road, Suite 111
Hauler 1 City	Wallingford	Hauler 2 City	Enfield
Hauler 1State,Zip	CT, 06492	Hauler 2 State,Zip	CT, 06082
Hauler 1 Contact	Cindy Devaglia	Hauler 2 Contact	Louise Cadavid

Hauler 3 Name	Strategic Environmental Services
Hauler 3 Address	27 Kreiger Lane
Hauler 3 City	Glastonbury
Hauler 3 State,Zip	CT, 06033
Hauler 3 Contact	Jennifer Mancini

15. WASTE DISPOSAL SITE *list up to 3 sites

Landfill 1 Name	Modern Landfill	Landfill 2 Name	Hakes Landfill
Landfill 1 Address	4400 Mount Pisgah Road	Landfill 2 Address	4376 Manning Ridge Road
Landfill 1 City	York	Landfill 2 City	Painted Post
Landfill 1 State,Zip	PA, 17406	Landfill 2 State,Zip	NY, 14870
Landfill 1Contact	Jim Kuhn	Landfill 2 Contact	

Landfill 3 Name	Minerva Enterprises, LLC
Landfill 3 Address	8955 Minerva Road
Landfill 3 City	Waynesburg
Landfill 3 State, Zip	OH, 44688
Landfill 3 Contact	Bruce Sullivan

Form Prepared by (printed)

Keith Godreau

Signature

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

ASBESTOS ABATEMENT NOTIFICATION FORM

STATE USE ONLY

Post Mark Date	8/17/17
Check #	122520
Amount	$ 243.00
Transmittal #	18-110
Record #	

This form is to be completed and postmarked or hand delivered to the Connecticut Department of Public Health at least ten (10) days prior to the start of asbestos abatement, as required by the Regulations of Connecticut State Agencies, Section 19a-332a-3. In case of an emergency, this form is to be completed and postmarked within one (1) working day following the start of asbestos abatement. Faxed originals are not acceptable. Revisions may be faxed unless an additional fee payment is due.

1. TYPE OF NOTIFICATION: APPROVED BY JOANNA

A. NEW ___ B. BLANKET ___ C. CANCELLATION / POSTPONED C ___ P ___

D. REVISED ___ (ITEMS REVISED) ___ REVISION # ___

E. EMERGENCY X DESCRIBE NATURE OF EMERGENCY BROKEN FLOOR TILE IN SCHOOL CAFETERIA

2. ABATEMENT CONTRACTOR:

NAME: Bestech, Inc. LICENSE #000016

ADDRESS: 25 Pinney St

CITY: Ellington STATE: CT ZIP: 06029

PHONE # 860-896-1000 CONTACT PERSON: Jim Newbury

3. FACILITY (OWNER'S NAME) OWNER/OPERATOR:

NAME: Greenwich Board of Education

ADDRESS: 290 Greenwich Ave.

CITY: Greenwich STATE: CT ZIP: 06830

PHONE # 203-625-7450 CONTACT PERSON: Mary Lou

4. NAME OF FACILITY: CENTRAL MIDDLE SCHOOL

ADDRESS: 9 Indian Rock Lane

CITY: Greenwich STATE: CT ZIP: 06830

5.(A) ABATEMENT START DATE: **08/21/17** *Month/Day/Year format* **5.(B) COMPLETION DATE:** **08/25/17** *Month/Day/Year format*

(#6 only) *TO BE COMPLETED IF PROJECT IS GREATER THAN 160 SQUARE FEET*

Notification Fee Due: $100.00 + 1% total asbestos abatement cost $243.00

6. TOTAL ABATEMENT PROJECT COST: 14,300.00 ***REVISED COST (ONLY FOR REVISIONS):** ___

7. USE OF FACILITY:

A. SCHOOL (K-12)	X	B. PUBLIC BUILDING		C. MANUFACTURING		D. OFFICE		E. COLLEGE	
F. COMMERCIAL		G. CHURCH/SYNAGOGUE		H. RESIDENTIAL, # OF DWELLINGS				I. OTHER	
(I. SPECIFY)									

RECEI

AUG 1 0 2017

DEP

Phone: (860) 509-7367/ Fax: (860) 509-7378
Telephone Device for the Deaf: (860) 509-7191
410 Capitol Avenue- MS # 51 AIR
PO Box 340308 Hartford CT 06134-0308 Hartford CT 06134

Affirmative Action/ An Equal Opportunity Employer

ADDRESS:
TOWN:

8. BUILDING DATA:

SQUARE FEET: 62,250 NUMBER OF FLOORS: 2 AGE: 50 years

9. ABATEMENT CLASSIFICATION:

RENOVATION X DEMOLITION ORDERED DEMO (AGENCY ISSUING ORDER) *MUST ATTACH COPY OF DEMO ORDER*

10. ABATEMENT TECHNIQUE:

A. FULL CONTAINMENT WITH NEGATIVE AIR X B. ALTERNATIVE WORK PRACTICE (PRE-APPROVAL REQUIRED

(IF AWP, include) **Project Designer &** LICENSE #

C. EXTERIOR ABATEMENT D. SPOT REPAIR (>25 SQ. FT. TOTAL)

11. ABATEMENT METHOD:

A. REMOVAL X B. ENCAPSULATION C. ENCLOSURE

12. TYPE OF DECONTAMINATION SYSTEM:

A. CONTIGUOUS B. REMOTE C. BOTH X

13. TYPE AND AMOUNT OF ASBESTOS TO BE ABATED: (REPORTED IN SQUARE FEET)

FRIABLE MATERIAL		NONFRIABLE MATERIAL	
		Category I	
A. SPRAYED /TROWELED ON:			
B. BOILER INSULATION:		I. FLOOR COVERINGS/TILES:	1,600
C. TANK INSULATION:		J. ROOFING, SPECIFY:	
D. BREECHING INSULATION:		K. GASKETS, PACKINGS:	
E. DUCT INSULATION:		**Category II**	
F. CEILING TILES:		L. TRANSITE BOARD:	
G. OTHER, SPECIFY:		M. OTHER, SPECIFY:	
H.* PIPE INSULATION:	**Use conversion table**	**Total Square Feet**	

(Pipe diameter)"	*Multiply LF by CF*	*= Total Square Feet*

14. WASTE DISPOSAL SITE (IF MULTIPLE SITES, LIST SEPARATELY)

NAME:	Minerva Landfill
ADDRESS:	8955 Minerva s e
CITY, STATE, ZIP:	Waynesburg, OH
OWNER, OPERATOR:	MINERVA, LLC

15. HAULER/ WASTE TRANSPORTER

NAME:	Tri-S Environmental
ADDRESS:	25 Pinney St.
CITY, STATE, ZIP:	Ellington, CT 06029

Signature and Title of Person Completing this Form: *Robert Sullivan/Estimator*

Mail to:

DPH

ASBESTOS PROGRAM

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

ASBESTOS ABATEMENT NOTIFICATION FORM

Post Mark Date	6-16-11
Check #	3485
Amount	$ 200.00
Transmittal #	11-673
Record #	

This form is to be completed and postmarked or hand delivered to the Connecticut Department of Public Health at least ten (10) days prior to the start of asbestos abatement, as required by the Regulations of Connecticut State Agencies, Section 19a-332a-3. In case of an emergency, this form is to be completed and postmarked within one (1) working day following the start of asbestos abatement. Faxed originals are not acceptable. Revisions may be faxed unless an additional fee payment is due.

1. TYPE OF NOTIFICATION:

A. NEW X B. BLANKET ___ C. CANCELLATION / POSTPONED ___ C ___ P ___

D. REVISED ___ (ITEMS REVISED) ___ REVISION # ___

E. EMERGENCY DESCRIBE NATURE OF EMERGENCY

2. ABATEMENT CONTRACTOR:

NAME: AWAY Environmental Inc LICENSE # 00552

ADDRESS: 88 Rennert Lane

CITY: Bardonia STATE: NY ZIP: 10954

PHONE # 845-521-5802 CONTACT PERSON: Yojana Costello

3. FACILITY (OWNER'S NAME) OWNER/OPERATOR:

NAME: Greenwich Public Schools

ADDRESS: 290 Greenwich Ave

CITY: Greenwich STATE: CT ZIP: 06830

PHONE # 203-625-7452 CONTACT PERSON: Susan chiporous

4. NAME OF FACILITY: (FILL IN ADDRESS WHERE ABATEMENT PROJECT IS LOCATED)

ADDRESS: Central middle School - 9 Indian Rock Lane

CITY: Greenwich STATE: ct ZIP: 06830

5.(A) ABATEMENT START DATE: 6 / 27 / 11 *Month/Day/Year format*

5.(B) COMPLETION DATE: 7 / 27 / 11 *Month/Day/Year format*

TO BE COMPLETED IF PROJECT IS GREATER THAN 160 SQUARE FEET

Notification Fee Due: $100.00 + 1% total asbestos abatement cost $ 200.00

6. TOTAL ABATEMENT PROJECT COST: $ 10,000 ***REVISED COST (ONLY FOR REVISIONS):** ___

7. USE OF FACILITY:

A. SCHOOL (K-12) X B. PUBLIC BUILDING ___ C. MANUFACTURING ___ D. OFFICE ___ E. COLLEGE ___

F. COMMERCIAL ___ G. CHURCH/SYNAGOGUE ___ H. RESIDENTIAL, # OF DWELLINGS ___ I. OTHER ___

(I. SPECIFY) ___

RECEIVED
JUN 24 2011
DEPARTMENT OF PUBLIC HEALTH
ASBESTOS PROGRAM

Phone: (860) 509-7367/ Fax: (860) 509-7378
Telephone Device for the Deaf: (860) 509-7191
410 Capitol Avenue- MS # 51 AIR

ASBESTOS ABATEMENT NOTIFICATION FORM- PAGE 2

ADDRESS:
TOWN:

8. BUILDING DATA:

SQUARE FEET: 111,130 NUMBER OF FLOORS: 2 AGE: 1958

9. ABATEMENT CLASSIFICATION:

RENOVATION X DEMOLITION ORDERED DEMO (AGENCY ISSUING ORDER) *MUST ATTACH COPY OF DEMO ORDER*

10. ABATEMENT TECHNIQUE:

A. FULL CONTAINMENT WITH NEGATIVE AIR X B. ALTERNATIVE WORK PRACTICE (PRE-APPROVAL REQUIRED

(IF AWP, include) Project Designer & LICENSE # Charles Schwartz - 000104

C. EXTERIOR ABATEMENT D. SPOT REPAIR (>25 SQ. FT. TOTAL)

11. ABATEMENT METHOD:

A. REMOVAL X B. ENCAPSULATION C. ENCLOSURE

12. TYPE OF DECONTAMINATION SYSTEM:

A. CONTIGUOUS X B. REMOTE C. BOTH

13. TYPE AND AMOUNT OF ASBESTOS TO BE ABATED: (REPORTED IN SQUARE FEET)

FRIABLE MATERIAL		NONFRIABLE MATERIAL	
		Category I	
A. SPRAYED /TROWELED ON:		I. FLOOR COVERINGS/TILES:	
B. BOILER INSULATION:		J. ROOFING, SPECIFY:	
C. TANK INSULATION:		K. GASKETS, PACKINGS:	
D. BREECHING INSULATION:		**Category II**	
E. DUCT INSULATION:			
F. CEILING TILES:		L. TRANSITE BOARD:	
G. OTHER, SPECIFY:	360 s.f. tile adhesive	M. OTHER, SPECIFY:	
H.* PIPE INSULATION:	**Use conversion table**	**Total Square Feet**	

(Pipe diameter)"	*Multiply LF by CF*	*= Total Square Feet*
3"	.79 x 100	79

14. WASTE DISPOSAL SITE (IF MULTIPLE SITES, LIST SEPARATELY)

NAME:	Hakes Landfill
ADDRESS:	4376 Manning Ridge Rd
CITY, STATE, ZIP:	Painted Post, NY 14870
OWNER, OPERATOR:	

15. HAULER/ WASTE TRANSPORTER

NAME:	Transwaste Inc.
ADDRESS:	3 Barker Drive
CITY, STATE, ZIP:	Wallingford, CT 06492

Signature and Title of Person Completing this Form:

Mail to:
DPH
ASBESTOS PROGRAM
410 CAPITOL AVENUE, MS # 51 AIR
PO BOX 340308
HARTFORD CT 06134-0308

Rev. 5/09

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH
ASBESTOS ABATEMENT NOTIFICATION FORM

State Use Only

Post Mark Date: June 14, 2006
Check #: 033048
Amount: 497.10
Transmittal #: 06-801
Record #: 723

N/A

ASBESTOS ABATEMENT NOTIFICATION FORM

This form is to be completed and filed with the Connecticut State Department of Health ten (10) days prior to the start of asbestos abatement, as required by the Regulations of Connecticut State Agencies, Section 19a-332a-3. In case of emergency notifications, this form is to be completed and postmarked within one (1) working day following the start of asbestos abatement. The U.S. EPA may require notification of abatement or demolition, as per 40 CFR, Part 61, the asbestos NESHAP regulation. Faxed originals are not acceptable. Revisions may be faxed unless a fee is required.

INSTRUCTIONS FOR FILLING IN FORM USING WORD:
This is a form that only accept information in the 'form fields'. Do not use the ENTER button or a mouse. Use TAB to advance to the next field.

Mail completed notification to the address listed below

1. TYPE OF NOTIFICATION

A. NEW X B. BLANKET _____ C. CANCELLATION / POSTPONED (C) _____ (P) _____
D. REVISED _____ (ITEMS REVISED) _____ REVISION # _____
E. EMERGENCY _____ DESCRIBE NATURE OF EMERGENCY _____

2. ABATEMENT CONTRACTOR

NAME: A.M.I.S CORPORATION LICENSE # 000817
ADDRESS: 18 HAMILTON STREET
CITY: WEST HAVEN STATE CT ZIP 06516
PHONE#: (203)932-2992 CONTACT PERSON: SCOTT MURDOCK

3. FACILITY OWNER/OPERATOR

NAME: GREENWICH BOARD OF EDUCATION
ADDRESS: 290 GREENWICH AVE
CITY: GREENWICH STATE CT ZIP 06830
PHONE#: 203-625-7437 CONTACT PERSON: ANTHONY BYRNE

4. NAME OF FACILITY

NAME: CENTRAL SCHOOL
ADDRESS: 9 INDIAN ROCK LANE
CITY: GREENWICH STATE CT ZIP 06830

5. (A) START DATE: 07/10/2006 5. (B) COMPLETION DATE: 07/30/2006

FOR PROJECTS INVOLVING 160 SQ. FT OR MORE OF ASBESTOS
IF APPLICABLE

6. (A) TOTAL COST OF ABATEMENT: 344,710 6 (B) REVISED COST: _____

Phone: (860) 509-7367 / Fax (860) 509-7378
410 Capitol Avenue, MS 51 AFR
P.O. Box 340308
Hartford, CT 06134-0308
An Equal Opportunity Employer

7. Use of Facility:

A. School (K-12) D. Office G. Church/Synagogue
B. Public Building E. College N. Residential - Number of Dwelling Units: _____
C. Manufacturing F. Commercial I. Other (Specify) _____

8. Building Data: Ft 111,130 Number of Floors 2 Age 1958

9. Abatement Classification:

A. Renovation C. Ordered Demolition-Agency Issuing Order: _____
B. Demolition NOTE: ATTACH DEMOLITION ORDER

10. Abatement Technique:

A. Full Containment with Negative Air
B. Alternative Work Practices (Pre-Approval Required) PROJECT DESIGNER / LICENSE
C. Exterior Abatement George Miller 000201
D. SPOT REPAIR (> 25 SQ.FT. TOTAL)

11. Abatement Method: A. Removal B. Encapsulation C. Enclosure

12. Type of Decontamination System: A. Contiguous to Work Area B. Remote

13. Type And Amount of Asbestos to be Abated:

FRIABLE		NON-FRIABLE CATEGORY I	
A. Sprayed or Troweled On	_____ Ft.	I. Floor Covering/Tiles	6384 Ft.
B. Boiler Insulatin	_____ Ft.	J. Roofing Material	_____ Ft.
C. Tank Insulation	_____ Ft.	(Specify)	_____
D. Breeching Insulation	_____ Ft.	K. Gaskets/Packings	_____ Ft.
E. Duct Insulation	_____ Ft.	NON-FRIABLE CATEGORY II	
F. Ceiling Tiles	_____ Ft.	L. Transite Board	_____ Ft.
G. Other (Specify)		M. Other (Specify)	
_____	_____ Ft.	_____	_____ Ft.
_____	_____ Ft.	_____	_____ Ft.

N. Pipe Insulation _____ Total Linear Feet

Pipe Diameter	Linear Feet	X	CF*	=	Ft. of Pipe Insulation
2 IN	FT	X	0.52	=	Ft.
3 IN	FT	X	0.79	=	Ft.
4 IN	FT	X	1.05	=	Ft.
5 IN	FT	X	1.31	=	Ft.
6 IN	FT	X	1.57	=	Ft.
7 IN	FT	X	1.83	=	Ft.
8 IN	FT	X	2.10	=	Ft.
IN	FT	X		=	Ft.

* See Notification Conversion Table For Conversion Factor (CF)

Total Ft. Of Pipe Insulation

14. Waste Disposal Site Minerva Enter. / EFI, Inc. / WMNH, Inc./Ontario County Landfill

Address 9000 Minerva Rd. / 11 Boggs Road / 97 Rochester Neck Rd / 3555 Post Farm Rd

City Pike Township / Imperial / Genic/Stanl State OH / PA / NH / NY Zip 44688/15126/03839 /14561
330-866-3435/724-695-0900

Owner/Operator 603-330-0217/585-526-4420 Steve Chandler / Bernie / John Monaco x2108

15. Hauler/Waste Transporter TRANSWASTE, INC. / RED TECHNOLOGIES / USA HAULING

Address 3 BARKER STREET / 10 NORTHWOOD DRIVE / 18 MULLEN ROAD

City WALLINGFORD / BLOOMFIELD / ENFIE State CT Zip 06492/06002/06082

NAME OF INDIVIDUAL COMPLETING THIS FORM SCOTT MURDOCK

Environmental Consultants
and Laboratory Services

HYGENIX, INC.
49 Woodside St. Stamford, CT 06902

(203) 324-2222
Fax (203) 324-9857

Shorelines Builders
47 Winding Lane
Norwalk, CT 06851

May 19, 2006

Re: Garage - Pre- Demolition Asbestos Survey
14 Irvine Road
Old Greenwich, CT

To Whom It May Concern:

HYGENIX was contacted by Shorelines Builders, to perform an asbestos survey at the above mentioned location. I inspected the building on May 15, 2006.

I collected six bulk samples during the inspection. All samples were sent overnight to AmeriSci New York Laboratories at 117 East 30th Street in New York City, where they were analyzed for asbestos content by polarized light microscopy (PLM) in accordance with EPA procedure #600/M4-82-020. AmeriSci New York Laboratories is accredited to perform bulk asbestos analysis by the National Voluntary Laboratory Approval Program (NVLAP).

The Connecticut Department of Public Health and U.S. E.P.A. define an asbestos containing material as any material that is greater than 1% asbestos by weight. The laboratory analysis found no samples to exceed the 1% asbestos standard. **Therefore all building materials associated with the garage can be removed and disposed of as regular demolition waste.** A detailed laboratory report is attached.

Please feel free to reach me at the office, 203-324-3635, if there any questions regarding this inspection. Thank you for using HYGENIX Inc. for your environmental concerns.

Sincerely,

Ryan Ebenhack
CT Asbestos Inspector #000418
HYGENIX, Inc.

Connecticut Department of
Energy & Environmental Protection
Bureau of Central Services
Office of Information Management

File Request Form

Requestor Name: Elyssa S. Schwendy
Company Name: Langan CT
Address: 555 Long Wharf Dr. New Haven CT
Phone Number: 860-930-3689

Date: 29 March 2023

Facility/Co Name: Central Middle School Address: 9 Indian Rock Ln Town: Greenwich	☑ REM ☑ OCS ☑ PER	☐ IND ☑ COR ☐ PRG	☐ P5 ☑ HAZ ☐ SII	☐ ORD ☑ SOL ☐ PIQ	☐ SW ☑ UST ☑ TCR
Facility/Co Name: Central Middle School Address: Stanwich Rd * Town: Greenwich	☑ REM ☑ OCS ☑ PER	☐ IND ☑ COR ☐ PRG	☐ P5 ☑ HAZ ☐ SII	☐ ORD ☑ SOL ☐ PIQ	☐ SW ☑ UST ☑ TCR
Facility/Co Name: Address: Town:	☐ REM ☐ OCS ☐ PER	☐ IND ☐ COR ☐ PRG	☐ P5 ☐ HAZ ☐ SII	☐ ORD ☐ SOL ☐ PIQ	☐ SW ☐ UST ☐ TCR
Facility/Co Name: Address: Town:	☐ REM ☐ OCS ☐ PER	☐ IND ☐ COR ☐ PRG	☐ P5 ☐ HAZ ☐ SII	☐ ORD ☐ SOL ☐ PIQ	☐ SW ☐ UST ☐ TCR
Facility/Co Name: Address: Town:	☐ REM ☐ OCS ☐ PER	☐ IND ☐ COR ☐ PRG	☐ P5 ☐ HAZ ☐ SII	☐ ORD ☐ SOL ☐ PIQ	☐ SW ☐ UST ☐ TCR
Facility/Co Name: Address: Town:	☐ REM ☐ OCS ☐ PER	☐ IND ☐ COR ☐ PRG	☐ P5 ☐ HAZ ☐ SII	☐ ORD ☐ SOL ☐ PIQ	☐ SW ☐ UST ☐ TCR
Facility/Co Name: Address: Town:	☐ REM ☐ OCS ☐ PER	☐ IND ☐ COR ☐ PRG	☐ P5 ☐ HAZ ☐ SII	☐ ORD ☐ SOL ☐ PIQ	☐ SW ☐ UST ☐ TCR

Comments:

* the UST records for the school appear to be associated with this address; there's no street number listed

REM - Remediation
ORD – Water Orders
OCS – Oil & Chemical Spills Reports
COR - Oil & Chemical Spills Correspondence
PER – Air Permits
PRG – Air Enforcement
STK – Air Stack Tests

IND – Industrial Water Corr'dence Files
SW – Stormwater Correspondence Files
SOL – Solid Waste
PIQ – Air Pre-Inspection Questionnaire
OB – Air Open Burning
CRA – CT Resource Recovery Authority
SII – Gas Station Vapor Recovery

P5 – Water Industrial Survey
HAZ – Hazardous Waste
UST – Underground Storage Tanks
TCR – Tank Closure Report
SS – Sub-Surface
WPA –Water Perm Application
DMR – Discharge Monitoring Reports

Town of Greenwich
101 Field Point Road
Greenwich, CT 06830
203-622-7700

RECORDS REQUEST FORM

You may use this form to request copies of public records from Town agencies, boards, departments, and divisions. Although any written request for records may be submitted, , use of this form is encouraged to ensure that you can be provided with the correct records as quickly as possible. Please write legibly. Separate forms should be used to request Geographic Information Systems (GIS) maps, data, abutters, and data layers.

1. **Name:** Elyssa Schwendy **Phone:** (860) 930-3689
   Mailing address: Langan CT, 555 Long Wharf Drive, New Haven CT 06511
2. **Office/Department from which records are sought:** Town clerk, fire department, health department, planning & zoning
3. **Please provide me with copies of the following records (continue on back if necessary):**

   Langan CT, Inc. (Langan) requests information on or copies of environmental permits, spills/discharge incidents, storage or disposal of hazardous substances, underground storage tanks, leaking underground storage tanks, asbestos abatement, and any other environmental reports for the Central Middle School property at 9 Indian Rock Lane (parcel 08-4598/S; previously known as 77 Stanwich Road). A copy of the property card has already been obtained.

   ☐ **check here for certified copies**

4. **Please provide me with any such electronically-stored records in the following format:**
   ☐ **printout** ☐ **computer diskette** ☒ **other:** Email preferred if practical; otherwise a diskette would be fine
5. **When the records are ready, please:** ☐ **mail them to me OR** ☒ **call me for pickup**
   If the timing works out I may be able to pick them up; otherwise I may need them mailed

OFFICIAL USE ONLY * = prior authorization of Town Law Department is required

☐ date request was received: _____ ☐ date of status letter to requestor: _____

☐ date copies were mailed or requestor was called for pickup: _____

☐ fee charged in advance ($10 or more) or ☐ fee billed at delivery:

$_____ for photocopies of _____ pages at $0.50 each
$_____ for _____ diskettes or other data storage device (specify): _____
$_____ salary for ____ employee hours necessary for computer reformatting/reprogramming*
$_____ fees of outside contractor necessary for copying/retrieval of electronic data*
= $_____ TOTAL

☐ requestor notified by letter dated _____ that any record will not be provided because:

☐ record does not exist or could not be located after thorough search
☐ electronic data could not be provided in requested format*
☐ exempt from disclosure because:* _____

WATER QUALITY CLASSIFICATIONS
GREENWICH, CT

SURFACE WATER QUALITY CLASSES

A	A
AA	AA
B, B*	B, B*
SA	SA
SB	SB

NOTES:
Surface Water Classifications beginning with S refer to Coastal and Marine Surface Water.
B* is a subset of Class B where no direct wastewater discharges are allowed other than those consistent with Class AA, A and SA surface waters.

GROUND WATER QUALITY CLASSES

GA (white background)
GAA, GAAs
GA, GAA may not meet current standards
GB
GC

Area of Contribution to Public Supply Well

Final Aquifer Protection Area (Level A)
Major Basin Boundary

EXPLANATION

WATER QUALITY CLASSIFICATIONS (WQC) MAPS are one of the elements of the Water Quality Standards (WQS) for the State of Connecticut. The WQS are a part of Connecticut's clean water program and are essential for protecting and improving water quality. The WQS follow the principles of Connecticut's Clean Water Act which is in Chapter 446K of the Connecticut General Statutes. The WQS provide policy guidance in many areas, for example decisions on acceptable discharges to water resources, siting of landfills, remediation or prioritization of municipal sewerage system projects. The first two elements of the WQS are the Standards, which set an overall policy for management of water quality, and the Criteria, which are descriptive and numerical standards that describe the allowable parameters and goals for various water quality classifications. A discussion of these two elements is found in the Water Quality Standards document available on the CT DEEP website. The third element is the Classifications and the Water Quality Classification Maps which show the Classification assigned to each surface and groundwater resource throughout the State. The WQS are adopted using a public participation process. The WQC maps are also adopted using a public participation process but go through hearings separately from the Standards and Criteria hearings. Revision and adoption of the WQC data occurs in accordance with the public participation procedures contained in Section 22a-426 of the Connecticut General Statutes. Ground WQC is subject to Connecticut regulation and changes must be reviewed and adopted. All changes to the Surface WQC require an adoption process which is subject to federal review and approval in addition to CT regulation. The adoption dates for the WQC by major drainage basin are: Housatonic River, Hudson River and Southwest Coastal Basins - March 1999; Connecticut River and South Central Coastal Basins - February 1993; Thames River, Pawcatuck River and Southeast Coastal Basins - December 1986. Surface Water Classifications do not change after the adoption date until the next major revision. Ground Water Classifications may change after the adoption date under specific circumstances. The map may have more than one WQC adoption date because a town may be in more than one major drainage basin.

SURFACE WATERS in Connecticut are divided into freshwater classified as AA, A, B or B* and saline waters classified as SA or SB. Class AA designated uses are existing or proposed drinking water supplies; habitat for fish and other aquatic life and wildlife; recreation; and water supply for industry and agriculture. Class A designated uses are habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; navigation; and water supply for industry and agriculture. Class SA designated uses are habitat for marine fish, other aquatic life and wildlife; shellfish harvesting for direct human consumption; recreation; industrial water supply; and navigation. Class B designated uses are habitat for fish and aquatic life and wildlife; recreation; navigation; and industrial and agricultural water supply. Class B*, applicable to Candlewood Lake, is a subset of Class B and is identical in all ways to the designated uses, criteria and standards for Class B waters except for the restriction on direct discharges. Class SB designated uses are habitat for marine fish and aquatic life and wildlife; commercial shellfish harvesting; recreation; industrial water supply; and navigation.

Surface waters which are not specifically classified shall be considered as Class A or Class AA. Surface waters in GA ground water areas are assumed Class A or Class SA unless otherwise indicated. Surface waters in GAA ground water areas are assumed Class AA unless otherwise indicated.

On the WQC map a surface water quality goal of A is represented by blue colored water bodies. Surface water quality goal of AA is represented by purple colored water bodies. Surface water quality goal of B is represented by gold colored water bodies.

GROUND WATERS in Connecticut are classified as GAA, GA, GB and GC. Class GAA designated uses are existing or potential public supply of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies. The Class GAAs is a subclass of GAA for ground water that is tributary to a public water supply reservoir. The area of contribution to a public water supply well is represented by a 500-foot radius around the well and is assumed to be Class GAA unless otherwise classified. Class GA designated uses are existing private and potential public or private supplies of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies. All ground waters not specifically classified are considered as Class GA. Class GB designated uses are industrial process water and cooling waters and baseflow for hydraulically-connected water bodies and is presumed not suitable for human consumption without treatment. Class GC designated uses are assimilation of discharges authorized by the Commissioner pursuant to Section 22a-430 of the General Statutes.

On the WQC map GA is represented by white colored land areas. Class GAA and class GAAs are represented by blue colored land areas. The area of contribution to a public water supply well is shown by a blue cross-hatch overprint. A notation of GAA followed by a state abbreviation indicates a watershed that contributes to the public water supply for a state other than Connecticut. Class GA or Class GAA areas that currently may not be meeting the GA or GAA standards are represented on the WQC maps by tan colored land areas. Class GB is represented by green colored land areas. Class GC is represented by magenta colored land areas.

FINAL AQUIFER PROTECTION AREAS (Level A) are included on the WQC maps for informational purposes. These areas are anticipated to be reclassified GAA during the next major basin updates, subject to public participation. The Aquifer Protection Program helps protect Connecticut's public drinking water resources by delineating aquifer protection areas (also called wellhead protection areas) for public supply wells and establishing land use regulations within these areas. These areas represent the land area contributing ground water to active public water supply wells or well fields that serve more than 1000 people and are set in sand and gravel aquifers (stratified drift deposits).

DATA SOURCES

WATER QUALITY CLASSIFICATIONS DATA – Water quality classifications shown on this map are based on information from the following digital spatial datasets that are typically shown together – Ground Water Quality Classifications Poly, Surface Water Quality Classifications Line, and Surface Water Quality Classifications Poly. The map legend above reflects the content of these three data sources. These WQC data were initially compiled on 1:24,000-scale 7.5 minute USGS topographic quadrangle maps and later digitized at 1:24,000 scale. For example, the Surface Water Quality Classifications Line and Surface Water Quality Classifications Poly digital data assigns surface water quality classifications to water bodies such as rivers, streams, reservoirs, lakes, ponds and coves found in 1:24,000-scale hydrography data available from CT DEEP. The hydrography may not include all the waterbodies in Connecticut. The Ground Water Quality Classifications Poly data assigns ground water quality classifications, at 1:24,000 scale, to the remaining land areas in Connecticut.

AQUIFER PROTECTION AREA DATA – Aquifer Protection Areas shown on this map are from the Aquifer Protection Area digital dataset which contains polygon data intended to be used at 1:24,000 scale. The dataset contains regulated areas classified as Level A Aquifer Protection Area (Final) and Level B Aquifer Protection Area (Preliminary). The Level B areas are not shown on the WQC maps. The data was collected from 1991 to the present and is actively updated as Final area mapping replaces earlier Preliminary areas. The Aquifer Protection Areas are delineated by the individual water companies owning the well fields and submitted to the CT DEEP for approval. Preliminary mapping provides a general estimate of the area contributing ground water to the well field. Final mapping is based on extensive, site-specific, detailed modeling of the ground water flow system. CT DEEP may adjust Final area boundaries to be consistent with 1:24,000 scale topography and base map data where appropriate during the approval process.

MAJOR DRAINAGE BASIN DATA – Major drainage basins shown on this map are from Major Basin Line data developed by CT DEEP and intended to be used at 1:24,000 scale.

BASE MAP DATA - Based on data originally from 1:24,000-scale USGS 7.5 minute topographic quadrangle maps published between 1969 and 1992. It includes political boundaries, railroads, airports, hydrography, geographic names and geographic places. Streets and street names are from Tele Atlas® copyrighted data. Base map information is neither current nor complete.

RELATED INFORMATION
This map is intended to be printed at its original dimensions in order to maintain the 1:24,000 scale (1 inch = 2000 feet).
WATER QUALITY STANDARDS - Go to the CT DEEP website for a summary and the full text of the "Water Quality Standards" and for other information on water quality.
AQUIFER PROTECTION AREAS - Go to the CT DEEP website for more information.

ADOPTED DATES

Water Quality Standards
February 25, 2011

Thames River, Pawcatuck River and Southeast Coastal Basins: December 1986

Connecticut River and South Central Coastal Basins: February 1993

Housatonic River, Hudson River and Southwest Coastal Basins: March 1999

MAJOR BASINS

1 Pawcatuck
2 Southeast Coast
3 Thames
4 Connecticut
5 South Central Coast
6 Housatonic
7 Southwest Coast
8 Hudson

MAP LOCATION

State Plane Coordinate System of 1983, Zone 3526
Lambert Conformal Conic Projection
North American Datum of 1983

1 0.5 0 1 Miles
1000 0 1000 2000 3000 4000 5000 6000 7000 Feet
1 0.5 0 1 Kilometers

SCALE 1:24,000 (1 inch = 2000 feet) when map is printed at original size

STATE OF CONNECTICUT
DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION
79 Elm Street
Hartford, CT 06106-5127

Map created by CT DEEP
October 2018

Map is not colorfast
Protect from light and moisture

Appendix E Historical Records

Central Middle School
9 Indian Rock Lane
Cos Cob, CT 06807

Inquiry Number: 7289805.3
March 27, 2023

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

03/27/23

Site Name:

Central Middle School
9 Indian Rock Lane
Cos Cob, CT 06807
EDR Inquiry # 7289805.3

Client Name:

Langan Environmental Services
555 Long Wharf Drive
New Haven, CT 06511
Contact: Elyssa Schwendy

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Langan Environmental Services were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 22F3-48FE-99D4

PO # 140265101

Project NA

Maps Provided:

2002
1996
1995
1994
1993
1992
1990
1950
1920

Sanborn® Library search results

Certification #: 22F3-48FE-99D4

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

2002 Source Sheets

Volume 1, Sheet 45
2002

Volume 1, Sheet 46
2002

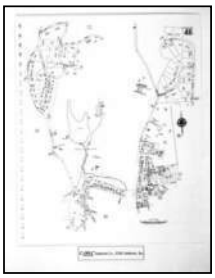
1996 Source Sheets

Volume 1, Sheet 46
1996

Volume 1, Sheet 45
1996

1995 Source Sheets

Volume 1, Sheet 45
1995



Volume 1, Sheet 46
1995

1994 Source Sheets

Volume 1, Sheet 45
1994

Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1993 Source Sheets

Volume 1, Sheet 45
1993

1992 Source Sheets

Volume 1, Sheet 46
1992

Volume 1, Sheet 45
1992

1990 Source Sheets

Volume 1, Sheet 45
1990

1950 Source Sheets

Volume 1, Sheet 45
1950

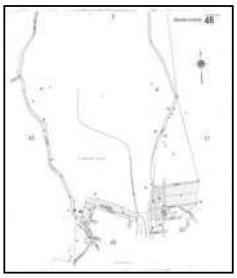
Volume 1, Sheet 46
1950

Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1920 Source Sheets

Volume 1, Sheet 45
1920



Volume 1, Sheet 46
1920

Site Name: Central Middle School
Address: 9 Indian Rock Lane
City, ST, ZIP: Cos Cob, CT 06807
Client: Langan Environmental Services
EDR Inquiry: 7289805.3
Order Date: 03/27/2023
Certification #: 22F3-48FE-99D4
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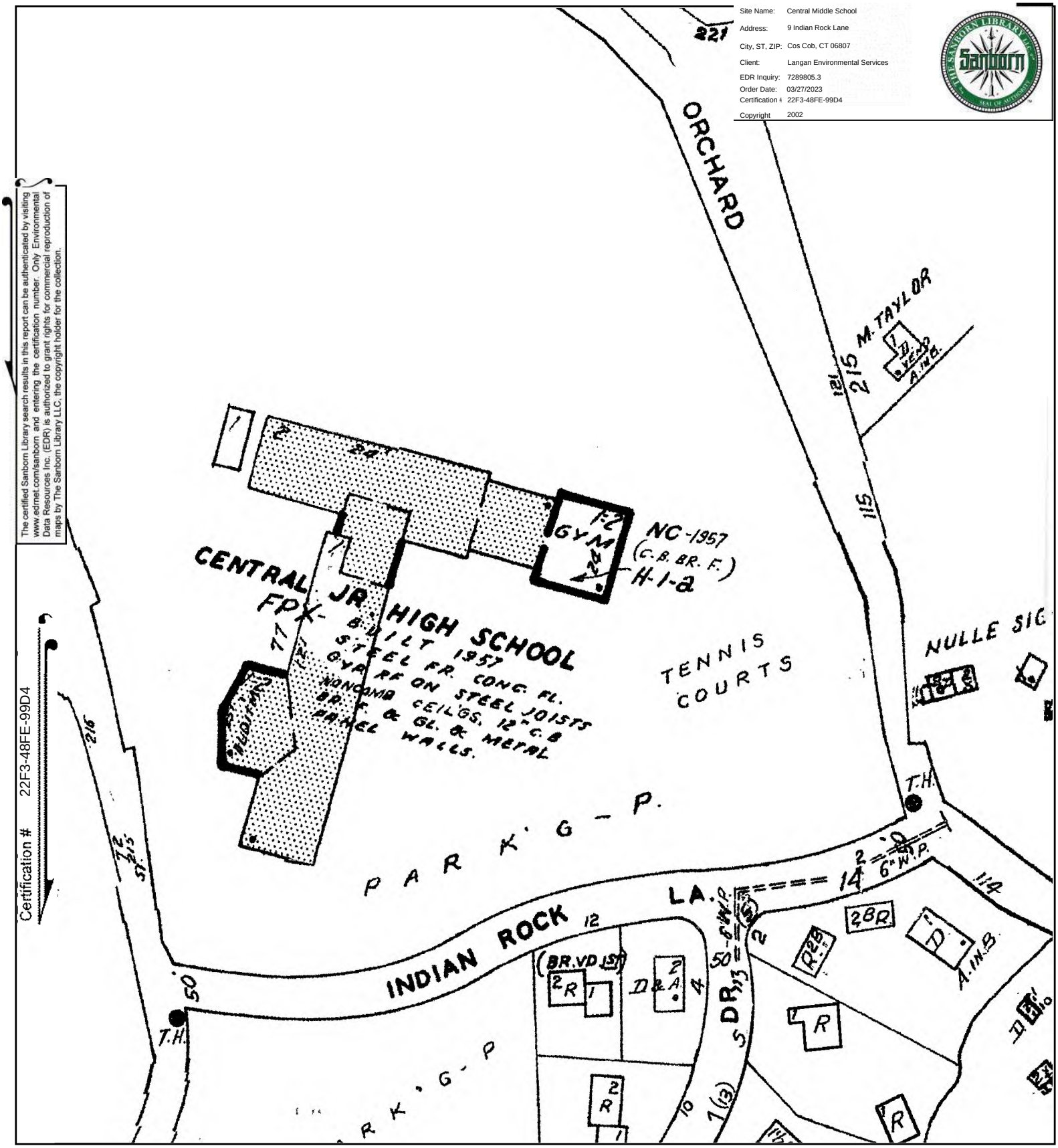

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Outlined areas indicate map sheets within the collection.

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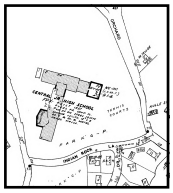

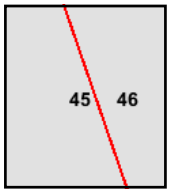

Volume 1, Sheet 46
Volume 1, Sheet 45

N

Site Name: Central Middle School
Address: 9 Indian Rock Lane
City, ST, ZIP: Cos Cob, CT 06807
Client: Langan Environmental Services
EDR Inquiry: 7289805.3
Order Date: 03/27/2023
Certification #: 22F3-48FE-99D4
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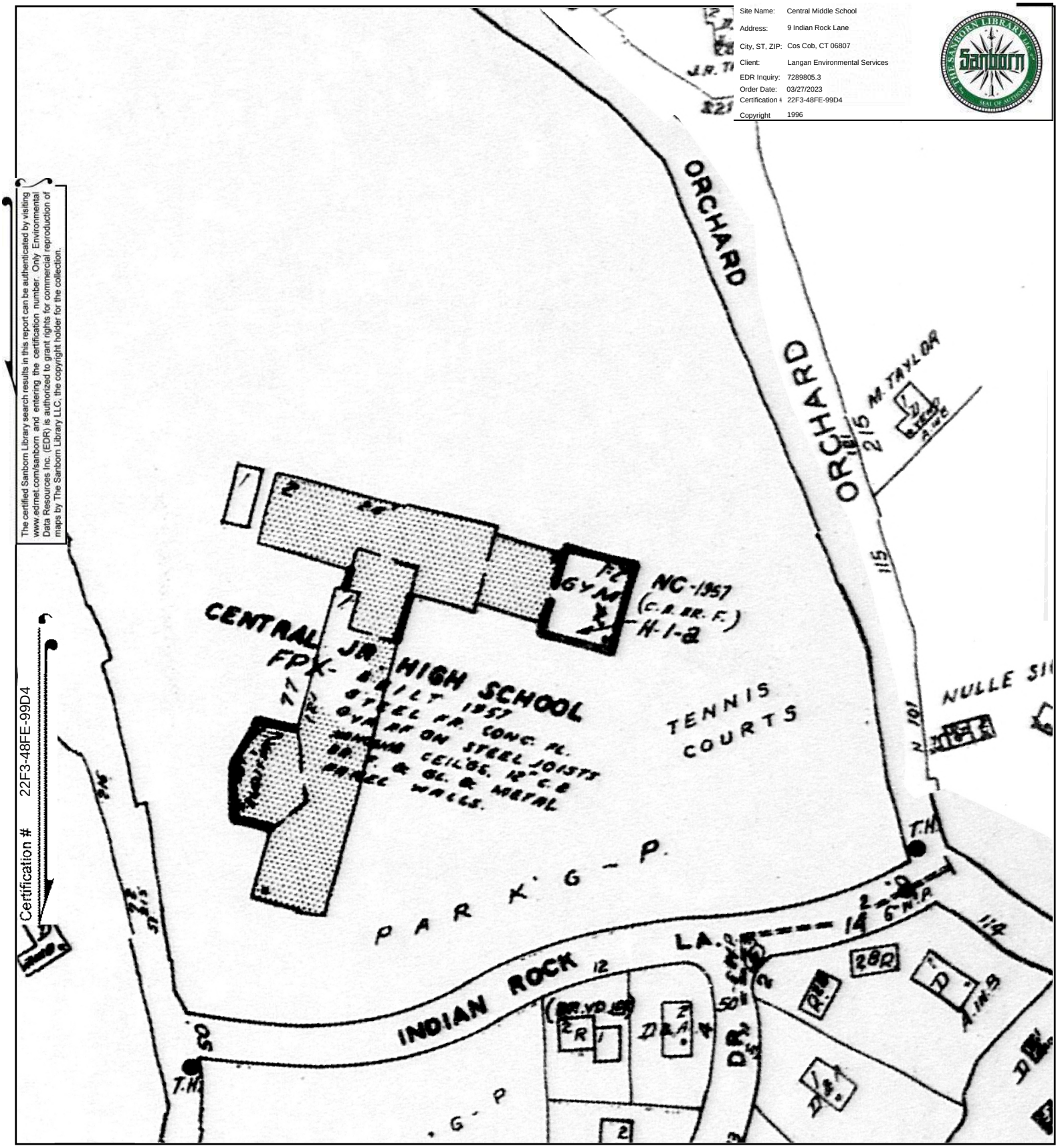

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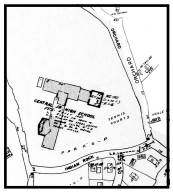

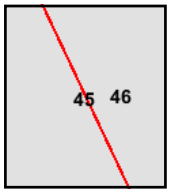

Volume 1, Sheet 45
Volume 1, Sheet 46

N

Site Name: Central Middle School
Address: 9 Indian Rock Lane
City, ST, ZIP: Cos Cob, CT 06807
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EDR Inquiry: 7289805.3
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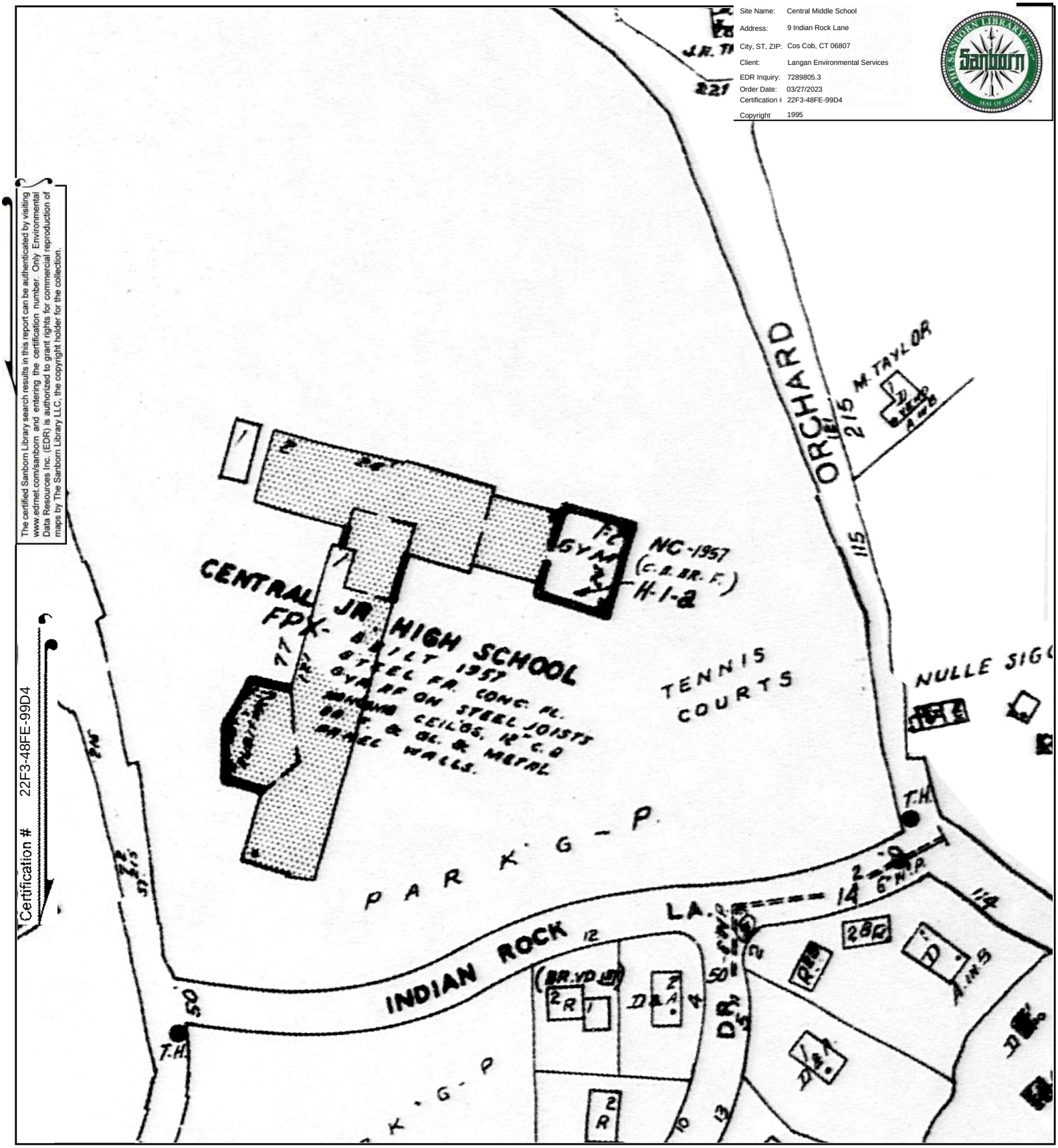

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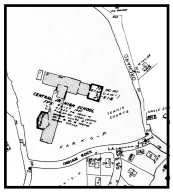

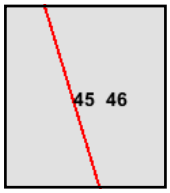

Volume 1, Sheet 46
Volume 1, Sheet 45

N

Site Name: Central Middle School
Address: 9 Indian Rock Lane
City, ST, ZIP: Cos Cob, CT 06807
Client: Langan Environmental Services
EDR Inquiry: 7289805.3
Order Date: 03/27/2023
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Copyright 1994

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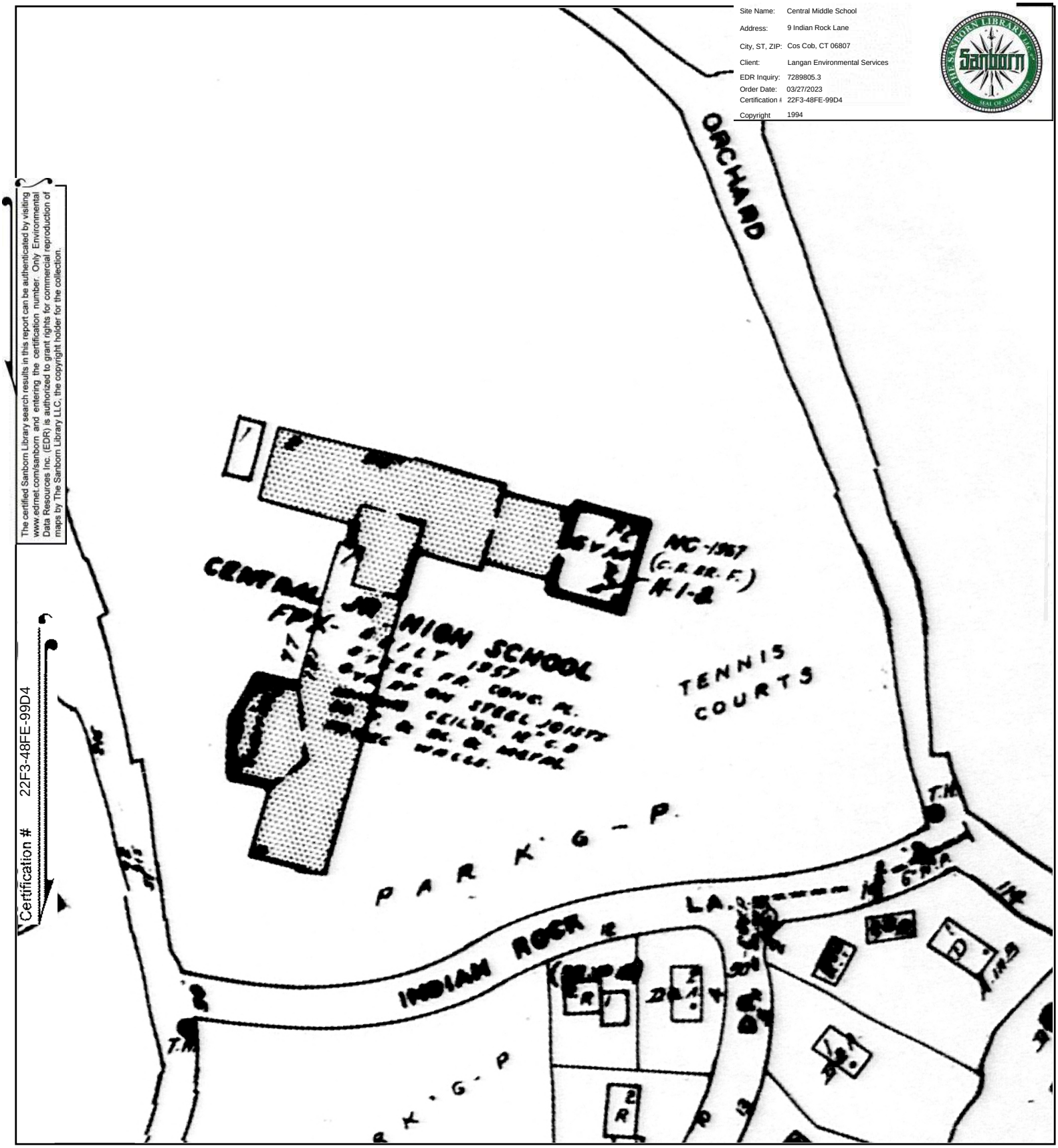
Certification # 22F3-48FE-99D4



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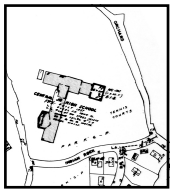

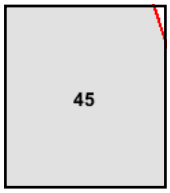

Volume 1, Sheet 45

N

Site Name:	Central Middle School
Address:	9 Indian Rock Lane
City, ST, ZIP:	Cos Cob, CT 06807
Client:	Langan Environmental Services
EDR Inquiry:	7289805.3
Order Date:	03/27/2023
Certification #	22F3-48FE-99D4
Copyright	1993

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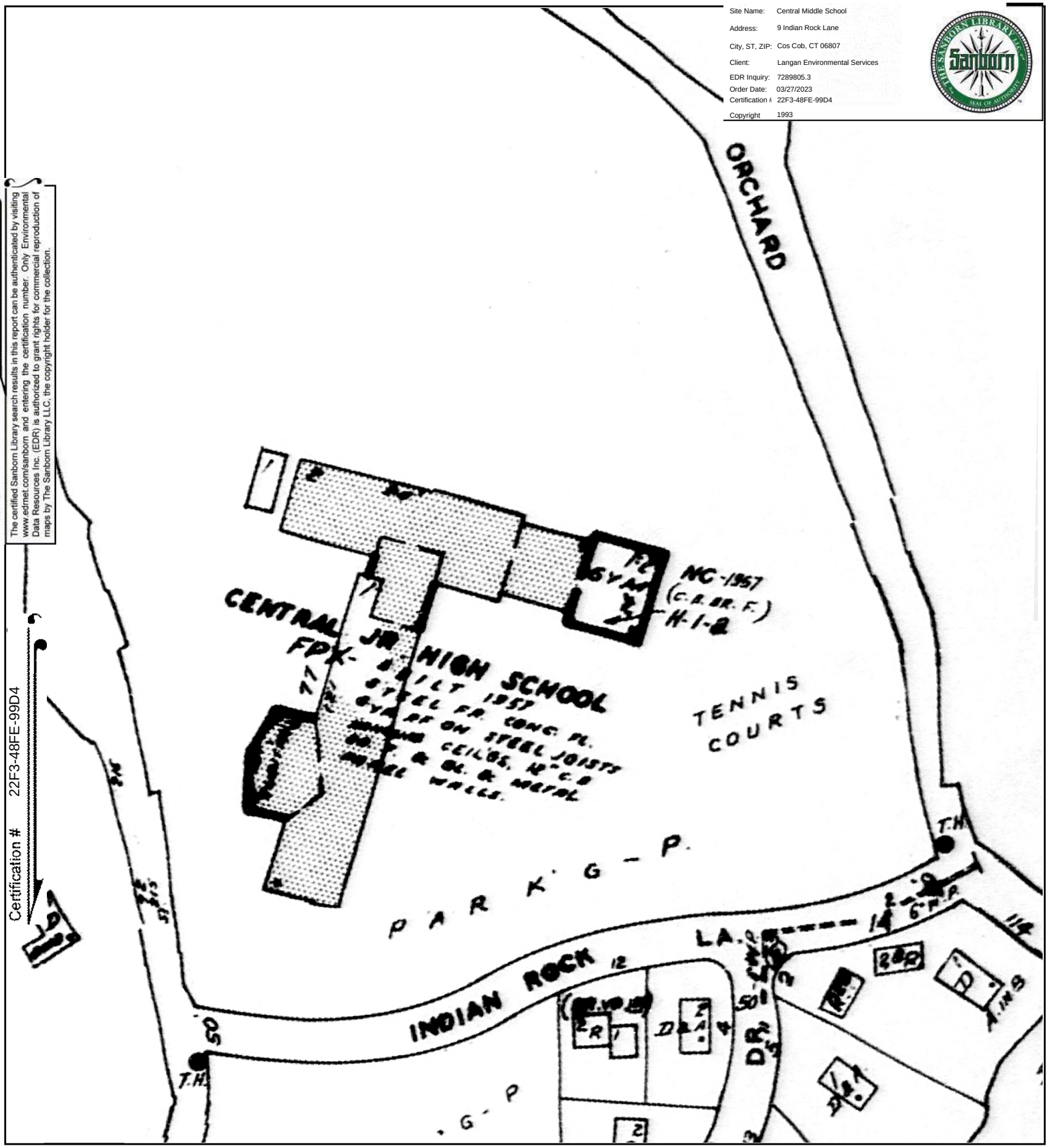
Certification # 22F3-48FE-99D4



This Certified Sanborn Map combines the following sheets.
Outlined areas indicate map sheets within the collection.

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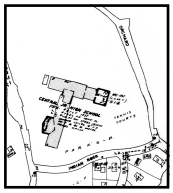

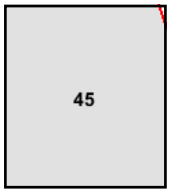

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N

Site Name: Central Middle School
Address: 9 Indian Rock Lane
City, ST, ZIP: Cos Cob, CT 06807
Client: Langan Environmental Services
EDR Inquiry: 7289805.3
Order Date: 03/27/2023
Certification #: 22F3-48FE-99D4
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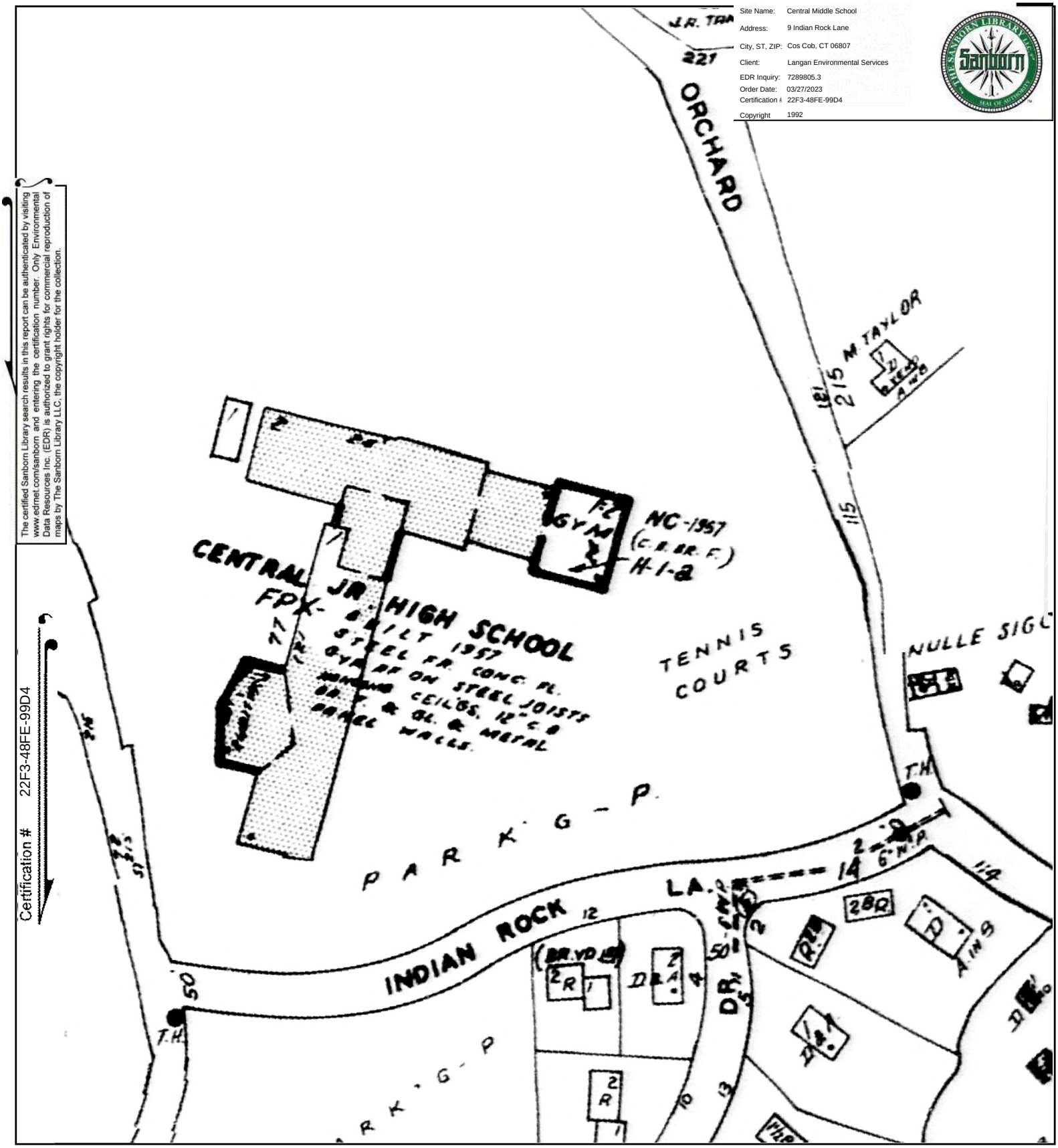

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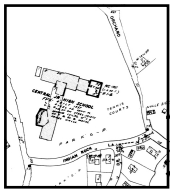

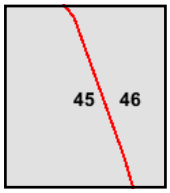

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N

Site Name:	Central Middle School
Address:	9 Indian Rock Lane
City, ST, ZIP:	Cos Cob, CT 06807
Client:	Langan Environmental Services
EDR Inquiry:	7289805.3
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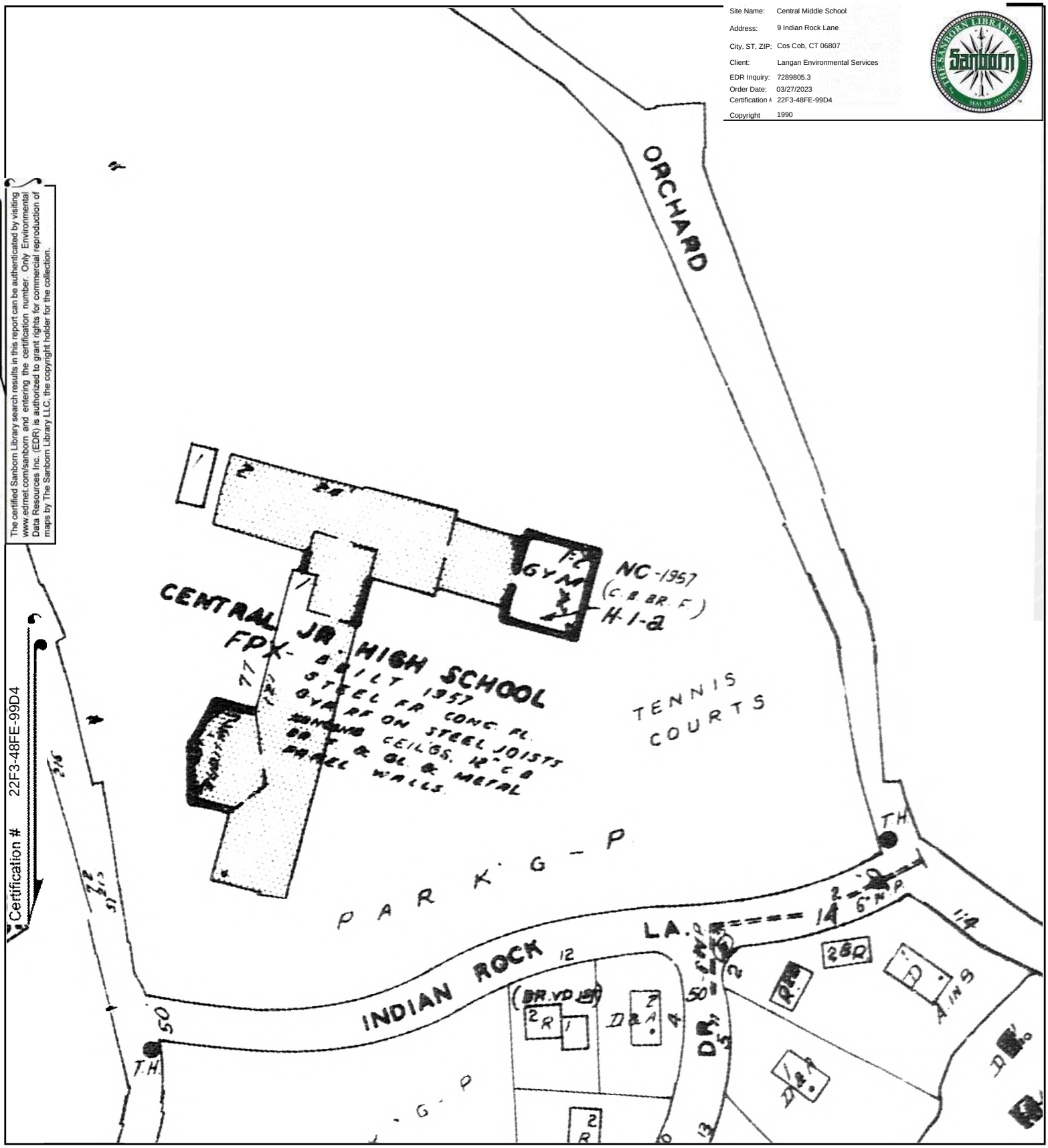

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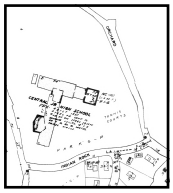

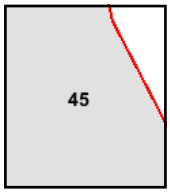

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Site Name: Central Middle School
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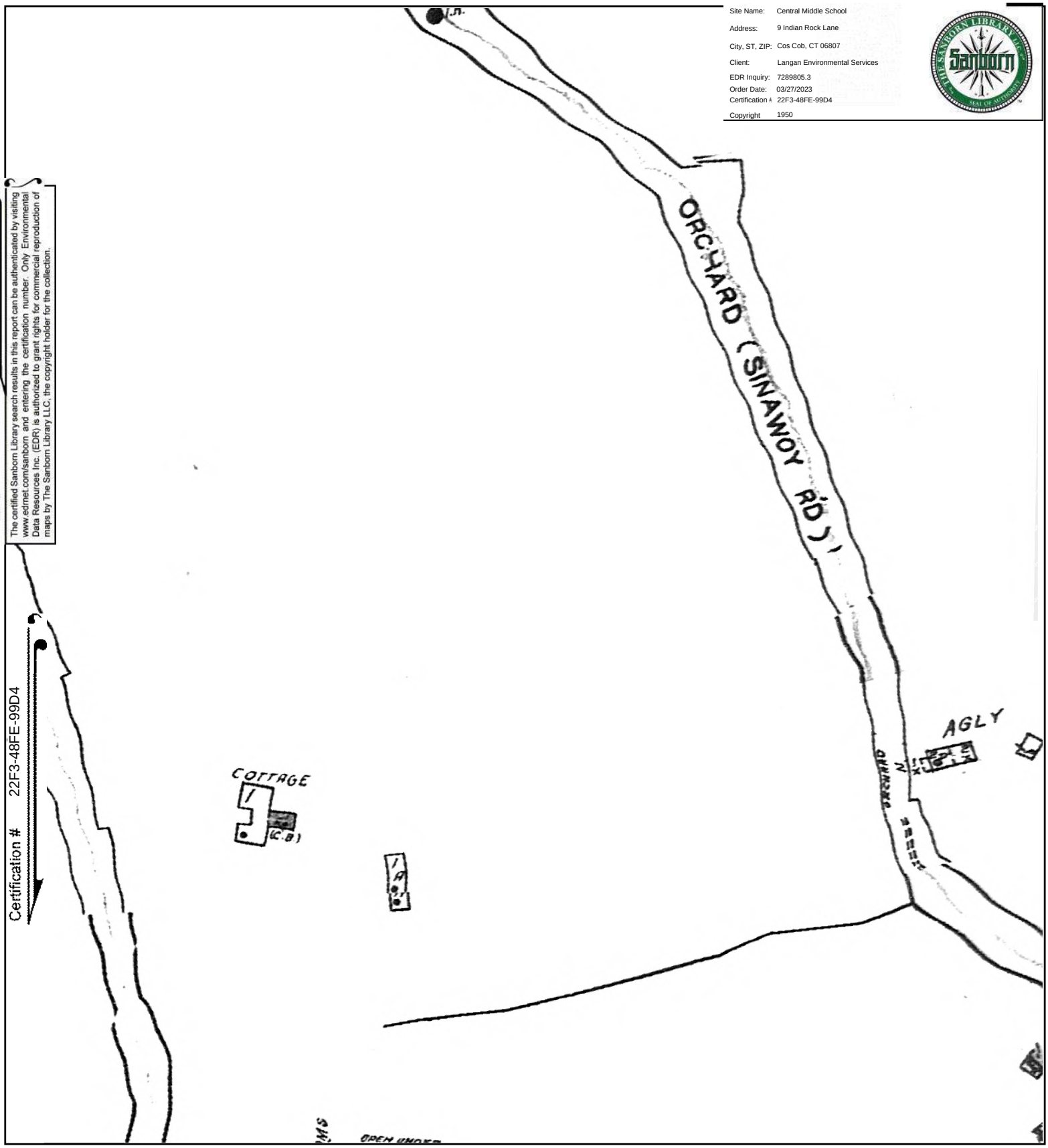

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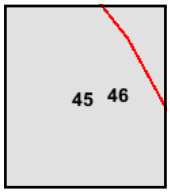

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Site Name: Central Middle School
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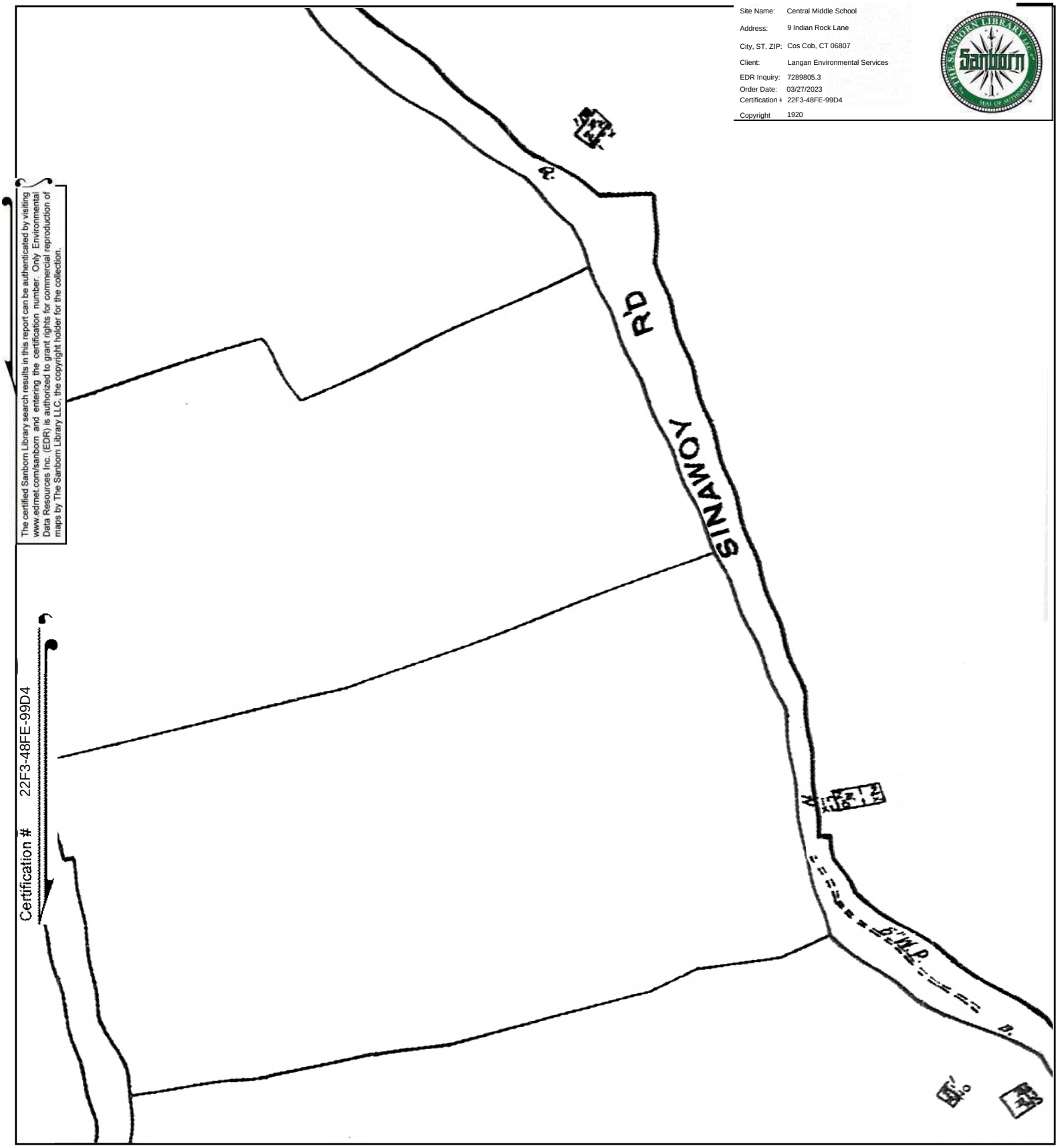

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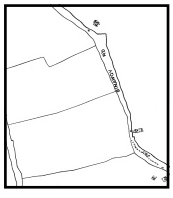

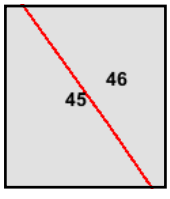

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N

Central Middle School
9 Indian Rock Lane
Cos Cob, CT 06807

Inquiry Number: 7289805.3
March 27, 2023

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Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

03/27/23

Site Name:

Central Middle School
9 Indian Rock Lane
Cos Cob, CT 06807
EDR Inquiry # 7289805.3

Client Name:

Langan Environmental Services
555 Long Wharf Drive
New Haven, CT 06511
Contact: Elyssa Schwendy

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Certified Sanborn Results:

Certification # 22F3-48FE-99D4

PO # 140265101

Project NA

Maps Provided:

2002
1996
1995
1994
1993
1992
1990
1950
1920

Sanborn® Library search results

Certification #: 22F3-48FE-99D4

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- ☑ University Publications of America
- ☑ EDR Private Collection

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2002 Source Sheets

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2002

Volume 1, Sheet 46
2002

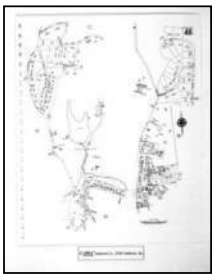
1996 Source Sheets

Volume 1, Sheet 46
1996

Volume 1, Sheet 45
1996

1995 Source Sheets

Volume 1, Sheet 45
1995



Volume 1, Sheet 46
1995

1994 Source Sheets

Volume 1, Sheet 45
1994

Sanborn Sheet Key

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1993 Source Sheets

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1993

1992 Source Sheets

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1992

Volume 1, Sheet 45
1992

1990 Source Sheets

Volume 1, Sheet 45
1990

1950 Source Sheets

Volume 1, Sheet 45
1950

Volume 1, Sheet 46
1950

Sanborn Sheet Key

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1920 Source Sheets

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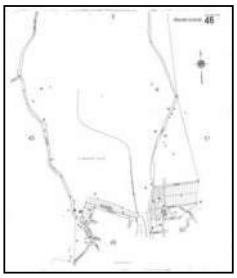
1920



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1920

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Address: 9 Indian Rock Lane
City, ST, ZIP: Cos Cob, CT 06807
Client: Langan Environmental Services
EDR Inquiry: 7289805.3
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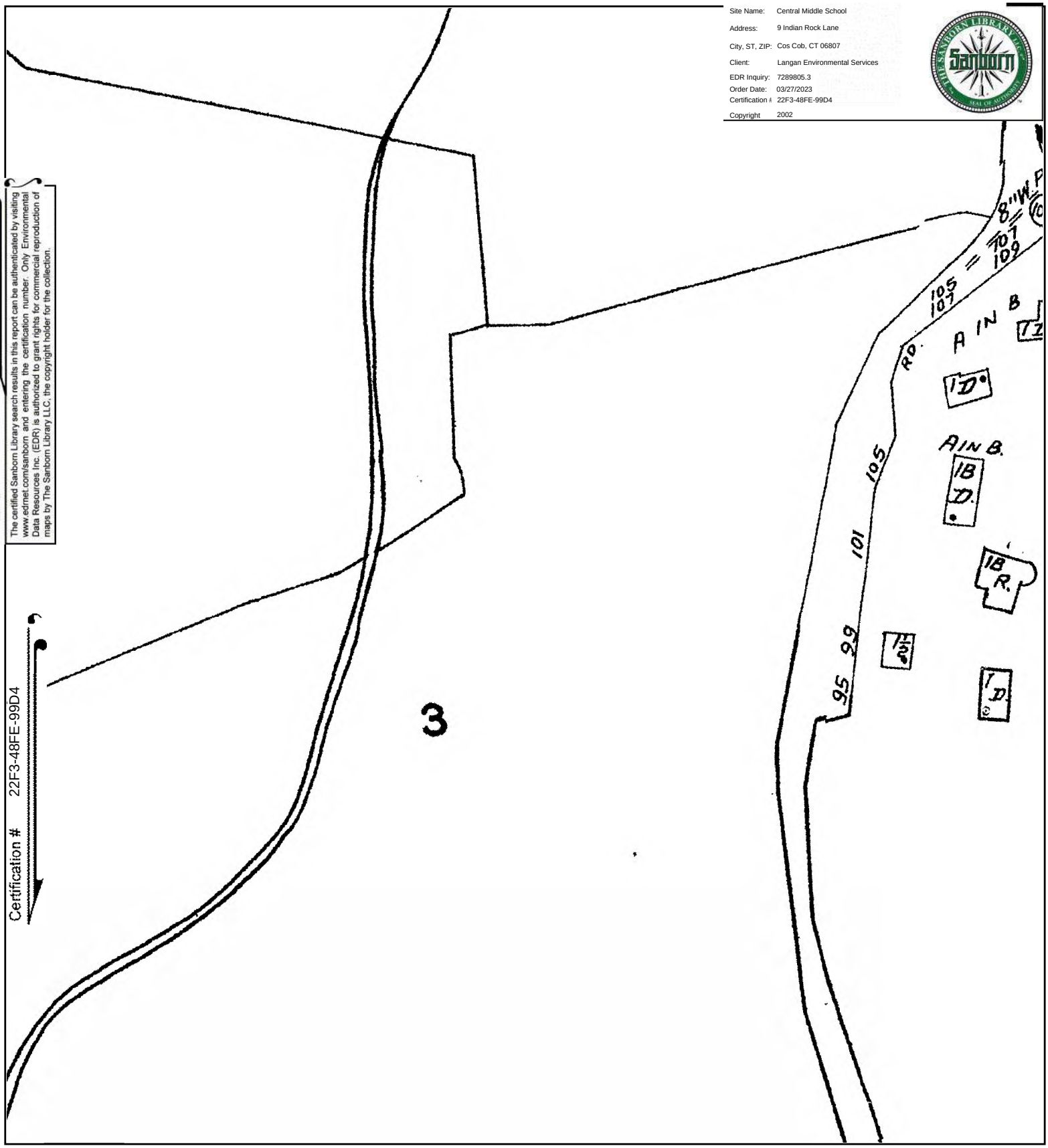

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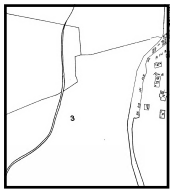

45

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N

Site Name: Central Middle School
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City, ST, ZIP: Cos Cob, CT 06807
Client: Langan Environmental Services
EDR Inquiry: 7289805.3
Order Date: 03/27/2023
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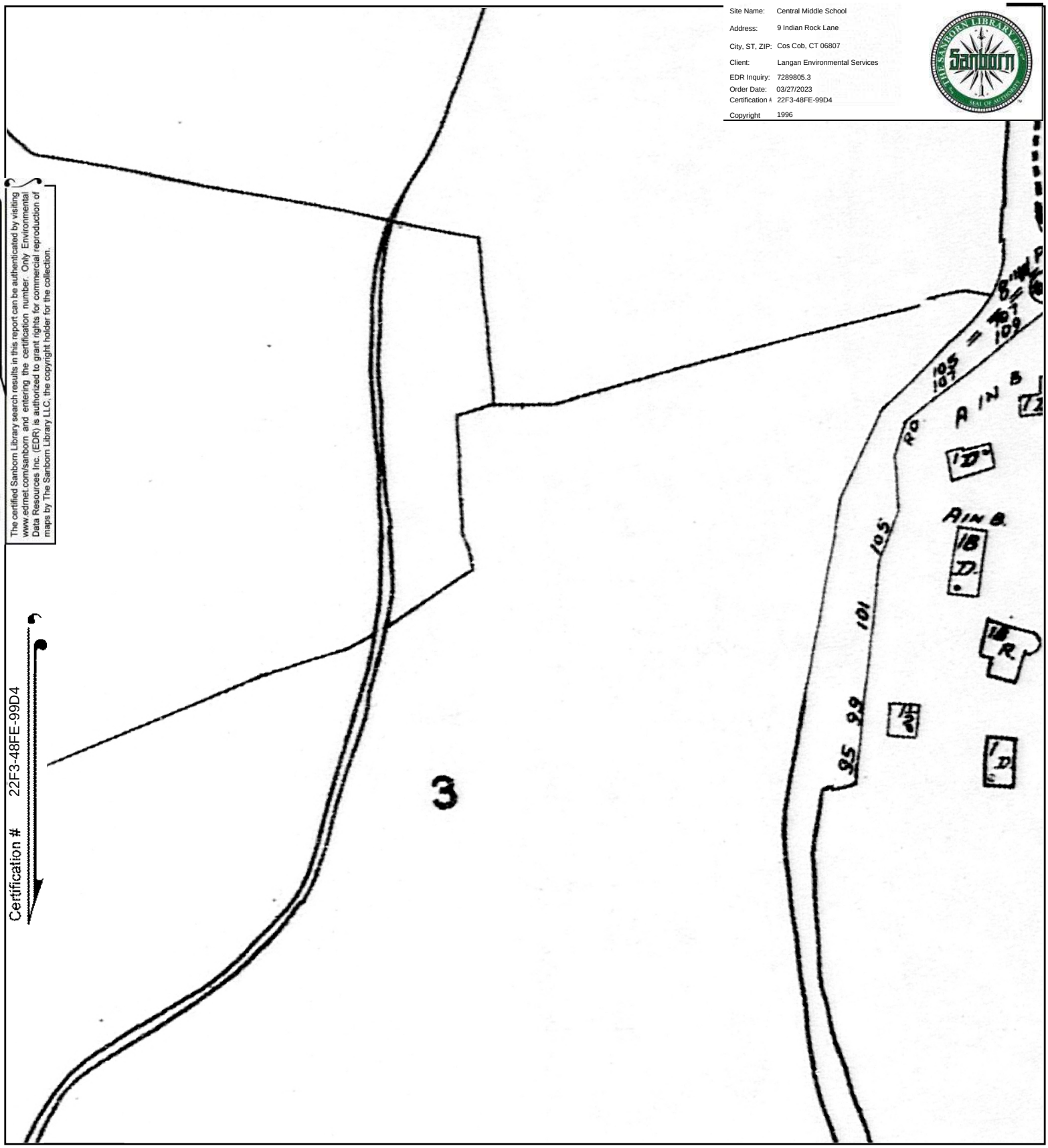

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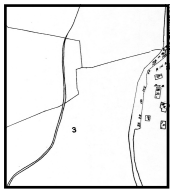

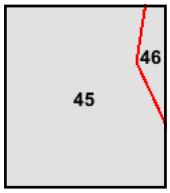

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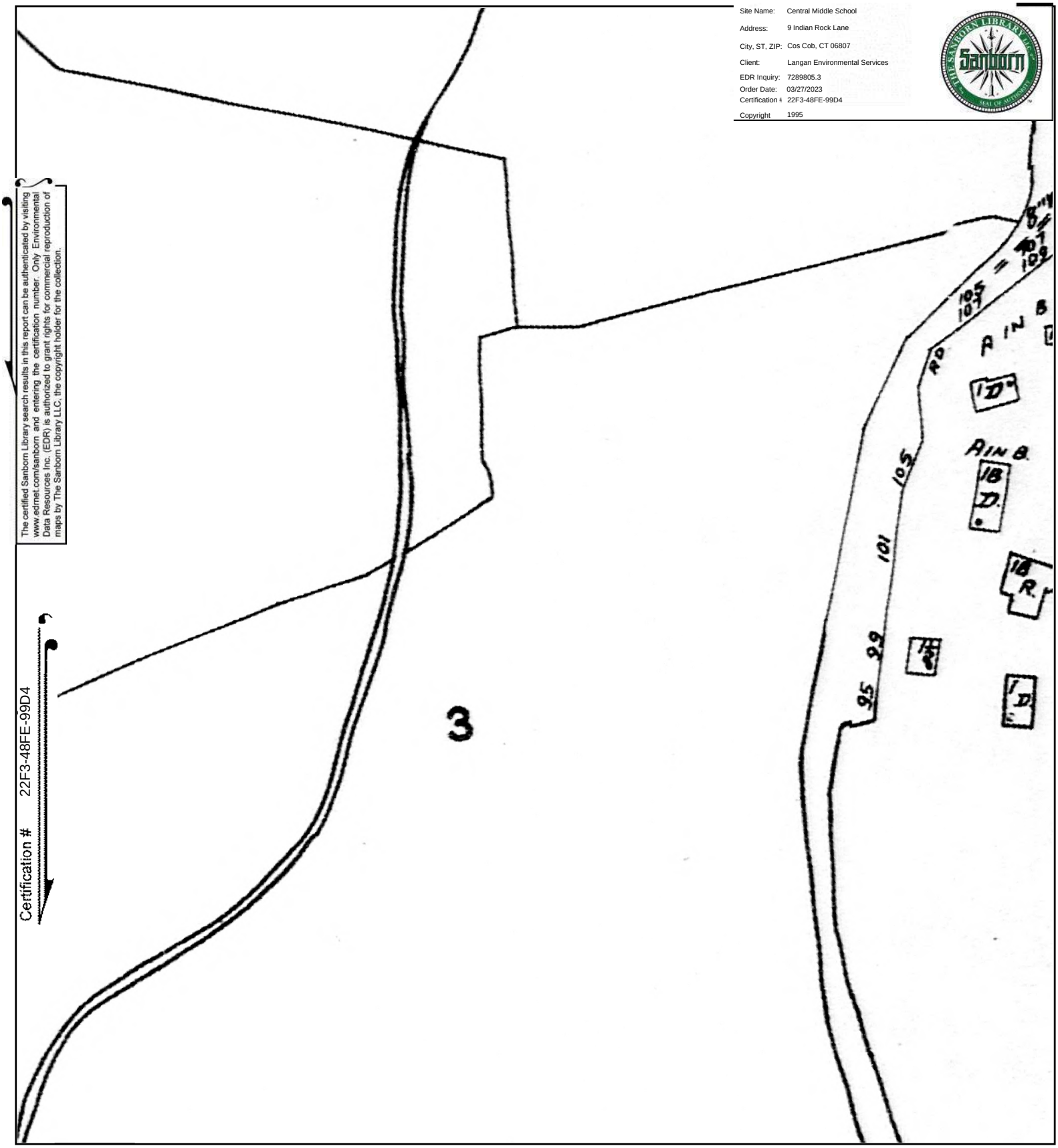

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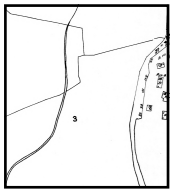

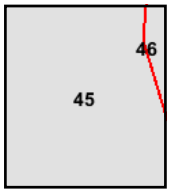

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N

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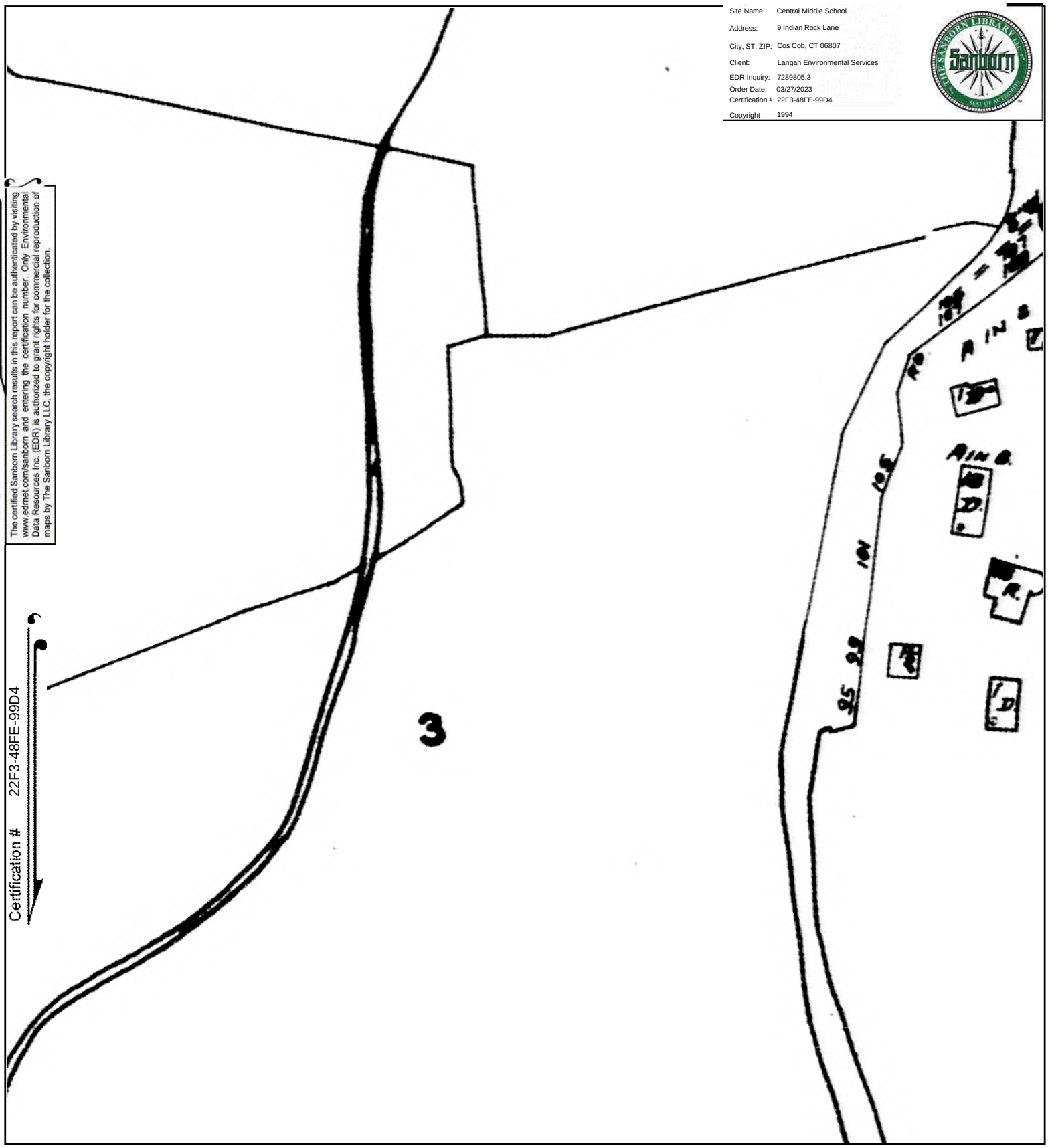

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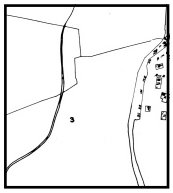

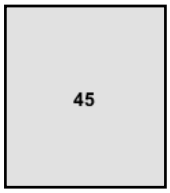

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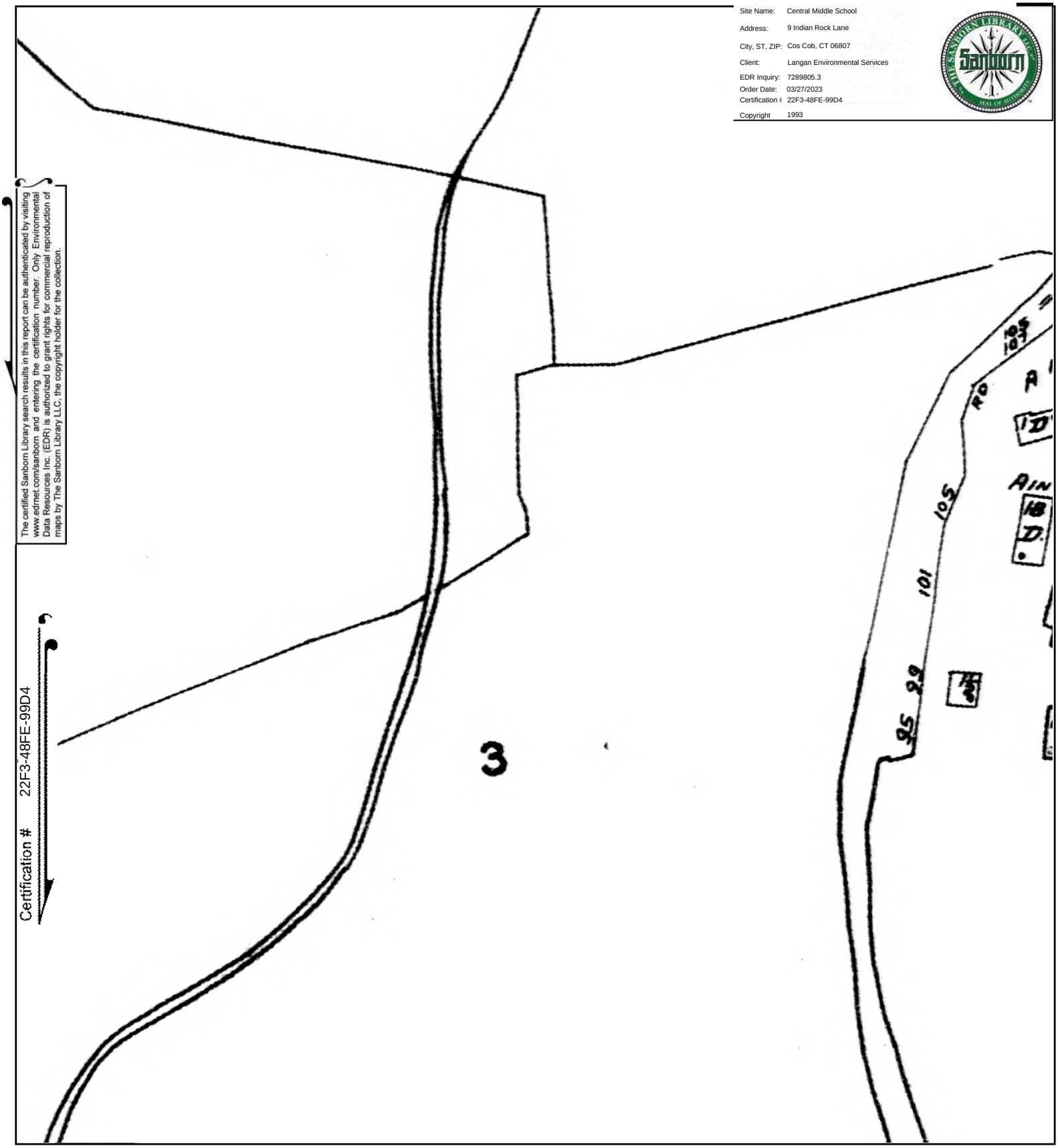

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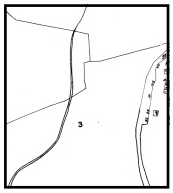

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N

Certified Sanborn® Map

1992

Site Name: Central Middle School
Address: 9 Indian Rock Lane
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Client: Langan Environmental Services
EDR Inquiry: 7289805.3
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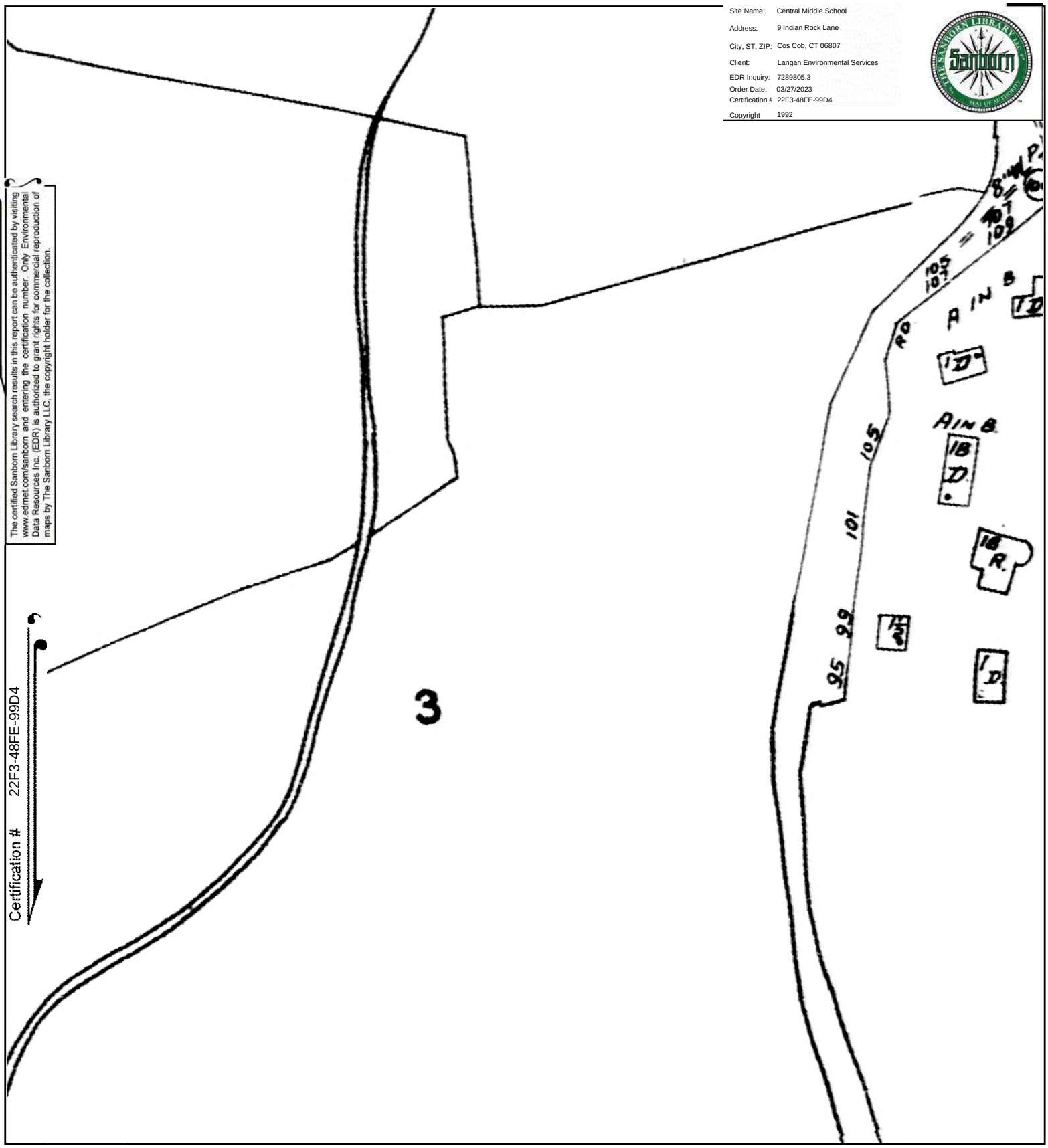

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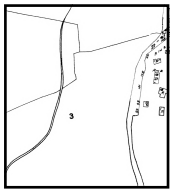

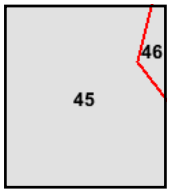

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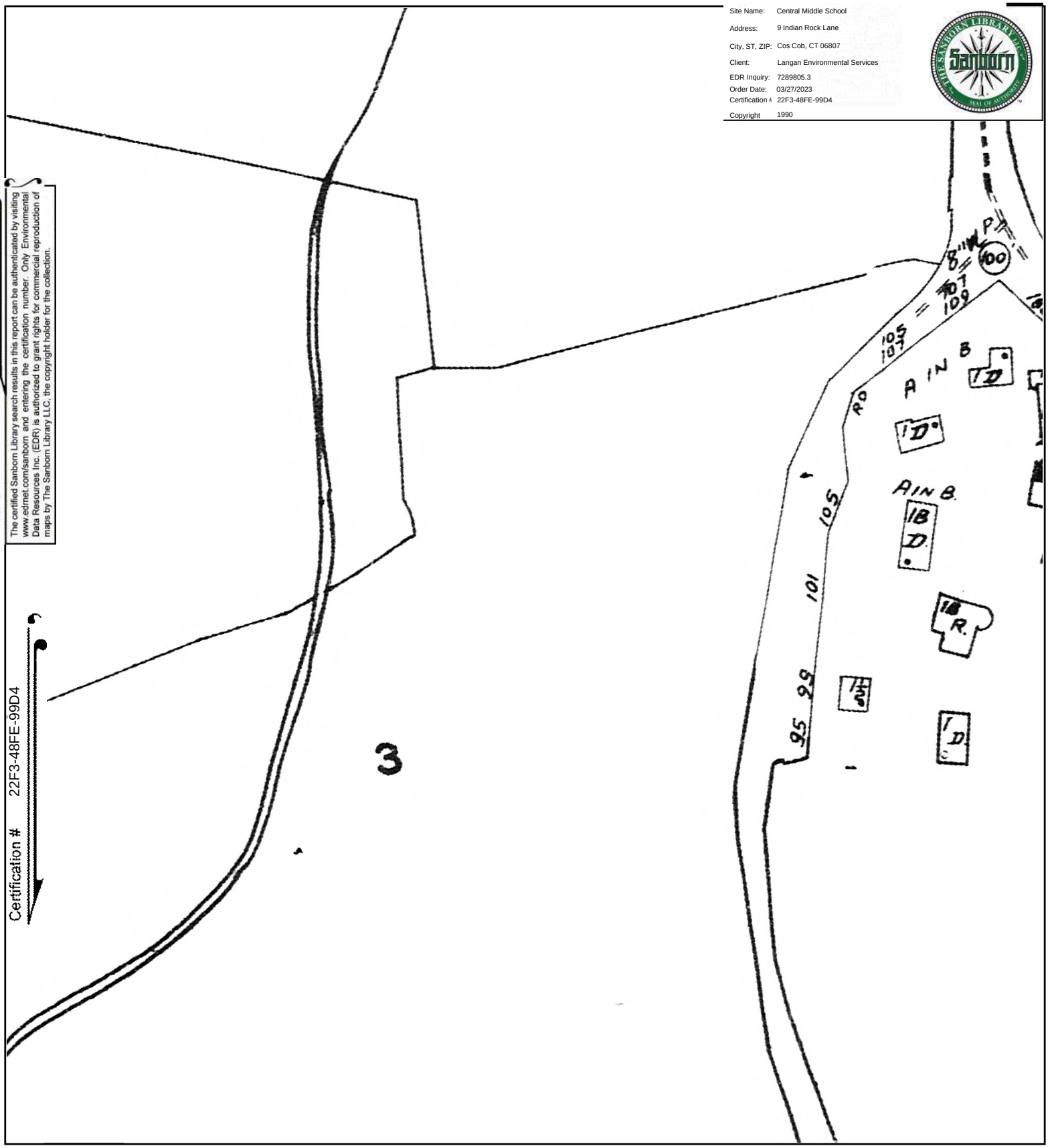

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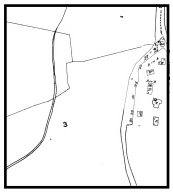

45

Volume 1, Sheet 45

N

Site Name: Central Middle School
Address: 9 Indian Rock Lane
City, ST, ZIP: Cos Cob, CT 06807
Client: Langan Environmental Services
EDR Inquiry: 7289805.3
Order Date: 03/27/2023
Certification #: 22F3-48FE-99D4
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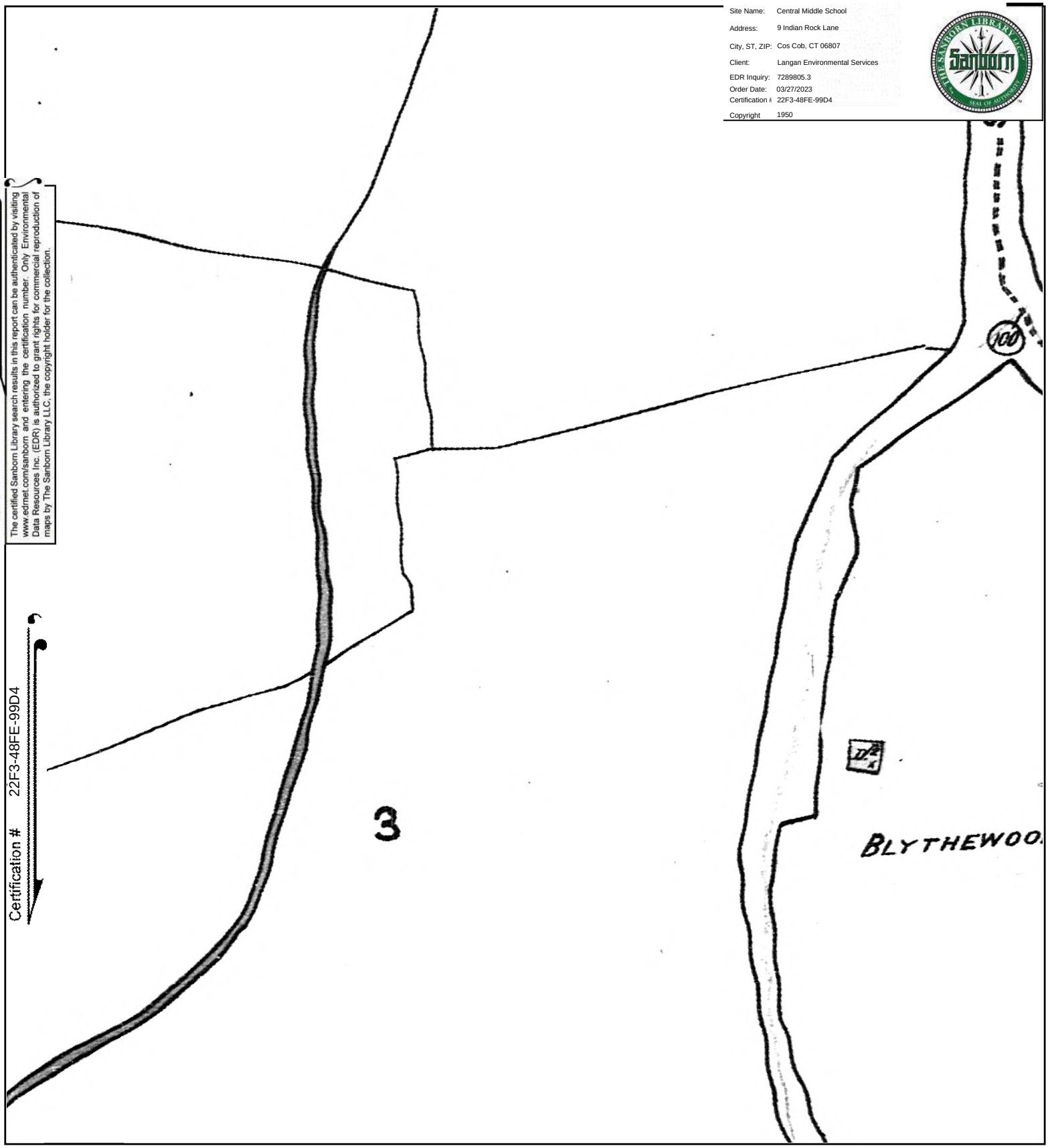

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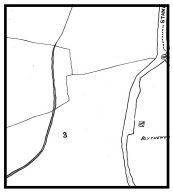

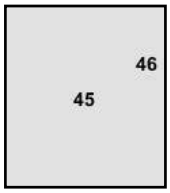

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N

Site Name: Central Middle School
Address: 9 Indian Rock Lane
City, ST, ZIP: Cos Cob, CT 06807
Client: Langan Environmental Services
EDR Inquiry: 7289805.3
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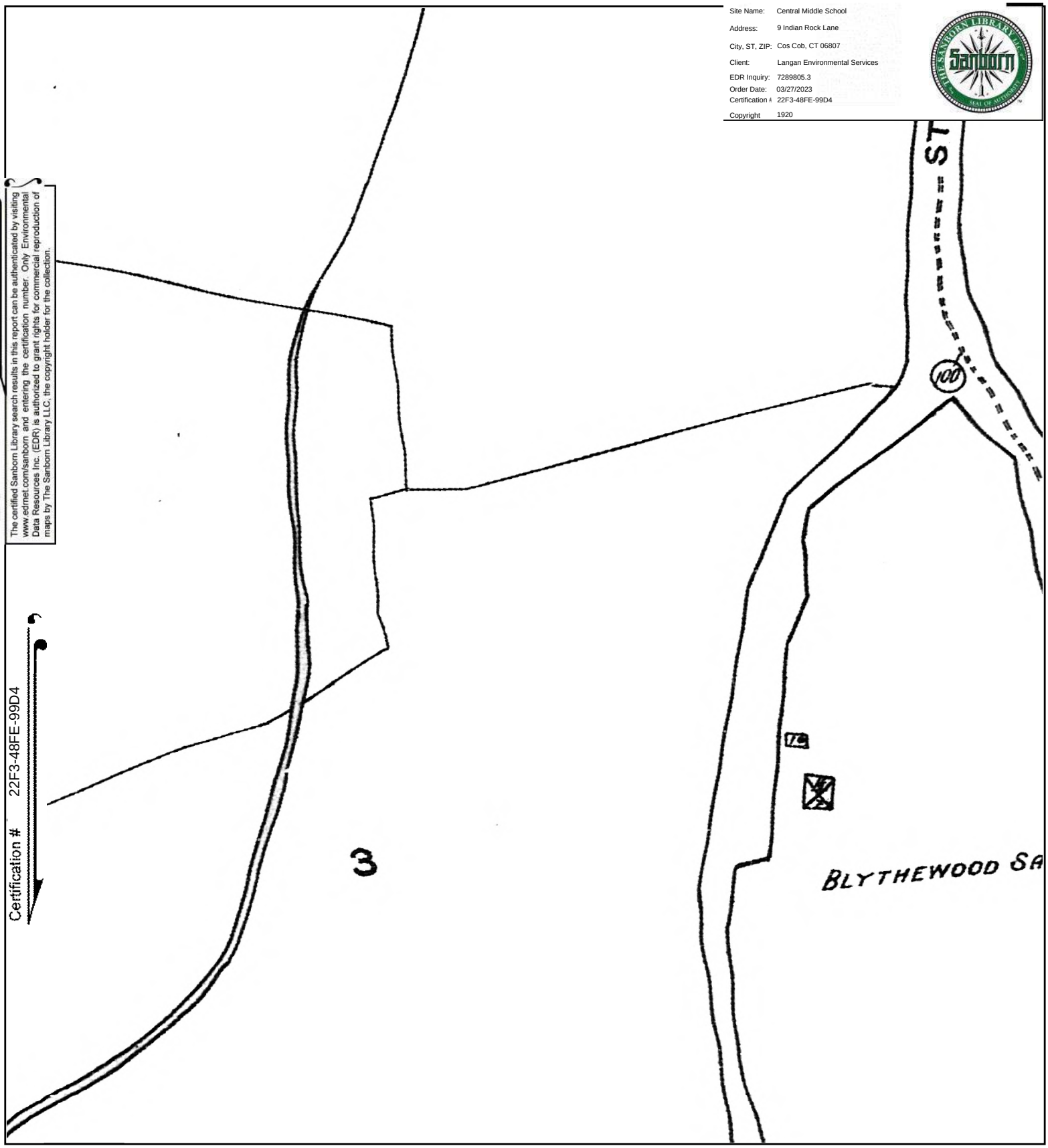

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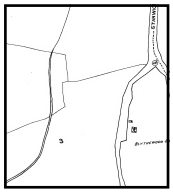

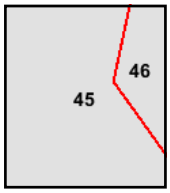

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N

Central Middle School
9 Indian Rock Lane
Cos Cob, CT 06807

Inquiry Number: 7289805.3
March 27, 2023

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

03/27/23

Site Name:

Central Middle School
9 Indian Rock Lane
Cos Cob, CT 06807
EDR Inquiry # 7289805.3

Client Name:

Langan Environmental Services
555 Long Wharf Drive
New Haven, CT 06511
Contact: Elyssa Schwendy

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Certified Sanborn Results:

Certification # 22F3-48FE-99D4

PO # 140265101

Project NA

Maps Provided:

2002
1996
1995
1994
1993
1992
1990
1950
1920

Sanborn® Library search results

Certification #: 22F3-48FE-99D4

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- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

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Sanborn Sheet Key

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2002 Source Sheets

Volume 1, Sheet 45
2002

Volume 1, Sheet 46
2002

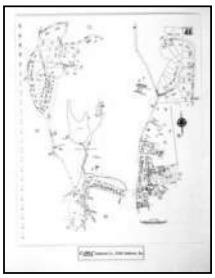
1996 Source Sheets

Volume 1, Sheet 46
1996

Volume 1, Sheet 45
1996

1995 Source Sheets

Volume 1, Sheet 45
1995



Volume 1, Sheet 46
1995

1994 Source Sheets

Volume 1, Sheet 45
1994

Sanborn Sheet Key

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1993 Source Sheets

Volume 1, Sheet 45
1993

1992 Source Sheets

Volume 1, Sheet 46
1992

Volume 1, Sheet 45
1992

1990 Source Sheets

Volume 1, Sheet 45
1990

1950 Source Sheets

Volume 1, Sheet 45
1950

Volume 1, Sheet 46
1950

Sanborn Sheet Key

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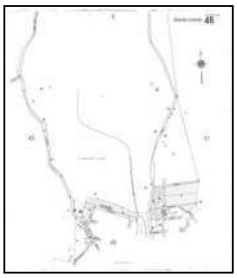
1920 Source Sheets

Volume 1, Sheet 45
1920

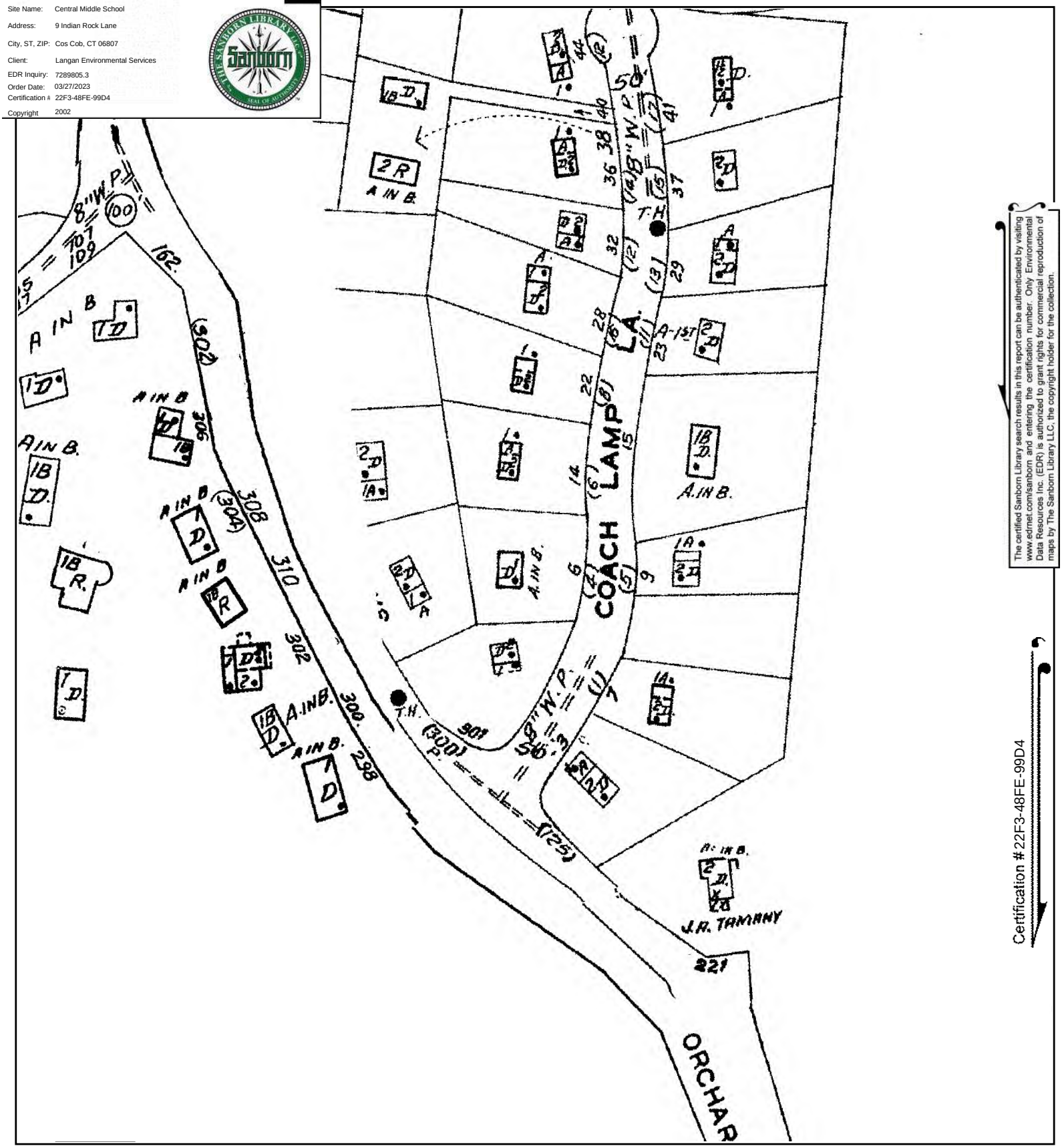


Volume 1, Sheet 46
1920

Certified Sanborn® Map

2002

Site Name:	Central Middle School
Address:	9 Indian Rock Lane
City, ST, ZIP:	Cos Cob, CT 06807
Client:	Langan Environmental Services
EDR Inquiry:	7289805.3
Order Date:	03/27/2023
Certification #	22F3-48FE-99D4
Copyright	2002



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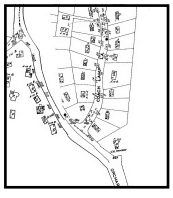

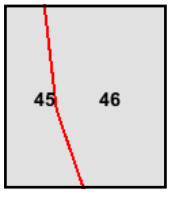

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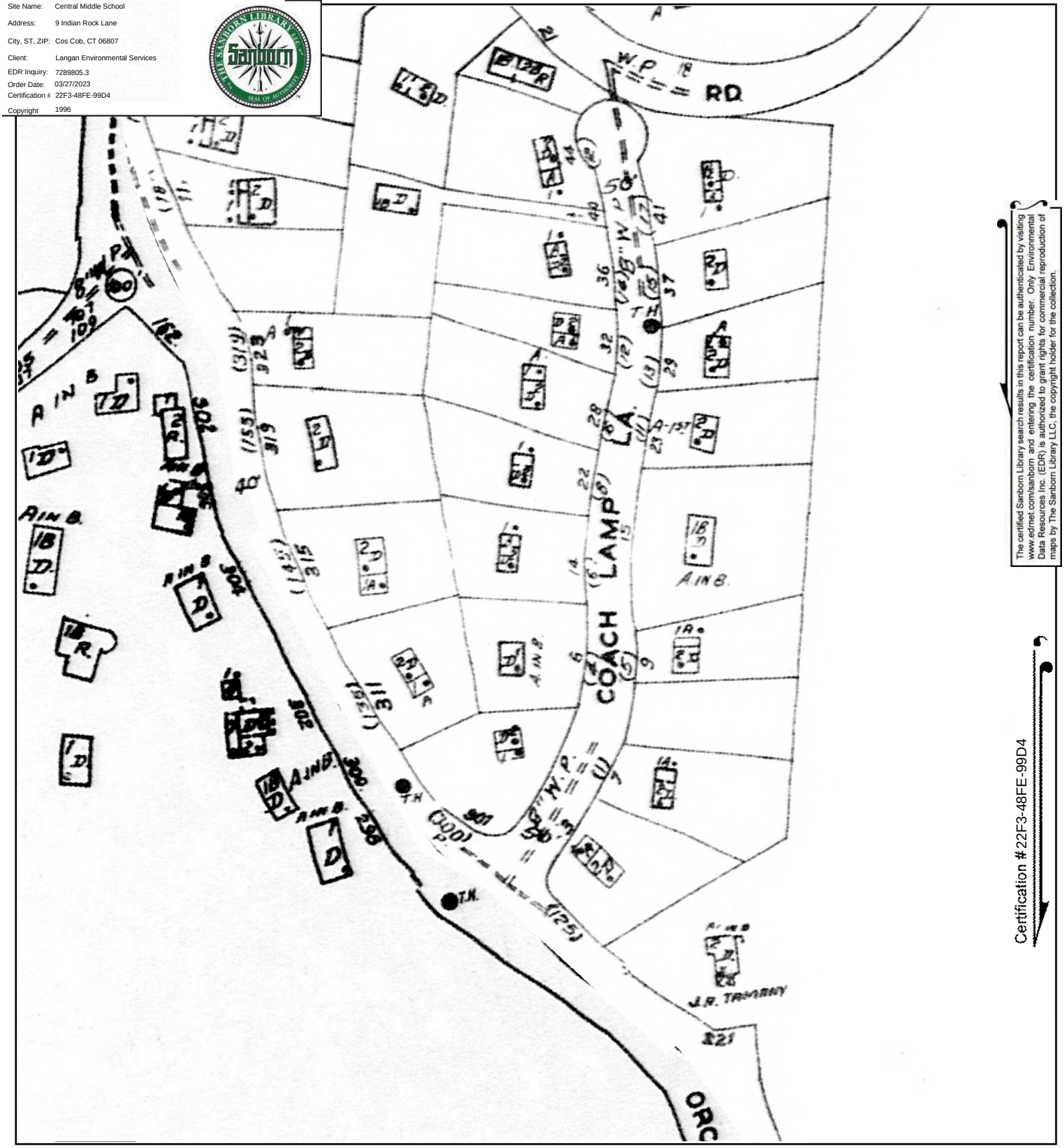
N

Certified Sanborn® Map

1996

Site Name:	Central Middle School
Address:	9 Indian Rock Lane
City, ST, ZIP:	Cos Cob, CT 06807
Client:	Langan Environmental Services
EDR Inquiry:	7289805.3
Order Date:	03/27/2023
Certification #	22F3-48FE-99D4
Copyright	1996



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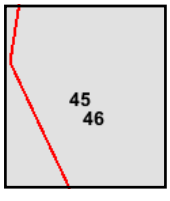

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N

Certified Sanborn® Map

1995

Site Name:	Central Middle School
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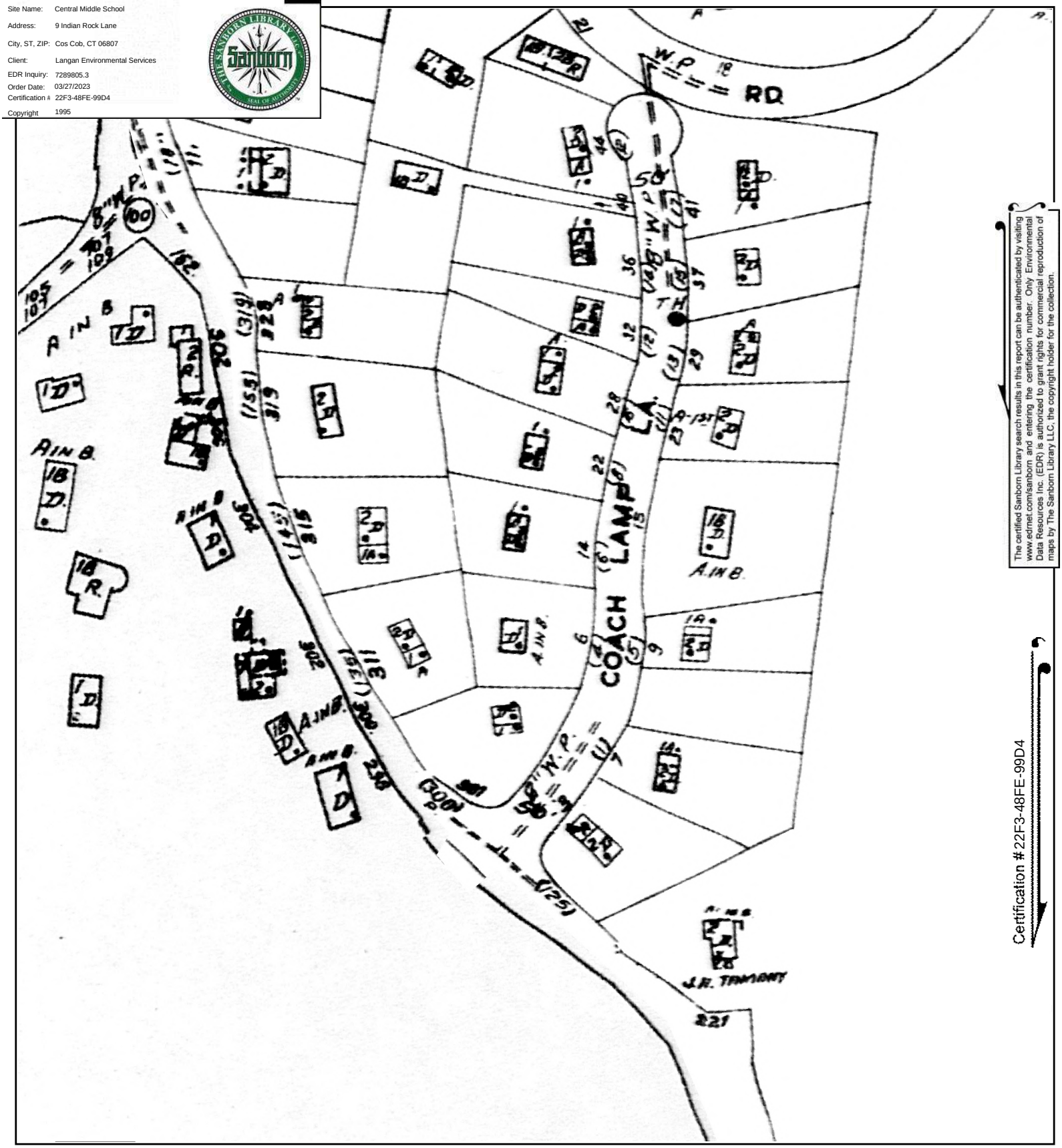
EDR Inquiry:	7289805.3
Order Date:	03/27/2023
Certification #:	22F3-48FE-99D4
Copyright	1995



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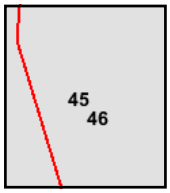

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Volume 1, Sheet 45

Site Name: Central Middle School
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EDR Inquiry: 7289805.3
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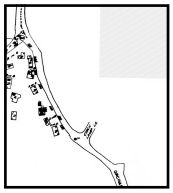

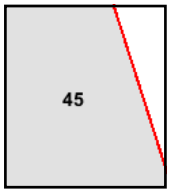

Volume 1, Sheet 45

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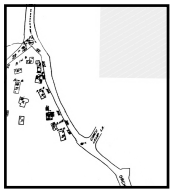
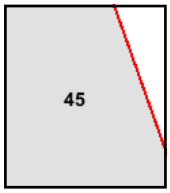




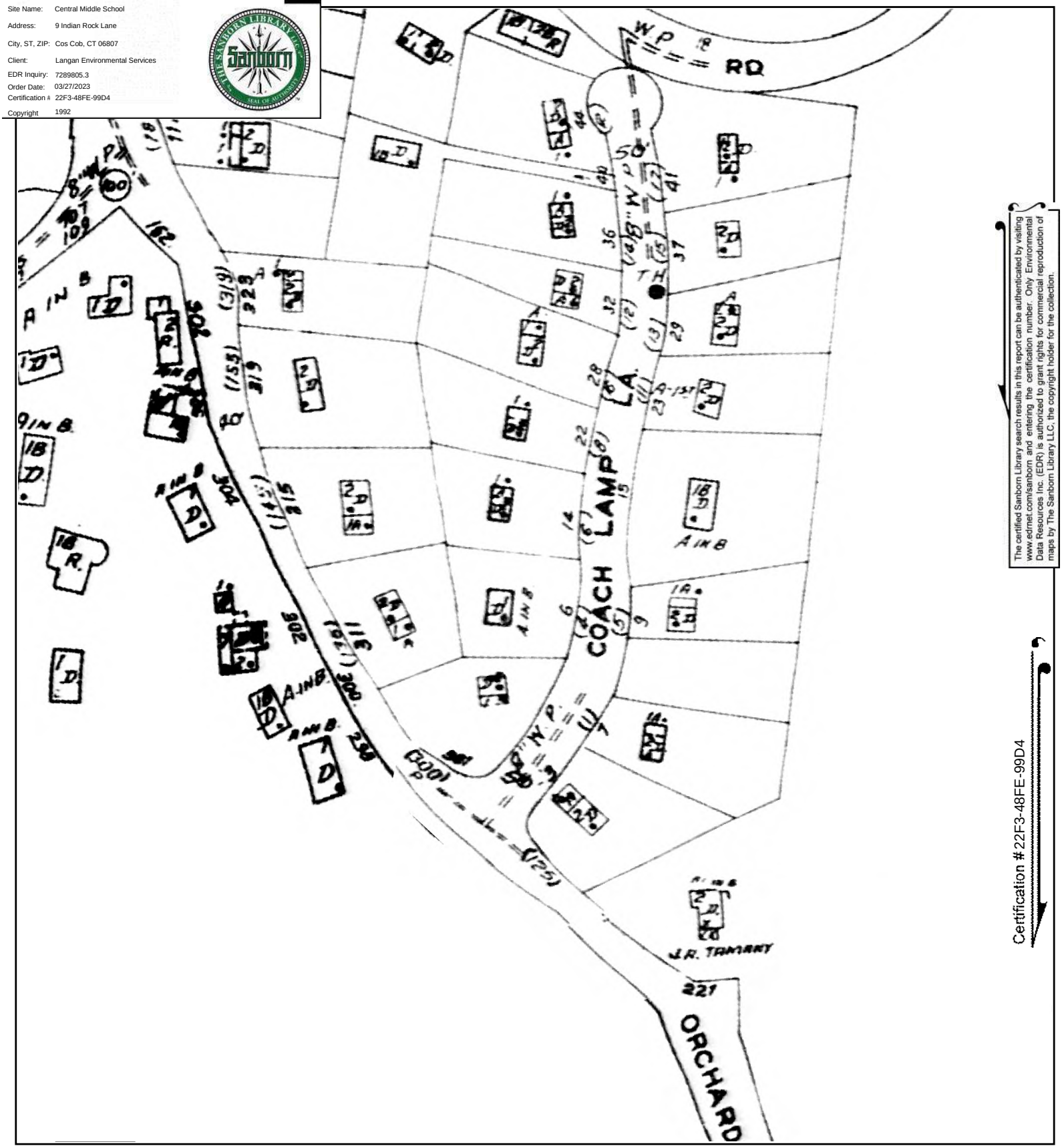
Volume 1, Sheet 45

0 Feet 150 300 600

Certified Sanborn® Map

1992

Site Name:	Central Middle School
Address:	9 Indian Rock Lane
City, ST, ZIP:	Cos Cob, CT 06807
Client:	Langan Environmental Services
EDR Inquiry:	7289805.3
Order Date:	03/27/2023
Certification #	22F3-48FE-99D4
Copyright	1992



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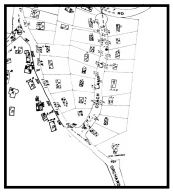

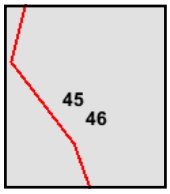

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Site Name: Central Middle School
Address: 9 Indian Rock Lane
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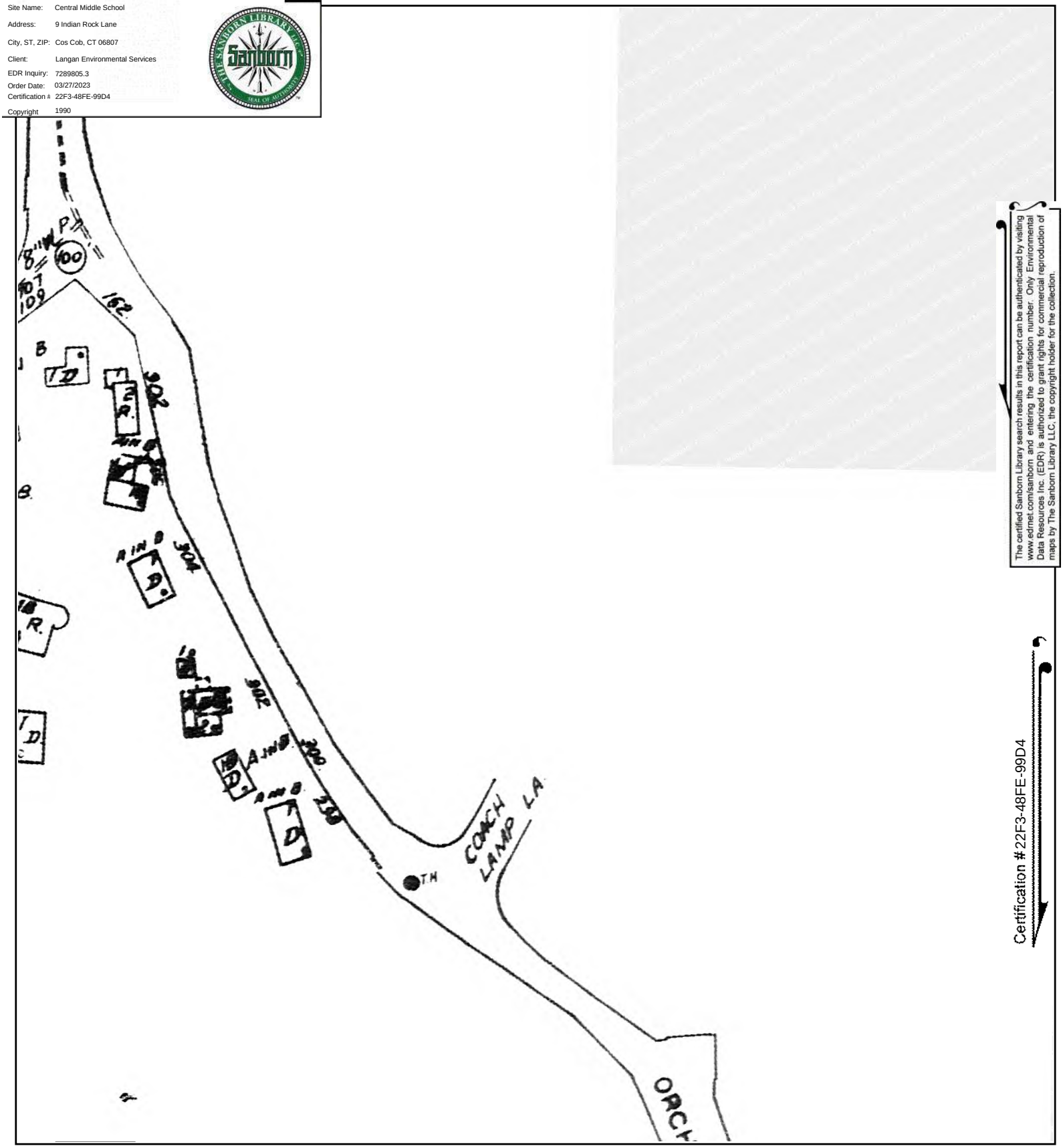
Client: Langan Environmental Services
EDR Inquiry: 7289805.3
Order Date: 03/27/2023
Certification #: 22F3-48FE-99D4
Copyright 1990



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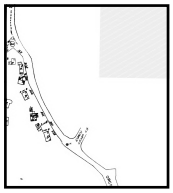

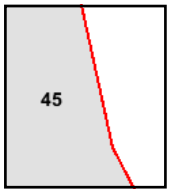

Volume 1, Sheet 45

0 Feet 150 300 600

N

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Address: 9 Indian Rock Lane
City, ST, ZIP: Cos Cob, CT 06807
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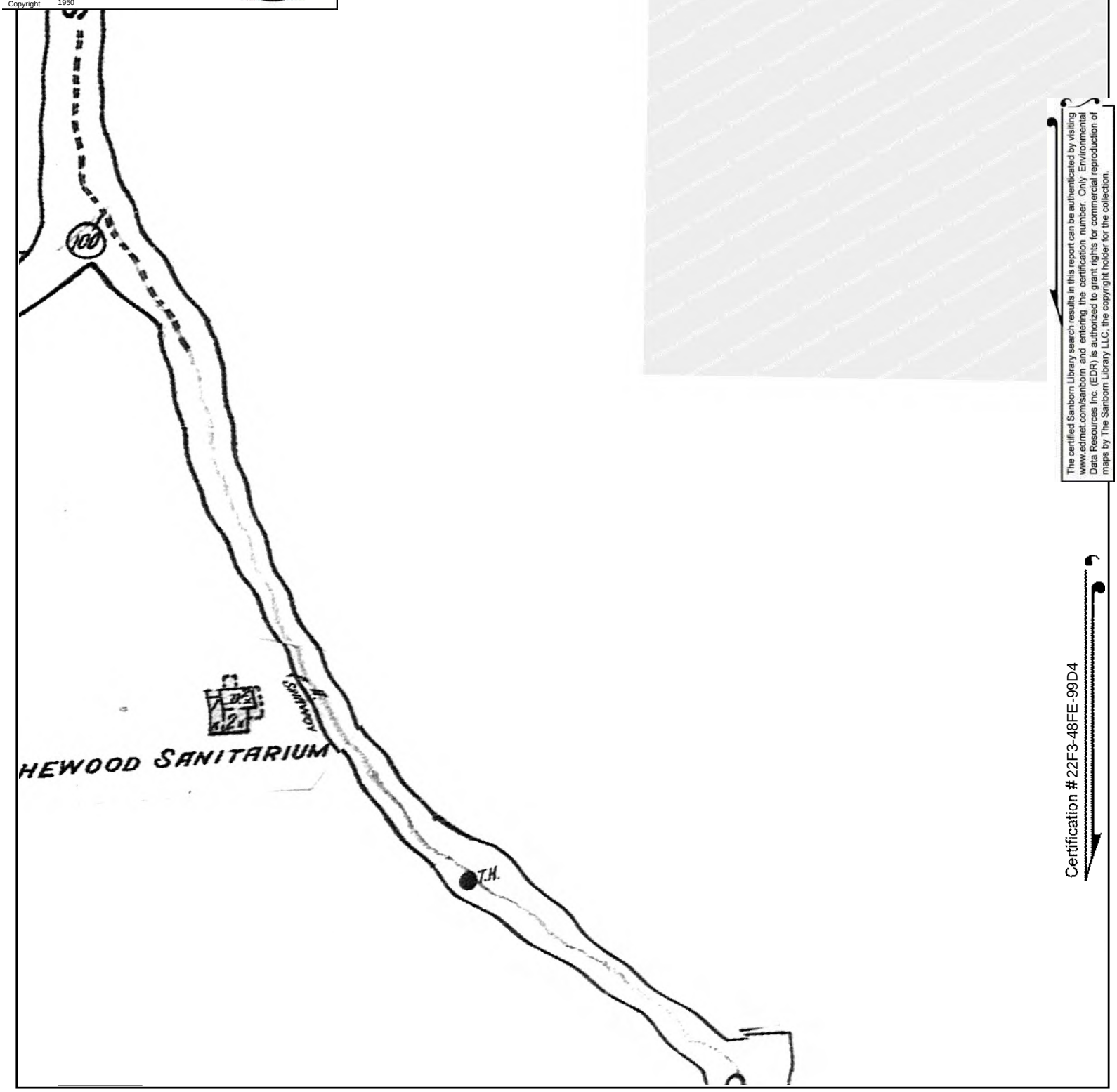
EDR Inquiry: 7289805.3
Order Date: 03/27/2023
Certification #: 22F3-48FE-99D4
Copyright: 1950



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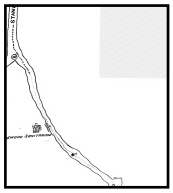

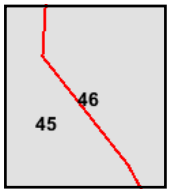

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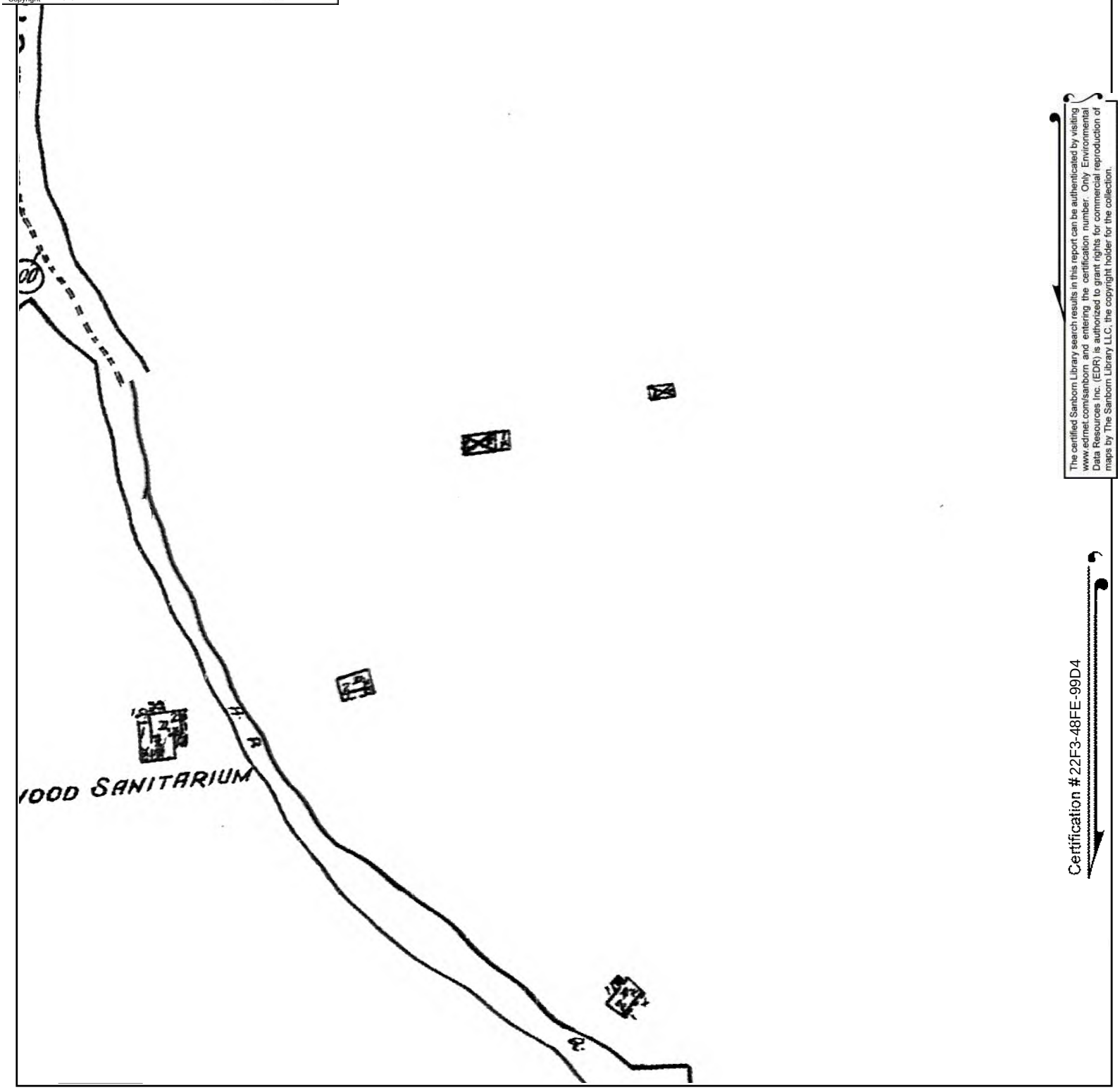
EDR Inquiry: 7289805.3
Order Date: 03/27/2023
Certification #: 22F3-48FE-99D4
Copyright: 1920



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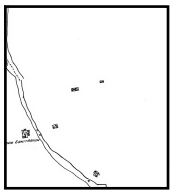

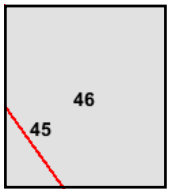

Volume 1, Sheet 46
Volume 1, Sheet 45

0 Feet 150 300 600

N

Central Middle School
9 Indian Rock Lane
Cos Cob, CT 06807

Inquiry Number: 7289805.3
March 27, 2023

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

03/27/23

Site Name:

Central Middle School
9 Indian Rock Lane
Cos Cob, CT 06807
EDR Inquiry # 7289805.3

Client Name:

Langan Environmental Services
555 Long Wharf Drive
New Haven, CT 06511
Contact: Elyssa Schwendy

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The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 22F3-48FE-99D4

PO # 140265101

Project NA

Maps Provided:

2002
1996
1995
1994
1993
1992
1990
1950
1920

Sanborn® Library search results

Certification #: 22F3-48FE-99D4

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

2002 Source Sheets

Volume 1, Sheet 45
2002

Volume 1, Sheet 46
2002

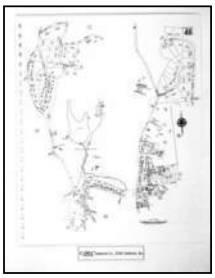
1996 Source Sheets

Volume 1, Sheet 46
1996

Volume 1, Sheet 45
1996

1995 Source Sheets

Volume 1, Sheet 45
1995



Volume 1, Sheet 46
1995

1994 Source Sheets

Volume 1, Sheet 45
1994

Sanborn Sheet Key

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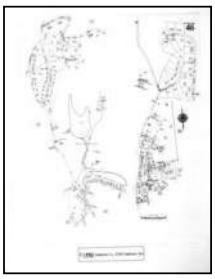
1993 Source Sheets

Volume 1, Sheet 45
1993

1992 Source Sheets

Volume 1, Sheet 45
1992



Volume 1, Sheet 46
1992

1990 Source Sheets

Volume 1, Sheet 45
1990

1950 Source Sheets

Volume 1, Sheet 45
1950

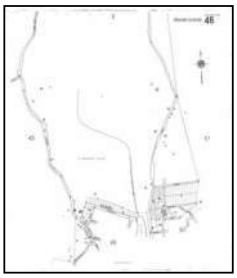
Volume 1, Sheet 46
1950

Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1920 Source Sheets

Volume 1, Sheet 45
1920



Volume 1, Sheet 46
1920

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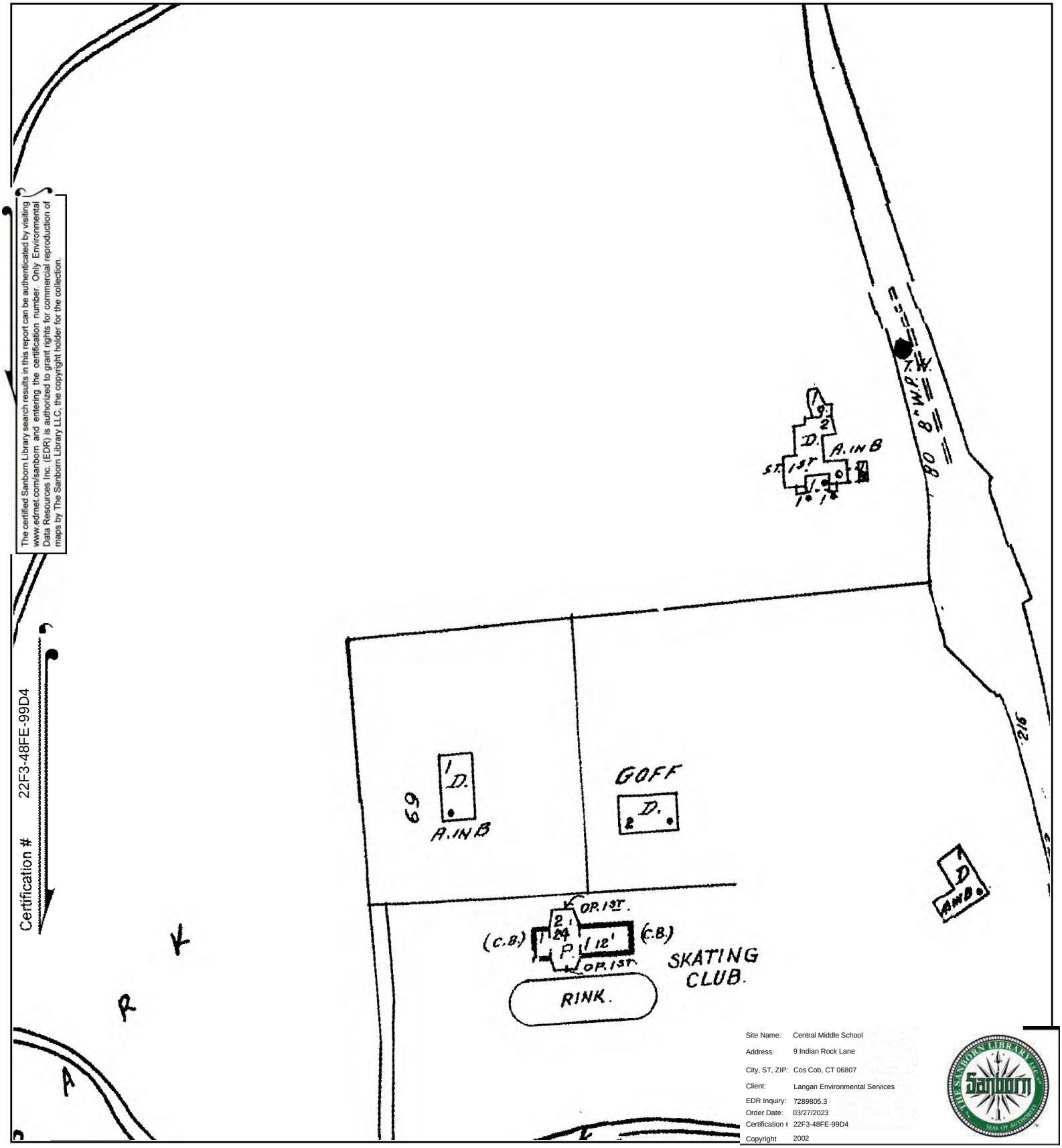
Certification # 22F3-48FE-99D4



Site Name:	Central Middle School
Address:	9 Indian Rock Lane
City, ST, ZIP:	Cos Cob, CT 06807
Client:	Langan Environmental Services
EDR Inquiry:	7289805.3
Order Date:	03/27/2023
Certification #:	22F3-48FE-99D4
Copyright	2002

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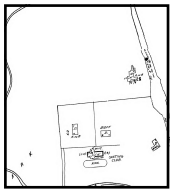

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Volume 1, Sheet 46
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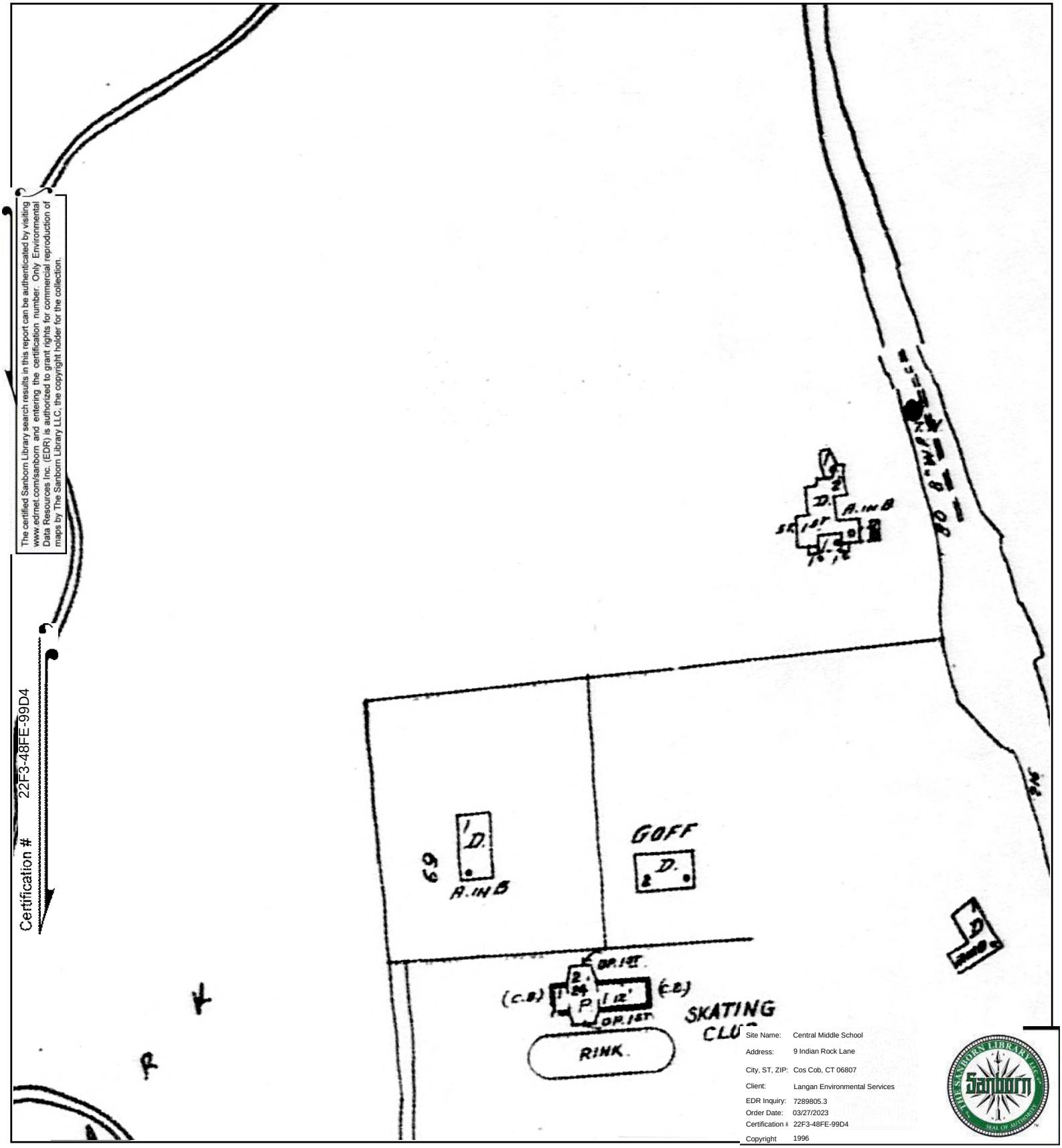

Site Name:	Central Middle School
Address:	9 Indian Rock Lane
City, ST, ZIP:	Cos Cob, CT 06807
Client:	Langan Environmental Services
EDR Inquiry:	7289805.3
Order Date:	03/27/2023
Certification #:	22F3-48FE-99D4
Copyright	1996

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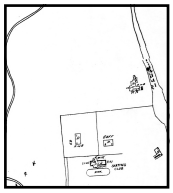

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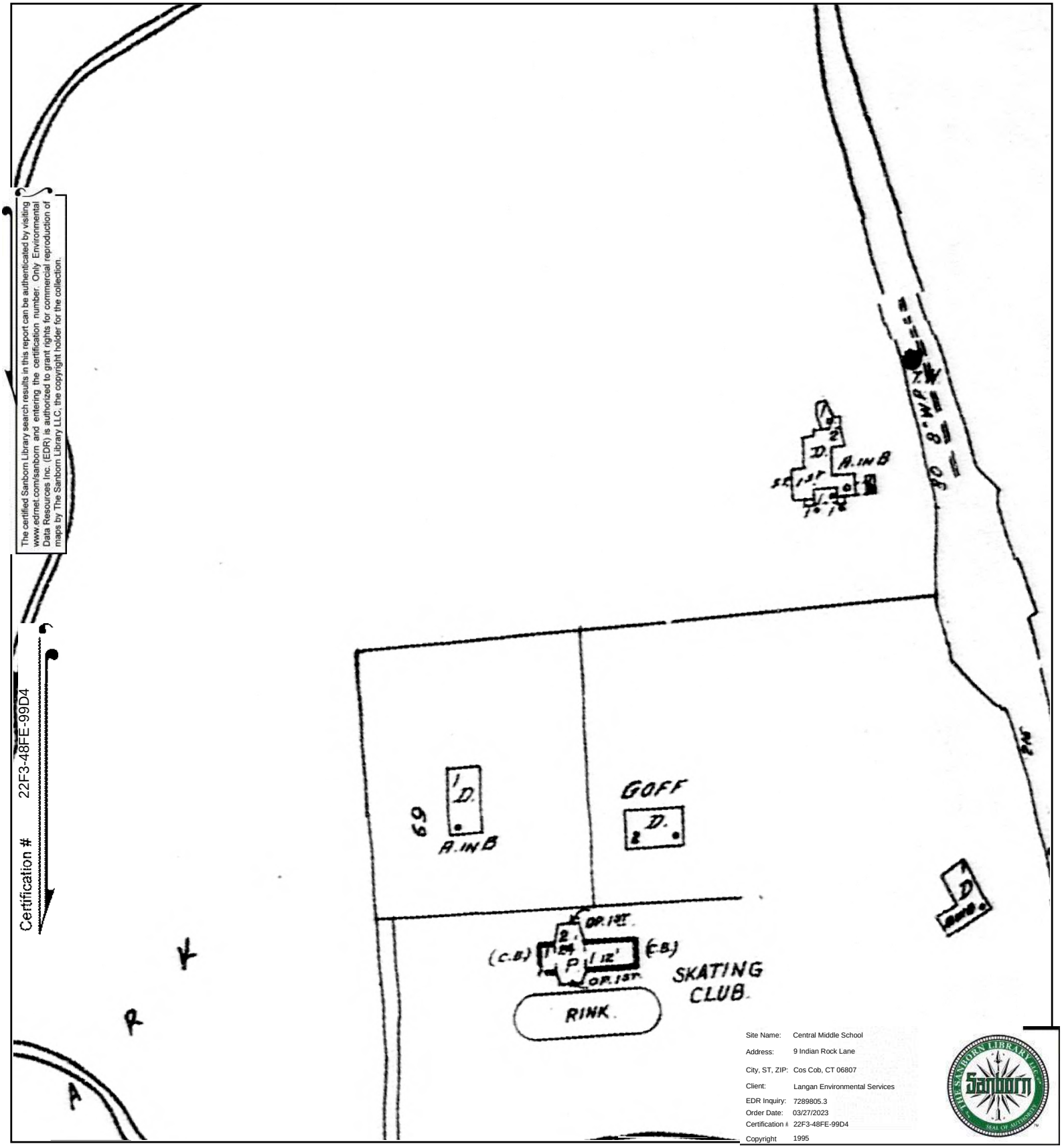

Site Name:	Central Middle School
Address:	9 Indian Rock Lane
City, ST, ZIP:	Cos Cob, CT 06807
Client:	Langan Environmental Services
EDR Inquiry:	7289805.3
Order Date:	03/27/2023
Certification #:	22F3-48FE-99D4
Copyright	1995

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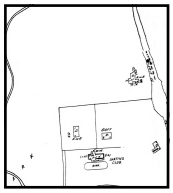

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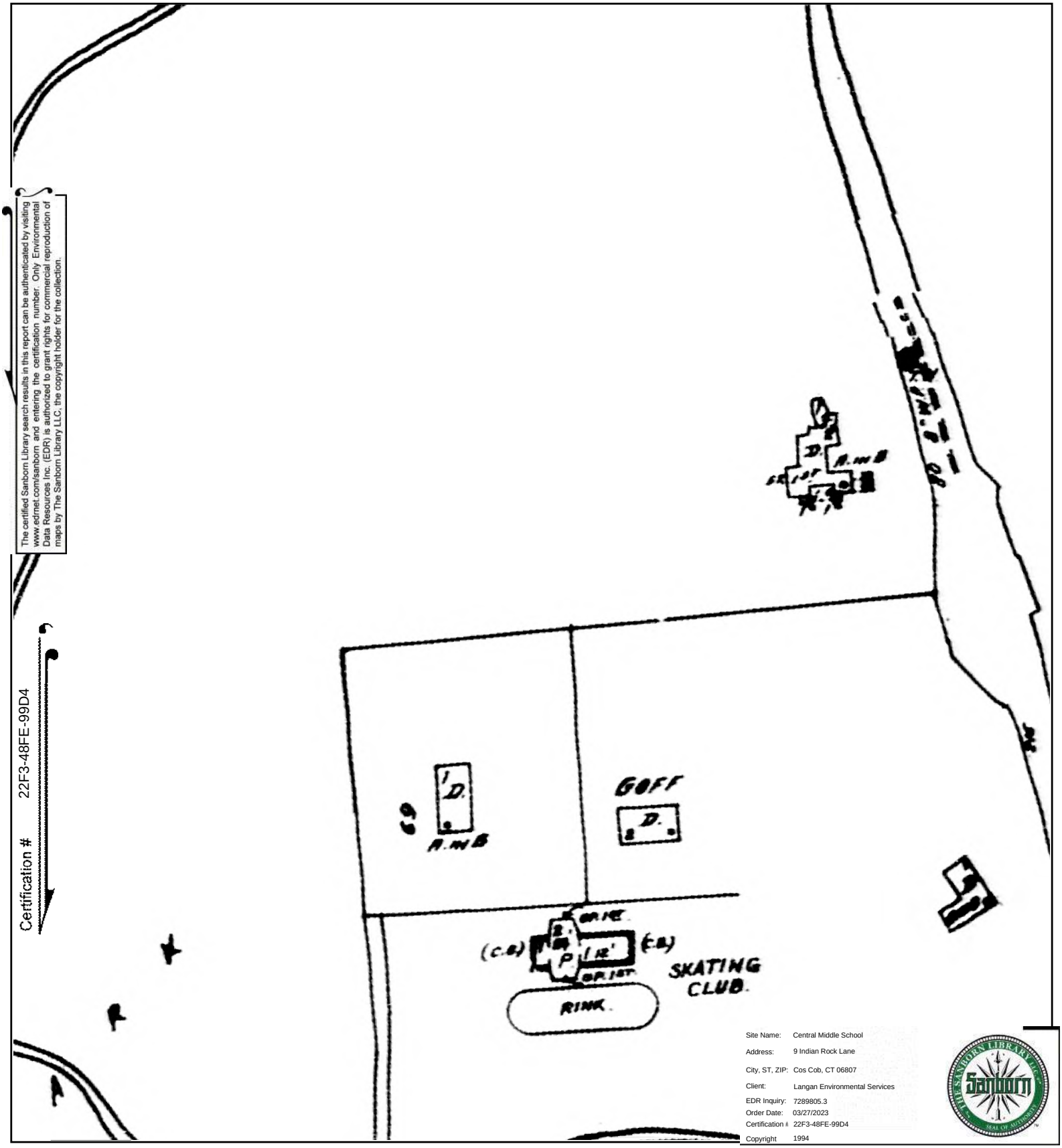

Site Name:	Central Middle School
Address:	9 Indian Rock Lane
City, ST, ZIP:	Cos Cob, CT 06807
Client:	Langan Environmental Services
EDR Inquiry:	7289805.3
Order Date:	03/27/2023
Certification #:	22F3-48FE-99D4
Copyright	1994

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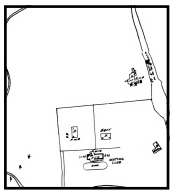

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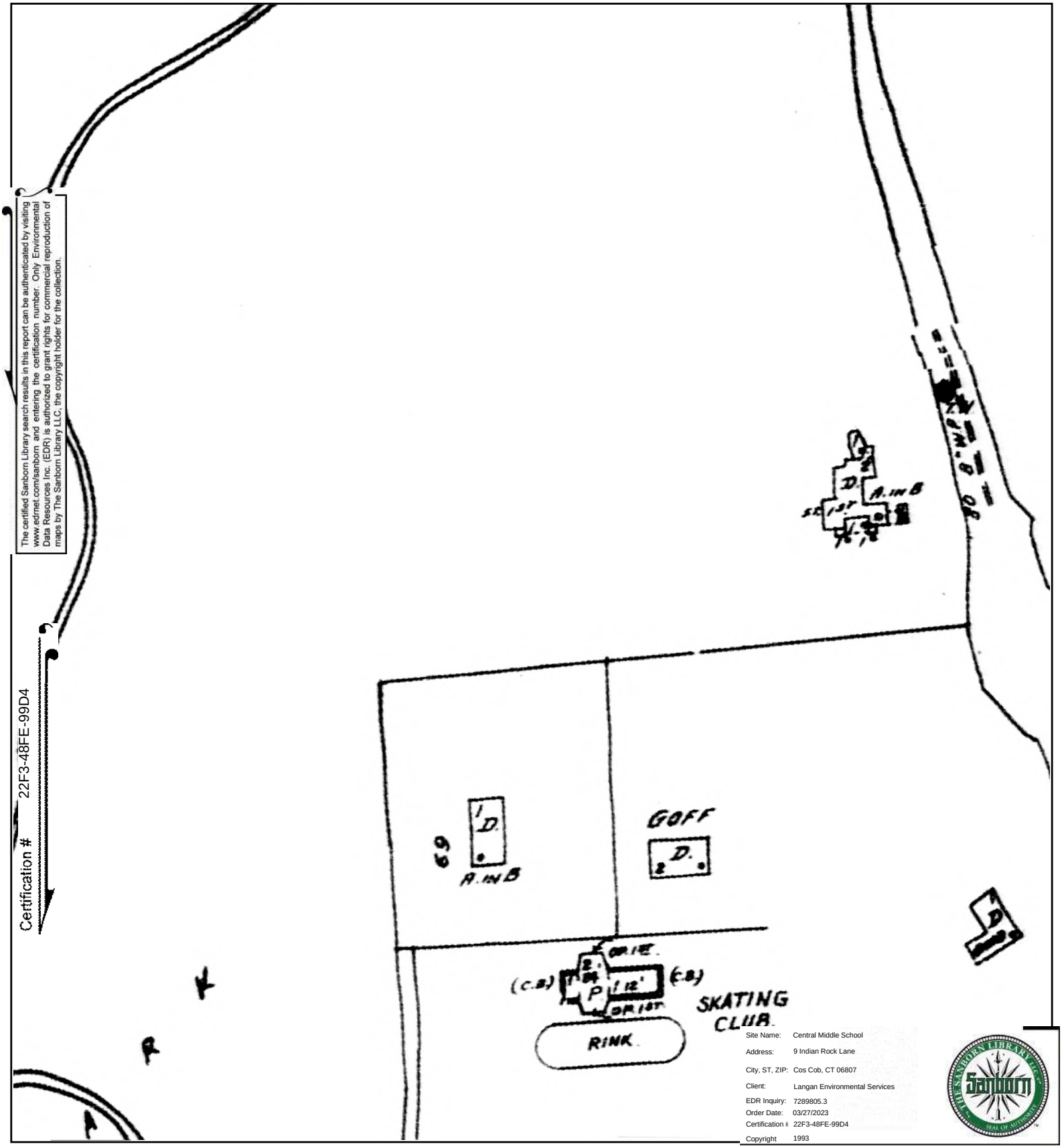

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Site Name:	Central Middle School
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City, ST, ZIP:	Cos Cob, CT 06807
Client:	Langan Environmental Services
EDR Inquiry:	7289805.3
Order Date:	03/27/2023
Certification #:	22F3-48FE-99D4
Copyright	1993

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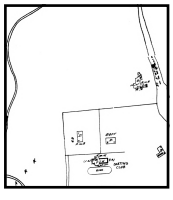

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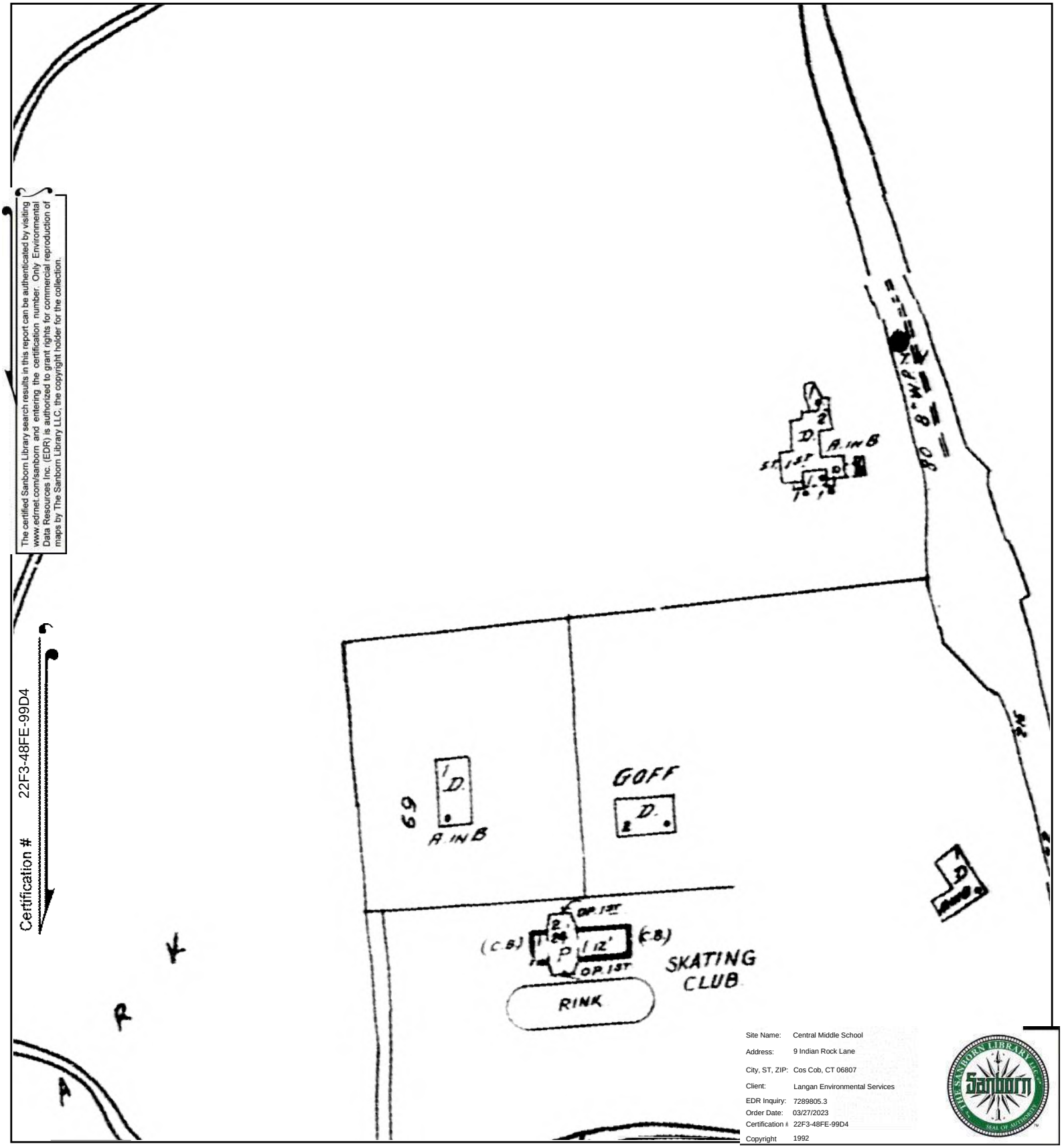

Site Name:	Central Middle School
Address:	9 Indian Rock Lane
City, ST, ZIP:	Cos Cob, CT 06807
Client:	Langan Environmental Services
EDR Inquiry:	7289805.3
Order Date:	03/27/2023
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Copyright	1992

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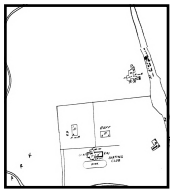

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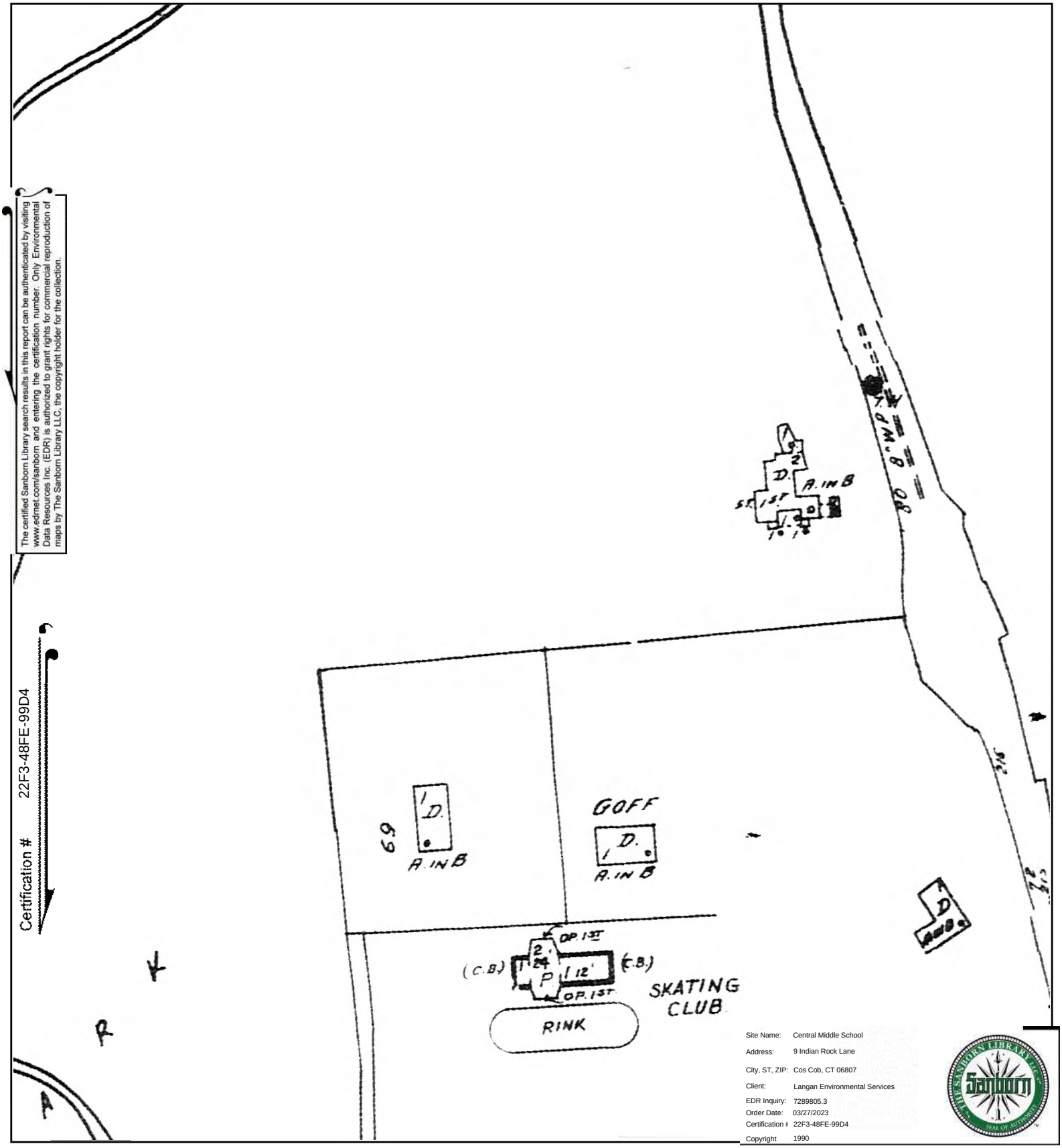

Site Name:	Central Middle School
Address:	9 Indian Rock Lane
City, ST, ZIP:	Cos Cob, CT 06807
Client:	Langan Environmental Services
EDR Inquiry:	7289805.3
Order Date:	03/27/2023
Certification #:	22F3-48FE-99D4
Copyright	1990

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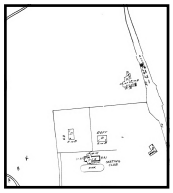

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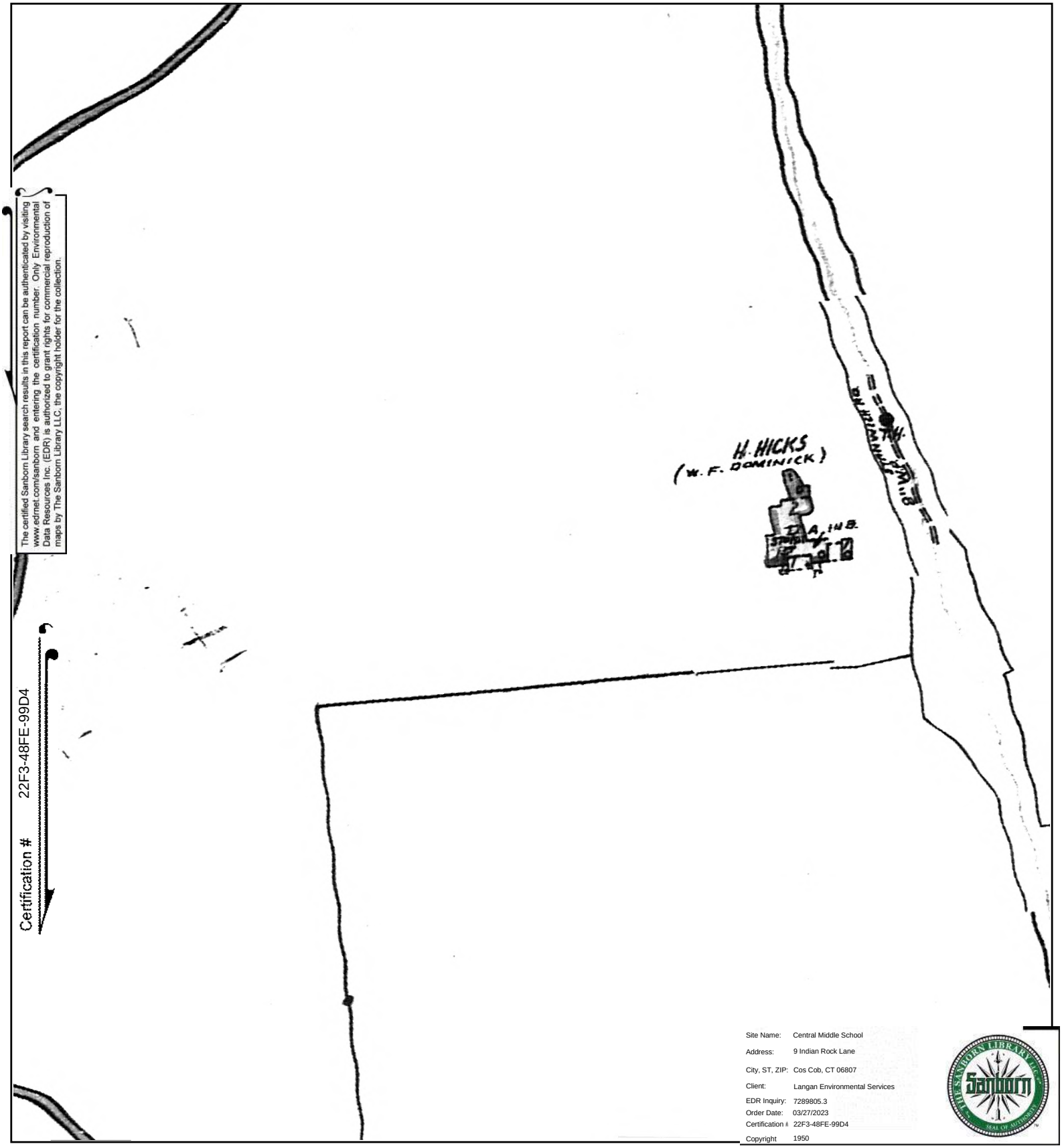

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Site Name:	Central Middle School
Address:	9 Indian Rock Lane
City, ST, ZIP:	Cos Cob, CT 06807
Client:	Langan Environmental Services
EDR Inquiry:	7289805.3
Order Date:	03/27/2023
Certification #:	22F3-48FE-99D4
Copyright	1950

This Certified Sanborn Map combines the following sheets.
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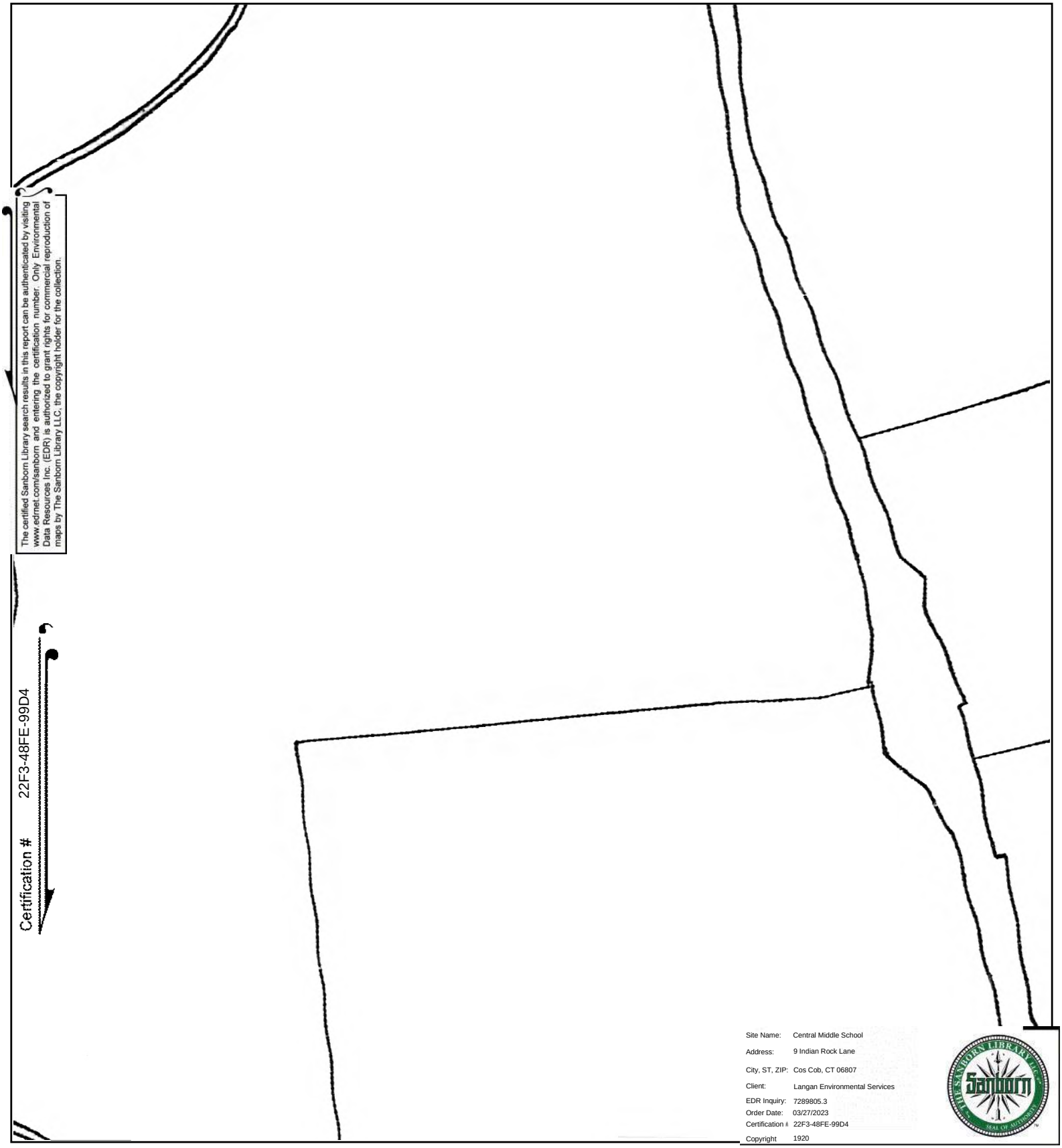
N



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Certification # 22F3-48FE-99D4

Site Name:	Central Middle School
Address:	9 Indian Rock Lane
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Client:	Langan Environmental Services
EDR Inquiry:	7289805.3
Order Date:	03/27/2023
Certification #:	22F3-48FE-99D4
Copyright	1920

This Certified Sanborn Map combines the following sheets.
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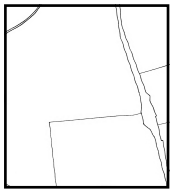

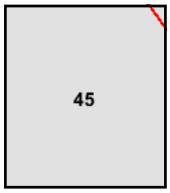

Volume 1, Sheet 46
Volume 1, Sheet 45

Central Middle School
9 Indian Rock Lane
Cos Cob, CT 06807

Inquiry Number: 7289805.4
March 24, 2023

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

03/24/23

Site Name:

Central Middle School
9 Indian Rock Lane
Cos Cob, CT 06807
EDR Inquiry # 7289805.4

Client Name:

Langan Environmental Services
555 Long Wharf Drive
New Haven, CT 06511
Contact: Elyssa Schwendy

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Langan Environmental Services were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# 140265101
Project: NA

Coordinates:

Latitude:	41.048946 41° 2' 56" North
Longitude:	-73.605775 -73° 36' 21" West
UTM Zone:	Zone 18 North
UTM X Meters:	617171.29
UTM Y Meters:	4545126.86
Elevation:	50.00' above sea level

Maps Provided:

2018	1893
2015	1892
2012	
1987	
1984	
1960	
1951	
1899	

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Topo Sheet Key

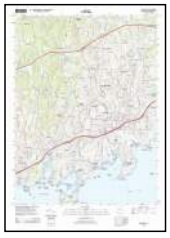
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2018 Source Sheets

Stamford
2018
7.5-minute, 24000

Glenville
2018
7.5-minute, 24000

2015 Source Sheets



Stamford
2015
7.5-minute, 24000

Glenville
2015
7.5-minute, 24000

2012 Source Sheets

Stamford
2012
7.5-minute, 24000

Glenville
2012
7.5-minute, 24000

1987 Source Sheets

Stamford
1987
7.5-minute, 24000
Aerial Photo Revised 1982

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1984 Source Sheets

Stamford
1984
7.5-minute, 24000
Aerial Photo Revised 1982

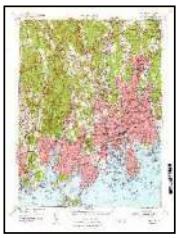
1960 Source Sheets

Glenville
1960
7.5-minute, 24000
Aerial Photo Revised 1949

Stamford
1960
7.5-minute, 24000
Aerial Photo Revised 1949

1951 Source Sheets

Glenville
1951
7.5-minute, 31680
Aerial Photo Revised 1949



STAMFORD
1951
7.5-minute, 31680

1899 Source Sheets

Stamford
1899
15-minute, 62500

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1893 Source Sheets

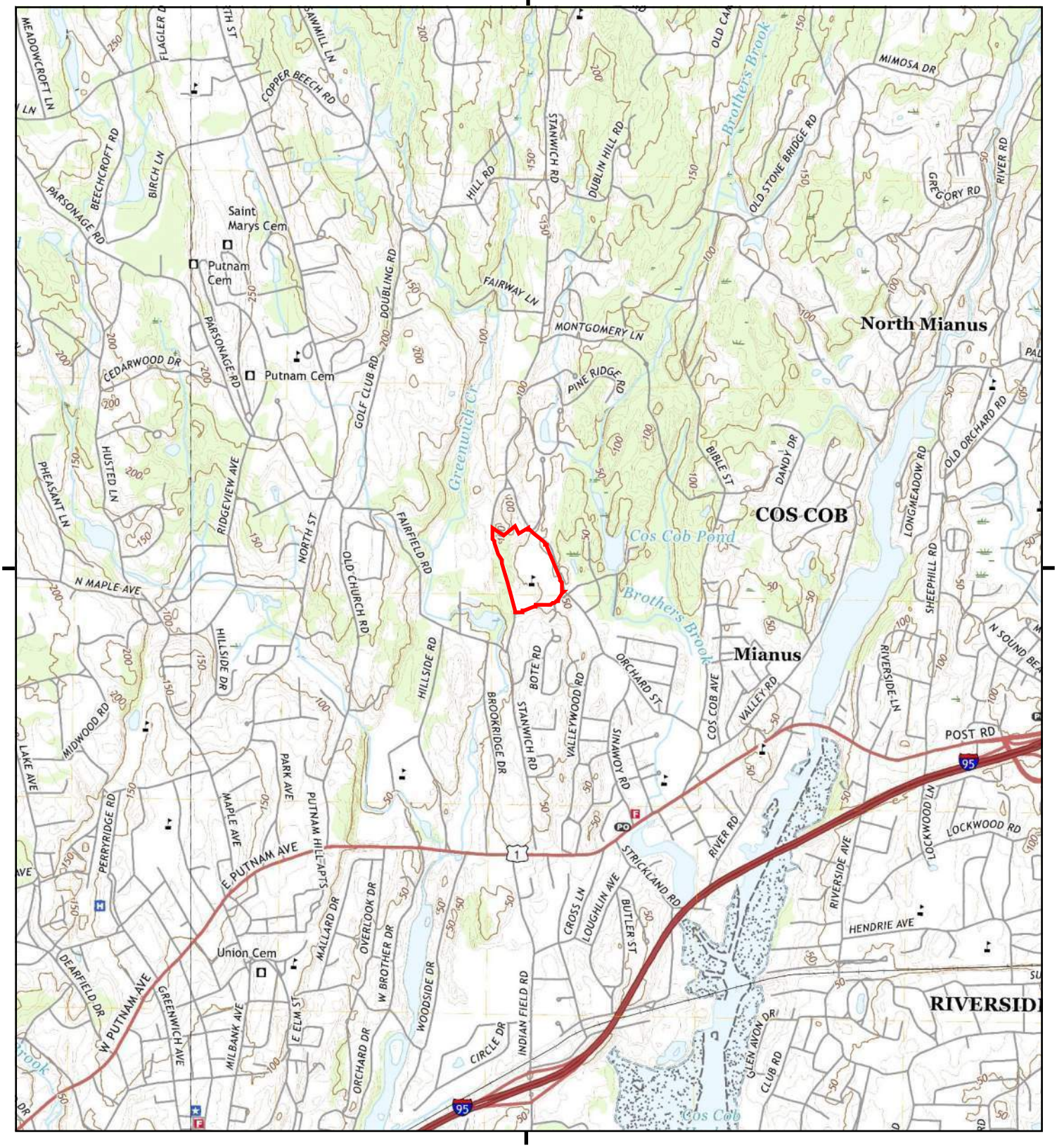
Stamford
1893
15-minute, 62500

1892 Source Sheets

Stamford
1892
15-minute, 62500

Historical Topo Map

2018



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

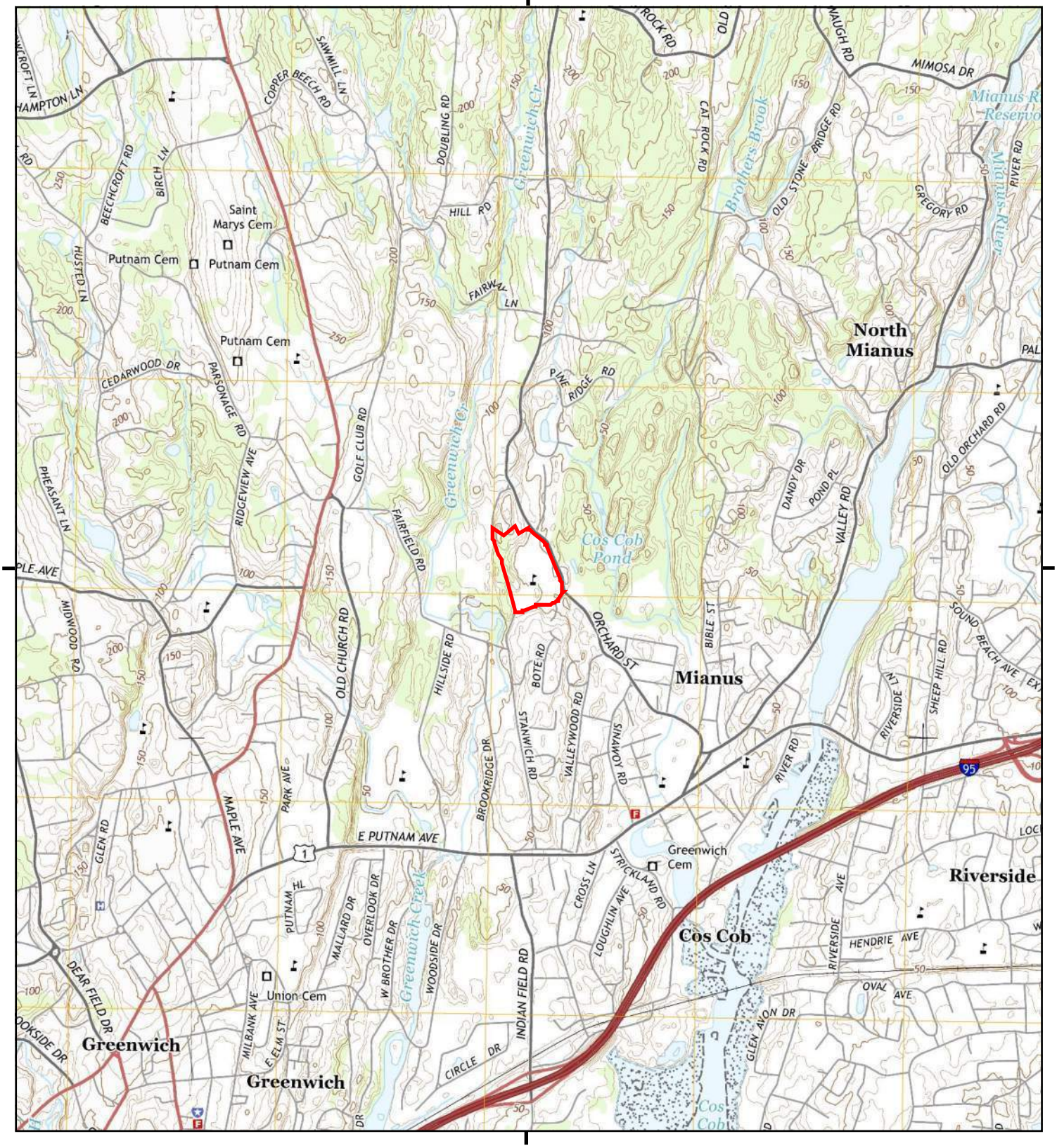
TP, Stamford, 2018, 7.5-minute
W, Glenville, 2018, 7.5-minute

SITE NAME: Central Middle School
ADDRESS: 9 Indian Rock Lane
Cos Cob, CT 06807
CLIENT: Langan Environmental Services

N

Historical Topo Map

2015



This report includes information from the following map sheet(s).

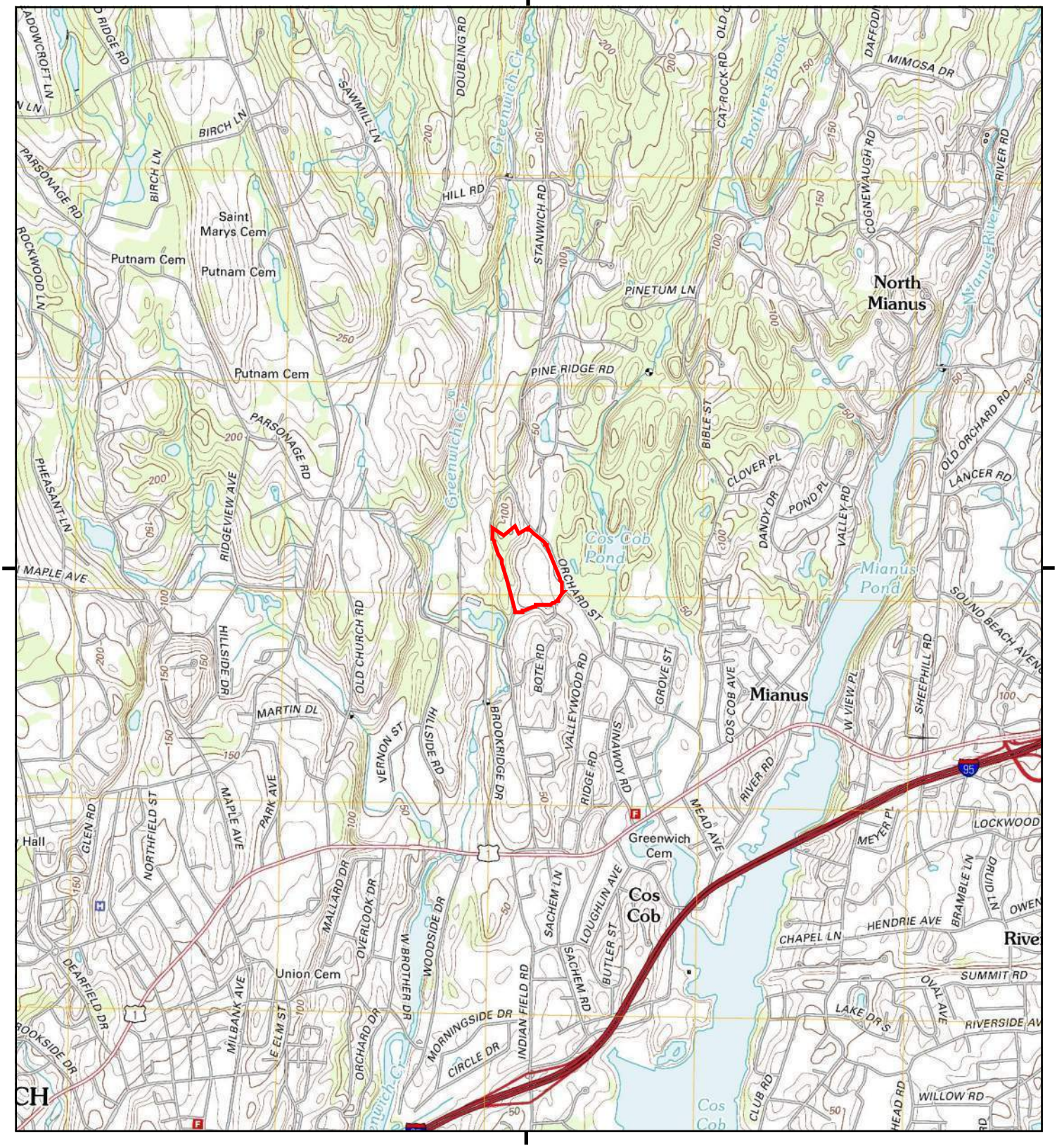
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Stamford, 2015, 7.5-minute
W, Glenville, 2015, 7.5-minute

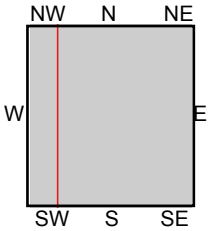
SITE NAME: Central Middle School
ADDRESS: 9 Indian Rock Lane
Cos Cob, CT 06807
CLIENT: Langan Environmental Services

N



This report includes information from the following map sheet(s).

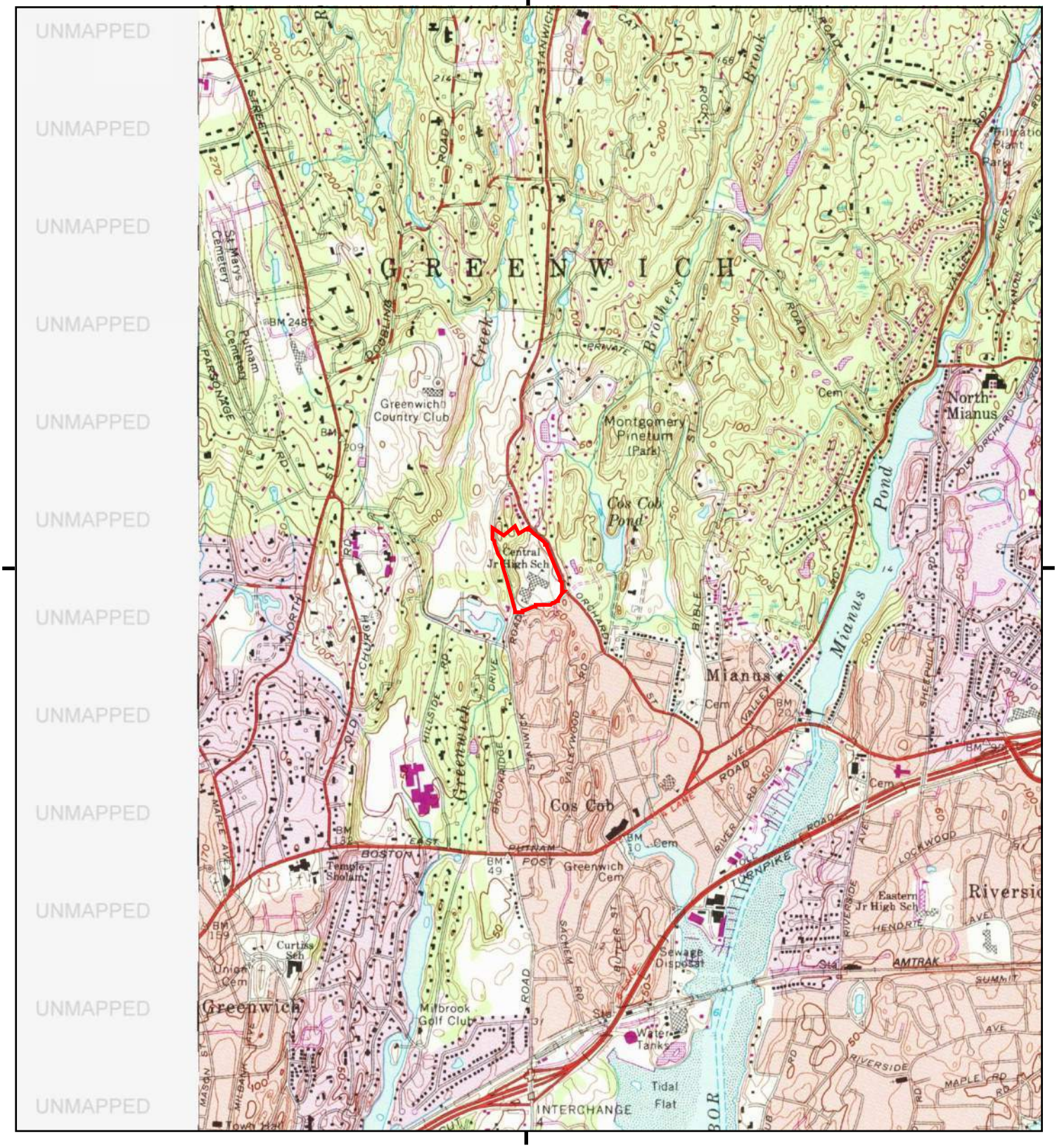
0 Miles 0.25 0.5 1 1.5



TP, Stamford, 2012, 7.5-minute
W, Glenville, 2012, 7.5-minute

SITE NAME: Central Middle School
ADDRESS: 9 Indian Rock Lane
Cos Cob, CT 06807
CLIENT: Langan Environmental Services

N



This report includes information from the following map sheet(s).

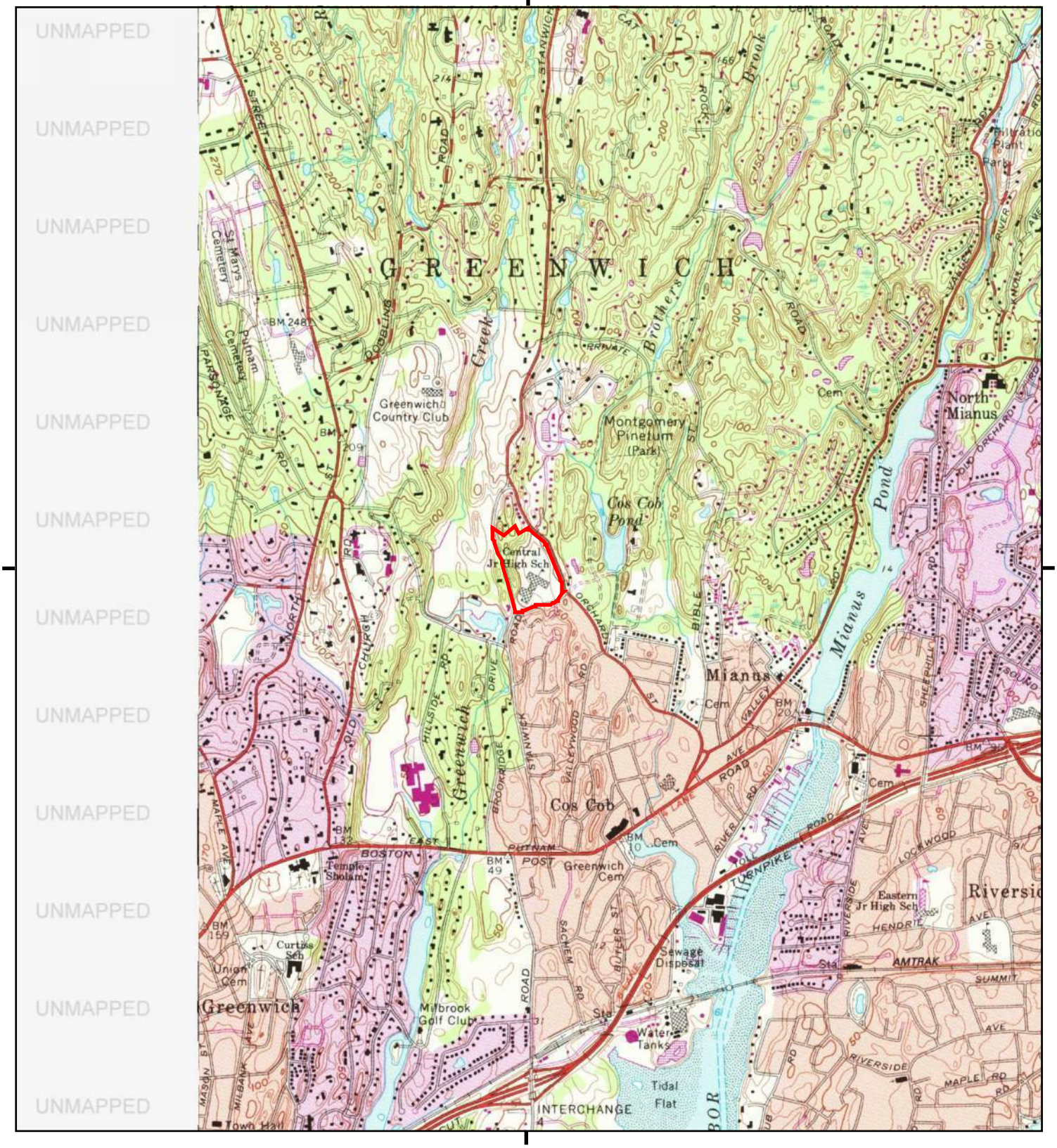
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Stamford, 1987, 7.5-minute

SITE NAME: Central Middle School
ADDRESS: 9 Indian Rock Lane
Cos Cob, CT 06807
CLIENT: Langan Environmental Services

N



This report includes information from the following map sheet(s).

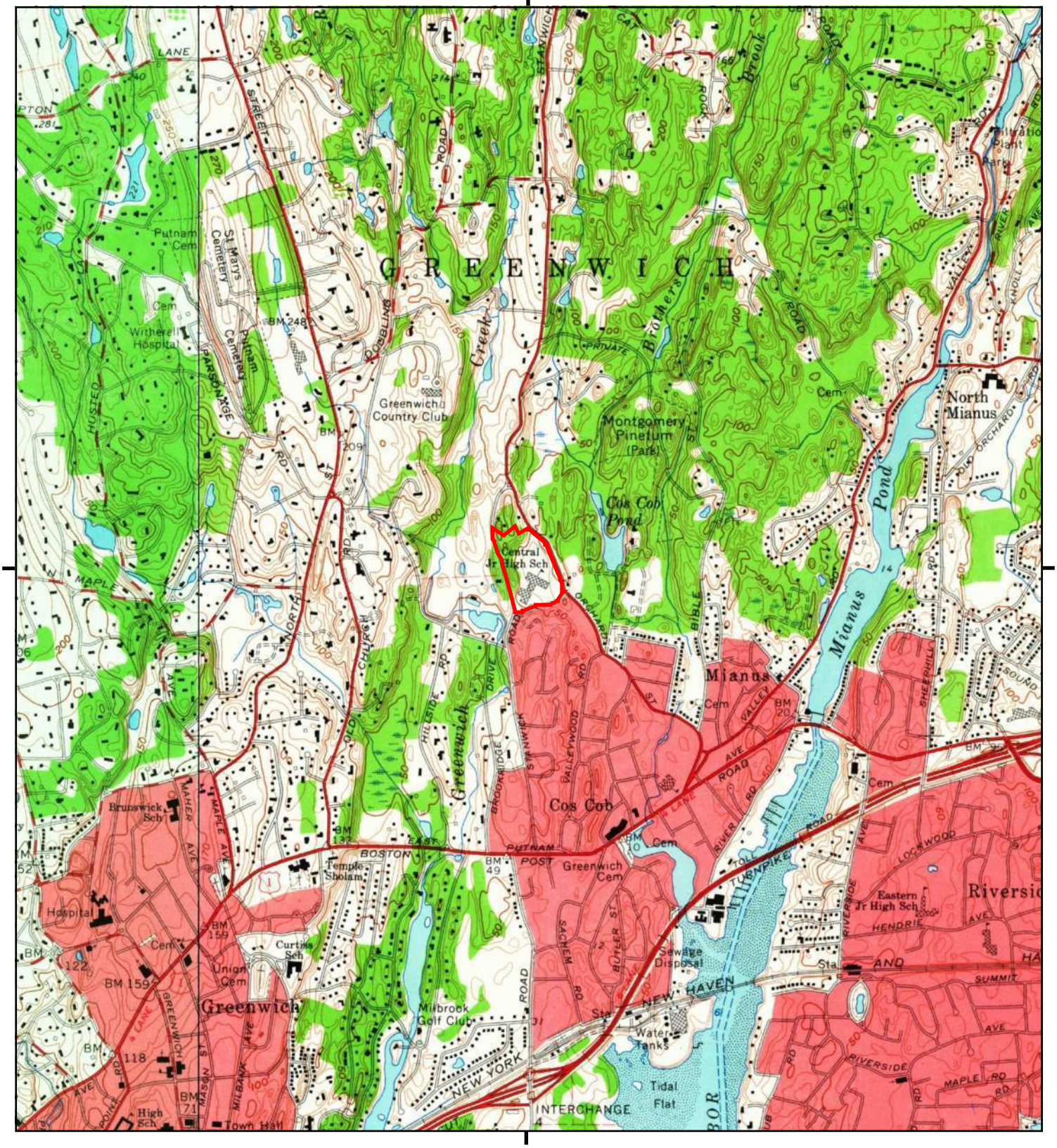
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Stamford, 1984, 7.5-minute

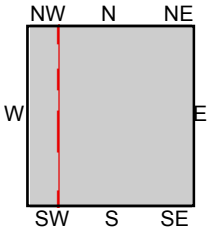
SITE NAME: Central Middle School
ADDRESS: 9 Indian Rock Lane
Cos Cob, CT 06807
CLIENT: Langan Environmental Services

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



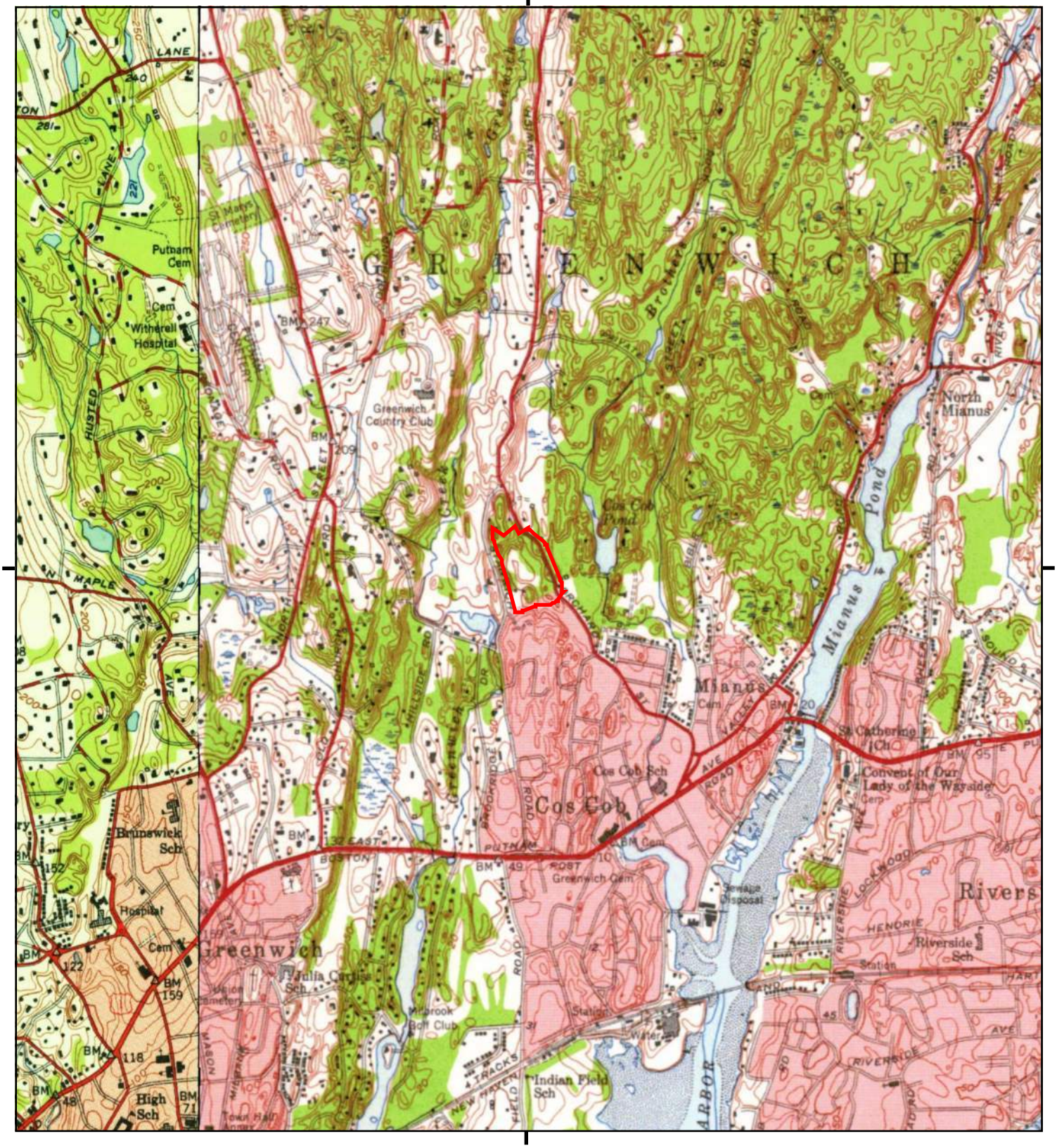
TP, Stamford, 1960, 7.5-minute
W, Glenville, 1960, 7.5-minute

SITE NAME: Central Middle School
ADDRESS: 9 Indian Rock Lane
Cos Cob, CT 06807
CLIENT: Langan Environmental Services

N

Historical Topo Map

1951



This report includes information from the following map sheet(s).

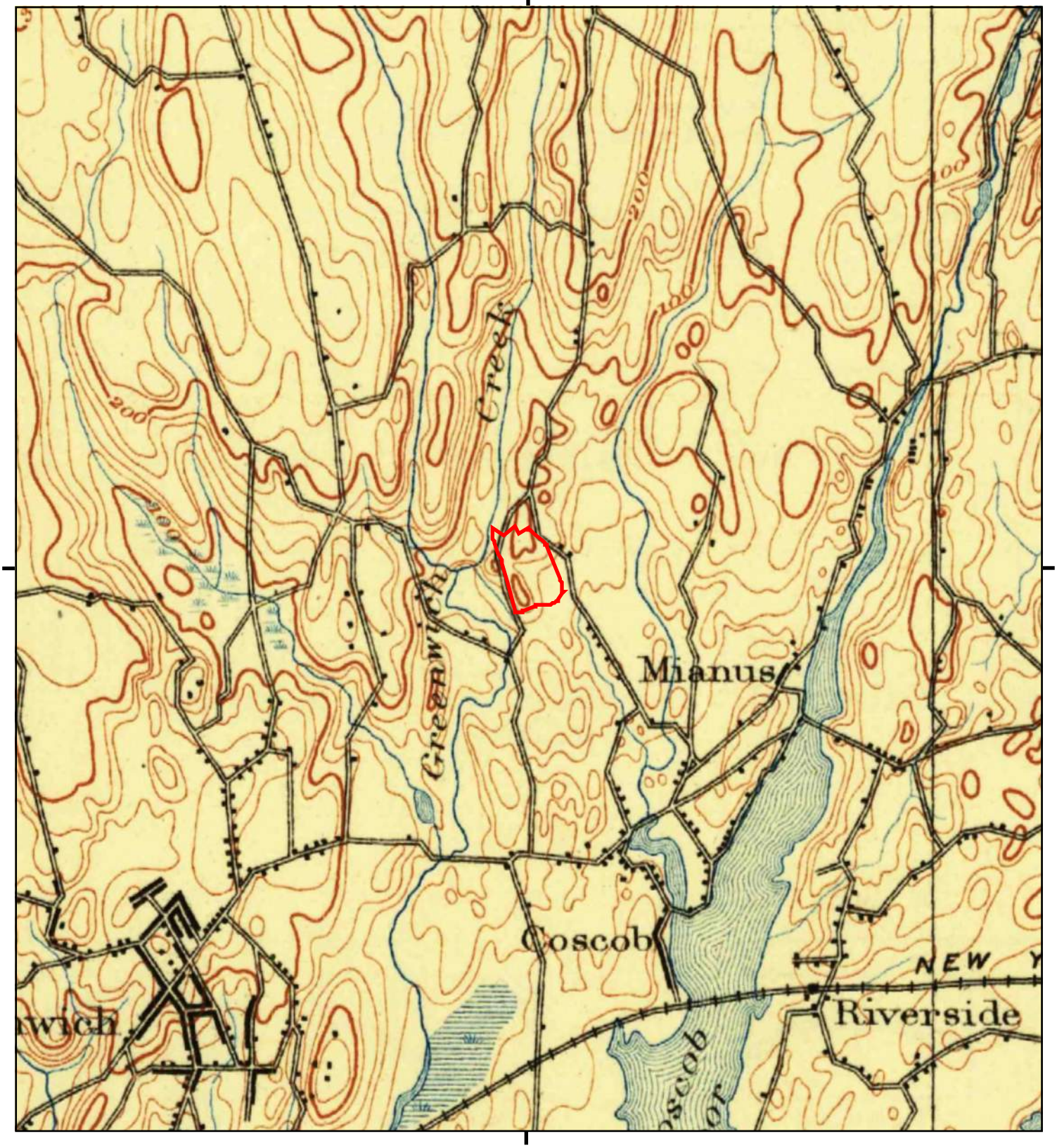
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, STAMFORD, 1951, 7.5-minute
W, Glenville, 1951, 7.5-minute

SITE NAME: Central Middle School
ADDRESS: 9 Indian Rock Lane
Cos Cob, CT 06807
CLIENT: Langan Environmental Services

N



This report includes information from the following map sheet(s).

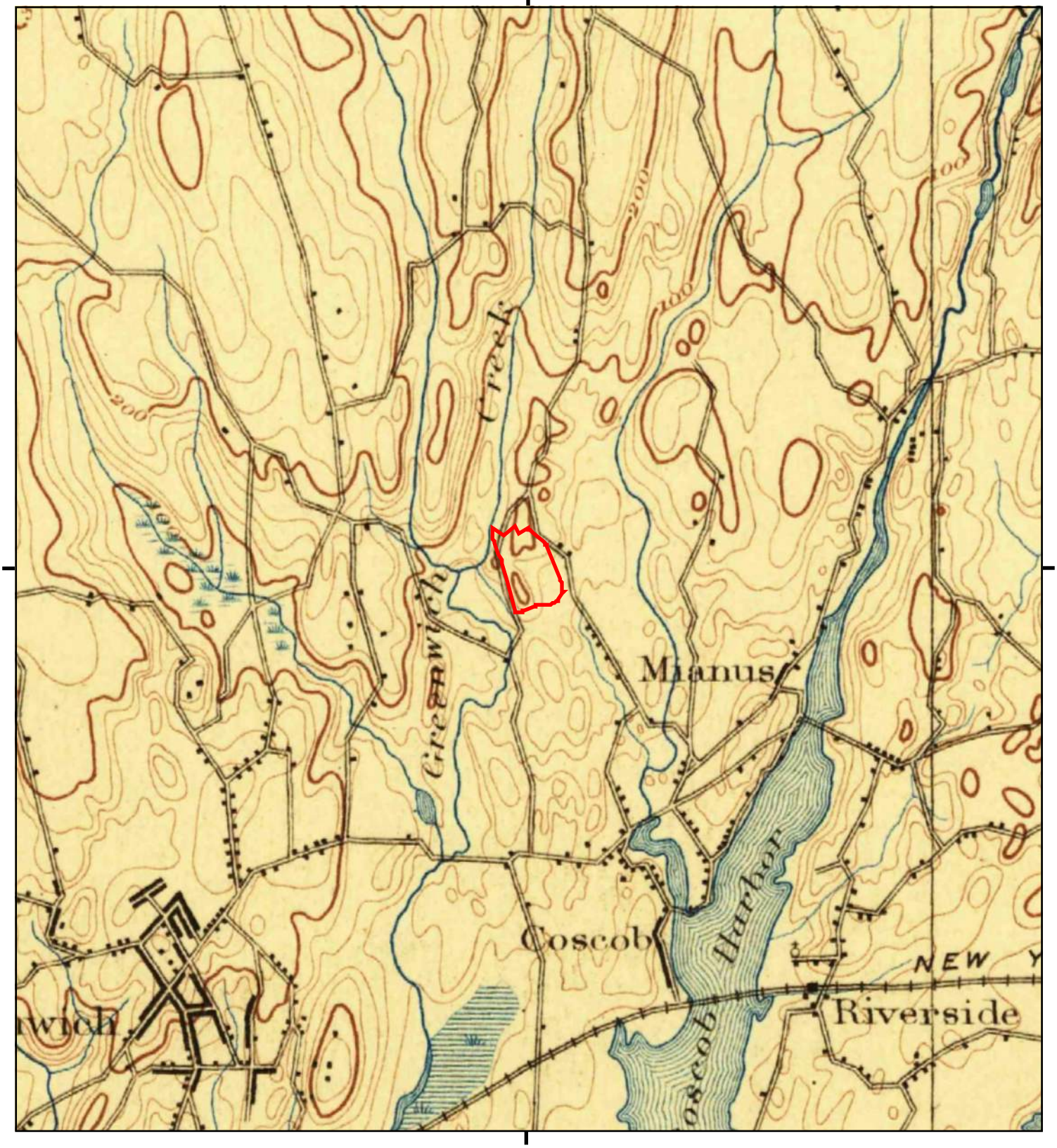
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Stamford, 1899, 15-minute

SITE NAME: Central Middle School
ADDRESS: 9 Indian Rock Lane
Cos Cob, CT 06807
CLIENT: Langan Environmental Services

N



This report includes information from the following map sheet(s).

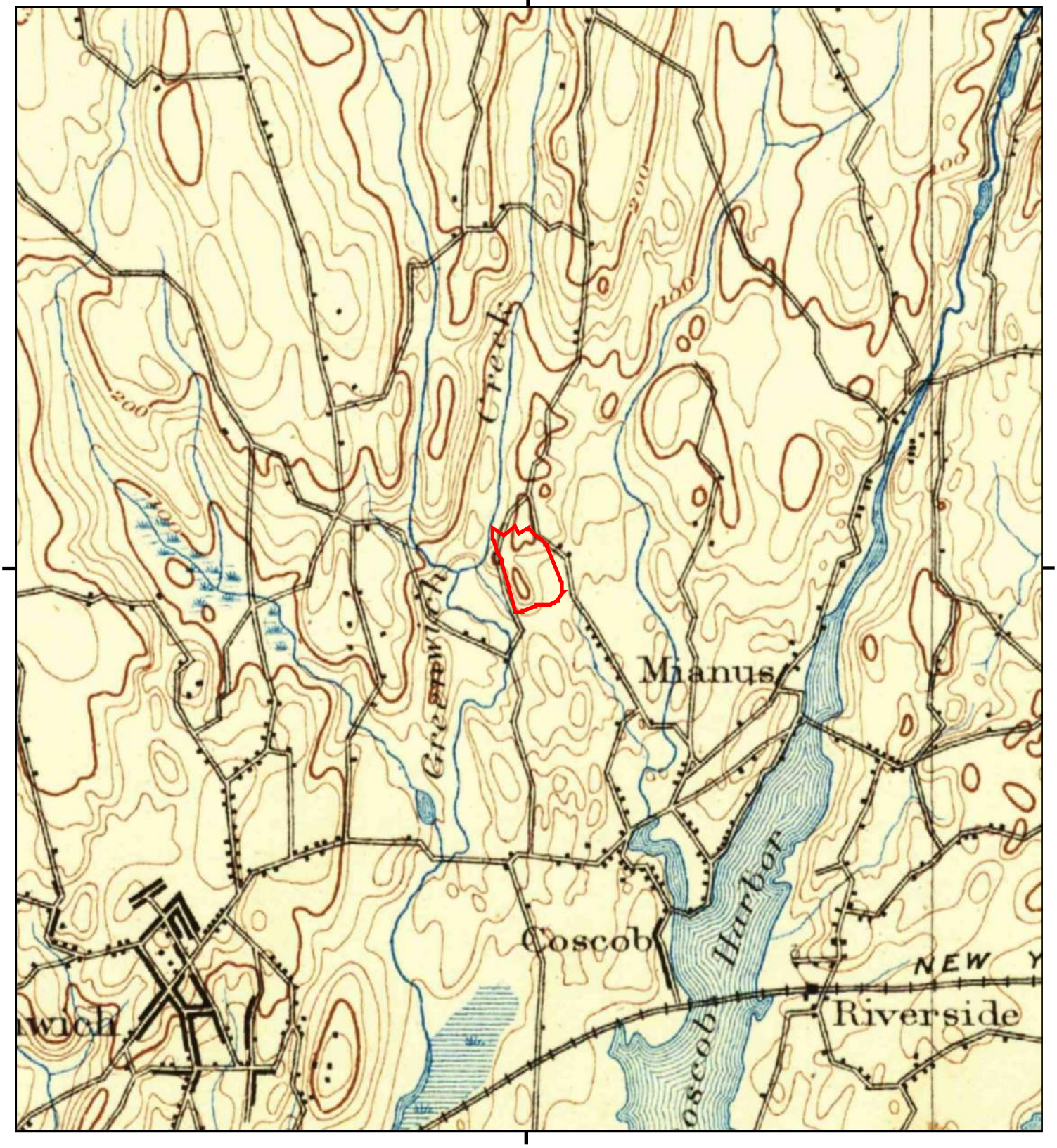
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Stamford, 1893, 15-minute

SITE NAME: Central Middle School
ADDRESS: 9 Indian Rock Lane
Cos Cob, CT 06807
CLIENT: Langan Environmental Services

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Stamford, 1892, 15-minute

SITE NAME: Central Middle School
ADDRESS: 9 Indian Rock Lane
Cos Cob, CT 06807
CLIENT: Langan Environmental Services

N

Central Middle School
9 Indian Rock Lane
Cos Cob, CT 06807

Inquiry Number: 7289805.5
March 27, 2023

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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SECTION

Executive Summary

Findings

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available business directory data at approximately five year intervals.

RECORD SOURCES

The EDR City Directory Report accesses a variety of business directory sources, including Haines, InfoUSA, Polk, Cole, Bresser, and Stewart. Listings marked as EDR Digital Archive access Cole and InfoUSA records. The various directory sources enhance and complement each other to provide a more thorough and accurate report.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	*Target Street*	*Cross Street*	*Source*
2020	☑	☑	EDR Digital Archive
2017	☑	☑	Cole Information
2014	☑	☑	Cole Information
2010	☑	☑	Cole Information
2005	☑	☑	Cole Information
2000	☑	☑	Cole Information
1995	☑	☑	Cole Information
1992	☑	☑	Cole Information
1988	☑	☑	Johnson's City Directory
1980	☑	☑	Price & Lee's City Directory
1977	☑	☑	Price & Lee's City Directory
1972	☑	☑	Price & Lee's City Directory
1967	☑	☑	Price & Lee's City Directory
1961	☑	☑	Price & Lee's City Directory

FINDINGS

TARGET PROPERTY STREET

9 Indian Rock Lane
Cos Cob, CT 06807

Year	*CD Image*	*Source*
INDIAN ROCK LN		
2020	pg A12	EDR Digital Archive
2017	pg A24	Cole Information
2014	pg A36	Cole Information
2010	pg A46	Cole Information
2005	pg A56	Cole Information
2000	pg A67	Cole Information
1995	pg A80	Cole Information
1992	pg A91	Cole Information
1988	pg A100	Johnson's City Directory
1980	pg A109	Price & Lee's City Directory
1977	pg A118	Price & Lee's City Directory
1972	pg A128	Price & Lee's City Directory
1967	pg A138	Price & Lee's City Directory
1961	pg A147	Price & Lee's City Directory

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*

BIBLE

2014	pg. A29	Cole Information
2000	pg. A61	Cole Information

BIBLE ST

2020	pg. A2	EDR Digital Archive
2017	pg. A20	Cole Information
2014	pg. A30	Cole Information
2010	pg. A41	Cole Information
2005	pg. A51	Cole Information
2000	pg. A62	Cole Information
1995	pg. A73	Cole Information
1992	pg. A86	Cole Information
1988	pg. A96	Johnson's City Directory
1988	pg. A97	Johnson's City Directory
1980	pg.A105	Price & Lee's City Directory
1980	pg.A106	Price & Lee's City Directory
1977	pg. A114	Price & Lee's City Directory
1977	pg. A115	Price & Lee's City Directory
1972	pg.A124	Price & Lee's City Directory
1967	pg.A133	Price & Lee's City Directory
1961	pg.A145	Price & Lee's City Directory

COACHLAMP LN

2020	pg. A6	EDR Digital Archive
2017	pg. A22	Cole Information
2014	pg. A33	Cole Information
2010	pg. A43	Cole Information
2005	pg. A53	Cole Information

FINDINGS

Year	CD Image	Source	
2000	pg. A64	Cole Information	
1995	pg. A76	Cole Information	
1992	pg. A88	Cole Information	
1988	pg. A98	Johnson's City Directory	
1980	pg. A107	Price & Lee's City Directory	
1977	pg. A116	Price & Lee's City Directory	
1972	pg. A125	Price & Lee's City Directory	
1967	pg. A134	Price & Lee's City Directory	
1967	pg. A135	Price & Lee's City Directory	
1961	-	Price & Lee's City Directory	Street not listed in Source

DOUBLING RD

2020	pg. A8	EDR Digital Archive	
2017	pg. A23	Cole Information	
2014	pg. A34	Cole Information	
2010	pg. A44	Cole Information	
2005	pg. A54	Cole Information	
2000	pg. A65	Cole Information	
1995	pg. A77	Cole Information	
1992	pg. A89	Cole Information	
1988	pg. A99	Johnson's City Directory	
1980	pg. A108	Price & Lee's City Directory	
1977	pg. A117	Price & Lee's City Directory	
1972	pg. A126	Price & Lee's City Directory	
1972	pg. A127	Price & Lee's City Directory	
1967	pg. A136	Price & Lee's City Directory	
1967	pg. A137	Price & Lee's City Directory	
1961	pg. A146	Price & Lee's City Directory	

ORCHARD ST

2020	pg. A13	EDR Digital Archive	
2017	pg. A25	Cole Information	
2014	pg. A37	Cole Information	

FINDINGS

Year	CD Image	Source	
2010	pg. A47	Cole Information	
2005	pg. A57	Cole Information	
2000	pg. A68	Cole Information	
1995	pg. A81	Cole Information	
1992	pg. A92	Cole Information	
1988	pg. A101	Johnson's City Directory	
1988	pg. A102	Johnson's City Directory	
1980	pg. A110	Price & Lee's City Directory	
1977	pg. A119	Price & Lee's City Directory	
1977	pg. A120	Price & Lee's City Directory	
1972	pg. A129	Price & Lee's City Directory	
1972	pg. A130	Price & Lee's City Directory	
1967	pg. A139	Price & Lee's City Directory	
1967	pg. A140	Price & Lee's City Directory	
1961	pg. A148	Price & Lee's City Directory	

PONDEROSA DR

2020	pg. A14	EDR Digital Archive	
2017	pg. A26	Cole Information	
2014	pg. A38	Cole Information	
2010	pg. A48	Cole Information	
2005	pg. A58	Cole Information	
2000	pg. A69	Cole Information	
1995	pg. A82	Cole Information	
1992	pg. A93	Cole Information	
1988	pg. A103	Johnson's City Directory	
1980	pg. A111	Price & Lee's City Directory	
1977	pg. A121	Price & Lee's City Directory	
1972	pg. A131	Price & Lee's City Directory	
1967	pg. A141	Price & Lee's City Directory	
1961	-	Price & Lee's City Directory	Street not listed in Source

FINDINGS

Year	*CD Image*	*Source*
STANWICH RD		
2020	pg. A15	EDR Digital Archive
2017	pg. A27	Cole Information
2014	pg. A39	Cole Information
2010	pg. A49	Cole Information
2005	pg. A59	Cole Information
2000	pg. A70	Cole Information
1995	pg. A83	Cole Information
1992	pg. A94	Cole Information
1988	pg. A104	Johnson's City Directory
1980	pg. A112	Price & Lee's City Directory
1980	pg. A113	Price & Lee's City Directory
1977	pg. A122	Price & Lee's City Directory
1977	pg. A123	Price & Lee's City Directory
1972	pg. A132	Price & Lee's City Directory
1967	pg. A142	Price & Lee's City Directory
1967	pg. A143	Price & Lee's City Directory
1967	pg. A144	Price & Lee's City Directory
1961	pg. A149	Price & Lee's City Directory
1961	pg. A150	Price & Lee's City Directory
1961	pg. A151	Price & Lee's City Directory

City Directory Images

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BIBLE ST 2020

3	JOSEPH PETRONE
7	JOHN TARANTINO
	PHILIP TARANTINO
9	MICHAEL SANTANNA
11	CAROLE BOUCHER
	CYNTHIA ARITA
	ERIN BOUCHER
15	ANGELINA ZICARELLI
	MARYBETH BROWN
	MATTHEW BROWN
17	AOMSIN CAPITAL MANAGEMENT LLC
	BARBARA ZICARELLI
	BETTY TASSONE
	LORENZO ZICARELLI
	MICHEAL TASSONE
19	ANGEL ZICARELLI
	LARRY ZICARELLI
	SUSAN ZICARELLI
23	ANGELO ALTOMARI
	FERNANDO ALVAREZ
	MARIA ALVAREZ
	PHYLLIS ALTOMARI
25	FE JOAQUIN
	JOSEPH SOWIN
27	JENNIFER BOOTH
	JOSEPH BOUCHER
29	BUSY BEE KITCHEN
31	ALFRED LOBALBO
	MARIA GUTIERREZ
33	ZORAIDA ROSAS-CABALLERO
35	COS COB LANDSCAPE SVC
	WILLIAM FERRARO
37	HEIDI HERNANDEZ
	LIDIA WINSOR
	THYNNA HERNANDEZ
39	COMPLETE DISMANTLING SVC LLC
	SIMONA MADDOX
41	ELBIO ALVAREZ
	PRISCILLA FLORES
	RAUL FLORES
45	PATRICIA SCARPELLI
	RONA LIRA
	SCARPELLI'S SAUSAGE
49	HILLARY NAMMACK
	MICHAEL FOX
53	CATHERINE RUIZ
	HERMANN PANG-LAI
	JED SIMON
	JUAN VICENTE
	P HERMANN

BIBLE ST 2020 (Cont'd)

53	POK HERMANN
	STEPHANIE KNUTH
	THOMAS AHNEMAN
	WENDY YEUNG
55	AIDAN MCLEOD
	FIORE CAPPARELLE
	FJC DESIGNS & CONSTR L8LC
	KAREEM WYNTER
	SUSAN CAPPARELLE
57	ANN CAPPARELLE
	ANNETTE BORTOT
	FRANK CAPPARELLE
	PHILIP JOHN
61	DEIDRE BRENNEN
	ELVIRA MC GUIRE
	FRANK LIBRANDI
	MARY LIBRANDI
	SHARON LIBRANDI
	THOMAS MCGUIRE
67	JEFFREY NATALE
	KELLEY DELUCA
	MICHAEL NTALE
	SANDRA BRIA
69	DOLLY MARULLO
	DONALD CHRISTIANSEN
	JERRY MARULLO
	JESSICA MARULLO
	MICHAEL MARULLO
75	DAVID WAGNER
	EMMA WAGNER
	JULIANE WAGNER
	MILDRED WAGNER
79	AARON BRANDENBURG
	ANNE STUDZINSKI
	BROWN SCHULTZ SHERIDAN & FRITZ
83	FIORINA TOCCI
	GIUSEPPE TOCCI
	MICHAEL TOCCI
	NATHALIE TOCCI
87	MICHAEL CHRISTIANO
91	ELLEN MANCINI
95	BENITO PISANO
	NONNA PISANO
	ROSE PISANO
99	BIAGINA BALDINUCCI
	BIAGINA GUCCIONE
	SUSANNAH ZYGMONT
	UMBERTO BALDINUCCI
111	CHARLES EDWARDS
	CHRISTINE EDWARDS

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BIBLE ST 2020 (Cont'd)

111	NICK CHARLES
	NICK EDWARDS
115	EILEEN CHAU
	RICHARD DEHAAN
117	GEORGE SCHIRRIPA
	LORI SCHIRRIPA
	MIRA SCHIRRIPA
123	JESSICA FITZROY
	MARY FITZROY
	ROBERT FITZROY
130	GARDEN EDUCATION CTR-GREENWICH
178	MARK KINGHORN
	MICHAEL KINGHORN
180	ACCENT ON COMPUTERS LLC
	MICHARL JESSEN
182	ALISSA TILLY
	ANITTA TILLY
	ANNIKA TILLY
	DANIEL TILLY
	KATRIINA TILLY
184	DOUGLAS PARKER
	MARIJA MIKOLAJCZAK
	NANDITA PARKER
186	AVIVA SMERNOFF
	JOEL SMERNOFF
188	REBECCA LINDLAND
190	ANDREW CHAPIN
	KATIE CHAPIN
	NANCY CHAPIN
	TYLER CHAPIN
	WILLIAM CHAPIN
192	BARBARA RIPP
	GREGORY SLATTERY
	MINORU MORITA
	NATALIA MORITA
	PETER RIPP
	SCOTT MANSFIELD
194	MICHAEL RIGANO
195	ALEX MARINO
	TERESA FARFAN
	THOMAS DODGE
196	KIM JUNG
	MIN KIM
	PRESTON HENSKE
	ROBERT HENSKE
199	BLEU WATERS GROUP LLC
	ELISABETH BLEUEL
	HANS BLEUEL
205	COS COB ARCHERS
206	SONNY GLASER

BIBLE ST 2020 (Cont'd)

206	STEAMBOAT WHARF PROPERTIES LLC
	WALTER GLASER
208	ANNE DUNSTER
	COLIN DUNSTER
	DEBRA DUNSTER
	DUNSTER WILLIAM S LANDSCP
	JAMES DUNSTER
	SALLY JORGENSEN
	SHAWN DUNSTER
	WILLIAM DUNSTER
210	CHERYL MOSS
	CONRAD MOSS
	EDWARD MOSS
	ROBERT MOSS
	SIMON MOSS
211	MICHAEL FREITAG
212	S KAVYA
215	FRANK CANTAVERO
	JAMES SEMELS
	LINA CANTAVERO
	LINDA SEMELS
	MEGAN SEMELS
	RICHARD SEMELS
219	DORIS GRAY
	JOHN TAMBASCIO
221	ANGELA MUNROW
	DANIEL MUNROW
	HAROLD MUNROW
225	CLOE CZEPIEL
	ELIZABETH INTRIERI
	THOMAS INTRIERI

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

COACHLAMP LN 2020

1	LIANE TEL
	MARTIJN TEL
6	DILLON NATISS
	KENNETH NATISS
	MARILYNN NATISS
	PATRICIA NATISS
7	CHRISTINE CHUNG
	JAMES CHUNG
	JENNIFER PALK
	K PAIK
	KYUNGHI PAIK
	PHILIP CHUNG
	SUNG CHUNG
9	KATHRYN GLASER
	WALTER GLASER
12	ARCHIE SMITH
	CHARLES BRANCH
	ERICA SMITH
15	ELLEN WOLFSON
	MICHAEL WOLFSON
17	BETH RYAN
	CLARE RYAN
	PATRICK RYAN
	THOMAS RYAN
18	CARRIE CLARK
	GIANLUCA DEBERARDINIS
	PETRA DEBERARDINIS
	THOMAS INTRIERI
	VICTORIA CLARK
	WHITNEY CLARK
22	ANTHONY ANRIG
23	JORGE HAYLER
27	CLAIRE STACK
	DAVID STACK
	PETER STACK
28	ARTHUR YEE
	FON YEE
	JUDY YEE
	SARAH YEE
32	AUGUSTUS STEINTHAL
	JOHN STEINTHAL
33	JEANNA BRACCHITTA
	JOSEPH BRACCHITTA
	RAYMOND BRACCHITTA
36	CLAYTON WEAVER
	DARREN WEAVER
	LOREN WEAVER
37	JAMES LENSING
	JANET LENSING
	JOAN LENSING

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

COACHLAMP LN 2020 (Cont'd)

38	ALICE ALLAN
	JULIA ALLAN
	RUPERT ALLAN
40	ANNA KAMINSKAYA
	BROWNING ANNA
	RYAN BROWNING
43	CHRISTIE CHIAPPETTA
	LAWRENCE CHIAPPETTA
	MARY CHIAPPETTA
44	CATHERINE ANNER
	JOHN ANNER
	MARIANNE ANNER
	MARK ANNER
	ROSEMARIE ANNER

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

DOUBLING RD 2020

6	ADRIANA BUNSTER
	DIEGO BUNSTER
	LUIS BUNSTER
	MATIAS GONZALEZ-BUNSTER
	MONICA BUNSTER
7	ALEX MARCUS
	CATHERINE MARCUS
	JULIA MARCUS
	MARIE JORDI
	OLIVIA MARCUS
12	CARNEY HAWKS
	CARNEY JOHN
	DOROTHY ASHE
	ISAAC JABILES
	JOHN HAWKS
	MELISSA HAWKS
	PETER WISE
15	M H HEAVEN REAL ESTATE LLC
	MARSHALL HEAVEN
	MARY HEAVAN
19	ALIRIO ROBAYO
	AUGUSTO ORELLANA
	COUNTRYCLUB COUNTRYCLUB
	ELMER FABRO
	GEORGE CASE
	GREENWICH COUNTRY CLUB
	ISAI ESPINOSA
	JAIRO CASTANEDA
	JOSEPH BOYCE
	KRISHNA JADAV
	LUZ ESPINOSA
	MARY CASE
	MORIAH CAIN
	RAJESH CHUMATE
	RAUL LUNA
	ROBERT WHITE
	SABRINA ROBERTS
	SOPHIE ALRIKSSON
	SUMNER CASE
	THERESA ROSS
	VIENGXAM ATHITANG
25	JOAN MORAN
	KENT MORAN
	LUKE MORAN
	YEKATERINA GALBMILLION
27	JOAN MORAN
29	MICHAEL TOBAK
	MITCH TOBAK
	SCOTT CORMAN
	SUSAN CORMAN

DOUBLING RD 2020 (Cont'd)

31	CHRISTINE AMIOT-CARTER
	FREDERICK JASPERSON
	REBECCA JASPERSON
33	DYLAN BISCH
	EILEEN ECK
	KEELY BISCH
35	ELIZABETH EBBERT
	ELIZABETH HA
	GIL HA
	MADELINE HA
39	JESSICA DUBNER
	RUSSELL DUBNER
41	ANDREW SCHOELKOPF
	GRACE SCHOELKOPF
	JAMES PIZZO
42	BARBARA REIBEL
	GARY FOLLANSBEE
	JAMES REIBEL
	JAY REIBEL
	JONATHAN BATZER
	KATHERINE REIBEL
	RICARDO JORQUERA
	ROSARIO GALES
43	SHONA GILBERT
	WILLIAM NOOK
44	ALAN POLO
	MAUREEN POLO
	ROSSANA EYSSEN
45	ADAM MARR
47	ARON NATALE
	GRACE NATALE
49	DONATELLA GENAZZANI
50	PIER LANDMAN
52	CRIMSON EXECUTIVE ADVISORS LLC
	DANE POLLOCK
	JENNIFER BYE
	PETER BYE
53	ADRIANNE SINGER
	DAVID SINGER
	JENNIFER SINGER
54	JOSEPH HAMMOND
	KATHRYN COLSON
58	ALESSA COX
	CHARLES COX
	EMILY FORD-COX
	HILLARY COX
	JOHN COX
68	NICOLAS TIERNEY
	RYDER TIERNEY
	SUSAN TIERNEY

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

DOUBLING RD 2020 (Cont'd)

72	CHRISTOPHER FORD
	LAURA FORD
	MARY LEWIS
75	47 MALLARD LLC
	BRADLEY HVOLBECK
	CHRISTOPHER BATES
	MARIJANE HVOLBECK
	MORGAN HVOLBECK
76	MARK DAVIES
	PATRICIA DAVIES
78	KATHERINE CLARK
80	LEIGHA PETUCK
	STACEY PETUCK
	STEPHEN PETUCK
81	ALBERT SLOAN
	BLAKE MATHER
	GRACE MATHER
	JOHN MATHER
	JULIE MATHER
82	SARA WILF
84	LUCY CARY
86	ABELARDO RIERA
	ANGELA RIERA
	LUCIA RIERA
	MARIEANGELA RIERA
	VERONICA RIERA
87	NISHA HURST
93	DAVID DIWIK
	MARIANNE DIWIK
	MICHAEL JONES
	TOM WARD
94	CONSTANCE SIEBERT
	SEIBERT CONSTANCE
96	JACQUELINE WALSH
	JEROME WALSH
	JUDY WALSH
97	BRYAN ROONEY
	KAITLYN ROONEY
	KRISTYN ROONEY
	LISA ROONEY
	MADELYNE ROONEY
	ROBERT ROONEY
101	RIAN DARTNELL
	SABINE DARTNELL
103	DAVID WALKER
	ELIZABETH WALKER
105	EDWARD CLOONAN
	LINDA CLOONAN
	OLIVIA CLOONAN
107	ANDREW MALKIN

DOUBLING RD 2020 (Cont'd)

107	GEORGE MALKIN
	RACHELLE MALKIN
	THOMAS KELTNER
115	HARVEY THOMAS
	LOWELL THOMAS
	MERI THOMAS
117	JOAN LOW
	PAULINE PETERSEN
	PETER LOW
119	REBECCA ENTENMAN
	REBECCA LONGO
	STEVE LONGO
121	GREGORY GILBERT
	JULIA GILBERT
123	BRIAN CARR
	CRAIG STANDISH
124	ANN AVILES
	EDYTA AVILES
	JENNIFER BERKLEY
	JUAN AVILES
	JULIA AVILES
	LAUREN BERKLEY
	NGAWANG RINKARTSANG
	PHUNTSOK RINKARTSANG
	TSERING RINKARTSANG
	TSIRING RINKARTSANG
	WILLIAM BERKLEY
125	EBBA GRUMIEAUX
	GEORGES GRUMIEAUX
127	DEBORAH O'BOYLE
129	DIANE GARNICK
131	ANNE DAVIDSON
	RUTH DAVIDSON
	THOMAS DAVIDSON
132	JOHN SAUNDERS
	LAUREN BERKLEY
139	JEFFREY GAGGIN
	MONICA GAGGIN
141	TOWNSEND BANCROFT
145	FAITH BIRNBAUM
	PAIGE BIRNBAUM
	ROBERT BIRNBAUM
	RUTHANNE BIRNBAUM
	RUTHANNE JAFFE
150	LAUREN BERKLEY
	MARJORIE BERKLEY
	SHERYL BERKLEY
	WILLIAM BERKLEY

Target Street	Cross Street	Source
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INDIAN ROCK LN 2020

9	CENTRAL MIDDLE SCHOOL
	GREENWICH TOWN
10	AGUSTINA GARABEDIAN
	BRIAN KLEPACKI
	DANIEL GALLO
	EDUARDO GARABEDIAN
	JAMES MOORE
	JOHN USHER
	KIMBERLY GALLO
	KRISTAN PEAVY
	MARIELA ZUCCO
	MELISSA MILLER
	MICHELLE KLEPACKI
	RACHEL MILLER
	RACHELLE USHER
	REBEKAH DAYE
	RICHARD PEAVY
	WHITNEY SABINS
12	NICOLE SILVER
	THOMAS YOHO
	WARREN SILVER
14	CAROLL RATPOJANAKUL
	STEPHEN RATPOJANAKUL
	THOMAS STARK
16	CHRISTIANE ABBOTT
	MARK ABBOTT

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

ORCHARD ST 2020

302	BRIAN STABILE
	CHRISTOPHER STABILE
	GIULIANO STABILE
	KAREN STABILE
	LAUREN STABILE
304	KEREN JOZWIAK
	TOM NELSON
306	GIOVANNI LUPINACCI
	JOHN LUPINACCI
	MARIA LUPINACCI
	TONY LUPINACCI
308	JENNY OTTERSTEDT
	PAUL OTTERSTEDT
310	KIYANA MARSH
	MAS MARSH
	PATRICK MARSH
311	ARTHUR YEE
	CRIS MARTIN
	JUDY YEE
	STELLA ARAKI
315	KIM WANG
319	BRIAN ERENSEN
	GEORGE ERENSEN
	MARY ERENSEN
323	JORGE GILL-JAUREQUI
	YUKO UCHIDA-DEGIL

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PONDEROSA DR 2020

1	MARSHA JACOBS
	STEPHEN SCOTT
2	ALEXANDRA SCOTT
	MARSHA SCOTT
3	DANIELLE RUDOLPH
	RUDOLPH ABBOT
	SUSAN RUDOLPH
5	ALON HERMAN
	AMY HERMAN
7	ALYSSA LODATO
	JANICE LODATO
	KRISTEN LODATO
	ROSS LODATO

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STANWICH RD 2020

1	ALICE RUF
	DAVID RUF
	JOAN RUF
2	DANA GETZ
	GEORGE GETZ
3	DAULAT DIPSHAN
	JANICA KIRPALANI
	JOANNA MICHAEL
	NALISHA DIPSHAN
	PHILIPPIDES COSTAS
	RICCI DIPSHAN
	SHIVAUN DIPSHAN
5	DAULAT DIPSHAN
6	PALLADIUM MUSICUM INC
	VV MARIE
7	CATHERINE DESILVA
	MICHAEL SHELDON
8	CHARLIE HUBBARD
	DANIEL HUBBARD
	KATHLEEN HUBBARD
	MICHAEL HUBBARD
9	ELIZABETH MENTEN
	ELIZABETH WEIL
	HOLLY WEIL
	JAMES WEIL
	WILLIAM MENTEN-WEIL
11	TERRY GOODWIN
12	BRIAN PLATTER
	DAVID PLATTER
	SHARON PLATTER
13	LINDA COLLINS
	WILLIAM BITTEL
15	ANDREW FISHER
	BENJAMIN FISHER
	NAOMI FISHER
17	CARL REIMERS
	PAMELA REIMERS
18	CHARLES PANG
	HONG PANG
	ROBERT PANG
	SHELDON PANG
19	CECILIA ESTANISLAO
	CRISTINA ESTANISLAO
	HILLARY BIDWELL
	JOSE ESTANISLAO
	JUAN ESTANISLAO
20	RANDEL MASON
21	JOHN BAUER
	LAURIE BAUER
	RICHARD BAUER

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STANWICH RD 2020 (Cont'd)

21	STEPHEN BAUER
22	THOMAS HEWETT
23	JOHN MILLER
	SHARI MILLER
25	DAGMAR DOLL
	MICHAEL DOLL
29	JOHN MCINTYRE
	KAROLYN KERR
	TSHERING PEM
30	JON NEWMAN
35	ALEXANDRA CAUFIELD
	ANDREW CAUFIELD
	EILEEN HUGHES
	JEROME CAULFIELD
	ROSITA CAULFIELD
37	A DEBORAH AIDINIS
	AMY AIDINIS
	AMY HIRSCH
	KEITH HIRSCH
	MICHAEL AIDINIS
	RICHARD AIDINIS
39	BETTY LAMBORN
	L WILMOT
	WILMOT HARRIS
45	DEBORAH WOLF
	EVAN WOLF
	MADELINE WOLF
	RANDALL WOLF
49	CARROLL THOMAS
51	JASON MEERBERGEN
	JOHN MEERBERGEN
	JUSTIN MEERBERGEN
	LORRAINE VOLLHARDT
	MEERBERGEN JOHN E ATY
57	ANNE DEANGELO
	DINA DEANGELO
59	STEPHEN KANE
	TOMMIE GUARA
61	BARBARA HARDVALL
	LEE HARDVALL
63	ALICJA PASTERNAK
	KEVIN TURCIO
	KRISTA AMERENO
65	JOHN ZUKAUSKAS
	JONAS DESIGN BUILD LLC
	MELINDA VOLLMER
	MELINDA ZUKAUSKAS
67	HELEN LASORSA
	PETER LASORSA
68	ANN BOZZA

STANWICH RD 2020 (Cont'd)

68	ANN PENNY
	KERRY BOZZA
	RALPH PENNY
69	ALEX STANISLAVSKY
	ARNE MEYER
	DORIA MEYER
	KNUT MEYER
	MALKA STANISLAVSKY
	SOFTWARE OBJECTIVES INC
	YULIYA STANISLAVSKY
72	MARY ROZMUS
	MELISSA ROZMUS
	ROBERT ROZMUS
80	JENNIFER PAPPALARDO
	PAUL PAPPALARDO
	WILMOT HARRIS
95	JAMIE GARCIA
	JASON FINGER
	PABLO GARCIA
	RACHEL KOVEN
	ROBERT KOVEN
99	CHRISTINA FOX
101	DYLAN ECK
	MICHAEL LULKIN
	NINA MONTI
105	JONATHAN OSSER
107	GREGG MOSKOWITZ
	RUTH MOSKOWITZ
111	FERENC DIONISLO
113	ANTHONY FEBLES
	CAROL FEBLES
	JENNIFER FEBLES
	JOHN FEBLES
115	MARY JANE
	WIRT MARKS
119	MICHAEL GRAVES
	SHERRYL BROWNE
	SHERRYL GRAVES
123	ANTHONY BUETI
	CLAUDIA BUETI
127	MARK GOTTLIEB
	OLGA GOTTLIEB
	ROBERT GOTTLIEB
133	EDINEIA BICKERSTAFF
	GEORGE BICKERSTAFF
140	ANDREW GRUSS
	KERRI GRUSS
147	JOSEPH MALLORY
	WENDY MALLORY
150	ANA PATWARDHAN

STANWICH RD 2020 (Cont'd)

150	ARUNA PATWARDHAN
	KOUSTUBH PATWARDHAN
	VINAY PATWARDHAN
151	ANDY FOX
	JOHN FOX
	PETER FOX
	STACY FOX
154	HORACIO ROBREDO
155	GINA DICLEMENTE
	RALPH DICLEMENTE
	ROXANNE TAYLOR
156	ERIC HOPP
157	DEIRDRE ALEXANDER
	JOANN ALEXANDER
	MARTIN ALEXANDER
159	GABRIELLE HALL
	ROBIN HALL
	SAMUEL HALL
160	CAROL GILBRIDE
	FRANK GILBRIDE
163	ANTONIO RIERA
	DOROTHY RIERA
164	HAROLD TURNER
	HELEN TURNER
	JENNIFER TURNER
	ROSEMARY TURNER
165	JOSEPH TRAMONTANO
	PAMELA TRAMONTANO
167	DONALD KERR
	FORD KERR
	IRENE KERR
	LUZ SUAREZ
	MARIEL KERR
169	HOWARD ALEXANDER
	JANEL ALEXANDER
	MARY GAROFALO
	ROY GAROFALO
170	EMMA DUTY
	MARY DUTY
	STUART DUTY
171	BRAINSTORMIN PRODUCTION
	DANIEL HICKS
	ELLERY HICKS
	HANNAH HICKS
	J D H PRODUCTIONS LLC
	J HICKS
	JOHN HICKS
	RILEY HICKS
173	CHAUWEI YAK
	HO TAN

STANWICH RD 2020 (Cont'd)

173	RITA LONGCORE
	YEN TAN
175	PHILIP KRUSE
	STEPHANIE KRUSE
177	ANN MASON
	RUSSELL MASON
178	ANDREW AMILL
	GEOFF MASSAM
	KATHARINE MASSAM
	SUSAN AMILL
	THOMAS MASSAM
179	JUNKO SAKAI
	TAKAKI SAKAI
180	ASHLEY HOWARD
181	JOHN MASSAD
	LESLIE MASSAD
	LORI MASSAD
	LUCY MASSAD
184	MANDY CASAMASSIMA
	MATTHEW CASAMASSIMA
187	ARBY GEGA
	ROSS ANDERSON
188	ELANA HORDON-WOOD
	WILLIAM WOOD
190	SARAH WHITTEMORE
196	ADRIAAN ZIMMERMAN
	EEVA ZIMMERMAN
	ELINA ZIMMERMAN
	EMILY DAVEY
	JOANN DAVEY
	JOANNE DAVIES
	MARTIN DAVEY
	SEAN DAVEY
	WILFRIED ZIMMERMAN
197	DAVID MELENEY
	J MELENEY
	LAURA MELENEY
	PATRICIA CULLEY
200	ANA SANTORO

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 2017

3	PETRONE, JOSEPH M
7	LEDERMAN, ZACHARY A
9	BENTHAL, JOHN M
	GOANE, KARYN M
11	BOUCHER, DONALD G
	BOUCHER, ERIN L
15	LORANCAITIS, TATUM L
	SWAN, ELIZABETH M
	ZICARELLI, ANGELINA
17	TASSONE, MICHEAL R
19	LIVIA, GARY J
	ZICARELLI, BARBARA J
23	ALTOMARO, JOLIE K
	ALVAREZ, FERNANDO
	ALVAREZ, MARIA
	MEDINA, MONICA
	TYMINSKI, CINDY A
25	ALACRON, DENISSE
	BERNA, MARTHA
	CHAN, DENISSE F
	GANG, TAHRI M
27	BOOTH, JENNIFER L
29	MANRIQUEZ, EDUARDO M
	MASI, CHARLES A
	MASI, MAL
	PERTA, CHARLES F
	SCHULER, HEDDA
31	GUTIERREZ, ANGELA
	LOBALBO, ALFRED
	SPITALIERI, ELISSA
33	EBERHEIM, ROBERT E
	SANTORO, LETIZIA C
35	FERRARO, WILLIAM J
37	NAVARRO, CLARA S
41	FLORES, A
45	SCARPELLI, PETER P
	SCARPELLIS LLC
49	DANKER, STELLA A
	FOX, FRANCES M
	KATZ, PATRICE A
53	AHNEMAN, THOMAS G
	RIEDY, PATRICIA A
	TUNNERA, ALBANO P
	VIZZO, TIFFANY
55	F J C DESIGNS & CONSTRUCTION L8LC
	FLORENTIN, VICTORIA
	GUASCO, CAROLINA
	GUASCO, THOMAS R
	MCLEOD, MEGAN A
	PIETRZAK, KAROL

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 2017 (Cont'd)

55	SMITH, MARGARET M
57	JOHN, PHILIP
61	ALLEN, MICHAEL
	BARGER, TARA
	LIBRANDI, SHARON E
	MCGUIRE, SHEILA M
67	NTALE, MICHAEL R
69	MARULLO, JERRY E
	SWARTZ, DANIEL M
75	WAGNER, DAVID R
	WAGNER, TAMMY L
79	CARINO, FRANCES B
	DULIN, JENNIFER L
	KUSHNER, WILLIAM
81	SANDLOCK, DAMON A
91	MANCINI, ELLEN M
	TOPO, TERESE L
95	PISANO, BEN T
99	GUCCIONE, FRANCESCO C
111	EDWARDS, CHARLES N
123	FITZROY, ROBERT A
130	GARDEN EDUCATION CENTER OF GREENWICH
178	KINGHORN, MARK L
180	SCHNEIDER, LAURENCE G
182	TILLY, DAVID O
184	PIERCE, ROGER W
188	VOLPE, KEN J
190	CHAPIN, ANDREW M
194	RIGANO, CRAIG M
195	BLEUEL, HANS J
196	HENSKE, PRESTON J
199	BLEU WATERS GROUP LLC
	BLEVEL, HANS J
205	COS COB ARCHERS
206	GLASER, SONNY G
208	DUNSTER WILLIAM S LANDSCAPE CONTRACT
	DUNSTER, WILLIAM S
210	MOSS, SIMON B
211	FREITAG, MICHAEL L
212	BOONE, SHEPARD S
215	SEMELS, RICHARD R
219	TAMBASCIO, JOHN A
221	MUNROW, HAROLD L
225	SAXE, PATRICIA D

Target Street	Cross Street	Source
-	✓	Cole Information

COACHLAMP LN 2017

6	NATISS, KENNY S
7	CHUNG, PHILIP Y
9	PECORA, SYLVESTER
15	WOLFSON, MICHAEL I
17	RYAN, THOMAS J
18	PARAMOUNT MAINTENANCE INC
22	ANRIG, ANTHONY G
23	HAYLER, JORGE A
28	YEE, ARTHUR
32	STEINTHAL, JOHN J
33	BRACCHITTA, JOSEPH F
36	WEAVER, CLAYTON H
37	LENSING, JOAN A
38	FIELDSTEEL, ROBERT D
43	CHIAPPETTA, LAWRENCE F
44	ANNER, JOHN L

Target Street	Cross Street	Source
-	✓	Cole Information

DOUBLING RD 2017

7	MARCUS, ANDREW W
12	HAWKS, CARNEY C
15	HEAVEN, MATTHEW C
16	SKOWRON, JOSEPH F
19	GREENWICH COUNTRY CLUB
25	MORAN, KENT F
31	AMIOT, DANIELLE
33	BISCH, DYLAN A
35	HA, GIL H
41	SCHOELKOPF, ANDREW L
42	REIBEL, JAY S
44	POLO, MAUREEN A
47	NATALE, ARON D
49	GENAZZANI, DONATELLA
50	LANDMAN, PIER A
51	SLOAN, ALBERT R
53	SINGER, DAVID M
54	HAMMOND, JOSEPH R
58	COX, JOHN C
72	FORD, LAURA N
75	HVOLBECK, BRADLEY S
76	DAVIES, MARK J
78	CLARK, JAMES J
81	MATHER, BLAKE W
82	WIEGENFELD, YOAV
84	MINELLA, RAYMOND J
86	RIERA, ABELARDO J
87	HURST, BRIAN K
93	WARD, TOM S
94	BETTERIDGE, ALBERT E
98	ONG, TINOG S
100	DRENNEN, WILLIAM G
101	DARTNELL, RIAN A
103	WALKER, DAVID B
105	CLOONAN, EDWARD T
107	KELTNER, THOMAS N
115	THOMAS, HARVEY L
117	LOW, PETER J
119	LONGO, STEPHEN A
124	AVILES, EDYTA M
	AVILES, JUAN M
	RINKARTSANG, NGAWANG
127	OBOYLE, DEBORAH S
131	DAVIDSON, THOMAS A
132	BERKLEY, LAUREN E
139	J G CAPITAL
141	BANCROFT, TOWNSEND W
145	BIRNBAUM, ROBERT D
	THIRD WAIVE GLOBAL
150	BERKLEY, WILLIAM M

Target Street	Cross Street	Source
✓	-	Cole Information

INDIAN ROCK LN 2017

9	TOWN OF GREENWICH
10	GREENWICH BAPTIST CHURCH
12	SILVER, WARREN D

Target Street	Cross Street	Source
-	✓	Cole Information

ORCHARD ST 2017

300	BRAUNSTEIN, JUDITH T
302	STABILE, GIULIANO R
308	OTTERSTEDT, PAUL J
310	MARSH, PATRICK S
315	WANG, ERIC D
319	ERENSEN, GEORGE B
323	GILL-JUAREGUI, JORGE L

Target Street	Cross Street	Source
-	✓	Cole Information

PONDEROSA DR 2017

2	SCOTT, STEPHEN J
4	AUGER, LUCELLE L
5	HERMAN, ALON P
7	LODATO, ROSS P

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 2017

1	MACKENZIE, GORDON C
3	PHILIPPIDES, COSTAS A
5	DIPSHAN, NALISHA H
6	WILLIAMS, MARIE V
7	BROWN, JOSHUA H
8	HUBBARD, CHARLIE P
	VANCE, ELEANOR H
9	WEIL, JAMES W
12	PLATTER, DAVID M
13	COLLINS, LINDA F
15	FISHER, BENJAMIN P
17	REIMERS, CARL D
18	PANG, SHELDON D
19	ESTANISLAO, JOSE
20	MASON, RANDY L
21	BAUER, JOHN F
23	MILLER, JOHN
25	DOLL, MICHAEL H
29	MCINTYRE, JOHN P
30	NEWMAN, JON L
35	CAULFIELD, JEROME R
37	AIDINIS, RICHARD M
39	WILMOT, L H
45	WOLF, RANDY J
49	CARROLL, THOMAS J
55	MASI, VINCENT F
59	SUH, THOMAS R
61	HARDVALL, LEE A
65	JONAS DESIGN BUILD LLC
	ZUKAUSKAS, JOHN J
68	PENNY, RALPH E
69	STANISLAVSKY, ALEX V
72	ROZMUS, ROBERT G
80	PAPPALARDO, PAUL P
95	GARCIA, PABLO A
99	PEPA, JORGE
101	LULKIN, MICHAEL A
105	OSSER, JONATHAN B
107	MOSKOWITZ, GREGG R
109	KANDL, MARK D
111	CANTWELL, KIMBERLY L
115	MARY, JANE F
119	GRAVES, MICHAEL A
123	BUETI, ANTONIO N
127	GOTTLIEB, ROBERT R
133	BICKERSTAFF, GEORGE M
140	GRUSS, ANDREW
150	LLOYD, TANGLEY C
151	FOX, STACY K
154	ROBREDO, HORATIO M

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 2017 (Cont'd)

155	DICLEMENTE, RALPH
156	CASEY, MARSHA J
157	ALEXANDER, MARTIN M
159	HALL, JOHN S
160	GILBRIDE, FRANK N
163	RIERA, ANTONIO R
164	DAVID, H W
165	KAHN, ANDREW P
167	KERR, DONALD E
169	ALEXANDER, CHRIS
	GAROFALO, ROY L
	MARY, T G
	STERN, EMILY H
170	DUTY, STUART M
171	BRAINSTORMIN PRODUCTION
	HICKS, JOHN D
173	YAK, CHAUWEI
175	KRUSE, STEPHANIE C
176	GLASEBROOK, TAYLOR G
177	MASON, RUSSELL A
178	MASSAM, GEOFF R
179	SAKAI, TAKAKI
180	HOLLIDAY, SHAUN P
181	MASSAD, LON
184	GAUSS, MANDY A
187	BERTULIS, ALVINA
188	WOOD, KEVIN
190	ROBERTS, JONATHAN B
196	DAVEY, MARTIN F
197	CULLEY, PATRICIA A
200	SANTORO, PETER

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE 2014

89 AGOSTINO, JOSEPH

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 2014

3	AUGUSTE, ROBERT C
7	LINH, LY
	LY, FRANCES
	TARANTINO, JOHN P
	VALENTINE, LIND M
9	GOANE, KARYN M
	LAVOIE, DANIEL R
	NOBLEMAN, MARC T
	PETERSEN, JAMIE
11	BOUCHER, DONALD G
	BOUCHER, ERIN L
	SCHUYLER, SEAN
15	PITTMAN, GRETCHEN E
	SWAN, ELIZABETH M
17	TASSONE, MICHEAL R
	YAGGI, THOMAS
19	LIVIA, GARY J
	SCORELLE, MICHAEL R
	ZICARELLI, LORENZO
23	ALTOMARO, JOLIE K
	ALVAREZ, MARIA
	RETOME, EMILINA
	TYMINSKI, CINDY A
25	ALACRON, DENISSE
	CANALES, JULIO C
	GANG, TAHRI M
	LOPEZ, GILBERT
27	CACCIOLA, NANCY M
29	MANRIQUEZ, EDUARDO M
	MASI, CHARLES A
	PERTA, CHARLES F
	SCHULER, HEDDA
31	MODAFFERI, NICOLINA
33	EBERHEIM, ROBERT E
	HARRY, EBERHEIM
	SANTORO, LETIZIA C
35	FERRARO, WILLIAM J
37	OCAMPO, MARIBEL
	PEDWARO, JOHN R
39	FERRO, MICHAEL
41	ALVAREZ, ELBIO R
	FLORES, RAUL G
45	SCARPELLI, PETER P
49	EDDEN, ELIZABETH P
	FOX, MICHAEL A
	GREEN, TONY
	KATZ, PATRICE M
	RUSHER, JOEL
52	TUNNERA, TRACY
53	BILHUBER, LISA H

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 2014 (Cont'd)

53	EIKREM, JOHN P
	RIEDY, PATRICIA A
	VICENTE, JUAN
55	F J C DESIGNS & CONSTRUCTION L8LC
	PIETRZAK, MAGDALENA
57	CAPPARELLE, FRANK
	JOHN, PHILIP
61	ALLEN, MICHAEL
	BARGER, TARA
	LIBRAND, FRANK J
	LIBRANDI, JAMES T
67	LIBRANDI, JOSEPH S
69	MARULLO, C
	SWARTZ, DANIEL M
73	OCCUPANT UNKNOWN,
75	FORD, LAVERNA
	OCCUPANT UNKNOWN,
	WAGNER, DAVID R
79	CARINO, ANGELO A
	OCCUPANT UNKNOWN,
81	SANDLOCK, DAMON A
83	OCCUPANT UNKNOWN,
87	CHRISTIANO, MICHAEL V
89	RAMOS, ELENA
91	MANCINI, ELLEN M
	TOPO, TREZ
95	PISANO, BEN T
99	GUCCIONE, FRANCESC A
111	CHARLES, NICK
117	OCCUPANT UNKNOWN,
123	FITZROY, ROBERT A
130	BEEBE-SCHMIDT, LISA
	GARDEN EDUCATION CENTER OF GREENWICH
	GREENWICH GARDEN CENTER
178	KINGHORN, MARK L
180	SCHNEIDER, LAURENCE G
182	TILLY, DAVID O
184	PIERCE, ROGER W
186	MCGUIRE, WALTER W
188	MACLELLAN, JOHN A
190	CHAPIN, ANDREW M
192	PARILLON, CAROL
194	RIGANO, CRAIG M
195	OCCUPANT UNKNOWN,
196	HENSKE, PRESTON J
199	BLEVEL, HANS
205	COS COB ARCHERS
206	OCCUPANT UNKNOWN,
208	DUNSTER WILLIAM S LANDSCAPE CONTRACT
	DUNSTER, WILLIAM S

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 2014 (Cont'd)

210	OCCUPANT UNKNOWN,
211	FREITAG, MICHAEL L
212	KENNEDY, MARYJAN
215	SEMELS, JAMES R
219	TAMBASCIO, JOHN A
221	MUNROW, HAROLD J
225	SAXE, PATRICIA D

Target Street	Cross Street	Source
-	✓	Cole Information

COACHLAMP LN 2014

1	OCCUPANT UNKNOWN,
6	OCCUPANT UNKNOWN,
7	CHUNG, PHILIP Y
9	GLASER, WALTER G
12	BRANCH, CHARLES E
15	WOLFSON, MICHAEL I
17	RYAN, THOMAS J
18	OCCUPANT UNKNOWN, PARAMOUNT MAINTENANCE INC
22	ANRIG, ANTHONY
23	OCCUPANT UNKNOWN,
27	STACK, DAVID H
28	YEE, ARTHUR
32	STEINTHAL, JOHN
33	BRACCHITTA, JOSEPH F
36	WEAVER, CLAYTON H
37	OCCUPANT UNKNOWN,
38	FIELDSTEEL, ROBERT D
43	CHIAPPETTA, LAWRENCE F
44	ANNER, JOHN L

Target Street	Cross Street	Source
-	✓	Cole Information

DOUBLING RD 2014

1	LEHMANN, GEORGE A
6	GONZALEZ-BUNSTER, LUIS
7	MARCUS, ANDREW W
12	HAWKS, JOHN C
15	OCCUPANT UNKNOWN,
19	GREENWICH COUNTRY CLUB
27	MORAN, JOAN B
31	JASPERSON, REBECCA A
33	MAYBURY, CHRISTOPHER W
35	HA, GIL H
41	SCHOELKOPF, ANDREW L
42	GALES, ROSARIO M
	REIBEL, JAY S
43	GILBERT, ARLO C
44	JASSON, JORGE V
	MILLS, SAM
45	OCCUPANT UNKNOWN,
47	OCCUPANT UNKNOWN,
50	LANDMAN, PIER A
51	SLOAN, ALBERT R
52	OCCUPANT UNKNOWN,
53	SINGER, DAVID M
54	OCCUPANT UNKNOWN,
58	COX, JOHN C
64	MORO, ROBERT
72	FORD, FREDRICK
75	HVOLBECK, BRADLEY S
76	DAVIES, MARK J
80	OCCUPANT UNKNOWN,
81	STARR, NICHOLAS C
82	DEMEUNYNCK, NATALIE
84	OCCUPANT UNKNOWN,
86	RIERA, ABELARDO J
87	HURST, BRIAN K
93	DIWIK, DAVID M
94	BETTERIDGE, ALBERT E
96	OCCUPANT UNKNOWN,
97	ROONEY, ROBERT J
98	ONG, TINOG S
101	DARTNELL, RIAN A
103	WALKER, DAVID B
105	CLOONAN, LINDA A
107	MALKIN, ANTHONY E
115	BASINET, JOHN M
117	LOW, PETER J
119	OCCUPANT UNKNOWN,
121	OCCUPANT UNKNOWN,
124	AVILES, JUAN M
	RINKARTSANG, NGAWANG
125	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	Cole Information

DOUBLING RD 2014 (Cont'd)

127	OBOYLE, DEBORAH J
129	OCCUPANT UNKNOWN,
131	DAVIDSON, THOMAS A
132	BERKLEY, JENNIFER
135	OSMAN, BARNETT D
139	J G CAPITAL
	OCCUPANT UNKNOWN,
141	NICASTRO, JASON R
145	BIRNBAUM, ROBERT D

Target Street	Cross Street	Source
✓	-	Cole Information

INDIAN ROCK LN 2014

9	TOWN OF GREENWICH
10	GREENWICH BAPTIST CHURCH
	IGLESIA RENAFIMIETO
12	SILVER, WARREN D
14	CLARK, AUSTIN P

Target Street	Cross Street	Source
-	✓	Cole Information

ORCHARD ST 2014

300	BRAUNSTEIN, JUDITH T
302	STABILE, GIULIANO
304	OCCUPANT UNKNOWN,
308	HE, JONNY
310	OCCUPANT UNKNOWN,
311	MARTIN, RAY A
315	SAMUEL, MARK A
319	ERENSEN, BRIAN J
323	GIL-JAUREQUI, JORGE L

Target Street	Cross Street	Source
-	✓	Cole Information

PONDEROSA DR 2014

2	SCOTT, STEPHEN J
3	RUDOLPH, DAVID H
4	AUGER, FRANCIS D
5	HERMAN, ALON P
7	LODATO, ROSS P
10	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 2014

1	RUF, DAVID A
2	GETZ, GEORGE H
3	DIPSHAN, RICCI
6	WILLIAMS, MARIE V
7	BROWN, JOSHUA H
8	HUBBARD, CHARLIE P
	VANCE, ELEANOR H
9	OCCUPANT UNKNOWN,
11	GOODWIN, TERENCE W
12	PLATTER, DAVID M
13	COLLINS, LINDA F
15	FISHER, BENJAMIN P
17	REIMERS, CARL D
18	OCCUPANT UNKNOWN,
19	BIDWELL, COURTNEY E
20	SILVEY, KATHERINE
21	BAUER, JOHN F
22	OCCUPANT UNKNOWN,
23	MILLER, JOHN
25	DOLL, MICHAEL H
29	OCCUPANT UNKNOWN,
	P & M GLOBAL
30	KANTES, DAVID G
35	CAULFIELD, JEROME R
37	HIRSCH, AMY A
39	HARRIS, WILMOT L
43	CUMMISKEY, ANTOINETTE Z
45	WOLF, RANDY J
49	CARROLL, THOMAS J
51	MEERBERGEN JOHN E
	OCCUPANT UNKNOWN,
55	MASI, VINCENT F
57	DENAGELO, ANNE S
59	SUH, THOMAS
61	HARDVALL, LOUIS H
63	PASTERNAK, MATTHEW S
65	JONAS DESIGN BUILD LLC
	ZUKAUSKAS, JOHN J
67	REDDY, MADHUMATHI T
68	PENNY, RALPH E
69	MEYER, KNUT E
72	ROZMUS, ARY M
80	PAPPALARDO, PAUL P
95	OCCUPANT UNKNOWN,
101	ECK, DYLAN
105	OSSER, JONATHAN B
107	MOSKOWITZ, RUTH S
109	KANDL, MARK D
111	GESELL, ANDREW S
113	DESMOND, CAROL J

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 2014 (Cont'd)

115	MARKS, MARY J
117	MULLER, MARGARET M
119	GRAVES, MICHAEL A
123	PENNA, CLAUDIA M
127	GOTTLIEB, MARK
133	BICKERSTAFF, GEORGE M
140	GRUSS, ANDREW
147	MALLORY, JOSEPH S
150	OCCUPANT UNKNOWN,
151	CLARK, HARRY W
154	VANDERLIP, CHRISTINA H
155	TAYLOR, ROXANNE
156	OCCUPANT UNKNOWN,
157	ALEXANDER, MARTIN M
159	HALL, JOHN S
160	GILBRIDE, FRANK J
161	WATTS, JOE D
163	OCCUPANT UNKNOWN,
164	TURNER, DAVID H
167	KERR, DONALD E
169	ALEXANDER, HOWARD A
	GAROFALO, ROY L
	STERN, BRIAN S
170	DUTY, STUART M
171	BRAINSTORMING PRODUCTIONS
	HICKS, JOHN D
	OCCUPANT UNKNOWN,
173	FARAHNAK, SAHAND
175	OCCUPANT UNKNOWN,
176	ALTSCHUL, CHRISTOPHER G
177	MASON, RUSSELL A
178	AMILL, ANDREW R
179	ROBINSON, BRUCE B
180	HOLLIDAY, SHAUN P
181	MASSAD, LON
184	FULLER, MILTON A
187	OCCUPANT UNKNOWN,
188	WOOD, KEVIN
190	WHITTEMORE, SARAH L
196	DAVIES, JOANNE
197	MELENEY, LAURA
200	KELLY, COLIN P

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 2010

7	POTUCEK, DAVID P
	TARANTINO, JOHN P
	VALENTINE, LINDA
9	LAVOIE, DANIEL R
	NOBLEMAN, MARC T
11	BOUCHER, JOSEPH D
	SCHUYLER, SEAN
15	PITTMAN, GRETCHEN E
17	TASSONE, MICHEAL R
19	GANG, TAHRI
	LIVIA, GARY J
	ZICARELLI, LARRY
23	RETOME, EMILINA
25	BELL, REBECCA J
	CANALES, JULIO C
	HEATH, STEPHANIE
	MULCAHEY, SARAH H
	SOWIN, JOSEPH R
27	CACCIOLA, NANCY M
29	MANRIQUEZ, EDUARDO M
	MASI, CHARLES A
	MUKHERJEE, PARTHA P
	PERTA, CHARLES F
31	MODAFFERI, NICOLINA
33	EBERHEIM, L
	SANTORO, LETIZIA C
37	BOUNTY, CARMELLA P
39	PURDY, JOANNA L
41	ALVAREZ, ELBIO R
	FLORES, MARCO T
45	SCARPELLI, PETER P
47	CAPPARELLE, FRANK
49	FOX, CRESTA
53	LAI, HERMANN P
	RIEDY, PATRICIA A
	VICENTE, JUAN
55	CAPPARELLI, FIORE J
	FJC DESIGNS & CONSTR LLC
61	LIBRANDI, SCOTT C
67	LIBRANDI, JOSEPH S
69	MARULLO, GENNARO J
	SWARTZ, DANIEL M
75	SCHAFRATH, SVITLANA
	WAGNER, DAVID R
79	CARINO, FRANCES
	DULIN, JENNIFER L
81	SANDLOCK, MICHAEL J
83	TOCCI, GIUSEPPE
87	CHRISTIANO, LEA D
89	AGOSTINO, MICHAEL

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 2010 (Cont'd)

91	MANCINI, ELLEN M
95	PISANO, BEN T
	VISION OF M
99	ZYGMONT, ROBERT F
111	CHARLES, NICK
123	FITZROY, ROBERT R
178	KINGHORN, MICHAEL H
180	SCHNEIDER, SALLY F
182	TILLY, DAVID O
184	PIERCE, ROGER W
190	CHAPIN, ANDREW M
194	MDC TECHNOLOGY
	RIGANO, FRANK E
195	MARINO, ALEX M
199	BLEUEL, HANS J
206	GLASER, WALTER G
208	DUNSTER, WILLIAM S
211	FREITAG, MICHAEL L
212	GABALDON, GUSTAVO J
219	LIFESAVER POOL FENCESOUTHERN
	TAMMS POOL SVC
221	MUNROW, HAROLD J
225	INTRIERI, THOMAS A

Target Street	Cross Street	Source
-	✓	Cole Information

COACHLAMP LN 2010

1	OSULLIVAN, MICHAEL J
6	LAROSSA, MARC A
7	CHUNG, SUNG K
9	PERRELLE, NICK P
12	SMITH, ARCHIE T
15	WOLFSON, MICHAEL I
17	RYAN, THOMAS J
18	PARAMOUNT MAINTENANCE INC
22	ANRIG, ANTHONY
23	HAYLER, JORGE
27	STACK, PETER W
28	YEE, ARTHUR
32	HORTON, PAULINE F
33	BRACCHITTA, JOSEPH F
36	WEAVER, CLAYTON H
38	FIELDSTEEL, ROBERT D
40	BELLUSCIO, THERESA A
43	CHIAPPETTA, LAWRENCE F
44	ANNER, JOHN L

Target Street	Cross Street	Source
-	✓	Cole Information

DOUBLING RD 2010

1	LEHMANN, GEORGE A
2	HOULDIN, SCOTT C
6	GONZALEZ-BUNSTER, ROLANDO G
15	HEAVEN, MATTHEW C
16	SKOWRON, JOSEPH F
19	GREENWICH COUNTRY CLUB
	GREENWICH COUNTRY CLUB GLF SHP
25	MORAN, KENT
29	CORMAN, D S
31	JASPERSON, REBECCA
33	OLIVEIRA, MAURICIO D
35	HA, GIL H
41	MINCHIN, HENRY R
42	GALES, ROSARIO M
	REIBEL, JAY S
44	JASSON, JORGE V
47	PIZZO, JAMES V
51	SLOAN, ALBERT R
53	SINGER, DAVID M
54	MANGIARDI, JOHN R
	ROUGEMONT MANAGEMENT SVC LLC
72	FORD, CHRISTOPHER P
75	HVOLBECK, BRADLEY S
76	KELT, PATRICIA
78	COSBY, MARK S
81	MATHER, BLAKE W
	S B BUILDERS
82	WIEGENFELD, YOAV
84	QUACKENBUSH, BRUCE K
86	RIERA, ABELARDO J
87	AJM HOLDING
	BANDYOPADHYAY, NISHA L
93	DIWIK, DAVID M
94	MORO, ROBERT W
96	WALSH, JEROME T
97	ROONEY, ROBERT G
101	DARTNELL, RIAN A
107	MALKIN, ANTHONY E
117	LOW, PETER J
119	HASTY, CHRISTOPHER S
124	AVILES, JUAN M
127	OBOYLE, DEBORAH J
129	LAMPERT, SPENCER
131	DAVIDSON, THOMAS M
	SOUTHPORTER MANAGEMENT GROUP
132	BERKLEY, LAUREN E
135	OSMAN, BARNETT D
139	TOMPKINS STATES D
	TOMPKINS, STATES D
141	NICASTRO, JASON R

Target Street	Cross Street	Source
-	✓	Cole Information

DOUBLING RD 2010 (Cont'd)

145 BIRNBAUM, ROBERT D
THIRD WAIVE GLOBAL

Target Street	Cross Street	Source
✓	-	Cole Information

INDIAN ROCK LN 2010

9 CENTRAL MIDDLE SCHOOL
10 GREENWICH BAPTIST CHURCH
USHER, JOHN

Target Street	Cross Street	Source
-	✓	Cole Information

ORCHARD ST 2010

300	TIRAMANI, PAOLO B
302	STABILE, BRIAN E
304	BUCKLIN, ROBERT S
	CLASSIC MOMENTS PHOTOGRAPHY
308	OTTERSTEDT, PAUL J
310	MARSH, PATRICK S
311	MASARU, KUMADA
315	SAMUEL, MARK A
319	ERENSEN, BRIAN J
323	GIL-JAUREQUI, JORGE L

Target Street	Cross Street	Source
-	✓	Cole Information

PONDEROSA DR 2010

2	SCOTT, STEPHEN J
3	RUDOLPH, DAVID H
4	AUGER, FRANCIS D
5	OJJEH, SAMER M
7	LODATO, ROSS P
10	SCHEDLER, NORMAN K
15	HAGAN, DANIELLE J

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 2010

1	RUF, DAVID A
2	GETZ, GEORGE H
3	DIPSHAN, DAULT
5	GALINDO, CARMELITA G
6	WILLIAMS, MARIE V
7	BROWN, JAMES
8	HUBBARD, CHARLIE P
	VANCE, ELEANOR H
9	KELLEY, DANIEL S
11	GOODWIN, TERENCE W
13	COLLINS, JOHN F
15	OLSSON, LARS H
17	REIMERS, CARL D
18	PANG, SHELDON
21	BAUER, STEFAN M
22	DAVID, KERRY G
25	DOLL, MICHAEL H
29	SCOTTI, GAVIN A
35	CAULFIELD, JEROME R
37	AIDINIS, HIRSCH
39	HARRIS, N
45	WOLF, RANDY J
49	THOMAS, CARROLL
51	MEERBERGEN JOHN E
55	MASI, VINCENT F
57	DEANGELO, BOB R
59	SUH, JOHN T
61	HARDVALL, LOUIS H
68	PENNY, RALPH E
69	MEYER, KNUT E
80	PAPPALARDO, PAUL P
95	FINGER, JASON R
99	LEDERER, JEFF H
105	OSSER, JONATHAN B
107	KHADEMI, GHAJAR
109	KANDL, MARK D
111	GESELL, ANDREW S
115	MARKS, MARY J
119	GRAVES, MICHAEL A
140	FELLOWS, ANDREW K
147	MALLORY, JOSEPH S
151	CLARK, HARRY W
160	GILBRIDE, FRANK J
161	WATTS, JOE D
163	RIERA, ANTONIO R
165	HOHENADEL, JOHN J
	MASSAD, JOHN A
167	KERR, DONALD E
169	MACKENZIE, TIMOTHY R
	PENNINGTON, ROBERT M

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 2010 (Cont'd)

170	DUTY, STUART M
171	CHERTKOV, EVAN R
173	YAK, CHAUWEI
175	FUTTERMAN, ROBERT K
176	ALTSCHUL, CHRISTOPHER G
177	MASON, RUSSELL K
179	ROBINSON, BRUCE B
180	HOLLIDAY, SHAUN P
184	FULLER, MILTON A
188	VANDOREN, DIRK M
196	ZIMMERMAN, WILFRIED
197	MELENEY, ALEXANDER A
200	KELLY, RICHARD S

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 2005

7	DELFINO, FRED M
	HARTEL, LUZMARINA M
	TARANTINO, JOHN P
	VALENTINE, LINDA
9	ANDREAE, DANIELA
	DANEMAYER, SCOTT M
	GETMAN, CHRIS R
	GILBERT, A
	NOBLEMAN, MARC T
	PETRASKO, TAMMY M
	SANTANNA, FRANK
	SMITH, BETH A
11	BOUCHER, JOSEPH D
	SCHUYLER, SEAN
15	BERARDI, GEORGE
	BROWN, MATTHEW C
	PITTMAN, GRETCHEN E
	SIELER, THOMAS
17	SILVA, SONDRA
	TASSONE, MICHEAL R
	ZICARELL, BARBARA
19	LARRYS LAWN SERVICE
	ZICARELLI, LARRY
23	ALTOMARI, ANGELO
	REGALADO, CARMEN
	RETOME, CANDIDO G
25	CHAPMAN, BETH A
	SIKES, WILLIAM S
	ZEHALKA, JEANETTA L
27	BEST EVER SOFTBALL CAMP LLC
	CACCIOLA, NANCY M
29	CAM CONSTRUCTION INC
	MANRIQUEZ, EDUARDO A
	MASI, CHARLES A
	PERTA, CHARLES F
31	MODAFFERI, NICOLINA
	PENDERGAST, JAN
33	EBERHEIM, LINDA M
35	COS COB LANDSCAPE SERVICE
37	BOUNTY, CARMELLA P
39	PEDWANO, JOHN P
41	ALBAREZ, ELBIO R
	VELASQUEZ, ALBA L
47	CAPPARELLE, PASQUALE J
53	EIKREM, JOHN P
	KOYA, ATSUSHI
	RIEDY, PATRICIA A
	TUNNERA, ALBANO
	VICENTE, JUAN
	WATANABE, MASAAKI

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 2005 (Cont'd)

55	REIDY, G
57	CAPPARELLE DEVELOPMENT LLC
	SOUNDVIEW PROPERTIES
67	LIBRANDI, PHILOMENA M
69	MARULLO, GENNARO J
	SWARTZ, DANIEL M
	ZELINSKI, SUZANNE E
75	WAGNER, DAVID R
79	CARLOW, MELISSA
81	CHILA, DEMETRIO J
83	SOUND ABUSE LTD
	TOCCI, JOSEPH
87	CHRISTIANO, LEA D
89	AGOSTINO, BRUNO
91	MANCINI, ELLEN M
95	PISANO BROTHERS LLC
	PISANO, BEN T
99	ZYGMONT, ROBERT F
111	EDWARDS, CHRISTINE C
123	FITZROY, ROBERT R
178	KINGHORN, MICHAEL H
180	SCHNEIDER, REBECCA
182	TILLY, DAVID M
184	PIERCE, ROGER S
186	NAKAMURA, TAKASHI
188	MACLELLAN, JOHN A
190	CHAPIN, ANDREW M
192	MORITA MINORU GRAPHIC DESIGN
	MORITA, MINORU K
195	MARINO, ALEX M
196	TRILNICK, MANUEL E
199	ALAMPI, DOMENICO
205	COS COB ARCHERS
206	CECI, MILO
210	DILLARD, JAMES E
211	WILSON, JAMES W
212	PAYTON, LINCOLN L
221	MUNROW, HAROLD J
225	SANDS, ALAN
	ZACK MODULAR HOMES INC

Target Street	Cross Street	Source
-	✓	Cole Information

COACHLAMP LN 2005

1	OSULLIVAN, MICHAEL J
6	SCHROEDER, EDWARD H
7	CHUNG, SUNG K
	GREATJAM WINE AND SPIRITS LLC
9	BAIRD, DARRAN A
12	ELLIOTT, BOB H
15	WOLFSON, MICHAEL I
17	RYAN, THOMAS J
18	PARAMOUNT MAINTENANCE INC
22	ANRIG, ANTHONY G
23	LANNY, KLAUS
27	STACK, PETER W
32	HORTON, JARED C
33	BRACCHITTA, JOSEPH F
	ROSEWOOD MUSIC
36	WEAVER, CLAYTON H
37	LENSING, JOAN K
38	FIELDSTEEL, ROBERT D
40	BELLUSCIO, THERESA A
44	ANNER, MARK S

Target Street	Cross Street	Source
-	✓	Cole Information

DOUBLING RD 2005

1	LEHMANN, GEORGE A
2	GALES, ROSARIO M
6	GONZALEZ-BUNSTER, ROLANDO G
12	BADCAT LLC
	JABILES, ISAAC
	NEW MEDICAL CONSULTING OF CONN INC
15	HEAVEN, MARSHALL H
19	GREENWICH COUNTRY CLUB
25	MORAN, JOAN B
27	MOMENTUM RECORDS INC
	MORAN, JOAN
29	RUSSELL, PHILIP
31	JASPERSON, FREDERICK B
33	MAYBURY, CHRISTOPHER W
35	HA, GIL H
39	FRIEDMAN, VALERIE J
40	HOLT-BIGLER, RENEE
41	MINCHIN, HENRY R
42	GARYS AUDIO VIDEO INSTLTN
	REIBEL, JAY S
44	JASSON CO
	JASSON, JORGE V
47	PIZZO CAPITAL MANAGEMENT
	PIZZO, JAMES V
51	SLOAN, ALBERT R
52	BAUER CAPITAL & CONSULTING LLC
	CONSULTING LLC
53	SINGER, DAVID M
54	MANGIARDI, JOHN R
58	COX, JOHN C
72	FORD, CHRISTOPHER P
75	HVOLBECK, BRADLEY S
80	PETUCK, STACY J
81	STARR, DANFORTH W
82	WILF, DAVID M
84	QUACKENBUSH, BRUCE K
86	RIERA, ABELARDO J
87	HURST, BRIAN K
93	MCATEE, JOHN C
94	MORO, ROBERT W
96	WALSH, JEROME T
97	ROONEY, ROBERT G
100	DRENNEN, WILLIAM G
101	DARTNELL, RIAN A
103	WALKER, DAVID B
105	CLOONAN, EDWARD A
107	KELTNER, THOMAS N
115	HOWELL, S
117	SCHUPP, CARL G
123	BRIDGE, ALFRED H

DOUBLING RD 2005 (Cont'd)

124	AVILES, JUAN M
	BERKLEY, WILLIAM R
125	S THREE CAPITAL LLC
127	OBOYLE, DEBORAH J
129	MITCHELL, DUKE N
131	THE SOUTHPORTER MANAGEMENT GROUP LLC
133	BOLLING, RAY C
135	LEE, THOMAS J
139	TOMPKINS, SCOTT D
141	NICASTRO, ROSALIND
145	BIRNBAUM, ROBERT D
	THIRD WAVE CAPITAL
	THIRD WAVE GLBL MACRO FUND LMT
	THRID WAVE CAPITAL
150	BERKLEY, WILLIAM R

Target Street	Cross Street	Source
✓	-	Cole Information

INDIAN ROCK LN 2005

9	CENTRAL MIDDLE SCHOOL
12	YOHO, THOMAS J
14	MURRAY, RICHARD W

Target Street	Cross Street	Source
-	✓	Cole Information

ORCHARD ST 2005

300	TIRAMANI, PAOLO M
302	STABILE, GIULIANO R
304	BUCKLIN, ROBERT S
306	OTTERSTEDT, PAUL
308	HE, JENNY M
310	MARSH, PATRICK S
311	ONO, YOSHIHIRO
315	SALVO, SAMUEL
319	ERENSEN, GEORGE B
323	ROBERTS, THOMAS E

Target Street	Cross Street	Source
-	✓	Cole Information

PONDEROSA DR 2005

2	SCOTT, STEPHEN J
3	RUDOLPH, DAVID H
4	AUGER, FRANCIS D
5	OJJEH, SAMER
7	LODATO, ROSS P
15	HAGAN, DANIELLE J

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 2005

1	RUF, DAVID A
2	D & D DESIGNS
	SCHUR, KENNETH
5	MCKAY, ROBERT J
6	WILLIAMS, MARIE V
7	WEST, PAUL F
8	HUBBARD, CHARLIE P
	VANCE, ELEANOR H
11	GOODWIN, HEATHER A
12	PLATTER, DAVID M
13	COLLINS, JOHN F
	SMITH HEKKER & COLLINS INC
15	OLSSON, LARS O
17	REIMERS, CARL D
20	MOSKOWITZ, STANLEY A
21	BAUER, JOHN F
22	ETTLINGER, ROBERT N
23	WINEGARDNER, DIEGO P
25	DOLL, MICHAEL H
29	SCOTTI, GAVIN A
35	CAULFIELD, JEROME R
37	AIDINIS, RICHARD M
43	ZILUCA, ANTOINETTE
45	WOLF, RANDY J
47	ABSTOSS, KLAUS J
51	MADARA, JOSE L
55	MASI, VINCENT F
57	DEANGELO, BOB M
59	SUH, JOHN T
61	HARDVALL, LOUIS H
65	ZUKAUSKAS, JOHN
67	GREENWALD, LINDA F
68	PENNY, RALPH E
69	MEYER, KNUT
72	HURLEY, JAMES L
80	HARRIS, WILMOT L
95	WOLFERT, FREDERICK E
99	LEDERER, JEFFREY H
101	ECK, EILEEN
107	COWLES, DAVID R
109	CESARIO, JOHN A
113	DESMOND, ROBERT G
115	MARKS, MARY J
119	GRAVES, MICHAEL A
123	BUETI DEVELOPMENTS
133	BAKER, SCOTT T
140	FELLOWS, ANDREW K
147	MALLORY, JOSEPH S
150	TANGLEY, LLOYD C
151	CLARK, HARRY W

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 2005 (Cont'd)

155	CIRILLO, THOMAS J
156	REYNOLDS, WALLACE B
157	ALEXANDER, MARTIN M
159	FORT HILL PARTNER INC
	HALL, JOHN S
160	GILBRIDE, FRANK J
161	WATTS, JOE D
163	RIERA, ANTONIO A
164	TURNER, DAVID H
165	HOHENADEL, JOHN J
	KAHN, ANDREW P
	MASSAD, JOHN A
167	KERR, DONALD E
169	GAROFALO, ROY L
	GAROLFALO, ROY L
	MACKENZIE, GORDON C
	PENNINGTON, MARK P
170	DUTY, STUART M
171	LECKIE, ROBERT R
175	FUTTERMAN, ROBERT K
176	ALTSCHUL, CHRISTOPHER G
178	BOWERS, TOM
179	ROBINSON, BRUCE B
180	WALLACE, DANA M
181	WATTS, ANDREW
184	FULLER, MILTON A
187	DAUGHERTY, CHARLES R
190	SIMPLY PLACED DESIGNS
196	ZIMMERMAN, WILFRIED
197	MELENEY, ALEXANDER A
206	DARRAH, WILLIAM M

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE 2000

53 VICENTE, JUAN

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 2000

3	LEDERMAN, L
7	DELFINO, FREDK M
	TULLIS, E
	ZOTO, DIANA
9	MENTEN, THOMAS H
11	DOMIZIANO, JOSEPH L
15	BERARDI, GEORGE
	CONELIAS, CAROLYN
	SIELER, THOMAS
17	OCCUPANT UNKNOWN,
19	ZICARELLI, LARRY
23	ALTOMARI, FRANK
	KOVACS ROBERT & EDIT
25	BARSANTI, JUSTIN C
	SIKES, WILLIAM
27	CRIMMINS, DAVID
	RAIENTE, JEFFREY
	RAY, A
29	MASI, CHARLES A
	PERTA, CHARLES
31	BARANOWSKY, ANDREA
	DEQUEIROZ, MARCELO
	EKLUND, HEATHER
	MANIATTY, JEFFREY A
	NILSON, M A
	PENDERGAST, J
33	EASTERN RIGGING SUPPLY COMPANY INCORPORATED
	EBERHEIM, L
	VADALA, BECKY
35	COS COB LANDSCAPE SERVICE
	FARANO, PHYLLIS
	FERRARO, WILLIAM J
37	BOUNTY, C
	TOLMIE, ALEX
39	BOOCHECK, SUZANNE
41	FLORES, RAUL
45	OCCUPANT UNKNOWN,
47	CAPPARELLE, PASQUAL
49	CECIO, JOSEPH W
	GOODWIN, LORI A
53	BENDER, ANDREW S
	CARASSO, MELANIE L
	LOPEZ, MARTHA
	NISHIDA, TETSUYA
	UEDA, KEIICHI
55	CHIAPPETTA, PAT
	P C PAINTING
57	MENCE, JILL
61	LIBRANDI, FRANK J
67	LIBRANDI, JOSEPH S

BIBLE ST 2000 (Cont'd)

69	MARULLO, JERRY
	MARULLO, MICHAEL F
	SEMINOFF, T
73	EDWARDS, CHARLES
75	KIM, YOUNG
79	ANDERSON, THOMAS N
	BLAKSLEY, V
	GREHAN, PEDRO
81	OCCUPANT UNKNOWN,
83	OCCUPANT UNKNOWN,
87	CHRISTIANO, MICHAEL
89	RAMOS, E
91	MANCINI, ELLEN M
95	BRASILEIRO, LILIAN
	PISANO, BEN
99	ZYGMONT, SUSAN
111	EDWARDS, CHARLES N
117	OCCUPANT UNKNOWN,
120	OCCUPANT UNKNOWN,
123	FITZROY, ROBERT R
178	KINGHORN, MARK
180	SCHNEIDER, SALLY F
182	FERTIG, ROBERT T
184	PIERCE, ROGER S
188	GREENWALD AUDREY ARCHT
	GREENWALD, DAVID H
190	FREITAS, JANE F
	GODOY, C
	HASSAN, KEVIN
192	MORITA, MINORU
194	RIGANO, FRANK
195	HARTSHORNE, DANIEL
196	TRILNICK, MANUEL
199	ALAMPI, DOMENIC
205	COS COB ARCHERS
206	FERRIS, W
208	DUNSTER WILLIAM S LANDSCAPE CONTRACTORS
	DUNSTER, WILLIAM
210	ESTRADA, ILIAD M
211	OCCUPANT UNKNOWN,
212	PAYTON, LINCOLN
219	TAMBASCIO, JOHN A
221	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	Cole Information

COACHLAMP LN 2000

1	OSULLIVAN, PAUL J
6	SCHROEDER, EDWARD H
7	CHUNG, SUNG K
9	BAIRD, DARRAN A
12	ELLIOTT ASSOCIATES
	ELLIOTT, BOB
15	WOLFSON, MICHAEL I
17	RYAN, B
18	INTRIERI ALBERT T
	INTRIERI, THOMAS A
	PARAMOUNT MAINTNCE SVCE
22	ELVIRA, ANRIG
	MCCORMICK, J
	WEISBARD, SALLY A
23	SCHINDLER, ERIC
27	STACK, PETER W
28	YEE, JUDY
32	HORTON, JARED C
33	BRACCHITTA, JOSEPH
36	WEAVER, CLAYTON
37	ANDREA, ROBERT
	LENSING, JENNY E
38	FIELDSTEEL, ROBERT D
40	BELLUSCIO, THERESA A
43	VERRASTRO, MARY
44	ANNER, JOHN L

Target Street	Cross Street	Source
-	✓	Cole Information

DOUBLING RD 2000

2	HOULDIN, SCOTT
6	GONZALEZ-BUNSTE, ROLANDO
	SKARKA, DEBRA
7	RAPP, STEPHEN J
12	GLANVILLE, ROBERT E
	JABILES, ISAAC
	SARALEGUI, L
	WALSH, W
15	HEAVEN, M H
27	SKY KING COMMUNICATIONS INCORPORATED
31	AMIOT, G B
33	LAVINIA, RUTH E
35	BAZ, JAVIER
39	FRIEDMAN, MARK
	GARIS, BROOKS
	WINN, VICKI
40	BIGLER, EDWARD M
41	HALLENBECK, GARY
	PIZZO, JAMES
42	GALES, R
	KACIN, ROBERT
	REIBEL, JAY S
44	JASSON, JORGE
45	DIAMOND, BILL
47	PIZZO, JAMES V
49	OCCUPANT UNKNOWN,
50	OCCUPANT UNKNOWN,
51	SLOAN, A R
52	BAUER, SCOTT
53	SINGER, DAVID M
54	BEATTIE, DANA A
	GREENWICH FIBER MANAGMNT CORPORATION
58	COX, JOHN C
68	RYDER, SUSAN
	TIERNEY, MICHAEL P
75	HVOLBECK, MORGAN
76	HEATH, GORDON
80	FREEBURG, MICHAEL J
81	OCCUPANT UNKNOWN,
82	BLOOMDAHL, ANNE
	SCHINASI, G
	WILF, D
84	QUACKENBUSH, BRUCE
86	ISBELL, STACEY L
87	OCCUPANT UNKNOWN,
88	STOCKER, DWIGHT
93	GLENN, B D
	HERMANN, KARL
	MCATEE LYNN G
	MCATEE, JOHN J

Target Street	Cross Street	Source
-	✓	Cole Information

DOUBLING RD 2000 (Cont'd)

97	LEWIS, MARTIN G
100	OCCUPANT UNKNOWN,
101	DARTNELL, RIAN A
103	WALKER, D
105	CLOONAN, EDWARD
107	LUNNEY, JAMES J
115	BJARK, TORE
117	SCHUPP, CARL G
119	HASTY, C
121	BARNETT, STEVEN J
123	BRIDGE, ALFRED H
124	BERKLEY, WILLIAM
	PEHMOELLER, FRAZER
	XHEMA CONSTRUCTION
125	BRAAS, ALBERIC
	SKOURAS, SPYROS
129	MITCHELL, DUKE
131	DAVIDSON, THOMAS
133	BOLLING, RAY
135	OCCUPANT UNKNOWN,
137	KHAYATT, SHAKER A
139	OCCUPANT UNKNOWN,
	TOMPKINS STATES
141	NICASTRO, R
143	IVERSEN, ERLING F
145	BIRNBAUM, ROBERT D
	TADDEO, JOE
150	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
✓	-	Cole Information

INDIAN ROCK LN 2000

9	TOWN OF GREENWICH PROBATE COURT PUBLIC SCHOOLS
10	GREENWICH BAPTIST CHURCH SBC
12	OCCUPANT UNKNOWN,
14	MURRAY, RICHARD

Target Street	Cross Street	Source
-	✓	Cole Information

ORCHARD ST 2000

300	SCHIGG, FRANK R
302	STABILE, L
304	BUCKLIN, ROBERT
	LUCIA BUCKLIN PHOTOGRAPHY
306	LUPINACCI, JOHN
	STEVENSON, ROBERT
308	LAWLESS, JANE M
310	LAWLESS, JANE M
311	GHOGAWALA, ZOHER
315	SPENCER, GEORGE H
319	ERENSEN, GEORGE
323	HANNA, JOHN H

Target Street	Cross Street	Source
-	✓	Cole Information

PONDEROSA DR 2000

2	SCOTT, STEPHEN J
3	OCCUPANT UNKNOWN,
5	LOSA, PEDRO
7	LODATO, ROSS
10	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 2000

1	TURNER, PHILIP
2	PUGH, KATHRYN
6	LINCOLN CAN MANUFACTURING
	WILLIAMS, MARIE V
7	MCKAY, ROBERT J
8	HUBBARD, CHARLIE
9	BEGOLE, C
11	GOODWIN, TERRY W
	LEVAILLANT, ARIANE
12	PLATTER, DAVID M
13	COLLINS, J F
	COLLINS, LINDA
15	OLSSON, LARS
17	POLCINI, PAMELA G
	REIMERS, CARL
19	MOLONEY, PHILIP
20	OCCUPANT UNKNOWN,
21	GARMANN, KETIL
22	MORELLI, JODI
	RESOR, STANLEY
23	NARDONE, VINCENT R
25	TINGLEY, CHARLES E
29	P & M GLOBAL
	SCOTTI, GAVIN A
30	ADAMS, LOUISE
35	CAUFIELD, ANDREW
	CAULFIELD, JEROME J
37	AIDINIS, RICHARD M
39	CHRISTIANSEN, SALLY
	HARRIS, WILMOT L
43	CUMMISKEY, A
44	STIASSNI, CHARLES N
45	WOLF, RANDY
49	TASKIN, METIN
50	OCCUPANT UNKNOWN,
51	MEERBERGEN JOHN E ATTORNEY
	MEERBERGEN, JOHN E
57	DEANGELO, SALVATO
59	SUH, JOHN T
61	HARDVAL, LOUIS H
63	SULLIVAN, MARY C
65	BUCK, SUZZANE
	LAUFFER, VICKIE
	TIMM, C J
	WANKO, RUTH
67	OCCUPANT UNKNOWN,
68	PENNY, RALPH
69	MEYER, KNUT
72	HURLEY, JAMES L
76	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 2000 (Cont'd)

80	EGGERS, STEVEN H
95	GELFAND, LAURA
	SMITH, BARBARA L
99	KENTISH, ROD
101	BAIN, H
	HETNIK, JOANNA S
	MATON, CYNTHIA
105	OSSER, J B
107	SPIERS CATHERINE
	SPIERS, CLINTON F
109	CESARIO, JOHN A
111	BENENSON, MICHAEL
113	DESMOND, ROBERT G
115	CHAN, YIN
117	SEASON, RANDI L
119	GRAVES, MICHAEL
123	EDGAR, M M
127	OCONNOR, PAUL M
140	COATS, JERRY
147	MALLORY, JOSEPH S
150	DELANEY, ROBERT
151	CLARK, HARRY W
154	EVERS, HERBERT
155	CIRILLO, THOMAS
156	REYNOLDS, WALLACE
157	ALEXANDER, MARTIN
159	HALL, JOHN
160	GILBRIDE, FRANK J
161	WATTS, JOE D
163	RIERA, ANTONIO
164	TURNER, DAVID
165	KAHN, EVELYN G
	MASSAD, JOHN
167	FUTTERMAN, ROBERT
	KERR, DONALD
169	GAROFALO, ROY L
	MCLAUGHLIN, MYRTLE S
	PETTERSEN, ULF
170	BLACK, STEVEN
171	LECKIE, C
	NELSON, C
175	FUTTERMAN, MARJORY R
176	DUCHANGE, NATALIA A
	FERRETTI, WILLIAM J
177	MASON, RUSSELL K
178	OCCUPANT UNKNOWN,
179	ROBINSON, BRUCE
180	DARLING, FRED
181	ERB, M R
184	FULLER, MILTON A

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 2000 (Cont'd)

187	ANDERSON, ROSS
	DAUGHERTY, CHARLES
188	VANDOREN, DIRK M
190	WHITTEMORE, A
196	ZIMMERMAN, WILFRIE
197	MELENEY, ANNE
200	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 1995

3	SMERIGLIO, THOMAS
	SMERIGLIO, THOS
7	DELFINO, FREDK M JR
	DELFINO, FREDK M, JR
9	LAWRENCE, K
	MENTEN, THOMAS H
	MENTEN, THOMAS H & GREER
11	DOMIZIANO, JOS L
	DOMIZIANO, JOSEPH L
15	FARCIERT, EFRAIN
	MALUF, PAULO S
	MALUF, PAULO SALLIM
	NAJERA, ELOIDA
	SIELER, THOMAS
	ZAREMBSKI, GREG A
17	CORTESE, TONY
19	HERLIHY, C
	OPPENHEIM, DAVID J
	REYNOLDS, MICHAEL
	ZICARELLI, LARRY
23	ALTOMARI, FRANK C
25	SIKES, WILLIAM
27	CRIMMINS, DAVID
	RAIENTE, JEFFREY
	RAY, A
29	MASI, CHARLES A
	PERTA, CHARLES
	REPACI, M
	WOLKIN, HAL
31	FITZSIMONS, BRUNA
	PENDERGAST, J
	VO, CHIN
	VO, THI
33	EASTERN RIGGING SUPPLY CO INC
	EBERHEIM, L
	SANTORO, JOHN W
35	FARANO, PHYLLIS
	FERRARO, A J, JR
	FERRARO, A J, JR-CHILDREN'S TELEPHON
	FERRARO, WILLIAM J
	FERRARO, WILLIAM JOSEPH
	WILLIAM J FERRARO
37	BOUNTY, EDWARD
	TOLMIE, ALEX
	TOLMIE, ALEXANDER
39	GAETANI, ROBIN
	PEDWANO, JOHN
41	FLORES, MARCO
	FLORES, RAUL
47	CAPPARELLE, P

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 1995 (Cont'd)

47	CAPPARELLE, PASQUALE
49	DAVENPORT, S
	KINNEY, K
	LUPINACCI, ANTONIO
53	EKEGREN, S
	LOPEZ, MARTHA
	UEDA, KEIICHI
	VICENTE, JUAN
54	GREENWICH TOWN OF DEPT OF PARKS & RECREATIONN
	PARKS & RECREATION DEPT
55	CHIAPPETTA, PAT
	CHIAPPETTA, PAT & JOANN
	P C PAINTING
	PC PAINTING
57	BONBRISCO, MIKE J
	CRAINE, DONAL
	MIKKELSEN, LISA
	MIKKELSON, LISA
61	LIBRANDI, FRANK J
	LIBRANDI, FRANK, JR
67	LIBRANDI, JOS S
	LIBRANDI, JOSEPH S
69	MARULLO, JERRY
	MARULLO, JERRY & DOLLY
	MARULLO, MICHAEL F, JR
	MAULLO, FENISE
	PHILLIPS, GEORGE
73	KAY, AGNES
75	MIYASAKA, KENICHI
	OSONOE, RYUICHI
79	FERRARO, GARY
	PROTANO, C J
81	CHILA, JOHN
87	CHRISTIANO, MICHAEL
	CHRISTIANO, VITO
89	AGOSTINO, BRUNIE & MARY
	AGOSTINO, BRUNO
	AGOSTINO, ROCCO
91	MANCINI, E M
95	PISANO, BEN
	ZAREMBSKI, GREG A
99	ZYGMONT, S
	ZYGMONT, SUSAN
180	SCHNEIDER, L
	SCHNEIDER, LAURENCE
182	FERTIG, ROBERT T
184	PIERCE, ROGER S
	POLYPROPYLENE COUNCIL AMERICA
188	AUDREY GREENWALD
	GREENWALD, AUDREY

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 1995 (Cont'd)

188	GREENWALD, AUDREY, ARCHT
190	CIRANKO, JON
192	MORITA, NATASHA
194	RIGANO, FRANK
195	HARTSHORNE, DANIEL
	HARTSHORNE, DANIEL-CHILDREN'S TELEPHONE
196	TRILNICK, MANUEL
	TRILNICK, MAU
199	ALAMPI, D
	ALAMPI, DOMENICO & KAREN
	ALAMPI, DOMENICO & KAREN-CHILDREN'S TELEPHONE
205	COS COB ARCHERS
206	FERRIS, PAOLA T
208	OCCUPANT UNKNOWNN
210	MASTROGIOVANNI, RON
	MASTROGIOVANNI, RONALD
212	PAYTON, LINCOLN
215	LAWSON, DUNCAN
	LAWSON, DUNCAN & ELIZABETH
219	OCCUPANT UNKNOWNN
221	MUNROW, HAROLD

Target Street	Cross Street	Source
-	✓	Cole Information

COACHLAMP LN 1995

1	O'SULLIVAN, PAUL J
	OSULLIVAN, PAUL J
6	SCHROEDER, EDWARD H
7	FOGWELL, BRUCE P
9	TORMEY, JAMES
12	ELLIOT ASSOCIATES
	ELLIOTT ASSOCIATES
	ELLIOTT, BOB
	ELLIOTT, ELISE & BOB
15	WOLFSON, MICHAEL I
17	DUBOY, CLAUDIO
18	INTRIERI, ALBERT T
	PARAMOUNT MAINTENANCE INC
22	LANDAU, LEE
23	KIRK, NELSON
27	STACK, PETER W
28	MC CLUSKEY, JAS
	OCCUPANT UNKNOWNN
32	HORTON, JARED C
33	OCCUPANT UNKNOWNN
36	INAGAKI, TAKASHI
37	LENSING, JAMES R
38	ASTOLFI, EDMUND G
40	BELLUSCIO, M A
	BELLUSCIO, MICHL A
43	VERRASTRO, DANIEL
44	ANNER, JOHN L III
	ANNER, JOHN L, 3RD

Target Street	Cross Street	Source
-	✓	Cole Information

DOUBLING RD 1995

6	GONZALEZ,-BUNSTER ROLANDO
	GONZALEZ-BUNSTER, FERNANDO
	GONZALEZ-BUNSTER, ROLANDO
	GONZALEZBUNSTE, ROLANDO
	SKARKA, D
	SKARKA, DEBRA
12	JABILES, ISAAC
	JOHNSON, KRISTIN
	JOHNSON, MARSHA S
15	KAPPES, CARL H
	KAPPES, CARL HENRY
16	FABRO, ELMER
19	CATTANI, EMILIO
	CUGINI, DAVID
	DIETRICH, SCOTT
	ELLIOT, TIMOTHY V
	ESPINOSA, ISAI
	ESPINOSI, ISAI
	GREENWICH COUNTRY CLUB
	KRAMER, PAT
	LEHMBERG, VELMA
	MANN, RAJ
	MIGLIACCIO, T
	MONTOYA, HUMBERTO
	ORELLANA, SIMON
	ROBAYO, ALIRIO
	SMITH, GRAHAM
	STANLEY, JOHN J
	WHEATLEY, DAVID
25	OCCUPANT UNKNOWNN
31	AMIOT, ARTHUR L
	AMOIT, G
33	LAVINIA, ROBERT
35	BAZ, JAVIER
	BAZ, JAVIER & CHANTAL
36	OCCUPANT UNKNOWNN
39	ELKOWITZ, HOWARD C
	GARIS, ADAIR
	HAMPTON COURT ESTATE BUILDERS
	WINN, VICKI
41	HALLENBECK, GARY
	PIZZO, JAMES
42	DOMINGUEZ, JULIO C
	REIBEL, JAY
	ROBLES, ALFIRIO
44	JASSON, JORGE
47	PIZZO, JAMES V
49	HESTER, L L
	HESTER, LAWRENCE L
	SIMONSON, ROBERT

Target Street	Cross Street	Source
-	✓	Cole Information

DOUBLING RD 1995 (Cont'd)

50	LANDMAN, FRED A
51	SLOAN, A R
52	MARTIN, FREDRICK J
	OCCUPANT UNKNOWNN
53	SINGER, DAVID M
54	GREENWICH MGMT CORP
55	SINGER, A
58	COX, JOHN CHARLES
68	RYDER, SUSAN
	TIERNEY, MICHAEL
	TIERNEY, MICHAEL & SUSAN
72	FORD, MARIAH
75	KELLEY, BAYNE
76	HEATH, GORDON A T-IF NO ANSWER
	HOMS, L
80	FREEBURG, M
	FREEBURG, MICHAEL
	FREEBURG, MICHAEL & DOROTHY
81	OCCUPANT UNKNOWNN
82	DOWLING, C
	SCHINASI, G
	TODD, WILLIAM H III
	TODD, WILLIAM H, III
	TUCKER, LYNETTE
87	ALI, STEVEN
88	OCCUPANT UNKNOWNN
	STOCKER, DWIGHT
93	GLENN, LINN
	GLENN, LYNN
	HERMANN, CARINA
	HERMANN, KARL
	INTO AFRICA INC
97	LEWIS, MARTIN G
101	MIGUENS, TOMAS
103	MC GUINN, E J, JR
	MCGUINN, EDWIN JR
105	CLOONAN, EDWARD
107	MALKIN, ANTHONY
115	LEAMAN, RICHARD
	LEAMAN, RICHARD & CINDY
117	SCHUPP, CARL G
119	WRIGHT, C
	WRIGHT, CAROLINE
	WRIGHT, ERIC P
123	BRIDGE, ALFRED H
124	GAVIN, WILLIAM
	HEATH, GORDON A
	XHEMA CONSTRUCTION
125	BRAAS, ALBERIC
	SKOURAS, S & V

Target Street	Cross Street	Source
-	✓	Cole Information

DOUBLING RD 1995 (Cont'd)

125	SKOURAS, SPYROS JR
	SKOURAS, SPYROS, JR
129	MITCHELL, DUKE
131	DAVIDSON, THOMAS
132	OCCUPANT UNKNOWNN
133	BOLLING, RAY
135	MCHALE, BART
137	KHAYATT, S A
	KHAYATT, SHAKER A
139	ALBANO, NINA
141	NICASTRO, FRANCIS E
	NICASTRO, LOUIS
143	IVERSEN, ERLING F
145	TADDEO, JOE

Target Street	Cross Street	Source
✓	-	Cole Information

INDIAN ROCK LN 1995

9	CENTRAL JUNIOR HIGH SCHOOL
10	GREENWICH BAPTIST CHURCH
	GREENWICH BAPTIST CHURCH SBC
12	YOHO, THOMAS
14	MURRAY, RICHARD
	MURRAY, RICHARD & CAROLYN

Target Street	Cross Street	Source
-	✓	Cole Information

ORCHARD ST 1995

30	HOULIHAN, JOHN E
33	LENIHAN, JOHN
54	WOZNIAK, S A
56	MEEKER, MARY C
300	SCHIGG, FRANK R
302	STABILE, L
304	LUPINACCI, JOHN
306	LUPINACCI, JOHN
	STEVENSON, ROBERT
308	LAWLESS, J M
	LAWLESS, JANE M
311	YEE, J
315	SPENCER, DOROTHY
	SPENCER, GEORGE H JR
	SPENCER, GEORGE H, JR
319	ERENSEN, GEORGE
	ERENSEN, KEVIN
323	HANNA, JOHN H
1010	STEWART, M

Target Street	Cross Street	Source
-	✓	Cole Information

PONDEROSA DR 1995

2	SCOTT, STEPHEN J
	SCOTT, STEPHEN JAY
3	RUDOLPH, SUSAN A
5	LOSA, PEDRO
7	LODATO, ROSS JR
	LODATO, ROSS, JR
10	SCHEDLER, SPENCER J

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 1995

1	REGISTRAR OF VOTERS
2	POTASH, ROBERT
	PUGH, KATHRYN
	PUGH, KATHRYN & MICHAEL
6	WILLIAMS, M V V
	WILLIAMS, MARIE V
7	MCKAY, ROBERT J
	MCKAY, ROBERT J-PERSONAL TELEPHONE
8	HUBBARD, CHARLIE
9	OCCUPANT UNKNOWNN
11	GOODWIN, HEATHER
	GOODWIN, T W
	GOODWIN, TERRY W
	LEVAILLANT, ARIANE
12	LARSON, FRANK S
13	COLLINS J FRED JR
	COLLINS, JOHN F JR
	COLLINS, L
15	OLSSON, LARS
	OLSSON, LARS & LILLAN
17	KITCHEN, DONALD
19	BIDWELL, H K & C
	MOLONEY, PHILIP
	MOLONEY, PHILIP & GAIL
20	TITAN BROKERAGE INC
21	GARMANN, KETIL
22	MAC TAGGART, DOUGLAS
	MANGLANO, DAVID
	MANGLANO, DAVID & PATTY
23	NARDONE, VINCENT R
25	TINGLEY, CHARLES E
29	LOPEZ, N
	LOPEZ, NICOLASA
	NICHOLSON, NORMAN C
	P & M GLOBAL
30	JAYNE N SCHIFF
	SCHIFF, ALBERT J
	SCHIFF, JAYNE N, CLU
35	CAULFIELD, JEROME J
36	SINCLAIR, E
37	AIDINIS, RICHARD M
39	HARRIS, WILMOT L JR
	HARRIS, WILMOT L, JR
43	DERBY, M
44	OCCUPANT UNKNOWNN
45	CHAPMAN, M
49	OLANDER, OLLE
	WITTEVEEN, MARCO J
50	SCRIVEN, NIALL
51	JOHN E MEERBERGEN

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 1995 (Cont'd)

51	MEERBERGEN, JOHN E
	MEERBERGEN, JOHN E, ATTY
57	DEANGELO, S
	DEANGELO, SALVATORE
59	SUH, JOHN T
61	OCCUPANT UNKNOWNN
65	CIFFERELLI, DAVID
	WANKO, RUTH
68	PENNY, RALPH
	PENNY, RALPH & ANN
69	MEYER, KNUT
	MEYER, KNUT & DORIA
72	HURLEY, J LANCE
	HURLEY, JAMES L
80	EGGERS, S H
	EGGERS, STEVEN H
	FROST, AMANDA
95	GELFAND, B & L
	GELFAND, BRUCE
99	ANDERSON, A P
	ANDERSON, A PETER
101	BAIN, H & A
	BAIN, HEATHER
	MATON, CYNTHIA
105	DEYBER, JOHN S
107	SPIERS, CLINTON F
111	BENENSON, M J
	BENENSON, MICHAEL
113	DESMOND, ROBERT G
115	SMITH, P
	SMITH, PATRICIA
	TREIBICK, AMY
	TREIBICK, AMY & IAN
117	STROMBERG, GUNDER
119	GRAVES, MICHAEL
	GRAVES, MICHAEL & SHERRYL
127	O'CONNOR, PAUL M, JR
	OCONNOR, PAUL M JR
133	BENTLEY, KEITH M
140	WOJICK, GREGORY & PANDORA
147	MALLORY, JOSEPH S
150	DELANEY, ROBERT
	DELANEY, ROBERT & T L
	DELANEY, ROBERT & T L-CHILDREN'S TELEPHONE
151	CLARK, H W
	CLARK, HARRY W
154	RICHARDSON, JOHN E
156	REYNOLDS, WALLACE
157	OCCUPANT UNKNOWNN
159	HALL, GABRIELLE & JOHN S

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 1995 (Cont'd)

159	HALL, JOHN & GABRIELLE
160	GILBRIDE, FRANK J II
	GILBRIDE, FRANK J, II
161	WATTS, J D
	WATTS, JOE D
163	RIERA, ANTONIO
164	HUDSON, THOMAS W JR
	HUDSON, THOS W, JR
165	MASSAD, JOHN
	MASSAD, LORI
167	KERR, DONALD
	KERR, DONALD & IRENE
169	GAROFALO, ROY L
	PETTERSEN, ULF
170	BLACK, STEVEN
	STANWICH GROUP INC
171	LECKIE, R R
	LECKIE, ROBERT R
	RODGER, STEVEN
173	RABUAZZO, FRITZ
	RABUAZZO, SANDY & FRITZ
176	FERRETTI, WILLIAM J
177	MASON, RUSSELL K
178	BROADBENT, N T
	CASSERLEY, D J
	STERN, JOHAB & ANN
179	ROBINSON, BRUCE
	ROBINSON, N
180	GILBRIDE, JOHN T
184	FULLER, MILTON A JR
	FULLER, MILTON A, JR
187	ADDLEMAN, SUE
	DAUGHERTY, CHARLES
188	PURIS, BEVERLY M
190	WHITTEMORE, A
	WHITTEMORE, L F
	WHITTEMORE, LAURENCE F
196	ZIMMERMAN, EEVA
	ZIMMERMAN, WILFRED
	ZIMMERMAN, WILFRIED
197	MARTIN, LESLIE
	PAIGE, BONNIE & SCOTT
	PAIGE, SCOTT
199	MARTIN, LESLIE
200	KELLY, RICHARD & GINNA
	KELLY, RICHARD & GINNA-CHILDRENS TELEPHONE
	OCCUPANT UNKNOWNN

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 1992

3	SMERIGLIO, THOMAS
9	BROWN, TEVYE
	MENTEN, THOMAS H
11	DOMIZIANO, JOSEPH L
	NEILSEN, S
15	CARVELAS, DON
	SIELER, THOMAS
	STAGNETTA, DAVID
17	CORTESE, TONY
19	COMERFORD, KAREN
23	ALTOMARI, FRANK C
25	SIKES, WILLIAM
	WHITLOCK, MARY
27	RAIENTE, JEFFREY
	RAY, A
29	REPACI, M
	VERNON, MOLLIE
31	INFOLINE INFO
	PENDERGAST, J
33	EASTERN RIGGING CO
	EBERHEIM, L
	SANTORO, JOHN W
35	FARANO, P
	FERRARO, WILLIAM J
37	BOUNTY, EDWARD
	TOLMIE, ALEX
39	PEDWANO, JOHN
41	FLORES, RAUL
47	CAPPARELLE, P
49	LUPINACCI, ANTONIO
53	VICENTE, JUAN
55	CHIAPPETTA, PAT
57	HARDING, KEVIN
61	LIBRANDI, FRANK J
67	LIBRANDI, JOSEPH S
69	MARULLO, JERRY
73	DELFINO, FREDK M JR
	KAY, AGNES
75	MIYASAKA, KENICHI
	WAGNER, DAVID
79	FERRARO, GARY
	PROTANO, C J
81	CHILA, JOHN
87	CHRISTIANO, VITO
89	AGOSTINO, ROCCO
	FAIRFIELD CNTY BLDR
95	PISANO, BEN
99	ZYGMONT, S
182	FERTIG, ROBERT T
184	PIERCE, ROGER S

Target Street	Cross Street	Source
-	✓	Cole Information

BIBLE ST 1992 (Cont'd)

188 GREENWALD A ARCHT
GREENWALD, AUDREY
190 STROPE, F
191 ZICARELLI, LARRY
192 MORITA, NATASHA
194 RIGANO, FRANK
196 TRILNICK, MANUEL
199 ALAMPI, D
206 FERRIS, PAOLA T
210 JOYET, ALAIN
211 CRAMER, WILLEM
212 PAYTON, LINCOLN
215 DONCHAK, ANDREW
221 MUNROW, HAROLD
292 MASI, CHARLES A
312 FITZSIMONS, BRUNA
412 CAMESELLE, CARLOS
532 AVERY, THOMAS
534 OZAWA, NAOKI
49204 OREILLY, KEVIN

Target Street	Cross Street	Source
-	✓	Cole Information

COACHLAMP LN 1992

1	OSULLIVAN, PAUL J
6	SCHROEDER, EDWARD H
7	FOGWELL, BRUCE P
	LENSING, JAMES R
9	TORMEY, JAMES
12	ELLIOTT, BOB
15	WOLFSON, MICHAEL I
17	NAGAHORI, SHINOBU
18	INTRIERI, ALBERT T
	PARAMOUNT MTCE SVCE
22	STRAUBER, HOWARD
23	KIRK, NELSON
27	STACK, PETER W
28	MCCLUSKEY, JAMES
36	INAGAKI, TAKASHI
37	LENSING, JAMES H
38	ASTOLFI, EDMUND G
40	BELLUSCIO, MICHAEL A
43	VERRASTRO, DANIEL
44	ANNER, JOHN L III

Target Street	Cross Street	Source
-	✓	Cole Information

DOUBLING RD 1992

1	LANDRY, MIKE
12	BENEDICT, TOM
	SOUSA, SHARON
15	KAPPES, CARL H
19	MEDINA, MARIO
27	MARTIN, PETER
	REDDAN, JOHN P
31	AMIOT, ARTHUR L
33	LAVINIA, ROBERT
39	ELKOWITZ, HOWARD C
	GARIS, ADAIR
	HAMPTON ESTATE BLDR
40	BIGLER, EDWARD M
41	HALLENBECK, GARY
42	REIBEL, JAY
44	FORRISTER, AMY
	SAUNDERS, DAVID
45	DIAMOND, WILLIAM
	SULLIVAN, ANDREA
50	LANDMAN, FRED A
51	SLOAN, A R
52	MARTIN, FREDDIE
53	SINGER, DAVID M
54	GREENWICH FIBER
68	MODEEN, PETER
76	SCLAFANI, LINDA
80	FREEBURG, MICHAEL
81	BURNS, JOHN L
82	DOWLING, C
	SCHINASI, G
	TODD, WILLIAM H III
	TUCKER, LYNETTE
87	GILLIS, LYNDEN
88	STOCKER, DWIGHT
93	GLENN, LYNN
	INTO AFRICA INC
97	TORINO, MARTIN
101	PARRIS, THOMAS B
103	MCGUINN, EDWIN JR
107	BEEKMAN, PETER D
117	SCHUPP, CARL G
119	MARTIN, PETER J
123	BRIDGE, ALFRED H
124	HEATH GORDON A T
	HEATH, GORDON A
	HOMS, L
125	SKOURAS, SPYROS JR
129	GINSBERG, HOWARD
	MITCHELL, DUKE
133	BOLLING, RAY

Target Street	Cross Street	Source
-	✓	Cole Information

DOUBLING RD 1992 (Cont'd)

137	KHAYATT, SHAKER A
145	TADDEO, JOE
195	ROBAYO, ALIRIO
4212	TSAKERES, PAUL
9300	HERMANN, CARINA

Target Street	Cross Street	Source
✓	-	Cole Information

INDIAN ROCK LN 1992

10	BROWN, BOB
	GIBSON ST CLAMSON
	GIBSON, ST C
	GREENWICH BAPT CHUR
12	YOHO, THOMAS
14	MURRAY, RICHARD

Target Street	Cross Street	Source
-	✓	Cole Information

ORCHARD ST 1992

83	VITALE, CHARLES
300	SCHIGG, FRANK R
304	LUPINACCI, JOHN
	MCCULLAGH, LEO
306	DUSENBERRY, HELEN
	STEVENSON, ROBERT
308	LAWLESS, JANE M
311	YEE, J
315	SPENCER, GEORGE H JR
319	ERENSEN, GEORGE
323	HANNA, JOHN H
1010	STEWART, M

Target Street	Cross Street	Source
-	✓	Cole Information

PONDEROSA DR 1992

2	SCOTT, STEPHEN J
3	WARSHAUER, ROBERT
5	LOSA, PEDRO
10	EUBANKS, RICHARD

Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 1992

2	POTASH, ROBERT
6	WILLIAMS, MARIE V
7	MCKAY, ROBERT J
8	HUBBARD, CHARLIE
9	GHIROSE, PETER W
11	GOODWIN, T W
	LEVAILLANT, ARIANE
12	LARSON, FRANK S
13	COLLINS, JOHN F JR
15	OLSSON, LARS
17	KITCHEN, DONALD R
19	BIDWELL, H K
	TITAN BROKERAGE INC
21	GARMANN, KETIL
22	PEABODY, ANDY
	SWEENEY, MARK
23	NARDONE, VINCENT R
29	LOPEZ, N
	NICHOLSON, NORMAN C
30	SCHIFF, ALBERT J
37	AIDINIS, RICHARD M
39	HARRIS, WILMOT L JR
50	SCRIVEN, NIALL
51	MEERBERGEN J E ATTY
	MEERBERGEN, JOHN E
57	DEANGELO, S
59	SUH, JOHN T
61	HARDVALL, LEE A
65	WANKO, GLADYS
68	PENNY, RALPH
69	MEYER, KNUT
72	HURLEY, JAMES L
80	EGGERS, STEVEN H
101	DEMARKEY, WILLIAM JR
105	DEYBER, JOHN S
107	SPIERS, CLINTON F
111	BENENSON, MICHAEL
113	DESMOND, ROBERT G
115	LEWIS, MARTIN G
119	GRAVES, MICHAEL
127	OCONNOR, PAUL M JR
133	BENTLEY, KEITH M
147	MALLORY, JOSEPH S
150	DELANEY, ROBERT
151	CLARK, HARRY W
154	RICHARDSON, JOHN E
156	COOK, WILLIAM E
160	GILBRIDE FRANK J 2
	GILBRIDE, FRANK J II
161	WATTS, JOE D

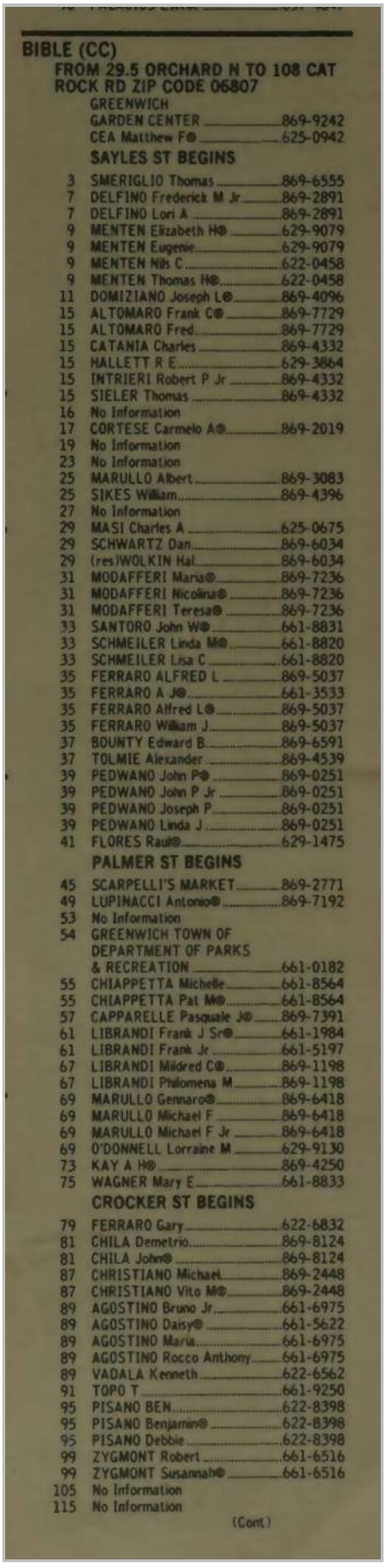
Target Street	Cross Street	Source
-	✓	Cole Information

STANWICH RD 1992 (Cont'd)

163	RIERA, ANTONIO
164	HUDSON, THOMAS W JR
165	MARTIN, MICHAEL
169	GAROFALO, ROY L
	PETTERSEN, ULF
170	ESCALER, MICHAEL
171	DEITCH, DAVID
	DESLAURIERS, CHARLES
173	AUTY, JAMES D
176	FERRETTI, WILLIAM J
177	MASON, RUSSELL K
178	BROADBENT, N T
	CASSERLEY, D J
179	ROBINSON, BRUCE
180	GILBRIDE, JOHN T
184	FULLER, MILTON A JR
187	DAUGHERTY, CHARLES
	WOOD, MARK
188	OHARA, JOHN
190	WHITTEMORE, L F
196	ZIMMERMAN, WILFRED
197	MARTIN, LESLIE
206	CLEAN WELL CO
	DARRAH, H D

Target Street	Cross Street	Source
-	✓	Johnson's City Directory

BIBLE ST 1988



BIBLE (CC)
FROM 29.5 ORCHARD N TO 108 CAT ROCK RD ZIP CODE 06807
GREENWICH
GARDEN CENTER 869-9242
CEA Matthew F® 625-0942

SAYLES ST BEGINS

3 SMERIGLIO Thomas 869-6555
7 DELFINO Frederick M Jr 869-2891
7 DELFINO Lori A 869-2891
9 MENTEN Elizabeth H® 629-9079
9 MENTEN Eugenie 629-9079
9 MENTEN Nils C 622-0458
9 MENTEN Thomas H® 622-0458
11 DOMIZIANO Joseph L® 869-4096
15 ALTOMARO Frank C® 869-7729
15 ALTOMARO Fred 869-7729
15 CATANIA Charles 869-4332
15 HALLETT R E 629-3864
15 INTRIERI Robert P Jr 869-4332
15 SIELER Thomas 869-4332
16 No Information
17 CORTESE Carmelo A® 869-2019
19 No Information
23 No Information
25 MARULLO Albert 869-3083
25 SIKES William 869-4396
27 No Information
29 MASI Charles A 625-0675
29 SCHWARTZ Dan 869-6034
29 (res)WOLKIN Hal 869-6034
31 MODAFFERI Maria® 869-7236
31 MODAFFERI Nicolina® 869-7236
31 MODAFFERI Teresa® 869-7236
33 SANTORO John W® 661-8831
33 SCHMEILER Linda M® 661-8820
33 SCHMEILER Lisa C 661-8820
35 FERRARO ALFRED L 869-5037
35 FERRARO A J® 661-3533
35 FERRARO Alfred L® 869-5037
35 FERRARO William J 869-5037
37 BOUNTY Edward B 869-6591
37 TOLMIE Alexander 869-4539
39 PEDWANO John P® 869-0251
39 PEDWANO John P Jr 869-0251
39 PEDWANO Joseph P 869-0251
39 PEDWANO Linda J 869-0251
41 FLORES Raul® 629-1475

PALMER ST BEGINS

45 SCARPELLI'S MARKET 869-2771
49 LUPINACCI Antonio® 869-7192
53 No Information
54 GREENWICH TOWN OF
DEPARTMENT OF PARKS
& RECREATION 661-0182
55 CHIAPPETTA Michelle 661-8564
55 CHIAPPETTA Pat M® 661-8564
57 CAPPARELLE Pasquale J® 869-7391
61 LIBRANDI Frank J Sr® 661-1984
61 LIBRANDI Frank Jr 661-5197
67 LIBRANDI Mildred C® 869-1198
67 LIBRANDI Philomena M 869-1198
69 MARULLO Gennaro® 869-6418
69 MARULLO Michael F 869-6418
69 MARULLO Michael F Jr 869-6418
69 O'DONNELL Lorraine M 629-9130
73 KAY A H® 869-4250
75 WAGNER Mary E 661-8833

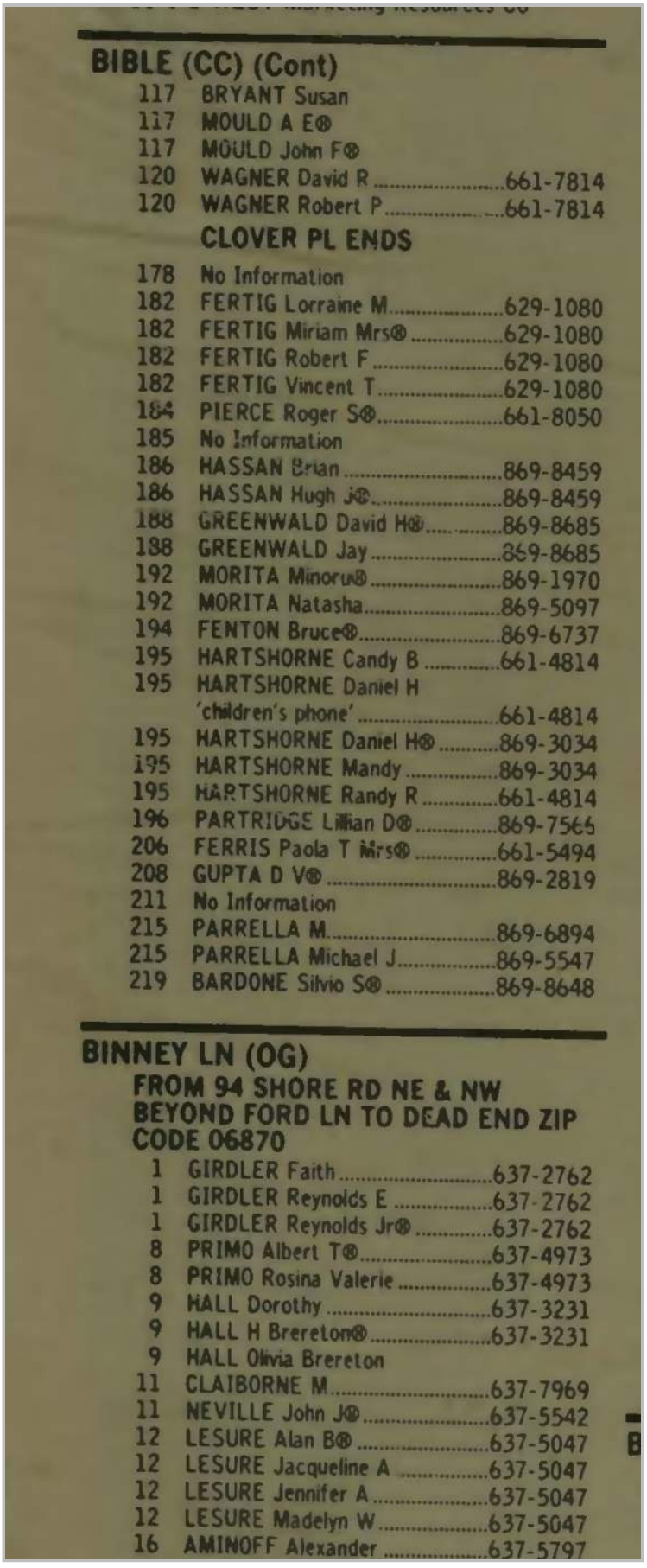
CROCKER ST BEGINS

79 FERRARO Gary 622-6832
81 CHILA Demetrio 869-8124
81 CHILA John® 869-8124
87 CHRISTIANO Michael 869-2448
87 CHRISTIANO Vito M® 869-2448
89 AGOSTINO Bruno Jr 661-6975
89 AGOSTINO Daisy® 661-5622
89 AGOSTINO Maria 661-6975
89 AGOSTINO Rocco Anthony 661-6975
89 VADALA Kenneth 622-6562
91 TOPO T 661-9250
95 PISANO BEN 622-8398
95 PISANO Benjamin® 622-8398
95 PISANO Debbie 622-8398
99 ZYGMONT Robert 661-6516
99 ZYGMONT Susannah® 661-6516
105 No Information
115 No Information

(Cont.)

Target Street	Cross Street	Source
-	✓	Johnson's City Directory

BIBLE ST 1988



BIBLE (CC) (Cont)

117 BRYANT Susan
117 MOULD A E®
117 MOULD John F®
120 WAGNER David R 661-7814
120 WAGNER Robert P 661-7814

CLOVER PL ENDS

178 No Information
182 FERTIG Lorraine M 629-1080
182 FERTIG Miriam Mrs® 629-1080
182 FERTIG Robert F 629-1080
182 FERTIG Vincent T 629-1080
184 PIERCE Roger S® 661-8050
185 No Information
186 HASSAN Brian 869-8459
186 HASSAN Hugh J® 869-8459
188 GREENWALD David H® 869-8685
188 GREENWALD Jay 869-8685
192 MORITA Minoru® 869-1970
192 MORITA Natasha 869-5097
194 FENTON Bruce® 869-6737
195 HARTSHORNE Candy B 661-4814
195 HARTSHORNE Daniel H
'children's phone' 661-4814
195 HARTSHORNE Daniel H® 869-3034
195 HARTSHORNE Mandy 869-3034
195 HARTSHORNE Randy R 661-4814
196 PARTRIDGE Lillian D® 869-7565
206 FERRIS Paola T Mrs® 661-5494
208 GUPTA D V® 869-2819
211 No Information
215 PARRELLA M 869-6894
215 PARRELLA Michael J 869-5547
219 BARDONE Silvio S® 869-8648

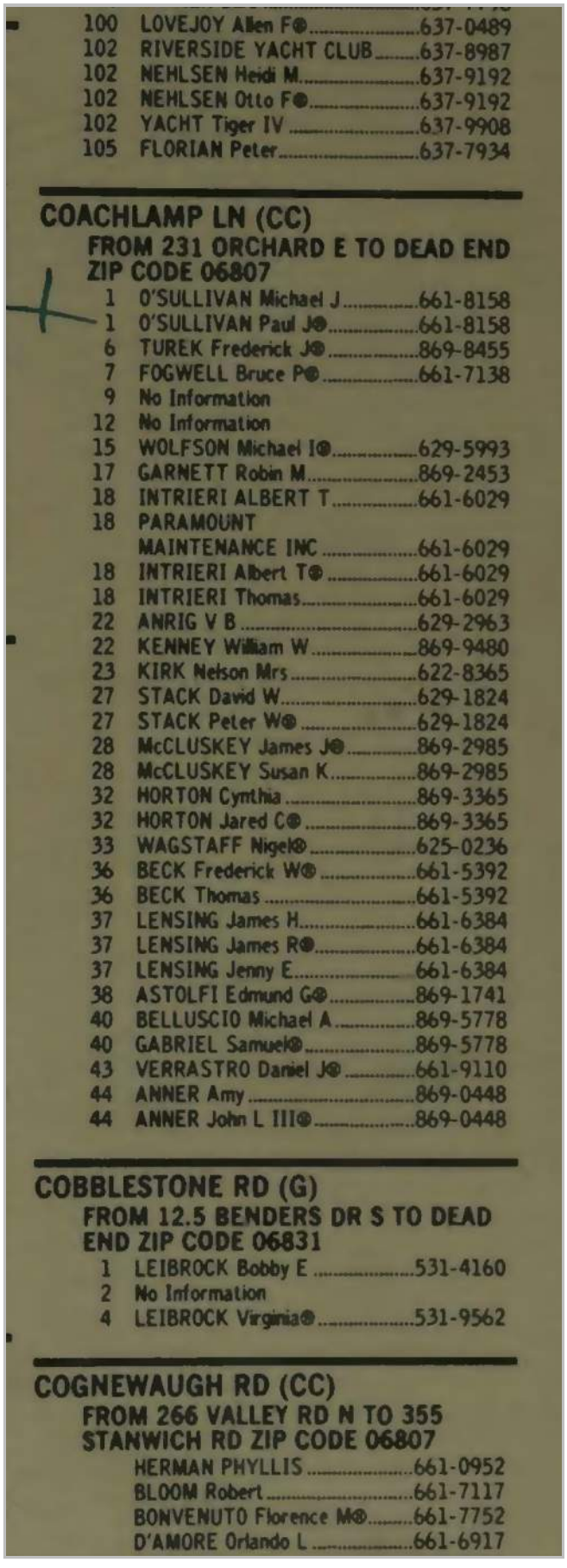
BINNEY LN (OG)

FROM 94 SHORE RD NE & NW BEYOND FORD LN TO DEAD END ZIP CODE 06870

1 GIRDLER Faith 637-2762
1 GIRDLER Reynolds E 637-2762
1 GIRDLER Reynolds Jr® 637-2762
8 PRIMO Albert T® 637-4973
8 PRIMO Rosina Valerie 637-4973
9 HALL Dorothy 637-3231
9 HALL H Brereton® 637-3231
9 HALL Olivia Brereton
11 CLAIBORNE M 637-7969
11 NEVILLE John J® 637-5542
12 LESURE Alan B® 637-5047
12 LESURE Jacqueline A 637-5047
12 LESURE Jennifer A 637-5047
12 LESURE Madelyn W 637-5047
16 AMINOFF Alexander 637-5797

Target Street	Cross Street	Source
-	✓	Johnson's City Directory

COACHLAMP LN 1988



100 LOVEJOY Allen F®.....637-0489
102 RIVERSIDE YACHT CLUB.....637-8987
102 NEHLSEN Heidi M.....637-9192
102 NEHLSEN Otto F®.....637-9192
102 YACHT Tiger IV.....637-9908
105 FLORIAN Peter.....637-7934

COACHLAMP LN (CC)

FROM 231 ORCHARD E TO DEAD END
ZIP CODE 06807

1 O'SULLIVAN Michael J.....661-8158
1 O'SULLIVAN Paul J®.....661-8158
6 TUREK Frederick J®.....869-8455
7 FOGWELL Bruce P®.....661-7138
9 No Information
12 No Information
15 WOLFSON Michael I®.....629-5993
17 GARNETT Robin M.....869-2453
18 INTRIERI ALBERT T.....661-6029
18 PARAMOUNT
MAINTENANCE INC.....661-6029
18 INTRIERI Albert T®.....661-6029
18 INTRIERI Thomas.....661-6029
22 ANRIG V B.....629-2963
22 KENNEY William W.....869-9480
23 KIRK Nelson Mrs.....622-8365
27 STACK David W.....629-1824
27 STACK Peter W®.....629-1824
28 McCLUSKEY James J®.....869-2985
28 McCLUSKEY Susan K.....869-2985
32 HORTON Cynthia.....869-3365
32 HORTON Jared C®.....869-3365
33 WAGSTAFF Nigel®.....625-0236
36 BECK Frederick W®.....661-5392
36 BECK Thomas.....661-5392
37 LENSING James H.....661-6384
37 LENSING James R®.....661-6384
37 LENSING Jenny E.....661-6384
38 ASTOLFI Edmund G®.....869-1741
40 BELLUSCIO Michael A.....869-5778
40 GABRIEL Samuel®.....869-5778
43 VERRASTRO Daniel J®.....661-9110
44 ANNER Amy.....869-0448
44 ANNER John L III®.....869-0448

COBBLESTONE RD (G)

FROM 12.5 BENDERS DR S TO DEAD
END ZIP CODE 06831

1 LEIBROCK Bobby E.....531-4160
2 No Information
4 LEIBROCK Virginia®.....531-9562

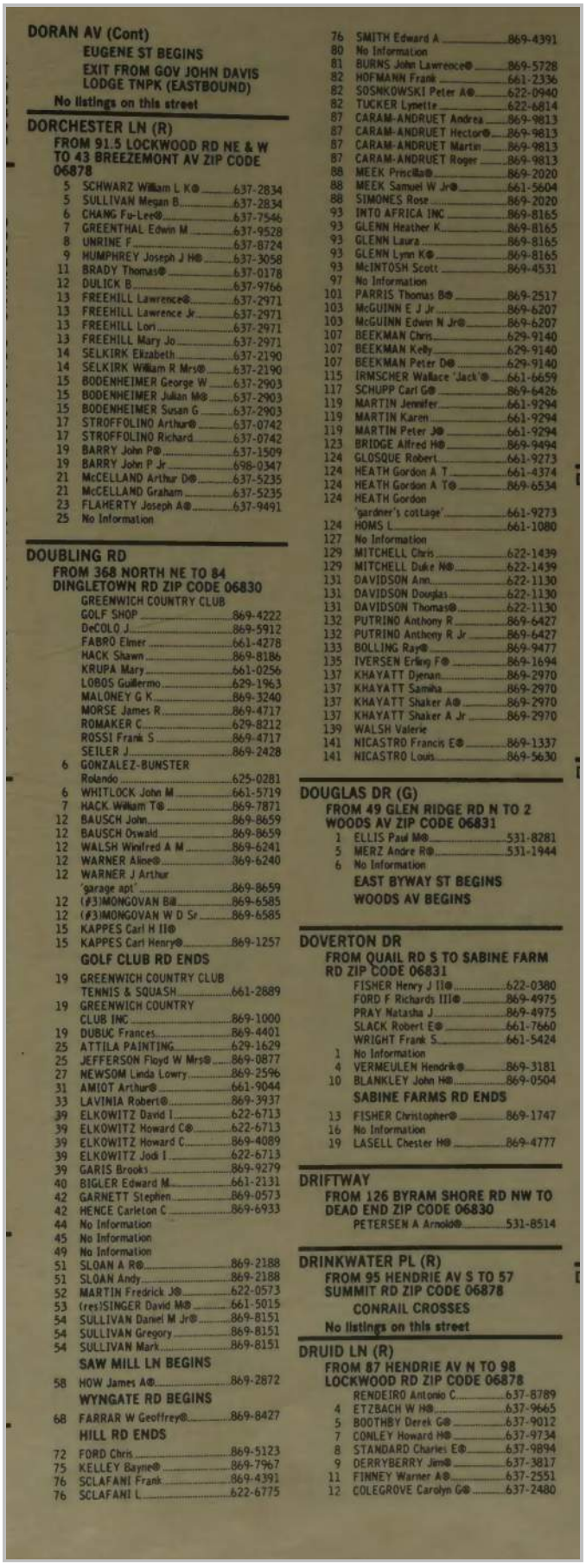
COGNEWAUGH RD (CC)

FROM 266 VALLEY RD N TO 355
STANWICH RD ZIP CODE 06807

HERMAN PHYLLIS.....661-0952
BLOOM Robert.....661-7117
BONVENUTO Florence M®.....661-7752
D'AMORE Orlando L.....661-6917

Target Street	Cross Street	Source
-	✓	Johnson's City Directory

DOUBLING RD 1988



DORAN AV (Cont)

EUGENE ST BEGINS

EXIT FROM GOV JOHN DAVIS LODGE TNPK (EASTBOUND)

No listings on this street

DORCHESTER LN (R)

FROM 91.5 LOCKWOOD RD NE & W TO 43 BREEZEMONT AV ZIP CODE 06878

5 SCHWARZ William L K® 637-2834
5 SULLIVAN Megan B 637-2834
6 CHANG Fu-Lee® 637-7546
7 GREENTHAL Edwin M 637-9528
8 UNRINE F 637-8724
9 HUMPHREY Joseph J H® 637-3058
11 BRADY Thomas® 637-0178
12 DULICK B 637-9766
13 FREEHILL Lawrence® 637-2971
13 FREEHILL Lawrence Jr 637-2971
13 FREEHILL Lori 637-2971
13 FREEHILL Mary Jo 637-2971
14 SELKIRK Elizabeth 637-2190
14 SELKIRK William R Mrs® 637-2190
15 BODENHEIMER George W 637-2903
15 BODENHEIMER Julian M® 637-2903
15 BODENHEIMER Susan G 637-2903
17 STROFFOLINO Arthur® 637-0742
17 STROFFOLINO Richard 637-0742
19 BARRY John P® 637-1509
19 BARRY John P Jr 698-0347
21 McCELLAND Arthur D® 637-5235
21 McCELLAND Graham 637-5235
23 FLAHERTY Joseph A® 637-9491
25 No Information

DOUBLING RD

FROM 368 NORTH NE TO 84 DINGLETOWN RD ZIP CODE 06830

GREENWICH COUNTRY CLUB
GOLF SHOP 869-4222
DeCOLO J 869-5912
FABRO Elmer 661-4278
HACK Shawn 869-8186
KRUPA Mary 661-0256
LOBOS Guillermo 629-1963
MALONEY G K 869-3240
MORSE James R 869-4717
ROMAKER C 629-8212
ROSSI Frank S 869-4717
SEILER J 869-2428
6 GONZALEZ-BUNSTER Rolando 625-0281
6 WHITLOCK John M 661-5719
7 HACK William T® 869-7871
12 BAUSCH John 869-8659
12 BAUSCH Oswald 869-8659
12 WALSH Winifred A M 869-6241
12 WARNER Aline® 869-6240
12 WARNER J Arthur 'garage apt' 869-8659
12 (#3)MONGOVAN Bill 869-6585
12 (#3)MONGOVAN W D Sr 869-6585
15 KAPPES Carl H II®
15 KAPPES Carl Henry® 869-1257

GOLF CLUB RD ENDS

19 GREENWICH COUNTRY CLUB TENNIS & SQUASH 661-2889
19 GREENWICH COUNTRY CLUB INC 869-1000
19 DUBUC Frances 869-4401
25 ATTILA PAINTING 629-1629
25 JEFFERSON Floyd W Mrs® 869-0877
27 NEWSOM Linda Lowry 869-2596
31 AMIOT Arthur® 661-9044
33 LAVINIA Robert® 869-3937
39 ELKOWITZ David I 622-6713
39 ELKOWITZ Howard C® 622-6713
39 ELKOWITZ Howard C 869-4089
39 ELKOWITZ Jodi I 622-6713
39 GARIS Brooks 869-9279
40 BIGLER Edward M 661-2131
42 GARNETT Stephen 869-0573
42 HENCE Carleton C 869-6933
44 No Information
45 No Information
49 No Information
51 SLOAN A R® 869-2188
51 SLOAN Andy 869-2188
52 MARTIN Fredrick J® 622-0573
53 (res)SINGER David M® 661-5015
54 SULLIVAN Daniel M Jr® 869-8151
54 SULLIVAN Gregory 869-8151
54 SULLIVAN Mark 869-8151

SAW MILL LN BEGINS

58 HOW James A® 869-2872

WYNGATE RD BEGINS

68 FARRAR W Geoffrey® 869-8427

HILL RD ENDS

72 FORD Chris 869-5123
75 KELLEY Bayne® 869-7967
76 SCLAFANI Frank 869-4391
76 SCLAFANI L 622-6775
76 SMITH Edward A 869-4391
80 No Information
81 BURNS John Lawreoce® 869-5728
82 HOFMANN Frank 661-2336
82 SOSNKOWSKI Peter A® 622-0940
82 TUCKER Lynette 622-6814
87 CARAM-ANDRUET Andrea 869-9813
87 CARAM-ANDRUET Hector® 869-9813
87 CARAM-ANDRUET Martin 869-9813
87 CARAM-ANDRUET Roger 869-9813
88 MEEK Priscilla® 869-2020
88 MEEK Samuel W Jr® 661-5604
88 SIMONES Rose 869-2020
93 INTO AFRICA INC 869-8165
93 GLENN Heather K 869-8165
93 GLENN Laura 869-8165
93 GLENN Lynn K® 869-8165
93 McINTOSH Scott 869-4531
97 No Information
101 PARRIS Thomas B® 869-2517
103 McGUINN E J Jr 869-6207
103 McGUINN Edwin N Jr® 869-6207
107 BEEKMAN Chris 629-9140
107 BEEKMAN Kelly 629-9140
107 BEEKMAN Peter D® 629-9140
115 IRMSCHER Wallace 'Jack'® 661-6659
117 SCHUPP Carl G® 869-6426
119 MARTIN Jennifer 661-9294
119 MARTIN Karen 661-9294
119 MARTIN Peter J® 661-9294
123 BRIDGE Alfred H® 869-9494
124 GLOSQUE Robert 661-9273
124 HEATH Gordon A T 661-4374
124 HEATH Gordon A T® 869-6534
124 HEATH Gordon 'gardner's cotLage' 661-9273
124 HOMS L 661-1080
127 No Information
129 MITCHELL Chris 622-1439
129 MITCHELL Duke N® 622-1439
131 DAVIDSON Ann 622-1130
131 DAVIDSON Douglas 622-1130
131 DAVIDSON Thomas® 622-1130
132 PUTRINO Anthony R 869-6427
132 PUTRINO Anthony R Jr 869-6427
133 BOLLING Ray® 869-9477
135 IVERSEN Erling F® 869-1694
137 KHAYATT Djenan 869-2970
137 KHAYATT Samiha 869-2970
137 KHAYATT Shaker A® 869-2970
137 KHAYATT Shaker A Jr 869-2970
139 WALSH Valerie
141 NICASTRO Francis E® 869-1337
141 NICASTRO Louis 869-5630

DOUGLAS DR (G)

FROM 49 GLEN RIDGE RD N TO 2 WOODS AV ZIP CODE 06831

1 ELLIS Paul M® 531-8281
5 MERZ Andre R® 531-1944
6 No Information

EAST BYWAY ST BEGINS

WOODS AV BEGINS

DOVERTON DR

FROM QUAIL RD S TO SABINE FARM RD ZIP CODE 06831

FISHER Henry J II® 622-0380
FORD F Richards III® 869-4975
PRAY Natasha J 869-4975
SLACK Robert E® 661-7660
WRIGHT Frank S 661-5424
1 No Information
4 VERMEULEN Hendrik® 869-3181
10 BLANKLEY John H® 869-0504

SABINE FARMS RD ENDS

13 FISHER Christopher® 869-1747
16 No Information
19 LASELL Chester H® 869-4777

DRIFTWAY

FROM 126 BYRAM SHORE RD NW TO DEAD END ZIP CODE 06830

PETERSEN A Arnold® 531-8514

DRINKWATER PL (R)

FROM 95 HENDRIE AV S TO 57 SUMMIT RD ZIP CODE 06878

CONRAIL CROSSES

No listings on this street

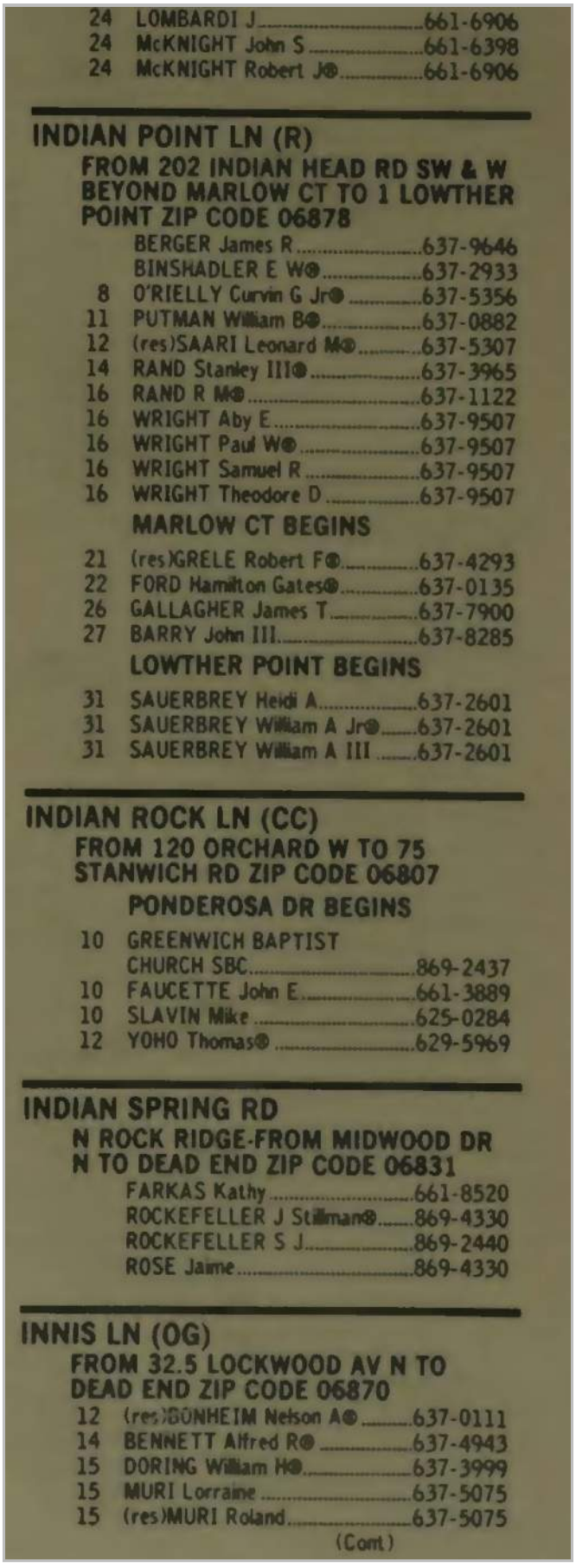
DRUID LN (R)

FROM 87 HENDRIE AV N TO 98 LOCKWOOD RD ZIP CODE 06878

RENDEIRO Antonio C 637-8789
4 ETZBACH W H® 637-9665
5 BOOTHBY Derek G® 637-9012
7 CONLEY Howard H® 637-9734
8 STANDARD Charles E® 637-9894
9 DERRYBERRY Jim® 637-3817
11 FINNEY Warner A® 637-2551
12 COLEGROVE Carolyn G® 637-2480

Target Street	Cross Street	Source
✓	-	Johnson's City Directory

INDIAN ROCK LN 1988



24 LOMBARDI J 661-6906
24 McKNIGHT John S 661-6398
24 McKNIGHT Robert J® 661-6906

INDIAN POINT LN (R)

FROM 202 INDIAN HEAD RD SW & W BEYOND MARLOW CT TO 1 LOWTHER POINT ZIP CODE 06878

BERGER James R 637-9646
BINSHADLER E W® 637-2933
8 O'RIELLY Curvin G Jr® 637-5356
11 PUTMAN William B® 637-0882
12 (res)SAARI Leonard M® 637-5307
14 RAND Stanley III® 637-3965
16 RAND R M® 637-1122
16 WRIGHT Aby E 637-9507
16 WRIGHT Paul W® 637-9507
16 WRIGHT Samuel R 637-9507
16 WRIGHT Theodore D 637-9507

MARLOW CT BEGINS

21 (res)GRELE Robert F® 637-4293
22 FORD Hamilton Gates® 637-0135
26 GALLAGHER James T 637-7900
27 BARRY John III 637-8285

LOWTHER POINT BEGINS

31 SAUERBREY Heidi A 637-2601
31 SAUERBREY William A Jr® 637-2601
31 SAUERBREY William A III 637-2601

INDIAN ROCK LN (CC)

FROM 120 ORCHARD W TO 75 STANWICH RD ZIP CODE 06807

PONDEROSA DR BEGINS

10 GREENWICH BAPTIST CHURCH SBC 869-2437
10 FAUCETTE John E 661-3889
10 SLAVIN Mike 625-0284
12 YOHO Thomas® 629-5969

INDIAN SPRING RD

N ROCK RIDGE-FROM MIDWOOD DR N TO DEAD END ZIP CODE 06831

FARKAS Kathy 661-8520
ROCKEFELLER J Stillman® 869-4330
ROCKEFELLER S J 869-2440
ROSE Jaime 869-4330

INNIS LN (OG)

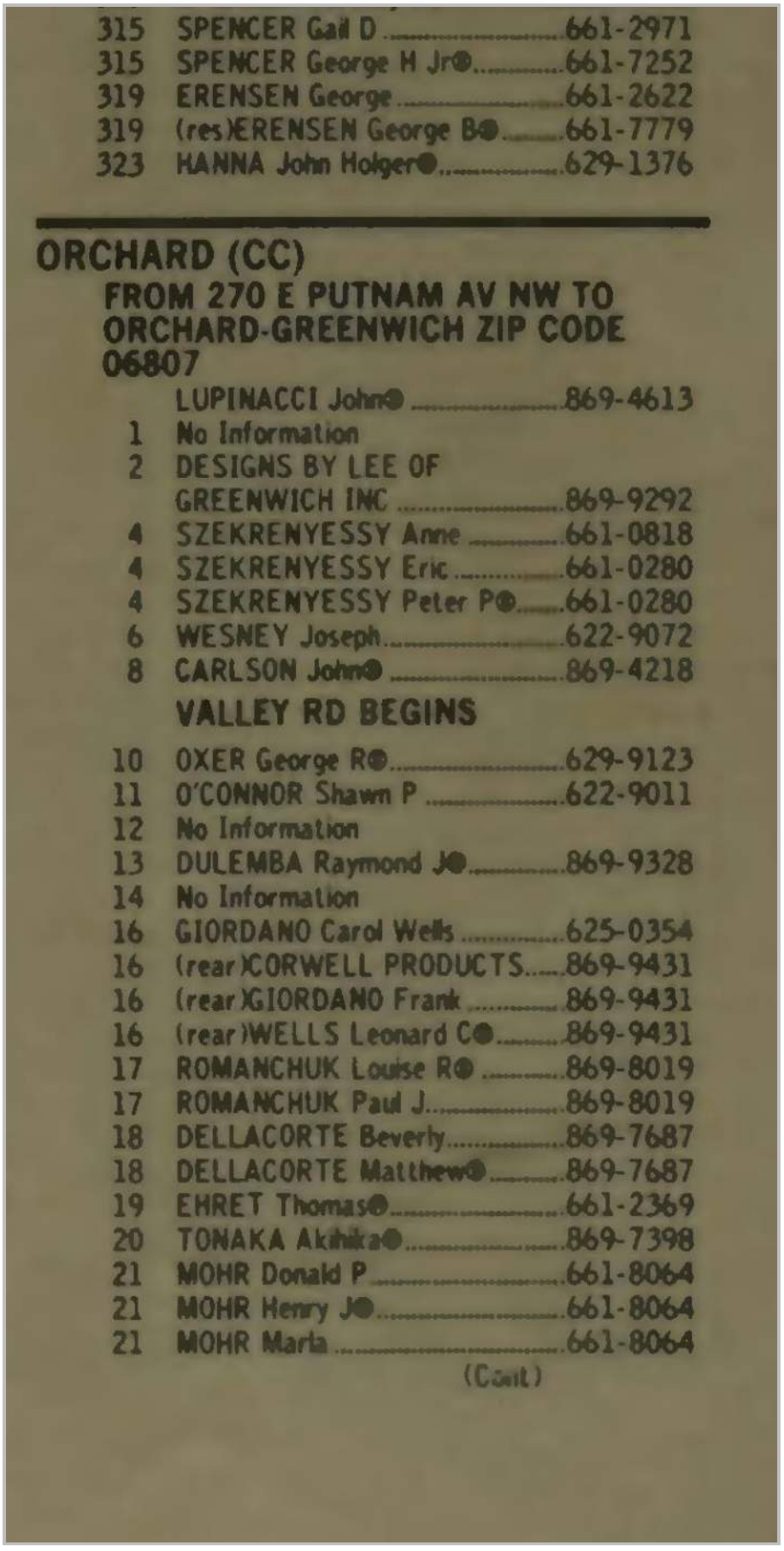
FROM 32.5 LOCKWOOD AV N TO DEAD END ZIP CODE 06870

12 (res)GUNHEIM Nelson A® 637-0111
14 BENNETT Alfred R® 637-4943
15 DORING William H® 637-3999
15 MURI Lorraine 637-5075
15 (res)MURI Roland 637-5075

(Cont)

Target Street	Cross Street	Source
-	✓	Johnson's City Directory

ORCHARD ST 1988



315 SPENCER Gail D 661-2971
315 SPENCER George H Jr● 661-7252
319 ERENSEN George 661-2622
319 (res)ERENSEN George B● 661-7779
323 HANNA John Holger● 629-1376

ORCHARD (CC)

FROM 270 E PUTNAM AV NW TO ORCHARD-GREENWICH ZIP CODE 06807

LUPINACCI John● 869-4613
1 No Information
2 DESIGNS BY LEE OF GREENWICH INC 869-9292
4 SZEKRENYESSY Anne 661-0818
4 SZEKRENYESSY Eric 661-0280
4 SZEKRENYESSY Peter P● 661-0280
6 WESNEY Joseph 622-9072
8 CARLSON John● 869-4218

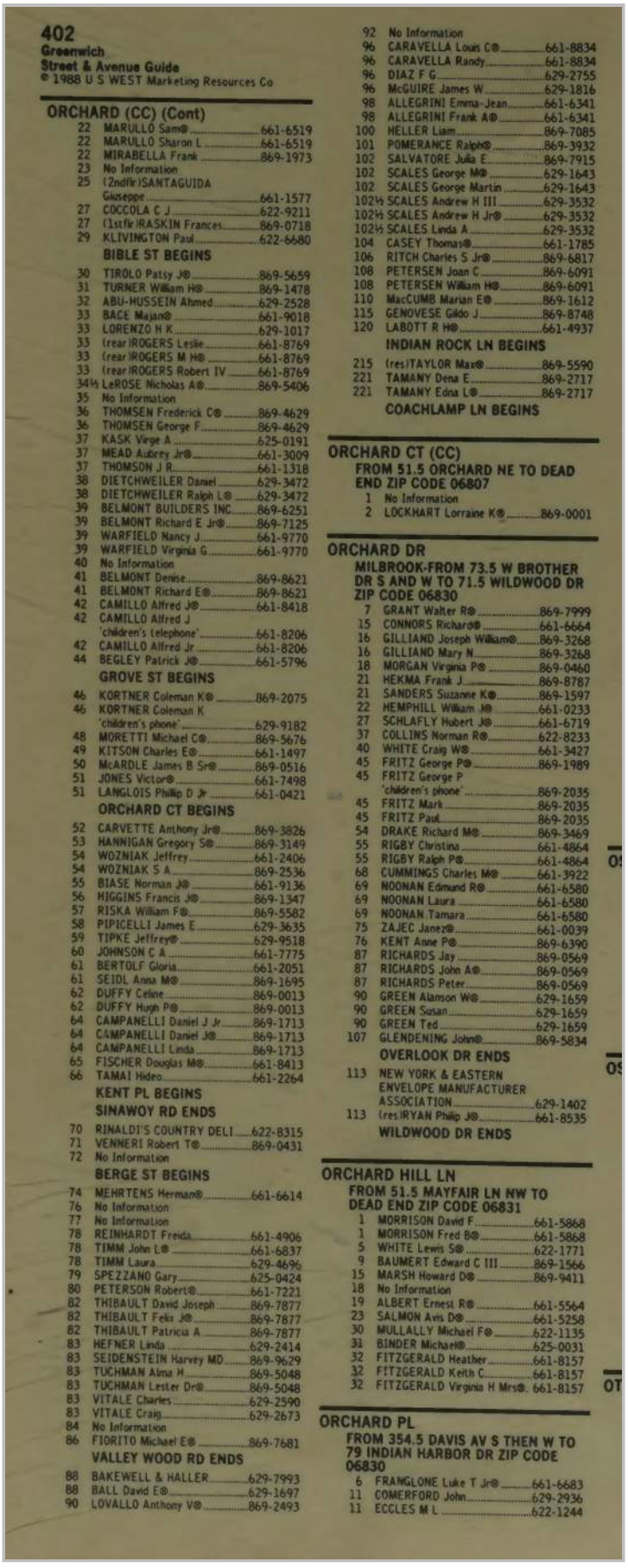
VALLEY RD BEGINS

10 OXER George R● 629-9123
11 O'CONNOR Shawn P 622-9011
12 No Information
13 DULEMBA Raymond J● 869-9328
14 No Information
16 GIORDANO Carol Wells 625-0354
16 (rear)CORWELL PRODUCTS 869-9431
16 (rear)GIORDANO Frank 869-9431
16 (rear)WELLS Leonard C● 869-9431
17 ROMANCHUK Louise R● 869-8019
17 ROMANCHUK Paul J 869-8019
18 DELLACORTE Beverly 869-7687
18 DELLACORTE Matthew● 869-7687
19 EHRET Thomas● 661-2369
20 TONAKA Akihika● 869-7398
21 MOHR Donald P 661-8064
21 MOHR Henry J● 661-8064
21 MOHR Marla 661-8064

(Cont)

Target Street	Cross Street	Source
-	✓	Johnson's City Directory

ORCHARD ST 1988



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Greenwich
Street & Avenue Guide
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ORCHARD (CC) (Cont)

22 MARULLO Sam® 661-6519
22 MARULLO Sharon L 661-6519
22 MIRABELLA Frank 869-1973
23 No Information
25 (2ndflr)SANTAGUIDA Giuseppe 661-1577
27 COCCOLA C J 622-9211
27 (1stflr)RASKIN Frances 869-0718
29 KLIVINGTON Paul 622-6680

BIBLE ST BEGINS

30 TIROLO Patsy J® 869-5659
31 TURNER William H® 869-1478
32 ABU-HUSSEIN Ahmed 629-2528
33 BACE Majan® 661-9018
33 LORENZO H K 629-1017
33 (rear)ROGERS Leslie 661-8769
33 (rear)ROGERS M H® 661-8769
33 (rear)ROGERS Robert IV 661-8769
34½ LeROSE Nicholas A® 869-5406
35 No Information
36 THOMSEN Frederick C® 869-4629
36 THOMSEN George F 869-4629
37 KASK Virge A 625-0191
37 MEAD Aubrey Jr® 661-3009
37 THOMSON J R 661-1318
38 DIETCHWEILER Daniel 629-3472
38 DIETCHWEILER Ralph L® 629-3472
39 BELMONT BUILDERS INC 869-6251
39 BELMONT Richard E Jr® 869-7125
39 WARFIELD Nancy J 661-9770
39 WARFIELD Virginia G 661-9770
40 No Information
41 BELMONT Denise 869-8621
41 BELMONT Richard E® 869-8621
42 CAMILLO Alfred J® 661-8418
42 CAMILLO Alfred J 'children's telephone' 661-8206
42 CAMILLO Alfred Jr 661-8206
44 BEGLEY Patrick J® 661-5796

GROVE ST BEGINS

46 KORTNER Coleman K® 869-2075
46 KORTNER Coleman K 'children's phone' 629-9182
48 MORETTI Michael C® 869-5676
49 KITSON Charles E® 661-1497
50 McARDLE James B Sr® 869-0516
51 JONES Victor® 661-7498
51 LANGLOIS Phillip D Jr 661-0421

ORCHARD CT BEGINS

52 CARVETTE Anthony Jr® 869-3826
53 HANNIGAN Gregory S® 869-3149
54 WOZNIAK Jeffrey 661-2406
54 WOZNIAK S A 869-2536
55 BIASE Norman J® 661-9136
56 HIGGINS Francis J® 869-1347
57 RISKA William F® 869-5582
58 PIPICELLI James E 629-3635
59 TIPKE Jeffrey® 629-9518
60 JOHNSON C A 661-7775
61 BERTOLF Gloria 661-2051
61 SEIDL Anna M® 869-1695
62 DUFFY Celine 869-0013
62 DUFFY Hugh P® 869-0013
64 CAMPANELLI Daniel J Jr 869-1713
64 CAMPANELLI Daniel J® 869-1713
64 CAMPANELLI Linda 869-1713
65 FISCHER Douglas M® 661-8413
66 TAMAI Hideo 661-2264

KENT PL BEGINS

SINAWOY RD ENDS

70 RINALDI'S COUNTRY DELI 622-8315
71 VENNERI Robert T® 869-0431
72 No Information

BERGE ST BEGINS

74 MEHRTENS Herman® 661-6614
76 No Information
77 No Information
78 REINHARDT Freida 661-4906
78 TIMM John L® 661-6837
78 TIMM Laura 629-4696
79 SPEZZANO Gary 625-0424
80 PETERSON Robert® 661-7221
82 THIBAULT David Joseph 869-7877
82 THIBAULT Felix J® 869-7877
82 THIBAULT Patricia A 869-7877
83 HEFNER Linda 629-2414
83 SEIDENSTEIN Harvey MD 869-9629
83 TUCHMAN Alma H 869-5048
83 TUCHMAN Lester Dr® 869-5048
83 VITALE Charles 629-2590
83 VITALE Craig 629-2673
84 No Information
86 FIORITO Michael E® 869-7681

VALLEY WOOD RD ENDS

88 BAKEWELL & HALLER 629-7993
88 BALL David E® 629-1697
90 LOVALLO Anthony V® 869-2493
92 No Information
96 CARAVELLA Louis C® 661-8834
96 CARAVELLA Randy 661-8834
96 DIAZ F G 629-2755
96 McGUIRE James W 629-1816
98 ALLEGRINI Emma-Jean 661-6341
98 ALLEGRINI Frank A® 661-6341
100 HELLER Liam 869-7085
101 POMERANCE Ralph® 869-3932
102 SALVATORE Julia E 869-7915
102 SCALES George M® 629-1643
102 SCALES George Martin 629-1643
102½ SCALES Andrew H III 629-3532
102½ SCALES Andrew H Jr® 629-3532
102½ SCALES Linda A 629-3532
104 CASEY Thomas® 661-1785
106 RITCH Charles S Jr® 869-6817
108 PETERSEN Joan C 869-6091
108 PETERSEN William H® 869-6091
110 MacCUMB Marian E® 869-1612
115 GENOVESE Gildo J 869-8748
120 LABOTT R H® 661-4937

INDIAN ROCK LN BEGINS

215 (res)TAYLOR Max® 869-5590
221 TAMANY Dena E 869-2717
221 TAMANY Edna L® 869-2717

COACHLAMP LN BEGINS

ORCHARD CT (CC)
FROM 51.5 ORCHARD NE TO DEAD END ZIP CODE 06807

1 No Information
2 LOCKHART Lorraine K® 869-0001

ORCHARD DR
MILBROOK-FROM 73.5 W BROTHER DR S AND W TO 71.5 WILDWOOD DR ZIP CODE 06830

7 GRANT Walter R® 869-7999
15 CONNORS Richard® 661-6664
16 GILLIAND Joseph William® 869-3268
16 GILLIAND Mary N 869-3268
18 MORGAN Virginia P® 869-0460
21 HEKMA Frank J 869-8787
21 SANDERS Suzanne K® 869-1597
22 HEMPHILL William J® 661-0233
27 SCHLAFLY Hubert J® 661-6719
37 COLLINS Norman R® 622-8233
40 WHITE Craig W® 661-3427
45 FRITZ George P® 869-1989
45 FRITZ George P 'children's phone' 869-2035
45 FRITZ Mark 869-2035
45 FRITZ Paul 869-2035
54 DRAKE Richard M® 869-3469
55 RIGBY Christina 661-4864
55 RIGBY Ralph P® 661-4864
68 CUMMINGS Charles M® 661-3922
69 NOONAN Edmund R® 661-6580
69 NOONAN Laura 661-6580
69 NOONAN Tamara 661-6580
75 ZAJEC Janez® 661-0039
76 KENT Anne P® 869-6390
87 RICHARDS Jay 869-0569
87 RICHARDS John A® 869-0569
87 RICHARDS Peter 869-0569
90 GREEN Alanson W® 629-1659
90 GREEN Susan 629-1659
90 GREEN Ted 629-1659
107 GLENDENING John® 869-5834

OVERLOOK DR ENDS

113 NEW YORK & EASTERN ENVELOPE MANUFACTURER ASSOCIATION 629-1402
113 (res)RYAN Philip J® 661-8535

WILDWOOD DR ENDS

ORCHARD HILL LN
FROM 51.5 MAYFAIR LN NW TO DEAD END ZIP CODE 06831

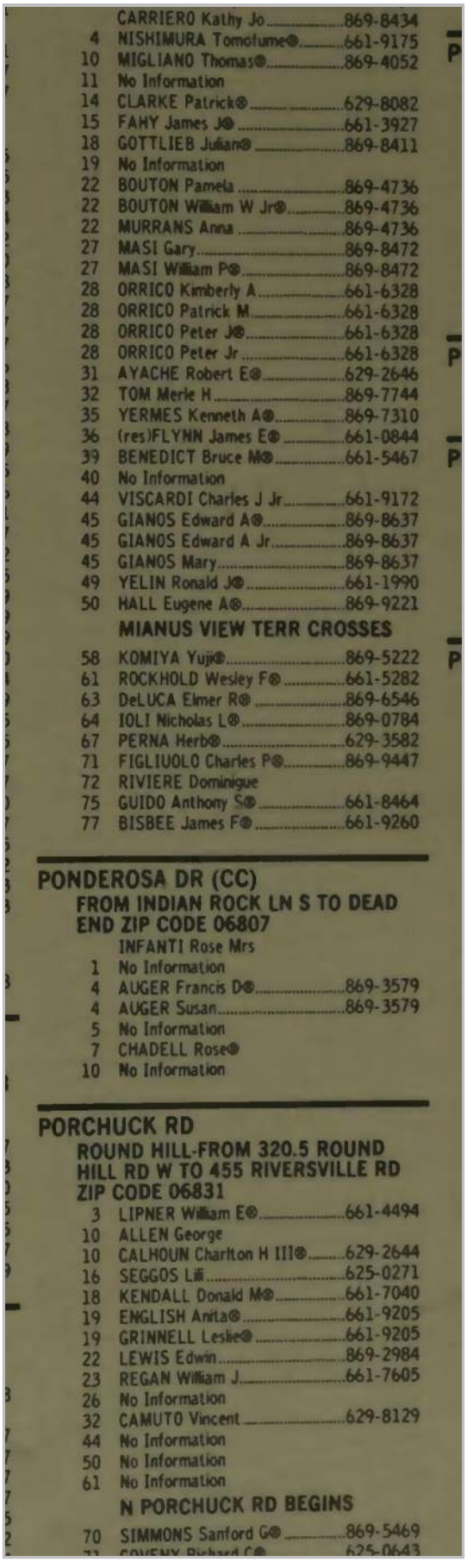
1 MORRISON David F 661-5868
1 MORRISON Fred B® 661-5868
5 WHITE Lewis S® 622-1771
9 BAUMERT Edward C III 869-1566
15 MARSH Howard D® 869-9411
18 No Information
19 ALBERT Ernest R® 661-5564
23 SALMON Avis D® 661-5258
30 MULLALLY Michael F® 622-1135
31 BINDER Michael® 625-0031
32 FITZGERALD Heather 661-8157
32 FITZGERALD Keith C 661-8157
32 FITZGERALD Virginia H Mrs® 661-8157

ORCHARD PL
FROM 354.5 DAVIS AV S THEN W TO 79 INDIAN HARBOR DR ZIP CODE 06830

6 FRANGLONE Luke T Jr® 661-6683
11 COMERFORD John 629-2936
11 ECCLES M L 622-1244

Target Street	Cross Street	Source
-	✓	Johnson's City Directory

PONDEROSA DR 1988



CARRIERO Kathy Jo 869-8434
4 NISHIMURA Tomofume® ..... 661-9175 P
10 MIGLIANO Thomas® 869-4052
11 No Information
14 CLARKE Patrick® 629-8082
15 FAHY James J® 661-3927
18 GOTTLIEB Julian® 869-8411
19 No Information
22 BOUTON Pamela 869-4736
22 BOUTON William W Jr® 869-4736
22 MURRANS Anna 869-4736
27 MASI Gary 869-8472
27 MASI William P® 869-8472
28 ORRICO Kimberly A 661-6328
28 ORRICO Patrick M 661-6328
28 ORRICO Peter J® ..... 661-6328 P
28 ORRICO Peter Jr 661-6328
31 AYACHE Robert E® 629-2646
32 TOM Merle H 869-7744
35 YERMES Kenneth A® 869-7310
36 (res)FLYNN James E® ..... 661-0844 P
39 BENEDICT Bruce M® 661-5467
40 No Information
44 VISCARDI Charles J Jr 661-9172
45 GIANOS Edward A® 869-8637
45 GIANOS Edward A Jr 869-8637
45 GIANOS Mary 869-8637
49 YELIN Ronald J® 661-1990
50 HALL Eugene A® 869-9221

MIANUS VIEW TERR CROSSES

58 KOMIYA Yuji® ..... 869-5222 P
61 ROCKHOLD Wesley F® 661-5282
63 DeLUCA Elmer R® 869-6546
64 IOLI Nicholas L® 869-0784
67 PERNA Herb® 629-3582
71 FIGLIUOLO Charles P® 869-9447
72 RIVIERE Dominique
75 GUIDO Anthony S® 661-8464
77 BISBEE James F® 661-9260

PONDEROSA DR (CC)
FROM INDIAN ROCK LN S TO DEAD END ZIP CODE 06807

INFANTI Rose Mrs
1 No Information
4 AUGER Francis D® 869-3579
4 AUGER Susan 869-3579
5 No Information
7 CHADELL Rose®
10 No Information

PORCHUCK RD
ROUND HILL-FROM 320.5 ROUND HILL RD W TO 455 RIVERSVILLE RD ZIP CODE 06831

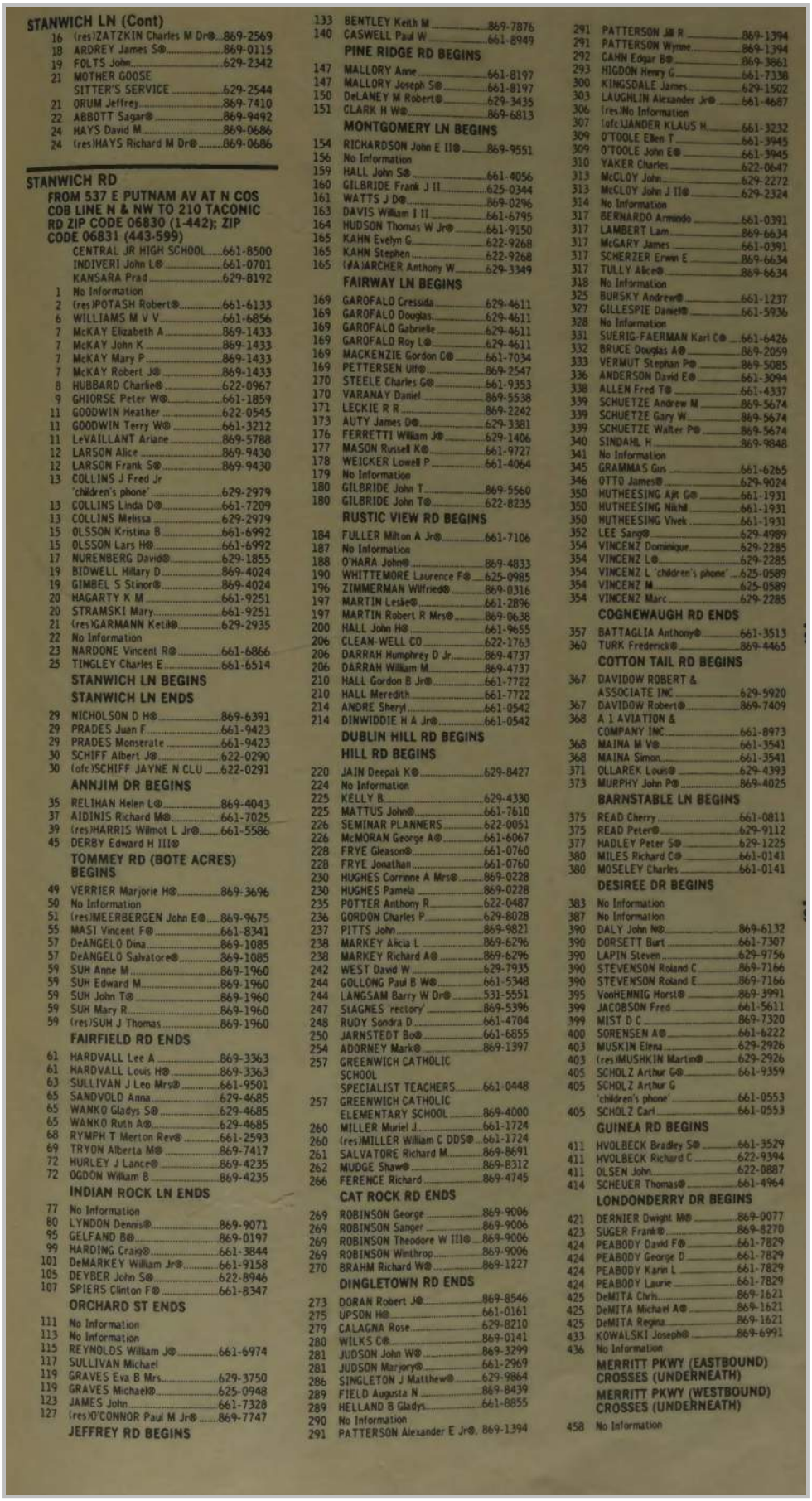
3 LIPNER William E® 661-4494
10 ALLEN George
10 CALHOUN Charlton H III® 629-2644
16 SEGGOS Lili 625-0271
18 KENDALL Donald M® 661-7040
19 ENGLISH Anita® 661-9205
19 GRINNELL Leslie® 661-9205
22 LEWIS Edwin 869-2984
23 REGAN William J 661-7605
26 No Information
32 CAMUTO Vincent 629-8129
44 No Information
50 No Information
61 No Information

N PORCHUCK RD BEGINS

70 SIMMONS Sanford G® 869-5469

Target Street	Cross Street	Source
-	✓	Johnson's City Directory

STANWICH RD 1988



STANWICH LN (Cont)
16 (res)ZATZKIN Charles M Dr® 869-2569
18 ARDREY James S® 869-0115
19 FOLTS John 629-2342
21 MOTHER GOOSE SITTER'S SERVICE 629-2544
21 ORUM Jeffrey 869-7410
22 ABBOTT Sagar® 869-9492
24 HAYS David M 869-0686
24 (res)HAYS Richard M Dr® 869-0686

STANWICH RD
FROM 537 E PUTNAM AV AT N COS COB LINE N & NW TO 210 TACONIC RD ZIP CODE 06830 (1-442); ZIP CODE 06831 (443-599)
CENTRAL JR HIGH SCHOOL 661-8500
INDIVERI John L® 661-0701
KANSARA Prad 629-8192
1 No Information
2 (res)POTASH Robert® 661-6133
6 WILLIAMS M V V 661-6856
7 McKAY Elizabeth A 869-1433
7 McKAY John K 869-1433
7 McKAY Mary P 869-1433
7 McKAY Robert J® 869-1433
8 HUBBARD Charlie® 622-0967
9 GHIORSE Peter W® 661-1859
11 GOODWIN Heather 622-0545
11 GOODWIN Terry W® 661-3212
11 LeVAILLANT Ariane 869-5788
12 LARSON Alice 869-9430
12 LARSON Frank S® 869-9430
13 COLLINS J Fred Jr 'children's phone' 629-2979
13 COLLINS Linda D® 661-7209
13 COLLINS Melissa 629-2979
15 OLSSON Kristina B 661-6992
15 OLSSON Lars H® 661-6992
17 NURENBERG David® 629-1855
19 BIDWELL Hilary D 869-4024
19 GIMBEL S Stinor® 869-4024
20 HAGARTY K M 661-9251
20 STRAMSKI Mary 661-9251
21 (res)GARMANN Ketil® 629-2935
22 No Information
23 NARDONE Vincent R® 661-6866
25 TINGLEY Charles E 661-6514

STANWICH LN BEGINS
STANWICH LN ENDS

29 NICHOLSON D H® 869-6391
29 PRADES Juan F 661-9423
29 PRADES Monserate 661-9423
30 SCHIFF Albert J® 622-0290
30 (ofc)SCHIFF JAYNE N CLU 622-0291

ANNJIM DR BEGINS
35 RELIHAN Helen L® 869-4043
37 AIDINIS Richard M® 661-7025
39 (res)HARRIS Wilmot L Jr® 661-5586
45 DERBY Edward H III®

TOMMEY RD (BOTE ACRES) BEGINS
49 VERRIER Marjorie H® 869-3696
50 No Information
51 (res)MEERBERGEN John E® 869-9675
55 MASI Vincent F® 661-8341
57 DeANGELO Dina 869-1085
57 DeANGELO Salvatore® 869-1085
59 SUH Anne M 869-1960
59 SUH Edward M 869-1960
59 SUH John T® 869-1960
59 SUH Mary R 869-1960
59 (res)SUH J Thomas 869-1960

FAIRFIELD RD ENDS
61 HARDVALL Lee A 869-3363
61 HARDVALL Louis H® 869-3363
63 SULLIVAN J Leo Mrs® 661-9501
65 SANDVOLD Anna 629-4685
65 WANKO Gladys S® 629-4685
65 WANKO Ruth A® 629-4685
68 RYMPH T Merton Rev® 661-2593
69 TRYON Alberta M® 869-7417
72 HURLEY J Lance® 869-4235
72 OGDON William B 869-4235

INDIAN ROCK LN ENDS
77 No Information
80 LYNDON Dennis® 869-9071
95 GELFAND B® 869-0197
99 HARDING Craig® 661-3844
101 DeMARKEY William Jr® 661-9158
105 DEYBER John S® 622-8946
107 SPIERS Clinton F® 661-8347

ORCHARD ST ENDS
111 No Information
113 No Information
115 REYNOLDS William J® 661-6974
117 SULLIVAN Michael
119 GRAVES Eva B Mrs 629-3750
119 GRAVES Michael® 625-0948
123 JAMES John 661-7328
127 (res)O'CONNOR Paul M Jr® 869-7747

JEFFREY RD BEGINS
133 BENTLEY Keith M 869-7876
140 CASWELL Paul W 661-8949

PINE RIDGE RD BEGINS
147 MALLORY Anne 661-8197
147 MALLORY Joseph S® 661-8197
150 DeLANEY M Robert® 629-3435
151 CLARK H W® 869-6813

MONTGOMERY LN BEGINS
154 RICHARDSON John E II® 869-9551
156 No Information
159 HALL John S® 661-4056
160 GILBRIDE Frank J II 625-0344
161 WATTS J D® 869-0296
163 DAVIS William I II 661-6795
164 HUDSON Thomas W Jr® 661-9150
165 KAHN Evelyn G 622-9268
165 KAHN Stephen 622-9268
165 (P&)ARCHER Anthony W 629-3349

FAIRWAY LN BEGINS
169 GAROFALO Cressida 629-4611
169 GAROFALO Douglas 629-4611
169 GAROFALO Gabrielle 629-4611
169 GAROFALO Roy L® 629-4611
169 MACKENZIE Gordon C® 661-7034
169 PETTERSEN Ulf® 869-2547
170 STEELE Charles G® 661-9353
170 VARANAY Daniel 869-5538
171 LECKIE R R 869-2242
173 AUTY James D® 629-3381
176 FERRETTI William J® 629-1406
177 MASON Russell K® 661-9727
178 WEICKER Lowell P 661-4064
179 No Information
180 GILBRIDE John T 869-5560
180 GILBRIDE John T® 622-8235

RUSTIC VIEW RD BEGINS
184 FULLER Milton A Jr® 661-7106
187 No Information
188 O'HARA John® 869-4833
190 WHITTEMORE Laurence F® 625-0985
196 ZIMMERMAN Wilfried® 869-0316
197 MARTIN Leslie® 661-2896
197 MARTIN Robert R Mrs® 869-0638
200 HALL John H® 661-9655
206 CLEAN-WELL CO 622-1763
206 DARRAH Humphrey D Jr 869-4737
206 DARRAH William M 869-4737
210 HALL Gordon B Jr® 661-7722
210 HALL Meredith 661-7722
214 ANDRE Sheryl 661-0542
214 DINWIDDIE H A Jr® 661-0542

DUBLIN HILL RD BEGINS
HILL RD BEGINS
220 JAIN Deepak K® 629-8427
224 No Information
225 KELLY B 629-4330
225 MATTUS John® 661-7610
226 SEMINAR PLANNERS 622-0051
226 McMORAN George A® 661-6067
228 FRYE Gleason® 661-0760
228 FRYE Jonathan 661-0760
230 HUGHES Corrinne A Mrs® 869-0228
230 HUGHES Pamela 869-0228
235 POTTER Anthony R 622-0487
236 GORDON Charles P 629-8028
237 PITTS John 869-9821
238 MARKEY Alicia L 869-6296
238 MARKEY Richard A® 869-6296
242 WEST David W 629-7935
244 GOLLONG Paul B W® 661-5348
244 LANGSAM Barry W Dr® 531-5551
247 SIAGNES 'rectory' 869-5396
248 RUDY Sondra D 661-4704
250 JARNSTEDT Bo® 661-6855
254 ADORNEY Mark® 869-1397
257 GREENWICH CATHOLIC SCHOOL SPECIALIST TEACHERS 661-0448
257 GREENWICH CATHOLIC ELEMENTARY SCHOOL 869-4000
260 MILLER Muriel J 661-1724
260 (res)MILLER William C DDS® 661-1724
261 SALVATORE Richard M 869-8691
262 MUDGE Shaw® 869-8312
266 FERENCE Richard 869-4745

CAT ROCK RD ENDS
269 ROBINSON George 869-9006
269 ROBINSON Sanger 869-9006
269 ROBINSON Theodore W III® 869-9006
269 ROBINSON Winthrop 869-9006
270 BRAHM Richard W® 869-1227

DINGLETOWN RD ENDS
273 DORAN Robert J® 869-8546
275 UPSON H® 661-0161
279 CALAGNA Rose 629-8210
280 WILKS C® 869-0141
281 JUDSON John W® 869-3299
281 JUDSON Marjory® 661-2969
286 SINGLETON J Matthew® 629-9864
289 FIELD Augusta N 869-8439
289 HELLAND B Gladys 661-8855
290 No Information
291 PATTERSON Alexander E Jr®, 869-1394
291 PATTERSON J® R 869-1394
291 PATTERSON Wynne 869-1394
292 CAHN Edgar B® 869-3861
293 HIGDON Henry G 661-7338
300 KINGSDALE James 629-1502
303 LAUGHLIN Alexander Jr® 661-4687
306 (res)No Information
307 (ofc)JANDER KLAUS H 661-3232
309 O'TOOLE Ellen T 661-3945
309 O'TOOLE John E® 661-3945
310 YAKER Charles 622-0647
313 McCLOY John 629-2272
313 McCLOY John J II® 629-2324
314 No Information
317 BERNARDO Armindo 661-0391
317 LAMBERT Lam 869-6634
317 McGARY James 661-0391
317 SCHERZER Erwin E 869-6634
317 TULLY Alice® 869-6634
318 No Information
325 BURSKY Andrew® 661-1237
327 GILLESPIE Daniel® 661-5936
328 No Information
331 SUERIG-FAERMAN Karl C® 661-6426
332 BRUCE Douglas A® 869-2059
333 VERMUT Stephan P® 869-5085
336 ANDERSON David E® 661-3094
338 ALLEN Fred T® 661-4337
339 SCHUETZE Andrew M 869-5674
339 SCHUETZE Gary W 869-5674
339 SCHUETZE Walter P® 869-5674
340 SINDAHL H 869-9848
341 No Information
345 GRAMMAS Gus 661-6265
346 OTTO James® 629-9024
350 HUTHEESING Ajit G® 661-1931
350 HUTHEESING Nikhil 661-1931
350 HUTHEESING Vivek 661-1931
352 LEE Sang® 629-4989
354 VINCENZ Dominique 629-2285
354 VINCENZ L® 629-2285
354 VINCENZ L 'children's phone' 625-0589
354 VINCENZ M 625-0589
354 VINCENZ Marc 629-2285

COGNEWAUGH RD ENDS
357 BATTAGLIA Anthony® 661-3513
360 TURK Frederick® 869-4465

COTTON TAIL RD BEGINS
367 DAVIDOW ROBERT & ASSOCIATE INC 629-5920
367 DAVIDOW Robert® 869-7409
368 A 1 AVIATION & COMPANY INC 661-8973
368 MAINA M V® 661-3541
368 MAINA Simon 661-3541
371 OLLAREK Louis® 629-4393
373 MURPHY John P® 869-4025

BARNSTABLE LN BEGINS
375 READ Cherry 661-0811
375 READ Peter® 629-9112
377 HADLEY Peter S® 629-1225
380 MILES Richard C® 661-0141
380 MOSELEY Charles 661-0141

DESIREE DR BEGINS
383 No Information
387 No Information
390 DALY John N® 869-6132
390 DORSETT Burt 661-7307
390 LAPIN Steven 629-9756
390 STEVENSON Roland C 869-7166
390 STEVENSON Roland E 869-7166
395 VonHENNIG Horst® 869-3991
399 JACOBSON Fred 661-5611
399 MIST D C 869-7320
400 SORENSEN A® 661-6222
403 MUSKIN Elena 629-2926
403 (res)MUSHKIN Martin® 629-2926
405 SCHOLZ Arthur G® 661-9359
405 SCHOLZ Arthur G 'children's phone' 661-0553
405 SCHOLZ Carl 661-0553

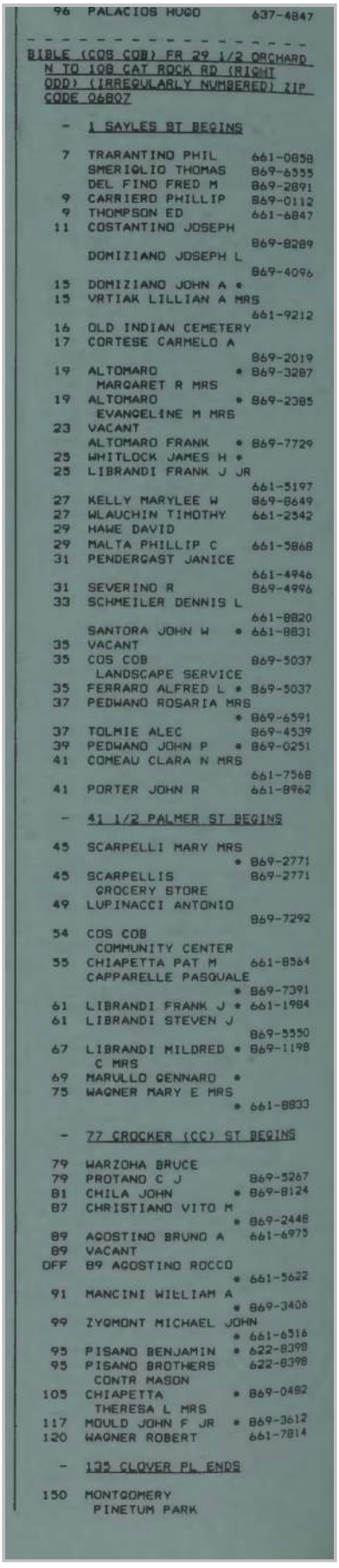
GUINEA RD BEGINS
411 HVOLBECK Bradley S® 661-3529
411 HVOLBECK Richard C 622-9394
411 OLSEN John 622-0887
414 SCHEUER Thomas® 661-4964

LONDONDERRY DR BEGINS
421 DERNIER Dwight M® 869-0077
423 SUGER Frank® 869-8270
424 PEABODY David F® 661-7829
424 PEABODY George D 661-7829
424 PEABODY Karin L 661-7829
424 PEABODY Laurie 661-7829
425 DeMITA Chris 869-1621
425 DeMITA Michael A® 869-1621
425 DeMITA Regina 869-1621
433 KOWALSKI Joseph® 869-6991
436 No Information

MERRITT PKWY (EASTBOUND) CROSSES (UNDERNEATH)
MERRITT PKWY (WESTBOUND) CROSSES (UNDERNEATH)
458 No Information

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

BIBLE ST 1980



96 PALACIOS HUGO 637-4847

BIBLE (COS COB) FR 29 1/2 ORCHARD N TO 108 CAT ROCK RD (RIGHT ODD) (IRREGULARLY NUMBERED) ZIP CODE 06807

\- 1 SAYLES ST BEGINS

7 TRARANTINO PHIL 661-0838
SMERIGLIO THOMAS 869-6555
DEL FINO FRED M 869-2891
9 CARRIERO PHILLIP 869-0112
9 THOMPSON ED 661-6847
11 COSTANTINO JOSEPH 869-8289
DOMIZIANO JOSEPH L 869-4096
15 DOMIZIANO JOHN A *
15 VRTIAK LILLIAN A MRS 661-9212
16 OLD INDIAN CEMETERY
17 CORTESE CARMELO A 869-2019
19 ALTOMARO * 869-3287
MARGARET R MRS
19 ALTOMARO * 869-2385
EVANGELINE M MRS
23 VACANT
ALTOMARO FRANK * 869-7729
25 WHITLOCK JAMES H *
25 LIBRANDI FRANK J JR 661-5197
27 KELLY MARYLEE W 869-8649
27 WLAUCHIN TIMOTHY 661-2542
29 HAWE DAVID
29 MALTA PHILLIP C 661-5868
31 PENDERGAST JANICE 661-4946
31 SEVERINO R 869-4996
33 SCHMEILER DENNIS L 661-8820
SANTORA JOHN W * 661-8831
35 VACANT
35 COS COB 869-5037
LANDSCAPE SERVICE
35 FERRARO ALFRED L * 869-5037
37 PEDWANO ROSARIA MRS * 869-6591
37 TOLMIE ALEC 869-4539
39 PEDWANO JOHN P * 869-0251
41 COMEAU CLARA N MRS 661-7568
41 PORTER JOHN R 661-8962

\- 41 1/2 PALMER ST BEGINS

45 SCARPELLI MARY MRS * 869-2771
45 SCARPELLIS 869-2771
GROCERY STORE
49 LUPINACCI ANTONIO 869-7292
54 COS COB
COMMUNITY CENTER
55 CHIAPETTA PAT M 661-8564
CAPPARELLE PASQUALE * 869-7391
61 LIBRANDI FRANK J * 661-1984
61 LIBRANDI STEVEN J 869-5550
67 LIBRANDI MILDRED * 869-1198
C MRS
69 MARULLO GENNARO *
75 WAGNER MARY E MRS * 661-8833

\- 77 CROCKER (CC) ST BEGINS

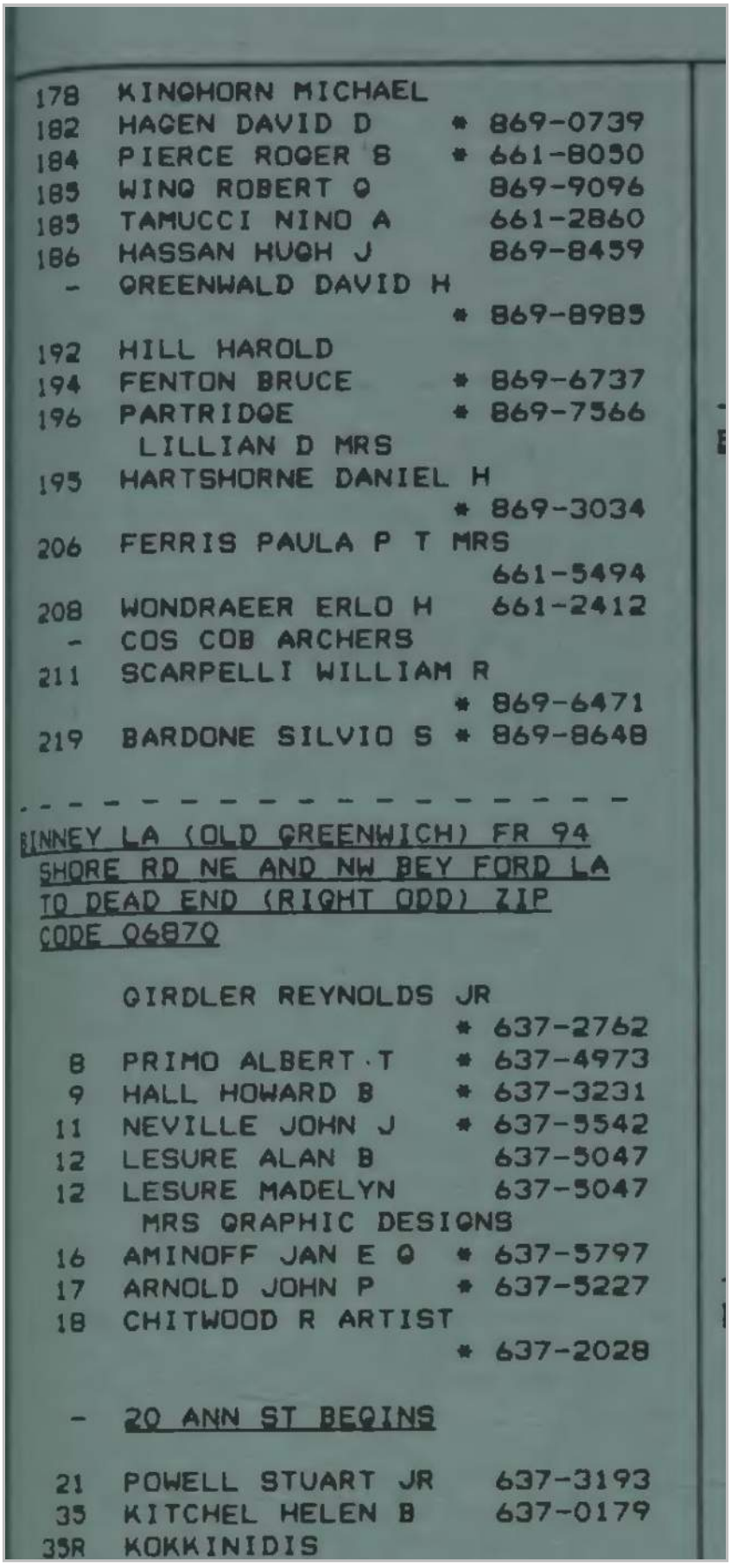
79 WARZOHA BRUCE
79 PROTANO C J 869-5267
81 CHILA JOHN * 869-8124
87 CHRISTIANO VITO M * 869-2448
89 AGOSTINO BRUNO A 661-6975
89 VACANT
OFF 89 AGOSTINO ROCCO * 661-5622
91 MANCINI WILLIAM A * 869-3406
99 ZYGMONT MICHAEL JOHN * 661-6316
95 PISANO BENJAMIN * 622-8398
95 PISANO BROTHERS 622-8398
CONTR MASON
105 CHIAPETTA * 869-0482
THERESA L MRS
117 MOULD JOHN F JR * 869-3612
120 WAGNER ROBERT 661-7814

\- 135 CLOVER PL ENDS

150 MONTGOMERY
PINETUM PARK

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

BIBLE ST 1980



178 KINGHORN MICHAEL
182 HAGEN DAVID D * 869-0739
184 PIERCE ROGER S * 661-8050
185 WING ROBERT Q 869-9096
185 TAMUCCI NINO A 661-2860
186 HASSAN HUGH J 869-8459
- GREENWALD DAVID H
* 869-8985
192 HILL HAROLD
194 FENTON BRUCE * 869-6737
196 PARTRIDGE * 869-7566
LILLIAN D MRS
195 HARTSHORNE DANIEL H
* 869-3034
206 FERRIS PAULA P T MRS
661-5494
208 WONDRAEER ERLO H 661-2412
- COS COB ARCHERS
211 SCARPELLI WILLIAM R
* 869-6471
219 BARDONE SILVIO S * 869-8648

BINNEY LA (OLD GREENWICH) FR 94 SHORE RD NE AND NW BEY FORD LA TO DEAD END (RIGHT ODD) ZIP CODE 06870

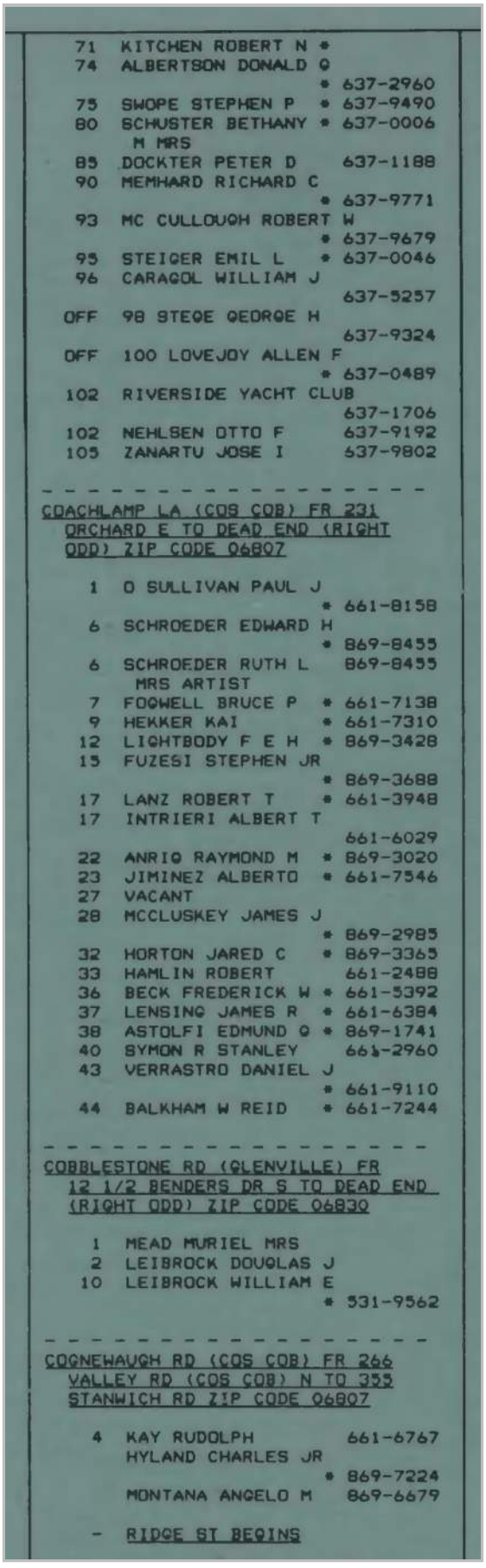
GIRDLER REYNOLDS JR
* 637-2762
8 PRIMO ALBERT T * 637-4973
9 HALL HOWARD B * 637-3231
11 NEVILLE JOHN J * 637-5542
12 LESURE ALAN B 637-5047
12 LESURE MADELYN 637-5047
MRS GRAPHIC DESIGNS
16 AMINOFF JAN E Q * 637-5797
17 ARNOLD JOHN P * 637-5227
18 CHITWOOD R ARTIST
* 637-2028

- 20 ANN ST BEGINS

21 POWELL STUART JR 637-3193
35 KITCHEL HELEN B 637-0179
35R KOKKINIDIS

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

COACHLAMP LN 1980



71 KITCHEN ROBERT N *
74 ALBERTSON DONALD Q
* 637-2960
75 SWOPE STEPHEN P * 637-9490
80 SCHUSTER BETHANY * 637-0006
M MRS
85 DOCKTER PETER D 637-1188
90 MEMHARD RICHARD C
* 637-9771
93 MC CULLOUGH ROBERT W
* 637-9679
95 STEIGER EMIL L * 637-0046
96 CARAGOL WILLIAM J
637-5257
OFF 98 STEGE GEORGE H
637-9324
OFF 100 LOVEJOY ALLEN F
* 637-0489
102 RIVERSIDE YACHT CLUB
637-1706
102 NEHLSEN OTTO F 637-9192
105 ZANARTU JOSE I 637-9802

COACHLAMP LA (COS COB) FR 231
ORCHARD E TO DEAD END (RIGHT
ODD) ZIP CODE 06807

1 O SULLIVAN PAUL J
* 661-8158
6 SCHROEDER EDWARD H
* 869-8455
6 SCHROEDER RUTH L 869-8455
MRS ARTIST
7 FOGWELL BRUCE P * 661-7138
9 HEKKER KAI * 661-7310
12 LIGHTBODY F E H * 869-3428
15 FUZESI STEPHEN JR
* 869-3688
17 LANZ ROBERT T * 661-3948
17 INTRIERI ALBERT T
661-6029
22 ANRIO RAYMOND M * 869-3020
23 JIMINEZ ALBERTO * 661-7546
27 VACANT
28 MCCLUSKEY JAMES J
* 869-2985
32 HORTON JARED C * 869-3365
33 HAMLIN ROBERT 661-2488
36 BECK FREDERICK W * 661-5392
37 LENSING JAMES R * 661-6384
38 ASTOLFI EDMUND O * 869-1741
40 SYMON R STANLEY 661-2960
43 VERRASTRO DANIEL J
* 661-9110
44 BALKHAM W REID * 661-7244

COBBLESTONE RD (GLENVILLE) FR
12 1/2 BENDERS DR S TO DEAD END
(RIGHT ODD) ZIP CODE 06830

1 MEAD MURIEL MRS
2 LEIBROCK DOUGLAS J
10 LEIBROCK WILLIAM E
* 531-9562

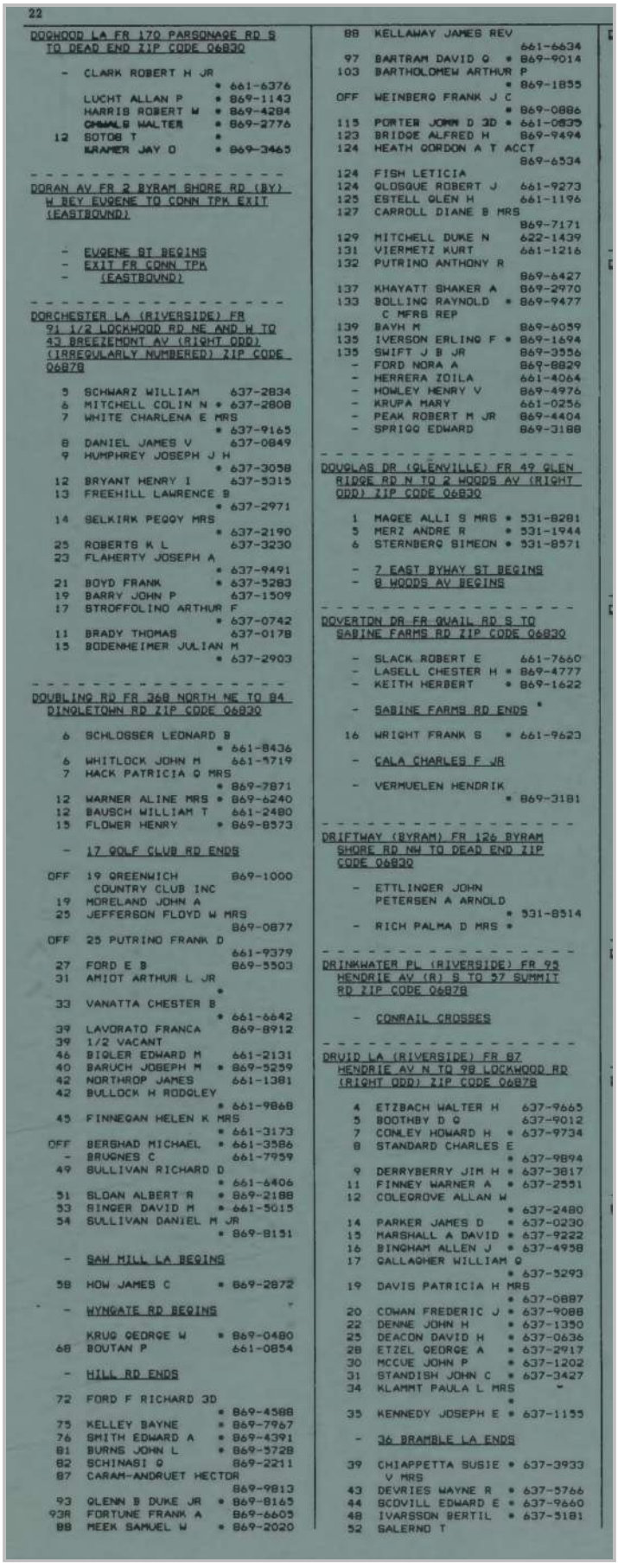
COGNEWAUGH RD (COS COB) FR 266
VALLEY RD (COS COB) N TO 355
STANWICH RD ZIP CODE 06807

4 KAY RUDOLPH 661-6767
HYLAND CHARLES JR
* 869-7224
MONTANA ANGELO M 869-6679

- RIDGE ST BEGINS

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

DOUBLING RD 1980



22

DOGWOOD LA FR 170 PARSONAGE RD S TO DEAD END ZIP CODE 06830

- CLARK ROBERT H JR * 661-6376
LUCHT ALLAN P * 869-1143
HARRIS ROBERT W * 869-4284
[illegible] WALTER * 869-2776
12 SOTOS T *
KRAMER JAY O * 869-3465

DORAN AV FR 2 BYRAM SHORE RD (BY) W BEY EUGENE TO CONN TPK EXIT (EASTBOUND)

- EUGENE ST BEGINS
- EXIT FR CONN TPK (EASTBOUND)

DORCHESTER LA (RIVERSIDE) FR 91 1/2 LOCKWOOD RD NE AND W TO 43 BREEZEMONT AV (RIGHT ODD) (IRREGULARLY NUMBERED) ZIP CODE 06878

5 SCHWARZ WILLIAM 637-2834
6 MITCHELL COLIN N * 637-2808
7 WHITE CHARLENA E MRS * 637-9165
8 DANIEL JAMES V 637-0849
9 HUMPHREY JOSEPH J H * 637-3058
12 BRYANT HENRY I 637-5315
13 FREEHILL LAWRENCE B * 637-2971
14 SELKIRK PEGGY MRS * 637-2190
25 ROBERTS K L 637-3230
23 FLAHERTY JOSEPH A * 637-9491
21 BOYD FRANK * 637-5283
19 BARRY JOHN P 637-1509
17 STROFFOLINO ARTHUR F * 637-0742
11 BRADY THOMAS 637-0178
15 BODENHEIMER JULIAN M * 637-2903

DOUBLING RD FR 368 NORTH NE TO 84 DINGLETOWN RD ZIP CODE 06830

6 SCHLOSSER LEONARD B * 661-8436
6 WHITLOCK JOHN M 661-9719
7 HACK PATRICIA Q MRS * 869-7871
12 WARNER ALINE MRS * 869-6240
12 BAUSCH WILLIAM T 661-2480
15 FLOWER HENRY * 869-8573

- 17 GOLF CLUB RD ENDS

OFF 19 GREENWICH COUNTRY CLUB INC 869-1000
19 MORELAND JOHN A
25 JEFFERSON FLOYD W MRS 869-0877
OFF 25 PUTRINO FRANK D 661-9379
27 FORD E B 869-5503
31 AMIOT ARTHUR L JR *
33 VANATTA CHESTER B * 661-6642
39 LAVORATO FRANCA 869-8912
39 1/2 VACANT
46 BIGLER EDWARD M 661-2131
40 BARUCH JOSEPH M * 869-5259
42 NORTHROP JAMES 661-1381
42 BULLOCK H RODDLEY * 661-9868
45 FINNEGAN HELEN K MRS * 661-3173
OFF BERGHAD MICHAEL * 661-3586
- BRUGNES C 661-7959
49 SULLIVAN RICHARD D * 661-6406
51 SLOAN ALBERT R * 869-2188
53 SINGER DAVID M * 661-5015
54 SULLIVAN DANIEL M JR * 869-8151

- SAW MILL LA BEGINS

58 HOW JAMES C * 869-2872

- WYNGATE RD BEGINS

KRUG GEORGE W * 869-0480
68 BOUTAN P 661-0854

- HILL RD ENDS

72 FORD F RICHARD 3D * 869-4588
75 KELLEY BAYNE * 869-7967
76 SMITH EDWARD A * 869-4391
81 BURNS JOHN L * 869-5728
82 SCHINASI G 869-2211
87 CARAM-ANDRUET HECTOR 869-9813
93 GLENN B DUKE JR * 869-8165
93R FORTUNE FRANK A 869-6605
88 MEEK SAMUEL W * 869-2020
88 KELLAWAY JAMES REV 661-6634
97 BARTRAM DAVID G * 869-9014
103 BARTHOLOMEW ARTHUR P * 869-1855
OFF WEINBERG FRANK J C * 869-0886
115 PORTER JOHN D 3D * 661-0839
123 BRIDGE ALFRED H 869-9494
124 HEATH GORDON A T ACCT 869-6534
124 FISH LETICIA
124 GLOSGUE ROBERT J 661-9273
125 ESTELL GLEN H 661-1196
127 CARROLL DIANE B MRS 869-7171
129 MITCHELL DUKE N 622-1439
131 VIERMETZ KURT 661-1216
132 PUTRINO ANTHONY R 869-6427
137 KHAYATT SHAKER A 869-2970
133 BOLLING RAYNOLD C MFRS REP * 869-9477
139 RAYH M 869-6059
135 IVERSON ERLING F * 869-1694
135 SWIFT J B JR 869-3556
- FORD NORA A 869-8829
- HERRERA ZOILA 661-4064
- HOWLEY HENRY V 869-4976
- KRUPA MARY 661-0256
- PEAK ROBERT M JR 869-4404
- SPRIGG EDWARD 869-3188

DOUGLAS DR (GLENVILLE) FR 49 GLEN RIDGE RD N TO 2 WOODS AV (RIGHT ODD) ZIP CODE 06830

1 MAGEE ALLI S MRS * 531-8281
5 MERZ ANDRE R * 531-1944
6 STERNBERG SIMEON * 531-8571

- 7 EAST BYWAY ST BEGINS
- 8 WOODS AV BEGINS

DOVERTON DR FR QUAIL RD S TO SABINE FARMS RD ZIP CODE 06830

- SLACK ROBERT E 661-7660
- LASELL CHESTER H * 869-4777
- KEITH HERBERT * 869-1622

- SABINE FARMS RD ENDS *

16 WRIGHT FRANK S * 661-9623

- CALA CHARLES F JR

- VERMUELEN HENDRIK * 869-3181

DRIFTWAY (BYRAM) FR 126 BYRAM SHORE RD NW TO DEAD END ZIP CODE 06830

- ETTLINGER JOHN PETERSEN A ARNOLD * 531-8514
- RICH PALMA D MRS *

DRINKWATER PL (RIVERSIDE) FR 95 HENDRIE AV (R) S TO 57 SUMMIT RD ZIP CODE 06878

- CONRAIL CROSSES

DRUID LA (RIVERSIDE) FR 87 HENDRIE AV N TO 98 LOCKWOOD RD (RIGHT ODD) ZIP CODE 06878

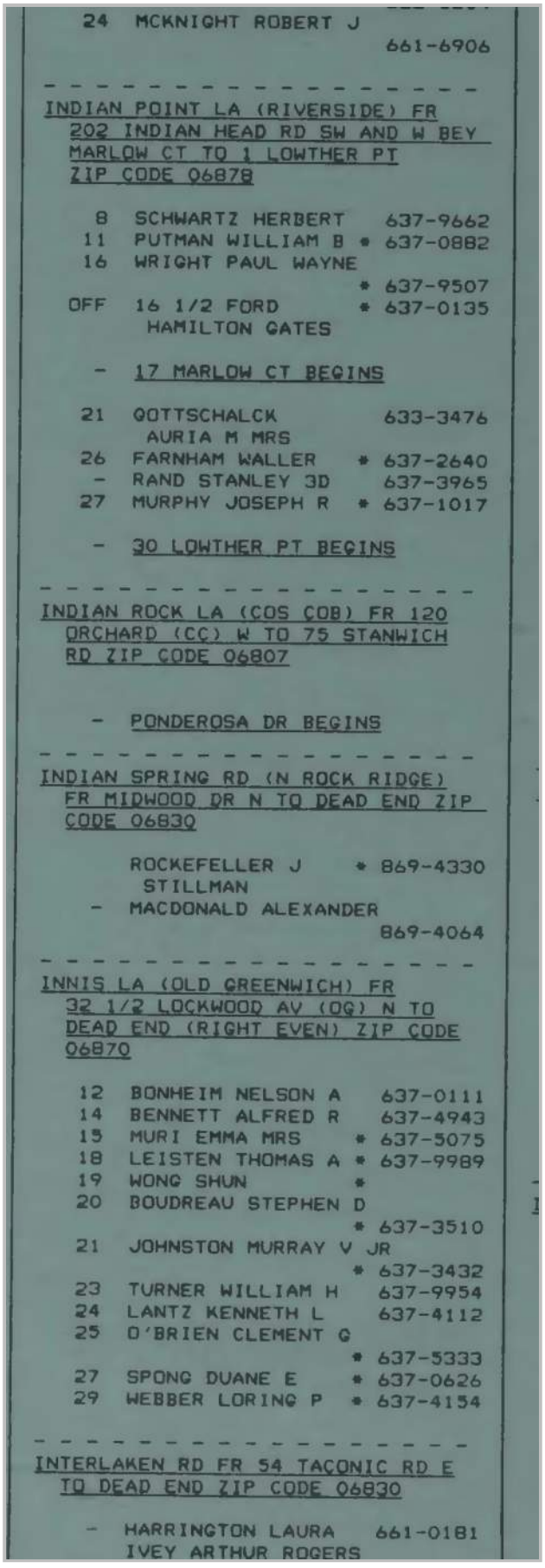
4 ETZBACH WALTER H 637-9665
5 BOOTHBY D G 637-9012
7 CONLEY HOWARD H * 637-9734
8 STANDARD CHARLES E * 637-9894
9 DERRYBERRY JIM H * 637-3817
11 FINNEY WARNER A * 637-2551
12 COLEGROVE ALLAN W * 637-2480
14 PARKER JAMES D * 637-0230
15 MARSHALL A DAVID * 637-9222
16 BINGHAM ALLEN J * 637-4958
17 GALLAGHER WILLIAM G * 637-5293
19 DAVIS PATRICIA H MRS * 637-0887
20 COWAN FREDERIC J * 637-9088
22 DENNE JOHN H * 637-1350
25 DEACON DAVID H * 637-0636
28 ETZEL GEORGE A * 637-2917
30 MCCUE JOHN P * 637-1202
31 STANDISH JOHN C * 637-3427
34 KLAMMT PAULA L MRS *
35 KENNEDY JOSEPH E * 637-1155

- 36 BRAMBLE LA ENDS

39 CHIAPPETTA SUSIE V MRS * 637-3933
43 DEVRIES WAYNE R * 637-5766
44 SCOVILL EDWARD E * 637-9660
48 IVARSSON BERTIL * 637-5181
52 SALERNO T

Target Street	Cross Street	Source
✓	-	Price & Lee's City Directory

INDIAN ROCK LN 1980



24 MCKNIGHT ROBERT J
661-6906

INDIAN POINT LA (RIVERSIDE) FR 202 INDIAN HEAD RD SW AND W BEY MARLOW CT TO 1 LOWTHER PT ZIP CODE 06878

8 SCHWARTZ HERBERT 637-9662
11 PUTMAN WILLIAM B * 637-0882
16 WRIGHT PAUL WAYNE
* 637-9507
OFF 16 1/2 FORD * 637-0135
HAMILTON GATES

\- 17 MARLOW CT BEGINS

21 GOTTSCHALCK 633-3476
AURIA M MRS
26 FARNHAM WALLER * 637-2640
\- RAND STANLEY 3D 637-3965
27 MURPHY JOSEPH R * 637-1017

\- 30 LOWTHER PT BEGINS

INDIAN ROCK LA (COS COB) FR 120 ORCHARD (CC) W TO 75 STANWICH RD ZIP CODE 06807

\- PONDEROSA DR BEGINS

INDIAN SPRING RD (N ROCK RIDGE) FR MIDWOOD DR N TO DEAD END ZIP CODE 06830

ROCKEFELLER J * 869-4330
STILLMAN
\- MACDONALD ALEXANDER
869-4064

INNIS LA (OLD GREENWICH) FR 32 1/2 LOCKWOOD AV (OG) N TO DEAD END (RIGHT EVEN) ZIP CODE 06870

12 BONHEIM NELSON A 637-0111
14 BENNETT ALFRED R 637-4943
15 MURI EMMA MRS * 637-5075
18 LEISTEN THOMAS A * 637-9989
19 WONG SHUN *
20 BOUDREAU STEPHEN D
* 637-3510
21 JOHNSTON MURRAY V JR
* 637-3432
23 TURNER WILLIAM H 637-9954
24 LANTZ KENNETH L 637-4112
25 O'BRIEN CLEMENT G
* 637-5333
27 SPONG DUANE E * 637-0626
29 WEBBER LORING P * 637-4154

INTERLAKEN RD FR 54 TACONIC RD E TO DEAD END ZIP CODE 06830

\- HARRINGTON LAURA 661-0181
IVEY ARTHUR ROGERS

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

ORCHARD ST 1980

15 YOUNG KENNETH B • 637-3402
16 BONNER CHARLES W 3D • 637-9152
17 GRUNERT FRANK 637-5851
18 KAUFMAN CHARLES E 3D • 637-5286
19 SISMAN JOEL H • 637-3090
20 JAYES HERBERT • 637-0102
23 LONDON MELVIN • 637-9907
24 MILES MATTHEW J • 637-2507
25 SAGE FREDERICK B 637-3392
26 HUNT WILLIAM C 637-5039
27 BIRD DONALD C

- 28 CROSS RIDGE DR BEGINS

29 CAHILL CURTIS C • 637-0794
31 TOWNSEND JOHN H JR • 637-4868
33 STAMM HAROLD H • 637-2080
35 JERMANTOWICZ ALPHONSE C • 637-9718
36 WALTON DONALD R • 637-0213
WALTON C W MRS MUSIC TCHR 637-0213

ONEIDA CT FR 106 ONEIDA DR S TO DEAD END ZIP CODE 06830

18 ANDERSON ENDY • 661-8687
19 OZTEMEL ARA • 869-4221

ONEIDA DR (BRUCE PARK AND INDIAN HARBOR) FR 567 STEAMBOAT RD E THEN NE TO 399 1/2 DAVIS AV ZIP CODE 06830

SEWER DEPT PUMPING STA
17 MC GEORGE • 661-7139
MARGARET J MRS

- 25 POSH RIVER CROSSES
- (UNDERNEATH)
- 29 INDIAN HARBOR DR ENDS

30 MACKALL CHARLES M JR • 869-7142
INDIAN HARBOR ASSOCIATION INC POLICE BOOTH 869-3663

- 50 VISTA DR BEGINS
- 51 LAKEWOOD CIR N BEGINS
- 57 ONEIDA POND CROSSES
- 60 LAKEWOOD CIR S BEGINS

61 MC KENNA ROBERT H • 869-3495
69 WARD ANN R MRS •
70 STRICKLAND HAROLD A • 869-4258

- 73 LAKEWOOD CIR NORTH ENDS

80 VACANT
83 MATTHEWS MARK S • 869-5854
90 MC DONALD RICHARD C
95 KEYS LOREN D JR 869-8309
- CHAMPION CARLETON C • 661-0748
97 KEITH ROBERT L 869-0620
100 BANYARD RICHARD D • 661-0748
101 HOLLAND ALBERT E JR • 661-5866
- BUECKING JOHN D • 661-0424

- 106 ONEIDA CT BEGINS

111 BERGER CIARINA MRS 661-1784
122 MATTHEWS MORA MRS • 661-1192
120 PRIDGE WILLIAM F • 661-0337
119 MAURI M • 661-1257

- 124 CHIMNEY CORNER LA
- BEGINS
- HOLT NEIL M

ORCHARD (COS COB) FR 270 POST RD NW TO 109 1/2 STANWICH RD (RIGHT ODD) (IRREGULARLY NUMBERED) ZIP CODE 06807

2 DESIGNS BY LEE FLORIST 869-9292
4 SZEKRENYESSY PETER P • 661-0280
6 RINALDI PATSY 661-3275
8 CARLSON JOHN • 869-4218

- 9 VALLEY RD (CC) BEGINS

10 HANSEN PETER J 661-3645
11 RICH ROBERT W
11 NASTAHOWSKI LORRAINE R
12 LAVALETTE GORDON J INC PLUMBERS 869-0117
12 BARLOW EDWARD W • 869-0117
12 O'LEAR CHARLES R 869-8310
13 DULEMBA RAYMOND J • 869-9328

14 WELLS MARIE C MRS • 661-8134
16R WELLS LEONARD C • 869-9431
17 ROMANCHUK LOUISE R MRS • 869-8019
18 DELLA CORTE MATTHEW F • 869-7687
19 VACANT
19 EHRET THOMAS 661-2369
20 GLINKA HENRY • 661-8618
21 MOHR HENRY J JR • 661-8064
22 MARULLO SAM • 661-6519
23 O'CONNOR K C • 869-4825
25 SANTAQUIDA C 661-1577
25 HUNTER BRUCE 661-6086
27 RASKIN FRANCES MRS 869-0718
27 COUEY LARRY J 661-8189
29 VACANT

- 29 1/2 BIBLE ST BEGINS

30 TIRIOLO PATSY J • 869-5659
31 DUIGNAN SARAH E MRS • 661-9747
32 LA ROSE DOMINICK •
33 ROGERS ROBERT B 3D • 661-8769
34 VACANT
34 1/2 LEROSE NICHOLAS A • 869-5406
35 RITCH RODMAN R S • 869-1523
36 THOMSEN FREDERICK C • 869-4629
37 MEAD AUBREY JR 661-3009
37 PATERACKI ELEZA S 622-0997
38 KEELEY EMMA M MRS • 869-1251
39 MILLER AND BELMONT CONTR 869-7125
39 BELMONT RICHARD E JR • 869-7125
40 ALLEVATO JOSEPH S • 869-6609
41 BELMONT RICHARD E • 869-8621
42 CAMILLO A J REFUSE COLLECTOR • 661-8418
44 BEGLEY PATRICK 661-5796

- 45 GROVE ST BEGINS

46 KORTNER COLEMAN K 869-2075
48 MORETTI MICHAEL C • 869-5676
49 KITSON CHARLES E • 661-1497
50 MC ARDLE JAMES B • 869-0516
51 CONNORS THOMAS J JR 869-6971
JONES VICTOR • 661-7498

- 51 1/2 ORCHARD CT BEGINS

52 CARVETTE ANTHONY M JR • 869-3826
CENTRAL CONSTRUCTION CO 869-3826
53 HANNIGAN GREGORY S • 869-3149
54 WOZNIAK SIMON A • 869-2536
54 SAW CONSTRUCTION CO 869-2536
54 HOGAN DANIEL F • 661-9865
55 BIASE NORMAN J • 661-9136
56 HIGGINS FRANCIS J • 869-1347
HAWTHORNE SYLVIA MRS 661-6192
57 RISKA WILLIAM F • 869-5582
RISKA G B MRS TCHR OF MUSIC 869-5582
58 PIPICELLI LORETTA A MRS • 661-6241
59 BOND RICHARD • 869-6190
60 JOHNSON STANLEY B • 661-7775
61 SEIDL ANN M • 869-1695
62 DUFFY HUGH P • 869-0013
64 CAMPANELLI DANIEL J • 661-8482
65 FISCHER DOUGLAS M • 661-8413
66 WALSH JOSEPH C • 661-8151

- 67 KENT PL BEGINS

68 RICKS LAURA M MRS • 869-6063

- 68 1/2 SINAWAY RD ENDS

70 COUNTRY DELICATESSEN 661-5126
72 PICA PETER J •

- 73 BERGE ST BEGINS

74 MEHRTENS HERMAN • 661-6614
76 GOURD DONALD • 661-6979
77 STERN OTTO E • 869-1235
77 ROMANIELLO ROSEMARY N 661-2645
78 REINHARDT FRIEDA L MRS • 661-7155
TIMM JOHN L 661-6837
79 SPEZIANO RUDOLPH R RUDYS LIMOUSINE SERVICE 869-6727

80 PETERSON ROBERT S • 661-7221
82 THIBAULT F J PRINTER • 869-7877
83 SCALES ANDREW 869-3960
83R TUCHMAN LESTER • 869-5048
83R STEIN DAVID 869-8789
84 OLIVIER LOUIS • 869-9859
86 FIORITO MICHAEL E • 869-7681

- 86 1/2 VALLEY WOOD RD ENDS

88 BENDETT RICHARD Q • 661-1897
90 LOVALLO ANTHONY • 869-2493
90 LIVINGSTON DAVID •
92 VACANT
92 FARWELL SARA
96 CARAVELLA LOUIS C • 661-8834
98 ALLEGRINI FRANK A • 661-6341
100 KOSSULK STEPHEN Q • 661-4871
101 POMERANCE RALPH • 869-3932
101 DRISCOLL PETER 869-8202
102 VACANT
SCALES GEORGE M 869-6539
102 1/2 SCALES ANDREW H JR • 869-8783
104 CASEY THOMAS F • 661-1785
106 RITCH CHARLES S JR PAINTER • 869-6817
108 PETERSEN WILLIAM H • 869-6091
110 SNYDER WALTER J • 869-2311
112 MAC CUMB SADIE E MRS • 869-1612
115 SLEVIN EDWARD S LANDSCAPE GARDENER 661-8906
TAYLOR MAX • 869-5590
221 TAMANY EDNA L MRS • 869-2717
120 LA BOTT RAYMOND H •

- 122 INDIAN ROCK LA BEGINS
- 231 COACHLAMP LA BEGINS

300 SCHIOO FRANK R • 869-7314
302 GIOFFRE JOSEPH D • 661-6038
304 CLARK LEO J • 869-8824
306 DUSENBERRY WALTER E 661-3287
308 LAWLESS DAVID 661-2214
311 REFUSED INFO
315 SPENCER GEORGE H JR • 661-7252
319 ERERSEN GEORGE B • 661-7779
323 QASHI OSMAN

ORCHARD CT (COS COB) FR 51 1/2 ORCHARD NE TO DEAD END (RIGHT ODD) ZIP CODE 06807

1 HORNIK JULIUS P • 869-7524
2 LOCKHART LORRAINE K 869-0001

ORCHARD DR (MILBROOK) FR 73 1/2 W BROTHER DR S AND W TO 71 1/2 WILDWOOD DR (RIGHT EVEN) ZIP CODE 06830

7 GRANT WALTER R • 869-7999
15 HENKEL HANS O • 622-8905
16 GILLIAND J WILLIAM • 869-3268
18 MORGAN E SADLER • 869-0460
21 SANDERS WILLIAM C • 869-1597
22 HEMPHILL WILLIAM J • 661-4856
27 SCHLAFLY HUBERT J • 661-6719
37 MOORE JOHN L • 869-9342
40 BISHOP WILLIAM MCK • 622-1447
45 HOLLAND BRYCE L • 869-0314
54 DRAKE RICHARD M • 869-3469
55 RIGBY RALPH P • 661-4864
68 CUMMINGS CHARLES M • 661-6580
69 NOONAN EDMUND R • 661-6580
75 ZAJEC JANEZ • 661-0039
76 KENT MILTON F • 869-6390
87 REDFIELD PETER B • 661-1246
90 GREEN ALANSON W 661-3744
107 GLENDENING JOHN • 869-5834
113 ZAMECKI ROBERT J • 869-3256
113 MORGAN VIRGINIA 869-6730

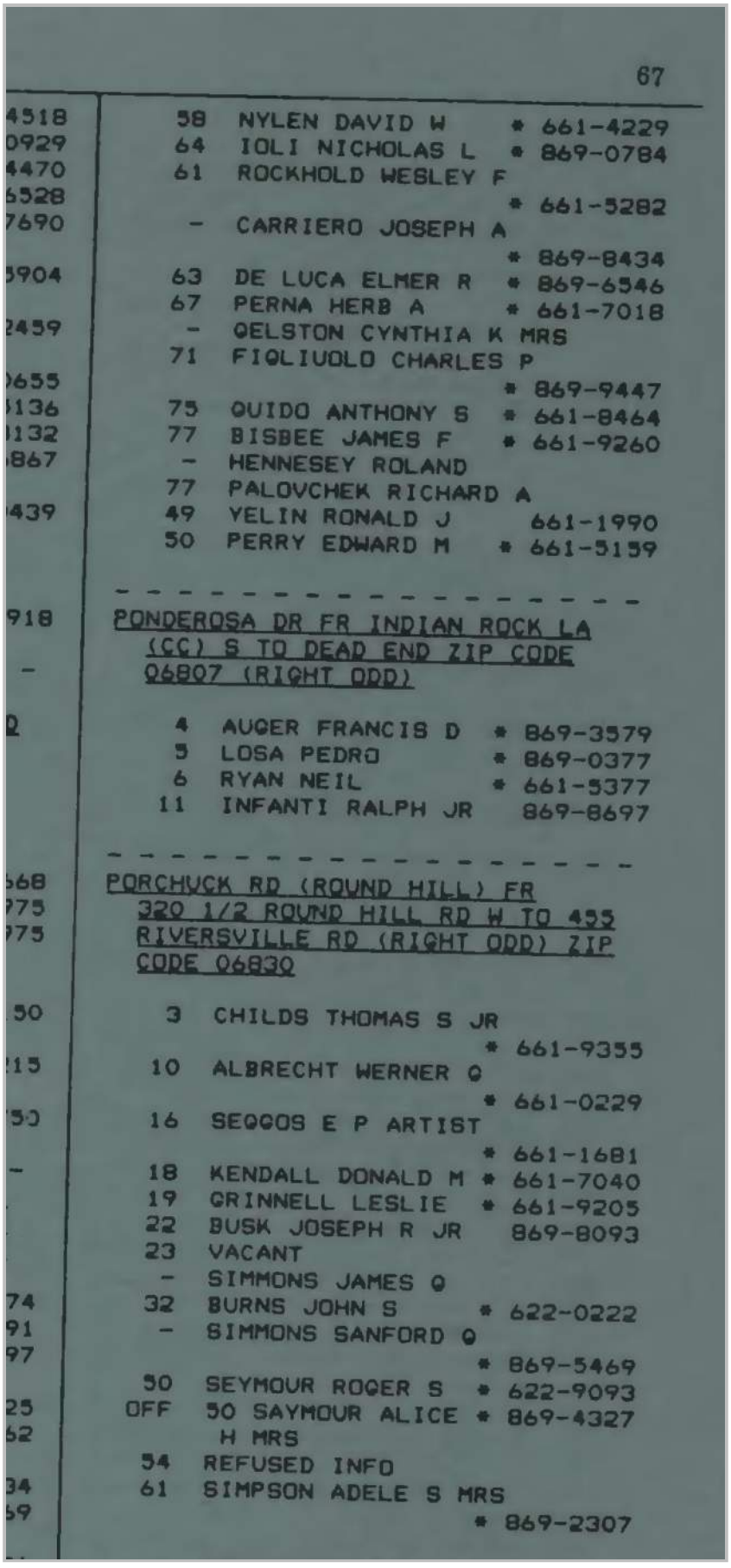
- 111 OVERLOOK DR ENDS
- 116 WILDWOOD DR ENDS

ORCHARD PL FR 394 1/2 DAVIS AV S THEN W TO 79 INDIAN HARBOR DR (RIGHT EVEN) ZIP CODE 06830

6 FRANGIONE LUKE T JR • 661-6683
6 STRONG B B MRS NURSE 869-4641
11 ECCLES THOMAS R JR • 869-6492

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

PONDEROSA DR 1980



67

4518 58 NYLEN DAVID W * 661-4229
0929 64 IOLI NICHOLAS L * 869-0784
4470 61 ROCKHOLD WESLEY F
6528 * 661-5282
7690 - CARRIERO JOSEPH A
* 869-8434
5904 63 DE LUCA ELMER R * 869-6546
67 PERNA HERB A * 661-7018
2459 - GELSTON CYNTHIA K MRS
71 FIGLIUOLO CHARLES P
)655 * 869-9447
)136 75 QUIDO ANTHONY S * 661-8464
)132 77 BISBEE JAMES F * 661-9260
)867 - HENNESEY ROLAND
77 PALOVCHEK RICHARD A
)439 49 YELIN RONALD J 661-1990
50 PERRY EDWARD M * 661-5159

- - - - - - - - - - - - - - - - - -

918 PONDEROSA DR FR INDIAN ROCK LA
(CC) S TO DEAD END ZIP CODE
- 06807 (RIGHT ODD)

Q 4 AUGER FRANCIS D * 869-3579
5 LOSA PEDRO * 869-0377
6 RYAN NEIL * 661-5377
11 INFANTI RALPH JR 869-8697

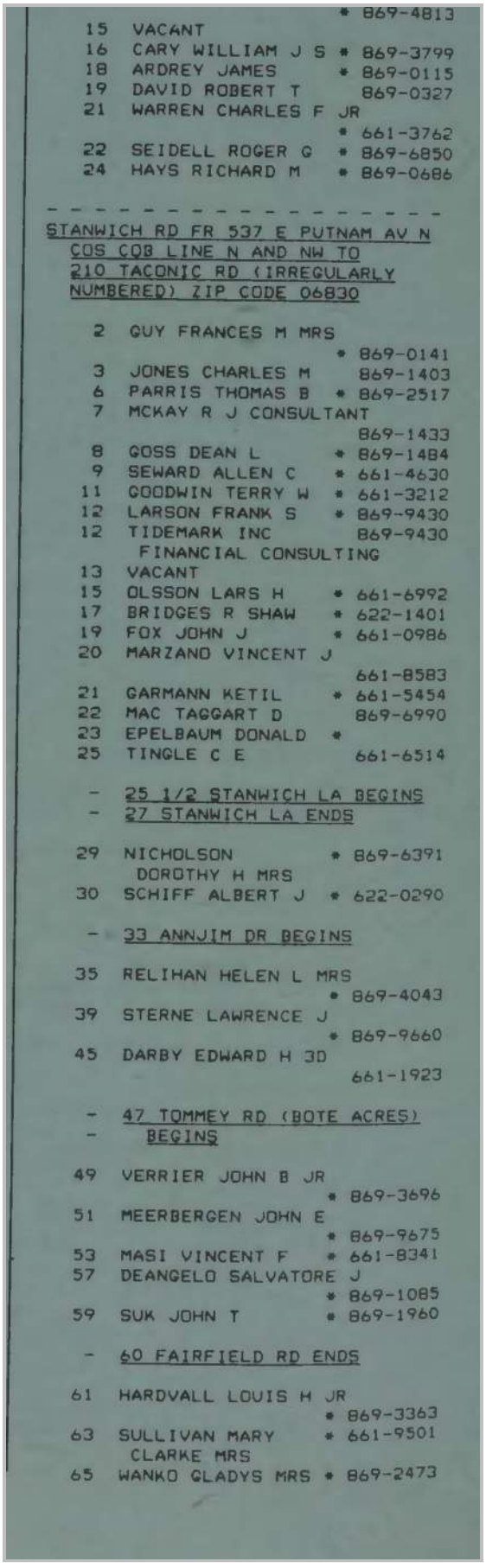
- - - - - - - - - - - - - - - - - -

568 PORCHUCK RD (ROUND HILL) FR
775 320 1/2 ROUND HILL RD W TO 455
775 RIVERSVILLE RD (RIGHT ODD) ZIP
CODE 06830

50 3 CHILDS THOMAS S JR
* 661-9355
!15 10 ALBRECHT WERNER Q
* 661-0229
!5O 16 SEQQOS E P ARTIST
* 661-1681
- 18 KENDALL DONALD M * 661-7040
19 GRINNELL LESLIE * 661-9205
22 BUSK JOSEPH R JR 869-8093
23 VACANT
- SIMMONS JAMES Q
74 32 BURNS JOHN S * 622-0222
91 - SIMMONS SANFORD Q
97 * 869-5469
50 SEYMOUR ROGER S * 622-9093
25 OFF 50 SAYMOUR ALICE * 869-4327
62 H MRS
54 REFUSED INFO
34 61 SIMPSON ADELE S MRS
69 * 869-2307

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

STANWICH RD 1980



* 869-4813
15 VACANT
16 CARY WILLIAM J S * 869-3799
18 ARDREY JAMES * 869-0115
19 DAVID ROBERT T 869-0327
21 WARREN CHARLES F JR
* 661-3762
22 SEIDELL ROGER G * 869-6850
24 HAYS RICHARD M * 869-0686

STANWICH RD FR 537 E PUTNAM AV N COS COB LINE N AND NW TO 210 TACONIC RD (IRREGULARLY NUMBERED) ZIP CODE 06830

2 GUY FRANCES M MRS
* 869-0141
3 JONES CHARLES M 869-1403
6 PARRIS THOMAS B * 869-2517
7 MCKAY R J CONSULTANT
869-1433
8 GOSS DEAN L * 869-1484
9 SEWARD ALLEN C * 661-4630
11 GOODWIN TERRY W * 661-3212
12 LARSON FRANK S * 869-9430
12 TIDEMARK INC 869-9430
FINANCIAL CONSULTING
13 VACANT
15 OLSSON LARS H * 661-6992
17 BRIDGES R SHAW * 622-1401
19 FOX JOHN J * 661-0986
20 MARZANO VINCENT J
661-8583
21 GARMANN KETIL * 661-5454
22 MAC TAGGART D 869-6990
23 EPELBAUM DONALD *
25 TINGLE C E 661-6514

\- 25 1/2 STANWICH LA BEGINS
\- 27 STANWICH LA ENDS

29 NICHOLSON * 869-6391
DOROTHY H MRS
30 SCHIFF ALBERT J * 622-0290

\- 33 ANNJIM DR BEGINS

35 RELIHAN HELEN L MRS
* 869-4043
39 STERNE LAWRENCE J
* 869-9660
45 DARBY EDWARD H 3D
661-1923

\- 47 TOMMEY RD (BOTE ACRES)
\- BEGINS

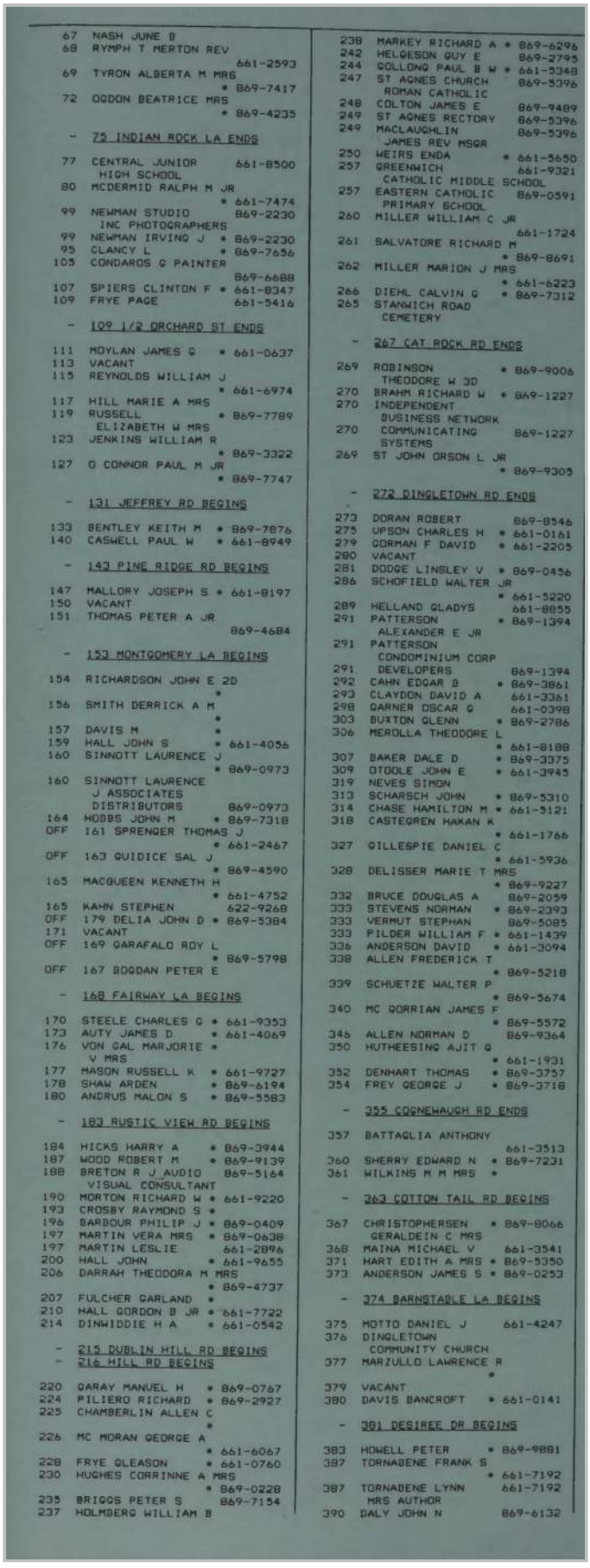
49 VERRIER JOHN B JR
* 869-3696
51 MEERBERGEN JOHN E
* 869-9675
53 MASI VINCENT F * 661-8341
57 DEANGELO SALVATORE J
* 869-1085
59 SUK JOHN T * 869-1960

\- 60 FAIRFIELD RD ENDS

61 HARDVALL LOUIS H JR
* 869-3363
63 SULLIVAN MARY * 661-9501
CLARKE MRS
65 WANKO GLADYS MRS * 869-2473

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

STANWICH RD 1980



67 NASH JUNE B
68 RYMPH T MERTON REV 661-2593
69 TYRON ALBERTA M MRS * 869-7417
72 OGDON BEATRICE MRS * 869-4235

- 75 INDIAN ROCK LA ENDS

77 CENTRAL JUNIOR HIGH SCHOOL 661-8500
80 MCDERMID RALPH M JR * 661-7474
99 NEWMAN STUDIO INC PHOTOGRAPHERS 869-2230
99 NEWMAN IRVING J * 869-2230
95 CLANCY L * 869-7656
103 CONDAROS G PAINTER 869-6688
107 SPIERS CLINTON F * 661-8347
109 FRYE PAGE 661-5416

- 109 1/2 ORCHARD ST ENDS

111 MOYLAN JAMES G * 661-0637
113 VACANT
115 REYNOLDS WILLIAM J * 661-6974
117 HILL MARIE A MRS
119 RUSSELL ELIZABETH W MRS * 869-7789
123 JENKINS WILLIAM R * 869-3322
127 O CONNOR PAUL M JR * 869-7747

- 131 JEFFREY RD BEGINS

133 BENTLEY KEITH M * 869-7876
140 CASWELL PAUL W * 661-8949

- 143 PINE RIDGE RD BEGINS

147 MALLORY JOSEPH S * 661-8197
150 VACANT
151 THOMAS PETER A JR 869-4684

- 153 MONTGOMERY LA BEGINS

154 RICHARDSON JOHN E 2D *
156 SMITH DERRICK A M *
157 DAVIS M *
159 HALL JOHN S * 661-4056
160 SINNOTT LAURENCE J * 869-0973
160 SINNOTT LAURENCE J ASSOCIATES DISTRIBUTORS 869-0973
164 HOBBS JOHN M * 869-7318
OFF 161 SPRENGER THOMAS J * 661-2467
OFF 163 QUIDICE SAL J * 869-4590
165 MACQUEEN KENNETH H * 661-4752
165 KAHN STEPHEN 622-9268
OFF 179 DELIA JOHN D * 869-5384
171 VACANT
OFF 169 GARAFALO ROY L * 869-5798
OFF 167 BOGDAN PETER E

- 168 FAIRWAY LA BEGINS

170 STEELE CHARLES G * 661-9353
173 AUTY JAMES D * 661-4069
176 VON GAL MARJORIE V MRS *
177 MASON RUSSELL K * 661-9727
178 SHAW ARDEN * 869-6194
180 ANDRUS MALON S * 869-5583

- 183 RUSTIC VIEW RD BEGINS

184 HICKS HARRY A * 869-3944
187 WOOD ROBERT M * 869-9139
188 BRETON R J AUDIO VISUAL CONSULTANT 869-5164
190 MORTON RICHARD W * 661-9220
193 CROSBY RAYMOND S *
196 BARBOUR PHILIP J * 869-0409
197 MARTIN VERA MRS * 869-0638
197 MARTIN LESLIE 661-2896
200 HALL JOHN * 661-9655
206 DARRAH THEODORA M MRS * 869-4737
207 FULCHER GARLAND *
210 HALL GORDON B JR * 661-7722
214 DINWIDDIE H A * 661-0542

- 215 DUBLIN HILL RD BEGINS
- 216 HILL RD BEGINS

220 GARAY MANUEL H * 869-0767
224 PILIERO RICHARD * 869-2927
225 CHAMBERLIN ALLEN C *
226 MC MORAN GEORGE A * 661-6067
228 FRYE GLEASON * 661-0760
230 HUGHES CORRINNE A MRS * 869-0228
235 BRIGGS PETER S 869-7154
237 HOLMBERG WILLIAM B
238 MARKEY RICHARD A * 869-6296
242 HELGESON GUY E 869-2795
244 GOLLONG PAUL B W * 661-3348
247 ST AGNES CHURCH ROMAN CATHOLIC 869-5396
248 COLTON JAMES E 869-9489
249 ST AGNES RECTORY 869-5396
249 MACLAUGHLIN JAMES REV MSGR 869-5396
250 WEIRS ENDA * 661-3650
257 GREENWICH CATHOLIC MIDDLE SCHOOL 661-9321
257 EASTERN CATHOLIC PRIMARY SCHOOL 869-0591
260 MILLER WILLIAM C JR 661-1724
261 SALVATORE RICHARD M * 869-8691
262 MILLER MARION J MRS * 661-6223
266 DIEHL CALVIN G * 869-7312
265 STANWICH ROAD CEMETERY

- 267 CAT ROCK RD ENDS

269 ROBINSON THEODORE W 3D * 869-9006
270 BRAHM RICHARD W * 869-1227
270 INDEPENDENT BUSINESS NETWORK COMMUNICATING SYSTEMS 869-1227
269 ST JOHN ORSON L JR * 869-9305

- 272 DINGLETOWN RD ENDS

273 DORAN ROBERT 869-8546
275 UPSON CHARLES H * 661-0161
279 GORMAN F DAVID * 661-2205
280 VACANT
281 DODGE LINSLEY V * 869-0456
286 SCHOFIELD WALTER JR * 661-5220
289 HELLAND GLADYS 661-8855
291 PATTERSON ALEXANDER E JR * 869-1394
291 PATTERSON CONDOMINIUM CORP DEVELOPERS 869-1394
292 CAHN EDGAR B * 869-3861
293 CLAYDON DAVID A 661-3361
298 GARNER OSCAR G 661-0398
303 BUXTON GLENN * 869-2786
306 MEROLLA THEODORE L * 661-8188
307 BAKER DALE D * 869-3375
309 OTOOLE JOHN E * 661-3945
319 NEVES SIMON
313 SCHARSCH JOHN * 869-5310
314 CHASE HAMILTON M * 661-5121
318 CASTEGREN HAKAN K * 661-1766
327 GILLESPIE DANIEL C * 661-5936
328 DELISSER MARIE T MRS * 869-9227
332 BRUCE DOUGLAS A 869-2059
333 STEVENS NORMAN * 869-2393
333 VERMUT STEPHAN 869-5085
333 PILDER WILLIAM F * 661-1439
336 ANDERSON DAVID * 661-3094
338 ALLEN FREDERICK T * 869-5218
339 SCHUETZE WALTER P * 869-5674
340 MC GORRIAN JAMES F * 869-5572
345 ALLEN NORMAN D 869-9364
350 HUTHEESING AJIT G * 661-1931
352 DENHART THOMAS * 869-3757
354 FREY GEORGE J * 869-3718

- 355 CORNEWAUGH RD ENDS

357 BATTAGLIA ANTHONY 661-3513
360 SHERRY EDWARD N * 869-7231
361 WILKINS M M MRS *

- 363 COTTON TAIL RD BEGINS

367 CHRISTOPHERSEN GERALDEIN C MRS * 869-8066
368 MAINA MICHAEL V 661-3541
371 HART EDITH A MRS * 869-5350
373 ANDERSON JAMES S * 869-0253

- 374 BARNSTABLE LA BEGINS

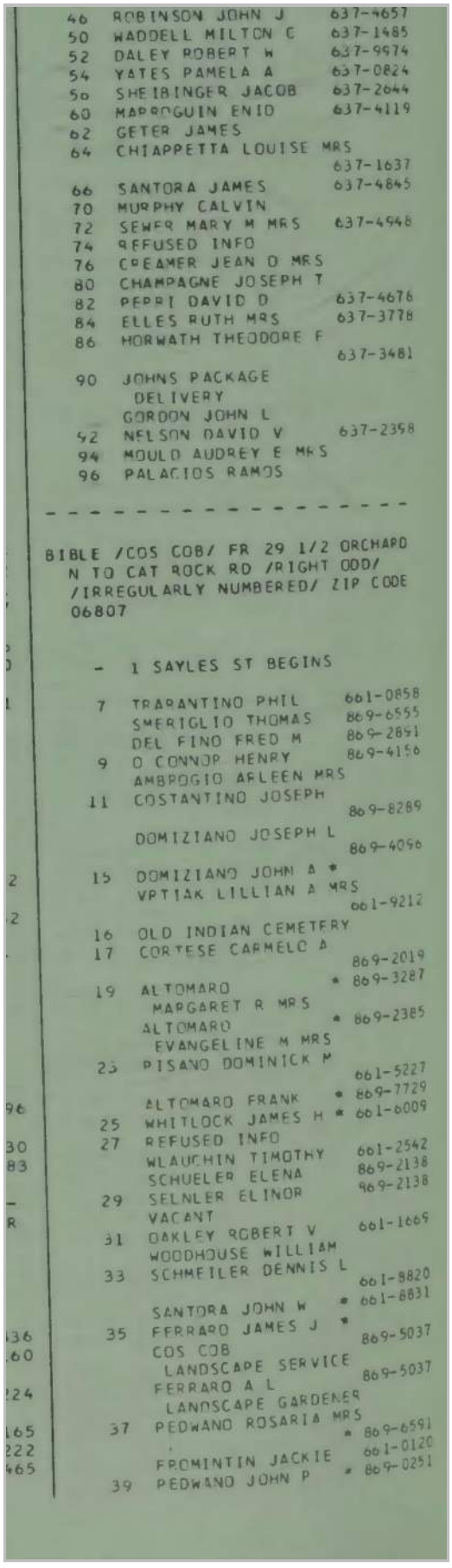
375 MOTTO DANIEL J 661-4247
376 DINGLETOWN COMMUNITY CHURCH
377 MARZULLO LAWRENCE R *
379 VACANT
380 DAVIS BANCROFT * 661-0141

- 381 DESIREE DR BEGINS

383 HOWELL PETER * 869-9881
387 TORNABENE FRANK S * 661-7192
387 TORNABENE LYNN MRS AUTHOR 661-7192
390 DALY JOHN N 869-6132

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

BIBLE ST 1977



46 ROBINSON JOHN J 637-4657
50 WADDELL MILTON C 637-1485
52 DALEY ROBERT W 637-9974
54 YATES PAMELA A 637-0824
56 SHEIBINGER JACOB 637-2644
60 MARROQUIN ENID 637-4119
62 GETER JAMES
64 CHIAPPETTA LOUISE MRS 637-1637
66 SANTORA JAMES 637-4845
70 MURPHY CALVIN
72 SEWER MARY M MRS 637-4948
74 REFUSED INFO
76 CREAMER JEAN D MRS
80 CHAMPAGNE JOSEPH T
82 PERRI DAVID D 637-4676
84 ELLES RUTH MRS 637-3778
86 HORWATH THEODORE F 637-3481
90 JOHNS PACKAGE DELIVERY
GORDON JOHN L
92 NELSON DAVID V 637-2398
94 MOULD AUDREY E MRS
96 PALACIOS RAMOS

- - - - - - - - - - - - - - - - -

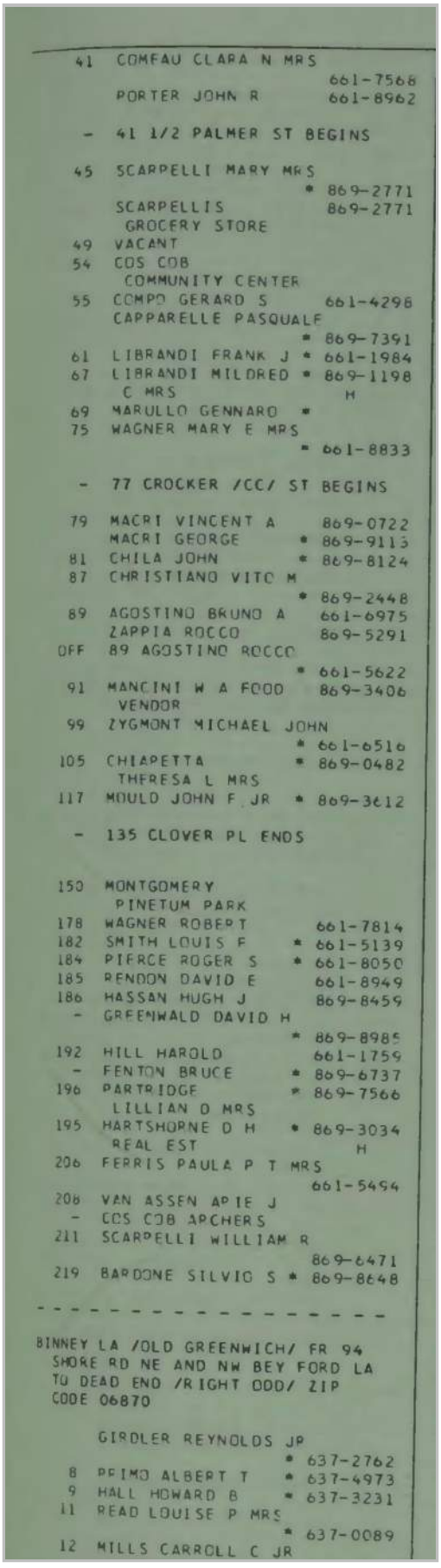
BIBLE /COS COB/ FR 29 1/2 ORCHARD N TO CAT ROCK RD /RIGHT ODD/ /IRREGULARLY NUMBERED/ ZIP CODE 06807

- 1 SAYLES ST BEGINS

7 TRABANTINO PHIL 661-0858
SMERIGLIO THOMAS 869-6555
DEL FINO FRED M 869-2891
9 O CONNOR HENRY 869-4156
AMBROGIO ARLEEN MRS
11 COSTANTINO JOSEPH 869-8289
DOMIZIANO JOSEPH L 869-4096
15 DOMIZIANO JOHN A * 661-9212
VPTIAK LILLIAN A MRS
16 OLD INDIAN CEMETERY
17 CORTESE CARMELO A 869-2019
19 ALTOMARO * 869-3287
MARGARET R MRS
ALTOMARO * 869-2385
EVANGELINE M MRS
23 PISANO DOMINICK M 661-5227
ALTOMARO FRANK * 869-7729
25 WHITLOCK JAMES H * 661-6009
27 REFUSED INFO
WLAUCHIN TIMOTHY 661-2542
SCHUELER ELENA 869-2138
29 SELNLER ELINOR 969-2138
VACANT
31 OAKLEY ROBERT V 661-1669
WOODHOUSE WILLIAM
33 SCHMEILER DENNIS L 661-8820
SANTORA JOHN W * 661-8831
35 FERRARO JAMES J *
COS COB 869-5037
LANDSCAPE SERVICE
FERRARO A L 869-5037
LANDSCAPE GARDENER
37 PEDWANO ROSARIA MRS * 869-6591
FROMINTIN JACKIE 661-0120
39 PEDWANO JOHN P * 869-0251

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

BIBLE ST 1977



41 COMFAU CLARA N MRS
661-7568
PORTER JOHN R 661-8962

\- 41 1/2 PALMER ST BEGINS

45 SCARPELLI MARY MRS
* 869-2771
SCARPELLIS 869-2771
GROCERY STORE
49 VACANT
54 COS COB
COMMUNITY CENTER
55 COMPO GERARD S 661-4298
CAPPARELLE PASQUALE
* 869-7391
61 LIBRANDI FRANK J * 661-1984
67 LIBRANDI MILDRED * 869-1198
C MRS H
69 MARULLO GENNARO *
75 WAGNER MARY E MRS
* 661-8833

\- 77 CROCKER /CC/ ST BEGINS

79 MACRI VINCENT A 869-0722
MACRI GEORGE * 869-9113
81 CHILA JOHN * 869-8124
87 CHRISTIANO VITO M
* 869-2448
89 AGOSTINO BRUNO A 661-6975
ZAPPIA ROCCO 869-5291
OFF 89 AGOSTINO ROCCO
* 661-5622
91 MANCINI W A FOOD 869-3406
VENDOR
99 ZYGMONT MICHAEL JOHN
* 661-6516
105 CHIAPETTA * 869-0482
THERESA L MRS
117 MOULD JOHN F JR * 869-3612

\- 135 CLOVER PL ENDS

150 MONTGOMERY
PINETUM PARK
178 WAGNER ROBERT 661-7814
182 SMITH LOUIS F * 661-5139
184 PIERCE ROGER S * 661-8050
185 RENDON DAVID E 661-8949
186 HASSAN HUGH J 869-8459
\- GREENWALD DAVID H
* 869-8985
192 HILL HAROLD 661-1759
\- FENTON BRUCE * 869-6737
196 PARTRIDGE * 869-7566
LILLIAN D MRS
195 HARTSHORNE D H * 869-3034
REAL EST H
206 FERRIS PAULA P T MRS
661-5494
208 VAN ASSEN APIE J
\- COS COB ARCHERS
211 SCARPELLI WILLIAM R
869-6471
219 BARDONE SILVIO S * 869-8648

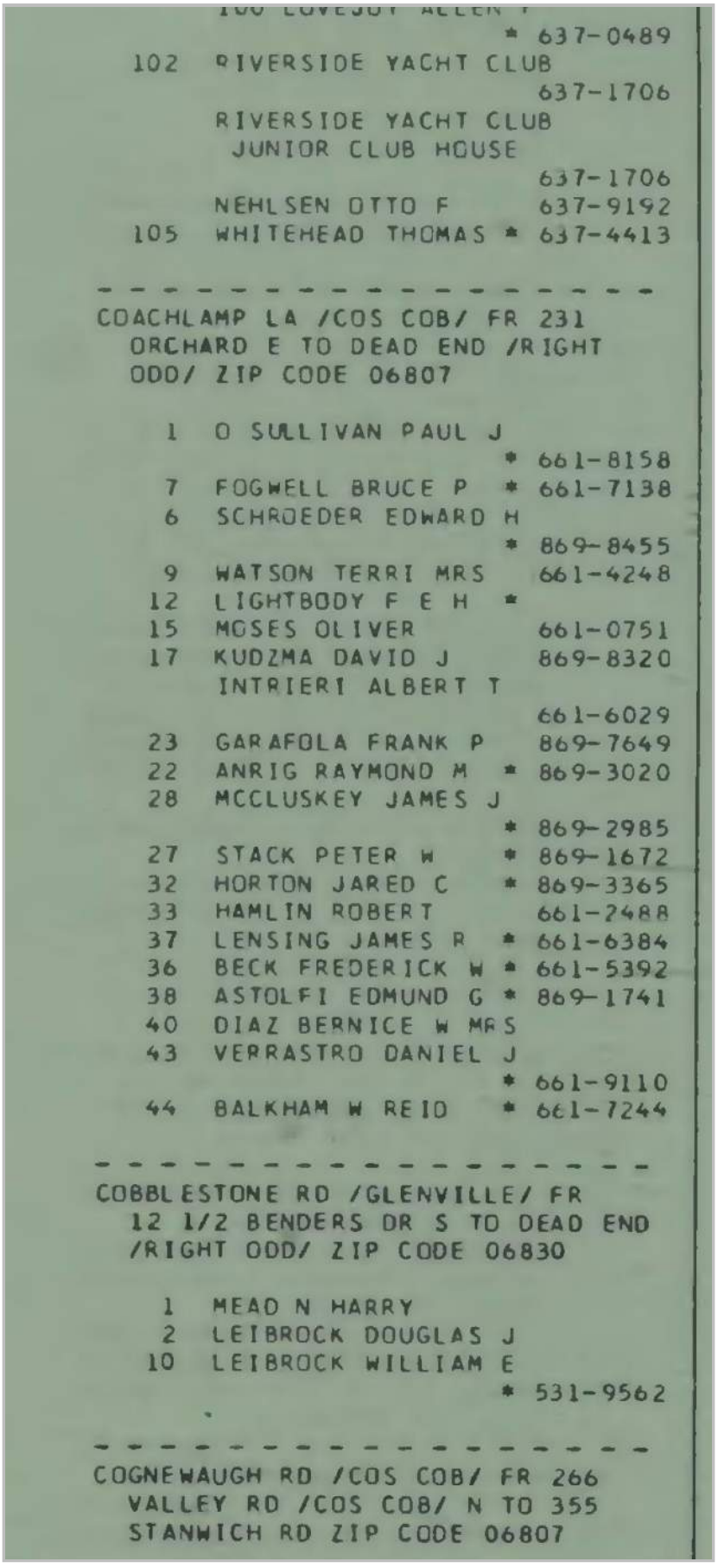
\- - - - - - - - - - - - - - - - - -

BINNEY LA /OLD GREENWICH/ FR 94
SHORE RD NE AND NW BEY FORD LA
TO DEAD END /RIGHT ODD/ ZIP
CODE 06870

GIRDLER REYNOLDS JR
* 637-2762
8 PRIMO ALBERT T * 637-4973
9 HALL HOWARD B * 637-3231
11 READ LOUISE P MRS
* 637-0089
12 MILLS CARROLL C JR

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

COACHLAMP LN 1977



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                                * 637-0489
  102  RIVERSIDE YACHT CLUB
                                  637-1706
       RIVERSIDE YACHT CLUB
        JUNIOR CLUB HOUSE
                                  637-1706
       NEHLSEN OTTO F             637-9192
  105  WHITEHEAD THOMAS *         637-4413

- - - - - - - - - - - - - - - - - - -
COACHLAMP LA /COS COB/ FR 231
  ORCHARD E TO DEAD END /RIGHT
  ODD/ ZIP CODE 06807

    1  O SULLIVAN PAUL J
                                * 661-8158
    7  FOGWELL BRUCE P          * 661-7138
    6  SCHROEDER EDWARD H
                                * 869-8455
    9  WATSON TERRI MRS           661-4248
   12  LIGHTBODY F E H  *
   15  MOSES OLIVER               661-0751
   17  KUDZMA DAVID J             869-8320
       INTRIERI ALBERT T
                                  661-6029
   23  GARAFOLA FRANK P           869-7649
   22  ANRIG RAYMOND M          * 869-3020
   28  MCCLUSKEY JAMES J
                                * 869-2985
   27  STACK PETER W            * 869-1672
   32  HORTON JARED C           * 869-3365
   33  HAMLIN ROBERT              661-2488
   37  LENSING JAMES R          * 661-6384
   36  BECK FREDERICK W         * 661-5392
   38  ASTOLFI EDMUND G         * 869-1741
   40  DIAZ BERNICE W MRS
   43  VERRASTRO DANIEL J
                                * 661-9110
   44  BALKHAM W REID           * 661-7244

- - - - - - - - - - - - - - - - - - -
COBBLESTONE RD /GLENVILLE/ FR
  12 1/2 BENDERS DR S TO DEAD END
  /RIGHT ODD/ ZIP CODE 06830

    1  MEAD N HARRY
    2  LEIBROCK DOUGLAS J
   10  LEIBROCK WILLIAM E
                                * 531-9562

- - - - - - - - - - - - - - - - - - -
COGNEWAUGH RD /COS COB/ FR 266
  VALLEY RD /COS COB/ N TO 355
  STANWICH RD ZIP CODE 06807
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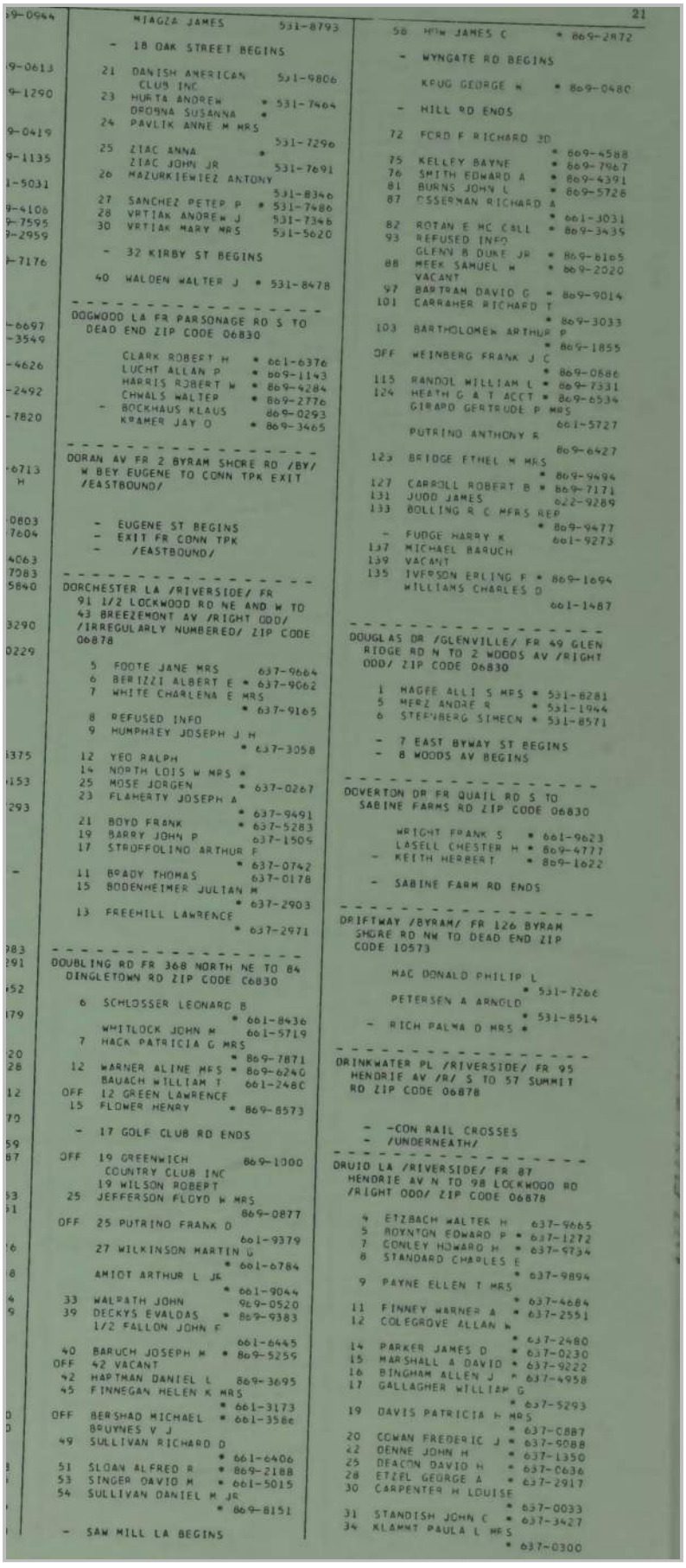
Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

DOUBLING RD 1977



MIAGZA JAMES 531-8793
- 18 OAK STREET BEGINS
21 DANISH AMERICAN CLUB INC 531-9806
23 HURTA ANDREW * 531-7404
DROGNA SUSANNA *
24 PAVLIK ANNE M MRS 531-7296
25 ZIAC ANNA *
ZIAC JOHN JR 531-7691
26 MAZURKIEWIEZ ANTONY 531-8346
27 SANCHEZ PETER P * 531-7486
28 VRTIAK ANDREW J 531-7346
30 VRTIAK MARY MRS 531-5620
- 32 KIRBY ST BEGINS
40 WALDEN WALTER J * 531-8478

DOGWOOD LA FR PARSONAGE RD S TO DEAD END ZIP CODE 06830

CLARK ROBERT H * 661-6376
LUCHT ALLAN P * 869-1143
HARRIS ROBERT W * 869-4284
CHWALS WALTER * 869-2776
- BOCKHAUS KLAUS 869-0293
KRAMER JAY D * 869-3465

DORAN AV FR 2 BYRAM SHORE RD /BY/ W BEY EUGENE TO CONN TPK EXIT /EASTBOUND/
- EUGENE ST BEGINS
- EXIT FR CONN TPK
- /EASTBOUND/

DORCHESTER LA /RIVERSIDE/ FR 91 1/2 LOCKWOOD RD NE AND W TO 43 BREEZEMONT AV /RIGHT ODD/ /IRREGULARLY NUMBERED/ ZIP CODE 06878
5 FOOTE JANE MRS 637-9664
6 BERTZZI ALBERT E * 637-9062
7 WHITE CHARLENA E MRS * 637-9165
8 REFUSED INFO
9 HUMPHREY JOSEPH J H * 637-3058
12 YEO RALPH
14 NORTH LOIS W MRS *
25 MOSE JORGEN * 637-0267
23 FLAHERTY JOSEPH A * 637-9491
21 BOYD FRANK * 637-5283
19 BARRY JOHN P 637-1509
17 STROFFOLINO ARTHUR F * 637-0742
11 BRADY THOMAS 637-0178
15 BODENHEIMER JULIAN M * 637-2903
13 FREEHILL LAWRENCE * 637-2971

DOUBLING RD FR 368 NORTH NE TO 84 DINGLETOWN RD ZIP CODE 06830
6 SCHLOSSER LEONARD B * 661-8436
WHITLOCK JOHN M 661-5719
7 HACK PATRICIA G MRS * 869-7871
12 WARNER ALINE MRS * 869-6240
BAUACH WILLIAM T 661-2480
OFF 12 GREEN LAWRENCE
15 FLOWER HENRY * 869-8573
- 17 GOLF CLUB RD ENDS
OFF 19 GREENWICH COUNTRY CLUB INC 869-1000
19 WILSON ROBERT
25 JEFFERSON FLOYD W MRS 869-0877
OFF 25 PUTRINO FRANK D 661-9379
27 WILKINSON MARTIN G * 661-6784
AMIOT ARTHUR L JR * 661-9044
33 WALRATH JOHN 869-0520
39 DECKYS EVALDAS * 869-9383
1/2 FALLON JOHN F 661-6445
40 BARUCH JOSEPH M * 869-5259
OFF 42 VACANT
42 HARTMAN DANIEL L 869-3695
45 FINNEGAN HELEN K MRS * 661-3173
OFF BERSHAD MICHAEL * 661-3586
BRUYNES V J
49 SULLIVAN RICHARD D * 661-6406
51 SLOAN ALFRED R * 869-2188
53 SINGER DAVID M * 661-5015
54 SULLIVAN DANIEL M JR * 869-8151
- SAW MILL LA BEGINS

58 HOW JAMES C * 869-2872
- WYNGATE RD BEGINS
KRUG GEORGE W * 869-0480
- HILL RD ENDS
72 FORD F RICHARD JR * 869-4588
75 KELLEY BAYNE * 869-7967
76 SMITH EDWARD A * 869-4391
81 BURNS JOHN L * 869-5728
87 OSSERMAN RICHARD A * 661-3031
82 ROTAN E MC CALL * 869-3435
93 REFUSED INFO
GLENN B DUKE JR * 869-8105
88 MEEK SAMUEL H * 869-2020
VACANT
97 BARTRAM DAVID G * 869-9014
101 CARRAHER RICHARD T * 869-3033
103 BARTHOLOMEW ARTHUR P * 869-1855
OFF WEINBERG FRANK J C * 869-0686
115 RANDOL WILLIAM L * 869-7331
124 HEATH G & T ACCT * 869-6534
GIRARD GERTRUDE P MRS 661-5727
PUTRINO ANTHONY R 869-6427
123 BRIDGE ETHEL M MRS * 869-9494
127 CARROLL ROBERT B * 869-7171
131 JUDD JAMES 622-9289
133 BOLLING R C MRS REP * 869-9477
- FUDGE HARRY K 661-9273
137 MICHAEL BARUCH
139 VACANT
135 IVERSON ERLING F * 869-1694
WILLIAMS CHARLES D 661-1487

DOUGLAS DR /GLENVILLE/ FR 49 GLEN RIDGE RD N TO 2 WOODS AV /RIGHT ODD/ ZIP CODE 06830
1 MAGEE ALLI S MRS * 531-8281
5 MERZ ANDRE R * 531-1944
6 STEINBERG SIMEON * 531-8571
- 7 EAST BYWAY ST BEGINS
- 8 WOODS AV BEGINS

DOVERTON DR FR QUAIL RD S TO SABINE FARMS RD ZIP CODE 06830
WRIGHT FRANK S * 661-9623
LASELL CHESTER H * 869-4777
- KEITH HERBERT * 869-1622
- SABINE FARM RD ENDS

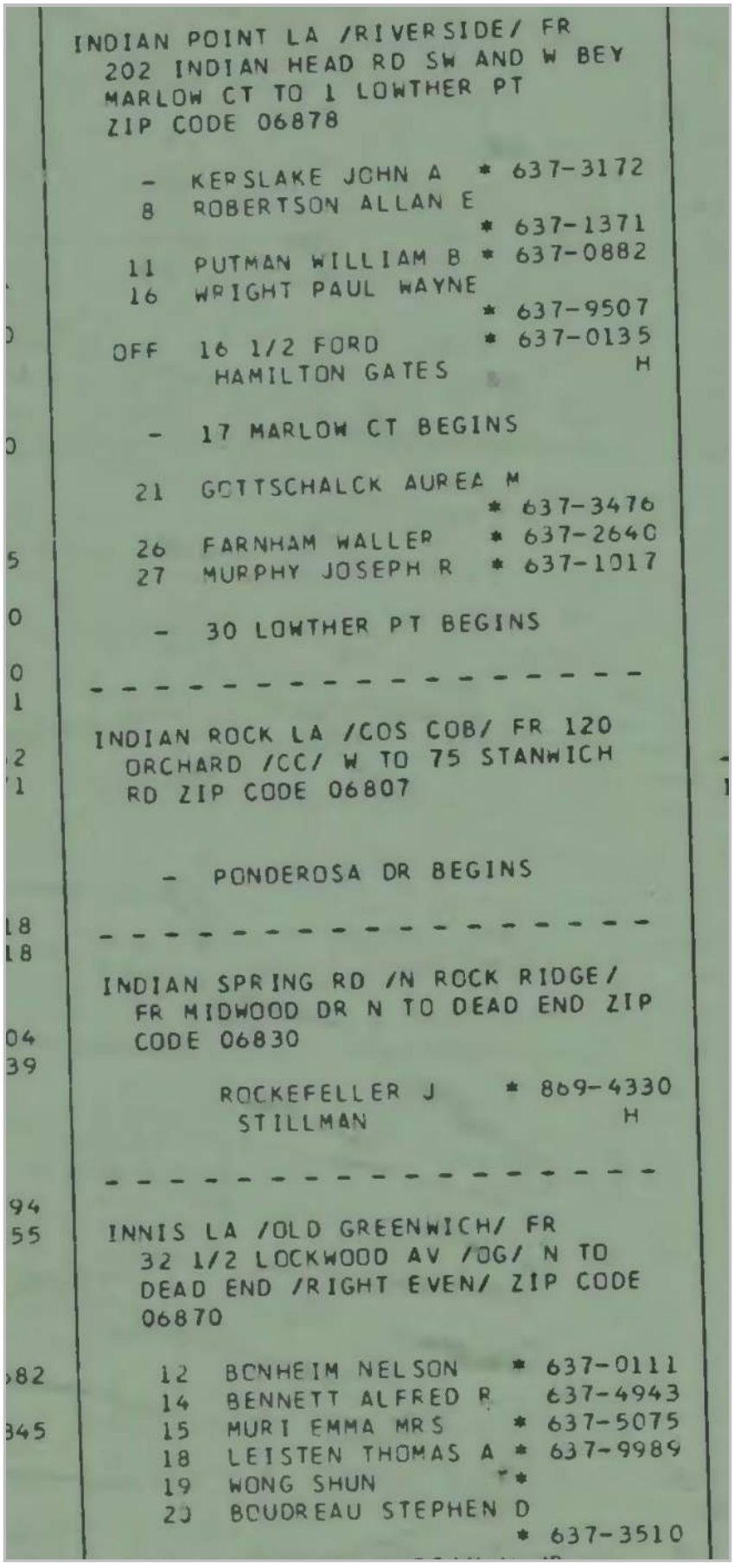
DRIFTWAY /BYRAM/ FR 126 BYRAM SHORE RD NW TO DEAD END ZIP CODE 10573
MAC DONALD PHILIP L * 531-7266
PETERSEN A ARNOLD * 531-8514
- RICH PALMA D MRS *

DRINKWATER PL /RIVERSIDE/ FR 95 HENDRIE AV /R/ S TO 57 SUMMIT RD ZIP CODE 06878
- -CON RAIL CROSSES
- /UNDERNEATH/

DRUID LA /RIVERSIDE/ FR 87 HENDRIE AV N TO 98 LOCKWOOD RD /RIGHT ODD/ ZIP CODE 06878
4 ETZBACH WALTER H 637-9665
5 ROYNTON EDWARD P * 637-1272
7 CONLEY HOWARD H * 637-9734
8 STANDARD CHARLES E * 637-9894
9 PAYNE ELLEN T MRS * 637-4684
11 FINNEY WARNER A * 637-2551
12 COLEGROVE ALLAN W * 637-2480
14 PARKER JAMES D * 637-0230
15 MARSHALL A DAVID * 637-9222
16 BINGHAM ALLEN J * 637-4958
17 GALLAGHER WILLIAM G * 637-5293
19 DAVIS PATRICIA H MRS * 637-0887
20 COWAN FREDERIC J * 637-9088
22 DENNE JOHN H * 637-1350
25 DEACON DAVID H * 637-0636
28 ETZEL GEORGE A * 637-2917
30 CARPENTER H LOUISE * 637-0033
31 STANDISH JOHN C * 637-3427
34 KLAMMT PAULA L MRS * 637-0300

Target Street	Cross Street	Source
✓	-	Price & Lee's City Directory

INDIAN ROCK LN 1977



INDIAN POINT LA /RIVERSIDE/ FR
202 INDIAN HEAD RD SW AND W BEY
MARLOW CT TO 1 LOWTHER PT
ZIP CODE 06878

- KERSLAKE JOHN A * 637-3172
8 ROBERTSON ALLAN E
* 637-1371
11 PUTMAN WILLIAM B * 637-0882
16 WRIGHT PAUL WAYNE
* 637-9507
OFF 16 1/2 FORD * 637-0135
HAMILTON GATES H

- 17 MARLOW CT BEGINS

21 GOTTSCHALCK AUREA M
* 637-3476
26 FARNHAM WALLER * 637-2640
27 MURPHY JOSEPH R * 637-1017

- 30 LOWTHER PT BEGINS

- - - - - - - - - - - - - - - - - -

INDIAN ROCK LA /COS COB/ FR 120
ORCHARD /CC/ W TO 75 STANWICH
RD ZIP CODE 06807

- PONDEROSA DR BEGINS

- - - - - - - - - - - - - - - - - -

INDIAN SPRING RD /N ROCK RIDGE/
FR MIDWOOD DR N TO DEAD END ZIP
CODE 06830

ROCKEFELLER J * 869-4330
STILLMAN H

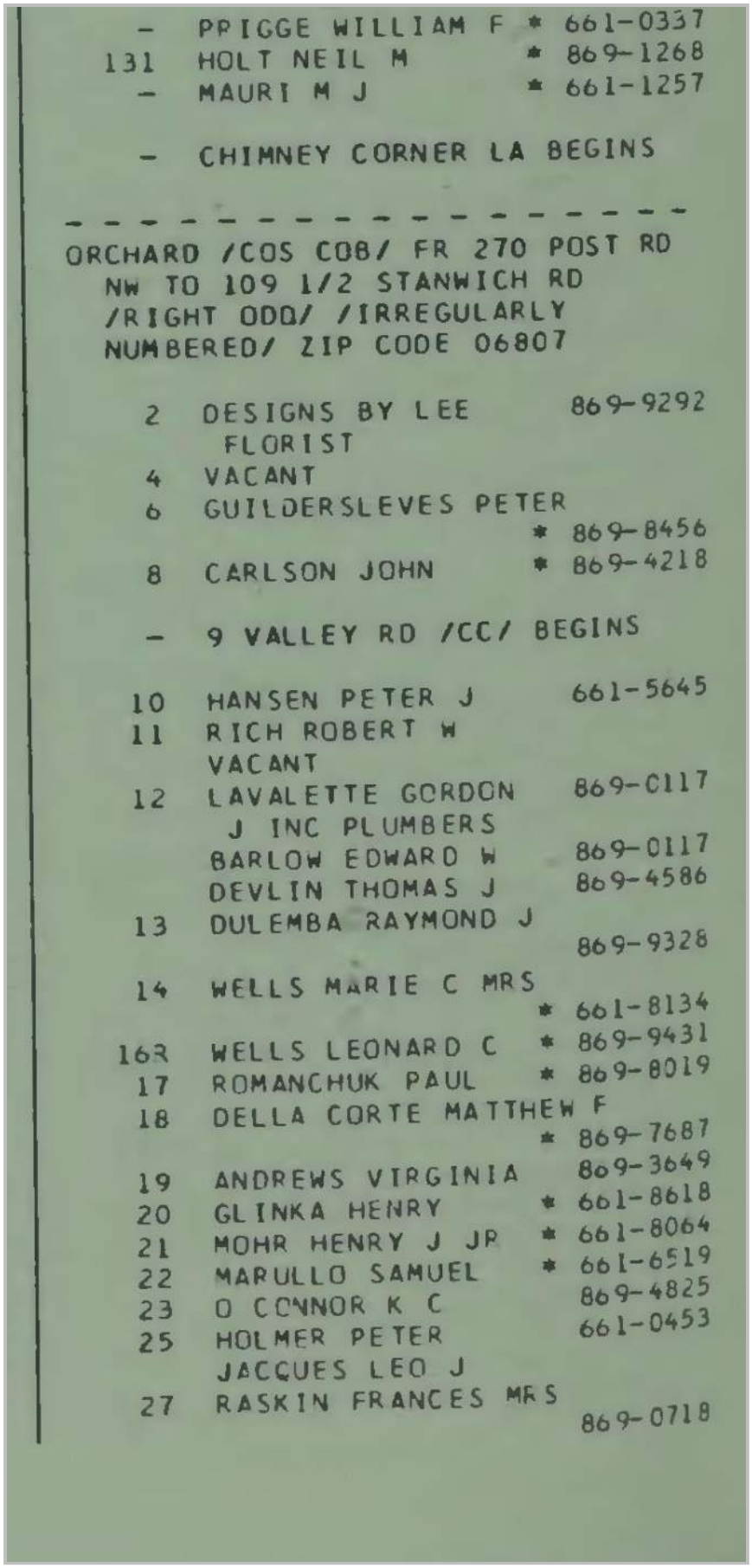
- - - - - - - - - - - - - - - - - -

INNIS LA /OLD GREENWICH/ FR
32 1/2 LOCKWOOD AV /OG/ N TO
DEAD END /RIGHT EVEN/ ZIP CODE
06870

12 BONHEIM NELSON * 637-0111
14 BENNETT ALFRED R 637-4943
15 MURI EMMA MRS * 637-5075
18 LEISTEN THOMAS A * 637-9989
19 WONG SHUN * *
20 BOUDREAU STEPHEN D
* 637-3510

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

ORCHARD ST 1977



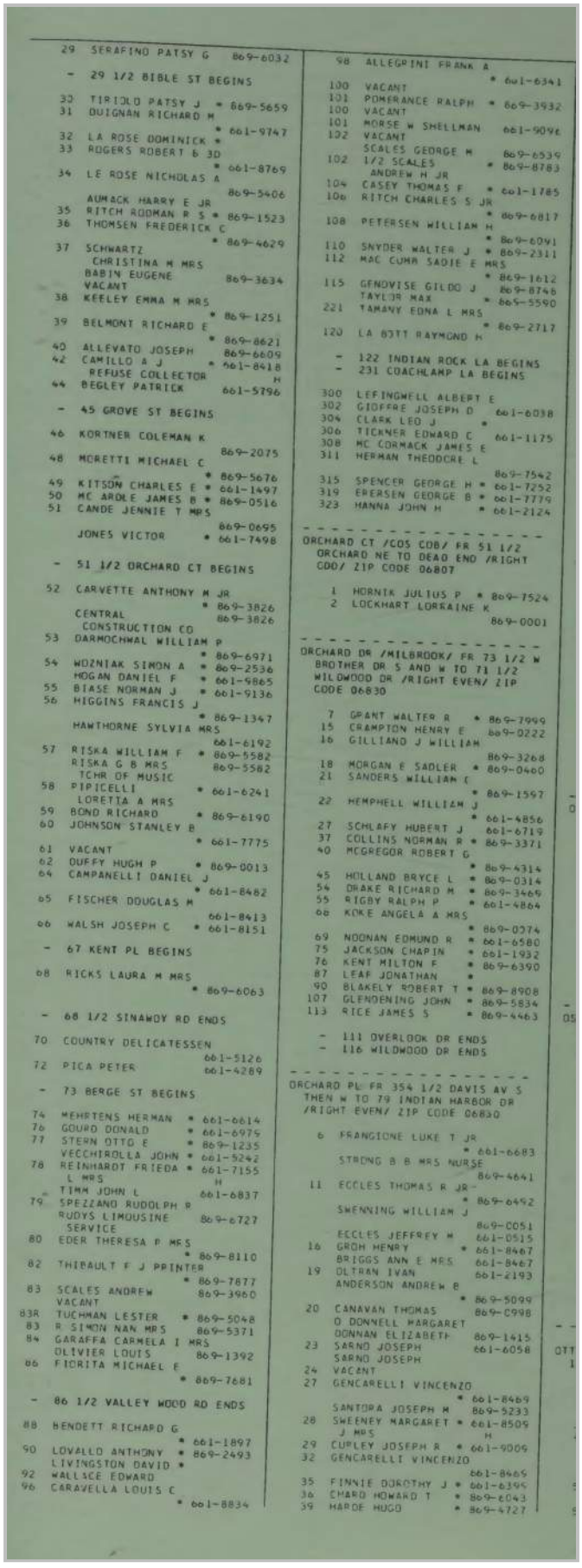
-	PRIGGE WILLIAM F *	661-0337
131	HOLT NEIL M *	869-1268
-	MAURI M J *	661-1257
-	CHIMNEY CORNER LA BEGINS	

ORCHARD /COS COB/ FR 270 POST RD NW TO 109 1/2 STANWICH RD /RIGHT ODD/ /IRREGULARLY NUMBERED/ ZIP CODE 06807

2	DESIGNS BY LEE FLORIST	869-9292
4	VACANT	
6	GUILDERSLEVES PETER *	869-8456
8	CARLSON JOHN *	869-4218
-	9 VALLEY RD /CC/ BEGINS	
10	HANSEN PETER J	661-5645
11	RICH ROBERT W	
	VACANT	
12	LAVALETTE GORDON J INC PLUMBERS	869-0117
	BARLOW EDWARD W	869-0117
	DEVLIN THOMAS J	869-4586
13	DULEMBA RAYMOND J	869-9328
14	WELLS MARIE C MRS *	661-8134
16R	WELLS LEONARD C *	869-9431
17	ROMANCHUK PAUL *	869-8019
18	DELLA CORTE MATTHEW F *	869-7687
19	ANDREWS VIRGINIA	869-3649
20	GLINKA HENRY *	661-8618
21	MOHR HENRY J JR *	661-8064
22	MARULLO SAMUEL *	661-6519
23	O CONNOR K C	869-4825
25	HOLMER PETER	661-0453
	JACQUES LEO J	
27	RASKIN FRANCES MRS	869-0718

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

ORCHARD ST 1977



29 SERAFINO PATSY G 869-6032

- 29 1/2 BIBLE ST BEGINS

30 TIRIOLO PATSY J * 869-5659
31 QUIGNAN RICHARD M * 661-9747
32 LA ROSE DOMINICK *
33 ROGERS ROBERT B 3D * 661-8769
34 LE ROSE NICHOLAS A 869-5406
AUMACK HARRY E JR
35 RITCH RODMAN R S * 869-1523
36 THOMSEN FREDERICK C * 869-4629
37 SCHWARTZ CHRISTINA M MRS
BABIN EUGENE 869-3634
VACANT
38 KEELEY EMMA M MRS * 869-1251
39 BELMONT RICHARD E * 869-8621
40 ALLEVATO JOSEPH 869-6609
42 CAMILLO A J * 661-8418
REFUSE COLLECTOR H
44 BEGLEY PATRICK 661-5796

- 45 GROVE ST BEGINS

46 KORTNER COLEMAN K 869-2075
48 MORETTI MICHAEL C * 869-5676
49 KITSON CHARLES E * 661-1497
50 MC ARDLE JAMES B * 869-0516
51 CANDE JENNIE T MRS 869-0695
JONES VICTOR * 661-7498

- 51 1/2 ORCHARD CT BEGINS

52 CARVETTE ANTHONY M JR * 869-3826
CENTRAL CONSTRUCTION CO 869-3826
53 DARMOCHWAL WILLIAM P * 869-6971
54 WOZNIAK SIMON A * 869-2536
HOGAN DANIEL F * 661-9865
55 BIASE NORMAN J * 661-9136
56 HIGGINS FRANCIS J * 869-1347
HAWTHORNE SYLVIA MRS 661-6192
57 RISKA WILLIAM F * 869-5582
RISKA G B MRS 869-5582
TCHR OF MUSIC
58 PIPICELLI * 661-6241
LORETTA A MRS
59 BOND RICHARD * 869-6190
60 JOHNSON STANLEY B * 661-7775
61 VACANT
62 DUFFY HUGH P * 869-0013
64 CAMPANELLI DANIEL J * 661-8482
65 FISCHER DOUGLAS M 661-8413
66 WALSH JOSEPH C * 661-8151

- 67 KENT PL BEGINS

68 RICKS LAURA M MRS * 869-6063

- 68 1/2 SINAWOY RD ENDS

70 COUNTRY DELICATESSEN 661-5126
72 PICA PETER 661-4289

- 73 BERGE ST BEGINS

74 MEHRTENS HERMAN * 661-6614
76 GOURO DONALD * 661-6975
77 STERN OTTO E * 869-1235
VECCHIROLLA JOHN * 661-5242
78 REINHARDT FRIEDA * 661-7155
L MRS H
TIMM JOHN L 661-6837
79 SPEZZANO RUDOLPH R 869-6727
RUDYS LIMOUSINE SERVICE
80 EDER THERESA P MRS * 869-8110
82 THIBAULT F J PRINTER * 869-7877
83 SCALES ANDREW 869-3960
VACANT
83R TUCHMAN LESTER * 869-5048
83 R SIMON NAN MRS 869-5371
84 GARAFFA CARMELA I MRS 869-1392
OLIVIER LOUIS
86 FIORITA MICHAEL E * 869-7681

- 86 1/2 VALLEY WOOD RD ENDS

88 BENDETT RICHARD G * 661-1897
90 LOVALLO ANTHONY * 869-2493
LIVINGSTON DAVID *
92 WALLSCE EDWARD
96 CARAVELLA LOUIS C * 661-8834

98 ALLEGRINI FRANK A * 661-6341
100 VACANT
101 POMERANCE RALPH * 869-3932
100 VACANT
101 MORSE W SHELLMAN 661-9096
102 VACANT
SCALES GEORGE M 869-6539
102 1/2 SCALES * 869-8783
ANDREW H JR
104 CASEY THOMAS F * 661-1785
106 RITCH CHARLES S JR * 869-6817
108 PETERSEN WILLIAM H * 869-6091
110 SNYDER WALTER J * 869-2311
112 MAC CUMB SADIE E MRS * 869-1612
115 GENOVISE GILDO J 869-8746
TAYLOR MAX * 865-5590
221 TAMANY EDNA L MRS * 869-2717
120 LA BOTT RAYMOND H

- 122 INDIAN ROCK LA BEGINS
- 231 COACHLAMP LA BEGINS

300 LEFINGWELL ALBERT E
302 GIOFFRE JOSEPH D 661-6038
304 CLARK LEO J *
306 TICKNER EDWARD C 661-1175
308 MC CORMACK JAMES E
311 HERMAN THEODORE L 869-7542
315 SPENCER GEORGE H * 661-7252
319 ERERSEN GEORGE B * 661-7779
323 MANNA JOHN M * 661-2124

ORCHARD CT /COS COB/ FR 51 1/2 ORCHARD NE TO DEAD END /RIGHT COD/ ZIP CODE 06807

1 HORNIK JULIUS P * 869-7524
2 LOCKHART LORRAINE K 869-0001

ORCHARD DR /MILBROOK/ FR 73 1/2 W BROTHER DR S AND W TO 71 1/2 WILDWOOD DR /RIGHT EVEN/ ZIP CODE 06830

7 GRANT WALTER R * 869-7999
15 CRAMPTON HENRY E 869-0222
16 GILLIAND J WILLIAM 869-3268
18 MORGAN E SADLER * 869-0460
21 SANDERS WILLIAM C * 869-1597
22 MEMPHELL WILLIAM J * 661-4856
27 SCHLAFY HUBERT J 661-6719
37 COLLINS NORMAN R * 869-3371
40 MCGREGOR ROBERT G * 869-4314
45 HOLLAND BRYCE L * 869-0314
54 DRAKE RICHARD M * 869-3469
55 RIGBY RALPH P * 661-4864
66 KOKE ANGELA A MRS * 869-0374
69 NOONAN EDMUND R * 661-6580
75 JACKSON CHAPIN * 661-1932
76 KENT MILTON F * 869-6390
87 LEAF JONATHAN *
90 BLAKELY ROBERT T * 869-8908
107 GLENDENING JOHN * 869-5834
113 RICE JAMES S * 869-4463

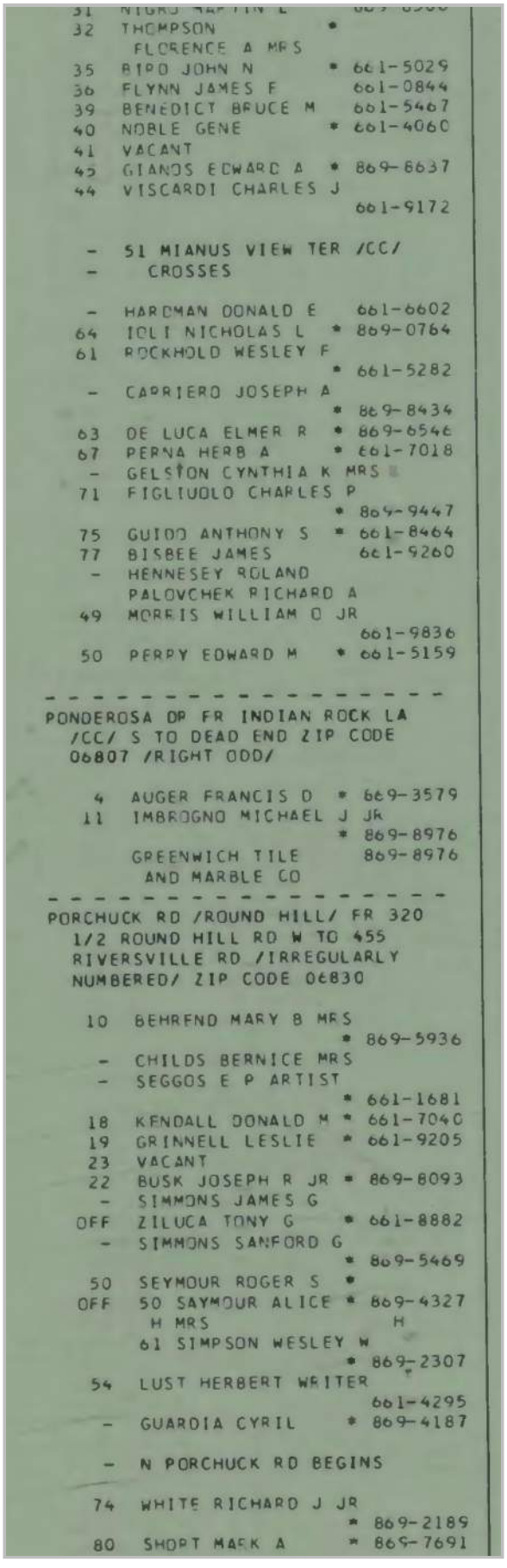
- 111 OVERLOOK DR ENDS
- 116 WILDWOOD DR ENDS

ORCHARD PL FR 354 1/2 DAVIS AV S THEN W TO 79 INDIAN HARBOR DR /RIGHT EVEN/ ZIP CODE 06830

6 FRANGIONE LUKE T JR * 661-6683
STRONG B B MRS NURSE 869-4641
11 ECCLES THOMAS R JR * 869-6492
SWENNING WILLIAM J 869-0051
ECCLES JEFFREY M 661-0515
16 GROH HENRY * 661-8467
BRIGGS ANN E MRS 661-8467
19 OLTRAN IVAN 661-2193
ANDERSON ANDREW B * 869-5099
20 CANAVAN THOMAS 869-0998
O DONNELL MARGARET
DONNAN ELIZABETH 869-1415
23 SARNO JOSEPH 661-6058
SARNO JOSEPH
24 VACANT
27 GENCARELLI VINCENZO * 661-8469
SANTORA JOSEPH M 869-5233
28 SWEENEY MARGARET * 661-8509
J MRS H
29 CUPLEY JOSEPH R * 661-9009
32 GENCARELLI VINCENZO 661-8469
35 FINNIE DOROTHY J * 661-6395
36 CHARO HOWARD T * 869-6043
39 HARDE HUGO * 869-4727

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

PONDEROSA DR 1977



31 NIGRO MARTIN L [illegible]
32 THOMPSON *
FLORENCE A MRS
35 BIRD JOHN N * 661-5029
36 FLYNN JAMES F 661-0844
39 BENEDICT BRUCE M 661-5467
40 NOBLE GENE * 661-4060
41 VACANT
45 GIANOS EDWARD A * 869-8637
44 VISCARDI CHARLES J
661-9172

- 51 MIANUS VIEW TER /CC/
- CROSSES

- HARDMAN DONALD E 661-6602
64 IOLI NICHOLAS L * 869-0764
61 ROCKHOLD WESLEY F
* 661-5282
- CARRIERO JOSEPH A
* 869-8434
63 DE LUCA ELMER R * 869-6546
67 PERNA HERB A * 661-7018
- GELSTON CYNTHIA K MRS
71 FIGLIUOLO CHARLES P
* 869-9447
75 GUIDO ANTHONY S * 661-8464
77 BISBEE JAMES 661-9260
- HENNESEY ROLAND
PALOVCHEK RICHARD A
49 MORRIS WILLIAM O JR
661-9836
50 PERRY EDWARD M * 661-5159

- - - - - - - - - - - - - - - - - - -

PONDEROSA DR FR INDIAN ROCK LA
/CC/ S TO DEAD END ZIP CODE
06807 /RIGHT ODD/

4 AUGER FRANCIS D * 869-3579
11 IMBROGNO MICHAEL J JR
* 869-8976
GREENWICH TILE 869-8976
AND MARBLE CO

- - - - - - - - - - - - - - - - - - -

PORCHUCK RD /ROUND HILL/ FR 320
1/2 ROUND HILL RD W TO 455
RIVERSVILLE RD /IRREGULARLY
NUMBERED/ ZIP CODE 06830

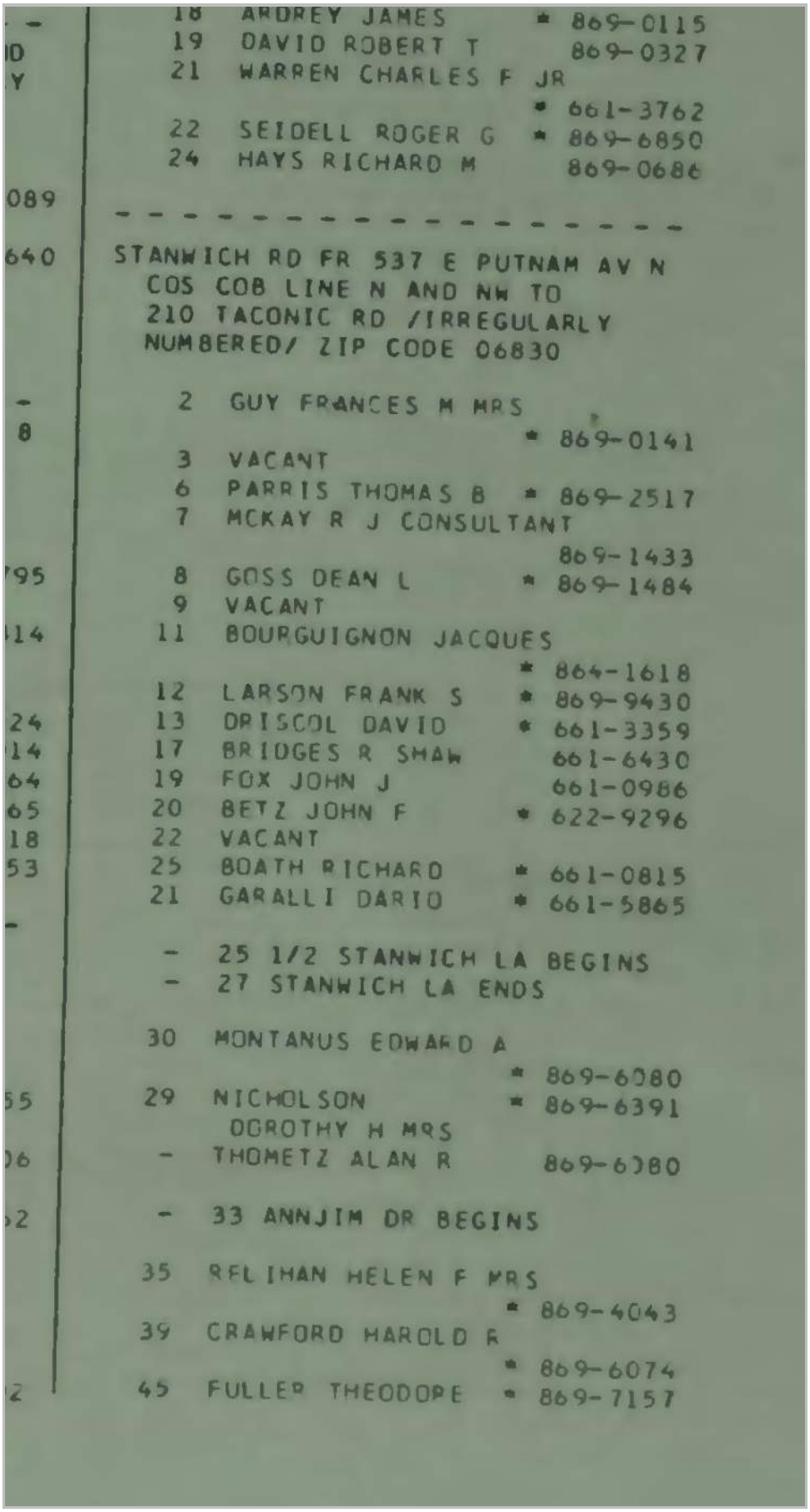
10 BEHREND MARY B MRS
* 869-5936
- CHILDS BERNICE MRS
- SEGGOS E P ARTIST
* 661-1681
18 KENDALL DONALD M * 661-7040
19 GRINNELL LESLIE * 661-9205
23 VACANT
22 BUSK JOSEPH R JR * 869-8093
- SIMMONS JAMES G
OFF ZILUCA TONY G * 661-8882
- SIMMONS SANFORD G
* 869-5469
50 SEYMOUR ROGER S *
OFF 50 SAYMOUR ALICE * 869-4327
H MRS H
61 SIMPSON WESLEY W
* 869-2307
54 LUST HERBERT WRITER
661-4295
- GUARDIA CYRIL * 869-4187

- N PORCHUCK RD BEGINS

74 WHITE RICHARD J JR
* 869-2189
80 SHORT MARK A * 869-7691

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

STANWICH RD 1977



18 ARDREY JAMES * 869-0115
19 DAVID ROBERT T 869-0327
21 WARREN CHARLES F JR * 661-3762
22 SEIDELL ROGER G * 869-6850
24 HAYS RICHARD M 869-0686

STANWICH RD FR 537 E PUTNAM AV N COS COB LINE N AND NW TO 210 TACONIC RD /IRREGULARLY NUMBERED/ ZIP CODE 06830

2 GUY FRANCES M MRS * 869-0141
3 VACANT
6 PARRIS THOMAS B * 869-2517
7 MCKAY R J CONSULTANT 869-1433
8 GOSS DEAN L * 869-1484
9 VACANT
11 BOURGUIGNON JACQUES * 864-1618
12 LARSON FRANK S * 869-9430
13 DRISCOL DAVID * 661-3359
17 BRIDGES R SHAW 661-6430
19 FOX JOHN J 661-0986
20 BETZ JOHN F * 622-9296
22 VACANT
25 BOATH RICHARD * 661-0815
21 GARALLI DARIO * 661-5865

- 25 1/2 STANWICH LA BEGINS
- 27 STANWICH LA ENDS

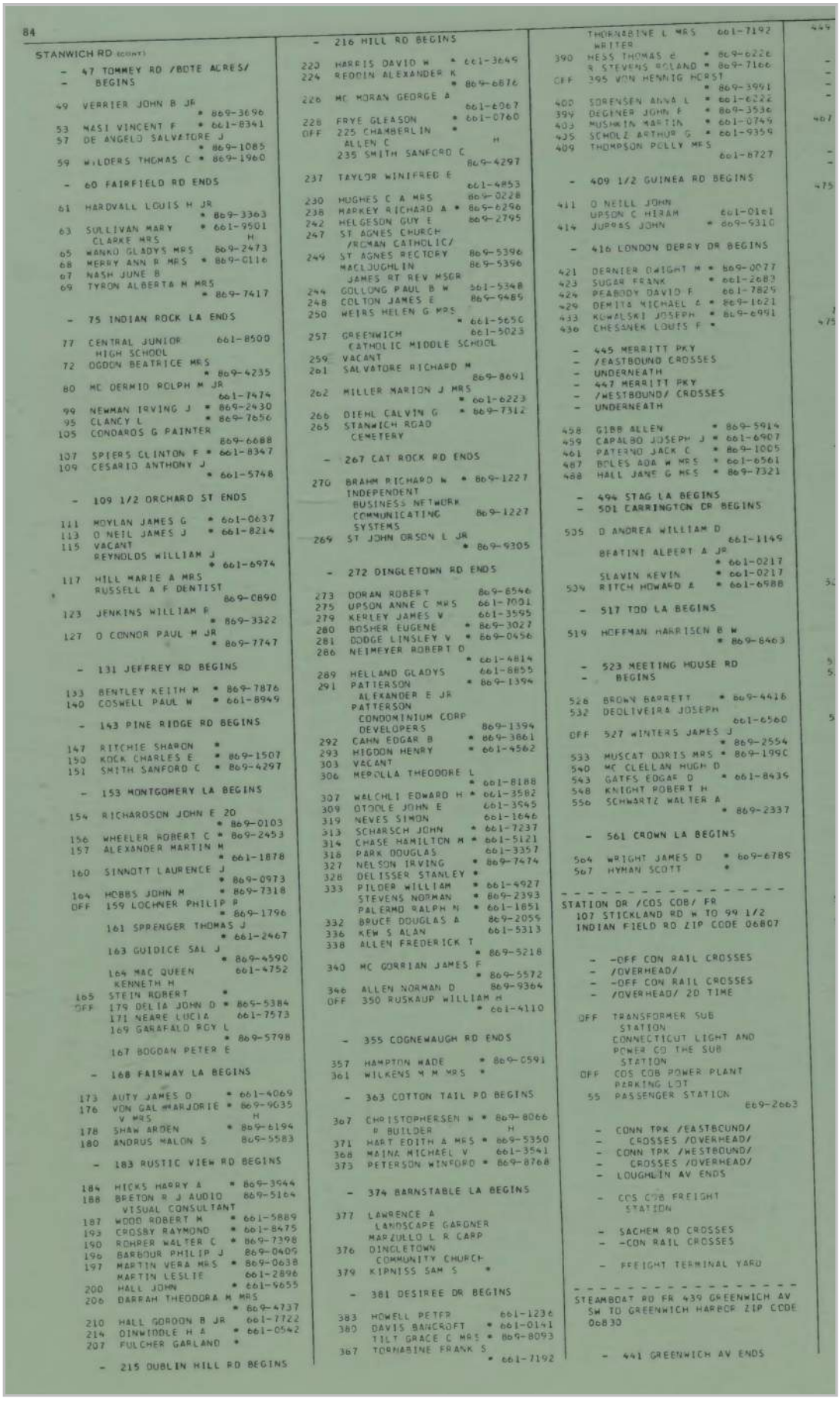
30 MONTANUS EDWARD A * 869-6080
29 NICHOLSON DOROTHY H MRS * 869-6391
- THOMETZ ALAN R 869-6080

- 33 ANNJIM DR BEGINS

35 REL IHAN HELEN F MRS * 869-4043
39 CRAWFORD HAROLD R * 869-6074
45 FULLER THEODORE * 869-7157

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

STANWICH RD 1977



84

STANWICH RD (CONT)

- 47 TOMMEY RD /BDTE ACRES/ BEGINS

49 VERRIER JOHN B JR * 869-3696
53 MASI VINCENT F * 661-8341
57 DE ANGELO SALVATORE J * 869-1085
59 WILDERS THOMAS C * 869-1960

- 60 FAIRFIELD RD ENDS

61 HARDVALL LOUIS H JR * 869-3363
63 SULLIVAN MARY CLARKE MRS * 661-9501 H
65 WANKO GLADYS MRS 869-2473
68 MERRY ANN R MRS * 869-0116
67 NASH JUNE B
69 TYRON ALBERTA M MRS * 869-7417

- 75 INDIAN ROCK LA ENDS

77 CENTRAL JUNIOR HIGH SCHOOL 661-8500
72 OGDON BEATRICE MRS * 869-4235
80 MC DERMID ROLPH M JR 661-7474
99 NEWMAN IRVING J * 869-2430
95 CLANCY L * 869-7656
105 CONDAROS G PAINTER 869-6688
107 SPIERS CLINTON F * 661-8347
109 CESARIO ANTHONY J * 661-5748

- 109 1/2 ORCHARD ST ENDS

111 MOYLAN JAMES G * 661-0637
113 O NEIL JAMES J * 661-8214
115 VACANT
REYNOLDS WILLIAM J * 661-6974
117 HILL MARIE A MRS
RUSSELL A F DENTIST 869-0890
123 JENKINS WILLIAM R * 869-3322
127 O CONNOR PAUL M JR * 869-7747

- 131 JEFFREY RD BEGINS

133 BENTLEY KEITH M * 869-7876
140 COSWELL PAUL W * 661-8949

- 143 PINE RIDGE RD BEGINS

147 RITCHIE SHARON *
150 ROCK CHARLES E * 869-1507
151 SMITH SANFORD C * 869-4297

- 153 MONTGOMERY LA BEGINS

154 RICHARDSON JOHN E JR * 869-0103
156 WHEELER ROBERT C * 869-2453
157 ALEXANDER MARTIN M * 661-1878
160 SINNOTT LAURENCE J * 869-0973
164 HOBBS JOHN M * 869-7318
OFF 159 LOCHNER PHILIP R * 869-1796
161 SPRENGER THOMAS J * 661-2467
163 GUIDICE SAL J * 869-4590
164 MAC QUEEN KENNETH H 661-4752
165 STEIN ROBERT *
OFF 179 DELIA JOHN D * 869-5384
171 NEARE LUCIA 661-7573
169 GARAFALO ROY L * 869-5798
167 BOGDAN PETER E

- 168 FAIRWAY LA BEGINS

173 AUTY JAMES O * 661-4069
176 VON GAL MARJORIE V MRS * 869-9035 H
178 SHAW ARDEN * 869-6194
180 ANDRUS MALON S 869-5583

- 183 RUSTIC VIEW RD BEGINS

184 HICKS HARRY A * 869-3944
188 BRETON R J AUDIO VISUAL CONSULTANT 869-5164
187 WOOD ROBERT M * 661-5889
193 CROSBY RAYMOND * 661-8475
190 ROHRER WALTER C * 869-7398
196 BARBOUR PHILIP J 869-0409
197 MARTIN VERA MRS * 869-0638
MARTIN LESLIE 661-2896
200 HALL JOHN * 661-9655
206 DARRAH THEODORA M MRS * 869-4737
210 HALL GORDON B JR 661-7722
214 DINWIDDLE H A * 661-0542
207 FULCHER GARLAND *

- 215 DUBLIN HILL RD BEGINS

- 216 HILL RD BEGINS

220 HARRIS DAVID W * 661-3649
224 REDDIN ALEXANDER K * 869-6876
226 MC MORAN GEORGE A 661-6067
228 FRYE GLEASON * 661-0760
OFF 225 CHAMBERLIN ALLEN C *
235 SMITH SANFORD C 869-4297
237 TAYLOR WINIFRED E 661-4853
230 HUGHES C A MRS 869-0228
238 MARKEY RICHARD A * 869-6296
242 HELGESON GUY E 869-2795
247 ST AGNES CHURCH /ROMAN CATHOLIC/
249 ST AGNES RECTORY 869-5396
MACLOUGHLIN JAMES RT REV MSGR 869-5396
244 GOLLONG PAUL B W 661-5348
248 COLTON JAMES E 869-9485
250 WEIRS HELEN G MRS * 661-5650
257 GREENWICH CATHOLIC MIDDLE SCHOOL 661-5023
259 VACANT
261 SALVATORE RICHARD M 869-8691
262 MILLER MARION J MRS * 661-6223
266 DIEHL CALVIN G * 869-7312
265 STANWICH ROAD CEMETERY

- 267 CAT ROCK RD ENDS

270 BRAHM RICHARD W * 869-1227
INDEPENDENT BUSINESS NETWORK COMMUNICATING SYSTEMS 869-1227
269 ST JOHN ORSON L JR * 869-9305

- 272 DINGLETOWN RD ENDS

273 DORAN ROBERT 869-8546
275 UPSON ANNE C MRS 661-7001
279 KERLEY JAMES V 661-3595
280 BOSHER EUGENE * 869-3027
281 DODGE LINSLEY V * 869-0456
286 NEIMEYER ROBERT D * 661-4814
289 HELLAND GLADYS 661-8855
291 PATTERSON ALEXANDER E JR * 869-1394
PATTERSON CONDOMINIUM CORP DEVELOPERS 869-1394
292 CAHN EDGAR B * 869-3861
293 HIGDON HENRY * 661-4562
303 VACANT
306 MEROLLA THEODORE L * 661-8188
307 WALCHLI EDWARD H * 661-3582
309 OTOOLE JOHN E 661-3545
319 NEVES SIMON 661-1646
313 SCHARSCH JOHN * 661-7237
314 CHASE HAMILTON M * 661-5121
316 PARK DOUGLAS 661-3357
327 NELSON IRVING * 869-7474
328 DELISSER STANLEY *
333 PILDER WILLIAM * 661-4927
STEVENS NORMAN * 869-2393
PALERMO RALPH N * 661-1851
332 BRUCE DOUGLAS A 869-2059
336 KEW S ALAN 661-5313
338 ALLEN FREDERICK T * 869-5218
340 MC GORRIAN JAMES F * 869-5572
346 ALLEN NORMAN D 869-9364
OFF 350 RUSKAUP WILLIAM H * 661-4110

- 355 COGNEWAUGH RD ENDS

357 HAMPTON WADE * 869-0591
361 WILKENS M M MRS *

- 363 COTTON TAIL RD BEGINS

367 CHRISTOPHERSEN N * 869-8066
R BUILDER H
371 HART EDITH A MRS * 869-5350
368 MAINA MICHAEL V 661-3541
373 PETERSON WINFORD * 869-8768

- 374 BARNSTABLE LA BEGINS

377 LAWRENCE A LANDSCAPE GARDNER
MARZULLO L R CARP
376 DINGLETOWN COMMUNITY CHURCH
379 KIPNISS SAM S *

- 381 DESIREE DR BEGINS

383 HOWELL PETER 661-1236
380 DAVIS BANCROFT * 661-0141
TILT GRACE C MRS * 869-8093
367 TORNABINE FRANK S * 661-7192
TORNABINE L MRS 661-7192
WRITER
390 HESS THOMAS E * 869-6226
R STEVENS ROLAND * 869-7166
OFF 395 VON HENNIG HORST * 869-3991
400 SORENSEN ANNA L * 661-6222
394 DEGENER JOHN F * 869-3536
403 MUSMAN MARTIN * 661-0749
435 SCHOLZ ARTHUR G * 661-9359
409 THOMPSON POLLY MRS 661-8727

- 409 1/2 GUINEA RD BEGINS

411 O NEILL JOHN
UPSON C HIRAM 661-0161
414 JURRAS JOHN * 869-9310

- 416 LONDON DERRY DR BEGINS

421 DERNIER DWIGHT M * 869-0077
423 SUGAR FRANK * 661-2683
424 PEABODY DAVID F 661-7825
429 DEMITA MICHAEL A * 869-1621
433 KOWALSKI JOSEPH * 869-6991
430 CHESANEK LOUIS F *

- 445 MERRITT PKY
- /EASTBOUND CROSSES
- UNDERNEATH
- 447 MERRITT PKY
- /WESTBOUND/ CROSSES
- UNDERNEATH

458 GIBB ALLEN * 869-5914
459 CAPALBO JOSEPH J * 661-6907
461 PATERNO JACK C * 869-1005
487 BOLES ADA W MRS * 661-6561
488 HALL JANE G MRS * 869-7321

- 494 STAG LA BEGINS
- 501 CARRINGTON DR BEGINS

505 D ANDREA WILLIAM D 661-1149
BFATINI ALBERT A JR * 661-0217
SLAVIN KEVIN * 661-0217
509 RITCH HOWARD A * 661-6988

- 517 TOD LA BEGINS

519 HOFFMAN HARRISON B W * 869-8463

- 523 MEETING HOUSE RD BEGINS

528 BROWN BARRETT * 869-4418
532 DEOLIVEIRA JOSEPH 661-6560
OFF 527 WINTERS JAMES J * 869-2554
533 MUSCAT DORIS MRS * 869-1990
540 MC CLELLAN HUGH D
543 GATES EDGAR D * 661-8439
548 KNIGHT ROBERT H
556 SCHWARTZ WALTER A * 869-2337

- 561 CROWN LA BEGINS

564 WRIGHT JAMES D * 869-6789
567 HYMAN SCOTT *

STATION DR /COS COB/ FR 107 STICKLAND RD W TO 99 1/2 INDIAN FIELD RD ZIP CODE 06807

- -OFF CON RAIL CROSSES
- /OVERHEAD/
- -OFF CON RAIL CROSSES
- /OVERHEAD/ 2D TIME

OFF TRANSFORMER SUB STATION CONNECTICUT LIGHT AND POWER CO THE SUB STATION
OFF COS COB POWER PLANT PARKING LOT
55 PASSENGER STATION 869-2663

- CONN TPK /EASTBOUND/
- CROSSES /OVERHEAD/
- CONN TPK /WESTBOUND/
- CROSSES /OVERHEAD/
- LOUGHLIN AV ENDS

- COS COB FREIGHT STATION

- SACHEM RD CROSSES
- -CON RAIL CROSSES

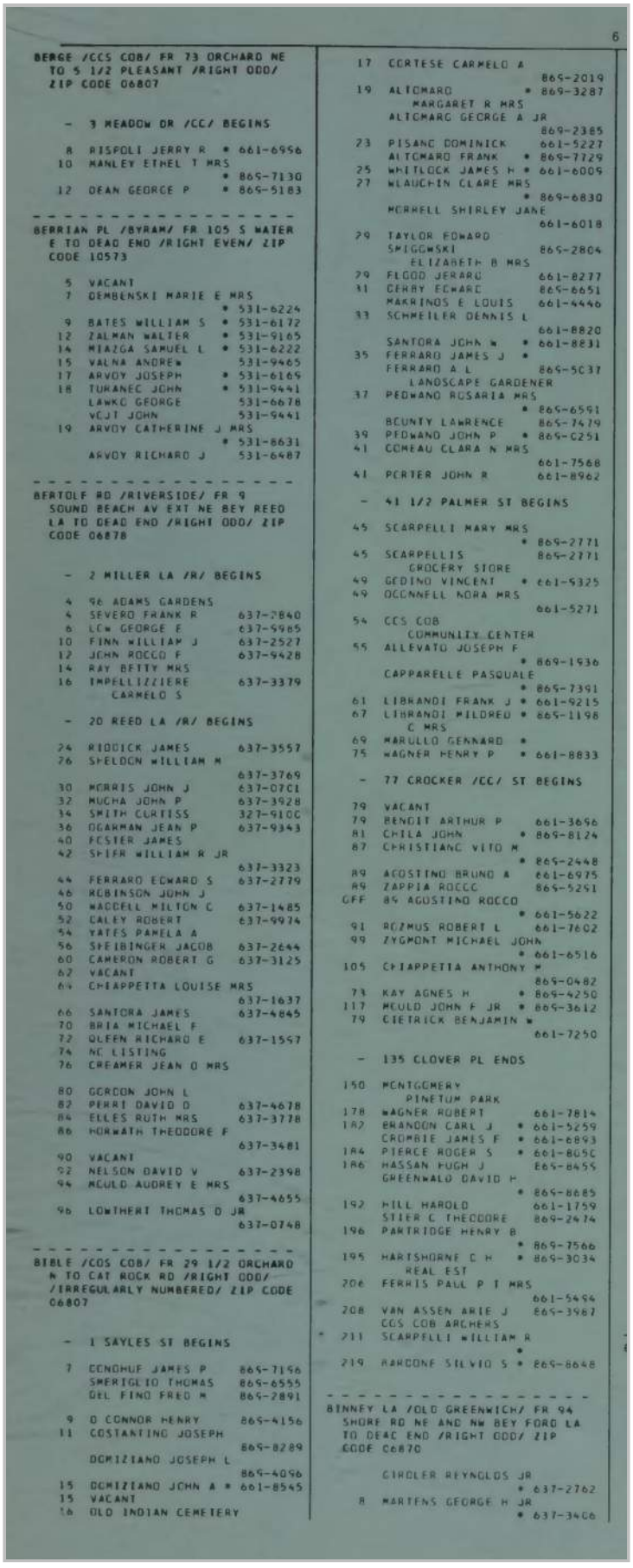
- FREIGHT TERMINAL YARD

STEAMBOAT RD FR 439 GREENWICH AV SW TO GREENWICH HARBOR ZIP CODE 06830

- 441 GREENWICH AV ENDS

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

BIBLE ST 1972



BERGE /CCS COB/ FR 73 ORCHARD NE TO S 1/2 PLEASANT /RIGHT ODD/ ZIP CODE 06807

- 3 MEADOW DR /CC/ BEGINS

8 RISPOLI JERRY R * 661-6956
10 MANLEY ETHEL T MRS * 869-7130
12 DEAN GEORGE P * 869-5183

BERRIAN PL /BYRAM/ FR 105 S WATER E TO DEAD END /RIGHT EVEN/ ZIP CODE 10573

5 VACANT
7 DEMBENSKI MARIE E MRS * 531-6224
9 BATES WILLIAM S * 531-6172
12 ZALMAN WALTER * 531-9165
14 MIAZGA SAMUEL L * 531-6222
15 VALNA ANDREW 531-9465
17 ARVOY JOSEPH * 531-6169
18 TURANEC JOHN * 531-9441
LAWKO GEORGE 531-6678
VOJT JOHN 531-9441
19 ARVOY CATHERINE J MRS * 531-8631
ARVOY RICHARD J 531-6487

BERTOLF RD /RIVERSIDE/ FR 9 SOUND BEACH AV EXT NE BEY REED LA TO DEAD END /RIGHT ODD/ ZIP CODE 06878

- 2 MILLER LA /R/ BEGINS

4 96 ADAMS GARDENS
4 SEVERO FRANK R 637-7840
6 LOW GEORGE E 637-5985
10 FINN WILLIAM J 637-2527
12 JOHN ROCCO F 637-9428
14 RAY BETTY MRS
16 IMPELLIZZIERE CARMELO S 637-3379

- 20 REED LA /R/ BEGINS

24 RIDDICK JAMES 637-3557
26 SHELDON WILLIAM M 637-3769
30 MORRIS JOHN J 637-0701
32 MUCHA JOHN P 637-3928
34 SMITH CURTISS 327-9100
36 OGARMAN JEAN P 637-9343
40 FOSTER JAMES
42 SHIFR WILLIAM R JR 637-3323
44 FERRARO EDWARD S 637-2779
46 ROBINSON JOHN J
50 WADDELL MILTON C 637-1485
52 CALEY ROBERT 637-9974
54 YATES PAMELA A
56 SPEIBINGER JACOB 637-2644
60 CAMERON ROBERT G 637-3125
62 VACANT
64 CHIAPPETTA LOUISE MRS 637-1637
66 SANTORA JAMES 637-4845
70 BRIA MICHAEL F
72 QUEEN RICHARD E 637-1597
74 NC LISTING
76 CREAMER JEAN O MRS

80 GORDON JOHN L
82 PERRI DAVID O 637-4678
84 ELLES RUTH MRS 637-3778
86 HORWATH THEODORE F 637-3481
90 VACANT
92 NELSON DAVID V 637-2398
94 MOULD AUDREY E MRS 637-4655
96 LOWTHERT THOMAS D JR 637-0748

BIBLE /COS COB/ FR 29 1/2 ORCHARD N TO CAT ROCK RD /RIGHT ODD/ /IRREGULARLY NUMBERED/ ZIP CODE 06807

- 1 SAYLES ST BEGINS

7 CONOHUE JAMES P 869-7196
SMERIGLIO THOMAS 869-6555
DEL FINO FRED M 869-2891
9 O CONNOR HENRY 869-4156
11 COSTANTINO JOSEPH 869-8289
DOMIZIANO JOSEPH L 869-4096
15 DOMIZIANO JOHN A * 661-8545
15 VACANT
16 OLD INDIAN CEMETERY

17 CORTESE CARMELO A 869-2019
19 ALTOMARO * 869-3287
MARGARET R MRS
ALTOMARO GEORGE A JR 869-2385
23 PISANO DOMINICK 661-5227
ALTOMARO FRANK * 869-7729
25 WHITLOCK JAMES H * 661-6009
27 MCLAUGHIN CLARE MRS * 869-6830
MORRELL SHIRLEY JANE 661-6018
29 TAYLOR EDWARD
SMIGOWSKI 869-2804
ELIZABETH B MRS
29 FLOOD JERARD 661-8277
31 DERBY EDWARD 869-6651
MAKRINOS E LOUIS 661-4446
33 SCHMEILER DENNIS L 661-8820
SANTORA JOHN W * 661-8831
35 FERRARO JAMES J *
FERRARO A L 869-5C37
LANDSCAPE GARDENER
37 PEDWANO ROSARIA MRS * 869-6591
BOUNTY LAWRENCE 869-7479
39 PEDWANO JOHN P * 869-0251
41 COMEAU CLARA N MRS 661-7568
41 PORTER JOHN R 661-8962

- 41 1/2 PALMER ST BEGINS

45 SCARPELLI MARY MRS * 869-2771
45 SCARPELLIS 869-2771
GROCERY STORE
49 GEDINO VINCENT * 661-5325
49 OCONNELL NORA MRS 661-5271
54 CCS COB
COMMUNITY CENTER
55 ALLEVATO JOSEPH F * 869-1936
CAPPARELLE PASQUALE * 869-7391
61 LIBRANDI FRANK J * 661-9215
67 LIBRANDI MILDRED * 869-1198
C MRS
69 MARULLO GENNARO *
75 WAGNER HENRY P * 661-8833

- 77 CROCKER /CC/ ST BEGINS

79 VACANT
79 BENOIT ARTHUR P 661-3696
81 CHILA JOHN * 869-8124
87 CHRISTIANO VITO M * 869-2448
89 AGOSTINO BRUNO A 661-6975
89 ZAPPIA ROCCO 869-5251
OFF 89 AGOSTINO ROCCO * 661-5622
91 RIZMUS ROBERT L 661-7602
99 ZYGMONT MICHAEL JOHN * 661-6516
105 CHIAPPETTA ANTHONY M 869-0482
73 KAY AGNES H * 869-4250
117 MOULD JOHN F JR * 869-3612
79 DIETRICK BENJAMIN W 661-7250

- 135 CLOVER PL ENDS

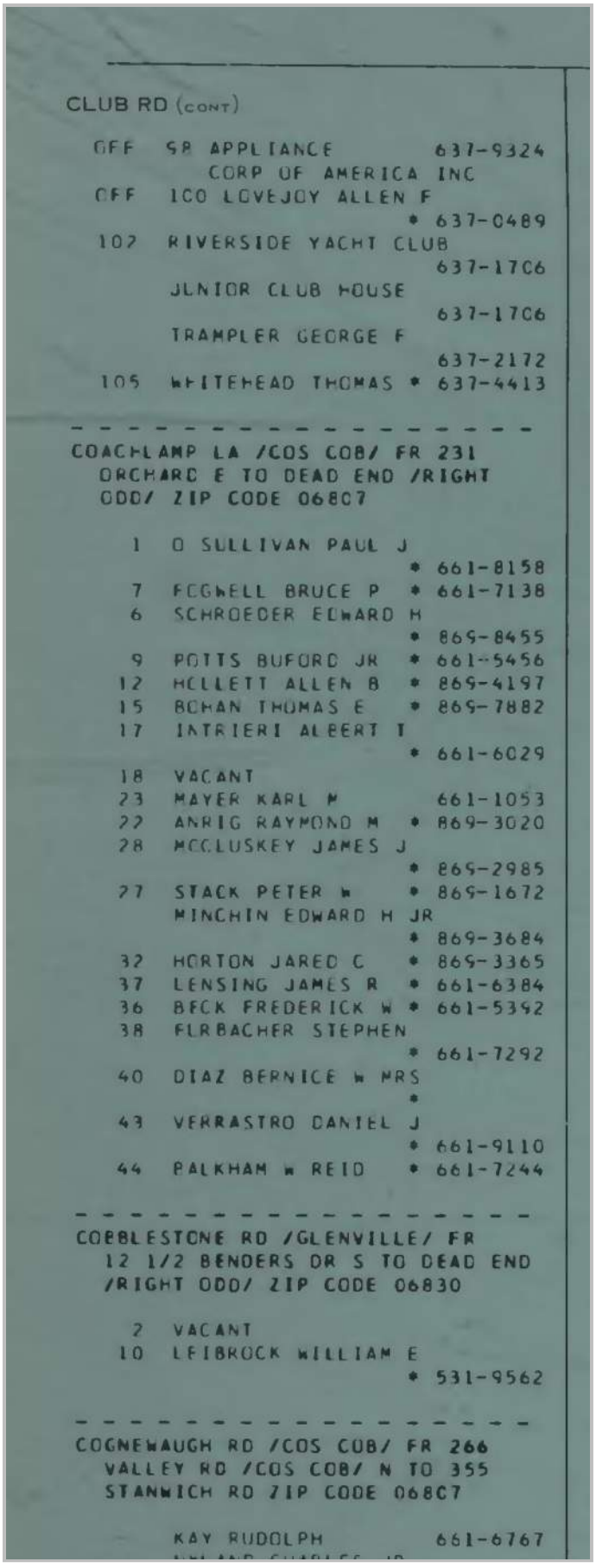
150 MONTGOMERY
PINETUM PARK
178 WAGNER ROBERT 661-7814
182 BRANDON CARL J * 661-5259
CROMBIE JAMES F * 661-6893
184 PIERCE ROGER S * 661-805C
186 HASSAN HUGH J 869-8455
GREENWALD DAVID H * 869-8685
192 HILL HAROLD 661-1759
STIER C THEODORE 869-2474
196 PARTRIDGE HENRY B * 869-7566
195 HARTSHORNE C H * 869-3034
REAL EST
206 FERRIS PAUL P T MRS 661-5494
208 VAN ASSEN ARIE J 869-3987
COS COB ARCHERS
211 SCARPELLI WILLIAM R *
219 AARCONE SILVIO S * 869-8648

BINNEY LA /OLD GREENWICH/ FR 94 SHORE RD NE AND NW BEY FORD LA TO DEAD END /RIGHT ODD/ ZIP CODE 06870

CIRCLER REYNOLDS JR * 637-2762
8 MARTENS GEORGE H JR * 637-3406

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

COACHLAMP LN 1972



CLUB RD (CONT)

OFF SR APPLIANCE 637-9324
CORP OF AMERICA INC
OFF ICO LOVEJOY ALLEN F
* 637-0489
107 RIVERSIDE YACHT CLUB
637-1706
JUNIOR CLUB HOUSE
637-1706
TRAMPLER GEORGE F
637-2172
105 WHITEHEAD THOMAS * 637-4413

COACHLAMP LA /COS COB/ FR 231
ORCHARD E TO DEAD END /RIGHT
ODD/ ZIP CODE 06807

1 O SULLIVAN PAUL J
* 661-8158
7 FOGWELL BRUCE P * 661-7138
6 SCHROEDER EDWARD H
* 869-8455
9 POTTS BUFORD JR * 661-5456
12 HOLLETT ALLEN B * 869-4197
15 BOHAN THOMAS E * 869-7882
17 IATRIERI ALBERT T
* 661-6029
18 VACANT
23 MAYER KARL M 661-1053
22 ANRIG RAYMOND M * 869-3020
28 MCCLUSKEY JAMES J
* 869-2985
27 STACK PETER W * 869-1672
MINCHIN EDWARD H JR
* 869-3684
32 HORTON JARED C * 869-3365
37 LENSING JAMES R * 661-6384
36 BECK FREDERICK W * 661-5392
38 ELRBACHER STEPHEN
* 661-7292
40 DIAZ BERNICE W MRS
*
43 VERRASTRO DANIEL J
* 661-9110
44 PALKHAM W REID * 661-7244

COBBLESTONE RD /GLENVILLE/ FR
12 1/2 BENDERS DR S TO DEAD END
/RIGHT ODD/ ZIP CODE 06830

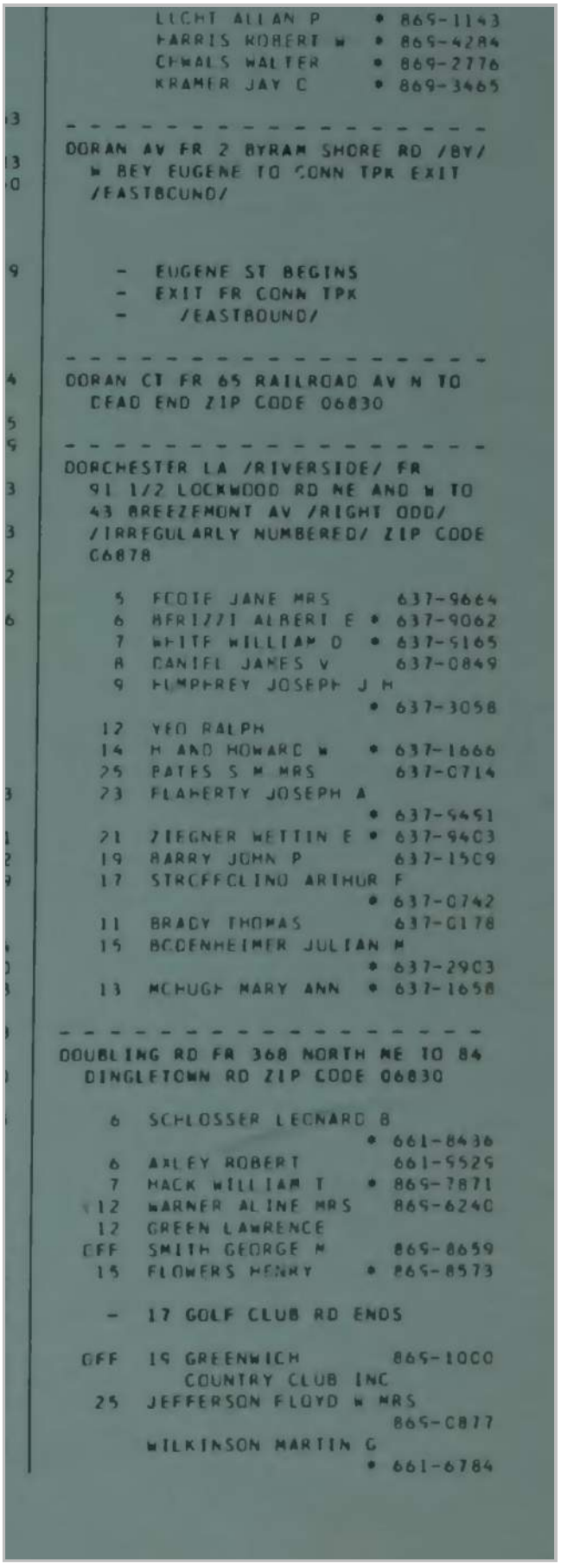
2 VACANT
10 LEIBROCK WILLIAM E
* 531-9562

COGNEWAUGH RD /COS COB/ FR 266
VALLEY RD /COS COB/ N TO 355
STANWICH RD ZIP CODE 06807

KAY RUDOLPH 661-6767

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

DOUBLING RD 1972



LUCHT ALLAN P * 869-1143
HARRIS ROBERT W * 869-4284
CHWALS WALTER * 869-2776
KRAMER JAY C * 869-3465

DORAN AV FR 2 BYRAM SHORE RD /BY/
W BEY EUGENE TO CONN TPK EXIT
/EASTBOUND/

- EUGENE ST BEGINS
- EXIT FR CONN TPK
- /EASTBOUND/

DORAN CT FR 65 RAILROAD AV N TO
DEAD END ZIP CODE 06830

DORCHESTER LA /RIVERSIDE/ FR
91 1/2 LOCKWOOD RD NE AND W TO
43 BREEZEMONT AV /RIGHT ODD/
/IRREGULARLY NUMBERED/ ZIP CODE
06878

5 FOOTE JANE MRS 637-9664
6 BERIZZI ALBERT E * 637-9062
7 WHITE WILLIAM D * 637-5165
8 DANIEL JAMES V 637-0849
9 HUMPHREY JOSEPH J H
* 637-3058
12 YEO RALPH
14 H AND HOWARD W * 637-1666
25 PATES S M MRS 637-0714
23 FLAHERTY JOSEPH A
* 637-5451
21 ZIEGNER WETTIN E * 637-9403
19 BARRY JOHN P 637-1509
17 STROFFOLINO ARTHUR F
* 637-0742
11 BRADY THOMAS 637-0178
15 BODENHEIMER JULIAN M
* 637-2903
13 MCHUGH MARY ANN * 637-1658

DOUBLING RD FR 368 NORTH NE TO 84
DINGLETOWN RD ZIP CODE 06830

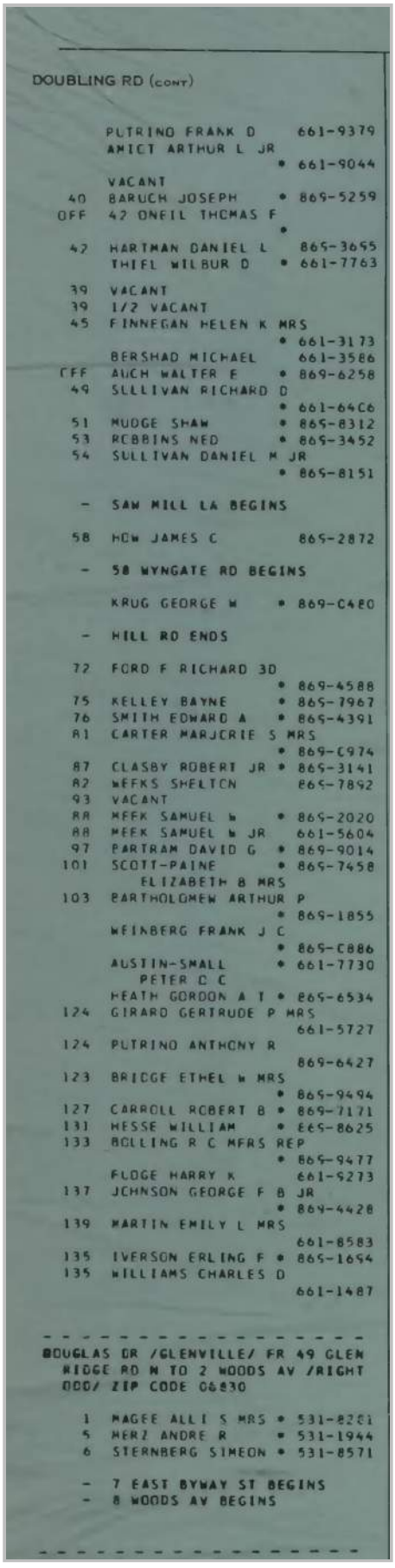
6 SCHLOSSER LEONARD B
* 661-8436
6 AXLEY ROBERT 661-5525
7 MACK WILLIAM T * 869-7871
12 WARNER ALINE MRS 869-6240
12 GREEN LAWRENCE
OFF SMITH GEORGE M 869-8659
15 FLOWERS HENRY * 869-8573

- 17 GOLF CLUB RD ENDS

OFF 19 GREENWICH 869-1000
COUNTRY CLUB INC
25 JEFFERSON FLOYD W MRS
869-0877
WILKINSON MARTIN G
* 661-6784

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

DOUBLING RD 1972



DOUBLING RD (CONT)

PUTRINO FRANK D 661-9379
AMICT ARTHUR L JR
• 661-9044
VACANT
40 BARUCH JOSEPH • 869-5259
OFF 42 ONEIL THOMAS F
•
42 HARTMAN DANIEL L 869-3655
THIEL WILBUR D • 661-7763
39 VACANT
39 1/2 VACANT
45 FINNEGAN HELEN K MRS
• 661-3173
BERSHAD MICHAEL 661-3586
OFF AUCH WALTER E • 869-6258
49 SULLIVAN RICHARD D
• 661-6466
51 MUDGE SHAW • 869-8312
53 ROBBINS NED • 869-3452
54 SULLIVAN DANIEL M JR
• 869-8151

- SAW MILL LA BEGINS

58 HOW JAMES C 869-2872

- 58 WYNGATE RD BEGINS

KRUG GEORGE W • 869-0480

- HILL RD ENDS

72 FORD F RICHARD 3D
• 869-4588
75 KELLEY BAYNE • 869-7967
76 SMITH EDWARD A • 869-4391
81 CARTER MARJORIE S MRS
• 869-0974
87 CLASBY ROBERT JR • 869-3141
82 WEEKS SHELTON 869-7892
93 VACANT
88 MEEK SAMUEL W • 869-2020
88 MEEK SAMUEL W JR 661-5604
97 PARTRAM DAVID G • 869-9014
101 SCOTT-PAINE • 869-7458
ELIZABETH B MRS
103 BARTHOLOMEW ARTHUR P
• 869-1855
WEINBERG FRANK J C
• 869-0886
AUSTIN-SMALL • 661-7730
PETER C C
HEATH GORDON A T • 869-6534
124 GIRARD GERTRUDE P MRS
661-5727
124 PUTRINO ANTHONY R
869-6427
123 BRIDGE ETHEL W MRS
• 869-9494
127 CARROLL ROBERT B • 869-7171
131 HESSE WILLIAM • 869-8625
133 BOLLING R C MGRS REP
• 869-9477
FLOGE HARRY K 661-9273
137 JOHNSON GEORGE F B JR
• 869-4428
139 MARTIN EMILY L MRS
661-8583
135 IVERSON ERLING F • 869-1694
135 WILLIAMS CHARLES D
661-1487

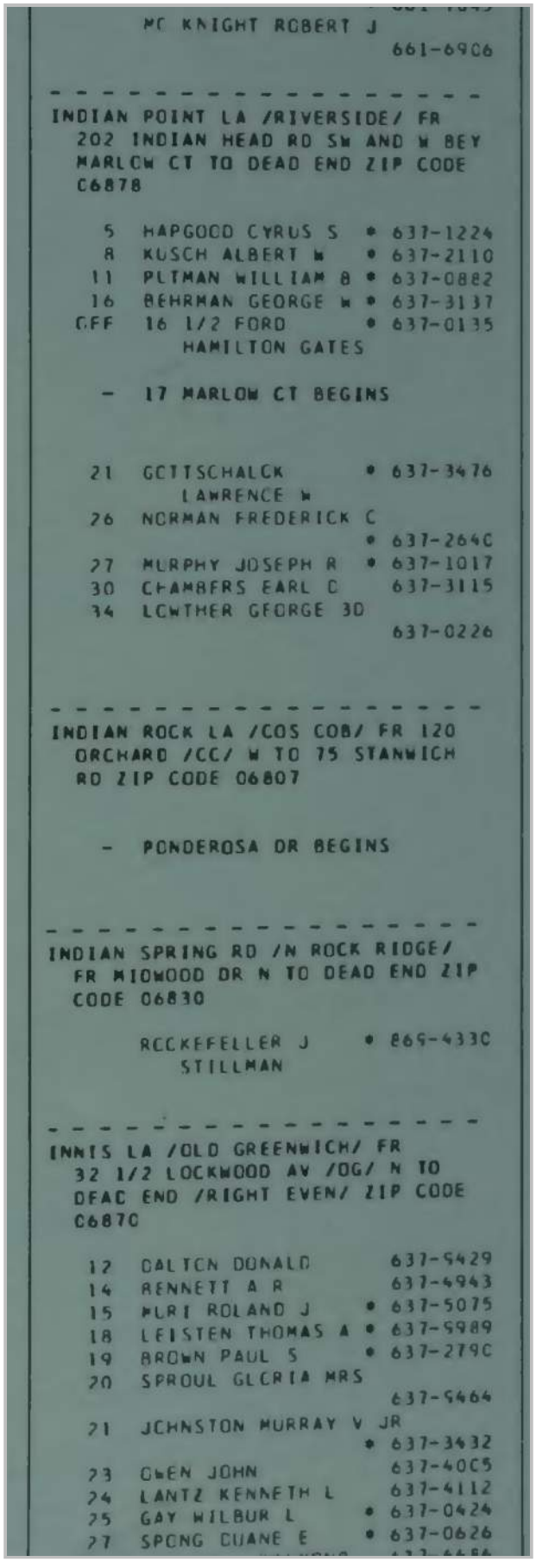
DOUGLAS DR /GLENVILLE/ FR 49 GLEN RIDGE RD N TO 2 WOODS AV /RIGHT ODD/ ZIP CODE 06830

1 MAGEE ALLI S MRS • 531-8281
5 HERZ ANDRE R • 531-1944
6 STERNBERG SIMEON • 531-8571

- 7 EAST BYWAY ST BEGINS
- 8 WOODS AV BEGINS

Target Street	Cross Street	Source
✓	-	Price & Lee's City Directory

INDIAN ROCK LN 1972



MC KNIGHT ROBERT J
661-6906

INDIAN POINT LA /RIVERSIDE/ FR 202 INDIAN HEAD RD SW AND W BEY MARLOW CT TO DEAD END ZIP CODE 06878

5 HAPGOOD CYRUS S * 637-1224
8 KUSCH ALBERT W * 637-2110
11 PLTMAN WILLIAM B * 637-0882
16 BEHRMAN GEORGE W * 637-3137
OFF 16 1/2 FORD * 637-0135
HAMILTON GATES

\- 17 MARLOW CT BEGINS

21 GCTTSCHALCK * 637-3476
LAWRENCE W
26 NORMAN FREDERICK C
* 637-264C
27 MURPHY JOSEPH R * 637-1017
30 CHAMBERS EARL C 637-3115
34 LCWTHER GEORGE 3D
637-0226

INDIAN ROCK LA /COS COB/ FR 120 ORCHARD /CC/ W TO 75 STANWICH RD ZIP CODE 06807

\- PONDEROSA DR BEGINS

INDIAN SPRING RD /N ROCK RIDGE/ FR MIDWOOD DR N TO DEAD END ZIP CODE 06830

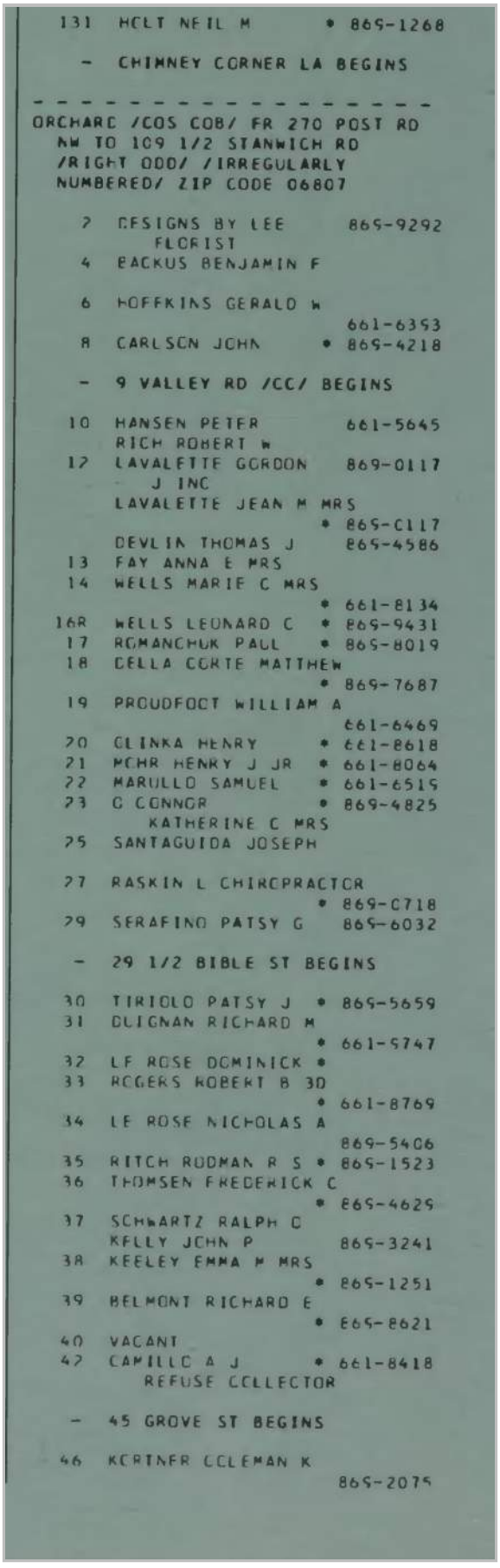
ROCKEFELLER J * 869-433C
STILLMAN

INNIS LA /OLD GREENWICH/ FR 32 1/2 LOCKWOOD AV /OG/ N TO DEAC END /RIGHT EVEN/ ZIP CODE 06870

12 DALTCN DONALD 637-5429
14 BENNETT A R 637-4943
15 PLRI ROLAND J * 637-5075
18 LEISTEN THOMAS A * 637-5989
19 BROWN PAUL S * 637-279C
20 SPROUL GLORIA MRS
637-5464
21 JCHNSTON MURRAY V JR
* 637-3432
23 OWEN JOHN 637-40C5
24 LANTZ KENNETH L 637-4112
25 GAY WILBUR L * 637-0424
27 SPONG DUANE E * 637-0626

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

ORCHARD ST 1972



131 HOLT NEIL M * 869-1268

\- CHIMNEY CORNER LA BEGINS

ORCHARD /COS COB/ FR 270 POST RD NW TO 109 1/2 STANWICH RD /RIGHT ODD/ /IRREGULARLY NUMBERED/ ZIP CODE 06807

2 DESIGNS BY LEE 869-9292
FLORIST
4 BACKUS BENJAMIN F
6 HOFFKINS GERALD W
661-6353
8 CARLSON JOHN * 869-4218

\- 9 VALLEY RD /CC/ BEGINS

10 HANSEN PETER 661-5645
RICH ROBERT W
12 LAVALETTE GORDON 869-0117
J INC
LAVALETTE JEAN M MRS
* 869-C117
DEVLIN THOMAS J 869-4586
13 FAY ANNA E MRS
14 WELLS MARIE C MRS
* 661-8134
16R WELLS LEONARD C * 869-9431
17 ROMANCHUK PAUL * 869-8019
18 DELLA CORTE MATTHEW
* 869-7687
19 PROUDFOOT WILLIAM A
661-6469
20 CLINKA HENRY * 661-8618
21 MOHR HENRY J JR * 661-8064
22 MARULLO SAMUEL * 661-6515
23 O CONNOR * 869-4825
KATHERINE C MRS
25 SANTAGUIDA JOSEPH
27 RASKIN L CHIROPRACTOR
* 869-C718
29 SERAFINO PATSY G 869-6032

\- 29 1/2 BIBLE ST BEGINS

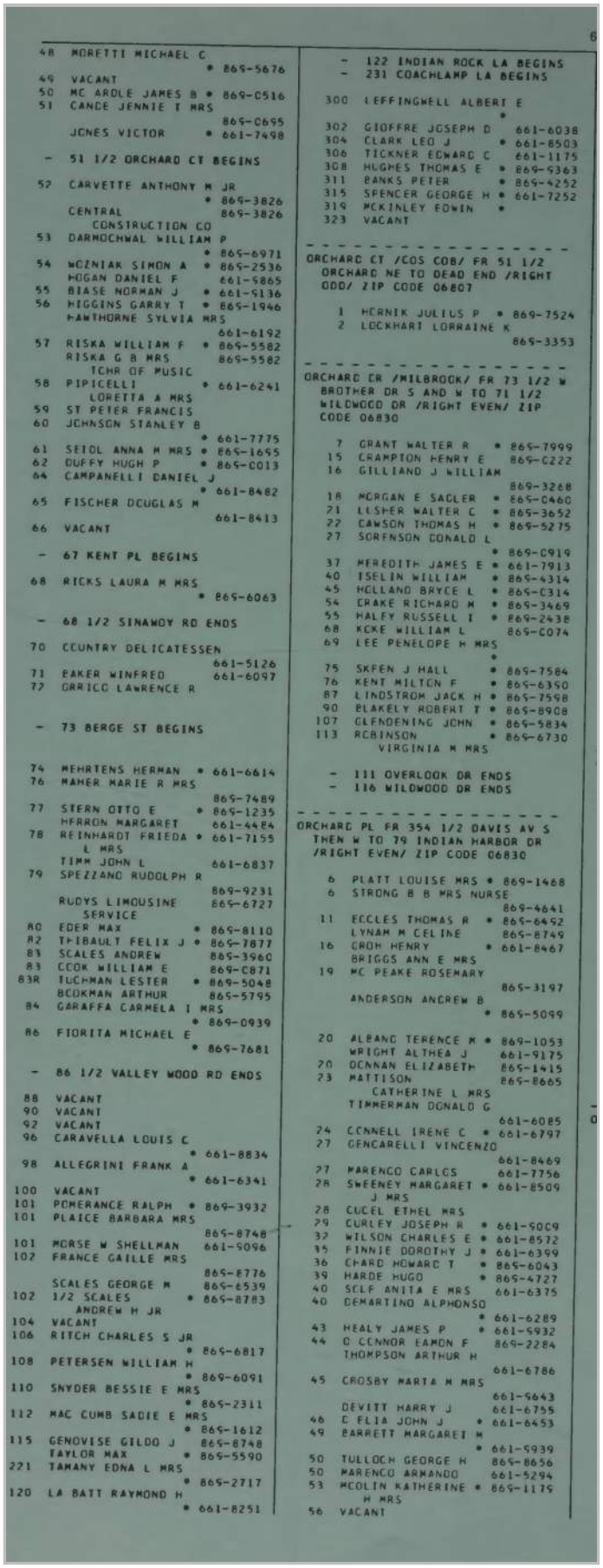
30 TIRIOLO PATSY J * 869-5659
31 DUIGNAN RICHARD M
* 661-5747
32 LE ROSE DOMINICK *
33 ROGERS ROBERT B 3D
* 661-8769
34 LE ROSE NICHOLAS A
869-5406
35 RITCH RODMAN R S * 869-1523
36 THOMSEN FREDERICK C
* 869-4625
37 SCHWARTZ RALPH C
KELLY JOHN P 869-3241
38 KEELEY EMMA M MRS
* 869-1251
39 BELMONT RICHARD E
* 869-8621
40 VACANT
42 CAMILLO A J * 661-8418
REFUSE COLLECTOR

\- 45 GROVE ST BEGINS

46 KORTNER COLEMAN K
869-2075

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

ORCHARD ST 1972



48 MORETTI MICHAEL C
* 869-5676
49 VACANT
50 MC ARDLE JAMES B * 869-0516
51 CANCE JENNIE T MRS
869-0695
JONES VICTOR * 661-7498
- 51 1/2 ORCHARD CT BEGINS
52 CARVETTE ANTHONY M JR
* 869-3826
CENTRAL 869-3826
CONSTRUCTION CO
53 DARMOCHWAL WILLIAM P
* 869-6971
54 WOZNIAK SIMON A * 869-2536
HOGAN DANIEL F 661-5865
55 BIASE NORMAN J * 661-9136
56 HIGGINS GARRY T * 869-1946
HAWTHORNE SYLVIA MRS
661-6192
57 RISKA WILLIAM F * 869-5582
RISKA G B MRS 869-5582
TCHR OF MUSIC
58 PIPICELLI * 661-6241
LORETTA A MRS
59 ST PETER FRANCIS
60 JOHNSON STANLEY B
* 661-7775
61 SEIDL ANNA M MRS * 869-1695
62 DUFFY HUGH P * 869-0013
64 CAMPANELLI DANIEL J
* 661-8482
65 FISCHER DOUGLAS M
661-8413
66 VACANT
- 67 KENT PL BEGINS
68 RICKS LAURA M MRS
* 869-6063
- 68 1/2 SINAWOY RD ENDS
70 COUNTRY DELICATESSEN
661-5126
71 BAKER WINFRED 661-6097
72 GRICCO LAWRENCE R
- 73 BERGE ST BEGINS
74 MEHRTENS HERMAN * 661-6614
76 MAHER MARIE R MRS
869-7489
77 STERN OTTO E * 869-1235
HERRON MARGARET 661-4484
78 REINHARDT FRIEDA * 661-7155
L MRS
TIMM JOHN L 661-6837
79 SPEZZANO RUDOLPH R
869-9231
RUDYS LIMOUSINE 869-6727
SERVICE
80 EDER MAX * 869-8110
82 THIBAULT FELIX J * 869-7877
83 SCALES ANDREW 869-3960
83 COOK WILLIAM E 869-0871
83R TUCHMAN LESTER * 869-5048
BOOKMAN ARTHUR 869-5795
84 GARAFFA CARMELA I MRS
* 869-0939
86 FIORITA MICHAEL E
* 869-7681
- 86 1/2 VALLEY WOOD RD ENDS
88 VACANT
90 VACANT
92 VACANT
96 CARAVELLA LOUIS C
* 661-8834
98 ALLEGRINI FRANK A
* 661-6341
100 VACANT
101 POMERANCE RALPH * 869-3932
101 PLAICE BARBARA MRS
869-8748
101 MORSE W SHELLMAN 661-9096
102 FRANCE GAILLE MRS
869-8776
SCALES GEORGE M 869-6539
102 1/2 SCALES * 869-8783
ANDREW M JR
104 VACANT
106 RITCH CHARLES S JR
* 869-6817
108 PETERSEN WILLIAM H
* 869-6091
110 SNYDER BESSIE E MRS
* 869-2311
112 MAC CUMB SADIE E MRS
* 869-1612
115 GENOVISE GILDO J 869-8748
TAYLOR MAX * 869-5590
221 TAMANY EDNA L MRS
* 869-2717
120 LA BATT RAYMOND H
* 661-8251
- 122 INDIAN ROCK LA BEGINS
- 231 COACHLAMP LA BEGINS
300 LEFFINGWELL ALBERT E
*
302 GIOFFRE JOSEPH D 661-6038
304 CLARK LEO J * 661-8503
306 TICKNER EDWARD C 661-1175
308 HUGHES THOMAS E * 869-9363
311 BANKS PETER * 869-4252
315 SPENCER GEORGE H * 661-7252
319 MCKINLEY EDWIN *
323 VACANT

ORCHARD CT /COS COB/ FR 51 1/2
ORCHARD NE TO DEAD END /RIGHT
ODD/ ZIP CODE 06807

1 HORNIK JULIUS P * 869-7524
2 LOCKHART LORRAINE K
869-3353

ORCHARD CR /MILBROOK/ FR 73 1/2 W
BROTHER DR S AND W TO 71 1/2
WILDWOOD DR /RIGHT EVEN/ ZIP
CODE 06830

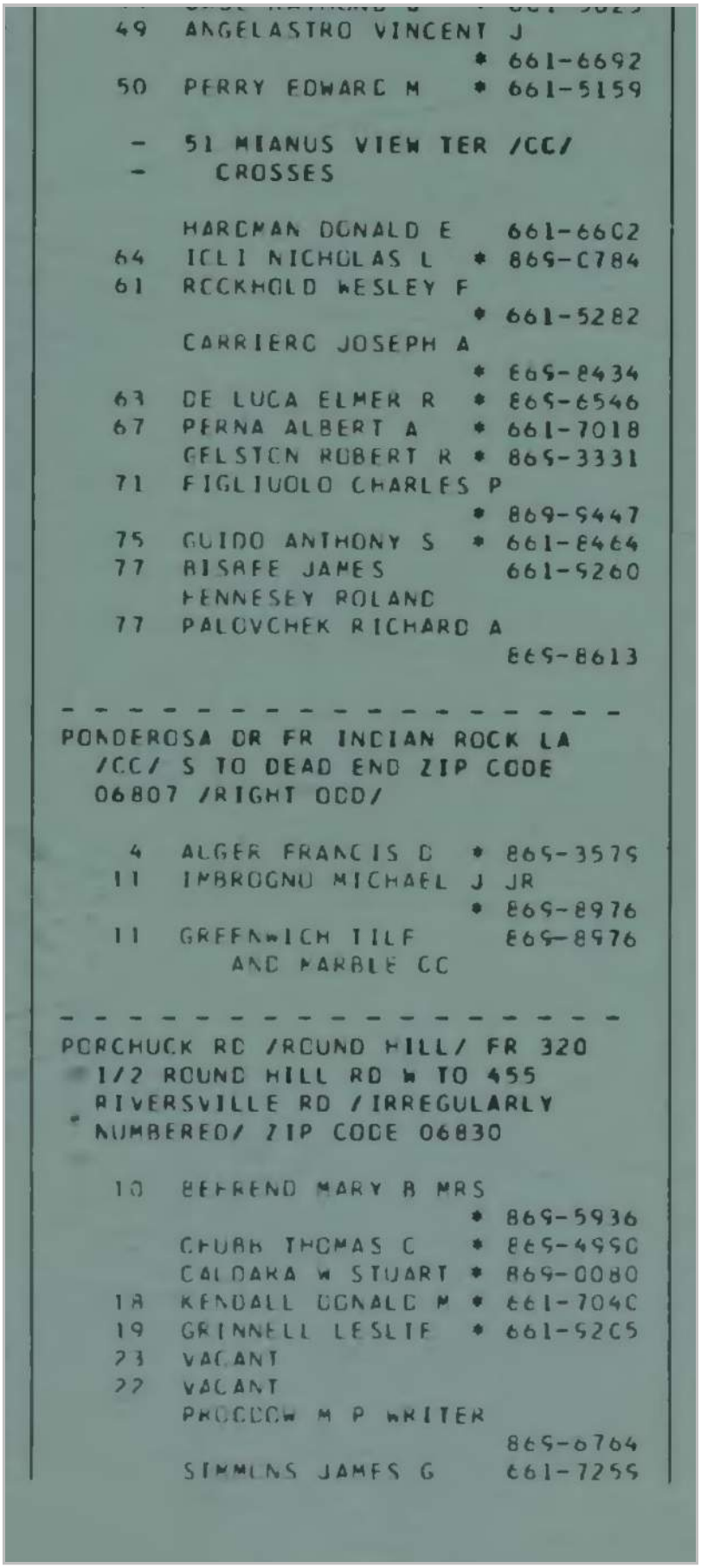
7 GRANT WALTER R * 869-7999
15 CRAMPTON HENRY E 869-0222
16 GILLIAND J WILLIAM
869-3268
18 MORGAN E SADLER * 869-0460
21 LESHER WALTER C * 869-3652
22 CAWSON THOMAS H * 869-5275
27 SORENSON DONALD L
* 869-0919
37 MEREDITH JAMES E * 661-7913
40 ISELIN WILLIAM * 869-4314
45 HOLLAND BRYCE L * 869-0314
54 DRAKE RICHARD M * 869-3469
55 HALEY RUSSELL I * 869-2438
68 KOKE WILLIAM L 869-0074
69 LEE PENELOPE H MRS
*
75 SKEEN J HALL * 869-7584
76 KENT MILTON F * 869-6350
87 LINDSTROM JACK H * 869-7598
90 BLAKELY ROBERT T * 869-8908
107 GLENDENING JOHN * 869-5834
113 ROBINSON * 869-6730
VIRGINIA M MRS
- 111 OVERLOOK DR ENDS
- 116 WILDWOOD DR ENDS

ORCHARD PL FR 354 1/2 DAVIS AV S
THEN W TO 79 INDIAN HARBOR DR
/RIGHT EVEN/ ZIP CODE 06830

6 PLATT LOUISE MRS * 869-1468
6 STRONG B B MRS NURSE
869-4641
11 ECCLES THOMAS R * 869-6492
LYNAM M CELINE 869-8749
16 GROH HENRY * 661-8467
BRIGGS ANN E MRS
19 MC PEAKE ROSEMARY
869-3197
ANDERSON ANDREW B
* 869-5099
20 ALBANO TERENCE M * 869-1053
WRIGHT ALTHEA J 661-9175
20 DONNAN ELIZABETH 869-1415
23 MATTISON 869-8665
CATHERINE L MRS
TIMMERMAN DONALD G
661-6085
24 CONNELL IRENE C * 661-6797
27 GENCARELLI VINCENZO
661-8469
27 MARENCO CARLOS 661-7756
28 SWEENEY MARGARET * 661-8509
J MRS
28 CUCEL ETHEL MRS
29 CURLEY JOSEPH R * 661-9009
32 WILSON CHARLES E * 661-8572
35 FINNIE DOROTHY J * 661-6399
36 CHARD HOWARD T * 869-6043
39 HARDE HUGO * 869-4727
40 SELF ANITA E MRS 661-6375
40 DEMARTINO ALPHONSO
* 661-6289
43 HEALY JAMES P * 661-5932
44 O CONNOR EAMON F 869-2284
THOMPSON ARTHUR H
661-6786
45 CROSBY MARTA M MRS
661-5643
DEVITT HARRY J 661-6755
46 C FLIA JOHN J * 661-6453
49 BARRETT MARGARET M
* 661-5939
50 TULLOCH GEORGE H 869-8656
50 MARENCO ARMANDO 661-5294
53 MCOLIN KATHERINE * 869-1175
M MRS
56 VACANT

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

PONDEROSA DR 1972



49 ANGELASTRO VINCENT J
* 661-6692
50 PERRY EDWARD M * 661-5159

\- 51 MIANUS VIEW TER /CC/
\- CROSSES

HARDMAN DONALD E 661-6602
64 ICLI NICHOLAS L * 869-0784
61 ROCKHOLD WESLEY F
* 661-5282
CARRIERO JOSEPH A
* 869-8434
63 DE LUCA ELMER R * 869-6546
67 PERNA ALBERT A * 661-7018
GELSTON ROBERT R * 869-3331
71 FIGLIUOLO CHARLES P
* 869-9447
75 GUIDO ANTHONY S * 661-8464
77 BISAFE JAMES 661-9260
FENNESEY ROLAND
77 PALOVCHEK RICHARD A
869-8613

PONDEROSA DR FR INDIAN ROCK LA /CC/ S TO DEAD END ZIP CODE 06807 /RIGHT ODD/

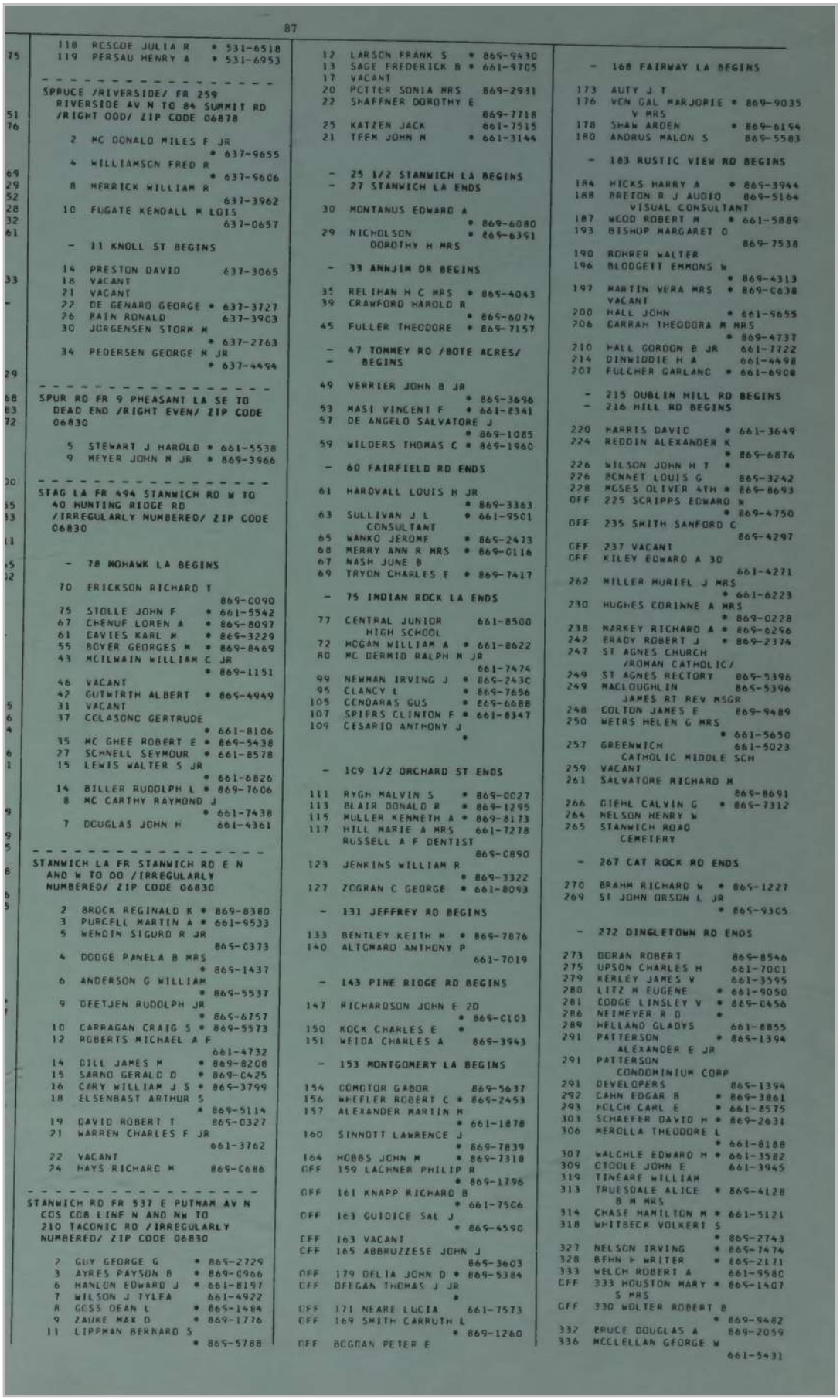
4 ALGER FRANCIS D * 869-3579
11 IMBROGNO MICHAEL J JR
* 869-8976
11 GREENWICH TILE 869-8976
AND MARBLE CO

PORCHUCK RD /ROUND HILL/ FR 320 1/2 ROUND HILL RD W TO 455 RIVERSVILLE RD /IRREGULARLY NUMBERED/ ZIP CODE 06830

10 BEFREND MARY B MRS
* 869-5936
CHUBB THOMAS C * 869-4950
CALDARA W STUART * 869-0080
18 KENDALL DONALD M * 661-7040
19 GRINNELL LESLIE * 661-5205
23 VACANT
22 VACANT
PROCTOR M P WRITER
869-6764
SIMMONS JAMES G 661-7255

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

STANWICH RD 1972



87

118 RCSCOE JULIA R * 531-6518
119 PERSAU HENRY A * 531-6953

SPRUCE /RIVERSIDE/ FR 259 RIVERSIDE AV N TO 84 SUMMIT RD /RIGHT ODD/ ZIP CODE 06878

2 MC DONALD MILES F JR * 637-9655
4 WILLIAMSCN FRED R * 637-9606
8 MERRICK WILLIAM R 637-3962
10 FUGATE KENDALL M LOIS 637-0657
- 11 KNOLL ST BEGINS
14 PRESTON DAVID 637-3065
18 VACANT
21 VACANT
22 DE GENARO GEORGE * 637-3727
26 RAIN RONALD 637-3903
30 JORGENSEN STORM M * 637-2763
34 PEDERSEN GEORGE M JR * 637-4494

SPUR RD FR 9 PHEASANT LA SE TO DEAD END /RIGHT EVEN/ ZIP CODE 06830

5 STEWART J HAROLD * 661-5538
9 MEYER JOHN M JR * 869-3966

STAG LA FR 494 STANWICH RD W TO 40 HUNTING RIDGE RD /IRREGULARLY NUMBERED/ ZIP CODE 06830

- 78 MOHAWK LA BEGINS
70 ERICKSON RICHARD T 869-0090
75 STOLLE JOHN F * 661-5542
67 CHENUF LOREN A * 869-8097
61 CAVIES KARL M * 869-3229
55 BOYER GEORGES M * 869-8469
43 MCILWAIN WILLIAM C JR * 869-1151
46 VACANT
42 GUTWIRTH ALBERT * 869-4949
31 VACANT
37 COLASONO GERTRUDE * 661-8106
35 MC GHEE ROBERT E * 869-5438
27 SCHNELL SEYMOUR * 661-8578
15 LEWIS WALTER S JR * 661-6826
14 BILLER RUDOLPH L * 869-7606
8 MC CARTHY RAYMOND J * 661-7438
7 DOUGLAS JOHN H 661-4361

STANWICH LA FR STANWICH RD E N AND W TO DO /IRREGULARLY NUMBERED/ ZIP CODE 06830

2 BROCK REGINALD K * 869-8380
3 PURCELL MARTIN A * 661-5533
5 WENDIN SIGURD R JR 869-C373
4 DODGE PANELA B MRS * 869-1437
6 ANDERSON G WILLIAM * 869-5537
9 DEETJEN RUDOLPH JR * 869-6757
10 CARRAGAN CRAIG S * 869-5573
12 ROBERTS MICHAEL A F 661-4732
14 DILL JAMES M * 869-8208
15 SARNO GERALD D * 869-C425
16 CARY WILLIAM J S * 869-3799
18 ELSENBAST ARTHUR S * 869-5114
19 DAVID ROBERT T 869-0327
21 WARREN CHARLES F JR 661-3762
22 VACANT
24 HAYS RICHARD M 869-C686

STANWICH RD FR 537 E PUTNAM AV N COS C08 LINE N AND NW TO 210 TACONIC RD /IRREGULARLY NUMBERED/ ZIP CODE 06830

2 GUY GEORGE G * 869-2729
3 AYRES PAYSON B * 869-C966
6 HANLON EDWARD J * 661-8197
7 WILSON J TYLER 661-4922
8 GOSS DEAN L * 869-1484
9 ZAUKE MAX D * 869-1776
11 LIPPMAN BERNARD S * 869-5788
12 LARSON FRANK S * 869-9430
13 SAGE FREDERICK B * 661-9705
17 VACANT
20 POTTER SONIA MRS 869-2931
22 SHAFFNER DOROTHY E 869-7718
25 KATZEN JACK 661-7515
21 TEEM JOHN M * 661-3144

- 25 1/2 STANWICH LA BEGINS
- 27 STANWICH LA ENDS
30 MONTANUS EDWARD A * 869-6080
29 NICHOLSON DOROTHY H MRS * 869-6391
- 33 ANNJIM DR BEGINS
35 RELIHAN H C MRS * 869-4043
39 CRAWFORD HAROLD R * 869-6074
45 FULLER THEODORE * 869-7157
- 47 TOMMEY RD /BOTE ACRES/ BEGINS
49 VERRIER JOHN B JR * 869-3696
53 MASI VINCENT F * 661-8341
57 DE ANGELO SALVATORE J * 869-1085
59 WILDERS THOMAS C * 869-1960
- 60 FAIRFIELD RD ENDS
61 HAROVALL LOUIS H JR * 869-3383
63 SULLIVAN J L CONSULTANT * 661-9501
65 WANKO JEROME * 869-2473
68 MERRY ANN R MRS * 869-0116
67 NASH JUNE B
69 TRYON CHARLES E * 869-7417
- 75 INDIAN ROCK LA ENDS
77 CENTRAL JUNIOR HIGH SCHOOL 661-8500
72 HOGAN WILLIAM A * 661-8622
80 MC DERMID RALPH M JR 661-7474
99 NEWMAN IRVING J * 869-243C
95 CLANCY L * 869-7656
105 CENDARAS GUS * 869-6688
107 SPIERS CLINTON F * 661-8347
109 CESARIO ANTHONY J *
- 109 1/2 ORCHARD ST ENDS
111 RYGH MALVIN S * 869-0027
113 BLAIR DONALD R * 869-1295
115 MULLER KENNETH A * 869-8173
117 HILL MARIE A MRS 661-7278
RUSSELL A F DENTIST 869-C890
123 JENKINS WILLIAM R * 869-3322
127 ZOGRAN C GEORGE * 661-8093
- 131 JEFFREY RD BEGINS
133 BENTLEY KEITH M * 869-7876
140 ALTOMARO ANTHONY P 661-7019
- 143 PINE RIDGE RD BEGINS
147 RICHARDSON JOHN E 2D * 869-0103
150 KOCK CHARLES E *
151 WEIDA CHARLES A 869-3943
- 153 MONTGOMERY LA BEGINS
154 COMOTOR GABOR 869-5637
156 WHEELER ROBERT C * 869-2453
157 ALEXANDER MARTIN M * 661-1878
160 SINNOTT LAWRENCE J * 869-7839
164 HOBBS JOHN M * 869-7318
OFF 159 LACHNER PHILIP R * 869-1796
OFF 161 KNAPP RICHARD B * 661-7506
OFF 163 GUIDICE SAL J * 869-4590
OFF 163 VACANT
OFF 165 ABBRUZZESE JOHN J 869-3603
OFF 179 DELIA JOHN D * 869-5384
OFF DEEGAN THOMAS J JR *
OFF 171 NEARE LUCIA 661-7573
OFF 169 SMITH CARRUTH L * 869-1260
OFF BEGDAN PETER E
- 168 FAIRWAY LA BEGINS
173 AUTY J T
176 VON GAL MARJORIE V MRS * 869-9035
178 SHAW ARDEN * 869-6154
180 ANDRUS MALON S 869-5583
- 183 RUSTIC VIEW RD BEGINS
184 HICKS HARRY A * 869-3944
188 BRETON R J AUDIO VISUAL CONSULTANT 869-5164
187 WOOD ROBERT M * 661-5889
193 BISHOP MARGARET D 869-7538
190 ROHRER WALTER
196 BLODGETT EMMONS W * 869-4313
197 MARTIN VERA MRS * 869-C638
VACANT
200 HALL JOHN * 661-9655
206 CARRAH THEODORA M MRS * 869-4737
210 HALL GORDON B JR 661-7722
214 DINWIDDIE H A 661-4498
207 FULCHER GARLAND * 661-6908
- 215 DUBLIN HILL RD BEGINS
- 216 HILL RD BEGINS
220 HARRIS DAVID * 661-3649
224 REDDIN ALEXANDER K * 869-6876
226 WILSON JOHN H T *
226 BONNET LOUIS G 869-3242
228 MOSES OLIVER 4TH * 869-8693
OFF 225 SCRIPPS EDWARD W * 869-4750
OFF 235 SMITH SANFORD C 869-4297
OFF 237 VACANT
OFF KILEY EDWARD A 3D 661-4271
262 MILLER MURIEL J MRS * 661-6223
230 HUGHES CORINNE A MRS * 869-0228
238 MARKEY RICHARD A * 869-6256
242 BRADY ROBERT J * 869-2374
247 ST AGNES CHURCH /ROMAN CATHOLIC/
249 ST AGNES RECTORY 869-5396
249 MACLOUGHLIN JAMES RT REV MSGR 869-5396
248 COLTON JAMES E 869-9489
250 WEIRS HELEN G MRS * 661-5650
257 GREENWICH CATHOLIC MIDDLE SCH 661-5023
259 VACANT
261 SALVATORE RICHARD M 869-8691
266 DIEHL CALVIN G * 869-7312
264 NELSON HENRY W
265 STANWICH ROAD CEMETERY
- 267 CAT ROCK RD ENDS
270 BRAHM RICHARD W * 869-1227
269 ST JOHN ORSON L JR * 869-9305
- 272 DINGLETOWN RD ENDS
273 DORAN ROBERT 869-8546
275 UPSON CHARLES H 661-7001
279 KERLEY JAMES V 661-3595
280 LITZ M EUGENE * 661-9050
281 CODGE LINSLEY V * 869-C456
286 NEIMEYER R D *
289 HELLAND GLADYS 661-8855
291 PATTERSON ALEXANDER E JR * 869-1394
291 PATTERSON CONDOMINIUM CORP
291 DEVELOPERS 869-1394
292 CAHN EDGAR B * 869-3861
293 HOLCH CARL E * 661-8575
303 SCHAEFER DAVID H * 869-2631
306 MEROLLA THEODORE L * 661-8188
307 WALCHLE EDWARD H * 661-3582
309 OTOOLE JOHN E 661-3945
319 TINEARE WILLIAM
313 TRUESDALE ALICE B M MRS * 869-4128
314 CHASE HAMILTON M * 661-5121
318 WHITBECK VOLKERT S * 869-2743
327 NELSON IRVING * 869-7474
328 BEHN P WRITER * 869-2171
333 WELCH ROBERT A 661-9580
OFF 333 HOUSTON MARY S MRS * 869-1407
OFF 330 WOLTER ROBERT B * 869-9482
332 BRUCE DOUGLAS A 869-2059
336 MCCLELLAN GEORGE W 661-5431

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

BIBLE ST 1967

Bertolf Rd (Riverside)—continued
60 Cameron Robert G 637-3125
62 Vacant
64 Vacant
66 Pastula Stanley J 637-2276
70 Bria Michael F 637-4159
72 Queen Richard E 637-1597
74 Nastahowski Jack 637-0189
76 Creamer Jean O Mrs
80 Gordon John L 637-4060
82 Walther Martin G 637-4426
84◎Elles Ruth Mrs 637-3778
86 Horwath Theodore F 637-3481
90 Koziel Edward W 637-9659
92 Baker Henry W 637-9250
94 Mould Audrey E Mrs
96 Lowthert T D Jr 637-0748

BIBLE (Cos Cob) fr 29½ Orchard N to Cat Rock rd (Right odd) (Irregularly numbered) Zip Code 06807
1 Sayles st begins
7 DelFino Fred M 869-2891
Smeriglio Thomas 869-6555
Cofone Mary Mrs
9 O'Connor Henry 869-4156
Keeler Floyd A 661-6041
11 Domizjano Joseph L 869-4096
Constantino Joseph 869-8289
15◎Domiziano John A 661-8545
Johnson Alexander D 869-5994
16 Old Indian Cemetery
17 Cortese Carmelo A 869-2019
19◎Altomaro G A Jr 869-2385
◎Altomaro Margaret Mrs 869-3287
23◎Altomaro Frank 869-7729
Cantella William J 869-0746
25◎Whitlock James H 869-3953
27 Wlauchin Emil 869-6830
Morrell Shirley-Jane 661-6018
Santora James 869-3299
Smigowski Elizabeth 869-2804
31 Makrinos E Louis 661-5423
◎Pratt Kathryn Mrs 661-9744
33◎Santora John W 661-8831
Vacant
35 Ferraro A L landscape gardener 869-5037
◎Ferraro James
37◎Pedwano Rosaria Mrs 869-6591
Bounty Lawrence 869-7479
39◎Pedwano John 869-0251
41 Comeau J Adolphe J 661-7568
Giunee Alfred 661-8195
41½ Palmer st begins
45◎Scarpelli Peter 869-2771
Scarpelli C J grocer 869-2771
49◎Godino Vincent 661-9325
Burke John J 869-3213
54 Cos Cob Community Center
55◎Allevato Joseph 869-1936
57◎Capparelle Bros Inc landscape contrs 869-8753
◎Capparelle Pasquale 869-7391
61◎Librandi Frank J 661-9215
67◎Librandi Mildred C Mrs 869-1198
69◎Marullo Gennaro 869-6978
75◎Wagner Henry P 661-8833
77 Crocker st begins
79 Ferrara V J 661-8705
Ceci John J 869-9166
81 Vacant
85off Vacant
87◎Christiano Vito 869-2448
89◎Agostino Bruno A 661-6975
Andrighetti Peter L 869-8714
89off◎Agostino Rocco 661-5622
91 Rozmus Robert L 661-7602
99◎Zygmont Michael John 661-6516
105 Chiappetta Anthony M 661-9482
73◎Kay Agnes H 869-4250
117◎Mould J F Jr 869-3612
79 Dietrick Benjamin W 661-7250
— Montgomery Pinetum Park
178◎Lawlor William E 869-6929
182◎Lansing E S 869-5264
—◎Hoyns Fred C 869-1246
184◎Pierce Roger S 869-6461
186 Hassan Hugh J 869-8459
—off◎Phillips Wendell S 869-0107
—◎Greenwold David H 869-8695
192◎Madonald J Grant 661-8517
196◎Partridge Henry B 869-7566
195off◎Carlson W G 869-1277
206◎Ferris Robert F 869-6485
208 VanAssen Arie J 869-3987
— Cos Cob Archers
211◎Scarpelli William R
219◎Bardone Silvio S 869-8648

BINNEY LA (Old Greenwich) fr 94 Shore rd NE and NW bey Ford la to dead end (Right odd) Zip Code 06870
—◎Girdler Reynolds Jr 637-2762
8◎Martens George H Jr 637-3406
9◎Hamilton John M 637-0466
11◎Read L P Mrs 637-0089
12◎Halsey John R 637-1350
16◎Hamilton M M Mrs 637-9146
17◎Bryon B H real est 637-0395
18◎Chitwood R artist 637-2028
20 Ann st begins
35◎Kitchel H B Mrs 637-0179
36◎Broaddus Nash Jr 637-0574
41◎Clauson Karl A 637-1739
44◎McShane Terrence F 637-3289
45◎Coolidge John W 637-2548
50◎Randak Mary S Mrs 637-2007
52 Sylvan la ends
54◎MacArthur Z Mrs 637-1518
55◎Hirschhorn Fred Jr 637-0003
56◎Powers Olive G Mrs 637-9075
60◎Lighthill David P 637-9982

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

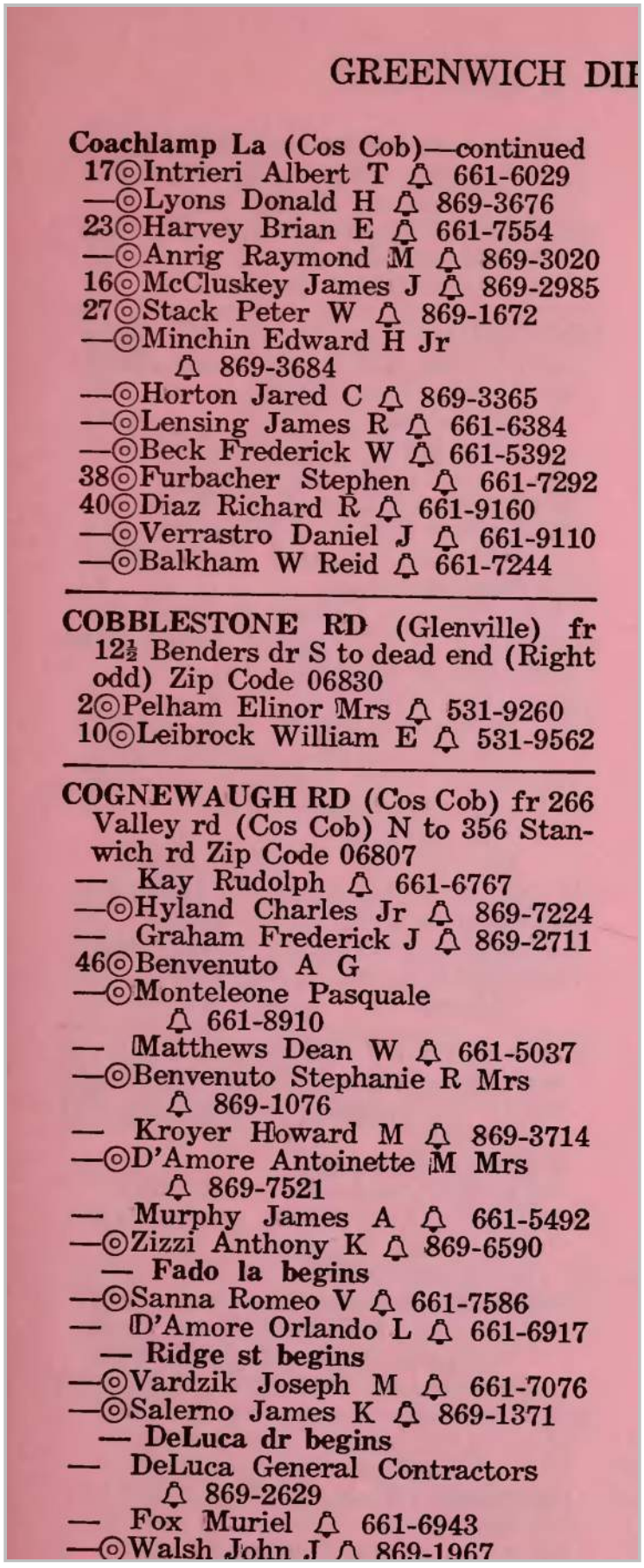
COACHLAMP LN 1967

10◎Norton Victor T 🔔 637-0701
11◎Kerrigan Richard T 🔔 637-4132
15 Glen Avon dr begins
18◎Stevens Philip J 🔔 637-1173
18r McWilliam Anna A Mrs
🔔 637-1339
25◎Belknap Carroll Y 🔔 637-1223
30◎Hinkley J W 🔔 637-2211
33◎Sneath William S 🔔 637-9455
34◎Snyder William S 🔔 637-2230
38◎Rathe Gustave H Jr 🔔 637-3724
41◎Moseley Cameron S 🔔 637-2901
52◎Gorby John S 🔔 637-1455
58◎French A M 🔔 637-0493
59◎Higginbotham E Gaston
🔔 637-1801
61 Glen Avon dr ends
64◎Ross DeHaven 🔔 637-0456
66 Gilliam la ends
73 Vacant
74◎Albertson Donald G 🔔 637-2960
75◎Mason G author 🔔 637-1674
80◎Schuster George G 🔔 637-0006
85◎Karr-Daves W T 🔔 637-0074
90◎Memhard Richard C 🔔 637-9771
93◎McCullough Robert W
🔔 637-9679
95◎Steiger Emil L 🔔 637-0046
96◎Ward Pierce C Jr 🔔 637-0692
96r Vacant
98◎Stege George H 🔔 637-9324
100◎Lovejoy Allen F 🔔 637-0489
102 Riverside Yacht Club
🔔 637-1706
Trampler George F
105◎Kerley James W 🔔 637-9083

COACHLAMP LA (Cos Cob) fr 231
Orchard E to dead end (Right odd)
Zip Code 06807
1◎O'Sullivan Paul J 🔔 661-8158
—◎Fogwell Bruce P 🔔 661-7138
6◎Schroeder Edward H 🔔 869-8455
9◎Potts Buford Jr 🔔 661-5456
12◎Hollett Allen 🔔 🔔 869-4197
◎Bohan Thomas E 🔔 869-7882

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

COACHLAMP LN 1967



GREENWICH DI

Coachlamp La (Cos Cob)—continued
17◎Intrieri Albert T 🔔 661-6029
—◎Lyons Donald H 🔔 869-3676
23◎Harvey Brian E 🔔 661-7554
—◎Anrig Raymond M 🔔 869-3020
16◎McCluskey James J 🔔 869-2985
27◎Stack Peter W 🔔 869-1672
—◎Minchin Edward H Jr 🔔 869-3684
—◎Horton Jared C 🔔 869-3365
—◎Lensing James R 🔔 661-6384
—◎Beck Frederick W 🔔 661-5392
38◎Furbacher Stephen 🔔 661-7292
40◎Diaz Richard R 🔔 661-9160
—◎Verrastro Daniel J 🔔 661-9110
—◎Balkham W Reid 🔔 661-7244

COBBLESTONE RD (Glenville) fr 12½ Benders dr S to dead end (Right odd) Zip Code 06830
2◎Pelham Elinor Mrs 🔔 531-9260
10◎Leibrock William E 🔔 531-9562

COGNEWAUGH RD (Cos Cob) fr 266 Valley rd (Cos Cob) N to 356 Stanwich rd Zip Code 06807
— Kay Rudolph 🔔 661-6767
—◎Hyland Charles Jr 🔔 869-7224
— Graham Frederick J 🔔 869-2711
46◎Benvenuto A G
—◎Monteleone Pasquale 🔔 661-8910
— Matthews Dean W 🔔 661-5037
—◎Benvenuto Stephanie R Mrs 🔔 869-1076
— Kroyer Howard M 🔔 869-3714
—◎D'Amore Antoinette M Mrs 🔔 869-7521
— Murphy James A 🔔 661-5492
—◎Zizzi Anthony K 🔔 869-6590
— Fado la begins
—◎Sanna Romeo V 🔔 661-7586
— D'Amore Orlando L 🔔 661-6917
— Ridge st begins
—◎Vardzik Joseph M 🔔 661-7076
—◎Salerno James K 🔔 869-1371
— DeLuca dr begins
— DeLuca General Contractors 🔔 869-2629
— Fox Muriel 🔔 661-6943
—◎Walsh John J 🔔 869-1967

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

DOUBLING RD 1967

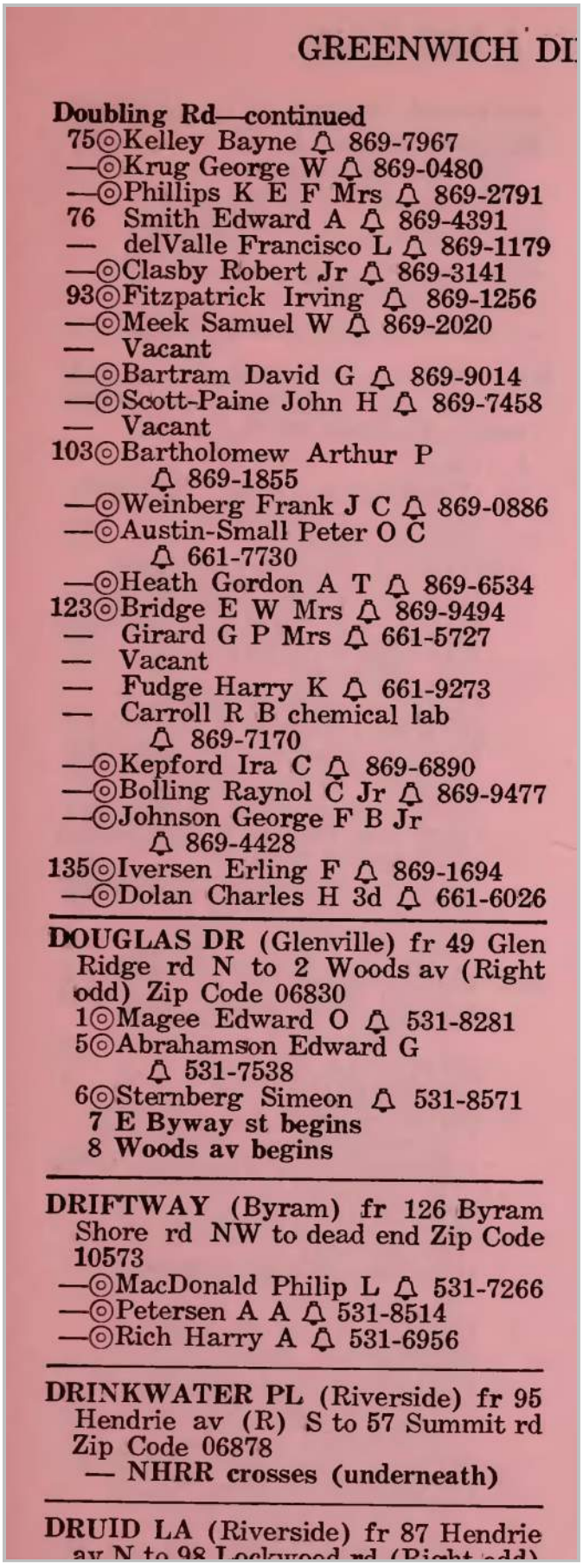
21◎Ziegner Wettin E 🔔 637-9403
19 Barry John P 🔔 637-1509
17◎Stroffolino Arthur F 🔔 637-0742
11 Brady Thomas 🔔 637-0178
15◎Lohr George W Jr 🔔 637-0149
13◎McHugh John 🔔 637-1658

DOUBLING RD fr 368 North NE to Dingletown rd Zip Code 06830

6 Ives Dermod Jr
Vacant
—◎Hack William T 🔔 869-7871
—◎Warner J Arthur 🔔 869-6240
—◎Flower Henry C Jr 🔔 869-8573
— Golf Club rd ends
—off Greenwich Country Club Inc 🔔 869-1000
—◎Jefferson F W 🔔 869-0877
—◎Wilkinson Martin G 🔔 661-6784
— Putrino Frank D 🔔 661-9379
—◎Amiot Arthur L Jr 🔔 661-9044
—◎Goldring Gertrude F Mrs 🔔 869-5259
—◎Klopher Ronald
— Grigas John E 🔔
—◎Thiel Wilbur D 🔔 661-7763
39◎Washburn Loring 🔔 869-2941
39½ Vacant
45◎Finnegan James C 🔔 869-6854
—◎Peak R M artist 🔔 869-4404
—off◎Auch Walter E 🔔 869-6258
49◎Sullivan Richard D 🔔 661-6406
51◎Mudge Shaw 🔔 869-8312
53◎Hart R Kenneth 🔔 869-8269
54◎Sullivan D M Jr 🔔 869-8151
— Saw Mill la begins
58◎Newkirk Edith Mrs 🔔 869-2969
— Wyngate rd begins
—◎Ford F Richard 3d 🔔 869-4588
— Hill rd ends

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

DOUBLING RD 1967



GREENWICH DI

Doubling Rd—continued
75◎Kelley Bayne 🔔 869-7967
—◎Krug George W 🔔 869-0480
—◎Phillips K E F Mrs 🔔 869-2791
76 Smith Edward A 🔔 869-4391
— delValle Francisco L 🔔 869-1179
—◎Clasby Robert Jr 🔔 869-3141
93◎Fitzpatrick Irving 🔔 869-1256
—◎Meek Samuel W 🔔 869-2020
— Vacant
—◎Bartram David G 🔔 869-9014
—◎Scott-Paine John H 🔔 869-7458
— Vacant
103◎Bartholomew Arthur P 🔔 869-1855
—◎Weinberg Frank J C 🔔 869-0886
—◎Austin-Small Peter O C 🔔 661-7730
—◎Heath Gordon A T 🔔 869-6534
123◎Bridge E W Mrs 🔔 869-9494
— Girard G P Mrs 🔔 661-5727
— Vacant
— Fudge Harry K 🔔 661-9273
— Carroll R B chemical lab 🔔 869-7170
—◎Kepford Ira C 🔔 869-6890
—◎Bolling Raynol C Jr 🔔 869-9477
—◎Johnson George F B Jr 🔔 869-4428
135◎Iversen Erling F 🔔 869-1694
—◎Dolan Charles H 3d 🔔 661-6026

DOUGLAS DR (Glenville) fr 49 Glen Ridge rd N to 2 Woods av (Right odd) Zip Code 06830
1◎Magee Edward O 🔔 531-8281
5◎Abrahamson Edward G 🔔 531-7538
6◎Sternberg Simeon 🔔 531-8571
7 E Byway st begins
8 Woods av begins

DRIFTWAY (Byram) fr 126 Byram Shore rd NW to dead end Zip Code 10573
—◎MacDonald Philip L 🔔 531-7266
—◎Petersen A A 🔔 531-8514
—◎Rich Harry A 🔔 531-6956

DRINKWATER PL (Riverside) fr 95 Hendrie av (R) S to 57 Summit rd Zip Code 06878
— NHRR crosses (underneath)

DRUID LA (Riverside) fr 87 Hendrie av N to 98 Lockwood rd (Right odd)

Target Street	Cross Street	Source
✓	-	Price & Lee's City Directory

INDIAN ROCK LN 1967

14◎Toner Adrian G 🔔 869-4712
18◎Jeffery Tad 🔔 661-6369
—◎McLaughlin Frank C 🔔 661-6464
—◎Breed Harlan P Jr 🔔 869-9181
22◎Cusack Catherine E Mrs
🔔 869-5211
— Hall Grace Mrs
—◎Sabanski Matthew W 🔔 661-7845
— McKnight Robert J 🔔 661-6906

INDIAN POINT LA (Riverside) fr 202 Indian Head rd SW and W bey Marlow ct to dead end Zip Code 06878
5◎Holland John E 🔔 637-0808
8◎VanDuyne F W Jr 🔔 637-1687
11◎Putnam William B 🔔 637-0882
16◎Behrman George W 🔔 637-3137
16½◎Ford Hamilton Gates
🔔 637-0135
17 Marlow ct begins
21◎Gottschalck L W 🔔 637-3476
26◎Norman Frederick C 🔔 637-2640
27◎Murphy Joseph R 🔔 637-1017
30 Barr Robert T 🔔 637-2178
32 Beresh Joseph 🔔 637-9053
◎Lowther Clara G 🔔 637-0226

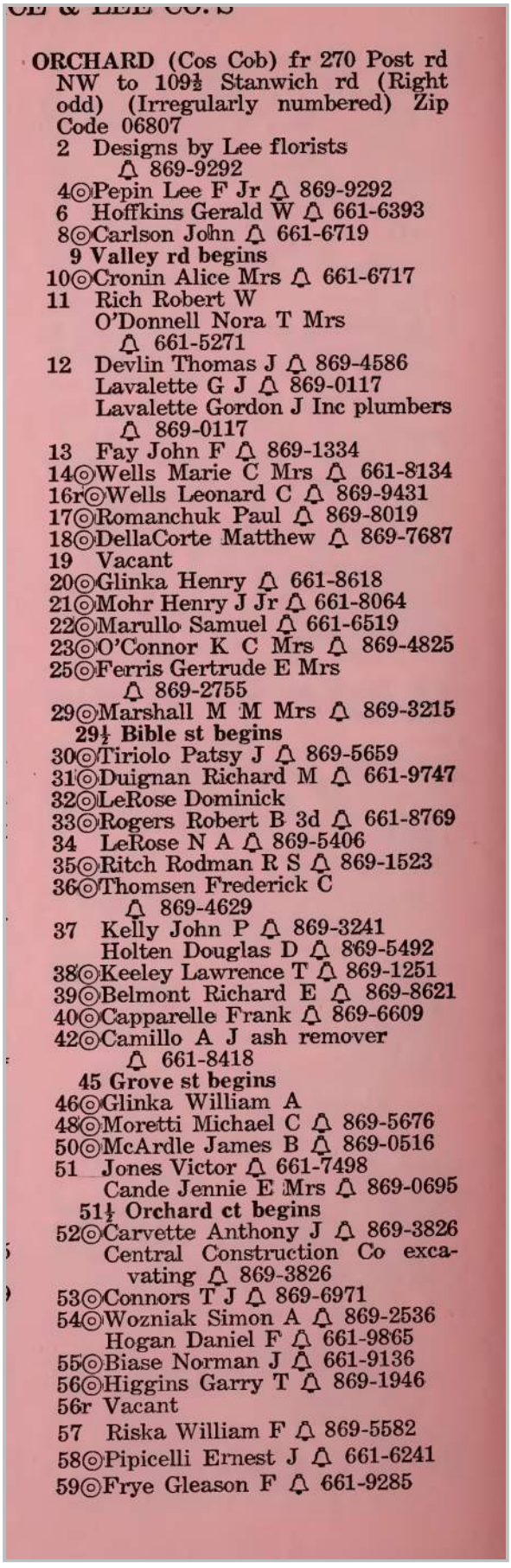
INDIAN ROCK LA (Cos Cob) fr 120 Orchard (CC) W to 75 Stanwich rd Zip Code 06807
— Ponderosa dr begins

INDIAN SPRING RD (N Rock Ridge) fr Midwood dr N to dead end Zip Code 06830
—◎Rockfeller J Stillman 🔔 869-4330

INNIS LA (Old Greenwich) fr 32½ Lockwood av (OG) N to dead end (Right even) Zip Code 06870
— Vacant
— Vacant
— Vacant
— Vacant
14◎Westphal William C 🔔 637-4186
18◎Leisten Thomas A 🔔 637-9989
20◎Sproul Gloria J Mrs 🔔 637-4474
25 Vacant
27◎Spong Duane E 🔔 637-0626
29◎Braun Carl L 🔔 637-0617

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

ORCHARD ST 1967



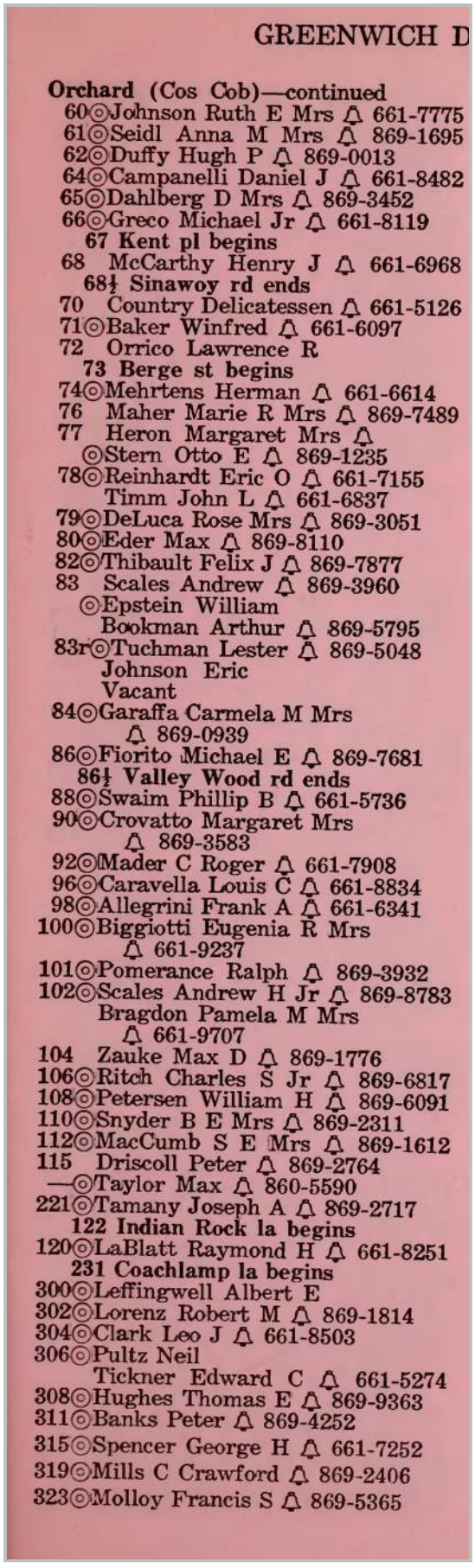
CE & LEE CO.'S

ORCHARD (Cos Cob) fr 270 Post rd NW to 109½ Stanwich rd (Right odd) (Irregularly numbered) Zip Code 06807

2 Designs by Lee florists 🔔 869-9292
4◎Pepin Lee F Jr 🔔 869-9292
6 Hoffkins Gerald W 🔔 661-6393
8◎Carlson John 🔔 661-6719
9 Valley rd begins
10◎Cronin Alice Mrs 🔔 661-6717
11 Rich Robert W
O'Donnell Nora T Mrs 🔔 661-5271
12 Devlin Thomas J 🔔 869-4586
Lavalette G J 🔔 869-0117
Lavalette Gordon J Inc plumbers 🔔 869-0117
13 Fay John F 🔔 869-1334
14◎Wells Marie C Mrs 🔔 661-8134
16r◎Wells Leonard C 🔔 869-9431
17◎Romanchuk Paul 🔔 869-8019
18◎DellaCorte Matthew 🔔 869-7687
19 Vacant
20◎Glinka Henry 🔔 661-8618
21◎Mohr Henry J Jr 🔔 661-8064
22◎Marullo Samuel 🔔 661-6519
23◎O'Connor K C Mrs 🔔 869-4825
25◎Ferris Gertrude E Mrs 🔔 869-2755
29◎Marshall M M Mrs 🔔 869-3215
29½ Bible st begins
30◎Tiriolo Patsy J 🔔 869-5659
31◎Duignan Richard M 🔔 661-9747
32◎LeRose Dominick
33◎Rogers Robert B 3d 🔔 661-8769
34 LeRose N A 🔔 869-5406
35◎Ritch Rodman R S 🔔 869-1523
36◎Thomsen Frederick C 🔔 869-4629
37 Kelly John P 🔔 869-3241
Holten Douglas D 🔔 869-5492
38◎Keeley Lawrence T 🔔 869-1251
39◎Belmont Richard E 🔔 869-8621
40◎Capparelle Frank 🔔 869-6609
42◎Camillo A J ash remover 🔔 661-8418
45 Grove st begins
46◎Glinka William A
48◎Moretti Michael C 🔔 869-5676
50◎McArdle James B 🔔 869-0516
51 Jones Victor 🔔 661-7498
Cande Jennie E Mrs 🔔 869-0695
51½ Orchard ct begins
52◎Carvette Anthony J 🔔 869-3826
Central Construction Co excavating 🔔 869-3826
53◎Connors T J 🔔 869-6971
54◎Wozniak Simon A 🔔 869-2536
Hogan Daniel F 🔔 661-9865
55◎Biase Norman J 🔔 661-9136
56◎Higgins Garry T 🔔 869-1946
56r Vacant
57 Riska William F 🔔 869-5582
58◎Pipicelli Ernest J 🔔 661-6241
59◎Frye Gleason F 🔔 661-9285

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

ORCHARD ST 1967

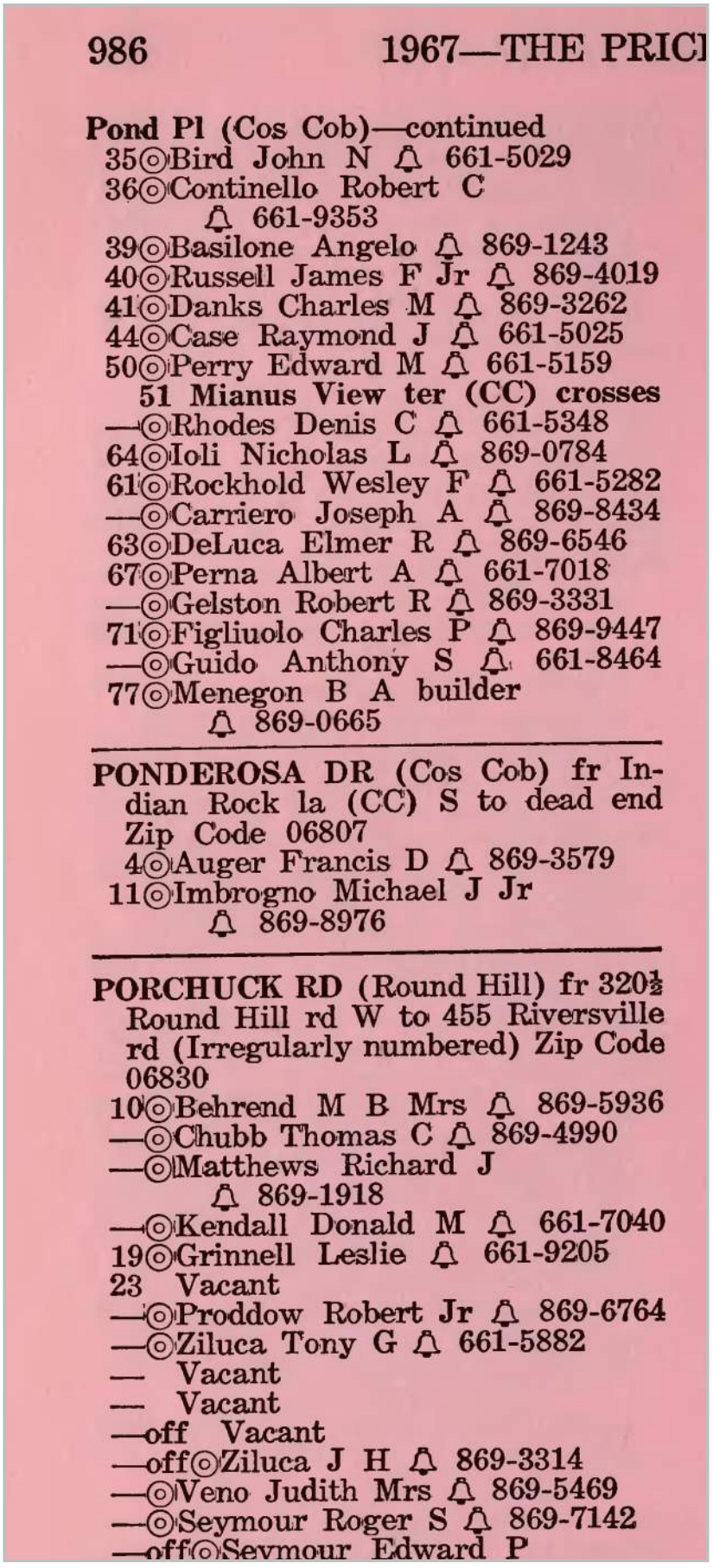


GREENWICH D

Orchard (Cos Cob)—continued
60◎Johnson Ruth E Mrs 🔔 661-7775
61◎Seidl Anna M Mrs 🔔 869-1695
62◎Duffy Hugh P 🔔 869-0013
64◎Campanelli Daniel J 🔔 661-8482
65◎Dahlberg D Mrs 🔔 869-3452
66◎Greco Michael Jr 🔔 661-8119
67 Kent pl begins
68 McCarthy Henry J 🔔 661-6968
68½ Sinawoy rd ends
70 Country Delicatessen 🔔 661-5126
71◎Baker Winfred 🔔 661-6097
72 Orrico Lawrence R
73 Berge st begins
74◎Mehrtens Herman 🔔 661-6614
76 Maher Marie R Mrs 🔔 869-7489
77 Heron Margaret Mrs 🔔
◎Stern Otto E 🔔 869-1235
78◎Reinhardt Eric O 🔔 661-7155
Timm John L 🔔 661-6837
79◎DeLuca Rose Mrs 🔔 869-3051
80◎Eder Max 🔔 869-8110
82◎Thibault Felix J 🔔 869-7877
83 Scales Andrew 🔔 869-3960
◎Epstein William
Bookman Arthur 🔔 869-5795
83r◎Tuchman Lester 🔔 869-5048
Johnson Eric
Vacant
84◎Garaffa Carmela M Mrs
🔔 869-0939
86◎Fiorito Michael E 🔔 869-7681
86½ Valley Wood rd ends
88◎Swaim Phillip B 🔔 661-5736
90◎Crovatto Margaret Mrs
🔔 869-3583
92◎Mader C Roger 🔔 661-7908
96◎Caravella Louis C 🔔 661-8834
98◎Allegrini Frank A 🔔 661-6341
100◎Biggiotti Eugenia R Mrs
🔔 661-9237
101◎Pomerance Ralph 🔔 869-3932
102◎Scales Andrew H Jr 🔔 869-8783
Bragdon Pamela M Mrs
🔔 661-9707
104 Zauke Max D 🔔 869-1776
106◎Ritch Charles S Jr 🔔 869-6817
108◎Petersen William H 🔔 869-6091
110◎Snyder B E Mrs 🔔 869-2311
112◎MacCumb S E Mrs 🔔 869-1612
115 Driscoll Peter 🔔 869-2764
—◎Taylor Max 🔔 860-5590
221◎Tamany Joseph A 🔔 869-2717
122 Indian Rock la begins
120◎LaBlatt Raymond H 🔔 661-8251
231 Coachlamp la begins
300◎Leffingwell Albert E
302◎Lorenz Robert M 🔔 869-1814
304◎Clark Leo J 🔔 661-8503
306◎Pultz Neil
Tickner Edward C 🔔 661-5274
308◎Hughes Thomas E 🔔 869-9363
311◎Banks Peter 🔔 869-4252
315◎Spencer George H 🔔 661-7252
319◎Mills C Crawford 🔔 869-2406
323◎Molloy Francis S 🔔 869-5365

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

PONDEROSA DR 1967



986 1967—THE PRICE

Pond Pl (Cos Cob)—continued
35◎Bird John N 🔔 661-5029
36◎Continello Robert C
🔔 661-9353
39◎Basilone Angelo 🔔 869-1243
40◎Russell James F Jr 🔔 869-4019
41◎Danks Charles M 🔔 869-3262
44◎Case Raymond J 🔔 661-5025
50◎Perry Edward M 🔔 661-5159
51 Mianus View ter (CC) crosses
—◎Rhodes Denis C 🔔 661-5348
64◎Ioli Nicholas L 🔔 869-0784
61◎Rockhold Wesley F 🔔 661-5282
—◎Carriero Joseph A 🔔 869-8434
63◎DeLuca Elmer R 🔔 869-6546
67◎Perna Albert A 🔔 661-7018
—◎Gelston Robert R 🔔 869-3331
71◎Figliuolo Charles P 🔔 869-9447
—◎Guido Anthony S 🔔 661-8464
77◎Menegon B A builder
🔔 869-0665

PONDEROSA DR (Cos Cob) fr Indian Rock la (CC) S to dead end Zip Code 06807
4◎Auger Francis D 🔔 869-3579
11◎Imbrogno Michael J Jr
🔔 869-8976

PORCHUCK RD (Round Hill) fr 320½ Round Hill rd W to 455 Riversville rd (Irregularly numbered) Zip Code 06830
10◎Behrend M B Mrs 🔔 869-5936
—◎Chubb Thomas C 🔔 869-4990
—◎Matthews Richard J
🔔 869-1918
—◎Kendall Donald M 🔔 661-7040
19◎Grinnell Leslie 🔔 661-9205
23 Vacant
—◎Proddow Robert Jr 🔔 869-6764
—◎Ziluca Tony G 🔔 661-5882
— Vacant
— Vacant
—off Vacant
—off◎Ziluca J H 🔔 869-3314
—◎Veno Judith Mrs 🔔 869-5469
—◎Seymour Roger S 🔔 869-7142
—off◎Seymour Edward P

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

STANWICH RD 1967

24 Hays Richard M 🔔 869-0686
21◎Jacques Emile W Jr 🔔 869-8624

STANWICH RD fr 537 E Putnam av n Cos Cob line N and NW to Taconic rd (Irregularly numbered) Zip Code 06830

2◎Guy George G 🔔 869-2729
3◎Ayers P B MD 🔔 869-0966
6◎Hanlon E J 🔔 869-8197
7 McKay Robert J 🔔 661-5784
8◎Larson Anna M Mrs 🔔 661-7571
5◎Langley George J 🔔 869-8972
11◎Lippman B S 🔔 869-5788
12◎Larson Frank S 🔔 869-9430
13◎Sage Frederick 🔔 661-9705
17◎Tinkess D E 🔔 869-4430
16◎Love James S 🔔 869-4847
25◎Begley John H 🔔 869-6918
— Stanwich la begins
22a Tyner Arthur K 🔔 661-9870
Tyner L R Mrs nurse 🔔 661-9870
22b Smith William G 🔔 661-7278
— Stanwich la ends
30◎Montanus Edward A 🔔 869-6080
29◎Nicholson N C 🔔 869-6391
— Annjim dr begins
35◎Relihan H C Mrs nurse 🔔 869-4043
39◎Crawford Harold R 🔔 869-6074
45◎Fuller Theodore 🔔 869-7157
— Tommy rd (Bote Acres) begins
49◎Verrier John B Jr 🔔 869-3696
53◎Masi Vincent F 🔔 661-8341
57◎DeAngelo Salvatore J 🔔 869-1085
59◎Cloninger Avery M 🔔 869-1960
60 Fairfield rd ends
61◎Hardvall Louis H Jr 🔔 869-3363
63◎Sullivan J L 🔔 661-9501
65◎Smith Audrey P Mrs 🔔 661-6105
67◎Nash June B 🔔
69◎Tryon Charles E 🔔 869-7417
— Vacant
75 Indian Rock la ends
77 Central Junior High School 🔔 661-8500
72◎Hogan William A 🔔 661-8622
80◎Chapman William L Jr 🔔 869-8159
99◎Newman Irving J 🔔 869-2430
95◎Clancy Louise 🔔 869-7656
105◎Condaras Gus 🔔 869-6688
107◎Spiers Clinton F 🔔 661-8347
109 Wilson Lillian C Mrs 🔔 869-9217

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

STANWICH RD 1967

Stanwich Rd—continued
109½ Orchard st ends
111◎Rygh Malvin S 869-0027
113◎Blair Donald R 869-1295
117◎Montaner J P builder 661-6345
119◎Russell A F dentist 869-0890
123◎Jenkins William R 869-6305
127◎Zagron C George 661-8093
131 Jeffrey rd begins
133 Bentley Keith M 869-7876
140 Altomaro Anthony P 661-7019
143 Pine Ridge rd begins
147◎Richardson John E 2d 869-0103
150◎Kock Charles E 869-1507
154◎Mitchell Elmer T 869-2405
151 Weida Charles A 869-3943
153 Montgomery la begins
156◎Wheeler Robert C 869-2453
160◎Sinnott Lawrence J 869-7839
157◎Tanner H A dentist 869-2880
164 Hobbs John M 869-0316
—off◎Lochner Philip R 869-1796
— Vacant
179off◎D'Elia John D 869-5384
—off◎Deegan T J Jr
—off◎Neare L 661-7573
—off◎Smith C L 869-1260
—off Lipton Arthur J 661-7885
168 Fairway la begins
173◎Tripp Arthur F 661-8506
176◎VonGal M V Mrs 869-9035
178◎Shaw Arden 869-6194
—◎Andrus Malon S 869-5583
183 Rustic View rd begins
184◎Hicks Harry A 869-3944
188 Breton Robert J 869-5164
187◎Wood Robert M 661-5589
190 Bishop Margaret D 869-7538
◎Byrne Edmund C 661-6780
196◎Blodgett E W 869-4313
197◎Martin V F Mrs 869-0638
200◎Rodiger Josephine M Mrs 869-3694
206◎Darrah H D 869-4737
214◎Rickenback Thomas 869-3558
— Vacant
— Dublin Hill rd begins
— Hill rd begins
220◎Rockefeller Lucia E Mrs 869-0426
224◎Reddin Alexander K 869-6876
226◎Wilson John H P 661-6709
228◎Moses Oliver 4th 869-8693
225off◎Scripps Edward W 869-4750
235off Smith Sandford C 869-4297
237off◎Barrett Daniel V 869-6149
230◎Hughes Joseph 869-0228
238◎Markey R A stock broker 869-6296
242◎Brady George J 869-2374
247 St Agnes Church
St Agnes Rectory 869-5396
Grise J Clifford Rev 869-5396
248 Colton James E 869-9489
250off◎Weirs Helen G Mrs 869-5969
257 St Mary's High School for Girls 661-5023
—off Vacant
262◎Miller William C 661-6223
261 Salvatore Richard M 869-8691
266◎Diehl C G 869-7312
— Nelson Henry W
265 Stanwich Rd Cemetery
267 Cat Rock rd ends
270◎Brahm Richard W 869-1227
269◎Zucker Jack W 869-8039
272 Dingletown rd ends
273 Voorhees Dudley 869-8975
275 Upson Charles H 661-7001
280◎Litz M Eugene 661-9050
281◎Dodge Linsley V 869-0456
286◎Fox Rector K 869-3371
291 Shoshany Edmund H 869-5527
◎Patterson Alexander E Jr 869-8759
292◎Cahn Edgar B 869-3861
293◎Holch Carl E 661-8575
303◎Schaefer David H 869-2631
306◎Merolla Theodore I 661-8188
319◎Fisher William D 661-6282
313◎Truesdale Alice B M Mrs 869-4128
314◎Kitchel Allan F Jr 661-5121
318◎Whitbeck Volkert S 869-2743
327◎Swan D archt 869-7474
328 Behn Henry 869-2171
330off Vacant
333◎Riches June H Mrs 869-1413
335off◎Houston M S Mrs 869-1407
336 Lobkowicz Oliver 869-3147
338◎Allen Frederick T 869-5218
340◎McGorrian James F 869-5572
346 Allen Norman D 869-9364
350◎Mullins Frederick J 869-0897
356 Cognewaugh rd ends
357◎Hampton Wade 869-0591
361 Abbott Carlton E 869-5825
363 Cotton Tail rd begins
367◎Christophersen Walter R 869-8066
371◎Hart John 869-5350
368◎Thomas Charles C 869-4536
373◎Kramer Kenneth 869-8743
374 Barnstable la begins
375◎Salvatore Eugene R 661-6752
379◎Marzullo Lawrence R
— Dingletown Community Church
— Desiree dr begins
380off Monod Noel 661-8224
390◎Tilt Albert 3d 869-7457
386 Lavish Thomas E 869-7166
390◎Hess Thomas 869-6226
395off◎VonHenning Horst 869-3991
400◎Sorensen A L 661-6222
399◎Degener John F 869-3536
403◎Howard Leonard A 869-7273
405◎Scholz Arthur G 661-9359

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

STANWICH RD 1967

Stanwich Rd—continued
409◎Thompson Hundley A
△ 661-8727
— Guinea rd begins
411◎Trask Frederick K △ 869-6598
Vinson Paul S
Sargent Mary Gay △ 869-5361
414◎Jurras John △ 869-9310
— London Derry dr begins
421◎Dernier Dwight M
433◎Kowalski Joseph △ 869-6991
436◎Chesanek Louis F
— Merritt pky crosses (underneath)
458◎McPherson Stephen M
△ 661-7879
461◎Paterno Jack C △ 869-1005
487◎Williams A M Mrs
△ 661-6561
488◎Hall Howard E C △ 869-7321
494 Stag la begins
501 Carrington dr begins
505◎Minor Mary E
509◎Ritch Howard A △ 661-6988
— Tod la begins
519◎Hoffman Harrison B △ 869-8463
523 Meeting House rd begins
528◎Brown Barrett △ 869-4418
530 Stevenson Roland C △ 661-6560
531 Vacant
527off◎Winters James J △ 869-2554
533◎Rosenthal Harold L △ 869-5254
540◎McClellan Hugh D △ 869-5958
543◎Gates Edgar D △ 661-8439
548 Knight Robert H △ 869-6350
556 Stahl Milton R △ 869-5134
— Crown la begins
564 Little H Martyn △ 661-5437
567 Richter Richard M △ 869-5062

STATION DR (Cos Cob) fr 91 Strickland rd W to 90 Loughlin av Zip Code 06807
—off NHRR crosses (overhead)
—off NHRR crosses (overhead) 2d

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

BIBLE ST 1961

90 O'Donnell Carter S
92 Baker Henry W
94 Ericson Joseph G ◎
96 Higgins Helen Mrs

BIBLE (Cos Cob) fr 29½ Orchard N to Cat Rock rd (Right odd) (Irregularly numbered)
1 Sayles st begins
7 Dobslof Louise Mrs
Lodato Angeline Mrs
Smeriglio Thomas
9 O'Connor Harry
Burdick Howard Jr
11 Kristoffersen V J J
Domiziano Joseph L
15 Domiziano John A ◎
Rutledge Martin T
17 Cortese Anthony
19 Altomaro G A Jr
Altomaro Margaret Mrs ◎
23 Altomaro Frank ◎
Cantella William J
25 Whitlock James H ◎
27 Bucci Clara
Wlauchin Emil
29 Vacant
Santora J trucking
Santoro Samuel
31 Maillie Shirley B Mrs
Infanti Rocco ◎
33 Marullo Michael
Santora John W ◎
35 Ferraro Angelina Mrs ◎
Ferraro Alfred L
37 Pedwano Rosaria Mrs ◎
Vacant
39 Pedwano John ◎
41 Buckley Patrick J
Pratley Francis C
41½ Palmer st begins
45 Scarpelli Peter ◎
Scarpelli C J grocer
49 Bouchard Louis E
Godino Vincent ◎
55 Allevato Joseph ◎
57 Capparelle P landscape gardener ◎
61 Librandi Frank J ◎
67 Librandi Mildred C Mrs ◎
LaBrand interior decorators
69 Marullo Gennaro ◎
75 Wagner Henry P ◎
77 Crocker st begins
— off Hoyns Fred C
79 Keating Conrad
Rich Daniel A Jr
81 Vacant
87 Christiano Vito ◎
75 off Agostino Bruno A
Agostino Rocco ◎
105 Chiappetta Frank
73 Kay Mary K Mrs
107 off Mould J F Jr
79 Dietrick Benjamin W
— Montgomery Pinetum Park
— Lawlor William E ◎
182 Armstrong Dale ◎
— Hoyns Fred C ◎
186 Hassan Hugh J
184 Pierce Roger S ◎
192 Rice Chester H ◎
— off Phillips Wendell S ◎
— Greenwold David H ◎
— Partridge Henry B ◎
— off Carlson W G ◎
VanAssen Arie J
206 Ferris Robert F ◎
Cos Cob Archers
211 Scarpelli William R ◎
219 Bardone Silvia S ◎

BINNEY LA (Old Greenwich) fr 94 Shore rd N E NW bey Ford la to dead end (Right odd)
— Girdler Reynolds ◎
8 Martens George H Jr ◎
9 Hamilton John M ◎
11 Read L P Mrs ◎
12 Meylerd John D ◎
16 Hamilton M M Mrs ◎
17 Bryon B H real est ◎
18 Powell Albert E ◎
20 Ann st begins
35 Kitchel Alan F ◎
36 Kitchel Alan F Jr ◎
41 Vacant
44 Broaddus T Nash ◎
50 Randak Mary S Mrs ◎
45 Coolidge John W ◎
52 Sylvan la ends
54 McArthur Z Mrs ◎
55 Hirschhorn Fred Jr ◎
56 Powers Erward T ◎
60 Griswold Alice M Mrs ◎
61 Vacant
62 Ford la ends
63 Chase Hamilton M ◎
64 Wood Norman B
Lauridsen F M Frs
64½ Vacant
66 Lanfer Stephen P ◎
68 Rickey Thomas Jr

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

DOUBLING RD 1961

DORAN'S CT fr 65 Railroad av N to dead end
1 McDermott E C
2 Moran John J
3 Howard Charles W
4 Nee Martin H

DORCHESTER LA (Riverside) fr 89 Lockwood rd NE and W to 43 Breezemont av (Right odd) (Irregularly numbered)
5 Goff Michael H ◎
6 Berizzi Albert E ◎
8 Salter Peter G ◎
7 White W D ◎
9 Slaughter Josh H ◎
12 Dobson Thomas F Jr ◎
14 Gade Marguerite N Mrs
25 Winquist Douglas
23 Shermak Joseph V
21 Ziegner Wettin E ◎
19 Byerley Donald B ◎
— Stroffolino Arthur F ◎
11 Brady Thomas
15 Jacob Carleton W
13 McHugh John ◎

DOUBLING RD fr North NE to Dingletown rd
— Casey Samuel H ◎
— Vacant
93 Fitkin R M investment banker
— Hack William T ◎
— Clark Donald P ◎
— Warner J Arthur ◎
— Flower Henry
— Darling John T
— Wise Jeanne Mrs
— Golf Club rd ends
— off Greenwich Country Club Inc
— Jefferson F W ◎
— Putrino Frank D
— Amiot Arthur L ◎
— Goldring Gertrude F Mrs ◎
— Wilkinson Martin G ◎
— Moreland Hugh J
— Carter Arthur H ◎
— Sporie Jacob
— Schaefer J Louis ◎
— Scott Howard W ◎
— Saw Mill la begins
— Newkirk Edith Mrs ◎
— Schmitz Robert A ◎
— Hill rd ends

75 Kelley Bayne ◎
— Phillips Elliot S ◎
— Smith Edward A
— Meek Samuel W Jr ◎
95 Fitkin Ralph M ◎
— Meek Samuel W ◎
— Vacant
— Scott-Paine John H ◎
— Kardos Elmer
— Waters Joseph M ◎
— Austin-Small Peter O C ◎
— Miller Byron S ◎
— Bridge E W Mrs
— Murray Douglas P
— Fudge Harry K
— Carroll R B chemical lab
— Vacant
— Burgess Steve
— Bolling A P Mrs ◎
— Bolling R C Jr poultry

DOUGLAS DR (Glenville) fr Glen Ridge rd N to Woods av (Right odd)
1 Magee Edward O ◎
5 Merkel George C ◎
6 Sternberg Simeon ◎
7 E Byway begins
8 Woods av begins

DRIFTWAY (Byram) fr Byram Shore rd NW
— Dean H S Mrs ◎
— Petersen A A ◎

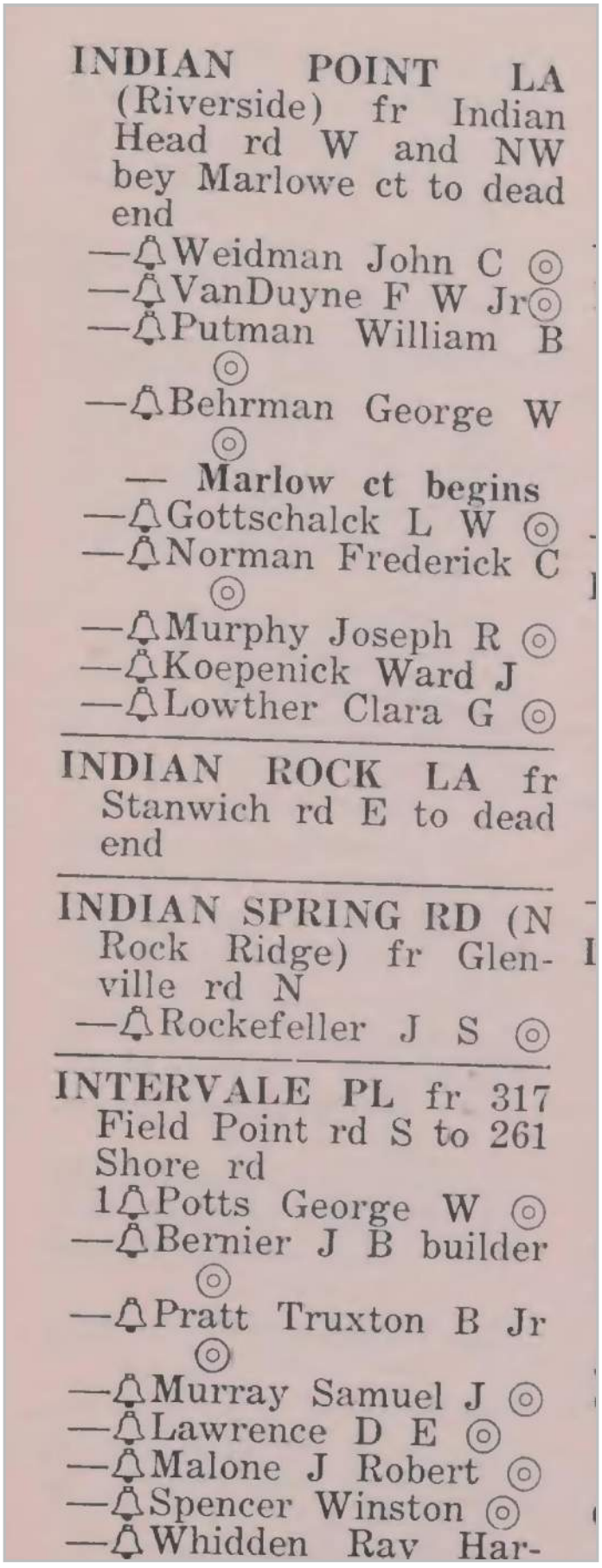
DRIFTWAY RD (Old Greenwich) fr 214 Shore rd S to Tod's Point (Right odd)
— Cove rd ends
2 Shields David S ◎
3 Lewis Robert S ◎
4 Bokum William H ◎
6 Prial Emily Mrs ◎
7 Murray Arthur F ◎
9 Murphy Otis W
10 Tod's Point begins

DRINKWATER PL (Riverside) fr Hendrie av S to 57 Summit rd
— NHRR crossing (underneath)

DRUID LA (Riverside) fr Hendrie av N to 98 Lockwood rd (Right odd)
4 Halsey Bates ◎
5 Boynton Edward P ◎
7 Conley Howard H ◎

Target Street	Cross Street	Source
✓	-	Price & Lee's City Directory

INDIAN ROCK LN 1961



INDIAN POINT LA (Riverside) fr Indian Head rd W and NW bey Marlowe ct to dead end

—Weidman John C ◎
—VanDuyne F W Jr ◎
—Putman William B ◎
—Behrman George W ◎
— Marlow ct begins
—Gottschalck L W ◎
—Norman Frederick C ◎
—Murphy Joseph R ◎
—Koepenick Ward J
—Lowther Clara G ◎

INDIAN ROCK LA fr Stanwich rd E to dead end

INDIAN SPRING RD (N Rock Ridge) fr Glenville rd N

—Rockefeller J S ◎

INTERVALE PL fr 317 Field Point rd S to 261 Shore rd

1 Potts George W ◎
—Bernier J B builder ◎
—Pratt Truxton B Jr ◎
—Murray Samuel J ◎
—Lawrence D E ◎
—Malone J Robert ◎
—Spencer Winston ◎
—Whidden Ray Har-

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

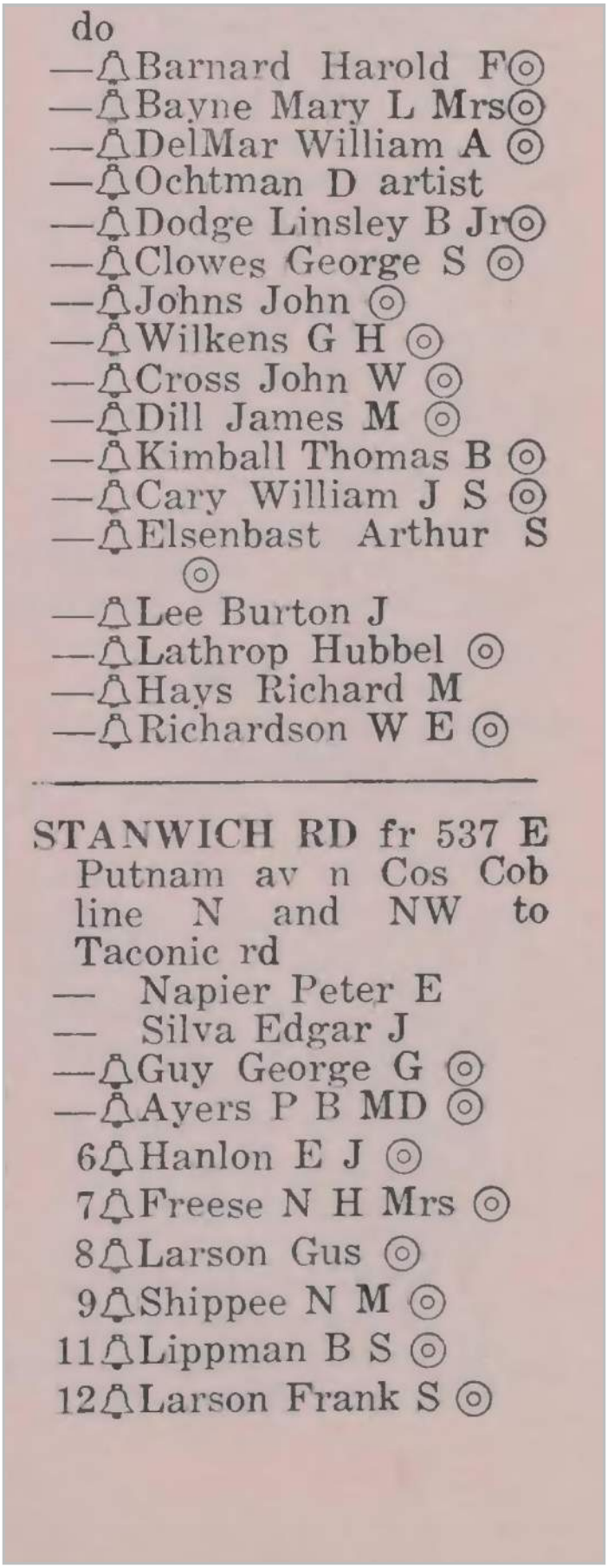
ORCHARD ST 1961

ORCHARD (Cos Cob) fr 270 Post rd NW to Stanwich rd (Right odd)
— Clark Leo J
2 Greening W W florist
4 Greening W W ◎
6 O'Donnell L Grant ◎
8 Carlson John
Carlson Hjalmer ◎
9 Valley rd begins
10 Cronin Alice Mrs ◎
11 Richardson Thomas F
Rich Robert W
12 Lavalette G J
Lavalette Joseph T ◎
13 Fay John F
14 Wells Harold G ◎
16r Wells Leonard C ◎
17 Romanchuk Paul ◎
19 June Edward G ◎
20 Glinka Henry ◎
21 Mohr Henry J Jr ◎
22 Marullo Samuel ◎
23 O'Connor K C Mrs ◎
25 Ferris G E Mrs ◎
Mathies George
29 Marshall M M Mrs ◎
29½ Bible st begins
30 Tiriolo Patsy J ◎
Hopper Beatrice
31 Duignan Richard M ◎
32 LeRose Dominick ◎
33 Rambush Robert E ◎
34 LeRose N A
35 Ritch Rodman R S ◎
36 Thomsen Frederick C ◎
37 Mead Hazel Mrs ◎
38 Keeley Lawrence T ◎
Electronic Service TV reprs
39 Belmont Richard E ◎
40 Capparelle Frank ◎
42 Vacant
45 Grove st begins
46 Reiser Alden M ◎
48 Moretti Michael C ◎
49 Barclay Albert W
50 McArdle James B ◎
51 Jones Victor
Thake John A
51½ Orchard ct begins
52 Carvette Anthony J ◎
Central Construction Co
53 Connor T J ◎
54 Wozniak Simon A ◎
Hogan Daniel F
55 Boise Norman J ◎
56 Thomsen Oscar ◎
56r DuCharme Charles E
58 Raymond R E ◎
59 Riska William F ◎
60 Johnson Carl H ◎
61 Seidl Anna M Mrs ◎
62 Duffy Hugh P
64 Miska Stanley M ◎
65 Dahlberg D Mrs ◎
66 Jacobs Howland D
67 Kent pl begins
68 Parent Rolland A
68½ Sinawoy rd ends
70 Bennett's Market
71 Baker Winifred ◎
72 Bennett Samuel H ◎
73 Berge st begins
74 Mehrtens Herman ◎
76 Maher Marie R Mrs
77 June Margaret G Mrs
Stern Otto E ◎
78 Reinhardt Eric O ◎
Higgins Garry T
79 DeLuca Rose Mrs ◎
80 Eder Max ◎
82 Chambless John
Thibault Felix J ◎
83 Scales Andrew
Epstein William ◎
Pomerance Ralph
Bookman Arthur
83r Tuchman Lester ◎
Zadig Ernest
Plaice Barbara Mrs
84 Garaffa Salvatore A ◎
86 Fiorito Michael E ◎
86½ Valley Wood rd ends
88 Allen Fred T ◎
90 Crovatto Margaret Mrs ◎
92 Ogden Peter K ◎
96 Relyea Charles D ◎
98 Allegrini Frank A ◎
100 Biggiotti Joseph ◎
102 Frances Peter J
Urso Romeo J
104 Casey M E Mrs ◎
110 Snyder B E Mrs
112 MacCumb S E Mrs ◎
—Taylor Max ◎
221 Tamany Joseph A ◎
302 Vacant

ORCHARD CT (Cos Cob) fr 5½ Orchard NE (Right odd)
1 Hornik Julius P ◎
2 Lockhard John W

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

STANWICH RD 1961



do
—Barnard Harold F ◎
—Bayne Mary L Mrs ◎
—DelMar William A ◎
—Ochtman D artist
—Dodge Linsley B Jr ◎
—Clowes George S ◎
—Johns John ◎
—Wilkens G H ◎
—Cross John W ◎
—Dill James M ◎
—Kimball Thomas B ◎
—Cary William J S ◎
—Elsenbast Arthur S ◎
—Lee Burton J
—Lathrop Hubbel ◎
—Hays Richard M
—Richardson W E ◎

STANWICH RD fr 537 E Putnam av n Cos Cob line N and NW to Taconic rd
— Napier Peter E
— Silva Edgar J
—Guy George G ◎
—Ayers P B MD ◎
6 Hanlon E J ◎
7 Freese N H Mrs ◎
8 Larson Gus ◎
9 Shippee N M ◎
11 Lippman B S ◎
12 Larson Frank S ◎

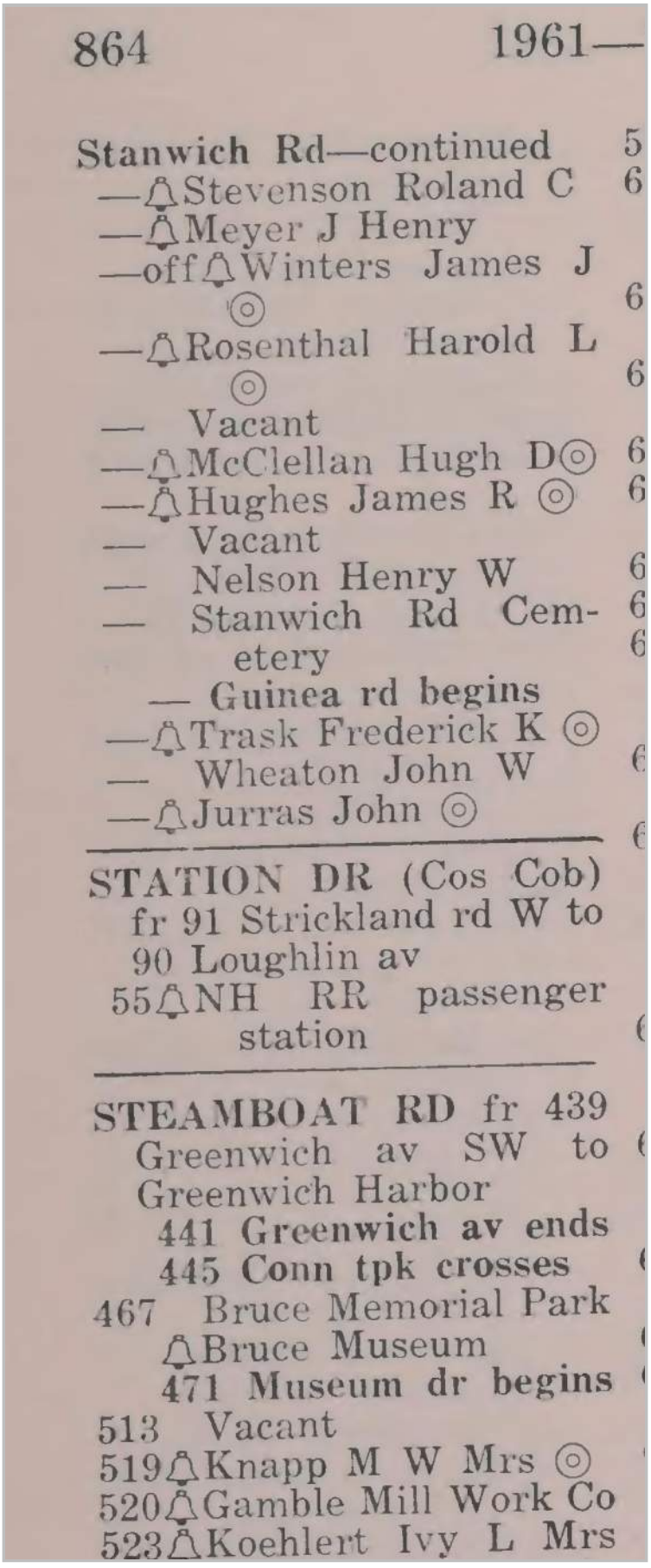
Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

STANWICH RD 1961

Stanwich Rd—continued
13 Sage Frederick ◎
— Tinkess D E ◎
— Love James S ◎
— Begley John H ◎
— Stanwich la begins
— Tyner Arthur K
— Tyner L R Mrs nurse
— Silva Maria Mrs ◎
— Stanwich la ends
— Vacant
29 Nicholson N C ◎
— Annjim dr begins
— Relihan Helen C Mrs ◎
— Crawford Harold R ◎
45 Fuller Clarence W
— Tomney rd (Bote Acres) begins
— Verrier John B Jr ◎
59 Richter Jane T Mrs
— Blythewood Nurses Home
— Fairfield rd ends
— Vacant
— Sullivan John L ◎
— Smith Fred M
— Nash Helen Mrs ◎
— Tryon Charles E ◎
— Blythewood Sanitarium
— Wiley William H
— Indian Rock la begins
— Central Junior High School
— Dominick Mary S Mrs ◎
— Chapman William L ◎
99 Newman Irving J ◎
— Barnes Arthur D ◎
105 Condaras Gus ◎
107 Kirk John J ◎
— Hansen George R ◎
—Orchard st ends
— Vacant
— Jenkins William R ◎
— Vacant
— Jeffrey la begins
— Silvi Albera H ◎
— Davis Forest C
— Pine Ridge rd begins
— Mayhew Zeb ◎
— Kock Charles E ◎
— Fortomaroff P A ◎
— Mitchell Elmer T ◎
— Montgomery la begins
— Kupillas Arthur E ◎
— Wheeler Robert C ◎
— Sinnott Lawrence J ◎
—off Plunkett James G
—off Stevens John N ◎
—off Cox Morgan B Jr ◎
—off Deegan T J Jr ◎
—off Neare L Mrs ◎
—off Smith C L ◎
— Fairway la begins
— Tanner Harvey A ◎
— Lemont Fred L ◎
— Shaw Arden ◎
— Andrus Malon S ◎
— Hicks Harry A ◎
— Rogers Edward S 2d ◎
— Mellick O Waring ◎
— Vacant
— Bishop Margaret D
— Blodgett E W ◎
— Martin V F Mrs ◎
— Rodiger Walter G ◎
— Darrah H D ◎
— Rickenback Thomas ◎
— McArthur J K ◎
— Dublin Hill rd begins
— Hill rd begins
— Robertson Peter M ◎
— Reddin Alexander K ◎
— Freyer William N ◎
— Moses Oliver 4th ◎
—off Ley Harold A Jr ◎
—off Smith Sandford C
—off Vacant
— Vacant
— Wilson George S ◎
— Maynard Eric N
— Brady George J ◎
— Coulton James
— Reilly Robert R ◎
—off Vacant
—off Dommerich A L ◎
— Ford Robert
— Miller William C ◎
— Diehl C G ◎
— Cat Rock rd ends
— Brahm Richard W ◎
— Darrach F B Mrs ◎
— Dingletown rd ends
— Leaman B F Jr ◎
— Haagenson Harlo N ◎
— Vacant
— Ratsey Ernest A ◎
— Vincent Robert L ◎
— Fox Rector K ◎
— Shaw James C ◎
— Holch Carl E ◎
— Platt Leonard S Jr
— Sulger Alden H Jr ◎
— Huck Louis C Jr ◎
— Overlock Leslie C ◎
— Fisher William D
— Truesdale Alice B M Mrs ◎
— Duffy John T
— Vacant
— Vacant
— Swan D archt ◎
— Houston M S Mrs ◎
— Figg James A Jr
— Springorum H W
— Lea Charles L Jr ◎
— Mullins Frederick J ◎
— Cognewaugh rd ends
— Hampton Wade ◎
— Abbott Carlton E
— Cotton Tail rd begins
— Christopherson Walter R ◎
— Hart John ◎
— Little H Martyn ◎
—off Vacant
—off Parsons Willard P ◎
— Vacant
— Burning Tree st begins
— Salvatore Eugene R ◎
— Marzullo Lawrence F ◎
— Dingleton Community Church
— Mastrocci Michael
— Aleshire Edward
— Tilt Albert 3d ◎
— VanHooydonck Gertrude Mrs ◎
— Biedleman Wynn H ◎
— Vacant
— Janney Harriet C Mrs ◎
— Hunt George S ◎
—off VonHenning Horst ◎
— Sorensen A L ◎
— Holch Richard A ◎
— Potter Geoffrey A ◎
— Thompson Hundley A ◎
— Boles Minnie J Mrs ◎
— Cardell William E ◎
— Chesanek Louis F ◎
— Merritt pky crosses (underneath)
— Mudge Shaw ◎
— Mueller Merrill ◎
— Williams A M Mrs ◎
— Boles C B real est
— Hall Howard E C ◎
— Stag la begins
— Minor Mary E ◎
— Ritch Howard A ◎
— Tol la begins
— Hoffman Harrison B W ◎
— Brown Barrett ◎

Target Street	Cross Street	Source
-	✓	Price & Lee's City Directory

STANWICH RD 1961



Stanwich Rd—continued 5
—🔔Stevenson Roland C 6
—🔔Meyer J Henry
—off🔔Winters James J ◎ 6
—🔔Rosenthal Harold L ◎ 6
— Vacant
—🔔McClellan Hugh D◎ 6
—🔔Hughes James R ◎ 6
— Vacant
— Nelson Henry W 6
— Stanwich Rd Cemetery 6
6
— Guinea rd begins
—🔔Trask Frederick K ◎
— Wheaton John W 6
—🔔Jurras John ◎
6

STATION DR (Cos Cob) fr 91 Strickland rd W to 90 Loughlin av
55🔔NH RR passenger station 6

STEAMBOAT RD fr 439 Greenwich av SW to Greenwich Harbor 6
441 Greenwich av ends
445 Conn tpk crosses 6
467 Bruce Memorial Park
🔔Bruce Museum 6
471 Museum dr begins 6
513 Vacant
519🔔Knapp M W Mrs ◎
520🔔Gamble Mill Work Co
523🔔Koehlert Ivy L Mrs

Central Middle School

9 Indian Rock Lane

Cos Cob, CT 06807

Inquiry Number: 7289805.8

March 24, 2023

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

03/24/23

Site Name:

Central Middle School
9 Indian Rock Lane
Cos Cob, CT 06807
EDR Inquiry # 7289805.8

Client Name:

Langan Environmental Services
555 Long Wharf Drive
New Haven, CT 06511
Contact: Elyssa Schwendy

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	*Scale*	*Details*	*Source*
2018	1"=500'	Flight Year: 2018	USDA/NAIP
2014	1"=500'	Flight Year: 2014	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1996	1"=500'	Flight Date: April 15, 1996	CTMAGIC
1991	1"=500'	Acquisition Date: April 13, 1991	USGS/DOQQ
1990	1"=500'	Flight Date: April 13, 1990	CTMAGIC
1989	1"=500'	Flight Date: April 20, 1989	NYDOT
1985	1"=500'	Flight Date: March 16, 1985	USDA
1979	1"=500'	Flight Date: June 14, 1979	USDA
1971	1"=500'	Flight Date: December 05, 1971	USGS
1966	1"=500'	Flight Date: February 23, 1966	USGS
1960	1"=500'	Flight Date: February 04, 1960	USGS
1959	1"=500'	Flight Date: October 30, 1959	USGS
1949	1"=500'	Flight Date: March 14, 1949	USGS
1941	1"=500'	Flight Date: October 06, 1941	USGS
1934	1"=500'	Flight Date: April 18, 1934	FAIR

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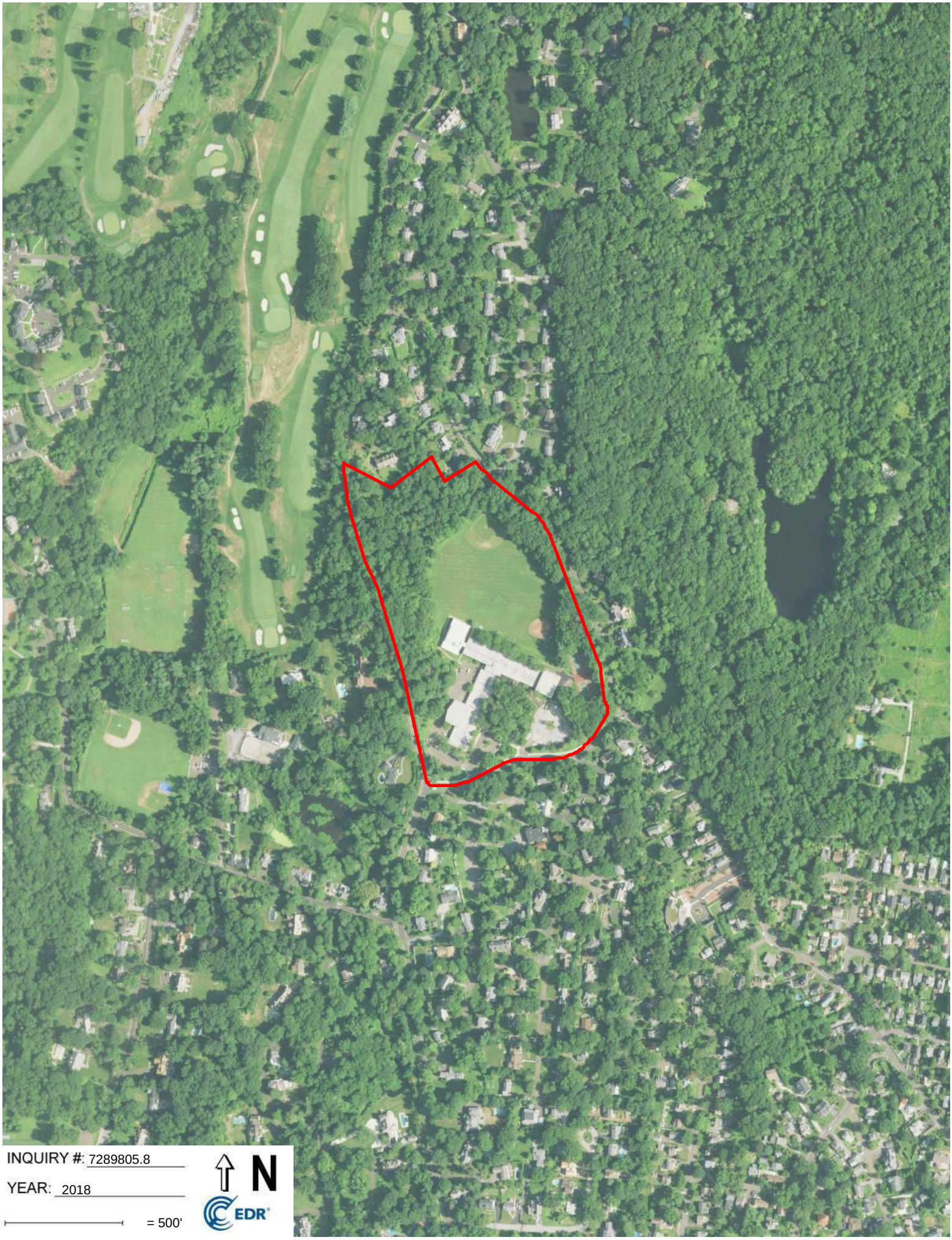
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YEAR: 2018
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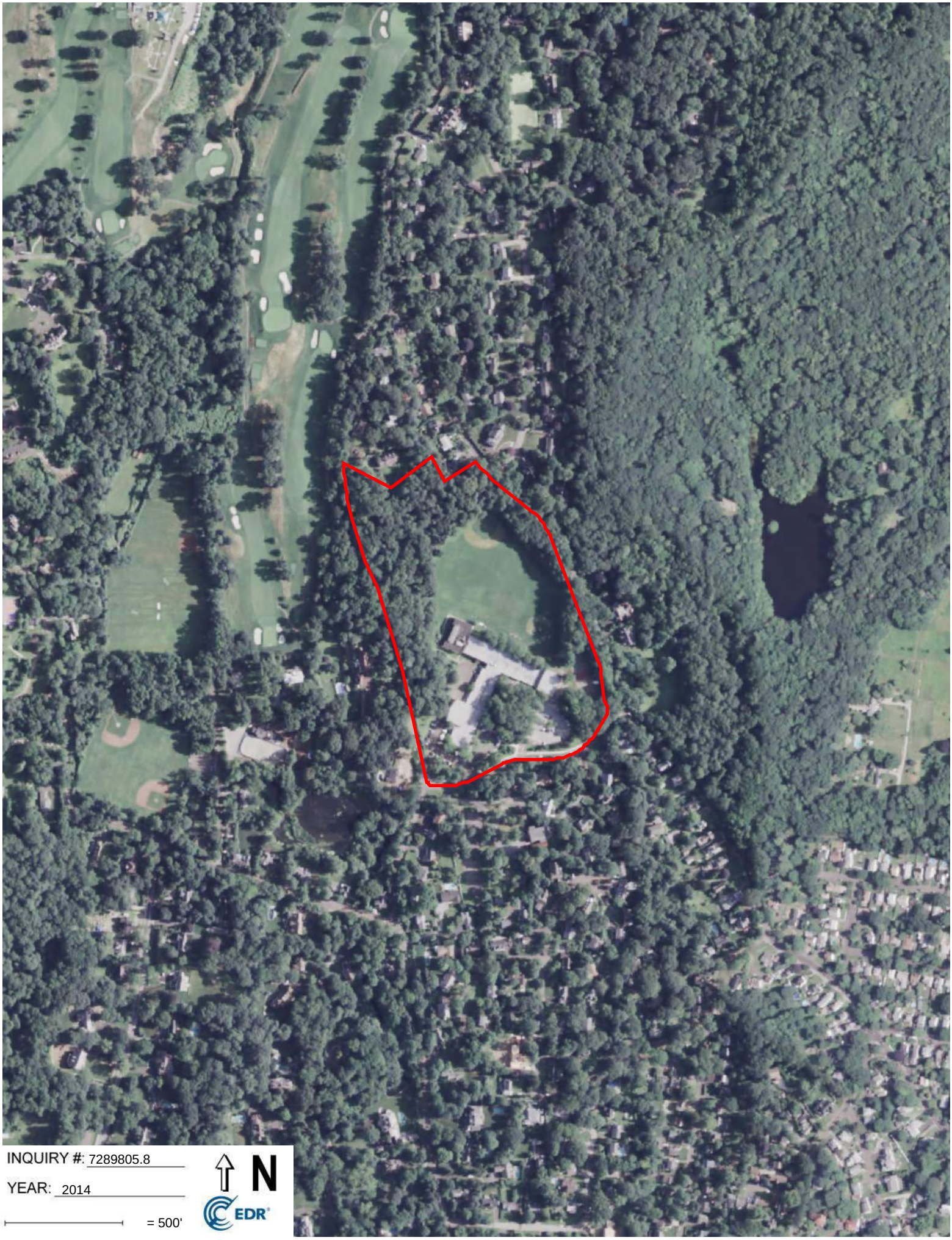
EDR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YEAR: 2014
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EDR

INQUIRY #: 7289805.8
YEAR: 2010
= 500'
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EDR

INQUIRY #: 7289805.8
YEAR: 2006
= 500'
N
EDR

INQUIRY #: 7289805.8

YEAR: 1996

= 500'

N

EDR

INQUIRY #: 7289805.8
YEAR: 1991
= 500'
N
EDR

INQUIRY #: 7289805.8
YEAR: 1990
= 500'
N
EDR

INQUIRY #: 7289805.8
YEAR: 1989
= 500'
N
EDR

INQUIRY #: 7289805.8
YEAR: 1985
= 500'
N
EDR

INQUIRY #: 7289805.8
YEAR: 1979
= 500'
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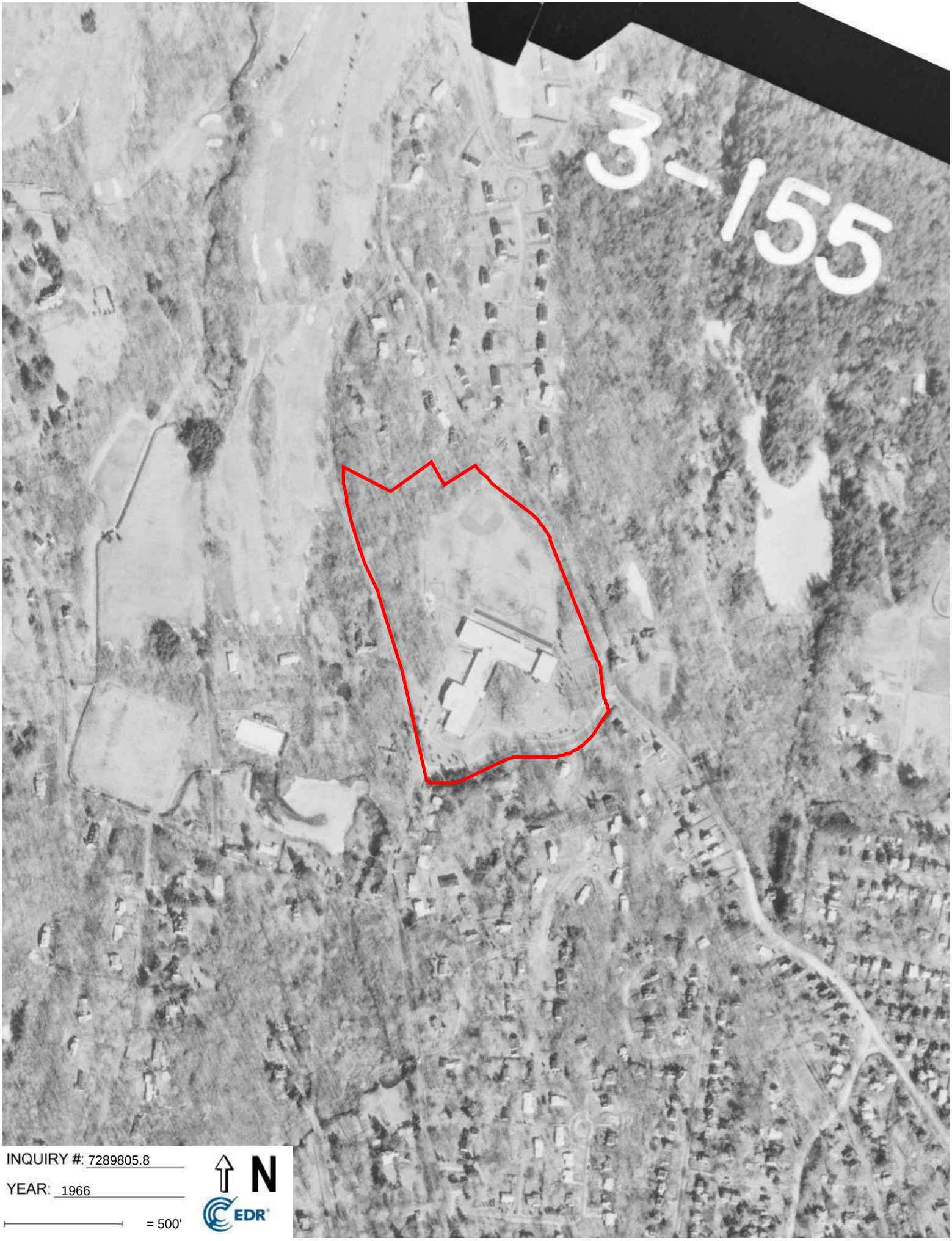
EDR

INQUIRY #: 7289805.8
YEAR: 1971
= 500'
N
EDR



INQUIRY #: 7289805.8

YEAR: 1966

= 500'

N

EDR

INQUIRY #: 7289805.8
YEAR: 1960
= 500'
N
EDR

INQUIRY #: 7289805.8
YEAR: 1959
= 500'
N
EDR

INQUIRY #: 7289805.8
YEAR: 1949
= 500'
N
EDR

INQUIRY #: 7289805.8
YEAR: 1941
= 500'
N
EDR

INQUIRY #: 7289805.8

YEAR: 1934

= 500'

N

EDR

Appendix F Environmental Database Report

Central Middle School
9 Indian Rock Lane
Cos Cob, CT 06807

Inquiry Number: 7289805.2s
March 27, 2023

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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GEOCHECK ADDENDUM

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527-21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

9 INDIAN ROCK LANE
COS COB, CT 06807

COORDINATES

Latitude (North):	41.0489460 - 41ˆ 2' 56.20''
Longitude (West):	73.6057750 - 73ˆ 36' 20.79''
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	617174.4
UTM Y (Meters):	4544915.0
Elevation:	50 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	11730145 STAMFORD, CT
Version Date:	2018
West Map:	11730113 GLENVILLE, CT
Version Date:	2018

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140718, 20150624
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
9 INDIAN ROCK LANE
COS COB, CT 06807

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	GREENWICH PUBLIC SCH	9 INDIAN ROCK LANE	ASBESTOS		TP
A2	GREENWICH PUBLIC SCH	9 INDIAN ROAK LA	ASBESTOS		TP
A3	GREENWICH PUBLIC SCH	9 INDIAN ROCK LANE	ASBESTOS		TP
A4	TOWN OF GREENWICH	9 INDIAN ROCK LANE	ASBESTOS		TP
A5	GREENWICH PUBLIC SCH	9 INDIAN ROCK LANE	ASBESTOS		TP
A6	GREENWICH PUBLIC SCH	9 INDIAN ROCK LANE	ASBESTOS		TP
A7	GREENWICH BOE	9 INDIAN ROCK LA	ASBESTOS		TP
A8	GREENWICH PUBLIC SCH	9 INDIAN ROCK LN	ASBESTOS		TP
A9	GREENWICH BOE	9 INDIAN ROCK LANE	ASBESTOS		TP
A10	GREENWICH BOE	9 INDIAN ROCK LN	ASBESTOS		TP
A11	GREENWICH PUBLIC SCH	9 INDIAN ROCK LN	ASBESTOS		TP
A12	GREENWICH BOE	9 INDIAN ROCK LA	ASBESTOS		TP
A13	GREENWICH PUBLIC SCH	9 INDIAN ROCK LA	ASBESTOS		TP
14	CENTRAL MIDDLE SCHOO	STANWICH ROAD	UST	Higher	23, 0.004, SW
15	VINCENT MASI	55 STANWICH ROAD	LUST, SPILLS, CPCS	Higher	670, 0.127, SSW
B16	JOHN VERRIER (ESTATE	49 STANWICH RD	LUST, SPILLS, CPCS	Higher	1059, 0.201, South
B17	ESTATE OF M.H. VERRI	49 STANWICH ROAD	SDADB	Higher	1059, 0.201, South
18	M. PACE PROPERTY	67 HILLSIDE ROAD	SDADB, LUST, SPILLS, CPCS	Higher	1170, 0.222, SW
19	MICHAEL SEELY	39 BOTE ROAD	LUST, SPILLS, CPCS	Higher	1315, 0.249, South
20	SVIHRA PROPERTY	58 HALSEY ROAD	SDADB	Higher	1823, 0.345, SW
21	PHOEBE	1O PINE RIDGE RD.	LUST, SPILLS, CPCS	Higher	1919, 0.363, North
22	ERIC SCHUMACHER	12 ANNJIM DRIVE	LUST, SPILLS, CPCS	Higher	1956, 0.370, South
23	ALEC CRAWFORD	11 PINE RIDGE RD.	LUST, SPILLS, CPCS	Higher	2206, 0.418, North
24	BARBARA KITES	30 STANWICH ROAD	LUST, SPILLS, CPCS	Higher	2233, 0.423, South
C25	GREENWICH COUNTRY DA	401 OLD CHURCH RD	LUST, SPILLS, ASBESTOS, CPCS, NPDES, UIC	Higher	2352, 0.445, West
26	CAPPARELLA	1 CHRISTIANO STEET	LUST, CPCS	Lower	2406, 0.456, ESE
C27	GREENWICH COUNTRY DA	OLD CHURCH RD.	CPCS	Higher	2417, 0.458, West
D28	WINIFRED CLARK	5 STANWICH LANE	LUST	Higher	2523, 0.478, South
D29	WINFRIED CLARK	5 STANWICH LANE	LUST	Higher	2523, 0.478, South
D30	WINFRIED CLARK	5 STANWICH LANE	SPILLS, CPCS	Higher	2523, 0.478, South
31	ESTATE OF MRS EUGENA	331 NORTH STEELE RD	LUST, SPILLS, CPCS	Higher	2626, 0.497, WNW
32	MINUTE MAN CLEANERS	407 POST ROAD	SHWS, SDADB, CPCS	Lower	3661, 0.693, SE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
GREENWICH PUBLIC SCH 9 INDIAN ROCK LANE GREENWICH, CT 06830	ASBESTOS	N/A
GREENWICH PUBLIC SCH 9 INDIAN ROAK LA GREENWICH, CT 06830	ASBESTOS	N/A
GREENWICH PUBLIC SCH 9 INDIAN ROCK LANE GREENWICH, CT 06830	ASBESTOS	N/A
TOWN OF GREENWICH 9 INDIAN ROCK LANE GREENWICH, CT 06830	ASBESTOS	N/A
GREENWICH PUBLIC SCH 9 INDIAN ROCK LANE GREENWICH, CT 06830	ASBESTOS	N/A
GREENWICH PUBLIC SCH 9 INDIAN ROCK LANE GREENWICH, CT 06830	ASBESTOS	N/A
GREENWICH BOE 9 INDIAN ROCK LA GREENWICH, CT 06830	ASBESTOS	N/A
GREENWICH PUBLIC SCH 9 INDIAN ROCK LN GREENWICH, CT 06830	ASBESTOS	N/A
GREENWICH BOE 9 INDIAN ROCK LANE GREENWICH, CT 06830	ASBESTOS	N/A
GREENWICH BOE 9 INDIAN ROCK LN GREENWICH, CT 06830	ASBESTOS	N/A
GREENWICH PUBLIC SCH 9 INDIAN ROCK LN GREENWICH, CT 06830	ASBESTOS	N/A

GREENWICH BOE 9 INDIAN ROCK LA GREENWICH, CT 06830	ASBESTOS	N/A
GREENWICH PUBLIC SCH 9 INDIAN ROCK LA GREENWICH, CT 06830	ASBESTOS	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL ---- National Priority List
Proposed NPL ---- Proposed National Priority List Sites
NPL LIENS ---- Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL ---- National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY ---- Federal Facility Site Information listing
SEMS ---- Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE ---- Superfund Enterprise Management System Archive

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS ---- Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF ---- RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-LQG ---- RCRA - Large Quantity Generators
RCRA-SQG ---- RCRA - Small Quantity Generators
RCRA-VSQG ---- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

EXECUTIVE SUMMARY

Federal institutional controls / engineering controls registries

LUCIS ---- Land Use Control Information System
US ENG CONTROLS ---- Engineering Controls Sites List
US INST CONTROLS ---- Institutional Controls Sites List

Federal ERNS list

ERNS ---- Emergency Response Notification System

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF ---- List of Landfills/Transfer Stations

Lists of state and tribal leaking storage tanks

INDIAN LUST ---- Leaking Underground Storage Tanks on Indian Land

Lists of state and tribal registered storage tanks

FEMA UST ---- Underground Storage Tank Listing
AST ---- Marine Terminals and Tank Information
INDIAN UST ---- Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

ENG CONTROLS ---- Engineering Controls Listing
AUL ---- ELUR Sites

Lists of state and tribal voluntary cleanup sites

INDIAN VCP ---- Voluntary Cleanup Priority Listing
VCP ---- Voluntary Remediation Sites

Lists of state and tribal brownfield sites

BROWNFIELDS ---- Brownfields Inventory

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY ---- Recycling Facilities
INDIAN ODI ---- Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 ---- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---- Open Dump Inventory
IHS OPEN DUMPS ---- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---- Delisted National Clandestine Laboratory Register

CDL ---- Clandestine Drug Lab Listing
US CDL ---- National Clandestine Laboratory Register

Local Land Records

CT PROPERTY ---- Property Transfer Filings
LIENS ---- Environmental Liens Listing
LIENS 2 ---- CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
SPILLS ---- Oil & Chemical Spill Database
SPILLS 90 ---- SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ---- RCRA - Non Generators / No Longer Regulated
FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
TRIS ---- Toxic Chemical Release Inventory System
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---- Material Licensing Tracking System
COAL ASH DOE ---- Steam-Electric Plant Operation Data
COAL ASH EPA ---- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---- PCB Transformer Registration Database
RADINFO ---- Radiation Information Database
HIST FTTS ---- FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ---- Incident and Accident Data
CONSENT ---- Superfund (CERCLA) Consent Decrees
INDIAN RESERV ---- Indian Reservations
FUSRAP ---- Formerly Utilized Sites Remedial Action Program
UMTRA ---- Uranium Mill Tailings Sites
LEAD SMELTERS ---- Lead Smelter Sites
US AIRS ---- Aerometric Information Retrieval System Facility Subsystem
US MINES ---- Mines Master Index File
ABANDONED MINES ---- Abandoned Mines
FINDS ---- Facility Index System/Facility Registry System
DOCKET HWC ---- Hazardous Waste Compliance Docket Listing
ECHO ---- Enforcement & Compliance History Information
UXO ---- Unexploded Ordnance Sites
FUELS PROGRAM ---- EPA Fuels Program Registered Listing

EXECUTIVE SUMMARY

PFAS NPL Superfund Sites with PFAS Detections Information
PFAS FEDERAL SITES Federal Sites PFAS Information
PFAS TSCA PFAS Manufacture and Imports Information
PFAS RCRA MANIFEST PFAS Transfers Identified In the RCRA Database Listing
PFAS ATSDR PFAS Contamination Site Location Listing
PFAS WQP Ambient Environmental Sampling for PFAS
PFAS NPDES Clean Water Act Discharge Monitoring Information
PFAS ECHO Facilities in Industries that May Be Handling PFAS Listing
PFAS ECHO FIRE TRAINING Facilities in Industries that May Be Handling PFAS Listing
PFAS PART 139 AIRPORT All Certified Part 139 Airports PFAS Information Listing
AQUEOUS FOAM NRC Aqueous Foam Related Incidents Listing
PFAS PFAS Contamination Site Listing
AIRS Permitted Air Sources Listing
DRYCLEANERS Drycleaner Facilities
ENF Enforcement Case Listing
Financial Assurance Financial Assurance Information Listing
LEAD Lead Inspection Database
LWDS Connecticut Leachate and Wastewater Discharge Sites
MANIFEST Hazardous Waste Manifest Data
NPDES Wastewater Permit Listing
SEH List of Significant Environmental Hazards Report to DEEP
UIC Underground Injection Control Listing
MINES MRDS Mineral Resources Data System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP EDR Proprietary Manufactured Gas Plants
EDR Hist Auto EDR Exclusive Historical Auto Stations
EDR Hist Cleaner EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS Recovered Government Archive State Hazardous Waste Facilities List
RGA LUST Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

Lists of state- and tribal hazardous waste facilities

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Environmental Protection's Inventory of Hazardous Disposal Sites.

A review of the SHWS list, as provided by EDR, and dated 04/23/2010 has revealed that there is 1 SHWS site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MINUTE MAN CLEANERS State ID: 1284 EPA ID: CTD075396283	***407 POST ROAD***	***SE 1/2 - 1 (0.693 mi.)***	***32***	***82***

SDADB: Site Discovery and Assessment Database.

A review of the SDADB list, as provided by EDR, and dated 04/23/2010 has revealed that there are 3 SDADB sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ESTATE OF M.H. VERRI Facility Id: 3417	49 STANWICH ROAD	S 1/8 - 1/4 (0.201 mi.)	B17	28
M. PACE PROPERTY Facility Id: 3476	***67 HILLSIDE ROAD***	***SW 1/8 - 1/4 (0.222 mi.)***	***18***	***30***
SVIHRA PROPERTY Facility Id: 2858	58 HALSEY ROAD	SW 1/4 - 1/2 (0.345 mi.)	20	40

Lists of state and tribal leaking storage tanks

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environmental Protection's Leaking Underground Storage Tank List.

A review of the LUST list, as provided by EDR, and dated 12/06/2022 has revealed that there are 13 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
VINCENT MASI LUST Id: 32448	***55 STANWICH ROAD***	***SSW 1/8 - 1/4 (0.127 mi.)***	***15***	***19***
JOHN VERRIER (ESTATE LUST Id: 34963	***49 STANWICH RD***	***S 1/8 - 1/4 (0.201 mi.)***	***B16***	***23***
M. PACE PROPERTY LUST Id: 35044	***67 HILLSIDE ROAD***	***SW 1/8 - 1/4 (0.222 mi.)***	***18***	***30***
MICHAEL SEELY	***39 BOTE ROAD***	***S 1/8 - 1/4 (0.249 mi.)***	***19***	***36***

LUST Id: 35002				
PHOEBE LUST Id: 33004	***1O PINE RIDGE RD.***	***N 1/4 - 1/2 (0.363 mi.)***	***21***	***42***
ERIC SCHUMACHER LUST Id: 36115	***12 ANNJIM DRIVE***	***S 1/4 - 1/2 (0.370 mi.)***	***22***	***46***
ALEC CRAWFORD LUST Id: 33542	***11 PINE RIDGE RD.***	***N 1/4 - 1/2 (0.418 mi.)***	***23***	***51***
BARBARA KITES LUST Id: 34268	***30 STANWICH ROAD***	***S 1/4 - 1/2 (0.423 mi.)***	***24***	***55***
GREENWICH COUNTRY DA LUST Id: 35291	***401 OLD CHURCH RD***	***W 1/4 - 1/2 (0.445 mi.)***	***C25***	***61***
WINIFRED CLARK LUST Id: 34681	5 STANWICH LANE	S 1/4 - 1/2 (0.478 mi.)	D28	73
WINFRIED CLARK LUST Id: 34564	5 STANWICH LANE	S 1/4 - 1/2 (0.478 mi.)	D29	73
ESTATE OF MRS EUGENA LUST Id: 33953	***331 NORTH STEELE RD***	***WNW 1/4 - 1/2 (0.497 mi.)***	***31***	***76***

Lower Elevation	Address	Direction / Distance	Map ID	Page
CAPPARELLA LUST Id: 34185	***1 CHRISTIANO STEET***	***ESE 1/4 - 1/2 (0.456 mi.)***	***26***	***69***

Lists of state and tribal registered storage tanks

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Protection's "Town Inventory" UST Listing.

A review of the UST list, as provided by EDR, and dated 10/25/2022 has revealed that there is 1 UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CENTRAL MIDDLE SCHOO Facility Id: 57-4741 Tank Status: Currently In Use	STANWICH ROAD	SW 0 - 1/8 (0.004 mi.)	14	17

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

CPCS: A list of Contaminated or Potentially Contaminated Sites within Connecticut. This list represents the "Hazardous Waste Facilities," as defined in Section 22a-134f of the Connecticut General Statutes (CGS). The list contains the following types of sites: Sites listed on the Inventory of Hazardous

EXECUTIVE SUMMARY

Waste Disposal Sites; Sites subject to the Property Transfer Act; Sites at which underground storage tanks are known to have leaked; Sites at which hazardous waste subject to the RCRA; Sites that are included in EPA's (CERCLIS); Sites that are the subject of an order issued by the Commissioner of DEP that requires investigation and remediation of a potential or known source of pollution; and Sites that have entered into one of the Department's Voluntary Remediation Programs.

A review of the CPCS list, as provided by EDR, and dated 09/01/2022 has revealed that there are 13 CPCS sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
VINCENT MASI	***55 STANWICH ROAD***	***SSW 1/8 - 1/4 (0.127 mi.)***	***15***	***19***
Lust Status: LUST Completed (DEP's significant hazard definition)				
JOHN VERRIER (ESTATE	***49 STANWICH RD***	***S 1/8 - 1/4 (0.201 mi.)***	***B16***	***23***
Lust Status: LUST Completed (DEP's significant hazard definition)				
M. PACE PROPERTY	***67 HILLSIDE ROAD***	***SW 1/8 - 1/4 (0.222 mi.)***	***18***	***30***
Lust Status: LUST Completed (DEP's significant hazard definition)				
MICHAEL SEELY	***39 BOTE ROAD***	***S 1/8 - 1/4 (0.249 mi.)***	***19***	***36***
Lust Status: LUST Completed (DEP's significant hazard definition)				
PHOEBE	***1O PINE RIDGE RD.***	***N 1/4 - 1/2 (0.363 mi.)***	***21***	***42***
Lust Status: LUST Completed (DEP's significant hazard definition)				
ERIC SCHUMACHER	***12 ANNJIM DRIVE***	***S 1/4 - 1/2 (0.370 mi.)***	***22***	***46***
Lust Status: LUST Completed (DEP's significant hazard definition)				
ALEC CRAWFORD	***11 PINE RIDGE RD.***	***N 1/4 - 1/2 (0.418 mi.)***	***23***	***51***
Lust Status: LUST Completed (DEP's significant hazard definition)				
BARBARA KITES	***30 STANWICH ROAD***	***S 1/4 - 1/2 (0.423 mi.)***	***24***	***55***
Lust Status: LUST Completed (DEP's significant hazard definition)				
GREENWICH COUNTRY DA	***401 OLD CHURCH RD***	***W 1/4 - 1/2 (0.445 mi.)***	***C25***	***61***
Lust Status: LUST Completed (DEP's significant hazard definition)				
GREENWICH COUNTRY DA	OLD CHURCH RD.	W 1/4 - 1/2 (0.458 mi.)	C27	72
Lust Status: LUST Completed (DEP's significant hazard definition)				
WINFRIED CLARK	***5 STANWICH LANE***	***S 1/4 - 1/2 (0.478 mi.)***	***D30***	***73***
Lust Status: LUST Completed (DEP's significant hazard definition)				
ESTATE OF MRS EUGENA	***331 NORTH STEELE RD***	***WNW 1/4 - 1/2 (0.497 mi.)***	***31***	***76***
Lust Status: LUST Completed (DEP's significant hazard definition)				

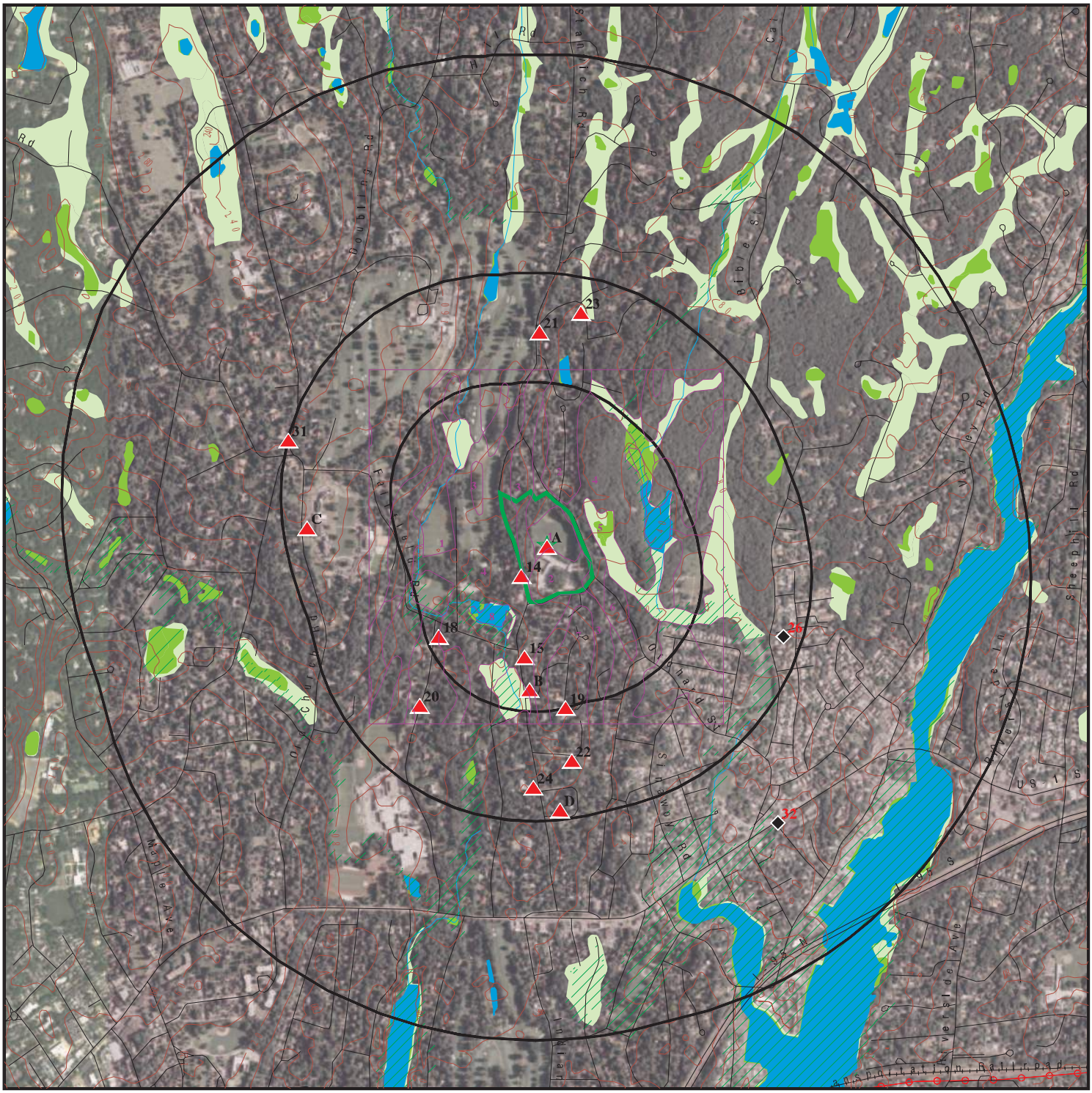
Lower Elevation	Address	Direction / Distance	Map ID	Page
CAPPARELLA	***1 CHRISTIANO STEET***	***ESE 1/4 - 1/2 (0.456 mi.)***	***26***	***69***
Lust Status: LUST Completed (DEP's significant hazard definition)				

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 6 records.

Site Name	Database(s)
WILLIAM BEIHL	LUST, CPCS
CENTRAL JUNIOR HIGH SCHOOL	AIRS
CENTRAL JUNIOR HIGH SCHOOL	AIRS
CENTRAL JUNIOR HIGH SCHOOL	AIRS
CENTRAL JUNIOR HIGH SCHOOL	FINDS
CENTRAL JUNIOR HIGH SCHOOL	ECHO

OVERVIEW MAP - 7289805.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Central Middle School	CLIENT:	Langan Environmental Services
ADDRESS:	9 Indian Rock Lane Cos Cob CT 06807	CONTACT:	Elyssa Schwendy
LAT/LONG:	41.048946 / 73.605775	INQUIRY #:	7289805.2s
		DATE:	March 27, 2023 9:19 am

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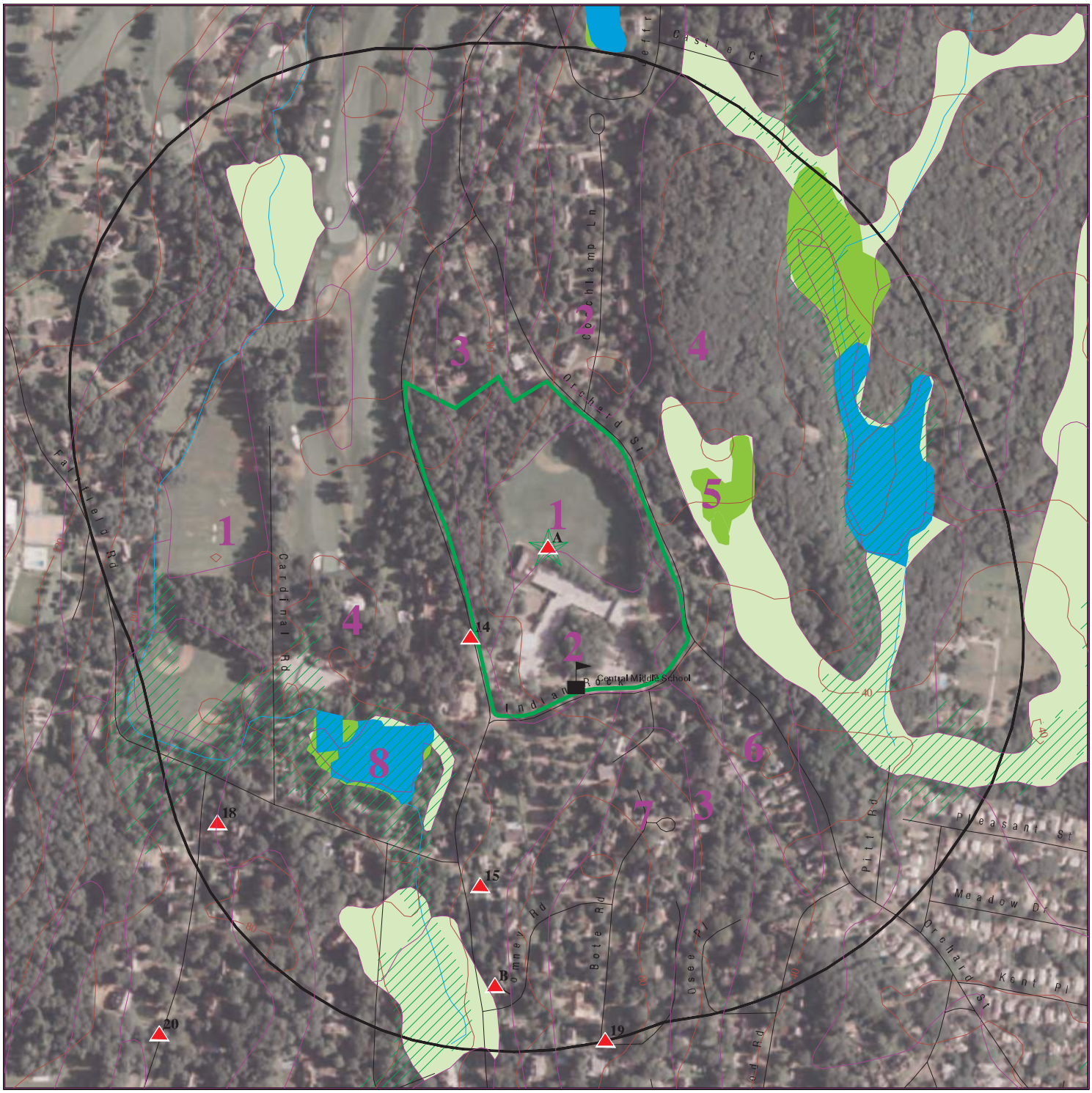
DETAIL MAP - 7289805.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/16 1/8 1/4 Miles

Indian Reservations BIA

Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

National Wetland Inventory

State Wetlands

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Central Middle School	CLIENT:	Langan Environmental Services
ADDRESS:	9 Indian Rock Lane Cos Cob CT 06807	CONTACT:	Elyssa Schwendy
LAT/LONG:	41.048946 / 73.605775	INQUIRY #:	7289805.2s
		DATE:	March 27, 2023 9:21 am

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Lists of Federal NPL (Superfund) sites								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	0	NR	0
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
Lists of state- and tribal hazardous waste facilities								
SHWS	1.000		0	0	0	1	NR	1
SDADB	0.500		0	2	1	NR	NR	3
Lists of state and tribal landfills and solid waste disposal facilities								
SWF/LF	0.500		0	0	0	NR	NR	0
Lists of state and tribal leaking storage tanks								
LUST	0.500		0	4	9	NR	NR	13

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		1	0	NR	NR	NR	1
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
AUL	0.500		0	0	0	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
Lists of state and tribal brownfield sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
SWRCY	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
Local Land Records								
CT PROPERTY	0.001		0	NR	NR	NR	NR	0
LIENS	0.001		0	NR	NR	NR	NR	0
LIENS 2	0.001		0	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
SPILLS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
PFAS NPL	0.250		0	0	NR	NR	NR	0
PFAS FEDERAL SITES	0.250		0	0	NR	NR	NR	0
PFAS TSCA	0.250		0	0	NR	NR	NR	0
PFAS RCRA MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS ATSDR	0.250		0	0	NR	NR	NR	0
PFAS WQP	0.250		0	0	NR	NR	NR	0
PFAS NPDES	0.250		0	0	NR	NR	NR	0
PFAS ECHO	0.250		0	0	NR	NR	NR	0
PFAS ECHO FIRE TRAINING	0.250		0	0	NR	NR	NR	0
PFAS PART 139 AIRPORT	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM NRC	0.250		0	0	NR	NR	NR	0
PFAS	0.250		0	0	NR	NR	NR	0
AIRS	0.001		0	NR	NR	NR	NR	0
ASBESTOS	0.001	13	0	NR	NR	NR	NR	13
CPCS	0.500		0	4	9	NR	NR	13

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
LEAD	0.001		0	NR	NR	NR	NR	0
LWDS	0.250		0	0	NR	NR	NR	0
MANIFEST	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
SEH	0.500		0	0	0	NR	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA HWS	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		13	1	10	19	1	0	44

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **GREENWICH PUBLIC SCHOOLS** **ASBESTOS** **S121819373**
Target Property **9 INDIAN ROCK LANE** **N/A**
GREENWICH, CT 06830

Site 1 of 13 in cluster A

Actual: 50 ft.

ASBESTOS:

Name:	GREENWICH PUBLIC SCHOOLS
Address:	9 INDIAN ROCK LANE
City,State,Zip:	GREENWICH, CT 06830
ID:	59008
Trans Number:	788
Enter Date:	Not reported
Postmark Date:	06/14/2016
Check Amount:	$137.52
Check Number:	4404
Type of Notification (new):	X
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	Not reported
Project Type:	Not reported
Start Date:	06/24/2014
End Date:	07/01/2016
Licence Number:	000727
Contractor:	A. VETS DEMO LLC
Contractor Address:	165 WASHINGTON ST
Contractor City:	VERNON
Contractor State:	CT
Contractor Zip:	06066
Owner:	MINERVA
Hauler:	TRANSWASTE
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

A2 **GREENWICH PUBLIC SCHOOL** **ASBESTOS** **S125142466**
Target Property **9 INDIAN ROAK LA** **N/A**
GREENWICH, CT 06830

Site 2 of 13 in cluster A

Actual: 50 ft.

ASBESTOS:

Name:	GREENWICH PUBLIC SCHOOL
Address:	9 INDIAN ROAK LA
City,State,Zip:	GREENWICH, CT 06830
ID:	5618
Trans Number:	Not reported
Enter Date:	Not reported
Postmark Date:	08/10/2007
Check Amount:	$65.00
Check Number:	030151
Type of Notification (new):	Not reported
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	X
Project Type:	CENTRAL SCHOOL TILE COACHS OFF

GREENWICH PUBLIC SCHOOL (Continued) **S125142466**

Start Date:	08/14/2007
End Date:	08/18/2007
Licence Number:	Not reported
Contractor:	A.A.I.S CORPORATION
Contractor Address:	16 HAMILTON ST
Contractor City:	WEST HAVEN
Contractor State:	CT
Contractor Zip:	06516
Owner:	Not reported
Hauler:	Not reported
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

Name:	GREENWICH PUBLIC SCHOOL
Address:	9 INDIAN ROAK LA
City,State,Zip:	GREENWICH, CT 06830
ID:	5618
Trans Number:	106
Enter Date:	08/13/2007
Postmark Date:	08/10/2007
Check Amount:	$65.00
Check Number:	030151
Type of Notification (new):	Not reported
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	X
Project Type:	CENTRAL SCHOOL TILE COACHS OFF
Start Date:	08/14/2007
End Date:	08/18/2007
Licence Number:	000017
Contractor:	A.A.I.S CORPORATION
Contractor Address:	16 HAMILTON ST
Contractor City:	WEST HAVEN
Contractor State:	CT
Contractor Zip:	06516
Owner:	MINERVA ENTER/BFI/WMNH
Hauler:	TRANSWASTE,INC./RTL ENTERPRISES/USA HAULING
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

A3 **GREENWICH PUBLIC SCHOOLS** **ASBESTOS** **S125095374**
Target **9 INDIAN ROCK LANE** **N/A**
Property **GREENWICH, CT 06830**

Site 3 of 13 in cluster A

Actual: ASBESTOS:
50 ft.

Name:	GREENWICH PUBLIC SCHOOLS
Address:	9 INDIAN ROCK LANE
City,State,Zip:	GREENWICH, CT 06830
ID:	12006

GREENWICH PUBLIC SCHOOLS (Continued) **S125095374**

Trans Number:	616
Enter Date:	07/16/2009
Postmark Date:	06/10/2009
Check Amount:	$964.65
Check Number:	1283
Type of Notification (new):	X
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	Not reported
Project Type:	SCHOOL
Start Date:	06/20/2009
End Date:	08/29/2009
Licence Number:	000552
Contractor:	AWAY ENVIRONMENTAL INC.
Contractor Address:	88 RENNERT LANE
Contractor City:	BARDONIA
Contractor State:	NY
Contractor Zip:	10954
Owner:	HAKES
Hauler:	TRANSWASTE
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

A4 **TOWN OF GREENWICH** **ASBESTOS** **S125100639**
Target **9 INDIAN ROCK LANE** **N/A**
Property **GREENWICH, CT 06830**

Site 4 of 13 in cluster A

Actual: **50 ft.**

ASBESTOS:

Name:	TOWN OF GREENWICH
Address:	9 INDIAN ROCK LANE
City,State,Zip:	GREENWICH, CT 06830
ID:	15840
Trans Number:	651
Enter Date:	06/29/2010
Postmark Date:	06/26/2010
Check Amount:	$172.00
Check Number:	1097
Type of Notification (new):	X
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	Not reported
Project Type:	CENTRAL MS
Start Date:	07/06/2010
End Date:	08/03/2010
Licence Number:	000304
Contractor:	OSCAR R ARDON dba Oscar’s Abatement, LL
Contractor Address:	29 1/2 Meadow Street
Contractor City:	Hartford
Contractor State:	CT
Contractor Zip:	06114
Owner:	MODERN

TOWN OF GREENWICH (Continued) **S125100639**

Hauler:	TRANSWASTE
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

A5 **GREENWICH PUBLIC SCHOOLS** **ASBESTOS** **S125101285**
Target **9 INDIAN ROCK LANE** **N/A**
Property **GREENWICH, CT 06830**

Site 5 of 13 in cluster A

Actual: **50 ft.**

ASBESTOS:

Name:	GREENWICH PUBLIC SCHOOLS
Address:	9 INDIAN ROCK LANE
City,State,Zip:	GREENWICH, CT 06830
ID:	16151
Trans Number:	47
Enter Date:	07/27/2010
Postmark Date:	07/23/2010
Check Amount:	$130.00
Check Number:	2448
Type of Notification (new):	Not reported
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	X
Project Type:	CENTRAL MIDDLE SCHOOL
Start Date:	07/22/2010
End Date:	07/23/2010
Licence Number:	000552
Contractor:	AWAY ENVIRONMENTAL INC.
Contractor Address:	88 RENNERT LANE
Contractor City:	BARDONIA
Contractor State:	NY
Contractor Zip:	10954
Owner:	HAKES
Hauler:	TRANSWASTE
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

A6 **GREENWICH PUBLIC SCHOOLS** **ASBESTOS** **S125095921**
Target **9 INDIAN ROCK LANE** **N/A**
Property **GREENWICH, CT 06830**

Site 6 of 13 in cluster A

Actual: **50 ft.**

ASBESTOS:

Name:	GREENWICH PUBLIC SCHOOLS
Address:	9 INDIAN ROCK LANE
City,State,Zip:	GREENWICH, CT 06860
ID:	79832

GREENWICH PUBLIC SCHOOLS (Continued) **S125095921**

Trans Number:	Not reported
Enter Date:	Not reported
Postmark Date:	03/15/2021
Check Amount:	148.4
Check Number:	1452
Type of Notification (new):	X
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	Not reported
Project Type:	Not reported
Start Date:	04/09/2021
End Date:	04/17/2021
Licence Number:	000017
Contractor:	AAIS A DIVISION OF SPECTRUM
Contractor Address:	PO BOX 26066
Contractor City:	WEST HAVEN
Contractor State:	CT
Contractor Zip:	06516
Owner:	Not reported
Hauler:	TRANSWATE INC / ITS ABOUT TIME
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

Name:	GREENWICH PUBLIC SCHOOLS
Address:	9 INDIAN ROCK LANE
City,State,Zip:	GREENWICH, CT 06830
ID:	12500
Trans Number:	616
Enter Date:	09/03/2009
Postmark Date:	06/15/2009
Check Amount:	$391.00
Check Number:	8815
Type of Notification (new):	X
Type of Notification (cancel):	Not reported
Type of Notification (revised):	X
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	Not reported
Project Type:	GREENWICH PUBLIC SCHOOLS
Start Date:	06/25/2009
End Date:	07/31/2009
Licence Number:	000017
Contractor:	A.A.I.S. Corporation
Contractor Address:	16 Hamilton St
Contractor City:	West Haven
Contractor State:	CT
Contractor Zip:	06516
Owner:	BFI
Hauler:	RTL
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

A7 **GREENWICH BOE** **ASBESTOS** **S125146891**
Target **9 INDIAN ROCK LA** **N/A**
Property **GREENWICH, CT 06830**

Site 7 of 13 in cluster A

Actual: ASBESTOS:
50 ft.

Name:	GREENWICH BOE
Address:	9 INDIAN ROCK LA
City,State,Zip:	GREENWICH, CT 06830
ID:	723
Trans Number:	801
Enter Date:	Not reported
Postmark Date:	06/14/2006
Check Amount:	$661.76
Check Number:	030048
Type of Notification (new):	Not reported
Type of Notification (cancel):	Not reported
Type of Notification (revised):	X
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	Not reported
Project Type:	CENTRAL SCHOOL
Start Date:	07/17/2006
End Date:	08/18/2006
Licence Number:	000017
Contractor:	A.A.I.S., CORPORATION
Contractor Address:	Not reported
Contractor City:	Not reported
Contractor State:	CT
Contractor Zip:	06460
Owner:	MINERVA ENTER./BFI, INC./WMNH
Hauler:	TRANSWASTE,INC./RED TECHNOLOGIES/USA HAULING
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

A8 **GREENWICH PUBLIC SCHOOLS** **ASBESTOS** **S125107657**
Target **9 INDIAN ROCK LN** **N/A**
Property **GREENWICH, CT 06830**

Site 8 of 13 in cluster A

Actual: ASBESTOS:
50 ft.

Name:	GREENWICH PUBLIC SCHOOLS
Address:	9 INDIAN ROCK LN
City,State,Zip:	GREENWICH, CT 06830
ID:	19184
Trans Number:	673
Enter Date:	06/27/2011
Postmark Date:	06/16/2011
Check Amount:	$600.00
Check Number:	3484
Type of Notification (new):	X
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	Not reported
Project Type:	CENTRAL MS

GREENWICH PUBLIC SCHOOLS (Continued) **S125107657**

Start Date:	06/27/2011
End Date:	07/27/2011
Licence Number:	000552
Contractor:	AWAY ENVIRONMENTAL INC.
Contractor Address:	88 RENNERT LANE
Contractor City:	BARDONIA
Contractor State:	NY
Contractor Zip:	10954
Owner:	HAKES
Hauler:	TRANSWASTE
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

A9 **GREENWICH BOE** **ASBESTOS** **S120779672**
Target **9 INDIAN ROCK LANE** **N/A**
Property **GREENWICH, CT 06830**

Site 9 of 13 in cluster A

Actual: **50 ft.**

ASBESTOS:

Name:	GREENWICH BOE
Address:	9 INDIAN ROCK LANE
City,State,Zip:	GREENWICH, CT 06830
ID:	63977
Trans Number:	110
Enter Date:	Not reported
Postmark Date:	08/17/2017
Check Amount:	$243.00
Check Number:	122520
Type of Notification (new):	X
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	Not reported
Project Type:	Not reported
Start Date:	08/21/2017
End Date:	08/25/2017
Licence Number:	000016
Contractor:	BESTECH INC. OF CT
Contractor Address:	25 PINNEY STREET
Contractor City:	ELLINGTON
Contractor State:	CT
Contractor Zip:	06029
Owner:	MINERVA
Hauler:	TRI
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

A10 **GREENWICH BOE** **ASBESTOS** **S125138578**
Target **9 INDIAN ROCK LN** **N/A**
Property **GREENWICH, CT 06830**

Site 10 of 13 in cluster A

Actual: ASBESTOS:
50 ft.

Name:	GREENWICH BOE
Address:	9 INDIAN ROCK LN
City,State,Zip:	GREENWICH, CT 06830
ID:	47033
Trans Number:	709
Enter Date:	Not reported
Postmark Date:	06/25/2013
Check Amount:	$540.00
Check Number:	3526
Type of Notification (new):	X
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	Not reported
Project Type:	CENTRAL MS
Start Date:	07/06/2013
End Date:	08/06/2013
Licence Number:	000524
Contractor:	INTEGRATED BUILDING SERVICES, LLC
Contractor Address:	167 CHERRY ST., #319
Contractor City:	MILFORD
Contractor State:	CT
Contractor Zip:	06460
Owner:	MODERN
Hauler:	TRANSWASTE
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

A11 **GREENWICH PUBLIC SCHOOLS** **ASBESTOS** **S125134555**
Target **9 INDIAN ROCK LN** **N/A**
Property **GREENWICH, CT 06830**

Site 11 of 13 in cluster A

Actual: ASBESTOS:
50 ft.

Name:	GREENWICH PUBLIC SCHOOLS
Address:	9 INDIAN ROCK LN
City,State,Zip:	GREENWICH, CT 06830
ID:	43399
Trans Number:	721
Enter Date:	Not reported
Postmark Date:	06/21/2012
Check Amount:	$500.00
Check Number:	4108
Type of Notification (new):	X
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	Not reported
Project Type:	CENTRAL MIDDLE SCHOOL

GREENWICH PUBLIC SCHOOLS (Continued) **S125134555**

Start Date:	06/30/2012
End Date:	09/05/2012
Licence Number:	000552
Contractor:	AWAY ENVIRONMENTAL INC.
Contractor Address:	88 RENNERT LANE
Contractor City:	BARDONIA
Contractor State:	NY
Contractor Zip:	10954
Owner:	HAKES
Hauler:	TRANSWASTE
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

A12 **GREENWICH BOE** **ASBESTOS** **S125093309**
Target **9 INDIAN ROCK LA** **N/A**
Property **GREENWICH, CT 06830**

Site 12 of 13 in cluster A

Actual: **50 ft.**

ASBESTOS:

Name:	GREENWICH BOE
Address:	9 INDIAN ROCK LA
City,State,Zip:	GREENWICH, CT 06830
ID:	10123
Trans Number:	189
Enter Date:	10/08/2008
Postmark Date:	09/26/2008
Check Amount:	$100.00
Check Number:	8635
Type of Notification (new):	X
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	X
Project Type:	CENTRAL MIDDLE BOILER RM PLENU
Start Date:	09/26/2008
End Date:	09/28/2008
Licence Number:	000017
Contractor:	A.A.I.S CORPORATION
Contractor Address:	16 HAMILTON ST
Contractor City:	WEST HAVEN
Contractor State:	CT
Contractor Zip:	06516
Owner:	MINERVA/BFI/WMNH/ONTARIO
Hauler:	TRANSWASTE/RTL/USA HAULING
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

A13 **GREENWICH PUBLIC SCHOOLS** **ASBESTOS** **S125149157**
Target Property **9 INDIAN ROCK LA** **N/A**
GREENWICH, CT 06830

Site 13 of 13 in cluster A

Actual: 50 ft.

ASBESTOS:

Name:	GREENWICH PUBLIC SCHOOLS
Address:	9 INDIAN ROCK LA
City,State,Zip:	GREENWICH, CT 06830
ID:	9149
Trans Number:	21
Enter Date:	07/14/2008
Postmark Date:	07/08/2008
Check Amount:	$5,000.00
Check Number:	8608
Type of Notification (new):	Not reported
Type of Notification (cancel):	Not reported
Type of Notification (revised):	X
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	Not reported
Project Type:	GREENWICH CENTRAL MS BOILER RM
Start Date:	06/19/2008
End Date:	08/29/2008
Licence Number:	000017
Contractor:	A.A.I.S CORPORATION
Contractor Address:	16 HAMILTON ST
Contractor City:	WEST HAVEN
Contractor State:	CT
Contractor Zip:	06516
Owner:	MINERVA
Hauler:	TRANSWASTE
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

---

14 **CENTRAL MIDDLE SCHOOL (CJH)** **UST** **U002174009**
SW **STANWICH ROAD** **N/A**
< 1/8 **GREENWICH, CT 06832**
0.004 mi.
23 ft.

Relative: Higher

Actual: 65 ft.

UST:

Name:	CENTRAL MIDDLE SCHOOL (CJH)
Address:	STANWICH ROAD
Address 2:	Not reported
City,State,Zip:	GREENWICH 06832
Facility ID:	57-4741
Substance:	Heating Oil(on-site consumption)
Last Use Date:	Not reported
Tank ID:	T1
Closure Status:	Not reported
Compartment ID:	a
Tank Status:	Currently In Use
Secondary Material:	Not reported
Tank Material:	Asphalt Coated or Bare Steel
Capacity:	7200
Install Date:	07/01/1958

CENTRAL MIDDLE SCHOOL (CJH) (Continued) **U002174009**

Overfill Installed:	Not reported
Pipe Material:	Bare Steel
Pipe Mode Description:	Not reported
Spill Installed:	Not reported
Latitude:	41.019572
Longitude:	-73.644556
Tank Latitude:	41.019572
Tank Longitude:	-73.644556

Contact:

Facility ID:	57-4741
Owner Name:	TOWN OF GREENWICH
Owner Address:	290 GREENWICH AVE
Owner Address 2:	Not reported
Owner Phone:	(203) 625-7400
Owner Phone Ext:	Not reported
Owner City/State/Zip:	GREENWICH, CT 068306508
Affiliation Type:	Owner
Contact Name:	Not reported
Contact Title:	Not reported
Contact Email:	Not reported

Facility ID:	57-4741
Owner Name:	TOWN OF GREENWICH
Owner Address:	290 GREENWICH AVE
Owner Address 2:	Not reported
Owner Phone:	Not reported
Owner Phone Ext:	Not reported
Owner City/State/Zip:	GREENWICH, CT 068306508
Affiliation Type:	Registrant
Contact Name:	Not reported
Contact Title:	Not reported
Contact Email:	Not reported

Name:	CENTRAL MIDDLE SCHOOL (CJH)
Address:	STANWICH ROAD
Address 2:	Not reported
City,State,Zip:	GREENWICH 06832
Facility ID:	57-4741
Substance:	Heating Oil(on-site consumption)
Last Use Date:	Not reported
Tank ID:	T1R1
Closure Status:	Not reported
Compartment ID:	a
Tank Status:	Currently In Use
Secondary Material:	Double Walled
Tank Material:	Asphalt Coated or Bare Steel
Capacity:	8000
Install Date:	10/01/1990
Overfill Installed:	Not reported
Pipe Material:	Bare Steel
Pipe Mode Description:	Not reported
Spill Installed:	Not reported
Latitude:	41.019572
Longitude:	-73.644556
Tank Latitude:	41.04844
Tank Longitude:	-73.60591

CENTRAL MIDDLE SCHOOL (CJH) (Continued) **U002174009**

Contact:

Facility ID:	57-4741
Owner Name:	TOWN OF GREENWICH
Owner Address:	290 GREENWICH AVE
Owner Address 2:	Not reported
Owner Phone:	(203) 625-7400
Owner Phone Ext:	Not reported
Owner City/State/Zip:	GREENWICH, CT 068306508
Affiliation Type:	Owner
Contact Name:	Not reported
Contact Title:	Not reported
Contact Email:	Not reported

Facility ID:	57-4741
Owner Name:	TOWN OF GREENWICH
Owner Address:	290 GREENWICH AVE
Owner Address 2:	Not reported
Owner Phone:	Not reported
Owner Phone Ext:	Not reported
Owner City/State/Zip:	GREENWICH, CT 068306508
Affiliation Type:	Registrant
Contact Name:	Not reported
Contact Title:	Not reported
Contact Email:	Not reported

15
SSW
1/8-1/4
0.127 mi.
670 ft.

VINCENT MASI
55 STANWICH ROAD
GREENWICH, CT 06830

LUST **S103155471**
SPILLS **N/A**
CPCS

Relative:
Higher

Actual:
65 ft.

LUST:

Name:	VINCENT MASI
Name 2:	Not reported
Address:	55 STANWICH ROAD
Address 2:	Not reported
City,State,Zip:	GREENWICH, CT 06830
LUST Case Id:	32448
Release Date:	Not reported
Site Case ID:	9604500
Substance:	Not reported
Release Source:	Not reported
Release Cause:	Not reported
Release Identified:	Not reported
Case Number:	Not reported
Release Quantity:	Not reported
Facility City Number:	57

Detail As of 06/2020:

Name:	VINCENT MASI
Name 2:	Not reported
Address:	55 STANWICH ROAD
City,State,Zip:	GREENWICH, CT 06830
Address 2:	Not reported
LUST Id:	4276
UST Facility Id:	Not reported
LUST Case Id:	32448

VINCENT MASI (Continued) **S103155471**

Lust Status:	Lust Completed
Processing Status:	Not reported
EPA Reportable:	False
Motor Fuel:	False
Diesel:	False
Gasoline:	False
Other:	False
Other Release:	Not reported
No Release:	False
Leak:	False
Tank:	False
Piping:	False
Overfill:	False
Removal:	False
Incident Date:	09/04/1996
Entry Date:	Not reported
Site Case Id:	9604500
UST Site Id:	Not reported
Cost Recovery Spill Case #:	Not reported
Old SITS Number:	Not reported
Case Log Id:	Not reported
Monthly Report Id:	0
UST Owner Id:	Not reported
LUST Owner Id:	Not reported
UST Event Id:	4376
Contact Info:	Not reported
Contact EMail:	Not reported
Site Contact City,St,Zip:	UNKNOWN
2nd Contact:	Not reported
2nd Contact EMail:	Not reported
2nd Contact Address:	Not reported
2nd Contact City,St,Zip:	UNKNOWN
2nd Contact Address 2:	Not reported
2nd Contact City 2:	Not reported
2nd Contact Phone Number:	Not reported
2nd Contact Fax Number:	Not reported
2nd Contact Type:	Not reported
Facility City Num:	57
Site Contact:	Not reported
Site Contact Address:	Not reported
Site Contact Add 2:	Not reported
Site Contact City 2:	Not reported
Site Contact Phone:	Not reported
Site Contact Fax:	Not reported
Site Contact Type:	Not reported
Department Contact 1:	Not reported
Department Contact 2:	Not reported
Referral Source:	Not reported
Offsite Source:	False
Date Referred:	Not reported
Emergency:	False
Private Heating Fuel:	True
Commercial Heating Fuel:	False
Commercial HF < 2100 Gal.:	False
Commercial HF > 2100 Gal.:	False
Commercial HF - Size Unk:	False
No LUST Site:	False

VINCENT MASI (Continued) **S103155471**

Cost Recvry Prgm Candidate:	False
OCSRD Complete:	True
Follow Up Flag:	False
Alternate Water Supply:	False
Relocation:	False
Responsible Party:	False
Responsible EMail:	Not reported
Resp Party Name:	Not reported
Resp Party Address:	Not reported
Resp Party City,St,Zip:	Not reported
Resp Party Town Number:	UNKNOWN
Resp Party Phone:	Not reported
Resp Party Fax:	Not reported
Resp Party Name 2:	Not reported
Resp Party Address 2:	Not reported
Resp Party Phone 2:	Not reported
Investigator Id:	35
Follow Update:	Not reported
Area Lextent:	Not reported
Annual Precipitation:	Not reported
Affected Population:	Not reported
Population Setting:	Not reported
Ground Water Direction:	Not reported
Ground Water Gradient:	Not reported
Hydro Basin:	Not reported
Drastic:	Not reported
Geo Setting:	Not reported
Ground Water Classification:	Not reported
Receptor:	Not reported
Ground Water Flow Direction:	Not reported
Ground Water Depth:	Not reported
Areas Of Concern:	Not reported
Free Product Inches:	Not reported
Fund Date:	Not reported
Fund Planned:	No
Fund Obligated:	No
Fund Outlayed:	No
Fund Judgment:	No
Fund Recovered:	No
Cellar Borings:	False
Install Micro Wells:	False
Ground Water Sample:	False
Soil Sample:	False
Soil Gas:	False
Site Inspect:	False
Soil Excavate:	False
Geo Probe:	False
Survey:	False
Potable Well Sample:	False
Sample MWS:	False
Ground Water Gauging:	False
Soil Venting:	False
Active:	False
NOV Action:	None
NOV Issued:	Not reported
NOV Due:	Not reported
NOV Received:	Not reported

VINCENT MASI (Continued) **S103155471**

NOV Closed:	Not reported
NOV Disc Date:	Not reported
NOV Issued Date:	Not reported
NOV Compliance Sched:	Not reported
NOV Admin Order:	Not reported
NOV Referred To Ag:	Not reported
Stop All NOV Actions:	False
Release Invest Rpt:	False
DEP App Letter 1:	False
Correct Action Plan:	False
DEP App Letter 2:	False
Rem Sys Install:	False
Rem Sys Install Date:	Not reported
Closure Date:	Not reported
Rem Sys Monitoring Rpt:	False
Qrtly Gwater Mon Rpts:	False
Closure Req Rpt:	False
DEP Closure Letter:	False
Referred To:	Not reported
No Wells:	Not reported
Lph Wells:	Not reported
User Stamp:	Not reported
Date Stamp:	Not reported
Correspondence:	Not reported
Environmental Impact:	Not reported
FollowUp:	Not reported
GW Comments:	Not reported
Location Desc:	Not reported
NOV Comments:	Not reported
Release Desc:	Not reported
Running Comments:	#2 HEATING OIL, , PULLED 1K LUST ABANDONED UST
Work Performed:	Not reported

SPILLS:

Name:	Not reported
Address:	55 STANWICH ROAD
City,State,Zip:	GREENWICH, CT
Year of Database:	1996
Case Number:	9604500
Who Took Spill:	915
Assigned To:	No Response
Report Date:	09/04/1996
Report Time:	00:00 AM
Date Release:	09/04/1996
Time Responded:	00:00 AM
Corrective Action Taken:	Removed Tank, and Soil Removed
Cause Info:	Inground Tank Failure
Media Info:	Other (SOIL CONTAM. SUBSURFACE)
Release Type:	petroleum
Reported By:	DICK LEWIS
Phone:	000 3667988
Representing:	ENVIROSHIELD
Terminated:	Yes
Recovd (Total):	0
Total (Water):	0
Facility Status:	Closed

VINCENT MASI (Continued) **S103155471**

Continuous Spill: False
Released Substance: #2 FUEL OIL
Qty: 0.00 (Gallons)
Emergency Measure: PULLED 1K LUST ABANDONED UST
Water Body: Not reported
Discharger: VINCENT MASI
Telephone: 6618341
Responsible Party: Not reported
RP Address 1: 55 STANWICH ROAD
RP City,St,Zip: GREENWICH, CT 06830
Historic: False
Waterbody: Not reported
Time Stamp: 1997-07-03 09:29:46
Sr Inspector: Capuano, Mike
At Inspctor: **NO RESPONSE
User Stamp: Not reported
Comments: Not reported
Action: Removed Tank
Other Action: Not reported
Action: Soil Removed
Other Action: Not reported
Agency ID: DEP
Other Agency: Not reported
DEP Bureau: BUREAU OF WASTE MANAGEMENT
DEP Agency: OIL AND CHEMICAL SPILL RESPONSE
Cause ID: Inground Tank Failure
Other Cause: Not reported
Media ID: Other
Other Media: SOIL CONTAM. SUBSURFACE
Release Type: petroleum
Other Release: Not reported

CPCS:
Name: VINCENT MASI
Address: 55 STANWICH ROAD
City,State,Zip: GREENWICH, CT 06830
Site Type: LUST
Lust Status code: 4
Lust Status: Lust Completed (DEP's significant hazard definition)
PTP Form: Not reported
Program: Not reported
Comments: #2 Heating Oil, , Pulled 1k Lust Abandoned Ust
Site Type Definition: Leaking Underground Storage Tanks Completed

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B16 **JOHN VERRIER (ESTATE OF MARJORIE H VERRIER)** **LUST** **S104239761**
South **49 STANWICH RD** **SPILLS** **N/A**
1/8-1/4 **GREENWICH, CT 06830** **CPCS**
0.201 mi.
1059 ft. **Site 1 of 2 in cluster B**

Relative: LUST:
Higher
Actual: Name: JOHN VERRIER (ESTATE OF MARJORIE H VERRIER)
68 ft. Name 2: Not reported
Address: 49 STANWICH RD
Address 2: Not reported
City,State,Zip: GREENWICH, CT 06830
LUST Case Id: 34963

JOHN VERRIER (ESTATE OF MARJORIE H VERRIER) (Continued) **S104239761**

Release Date:	Not reported
Site Case ID:	9807555
Substance:	Not reported
Release Source:	Not reported
Release Cause:	Not reported
Release Identified:	Not reported
Case Number:	Not reported
Release Quantity:	Not reported
Facility City Number:	57

Detail As of 06/2020:

Name:	JOHN VERRIER (ESTATE OF MARJORIE H VERRIER)
Name 2:	Not reported
Address:	49 STANWICH RD
City,State,Zip:	GREENWICH, CT 06830
Address 2:	Not reported
LUST Id:	6888
UST Facility Id:	Not reported
LUST Case Id:	34963
Lust Status:	Lust Completed
Processing Status:	Not reported
EPA Reportable:	False
Motor Fuel:	False
Diesel:	False
Gasoline:	False
Other:	False
Other Release:	Not reported
No Release:	False
Leak:	False
Tank:	False
Piping:	False
Overfill:	False
Removal:	False
Incident Date:	11/04/1998
Entry Date:	Not reported
Site Case Id:	9807555
UST Site Id:	Not reported
Cost Recovery Spill Case #:	Not reported
Old SITS Number:	Not reported
Case Log Id:	Not reported
Monthly Report Id:	0
UST Owner Id:	Not reported
LUST Owner Id:	Not reported
UST Event Id:	7003
Contact Info:	Not reported
Contact EMail:	Not reported
Site Contact City,St,Zip:	UNKNOWN
2nd Contact:	Not reported
2nd Contact EMail:	Not reported
2nd Contact Address:	Not reported
2nd Contact City,St,Zip:	UNKNOWN
2nd Contact Address 2:	Not reported
2nd Contact City 2:	Not reported
2nd Contact Phone Number:	Not reported
2nd Contact Fax Number:	Not reported
2nd Contact Type:	Not reported
Facility City Num:	57
Site Contact:	Not reported

JOHN VERRIER (ESTATE OF MARJORIE H VERRIER) (Continued) **S104239761**

Site Contact Address:	Not reported
Site Contact Add 2:	Not reported
Site Contact City 2:	Not reported
Site Contact Phone:	Not reported
Site Contact Fax:	Not reported
Site Contact Type:	Not reported
Department Contact 1:	Not reported
Department Contact 2:	Not reported
Referral Source:	Not reported
Offsite Source:	False
Date Referred:	Not reported
Emergency:	False
Private Heating Fuel:	True
Commercial Heating Fuel:	False
Commercial HF < 2100 Gal.:	False
Commercial HF > 2100 Gal.:	False
Commercial HF - Size Unk:	False
No LUST Site:	False
Cost Recvry Prgm Candidate:	False
OCSRD Complete:	True
Follow Up Flag:	False
Alternate Water Supply:	False
Relocation:	False
Responsible Party:	False
Responsible EMail:	Not reported
Resp Party Name:	Not reported
Resp Party Address:	Not reported
Resp Party City,St,Zip:	Not reported
Resp Party Town Number:	UNKNOWN
Resp Party Phone:	Not reported
Resp Party Fax:	Not reported
Resp Party Name 2:	Not reported
Resp Party Address 2:	Not reported
Resp Party Phone 2:	Not reported
Investigator Id:	35
Follow Update:	Not reported
Area Lextent:	Not reported
Annual Precipitation:	Not reported
Affected Population:	Not reported
Population Setting:	Not reported
Ground Water Direction:	Not reported
Ground Water Gradient:	Not reported
Hydro Basin:	Not reported
Drastic:	Not reported
Geo Setting:	Not reported
Ground Water Classification:	Not reported
Receptor:	Not reported
Ground Water Flow Direction:	Not reported
Ground Water Depth:	Not reported
Areas Of Concern:	Not reported
Free Product Inches:	Not reported
Fund Date:	Not reported
Fund Planned:	No
Fund Obligated:	No
Fund Outlayed:	No
Fund Judgment:	No
Fund Recovered:	No

JOHN VERRIER (ESTATE OF MARJORIE H VERRIER) (Continued) **S104239761**

Cellar Borings:	False
Install Micro Wells:	False
Ground Water Sample:	False
Soil Sample:	False
Soil Gas:	False
Site Inspect:	False
Soil Excavate:	False
Geo Probe:	False
Survey:	False
Potable Well Sample:	False
Sample MWS:	False
Ground Water Gauging:	False
Soil Venting:	False
Active:	False
NOV Action:	None
NOV Issued:	Not reported
NOV Due:	Not reported
NOV Received:	Not reported
NOV Closed:	Not reported
NOV Disc Date:	Not reported
NOV Issued Date:	Not reported
NOV Compliance Sched:	Not reported
NOV Admin Order:	Not reported
NOV Referred To Ag:	Not reported
Stop All NOV Actions:	False
Release Invest Rpt:	False
DEP App Letter 1:	False
Correct Action Plan:	False
DEP App Letter 2:	False
Rem Sys Install:	False
Rem Sys Install Date:	Not reported
Closure Date:	Not reported
Rem Sys Monitoring Rpt:	False
Qrtly Gwater Mon Rpts:	False
Closure Req Rpt:	False
DEP Closure Letter:	False
Referred To:	Not reported
No Wells:	Not reported
Lph Wells:	Not reported
User Stamp:	Not reported
Date Stamp:	Not reported
Correspondence:	Not reported
Environmental Impact:	Not reported
FollowUp:	Not reported
GW Comments:	Not reported
Location Desc:	Not reported
NOV Comments:	Not reported
Release Desc:	Not reported
Running Comments:	#2 FUEL OIL, , REMOVED 275 LUST 10/27, 4344 PPM TPH, NO FREE PRODUCT, TANK WAS ABANDONED "YEARS AGO", FM TO BE NOTIFIED, PO NOT AUTHORIZING SOIL REMOVAL AT THIS TIME
Work Performed:	Not reported

SPILLS:

Name:	Not reported
Address:	49 STANWICH RD

JOHN VERRIER (ESTATE OF MARJORIE H VERRIER) (Continued) **S104239761**

City,State,Zip: GREENWICH, CT
Year of Database: 1998
Case Number: 9807555
Who Took Spill: 935
Assigned To: No Response
Report Date: 11/04/1998
Report Time: 00:00 AM
Date Release: 11/04/1998
Time Responded: 00:00 AM
Corrective Action Taken: Removed Tank
Cause Info: Inground Tank Failure
Media Info: Other (SOILS)
Release Type: petroleum
Reported By: LOIS JONES
Phone: 800 9558861
Representing: TANKWORKS
Terminated: YES
Recovd (Total): 0
Total (Water): 0
Facility Status: CLOSED
Continuous Spill: False
Released Substance: #2 FUEL OIL
Qty: 0.00 (Gallons)
Emergency Measure: REMOVED 275 LUST 10/27, 4344 PPM TPH, NO FREE PRODUCT, TANK WAS ABANDONED "YEARS AGO", FM TO BE NOTIFIED, PO NOT AUTHORIZING SOIL REMOVAL AT THIS TIME
Water Body: Other (NONE)
Discharger: JOHN VERRIER (ESTATE OF MARJORIE H VERRIER)
Telephone: 203 6373586
Responsible Party: true
RP Address 1: SAA
RP City,St,Zip: CT
Historic: False
Waterbody: Not reported
Time Stamp: 1998-11-13 08:52:08
Sr Inspector: Torres, Neil
At Inspctor: **NO RESPONSE
User Stamp: Not reported
Comments: Not reported
Action: Removed Tank
Other Action: Not reported
Agency ID: Local Fire Marshal
Other Agency: Not reported
DEP Bureau: Not reported
DEP Agency: Not reported
Cause ID: Inground Tank Failure
Other Cause: Not reported
Media ID: Other
Other Media: SOILS
Release Type: petroleum
Other Release: Not reported
Waterbody: Other
Other Wtrbody: NONE

CPCS:
Name: JOHN VERRIER (ESTATE OF MARJORIE H VERRIER)
Address: 49 STANWICH RD

JOHN VERRIER (ESTATE OF MARJORIE H VERRIER) (Continued) **S104239761**

City,State,Zip:	GREENWICH, CT 06830
Site Type:	LUST
Lust Status code:	4
Lust Status:	Lust Completed (DEP's significant hazard definition)
PTP Form:	Not reported
Program:	Not reported
Comments:	#2 Fuel Oil, , Removed 275 Lust 10/27, 4344 Ppm Tph, No Free Product, Tank Was Abandoned "years Ago", Fm To Be Notified, Po Not Authorizing Soil Removal At This Time
Site Type Definition:	Leaking Underground Storage Tanks Completed

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B17 **ESTATE OF M.H. VERRIER** **SDADB** **S104253931**
South **49 STANWICH ROAD** **N/A**
1/8-1/4 **GREENWICH, CT**
0.201 mi.
1059 ft. **Site 2 of 2 in cluster B**

Relative: **Higher**
Actual: **68 ft.**

Site Discovery and Assessment:

Facility ID:	3417
Rem Master ID:	3670
PTP Id:	Not reported
WPC Number:	Not reported
Postal District:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Lat/Long Determined By:	Not reported
Ground Water Quality Classification:	Not reported
Surface Water Quality Classification:	Not reported
Waste Type:	HYDRO/OIL
Disposal:	UST
Sample Data Available:	False
Updated By:	WARZECHA, W.
Update Program:	PWP
Updated:	2/9/1999
Date Created:	Not reported
Duplicate:	False

SDA Federal:

EPA CERCLIS Id:	Not reported
Number EPA RCRIS Id:	Not reported
Site on EPA's CERCLIS:	Not reported
Site Archived from CERCLIS:	Not reported
Archive Date:	Not reported
EPA's Removal at Site:	Not reported
Deferred to another EPA Program:	Not reported
EPA Env Priority Initiative Site:	Not reported
Federal Facility:	Not reported
Site on EPA's National Priority List:	Not reported
Part of an NPL site:	Not reported
RCRA Generator Status:	Not reported
RCRA Permit Status:	Not reported

SDA Referral:

Referral Id:	3216
Source of referral:	SPILLS
Date Received:	1/14/1999
Staff Assigned:	WARZECHA, W.
Remediation Program:	PWP
Date dt_assigned:	Not reported

ESTATE OF M.H. VERRIER (Continued) **S104253931**

Remediation Complete Approved DEP/Verified by LEP: 2/9/1999
Outcome: ON RECORD

SDA Remedial:
Remedial Id: Not reported
PTP Id: Not reported
Remediation Program: Not reported
Remediation Program Entered: Not reported
Staff Assigned: Not reported
Remediation Program: Not reported
Date dt_assign: Not reported
Project Phase: Not reported
Order issued: Not reported
Order Number: Not reported
Date order issued: Not reported
Remedial Investigation Start: Not reported
Remedial Investigation Completed: Not reported
Remedial Design Start: Not reported
Remedial Design complet: Not reported
Remedial Action Start: Not reported
Remedial Action Completed: Not reported
Date Oper/ maintenance Started: Not reported
GW monitoring: Not reported
Remediation complete Approved DEP/Verified by LEP: Not reported

SDA Orders:
Order Id: Not reported
Order Number: Not reported
Date order issued: Not reported
Staff Assigned: Not reported
Type of Order: Not reported
Order Respondent: Not reported
Admin Appeal Date: Not reported
Date of Admin Appeal Ruling: Not reported
Date of Admin Appeal Ruling: Not reported
Date of Final Order: Not reported
Date of Court Appeal: Not reported
Date of Court Ruling: Not reported
Date of Court Ruling: Not reported
Date Order Modified: Not reported
Date Referred to AG: Not reported
Judgement: Not reported
Date of AGR judgement: Not reported
Penalty assessed: Not reported
Order Complete: Not reported
In compliance: Not reported
Comments: Not reported

SDADB:

SDA Waste:
Waste Id: 11
Waste Type: HYDRO/OIL
Description: Hydrocarbons and/or Fuel Oil

18
SW
1/8-1/4
0.222 mi.
1170 ft.

M. PACE PROPERTY
67 HILLSIDE ROAD
GREENWICH, CT 00068

SDADB **S104253946**
LUST **N/A**
SPILLS
CPCS

Relative:
Higher

Actual:
72 ft.

Site Discovery and Assessment:

Facility ID:	3476
Rem Master ID:	3854
PTP Id:	Not reported
WPC Number:	Not reported
Postal District:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Lat/Long Determined By:	Not reported
Ground Water Quality Classification:	Not reported
Surface Water Quality Classification:	Not reported
Waste Type:	HYDRO/OIL
Disposal:	UST
Sample Data Available:	False
Updated By:	DANYLUK, M.
Update Program:	D&A
Updated:	6/25/1999
Date Created:	Not reported
Duplicate:	False

SDA Federal:

EPA CERCLIS Id:	Not reported
Number EPA RCRIS Id:	Not reported
Site on EPA's CERCLIS:	Not reported
Site Archived from CERCLIS:	Not reported
Archive Date:	Not reported
EPA's Removal at Site:	Not reported
Deferred to another EPA Program:	Not reported
EPA Env Priority Initiative Site:	Not reported
Federal Facility:	Not reported
Site on EPA's National Priority List:	Not reported
Part of an NPL site:	Not reported
RCRA Generator Status:	Not reported
RCRA Permit Status:	Not reported

SDA Referral:

Referral Id:	3272
Source of referral:	SPILLS
Date Received:	6/21/1999
Staff Assigned:	Not reported
Remediation Program:	Not reported
Date dt_assigned:	Not reported
Remediation Complete Approved DEP/Verified by LEP:	8/20/1999
Outcome:	ON RECORD

SDA Remedial:

Remedial Id:	Not reported
PTP Id:	Not reported
Remediation Program:	Not reported
Remediation Program Entered:	Not reported
Staff Assigned:	Not reported
Remediation Program:	Not reported
Date dt_assign:	Not reported
Project Phase:	Not reported
Order issued:	Not reported

M. PACE PROPERTY (Continued) **S104253946**

Order Number:	Not reported
Date order issued:	Not reported
Remedial Investigation Start:	Not reported
Remedial Investigation Completed:	Not reported
Remedial Design Start:	Not reported
Remedial Design complet:	Not reported
Remedial Action Start:	Not reported
Remedial Action Completed:	Not reported
Date Oper/ maintenance Started:	Not reported
GW monitoring:	Not reported
Remediation complete Approved DEP/Verified by LEP:	Not reported

SDA Orders:

Order Id:	Not reported
Order Number:	Not reported
Date order issued:	Not reported
Staff Assigned:	Not reported
Type of Order:	Not reported
Order Respondent:	Not reported
Admin Appeal Date:	Not reported
Date of Admin Appeal Ruling:	Not reported
Date of Admin Appeal Ruling:	Not reported
Date of Final Order:	Not reported
Date of Court Appeal:	Not reported
Date of Court Ruling:	Not reported
Date of Court Ruling:	Not reported
Date Order Modified:	Not reported
Date Referred to AG:	Not reported
Judgement:	Not reported
Date of AGR judgement:	Not reported
Penalty assessed:	Not reported
Order Complete:	Not reported
In compliance:	Not reported
Comments:	Not reported

SDADB:

SDA Waste:

Waste Id:	11
Waste Type:	HYDRO/OIL
Description:	Hydrocarbons and/or Fuel Oil

LUST:

Name:	MARGARET PACE
Name 2:	Not reported
Address:	67 HILLSIDE ROAD
Address 2:	Not reported
City,State,Zip:	GREENWICH, CT 06830
LUST Case Id:	35044
Release Date:	Not reported
Site Case ID:	9808062
Substance:	Not reported
Release Source:	Not reported
Release Cause:	Not reported
Release Identified:	Not reported
Case Number:	Not reported
Release Quantity:	Not reported

M. PACE PROPERTY (Continued) **S104253946**

Facility City Number: 57

Detail As of 06/2020:

Name:	MARGARET PACE
Name 2:	Not reported
Address:	67 HILLSIDE ROAD
City,State,Zip:	GREENWICH, CT 06830
Address 2:	Not reported
LUST Id:	6969
UST Facility Id:	Not reported
LUST Case Id:	35044
Lust Status:	Lust Completed
Processing Status:	Not reported
EPA Reportable:	False
Motor Fuel:	False
Diesel:	False
Gasoline:	False
Other:	False
Other Release:	Not reported
No Release:	False
Leak:	False
Tank:	False
Piping:	False
Overfill:	False
Removal:	False
Incident Date:	11/25/1998
Entry Date:	Not reported
Site Case Id:	9808062
UST Site Id:	Not reported
Cost Recovery Spill Case #:	Not reported
Old SITS Number:	Not reported
Case Log Id:	Not reported
Monthly Report Id:	0
UST Owner Id:	Not reported
LUST Owner Id:	Not reported
UST Event Id:	7085
Contact Info:	Not reported
Contact EMail:	Not reported
Site Contact City,St,Zip:	UNKNOWN
2nd Contact:	Not reported
2nd Contact EMail:	Not reported
2nd Contact Address:	Not reported
2nd Contact City,St,Zip:	UNKNOWN
2nd Contact Address 2:	Not reported
2nd Contact City 2:	Not reported
2nd Contact Phone Number:	Not reported
2nd Contact Fax Number:	Not reported
2nd Contact Type:	Not reported
Facility City Num:	57
Site Contact:	Not reported
Site Contact Address:	Not reported
Site Contact Add 2:	Not reported
Site Contact City 2:	Not reported
Site Contact Phone:	Not reported
Site Contact Fax:	Not reported
Site Contact Type:	Not reported
Department Contact 1:	Not reported
Department Contact 2:	Not reported

M. PACE PROPERTY (Continued) **S104253946**

Referral Source:	Not reported
Offsite Source:	False
Date Referred:	Not reported
Emergency:	False
Private Heating Fuel:	True
Commercial Heating Fuel:	False
Commercial HF < 2100 Gal.:	False
Commercial HF > 2100 Gal.:	False
Commercial HF - Size Unk:	False
No LUST Site:	False
Cost Recvry Prgm Candidate:	False
OCSRD Complete:	True
Follow Up Flag:	False
Alternate Water Supply:	False
Relocation:	False
Responsible Party:	False
Responsible EMail:	Not reported
Resp Party Name:	Not reported
Resp Party Address:	Not reported
Resp Party City,St,Zip:	Not reported
Resp Party Town Number:	UNKNOWN
Resp Party Phone:	Not reported
Resp Party Fax:	Not reported
Resp Party Name 2:	Not reported
Resp Party Address 2:	Not reported
Resp Party Phone 2:	Not reported
Investigator Id:	35
Follow Update:	Not reported
Area Lextent:	Not reported
Annual Precipitation:	Not reported
Affected Population:	Not reported
Population Setting:	Not reported
Ground Water Direction:	Not reported
Ground Water Gradient:	Not reported
Hydro Basin:	Not reported
Drastic:	Not reported
Geo Setting:	Not reported
Ground Water Classification:	Not reported
Receptor:	Not reported
Ground Water Flow Direction:	Not reported
Ground Water Depth:	Not reported
Areas Of Concern:	Not reported
Free Product Inches:	Not reported
Fund Date:	Not reported
Fund Planned:	No
Fund Obligated:	No
Fund Outlayed:	No
Fund Judgment:	No
Fund Recovered:	No
Cellar Borings:	False
Install Micro Wells:	False
Ground Water Sample:	False
Soil Sample:	False
Soil Gas:	False
Site Inspect:	False
Soil Excavate:	False
Geo Probe:	False

M. PACE PROPERTY (Continued) **S104253946**

Survey:	False
Potable Well Sample:	False
Sample MWS:	False
Ground Water Gauging:	False
Soil Venting:	False
Active:	False
NOV Action:	None
NOV Issued:	Not reported
NOV Due:	Not reported
NOV Received:	Not reported
NOV Closed:	Not reported
NOV Disc Date:	Not reported
NOV Issued Date:	Not reported
NOV Compliance Sched:	Not reported
NOV Admin Order:	Not reported
NOV Referred To Ag:	Not reported
Stop All NOV Actions:	False
Release Invest Rpt:	False
DEP App Letter 1:	False
Correct Action Plan:	False
DEP App Letter 2:	False
Rem Sys Install:	False
Rem Sys Install Date:	Not reported
Closure Date:	Not reported
Rem Sys Monitoring Rpt:	False
Qrtly Gwater Mon Rpts:	False
Closure Req Rpt:	False
DEP Closure Letter:	False
Referred To:	Not reported
No Wells:	Not reported
Lph Wells:	Not reported
User Stamp:	Not reported
Date Stamp:	Not reported
Correspondence:	Not reported
Environmental Impact:	Not reported
FollowUp:	Not reported
GW Comments:	Not reported
Location Desc:	Not reported
NOV Comments:	Not reported
Release Desc:	Not reported
Running Comments:	#2 fuel oil, Private, 1000 gallon LUST removed, contaminated soil to be addressed
Work Performed:	Not reported

SPILLS:

Name:	Not reported
Address:	67 HILLSIDE ROAD
City,State,Zip:	GREENWICH, CT
Year of Database:	1998
Case Number:	9808062
Who Took Spill:	916
Assigned To:	Aceto, John
Report Date:	11/25/1998
Report Time:	51:00 AM
Date Release:	11/25/1998
Time Responded:	51:00 AM

M. PACE PROPERTY (Continued) **S104253946**

Corrective Action Taken: Removed Tank, and Soil Removed
Cause Info: Inground Tank Failure
Media Info: Ground Surface
Release Type: petroleum
Reported By: dick lewis
Phone: 203 3805644
Representing: enviro shield
Terminated: YES
Recovd (Total): 0
Total (Water): 0
Facility Status: Closed
Continuous Spill: False
Released Substance: #2 FUEL OIL
Qty: 0.00 (Gallons)
Emergency Measure: 1000 gallon LUST removed, contaminated soil to be addressed3/10/99
UPDATE 220 TONS REMOVED BY ENVIROSHIELD AND STILL EXCAVATING - DICK LEWIS
Water Body: Not reported
Discharger: margaret pace
Telephone: Not reported
Responsible Party: true
RP Address 1: Not reported
RP City,St,Zip: CT
Historic: False
Waterbody: Not reported
Time Stamp: 1999-10-05 13:03:42
Sr Inspector: Stavola, Rosanne
At Inspctor: Aceto, John
User Stamp: Not reported
Comments: Not reported
Action: Removed Tank
Other Action: Not reported
Action: Soil Removed
Other Action: Not reported
Agency ID: DEP
Other Agency: Not reported
DEP Bureau: BUREAU OF WASTE MANAGEMENT
DEP Agency: OIL AND CHEMICAL SPILL RESPONSE
Cause ID: Inground Tank Failure
Other Cause: Not reported
Media ID: Ground Surface
Other Media: Not reported
Class ID: Private
Other Class: Not reported
Release Type: petroleum
Other Release: Not reported

CPCS:
Name: MARGARET PACE
Address: 67 HILLSIDE ROAD
City,State,Zip: GREENWICH, CT 06830
Site Type: LUST
Lust Status code: 4
Lust Status: Lust Completed (DEP's significant hazard definition)
PTP Form: Not reported
Program: Not reported
Comments: #2 Fuel Oil, Private, 1000 Gallon Lust Removed, Contaminated Soil To

M. PACE PROPERTY (Continued) **S104253946**

Be Addressed
Site Type Definition: Leaking Underground Storage Tanks Completed

---

19
South
1/8-1/4
0.249 mi.
1315 ft.

MICHAEL SEELY
39 BOTE ROAD
GREENWICH, CT 06830

LUST **S105442312**
SPILLS **N/A**
CPCS

Relative:
Higher

Actual:
88 ft.

LUST:

Name:	MICHAEL SEELY
Name 2:	Not reported
Address:	39 BOTE ROAD
Address 2:	Not reported
City,State,Zip:	GREENWICH, CT 06830
LUST Case Id:	35002
Release Date:	Not reported
Site Case ID:	9807832
Substance:	Not reported
Release Source:	Not reported
Release Cause:	Not reported
Release Identified:	Not reported
Case Number:	Not reported
Release Quantity:	Not reported
Facility City Number:	57

Detail As of 06/2020:

Name:	MICHAEL SEELY
Name 2:	Not reported
Address:	39 BOTE ROAD
City,State,Zip:	GREENWICH, CT 06830
Address 2:	Not reported
LUST Id:	6927
UST Facility Id:	Not reported
LUST Case Id:	35002
Lust Status:	Lust Completed
Processing Status:	Not reported
EPA Reportable:	False
Motor Fuel:	False
Diesel:	False
Gasoline:	False
Other:	False
Other Release:	Not reported
No Release:	False
Leak:	False
Tank:	False
Piping:	False
Overfill:	False
Removal:	False
Incident Date:	11/16/1998
Entry Date:	Not reported
Site Case Id:	9807832
UST Site Id:	Not reported
Cost Recovery Spill Case #:	Not reported
Old SITS Number:	Not reported
Case Log Id:	Not reported
Monthly Report Id:	0
UST Owner Id:	Not reported

MICHAEL SEELY (Continued) **S105442312**

LUST Owner Id:	Not reported
UST Event Id:	7042
Contact Info:	Not reported
Contact EMail:	Not reported
Site Contact City,St,Zip:	UNKNOWN
2nd Contact:	Not reported
2nd Contact EMail:	Not reported
2nd Contact Address:	Not reported
2nd Contact City,St,Zip:	UNKNOWN
2nd Contact Address 2:	Not reported
2nd Contact City 2:	Not reported
2nd Contact Phone Number:	Not reported
2nd Contact Fax Number:	Not reported
2nd Contact Type:	Not reported
Facility City Num:	57
Site Contact:	Not reported
Site Contact Address:	Not reported
Site Contact Add 2:	Not reported
Site Contact City 2:	Not reported
Site Contact Phone:	Not reported
Site Contact Fax:	Not reported
Site Contact Type:	Not reported
Department Contact 1:	Not reported
Department Contact 2:	Not reported
Referral Source:	Not reported
Offsite Source:	False
Date Referred:	Not reported
Emergency:	False
Private Heating Fuel:	True
Commercial Heating Fuel:	False
Commercial HF < 2100 Gal.:	False
Commercial HF > 2100 Gal.:	False
Commercial HF - Size Unk:	False
No LUST Site:	False
Cost Recvry Prgm Candidate:	False
OCSRD Complete:	True
Follow Up Flag:	False
Alternate Water Supply:	False
Relocation:	False
Responsible Party:	False
Responsible EMail:	Not reported
Resp Party Name:	Not reported
Resp Party Address:	Not reported
Resp Party City,St,Zip:	Not reported
Resp Party Town Number:	UNKNOWN
Resp Party Phone:	Not reported
Resp Party Fax:	Not reported
Resp Party Name 2:	Not reported
Resp Party Address 2:	Not reported
Resp Party Phone 2:	Not reported
Investigator Id:	35
Follow Update:	Not reported
Area Lextent:	Not reported
Annual Precipitation:	Not reported
Affected Population:	Not reported
Population Setting:	Not reported
Ground Water Direction:	Not reported

MICHAEL SEELY (Continued) **S105442312**

Ground Water Gradient:	Not reported
Hydro Basin:	Not reported
Drastic:	Not reported
Geo Setting:	Not reported
Ground Water Classification:	Not reported
Receptor:	Not reported
Ground Water Flow Direction:	Not reported
Ground Water Depth:	Not reported
Areas Of Concern:	Not reported
Free Product Inches:	Not reported
Fund Date:	Not reported
Fund Planned:	No
Fund Obligated:	No
Fund Outlayed:	No
Fund Judgment:	No
Fund Recovered:	No
Cellar Borings:	False
Install Micro Wells:	False
Ground Water Sample:	False
Soil Sample:	False
Soil Gas:	False
Site Inspect:	False
Soil Excavate:	False
Geo Probe:	False
Survey:	False
Potable Well Sample:	False
Sample MWS:	False
Ground Water Gauging:	False
Soil Venting:	False
Active:	False
NOV Action:	None
NOV Issued:	Not reported
NOV Due:	Not reported
NOV Received:	Not reported
NOV Closed:	Not reported
NOV Disc Date:	Not reported
NOV Issued Date:	Not reported
NOV Compliance Sched:	Not reported
NOV Admin Order:	Not reported
NOV Referred To Ag:	Not reported
Stop All NOV Actions:	False
Release Invest Rpt:	False
DEP App Letter 1:	False
Correct Action Plan:	False
DEP App Letter 2:	False
Rem Sys Install:	False
Rem Sys Install Date:	Not reported
Closure Date:	Not reported
Rem Sys Monitoring Rpt:	False
Qrtly Gwater Mon Rpts:	False
Closure Req Rpt:	False
DEP Closure Letter:	False
Referred To:	Not reported
No Wells:	Not reported
Lph Wells:	Not reported
User Stamp:	Not reported
Date Stamp:	Not reported

MICHAEL SEELY (Continued) **S105442312**

Correspondence:	Not reported
Environmental Impact:	Not reported
FollowUp:	Not reported
GW Comments:	Not reported
Location Desc:	Not reported
NOV Comments:	Not reported
Release Desc:	Not reported
Running Comments:	#2 FUEL OIL, , 550 LUST WITH HOLES, NO FREE OIL OR GROUNDWATER IN GRAVE, CITY WATER SITE, SOIL REMOVAL TO BE DONE
Work Performed:	Not reported

SPILLS:

Name:	Not reported
Address:	39 BOTE ROAD
City,State,Zip:	GREENWICH, CT
Year of Database:	1998
Case Number:	9807832
Who Took Spill:	912
Assigned To:	No Response
Report Date:	11/16/1998
Report Time:	00:00 AM
Date Release:	11/16/1998
Time Responded:	00:00 AM
Corrective Action Taken:	Removed Tank, and Soil Removed
Cause Info:	Inground Tank Failure
Media Info:	Other (SUBSURFACE SOILS)
Release Type:	petroleum
Reported By:	LOIS JONES
Phone:	800 9558861
Representing:	TANKWORKS
Terminated:	YES
Recovd (Total):	0
Total (Water):	0
Facility Status:	Closed
Continuous Spill:	False
Released Substance:	#2 FUEL OIL
Qty:	0.00 (Gallons)
Emergency Measure:	550 LUST WITH HOLES, NO FREE OIL OR GROUNDWATER IN GRAVE, CITY WATER SITE, SOIL REMOVAL TO BE DONE
Water Body:	Not reported
Discharger:	MICHAEL SEELY
Telephone:	203 6220459
Responsible Party:	true
RP Address 1:	Not reported
RP City,St,Zip:	CT
Historic:	False
Waterbody:	Not reported
Time Stamp:	1998-11-16 12:06:52
Sr Inspector:	Ciasullo, Rich
At Inspctor:	**NO RESPONSE
User Stamp:	Not reported
Comments:	Not reported
Action:	Removed Tank
Other Action:	Not reported
Action:	Soil Removed
Other Action:	Not reported

MICHAEL SEELY (Continued) **S105442312**

Agency ID:	Local Fire Marshal
Other Agency:	Not reported
DEP Bureau:	Not reported
DEP Agency:	Not reported
Agency ID:	DEP Dispatch
Other Agency:	Not reported
DEP Bureau:	Not reported
DEP Agency:	Not reported
Cause ID:	Inground Tank Failure
Other Cause:	Not reported
Media ID:	Other
Other Media:	SUBSURFACE SOILS
Release Type:	petroleum
Other Release:	Not reported

CPCS:

Name:	MICHAEL SEELY
Address:	39 BOTE ROAD
City,State,Zip:	GREENWICH, CT 06830
Site Type:	LUST
Lust Status code:	4
Lust Status:	Lust Completed (DEP's significant hazard definition)
PTP Form:	Not reported
Program:	Not reported
Comments:	#2 Fuel Oil, , 550 Lust With Holes, No Free Oil Or Groundwater In Grave, City Water Site, Soil Removal To Be Done
Site Type Definition:	Leaking Underground Storage Tanks Completed

---

20
SW
1/4-1/2
0.345 mi.
1823 ft.

SVIHRA PROPERTY **SDADB** **S104253962**
58 HALSEY ROAD **N/A**
GREENWICH, CT

Relative:
Higher

Actual:
62 ft.

Site Discovery and Assessment:

Facility ID:	2858
Rem Master ID:	1616
PTP Id:	Not reported
WPC Number:	Not reported
Postal District:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Lat/Long Determined By:	Not reported
Ground Water Quality Classification:	Not reported
Surface Water Quality Classification:	Not reported
Waste Type:	HYDRO/OIL
Disposal:	UST
Sample Data Available:	False
Updated By:	DANYLUK, M.
Update Program:	D&A
Updated:	9/26/1996
Date Created:	Not reported
Duplicate:	False

SDA Federal:

EPA CERCLIS Id:	Not reported
Number EPA RCRIS Id:	Not reported
Site on EPA's CERCLIS:	Not reported

SVIHRA PROPERTY (Continued) **S104253962**

Site Archived from CERCLIS:	Not reported
Archive Date:	Not reported
EPA's Removal at Site:	Not reported
Deferred to another EPA Program:	Not reported
EPA Env Priority Initiative Site:	Not reported
Federal Facility:	Not reported
Site on EPA's National Priority List:	Not reported
Part of an NPL site:	Not reported
RCRA Generator Status:	Not reported
RCRA Permit Status:	Not reported

SDA Referral:

Referral Id:	2671
Source of referral:	SPILLS
Date Received:	10/4/1995
Staff Assigned:	Not reported
Remediation Program:	Not reported
Date dt_assigned:	Not reported
Remediation Complete Approved DEP/Verified by LEP:	9/26/1996
Outcome:	ON RECORD

SDA Remedial:

Remedial Id:	Not reported
PTP Id:	Not reported
Remediation Program:	Not reported
Remediation Program Entered:	Not reported
Staff Assigned:	Not reported
Remediation Program:	Not reported
Date dt_assign:	Not reported
Project Phase:	Not reported
Order issued:	Not reported
Order Number:	Not reported
Date order issued:	Not reported
Remedial Investigation Start:	Not reported
Remedial Investigation Completed:	Not reported
Remedial Design Start:	Not reported
Remedial Design complet:	Not reported
Remedial Action Start:	Not reported
Remedial Action Completed:	Not reported
Date Oper/ maintenance Started:	Not reported
GW monitoring:	Not reported
Remediation complete Approved DEP/Verified by LEP:	Not reported

SDA Orders:

Order Id:	Not reported
Order Number:	Not reported
Date order issued:	Not reported
Staff Assigned:	Not reported
Type of Order:	Not reported
Order Respondent:	Not reported
Admin Appeal Date:	Not reported
Date of Admin Appeal Ruling:	Not reported
Date of Admin Appeal Ruling:	Not reported
Date of Final Order:	Not reported
Date of Court Appeal:	Not reported
Date of Court Ruling:	Not reported
Date of Court Ruling:	Not reported
Date Order Modified:	Not reported
Date Referred to AG:	Not reported

SVIHRA PROPERTY (Continued) **S104253962**

Judgement:	Not reported
Date of AGR judgement:	Not reported
Penalty assessed:	Not reported
Order Complete:	Not reported
In compliance:	Not reported
Comments:	Not reported

SDADB:

SDA Waste:

Waste Id:	11
Waste Type:	HYDRO/OIL
Description:	Hydrocarbons and/or Fuel Oil

21
North
1/4-1/2
0.363 mi.
1919 ft.

PHOEBE **LUST** **S103159746**
1O PINE RIDGE RD. **SPILLS** **N/A**
GREENWICH, CT 06830 **CPCS**

Relative:
Higher

Actual:
82 ft.

LUST:

Name:	PHOEBE
Name 2:	Not reported
Address:	1O PINE RIDGE RD.
Address 2:	Not reported
City,State,Zip:	GREENWICH, CT 06830
LUST Case Id:	33004
Release Date:	Not reported
Site Case ID:	9702490
Substance:	Not reported
Release Source:	Not reported
Release Cause:	Not reported
Release Identified:	Not reported
Case Number:	Not reported
Release Quantity:	Not reported
Facility City Number:	57

Detail As of 06/2020:

Name:	PHOEBE
Name 2:	Not reported
Address:	1O PINE RIDGE RD.
City,State,Zip:	GREENWICH, CT 06830
Address 2:	Not reported
LUST Id:	4879
UST Facility Id:	Not reported
LUST Case Id:	33004
Lust Status:	Lust Completed
Processing Status:	Not reported
EPA Reportable:	False
Motor Fuel:	False
Diesel:	False
Gasoline:	False
Other:	False
Other Release:	Not reported
No Release:	False
Leak:	False
Tank:	False
Piping:	False

PHOEBE (Continued) **S103159746**

Overfill:	False
Removal:	False
Incident Date:	05/16/1997
Entry Date:	Not reported
Site Case Id:	9702490
UST Site Id:	Not reported
Cost Recovery Spill Case #:	Not reported
Old SITS Number:	Not reported
Case Log Id:	Not reported
Monthly Report Id:	0
UST Owner Id:	Not reported
LUST Owner Id:	Not reported
UST Event Id:	4990
Contact Info:	Not reported
Contact EMail:	Not reported
Site Contact City,St,Zip:	UNKNOWN
2nd Contact:	Not reported
2nd Contact EMail:	Not reported
2nd Contact Address:	Not reported
2nd Contact City,St,Zip:	UNKNOWN
2nd Contact Address 2:	Not reported
2nd Contact City 2:	Not reported
2nd Contact Phone Number:	Not reported
2nd Contact Fax Number:	Not reported
2nd Contact Type:	Not reported
Facility City Num:	57
Site Contact:	Not reported
Site Contact Address:	Not reported
Site Contact Add 2:	Not reported
Site Contact City 2:	Not reported
Site Contact Phone:	Not reported
Site Contact Fax:	Not reported
Site Contact Type:	Not reported
Department Contact 1:	Not reported
Department Contact 2:	Not reported
Referral Source:	Not reported
Offsite Source:	False
Date Referred:	Not reported
Emergency:	False
Private Heating Fuel:	True
Commercial Heating Fuel:	False
Commercial HF < 2100 Gal.:	False
Commercial HF > 2100 Gal.:	False
Commercial HF - Size Unk:	False
No LUST Site:	False
Cost Recvry Prgm Candidate:	False
OCSRD Complete:	True
Follow Up Flag:	False
Alternate Water Supply:	False
Relocation:	False
Responsible Party:	False
Responsible EMail:	Not reported
Resp Party Name:	Not reported
Resp Party Address:	Not reported
Resp Party City,St,Zip:	Not reported
Resp Party Town Number:	UNKNOWN
Resp Party Phone:	Not reported

PHOEBE (Continued) **S103159746**

Resp Party Fax:	Not reported
Resp Party Name 2:	Not reported
Resp Party Address 2:	Not reported
Resp Party Phone 2:	Not reported
Investigator Id:	35
Follow Update:	Not reported
Area Lextent:	Not reported
Annual Precipitation:	Not reported
Affected Population:	Not reported
Population Setting:	Not reported
Ground Water Direction:	Not reported
Ground Water Gradient:	Not reported
Hydro Basin:	Not reported
Drastic:	Not reported
Geo Setting:	Not reported
Ground Water Classification:	Not reported
Receptor:	Not reported
Ground Water Flow Direction:	Not reported
Ground Water Depth:	Not reported
Areas Of Concern:	Not reported
Free Product Inches:	Not reported
Fund Date:	Not reported
Fund Planned:	No
Fund Obligated:	No
Fund Outlayed:	No
Fund Judgment:	No
Fund Recovered:	No
Cellar Borings:	False
Install Micro Wells:	False
Ground Water Sample:	False
Soil Sample:	False
Soil Gas:	False
Site Inspect:	False
Soil Excavate:	False
Geo Probe:	False
Survey:	False
Potable Well Sample:	False
Sample MWS:	False
Ground Water Gauging:	False
Soil Venting:	False
Active:	False
NOV Action:	None
NOV Issued:	Not reported
NOV Due:	Not reported
NOV Received:	Not reported
NOV Closed:	Not reported
NOV Disc Date:	Not reported
NOV Issued Date:	Not reported
NOV Compliance Sched:	Not reported
NOV Admin Order:	Not reported
NOV Referred To Ag:	Not reported
Stop All NOV Actions:	False
Release Invest Rpt:	False
DEP App Letter 1:	False
Correct Action Plan:	False
DEP App Letter 2:	False
Rem Sys Install:	False

PHOEBE (Continued) **S103159746**

Rem Sys Install Date:	Not reported
Closure Date:	Not reported
Rem Sys Monitoring Rpt:	False
Qrtly Gwater Mon Rpts:	False
Closure Req Rpt:	False
DEP Closure Letter:	False
Referred To:	Not reported
No Wells:	Not reported
Lph Wells:	Not reported
User Stamp:	Not reported
Date Stamp:	Not reported
Correspondence:	Not reported
Environmental Impact:	Not reported
FollowUp:	Not reported
GW Comments:	Not reported
Location Desc:	Not reported
NOV Comments:	Not reported
Release Desc:	Not reported
Running Comments:	#2 HEATING OIL, , 20 yards of soil removed city water
Work Performed:	Not reported

SPILLS:

Name:	Not reported
Address:	1O PINE RIDGE RD.
City,State,Zip:	GREENWICH, CT
Year of Database:	1997
Case Number:	9702490
Who Took Spill:	917
Assigned To:	No Response
Report Date:	05/16/1997
Report Time:	00:00 AM
Date Release:	05/16/1997
Time Responded:	00:00 AM
Corrective Action Taken:	Removed Tank
Cause Info:	Inground Tank Failure
Media Info:	Other (sub surface soil)
Release Type:	petroleum
Reported By:	mike o'driscoll
Phone:	203 2242222
Representing:	hygenix
Terminated:	YES
Recovd (Total):	0
Total (Water):	0
Facility Status:	closed
Continuous Spill:	False
Released Substance:	#2 FUEL OIL
Qty:	0.00 (Gallons)
Emergency Measure:	20 yards of soil removed city water
Water Body:	Other (na)
Discharger:	phoebe
Telephone:	203 8694118
Responsible Party:	true
RP Address 1:	Not reported
RP City,St,Zip:	GREENWICH, CT 06830
Historic:	False
Waterbody:	na

PHOEBE (Continued) **S103159746**

Time Stamp: 1997-05-16 15:25:59
Sr Inspector: Emanuelson, Brian
At Inspctor: **NO RESPONSE
User Stamp: Not reported
Comments: Not reported
Action: Removed Tank
Other Action: Not reported
Agency ID: DEP
Other Agency: Not reported
DEP Bureau: BUREAU OF WASTE MANAGEMENT
DEP Agency: OIL AND CHEMICAL SPILL RESPONSE
Cause ID: Inground Tank Failure
Other Cause: Not reported
Media ID: Other
Other Media: sub surface soil
Release Type: petroleum
Other Release: Not reported
Waterbody: Other
Other Wtrbody: na

CPCS:
Name: PHOEBE
Address: 1O PINE RIDGE RD.
City,State,Zip: GREENWICH, CT 06830
Site Type: LUST
Lust Status code: 4
Lust Status: Lust Completed (DEP's significant hazard definition)
PTP Form: Not reported
Program: Not reported
Comments: #2 Heating Oil, , 20 Yards Of Soil Removed City Water
Site Type Definition: Leaking Underground Storage Tanks Completed

---

22 **ERIC SCHUMACHER** **LUST** **S105443991**
South **12 ANNJIM DRIVE** **SPILLS** **N/A**
1/4-1/2 **GREENWICH, CT 06830** **CPCS**
0.370 mi.
1956 ft.

Relative:
Higher

Actual:
71 ft.

LUST:
Name: ERIC SCHUMACHER
Name 2: Not reported
Address: 12 ANNJIM DRIVE
Address 2: Not reported
City,State,Zip: GREENWICH, CT 06830
LUST Case Id: 36115
Release Date: Not reported
Site Case ID: 9902823
Substance: Not reported
Release Source: Not reported
Release Cause: Not reported
Release Identified: Not reported
Case Number: Not reported
Release Quantity: Not reported
Facility City Number: 57

Detail As of 06/2020:
Name: ERIC SCHUMACHER
Name 2: Not reported

ERIC SCHUMACHER (Continued) **S105443991**

Address:	12 ANNJIM DRIVE
City,State,Zip:	GREENWICH, CT 06830
Address 2:	Not reported
LUST Id:	8064
UST Facility Id:	Not reported
LUST Case Id:	36115
Lust Status:	Lust Completed
Processing Status:	Not reported
EPA Reportable:	False
Motor Fuel:	False
Diesel:	False
Gasoline:	False
Other:	False
Other Release:	Not reported
No Release:	False
Leak:	False
Tank:	False
Piping:	False
Overfill:	False
Removal:	False
Incident Date:	05/04/1999
Entry Date:	Not reported
Site Case Id:	9902823
UST Site Id:	Not reported
Cost Recovery Spill Case #:	Not reported
Old SITS Number:	Not reported
Case Log Id:	Not reported
Monthly Report Id:	0
UST Owner Id:	Not reported
LUST Owner Id:	Not reported
UST Event Id:	8245
Contact Info:	Not reported
Contact EMail:	Not reported
Site Contact City,St,Zip:	UNKNOWN
2nd Contact:	Not reported
2nd Contact EMail:	Not reported
2nd Contact Address:	Not reported
2nd Contact City,St,Zip:	UNKNOWN
2nd Contact Address 2:	Not reported
2nd Contact City 2:	Not reported
2nd Contact Phone Number:	Not reported
2nd Contact Fax Number:	Not reported
2nd Contact Type:	Not reported
Facility City Num:	57
Site Contact:	Not reported
Site Contact Address:	Not reported
Site Contact Add 2:	Not reported
Site Contact City 2:	Not reported
Site Contact Phone:	Not reported
Site Contact Fax:	Not reported
Site Contact Type:	Not reported
Department Contact 1:	Not reported
Department Contact 2:	Not reported
Referral Source:	Not reported
Offsite Source:	False
Date Referred:	Not reported
Emergency:	False

ERIC SCHUMACHER (Continued) **S105443991**

Private Heating Fuel:	True
Commercial Heating Fuel:	False
Commercial HF < 2100 Gal.:	False
Commercial HF > 2100 Gal.:	False
Commercial HF - Size Unk:	False
No LUST Site:	False
Cost Recvry Prgm Candidate:	False
OCSRD Complete:	True
Follow Up Flag:	False
Alternate Water Supply:	False
Relocation:	False
Responsible Party:	False
Responsible EMail:	Not reported
Resp Party Name:	Not reported
Resp Party Address:	Not reported
Resp Party City,St,Zip:	Not reported
Resp Party Town Number:	UNKNOWN
Resp Party Phone:	Not reported
Resp Party Fax:	Not reported
Resp Party Name 2:	Not reported
Resp Party Address 2:	Not reported
Resp Party Phone 2:	Not reported
Investigator Id:	35
Follow Update:	Not reported
Area Lextent:	Not reported
Annual Precipitation:	Not reported
Affected Population:	Not reported
Population Setting:	Not reported
Ground Water Direction:	Not reported
Ground Water Gradient:	Not reported
Hydro Basin:	Not reported
Drastic:	Not reported
Geo Setting:	Not reported
Ground Water Classification:	Not reported
Receptor:	Not reported
Ground Water Flow Direction:	Not reported
Ground Water Depth:	Not reported
Areas Of Concern:	Not reported
Free Product Inches:	Not reported
Fund Date:	Not reported
Fund Planned:	No
Fund Obligated:	No
Fund Outlayed:	No
Fund Judgment:	No
Fund Recovered:	No
Cellar Borings:	False
Install Micro Wells:	False
Ground Water Sample:	False
Soil Sample:	False
Soil Gas:	False
Site Inspect:	False
Soil Excavate:	False
Geo Probe:	False
Survey:	False
Potable Well Sample:	False
Sample MWS:	False
Ground Water Gauging:	False

ERIC SCHUMACHER (Continued) **S105443991**

Soil Venting:	False
Active:	False
NOV Action:	None
NOV Issued:	Not reported
NOV Due:	Not reported
NOV Received:	Not reported
NOV Closed:	Not reported
NOV Disc Date:	Not reported
NOV Issued Date:	Not reported
NOV Compliance Sched:	Not reported
NOV Admin Order:	Not reported
NOV Referred To Ag:	Not reported
Stop All NOV Actions:	False
Release Invest Rpt:	False
DEP App Letter 1:	False
Correct Action Plan:	False
DEP App Letter 2:	False
Rem Sys Install:	False
Rem Sys Install Date:	Not reported
Closure Date:	Not reported
Rem Sys Monitoring Rpt:	False
Qrtly Gwater Mon Rpts:	False
Closure Req Rpt:	False
DEP Closure Letter:	False
Referred To:	Not reported
No Wells:	Not reported
Lph Wells:	Not reported
User Stamp:	Not reported
Date Stamp:	Not reported
Correspondence:	Not reported
Environmental Impact:	Not reported
FollowUp:	Not reported
GW Comments:	Not reported
Location Desc:	Not reported
NOV Comments:	Not reported
Release Desc:	Not reported
Running Comments:	unknown size, Heating Oil, PRIVATE, TANK REMOVED AND SOIL TO BE EXCAVATED
Work Performed:	Not reported

SPILLS:

Name:	Not reported
Address:	12 ANNJIM DRIVE
City,State,Zip:	GREENWICH, CT
Year of Database:	1999
Case Number:	9902823
Who Took Spill:	934
Assigned To:	No Response
Report Date:	05/04/1999
Report Time:	00:00 AM
Date Release:	05/04/1999
Time Responded:	00:00 AM
Corrective Action Taken:	Removed Tank
Cause Info:	Inground Tank Failure
Media Info:	Other (SOIL)
Release Type:	petroleum

ERIC SCHUMACHER (Continued) **S105443991**

Reported By: ENVIROSHIELD
Phone: 800 3944821
Representing: Self
Terminated: YES
Recovd (Total): 0
Total (Water): 0
Facility Status: Closed
Continuous Spill: False
Released Substance: #2 FUEL OIL
Qty: 0.00 (Gallons)
Emergency Measure: TANK REMOVED AND SOIL TO BE EXCAVATED
Water Body: Other (N/A)
Discharger: ERIC SCHUMACHER
Telephone: 203 8694821
Responsible Party: true
RP Address 1: Not reported
RP City,St,Zip: CT
Historic: False
Waterbody: NONE
Time Stamp: 1999-05-04 11:29:54
Sr Inspector: Williamson, Matt
At Inspctor: **NO RESPONSE
User Stamp: Not reported
Comments: Not reported
Action: Removed Tank
Other Action: Not reported
Agency ID: DEP Dispatch
Other Agency: Not reported
DEP Bureau: Not reported
DEP Agency: Not reported
Cause ID: Inground Tank Failure
Other Cause: Not reported
Media ID: Other
Other Media: SOIL
Class ID: Private
Other Class: Not reported
Release Type: petroleum
Other Release: Not reported
Waterbody: Other
Other Wtrbody: N/A

CPCS:
Name: ERIC SCHUMACHER
Address: 12 ANNJIM DRIVE
City,State,Zip: GREENWICH, CT 06830
Site Type: LUST
Lust Status code: 4
Lust Status: Lust Completed (DEP's significant hazard definition)
PTP Form: Not reported
Program: Not reported
Comments: Unknown Size, Heating Oil, Private, Tank Removed And Soil To Be Excavated
Site Type Definition: Leaking Underground Storage Tanks Completed

23
North
1/4-1/2
0.418 mi.
2206 ft.

ALEC CRAWFORD
11 PINE RIDGE RD.
GREENWICH, CT 06830

LUST
SPILLS
CPCS

S103162919
N/A

Relative:
Higher

Actual:
54 ft.

LUST:

Name:	ALEC CRAWFORD
Name 2:	Not reported
Address:	11 PINE RIDGE RD.
Address 2:	Not reported
City,State,Zip:	GREENWICH, CT 06830
LUST Case Id:	33542
Release Date:	Not reported
Site Case ID:	9706065
Substance:	Not reported
Release Source:	Not reported
Release Cause:	Not reported
Release Identified:	Not reported
Case Number:	Not reported
Release Quantity:	Not reported
Facility City Number:	57

Detail As of 06/2020:

Name:	ALEC CRAWFORD
Name 2:	Not reported
Address:	11 PINE RIDGE RD.
City,State,Zip:	GREENWICH, CT 06830
Address 2:	Not reported
LUST Id:	5417
UST Facility Id:	Not reported
LUST Case Id:	33542
Lust Status:	Lust Completed
Processing Status:	Not reported
EPA Reportable:	False
Motor Fuel:	False
Diesel:	False
Gasoline:	False
Other:	False
Other Release:	Not reported
No Release:	False
Leak:	False
Tank:	False
Piping:	False
Overfill:	False
Removal:	False
Incident Date:	10/21/1997
Entry Date:	Not reported
Site Case Id:	9706065
UST Site Id:	Not reported
Cost Recovery Spill Case #:	Not reported
Old SITS Number:	Not reported
Case Log Id:	Not reported
Monthly Report Id:	0
UST Owner Id:	Not reported
LUST Owner Id:	Not reported
UST Event Id:	5528
Contact Info:	Not reported
Contact EMail:	Not reported
Site Contact City,St,Zip:	UNKNOWN

ALEC CRAWFORD (Continued) **S103162919**

2nd Contact:	Not reported
2nd Contact EMail:	Not reported
2nd Contact Address:	Not reported
2nd Contact City,St,Zip:	UNKNOWN
2nd Contact Address 2:	Not reported
2nd Contact City 2:	Not reported
2nd Contact Phone Number:	Not reported
2nd Contact Fax Number:	Not reported
2nd Contact Type:	Not reported
Facility City Num:	57
Site Contact:	Not reported
Site Contact Address:	Not reported
Site Contact Add 2:	Not reported
Site Contact City 2:	Not reported
Site Contact Phone:	Not reported
Site Contact Fax:	Not reported
Site Contact Type:	Not reported
Department Contact 1:	Not reported
Department Contact 2:	Not reported
Referral Source:	Not reported
Offsite Source:	False
Date Referred:	Not reported
Emergency:	False
Private Heating Fuel:	True
Commercial Heating Fuel:	False
Commercial HF < 2100 Gal.:	False
Commercial HF > 2100 Gal.:	False
Commercial HF - Size Unk:	False
No LUST Site:	False
Cost Recvry Prgm Candidate:	False
OCSRD Complete:	True
Follow Up Flag:	False
Alternate Water Supply:	False
Relocation:	False
Responsible Party:	False
Responsible EMail:	Not reported
Resp Party Name:	Not reported
Resp Party Address:	Not reported
Resp Party City,St,Zip:	Not reported
Resp Party Town Number:	UNKNOWN
Resp Party Phone:	Not reported
Resp Party Fax:	Not reported
Resp Party Name 2:	Not reported
Resp Party Address 2:	Not reported
Resp Party Phone 2:	Not reported
Investigator Id:	35
Follow Update:	Not reported
Area Lextent:	Not reported
Annual Precipitation:	Not reported
Affected Population:	Not reported
Population Setting:	Not reported
Ground Water Direction:	Not reported
Ground Water Gradient:	Not reported
Hydro Basin:	Not reported
Drastic:	Not reported
Geo Setting:	Not reported
Ground Water Classification:	Not reported

ALEC CRAWFORD (Continued) **S103162919**

Receptor:	Not reported
Ground Water Flow Direction:	Not reported
Ground Water Depth:	Not reported
Areas Of Concern:	Not reported
Free Product Inches:	Not reported
Fund Date:	Not reported
Fund Planned:	No
Fund Obligated:	No
Fund Outlayed:	No
Fund Judgment:	No
Fund Recovered:	No
Cellar Borings:	False
Install Micro Wells:	False
Ground Water Sample:	False
Soil Sample:	False
Soil Gas:	False
Site Inspect:	False
Soil Excavate:	False
Geo Probe:	False
Survey:	False
Potable Well Sample:	False
Sample MWS:	False
Ground Water Gauging:	False
Soil Venting:	False
Active:	False
NOV Action:	None
NOV Issued:	Not reported
NOV Due:	Not reported
NOV Received:	Not reported
NOV Closed:	Not reported
NOV Disc Date:	Not reported
NOV Issued Date:	Not reported
NOV Compliance Sched:	Not reported
NOV Admin Order:	Not reported
NOV Referred To Ag:	Not reported
Stop All NOV Actions:	False
Release Invest Rpt:	False
DEP App Letter 1:	False
Correct Action Plan:	False
DEP App Letter 2:	False
Rem Sys Install:	False
Rem Sys Install Date:	Not reported
Closure Date:	Not reported
Rem Sys Monitoring Rpt:	False
Qrtly Gwater Mon Rpts:	False
Closure Req Rpt:	False
DEP Closure Letter:	False
Referred To:	Not reported
No Wells:	Not reported
Lph Wells:	Not reported
User Stamp:	Not reported
Date Stamp:	Not reported
Correspondence:	Not reported
Environmental Impact:	Not reported
FollowUp:	Not reported
GW Comments:	Not reported
Location Desc:	Not reported

ALEC CRAWFORD (Continued) **S103162919**

NOV Comments: Not reported
Release Desc: Not reported
Running Comments: #2 heating oil, , removed 550 lust, to be determined who will remove soil
Work Performed: Not reported

SPILLS:
Name: Not reported
Address: 11 PINE RIDGE RD.
City,State,Zip: GREENWICH, CT
Year of Database: 1997
Case Number: 9706065
Who Took Spill: 935
Assigned To: No Response
Report Date: 10/21/1997
Report Time: 00:00 AM
Date Release: 10/21/1997
Time Responded: 00:00 AM
Corrective Action Taken: Removed Tank
Cause Info: Inground Tank Failure
Media Info: Other (none)
Release Type: petroleum
Reported By: al barrozo
Phone: 203 3781066
Representing: tec
Terminated: YES
Recovd (Total): 0
Total (Water): 0
Facility Status: CLOSED
Continuous Spill: False
Released Substance: #2 FUEL OIL
Qty: 0.00 (Gallons)
Emergency Measure: removed 550 lust, to be determined who will remove soil
Water Body: Not reported
Discharger: alec crawford
Telephone: 203 6189143
Responsible Party: true
RP Address 1: above
RP City,St,Zip: CT
Historic: False
Waterbody: Not reported
Time Stamp: 1997-10-21 09:43:32
Sr Inspector: Torres, Neil
At Inspctor: **NO RESPONSE
User Stamp: Not reported
Comments: Not reported
Action: Removed Tank
Other Action: Not reported
Agency ID: Local Fire Marshal
Other Agency: Not reported
DEP Bureau: Not reported
DEP Agency: Not reported
Cause ID: Inground Tank Failure
Other Cause: Not reported
Media ID: Other
Other Media: none

ALEC CRAWFORD (Continued) **S103162919**

Release Type: petroleum
Other Release: Not reported

CPCS:

Name:	ALEC CRAWFORD
Address:	11 PINE RIDGE RD.
City,State,Zip:	GREENWICH, CT 06830
Site Type:	LUST
Lust Status code:	4
Lust Status:	Lust Completed (DEP's significant hazard definition)
PTP Form:	Not reported
Program:	Not reported
Comments:	#2 Heating Oil, , Removed 550 Lust, To Be Determined Who Will Remove Soil
Site Type Definition:	Leaking Underground Storage Tanks Completed

---

24
South
1/4-1/2
0.423 mi.
2233 ft.

BARBARA KITES **LUST** **S105440783**
30 STANWICH ROAD **SPILLS** **N/A**
GREENWICH, CT 06830 **CPCS**

Relative:
Higher

Actual:
73 ft.

LUST:

Name:	BARBARA KITES
Name 2:	Not reported
Address:	30 STANWICH ROAD
Address 2:	Not reported
City,State,Zip:	GREENWICH, CT 06830
LUST Case Id:	34268
Release Date:	Not reported
Site Case ID:	9804046
Substance:	Not reported
Release Source:	Not reported
Release Cause:	Not reported
Release Identified:	Not reported
Case Number:	Not reported
Release Quantity:	Not reported
Facility City Number:	57

Detail As of 06/2020:

Name:	BARBARA KITES
Name 2:	Not reported
Address:	30 STANWICH ROAD
City,State,Zip:	GREENWICH, CT 06830
Address 2:	Not reported
LUST Id:	6143
UST Facility Id:	Not reported
LUST Case Id:	34268
Lust Status:	Lust Completed
Processing Status:	Not reported
EPA Reportable:	False
Motor Fuel:	False
Diesel:	False
Gasoline:	False
Other:	False
Other Release:	Not reported
No Release:	False
Leak:	False

BARBARA KITES (Continued) **S105440783**

Tank:	False
Piping:	False
Overfill:	False
Removal:	False
Incident Date:	06/25/1998
Entry Date:	Not reported
Site Case Id:	9804046
UST Site Id:	Not reported
Cost Recovery Spill Case #:	Not reported
Old SITS Number:	Not reported
Case Log Id:	Not reported
Monthly Report Id:	0
UST Owner Id:	Not reported
LUST Owner Id:	Not reported
UST Event Id:	6258
Contact Info:	Not reported
Contact EMail:	Not reported
Site Contact City,St,Zip:	UNKNOWN
2nd Contact:	Not reported
2nd Contact EMail:	Not reported
2nd Contact Address:	Not reported
2nd Contact City,St,Zip:	UNKNOWN
2nd Contact Address 2:	Not reported
2nd Contact City 2:	Not reported
2nd Contact Phone Number:	Not reported
2nd Contact Fax Number:	Not reported
2nd Contact Type:	Not reported
Facility City Num:	57
Site Contact:	Not reported
Site Contact Address:	Not reported
Site Contact Add 2:	Not reported
Site Contact City 2:	Not reported
Site Contact Phone:	Not reported
Site Contact Fax:	Not reported
Site Contact Type:	Not reported
Department Contact 1:	Not reported
Department Contact 2:	Not reported
Referral Source:	Not reported
Offsite Source:	False
Date Referred:	Not reported
Emergency:	False
Private Heating Fuel:	True
Commercial Heating Fuel:	False
Commercial HF < 2100 Gal.:	False
Commercial HF > 2100 Gal.:	False
Commercial HF - Size Unk:	False
No LUST Site:	False
Cost Recvry Prgm Candidate:	False
OCSRD Complete:	True
Follow Up Flag:	False
Alternate Water Supply:	False
Relocation:	False
Responsible Party:	False
Responsible EMail:	Not reported
Resp Party Name:	Not reported
Resp Party Address:	Not reported
Resp Party City,St,Zip:	Not reported

BARBARA KITES (Continued) **S105440783**

Resp Party Town Number:	UNKNOWN
Resp Party Phone:	Not reported
Resp Party Fax:	Not reported
Resp Party Name 2:	Not reported
Resp Party Address 2:	Not reported
Resp Party Phone 2:	Not reported
Investigator Id:	35
Follow Update:	Not reported
Area Lextent:	Not reported
Annual Precipitation:	Not reported
Affected Population:	Not reported
Population Setting:	Not reported
Ground Water Direction:	Not reported
Ground Water Gradient:	Not reported
Hydro Basin:	Not reported
Drastic:	Not reported
Geo Setting:	Not reported
Ground Water Classification:	Not reported
Receptor:	Not reported
Ground Water Flow Direction:	Not reported
Ground Water Depth:	Not reported
Areas Of Concern:	Not reported
Free Product Inches:	Not reported
Fund Date:	Not reported
Fund Planned:	No
Fund Obligated:	No
Fund Outlayed:	No
Fund Judgment:	No
Fund Recovered:	No
Cellar Borings:	False
Install Micro Wells:	False
Ground Water Sample:	False
Soil Sample:	False
Soil Gas:	False
Site Inspect:	False
Soil Excavate:	False
Geo Probe:	False
Survey:	False
Potable Well Sample:	False
Sample MWS:	False
Ground Water Gauging:	False
Soil Venting:	False
Active:	False
NOV Action:	None
NOV Issued:	Not reported
NOV Due:	Not reported
NOV Received:	Not reported
NOV Closed:	Not reported
NOV Disc Date:	Not reported
NOV Issued Date:	Not reported
NOV Compliance Sched:	Not reported
NOV Admin Order:	Not reported
NOV Referred To Ag:	Not reported
Stop All NOV Actions:	False
Release Invest Rpt:	False
DEP App Letter 1:	False
Correct Action Plan:	False

BARBARA KITES (Continued) **S105440783**

DEP App Letter 2:	False
Rem Sys Install:	False
Rem Sys Install Date:	Not reported
Closure Date:	Not reported
Rem Sys Monitoring Rpt:	False
Qrtly Gwater Mon Rpts:	False
Closure Req Rpt:	False
DEP Closure Letter:	False
Referred To:	Not reported
No Wells:	Not reported
Lph Wells:	Not reported
User Stamp:	Not reported
Date Stamp:	Not reported
Correspondence:	Not reported
Environmental Impact:	Not reported
FollowUp:	Not reported
GW Comments:	Not reported
Location Desc:	Not reported
NOV Comments:	Not reported
Release Desc:	Not reported
Running Comments:	#2 FUEL OIL, , 1K LUST REMOVED WITH HOLES, NO FREE OIL OR GROUNDWATER IN GRAVE, CITY WATER SITE, SOIL REMOVAL TO COMPLETE MOST OF REMEDIATION, SOIL VENT MAY BE NECESSARY ALONG FOUNDATION
Work Performed:	Not reported

SPILLS:

Name:	Not reported
Address:	30 STANWICH ROAD
City,State,Zip:	GREENWICH, CT
Year of Database:	2008
Case Number:	200803925
Who Took Spill:	205
Assigned To:	No Response
Report Date:	06/24/2008
Report Time:	00:00 AM
Date Release:	06/24/2008
Time Responded:	00:00 AM
Corrective Action Taken:	Contracted, and Pumped Out, and Other (clean harbors)
Cause Info:	Other (unk)
Media Info:	Other (subsurface)
Release Type:	dielect
Reported By:	David Furtado
Phone:	860 8835354
Representing:	CL&P
Terminated:	YES
Recovd (Total):	0
Total (Water):	0
Facility Status:	CLOSED
Continuous Spill:	False
Released Substance:	CABLE OIL
Qty:	< 1.00 (Gallons)
Emergency Measure:	Non-detectable pcb.
Water Body:	Other (none)
Discharger:	saa
Telephone:	Not reported
Responsible Party:	true

BARBARA KITES (Continued) **S105440783**

RP Address 1: Not reported
RP City,St,Zip: CT
Historic: False
Waterbody: n/a
Time Stamp: 2008-06-24 16:16:13
Sr Inspector: Cox, Michael
At Inspctor: **NO RESPONSE
User Stamp: cguzman
Comments: Not reported
Action: Contracted
Other Action: Not reported
Action: Pumped Out
Other Action: Not reported
Action: Other
Other Action: clean harbors
Agency ID: DEP Dispatch
Other Agency: Not reported
DEP Bureau: Not reported
DEP Agency: Not reported
Cause ID: Other
Other Cause: unk
Media ID: Other
Other Media: subsurface
Class ID: Utility
Other Class: Not reported
Release Type: dielect
Other Release: Not reported
Waterbody: Other
Other Wtrbody: none

Name: Not reported
Address: 30 STANWICH ROAD
City,State,Zip: GREENWICH, CT
Year of Database: 1998
Case Number: 9804046
Who Took Spill: 912
Assigned To: No Response
Report Date: 06/25/1998
Report Time: 00:00 AM
Date Release: 06/25/1998
Time Responded: 00:00 AM
Corrective Action Taken: Removed Tank, and Soil Removed
Cause Info: Inground Tank Failure
Media Info: Other (SUBSURFACE SOILS)
Release Type: petroleum
Reported By: TOM MONK
Phone: 203 3846020
Representing: CT TANK REMOVAL
Terminated: YES
Recovd (Total): 0
Total (Water): 0
Facility Status: Closed
Continuous Spill: False
Released Substance: #2 FUEL OIL
Qty: 0.00 (Gallons)
Emergency Measure: 1K LUST REMOVED WITH HOLES, NO FREE OIL OR GROUNDWATER IN GRAVE, CITY WATER SITE, SOIL REMOVAL TO COMPLETE MOST OF REMEDIATION, SOIL VENT

BARBARA KITES (Continued) **S105440783**

MAY BE NECESSARY ALONG FOUNDATION
Water Body: Not reported
Discharger: BARBARA KITES
Telephone: 203 8616352
Responsible Party: true
RP Address 1: AS ABOVE
RP City,St,Zip: CT
Historic: False
Waterbody: Not reported
Time Stamp: 1998-06-25 11:04:06
Sr Inspector: Ciasullo, Rich
At Inspctor: **NO RESPONSE
User Stamp: Not reported
Comments: Not reported
Action: Removed Tank
Other Action: Not reported
Action: Soil Removed
Other Action: Not reported
Agency ID: Local Fire Marshal
Other Agency: Not reported
DEP Bureau: Not reported
DEP Agency: Not reported
Agency ID: DEP Dispatch
Other Agency: Not reported
DEP Bureau: Not reported
DEP Agency: Not reported
Agency ID: DEP
Other Agency: Not reported
DEP Bureau: BUREAU OF WASTE MANAGEMENT
DEP Agency: PESTICIDE, PCB, UNDERGROUND TANK & TERMINAL
Cause ID: Inground Tank Failure
Other Cause: Not reported
Media ID: Other
Other Media: SUBSURFACE SOILS
Release Type: petroleum
Other Release: Not reported

CPCS:
Name: BARBARA KITES
Address: 30 STANWICH ROAD
City,State,Zip: GREENWICH, CT 06830
Site Type: LUST
Lust Status code: 4
Lust Status: Lust Completed (DEP's significant hazard definition)
PTP Form: Not reported
Program: Not reported
Comments: #2 Fuel Oil, , 1k Lust Removed With Holes, No Free Oil Or Groundwater In Grave, City Water Site, Soil Removal To Complete Most Of Remediation, Soil Vent May Be Necessary Along Foundation
Site Type Definition: Leaking Underground Storage Tanks Completed

C25 **GREENWICH COUNTRY DAY SCHOOL** **LUST** **S105442837**
West **401 OLD CHURCH RD** **SPILLS** **N/A**
1/4-1/2 **GREENWICH, CT 06836** **ASBESTOS**
0.445 mi. **CPCS**
2352 ft. **Site 1 of 2 in cluster C** **NPDES**
UIC

Relative:
Higher

Actual:
175 ft.

LUST:

Name:	Not reported
Name 2:	Not reported
Address:	401 OLD CHURCH ROAD
Address 2:	Not reported
City,State,Zip:	GREENWICH, CT
LUST Case Id:	35291
Release Date:	08/30/1989
Site Case ID:	57-5100
Substance:	Gasoline
Release Source:	Unknown
Release Cause:	Overfill
Release Identified:	Not reported
Case Number:	unknown
Release Quantity:	Unknown
Facility City Number:	Not reported

Detail As of 06/2020:

Name:	GREENWICH COUNTRY DAY SCHOOL/ VICTOR
Name 2:	Not reported
Address:	401 OLD CHURCH ROAD
City,State,Zip:	GREENWICH, CT 06830
Address 2:	Not reported
LUST Id:	7216
UST Facility Id:	5100
LUST Case Id:	35291
Lust Status:	Lust Completed
Processing Status:	Not reported
EPA Reportable:	True
Motor Fuel:	False
Diesel:	False
Gasoline:	False
Other:	False
Other Release:	Not reported
No Release:	False
Leak:	False
Tank:	False
Piping:	False
Overfill:	False
Removal:	False
Incident Date:	01/04/1999
Entry Date:	Not reported
Site Case Id:	9900096
UST Site Id:	Not reported
Cost Recovery Spill Case #:	Not reported
Old SITS Number:	Not reported
Case Log Id:	Not reported
Monthly Report Id:	0
UST Owner Id:	2724
LUST Owner Id:	Not reported
UST Event Id:	7332
Contact Info:	Not reported
Contact EMail:	Not reported

GREENWICH COUNTRY DAY SCHOOL (Continued) **S105442837**

Site Contact City,St,Zip:	UNKNOWN
2nd Contact:	Not reported
2nd Contact EMail:	Not reported
2nd Contact Address:	Not reported
2nd Contact City,St,Zip:	UNKNOWN
2nd Contact Address 2:	Not reported
2nd Contact City 2:	Not reported
2nd Contact Phone Number:	Not reported
2nd Contact Fax Number:	Not reported
2nd Contact Type:	Not reported
Facility City Num:	57
Site Contact:	Not reported
Site Contact Address:	Not reported
Site Contact Add 2:	Not reported
Site Contact City 2:	Not reported
Site Contact Phone:	Not reported
Site Contact Fax:	Not reported
Site Contact Type:	Not reported
Department Contact 1:	Not reported
Department Contact 2:	Not reported
Referral Source:	Not reported
Offsite Source:	False
Date Referred:	Not reported
Emergency:	False
Private Heating Fuel:	True
Commercial Heating Fuel:	False
Commercial HF < 2100 Gal.:	False
Commercial HF > 2100 Gal.:	False
Commercial HF - Size Unk:	False
No LUST Site:	False
Cost Recvry Prgm Candidate:	False
OCSRD Complete:	True
Follow Up Flag:	False
Alternate Water Supply:	False
Relocation:	False
Responsible Party:	False
Responsible EMail:	Not reported
Resp Party Name:	John Ernst
Resp Party Address:	Not reported
Resp Party City,St,Zip:	Not reported
Resp Party Town Number:	UNKNOWN
Resp Party Phone:	8606228536
Resp Party Fax:	Not reported
Resp Party Name 2:	Not reported
Resp Party Address 2:	Not reported
Resp Party Phone 2:	Not reported
Investigator Id:	35
Follow Update:	Not reported
Area Lextent:	Not reported
Annual Precipitation:	Not reported
Affected Population:	Not reported
Population Setting:	Not reported
Ground Water Direction:	Not reported
Ground Water Gradient:	Not reported
Hydro Basin:	Not reported
Drastic:	Not reported
Geo Setting:	Not reported

GREENWICH COUNTRY DAY SCHOOL (Continued) **S105442837**

Ground Water Classification:	Not reported
Receptor:	Not reported
Ground Water Flow Direction:	Not reported
Ground Water Depth:	Not reported
Areas Of Concern:	Not reported
Free Product Inches:	Not reported
Fund Date:	Not reported
Fund Planned:	No
Fund Obligated:	No
Fund Outlayed:	No
Fund Judgment:	No
Fund Recovered:	No
Cellar Borings:	False
Install Micro Wells:	False
Ground Water Sample:	False
Soil Sample:	False
Soil Gas:	False
Site Inspect:	False
Soil Excavate:	False
Geo Probe:	False
Survey:	False
Potable Well Sample:	False
Sample MWS:	False
Ground Water Gauging:	False
Soil Venting:	False
Active:	False
NOV Action:	None
NOV Issued:	Not reported
NOV Due:	Not reported
NOV Received:	Not reported
NOV Closed:	Not reported
NOV Disc Date:	Not reported
NOV Issued Date:	Not reported
NOV Compliance Sched:	Not reported
NOV Admin Order:	Not reported
NOV Referred To Ag:	Not reported
Stop All NOV Actions:	False
Release Invest Rpt:	False
DEP App Letter 1:	False
Correct Action Plan:	False
DEP App Letter 2:	False
Rem Sys Install:	False
Rem Sys Install Date:	Not reported
Closure Date:	Not reported
Rem Sys Monitoring Rpt:	False
Qrtly Gwater Mon Rpts:	False
Closure Req Rpt:	False
DEP Closure Letter:	False
Referred To:	Not reported
No Wells:	Not reported
Lph Wells:	Not reported
User Stamp:	Allison Forrest/AForrest
Date Stamp:	03/06/2012
Correspondence:	Not reported
Environmental Impact:	Not reported
FollowUp:	Not reported
GW Comments:	Not reported

GREENWICH COUNTRY DAY SCHOOL (Continued) **S105442837**

Location Desc: Not reported
NOV Comments: Not reported
Release Desc: Not reported
Running Comments: Not reported
Work Performed: Not reported

SPILLS:
Name: Not reported
Address: 401 OLD CHURCH RD.
City,State,Zip: GREENWICH, CT
Year of Database: 2000
Case Number: 200005901
Who Took Spill: 931
Assigned To: No Response
Report Date: 08/10/2000
Report Time: 00:00 AM
Date Release: 08/10/2000
Time Responded: 00:00 AM
Corrective Action Taken: Removed, and Contained, and Other (BY COMPANY)
Cause Info: Trans/Capac.
Media Info: Other (ON PAD/ GROUND?)
Release Type: dielect
Reported By: DON STAPLES
Phone: 800 9523319
Representing: CL&P
Terminated: YES
Recovd (Total): 0
Total (Water): 0
Facility Status: Closed
Continuous Spill: False
Released Substance: TRANSFORMER OIL
Qty: 0.00 (Gallons)
Emergency Measure: PAD MOUNT(# 688)
Water Body: Not reported
Discharger: SAME
Telephone: Not reported
Responsible Party: true
RP Address 1: Not reported
RP City,St,Zip: CT
Historic: False
Waterbody: NA
Time Stamp: 2000-08-10 09:50:41
Sr Inspector: Coss, Brian
At Inspctor: **NO RESPONSE
User Stamp: Not reported
Comments: Not reported
Action: Removed
Other Action: Not reported
Action: Contained
Other Action: Not reported
Action: Other
Other Action: BY COMPANY
Cause ID: Trans/Capac.
Other Cause: Not reported
Media ID: Other
Other Media: ON PAD/ GROUND?

GREENWICH COUNTRY DAY SCHOOL (Continued) **S105442837**

Class ID: Utility
Other Class: Not reported
Release Type: dielect
Other Release: Not reported

Name: Not reported
Address: 401 OLD CHURCH RD.
City,State,Zip: GREENWICH, CT
Year of Database: 1999
Case Number: 9900096
Who Took Spill: 931
Assigned To: No Response
Report Date: 12/28/1999
Report Time: 30:00 AM
Date Release: 12/28/1999
Time Responded: 30:00 AM
Corrective Action Taken: Removed Tank, and Other (LEAKER)
Cause Info: Inground Tank Failure
Media Info: Other (SOIL)
Release Type: petroleum
Reported By: JOHN RUDDY
Phone: 203 3233118
Representing: AES
Terminated: YES
Recovd (Total): 0
Total (Water): 0
Facility Status: Closed
Continuous Spill: False
Released Substance: #2 FUEL OIL & #4 FUEL OIL
Qty: 0.00 (Gallons)
Emergency Measure: 4515 PPM TPH IN HIGHEST SAMPLE 3000 GALLON TANK
Water Body: Not reported
Discharger: GREENWICH COUNTRY DAY SCHOOL/ VICTOR
Telephone: 203 8635656
Responsible Party: true
RP Address 1: Not reported
RP City,St,Zip: CT
Historic: False
Waterbody: NA
Time Stamp: 1999-12-08 16:23:46
Sr Inspector: Coss, Brian
At Inspctor: **NO RESPONSE
User Stamp: Not reported
Comments: Not reported
Action: Removed Tank
Other Action: Not reported
Action: Other
Other Action: LEAKER
Agency ID: Local Fire Marshal
Other Agency: Not reported
DEP Bureau: Not reported
DEP Agency: Not reported
Agency ID: Other
Other Agency: WILL CALL IMMEDIATELY
DEP Bureau: Not reported
DEP Agency: Not reported
Cause ID: Inground Tank Failure

GREENWICH COUNTRY DAY SCHOOL (Continued) **S105442837**

Other Cause: Not reported
Media ID: Other
Other Media: SOIL
Class ID: Private
Other Class: Not reported
Release Type: petroleum
Other Release: Not reported

ASBESTOS:

Name:	GREENWICH COUNTRY DAY SCHOOL
Address:	401 OLD CHURCH RD
City,State,Zip:	GREENWICH, CT 06830
ID:	58616
Trans Number:	716
Enter Date:	Not reported
Postmark Date:	05/12/2016
Check Amount:	$639.80
Check Number:	008113
Type of Notification (new):	X
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	Not reported
Project Type:	Not reported
Start Date:	06/13/2016
End Date:	07/04/2016
Licence Number:	000026
Contractor:	ABATEMENT INDUSTRIES GROUP
Contractor Address:	802 ORANGE AVE
Contractor City:	WEST HAVEN
Contractor State:	CT
Contractor Zip:	06516
Owner:	MODERN
Hauler:	RTL
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

Name:	GREENWICH COUNTRY DAY SCHOOL
Address:	401 OLD CHURCH RD
City,State,Zip:	GREENWICH, CT 06836
ID:	62803
Trans Number:	684
Enter Date:	Not reported
Postmark Date:	05/17/2017
Check Amount:	$250.00
Check Number:	44123
Type of Notification (new):	X
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	Not reported
Project Type:	GREENWICH COUNTRY DAY
Start Date:	05/19/2017
End Date:	05/21/2017

GREENWICH COUNTRY DAY SCHOOL (Continued) **S105442837**

Licence Number:	000046
Contractor:	NIRAM INC.
Contractor Address:	91 FULTON STREET
Contractor City:	BOONTON
Contractor State:	NJ
Contractor Zip:	07005
Owner:	MINERVA
Hauler:	TRI
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

Name:	GREENWICH COUNTRY DAY SCHOOL
Address:	401 OLD CHURCH RD
City,State,Zip:	GREENWICH, CT 06836
ID:	62874
Trans Number:	698
Enter Date:	Not reported
Postmark Date:	05/26/2017
Check Amount:	$2,100.00
Check Number:	44208
Type of Notification (new):	X
Type of Notification (cancel):	Not reported
Type of Notification (revised):	Not reported
Type of Notification (blanket):	Not reported
Type of Notification (emergency):	Not reported
Project Type:	GREENWICH COUNTRY DAY
Start Date:	06/12/2017
End Date:	08/30/2017
Licence Number:	000046
Contractor:	NIRAM INC.
Contractor Address:	91 FULTON STREET
Contractor City:	BOONTON
Contractor State:	NJ
Contractor Zip:	07005
Owner:	MINERVA
Hauler:	TRI
Location of Demo:	Not reported
Inspection Conducted:	Not reported
Inspector Name:	Not reported
Inspector License Number:	Not reported
Disposal Facility:	Not reported

CPCS:

Name:	GREENWICH COUNTRY DAY SCHOOL/ VICTOR
Address:	401 OLD CHURCH RD.
City,State,Zip:	GREENWICH, CT 06830
Site Type:	LUST
Lust Status code:	4
Lust Status:	Lust Completed (DEP’s significant hazard definition)
PTP Form:	Not reported
Program:	Not reported
Comments:	# 2 &4 Fuel Oil, Private, 4515 Ppm Tph In Highest Sample 3000 Gallon Tank
Site Type Definition:	Leaking Underground Storage Tanks Completed

GREENWICH COUNTRY DAY SCHOOL (Continued) **S105442837**

NPDES:

Name:	GREENWICH COUNTRY DAY SCHOOL INC.
Address:	401 OLD CHURCH RD
City:	GREENWICH
Town Id:	Not reported
Company Name:	Not reported
Permit Number:	GPL000234
Permit Issued Date:	05/16/2012
Permit Expiration Date:	07/09/2014
Application Received Date:	Not reported
Affiliation Type:	Permittee
Permit EI Type:	Swimming Pool Wastewater-GP
App Id:	201106152
Site Address Description:	Not reported
Site Address Line 2:	Not reported
Permit Description:	Greenwich Country Day School - 401 Old Church Rd. Grenwich, Ct. 06878
Status:	Expired
Affiliate Address Line 1:	401 Old Church Rd
Affiliate Address Line 2:	Not reported
Affiliate City/State/Zip:	Greenwich, CT 06830-4809
Contact Name:	Adam Rhodie
Contact Title:	Not reported
Contact EMail:	Arohdie@gcds.net

Name:	GREENWICH COUNTRY DAY SCHOOL INC.
Address:	401 OLD CHURCH RD
City:	GREENWICH
Town Id:	Not reported
Company Name:	Not reported
Permit Number:	GPL000234
Permit Issued Date:	10/15/2014
Permit Expiration Date:	08/09/2024
Application Received Date:	Not reported
Affiliation Type:	Not reported
Permit EI Type:	Swimming Pool Wastewater-GP
App Id:	201408551
Site Address Description:	Not reported
Site Address Line 2:	Not reported
Permit Description:	Not reported
Status:	Active
Affiliate Address Line 1:	Not reported
Affiliate Address Line 2:	Not reported
Affiliate City/State/Zip:	Not reported
Contact Name:	Not reported
Contact Title:	Not reported
Contact EMail:	Not reported

UIC:

Permit ID:	GPL000234
Name:	GREENWICH COUNTRY DAY SCHOOL INC.
Address:	401 OLD CHURCH RD
Address 2:	Not reported
City,State,Zip:	GREENWICH, CT 06830
Site Address Desc:	Not reported
Issued Date:	10/15/2014
Expire Date:	08/09/2024

GREENWICH COUNTRY DAY SCHOOL (Continued) **S105442837**

Program:	GENPT
Client:	THE GREENWICH COUNTRY DAY SCHOOL, INCORPORATED
Affiliation Type:	Registrant
Permit EI Type:	Swimming Pool Wastewater-GP
App ID:	201408551
Permit Description:	Not reported
Status:	Active
Affiliate Add1:	401 Old Church Rd
Affiliate Add2:	Not reported
Affiliate City:	Greenwich
Affiliate State:	CT
Affiliate Zip:	06830
Affiliate Zip4:	06830-4809
Contact Name:	Adam Rhodie
Contact Title:	Not reported
Contact Email:	Arohdie@gcds.net
Latitude:	41.048558
Longitude:	-73.616268

26
ESE
1/4-1/2
0.456 mi.
2406 ft.

CAPPARELLA **LUST S105458483**
1 CHRISTIANO STEET **CPCS N/A**
COS COB, CT 06807

Relative:
Lower

Actual:
39 ft.

LUST:

Name:	CAPPARELLA
Name 2:	Not reported
Address:	1 CHRISTIANO STEET
Address 2:	Not reported
City,State,Zip:	COS COB, CT 06807
LUST Case Id:	34185
Release Date:	Not reported
Site Case ID:	9803631
Substance:	Not reported
Release Source:	Not reported
Release Cause:	Not reported
Release Identified:	Not reported
Case Number:	Not reported
Release Quantity:	Not reported
Facility City Number:	57

Detail As of 06/2020:

Name:	CAPPARELLA
Name 2:	Not reported
Address:	1 CHRISTIANO STEET
City,State,Zip:	COS COB, CT 06807
Address 2:	Not reported
LUST Id:	6060
UST Facility Id:	Not reported
LUST Case Id:	34185
Lust Status:	Lust Completed
Processing Status:	Not reported
EPA Reportable:	False
Motor Fuel:	False
Diesel:	False
Gasoline:	False
Other:	False

CAPPARELLA (Continued) **S105458483**

Other Release:	Not reported
No Release:	False
Leak:	False
Tank:	False
Piping:	False
Overfill:	False
Removal:	False
Incident Date:	06/10/1998
Entry Date:	Not reported
Site Case Id:	9803631
UST Site Id:	Not reported
Cost Recovery Spill Case #:	Not reported
Old SITS Number:	Not reported
Case Log Id:	Not reported
Monthly Report Id:	0
UST Owner Id:	Not reported
LUST Owner Id:	Not reported
UST Event Id:	6175
Contact Info:	Not reported
Contact EMail:	Not reported
Site Contact City,St,Zip:	UNKNOWN
2nd Contact:	Not reported
2nd Contact EMail:	Not reported
2nd Contact Address:	Not reported
2nd Contact City,St,Zip:	UNKNOWN
2nd Contact Address 2:	Not reported
2nd Contact City 2:	Not reported
2nd Contact Phone Number:	Not reported
2nd Contact Fax Number:	Not reported
2nd Contact Type:	Not reported
Facility City Num:	57
Site Contact:	Not reported
Site Contact Address:	Not reported
Site Contact Add 2:	Not reported
Site Contact City 2:	Not reported
Site Contact Phone:	Not reported
Site Contact Fax:	Not reported
Site Contact Type:	Not reported
Department Contact 1:	Not reported
Department Contact 2:	Not reported
Referral Source:	Not reported
Offsite Source:	False
Date Referred:	Not reported
Emergency:	False
Private Heating Fuel:	True
Commercial Heating Fuel:	False
Commercial HF < 2100 Gal.:	False
Commercial HF > 2100 Gal.:	False
Commercial HF - Size Unk:	False
No LUST Site:	False
Cost Recvry Prgm Candidate:	False
OCSRD Complete:	True
Follow Up Flag:	False
Alternate Water Supply:	False
Relocation:	False
Responsible Party:	False
Responsible EMail:	Not reported

CAPPARELLA (Continued) **S105458483**

Resp Party Name:	Not reported
Resp Party Address:	Not reported
Resp Party City,St,Zip:	Not reported
Resp Party Town Number:	UNKNOWN
Resp Party Phone:	Not reported
Resp Party Fax:	Not reported
Resp Party Name 2:	Not reported
Resp Party Address 2:	Not reported
Resp Party Phone 2:	Not reported
Investigator Id:	35
Follow Update:	Not reported
Area Lextent:	Not reported
Annual Precipitation:	Not reported
Affected Population:	Not reported
Population Setting:	Not reported
Ground Water Direction:	Not reported
Ground Water Gradient:	Not reported
Hydro Basin:	Not reported
Drastic:	Not reported
Geo Setting:	Not reported
Ground Water Classification:	Not reported
Receptor:	Not reported
Ground Water Flow Direction:	Not reported
Ground Water Depth:	Not reported
Areas Of Concern:	Not reported
Free Product Inches:	Not reported
Fund Date:	Not reported
Fund Planned:	No
Fund Obligated:	No
Fund Outlayed:	No
Fund Judgment:	No
Fund Recovered:	No
Cellar Borings:	False
Install Micro Wells:	False
Ground Water Sample:	False
Soil Sample:	False
Soil Gas:	False
Site Inspect:	False
Soil Excavate:	False
Geo Probe:	False
Survey:	False
Potable Well Sample:	False
Sample MWS:	False
Ground Water Gauging:	False
Soil Venting:	False
Active:	False
NOV Action:	None
NOV Issued:	Not reported
NOV Due:	Not reported
NOV Received:	Not reported
NOV Closed:	Not reported
NOV Disc Date:	Not reported
NOV Issued Date:	Not reported
NOV Compliance Sched:	Not reported
NOV Admin Order:	Not reported
NOV Referred To Ag:	Not reported
Stop All NOV Actions:	False

CAPPARELLA (Continued) **S105458483**

Release Invest Rpt:	False
DEP App Letter 1:	False
Correct Action Plan:	False
DEP App Letter 2:	False
Rem Sys Install:	False
Rem Sys Install Date:	Not reported
Closure Date:	Not reported
Rem Sys Monitoring Rpt:	False
Qrtly Gwater Mon Rpts:	False
Closure Req Rpt:	False
DEP Closure Letter:	False
Referred To:	Not reported
No Wells:	Not reported
Lph Wells:	Not reported
User Stamp:	Not reported
Date Stamp:	Not reported
Correspondence:	Not reported
Environmental Impact:	Not reported
FollowUp:	Not reported
GW Comments:	Not reported
Location Desc:	Not reported
NOV Comments:	Not reported
Release Desc:	Not reported
Running Comments:	#2 fuel oil, , 550 LUST removed, soil excavated, samples taken
Work Performed:	Not reported

CPCS:

Name:	CAPPARELLA
Address:	1 CHRISTIANO STEET
City,State,Zip:	COS COB, CT 06807
Site Type:	LUST
Lust Status code:	4
Lust Status:	Lust Completed (DEP's significant hazard definition)
PTP Form:	Not reported
Program:	Not reported
Comments:	#2 Fuel Oil, , 550 Lust Removed, Soil Excavated, Samples Taken
Site Type Definition:	Leaking Underground Storage Tanks Completed

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C27 **GREENWICH COUNTRY DAY SCHOOL** **CPCS** **S101405617**
West **OLD CHURCH RD.** **N/A**
1/4-1/2 **GREENWICH, CT 06830**
0.458 mi.
2417 ft. **Site 2 of 2 in cluster C**

Relative:
Higher

Actual:
170 ft.

CPCS:

Name:	GREENWICH COUNTRY DAY SCHOOL
Address:	OLD CHURCH RD.
City,State,Zip:	GREENWICH, CT 06830
Site Type:	LUST
Lust Status code:	4
Lust Status:	Lust Completed (DEP's significant hazard definition)
PTP Form:	Not reported
Program:	Not reported
Comments:	Not reported
Site Type Definition:	Leaking Underground Storage Tanks Completed

D28 **WINIFRED CLARK** **LUST** **S127580229**
South **5 STANWICH LANE** **N/A**
1/4-1/2 **GREENWICH, CT 06830**
0.478 mi.
2523 ft. **Site 1 of 3 in cluster D**

Relative: LUST:
Higher

Actual:
55 ft.

Name:	WINIFRED CLARK
Name 2:	Not reported
Address:	5 STANWICH LANE
Address 2:	Not reported
City,State,Zip:	GREENWICH, CT 06830
LUST Case Id:	34681
Release Date:	Not reported
Site Case ID:	9805888
Substance:	Not reported
Release Source:	Not reported
Release Cause:	Not reported
Release Identified:	Not reported
Case Number:	Not reported
Release Quantity:	Not reported
Facility City Number:	57

D29 **WINFRIED CLARK** **LUST** **S127580224**
South **5 STANWICH LANE** **N/A**
1/4-1/2 **GREENWICH, CT 06830**
0.478 mi.
2523 ft. **Site 2 of 3 in cluster D**

Relative: LUST:
Higher

Actual:
55 ft.

Name:	WINFRIED CLARK
Name 2:	Not reported
Address:	5 STANWICH LANE
Address 2:	Not reported
City,State,Zip:	GREENWICH, CT 06830
LUST Case Id:	34564
Release Date:	Not reported
Site Case ID:	9805327
Substance:	Not reported
Release Source:	Not reported
Release Cause:	Not reported
Release Identified:	Not reported
Case Number:	Not reported
Release Quantity:	Not reported
Facility City Number:	57

D30 **WINFRIED CLARK** **SPILLS** **S105441305**
South **5 STANWICH LANE** **CPCS** **N/A**
1/4-1/2 **GREENWICH, CT 06830**
0.478 mi.
2523 ft. **Site 3 of 3 in cluster D**

Relative: SPILLS:
Higher

Actual:
55 ft.

Name:	Not reported
Address:	5 STANWICH LANE
City,State,Zip:	GREENWICH, CT
Year of Database:	1998
Case Number:	9805327

WINFRIED CLARK (Continued) **S105441305**

Who Took Spill: 923
Assigned To: No Response
Report Date: 08/11/1998
Report Time: 00:00 AM
Date Release: 08/11/1998
Time Responded: 00:00 AM
Corrective Action Taken: Removed Tank, and Soil Removed
Cause Info: Inground Tank Failure
Media Info: Ground Water
Release Type: petroleum
Reported By: MIKE SABIA
Phone: 203 3781066
Representing: TECH REMEDIAL
Terminated: YES
Recovd (Total): 0
Total (Water): 0
Facility Status: Closed
Continuous Spill: False
Released Substance: #2 FUEL OIL
Qty: 0.00 (Gallons)
Emergency Measure: REMOVAL OF 550 GAL UST AND CONTAMINATED SOIL
Water Body: Groundwater
Discharger: WINFRIED CLARK
Telephone: 203 1111111
Responsible Party: true
RP Address 1: 5 STANWICH
RP City,St,Zip: GREENWICH, CT 06830
Historic: False
Waterbody: N/A
Time Stamp: 1998-08-12 08:25:17
Sr Inspector: McCann, Mike
At Inspctor: **NO RESPONSE
User Stamp: Not reported
Comments: Not reported
Action: Removed Tank
Other Action: Not reported
Action: Soil Removed
Other Action: Not reported
Agency ID: DEP Dispatch
Other Agency: Not reported
DEP Bureau: Not reported
DEP Agency: Not reported
Cause ID: Inground Tank Failure
Other Cause: Not reported
Media ID: Ground Water
Other Media: Not reported
Release Type: petroleum
Other Release: Not reported
Waterbody: Groundwater
Other Wtrbody: Not reported

Name: Not reported
Address: 5 STANWICH LANE
City,State,Zip: GREENWICH, CT
Year of Database: 1998
Case Number: 9805888
Who Took Spill: 914

WINFRIED CLARK (Continued) **S105441305**

Assigned To: No Response
Report Date: 09/01/1998
Report Time: 00:00 AM
Date Release: 09/01/1998
Time Responded: 00:00 AM
Corrective Action Taken: Removed Tank, and Soil Removed
Cause Info: Inground Tank Failure
Media Info: Other (SOIL)
Release Type: petroleum
Reported By: TINA OSTROWSKI
Phone: 203 3781066
Representing: TEC
Terminated: YES
Recovd (Total): 0
Total (Water): 0
Facility Status: Closed
Continuous Spill: False
Released Substance: #2 FUEL OIL
Qty: 0.00 (Gallons)
Emergency Measure: 275 : TANK & SOIL REMOVAL
Water Body: Not reported
Discharger: WINIFRED CLARK
Telephone: Not reported
Responsible Party: true
RP Address 1: SAA
RP City,St,Zip: CT
Historic: False
Waterbody: N/A
Time Stamp: 1998-09-03 10:15:36
Sr Inspector: Porter, John
At Inspctor: **NO RESPONSE
User Stamp: Not reported
Comments: Not reported
Action: Removed Tank
Other Action: Not reported
Action: Soil Removed
Other Action: Not reported
Cause ID: Inground Tank Failure
Other Cause: Not reported
Media ID: Other
Other Media: SOIL
Release Type: petroleum
Other Release: Not reported

CPCS:
Name: WINFRIED CLARK
Address: 5 STANWICH LANE
City,State,Zip: GREENWICH, CT 06830
Site Type: LUST
Lust Status code: 4
Lust Status: Lust Completed (DEP’s significant hazard definition)
PTP Form: Not reported
Program: Not reported
Comments: #2 Fuel Oil, , Removal Of 550 Gal Ust And Contaminated Soil
Site Type Definition: Leaking Underground Storage Tanks Completed

Name: WINIFRED CLARK

WINFRIED CLARK (Continued) **S105441305**

Address:	5 STANWICH LANE
City,State,Zip:	GREENWICH, CT 06830
Site Type:	LUST
Lust Status code:	4
Lust Status:	Lust Completed (DEP's significant hazard definition)
PTP Form:	Not reported
Program:	Not reported
Comments:	#2 Fuel Oil, , 275 : Tank & Soil Removal
Site Type Definition:	Leaking Underground Storage Tanks Completed

---

31
WNW
1/4-1/2
0.497 mi.
2626 ft.

ESTATE OF MRS EUGENA
331 NORTH STEELE RD
GREENWICH, CT 06830

LUST **S104238700**
SPILLS **N/A**
CPCS

Relative:
Higher

Actual:
199 ft.

LUST:

Name:	ESTATE OF MRS EUGENA
Name 2:	Not reported
Address:	331 NORTH STEELE RD
Address 2:	Not reported
City,State,Zip:	GREENWICH, CT 06830
LUST Case Id:	33953
Release Date:	Not reported
Site Case ID:	9802541
Substance:	Not reported
Release Source:	Not reported
Release Cause:	Not reported
Release Identified:	Not reported
Case Number:	Not reported
Release Quantity:	Not reported
Facility City Number:	57

Detail As of 06/2020:

Name:	ESTATE OF MRS EUGENA
Name 2:	Not reported
Address:	331 NORTH STEELE RD
City,State,Zip:	GREENWICH, CT 06830
Address 2:	Not reported
LUST Id:	5828
UST Facility Id:	Not reported
LUST Case Id:	33953
Lust Status:	Lust Completed
Processing Status:	Not reported
EPA Reportable:	False
Motor Fuel:	False
Diesel:	False
Gasoline:	False
Other:	False
Other Release:	Not reported
No Release:	False
Leak:	False
Tank:	False
Piping:	False
Overfill:	False
Removal:	False
Incident Date:	04/29/1998
Entry Date:	Not reported

ESTATE OF MRS EUGENA (Continued) **S104238700**

Site Case Id:	9802541
UST Site Id:	Not reported
Cost Recovery Spill Case #:	Not reported
Old SITS Number:	Not reported
Case Log Id:	Not reported
Monthly Report Id:	0
UST Owner Id:	Not reported
LUST Owner Id:	Not reported
UST Event Id:	5943
Contact Info:	Not reported
Contact EMail:	Not reported
Site Contact City,St,Zip:	UNKNOWN
2nd Contact:	Not reported
2nd Contact EMail:	Not reported
2nd Contact Address:	Not reported
2nd Contact City,St,Zip:	UNKNOWN
2nd Contact Address 2:	Not reported
2nd Contact City 2:	Not reported
2nd Contact Phone Number:	Not reported
2nd Contact Fax Number:	Not reported
2nd Contact Type:	Not reported
Facility City Num:	57
Site Contact:	Not reported
Site Contact Address:	Not reported
Site Contact Add 2:	Not reported
Site Contact City 2:	Not reported
Site Contact Phone:	Not reported
Site Contact Fax:	Not reported
Site Contact Type:	Not reported
Department Contact 1:	Not reported
Department Contact 2:	Not reported
Referral Source:	Not reported
Offsite Source:	False
Date Referred:	Not reported
Emergency:	False
Private Heating Fuel:	True
Commercial Heating Fuel:	False
Commercial HF < 2100 Gal.:	False
Commercial HF > 2100 Gal.:	False
Commercial HF - Size Unk:	False
No LUST Site:	False
Cost Recvry Prgm Candidate:	False
OCSRD Complete:	True
Follow Up Flag:	False
Alternate Water Supply:	False
Relocation:	False
Responsible Party:	False
Responsible EMail:	Not reported
Resp Party Name:	Not reported
Resp Party Address:	Not reported
Resp Party City,St,Zip:	Not reported
Resp Party Town Number:	UNKNOWN
Resp Party Phone:	Not reported
Resp Party Fax:	Not reported
Resp Party Name 2:	Not reported
Resp Party Address 2:	Not reported
Resp Party Phone 2:	Not reported

ESTATE OF MRS EUGENA (Continued) **S104238700**

Investigator Id:	35
Follow Update:	Not reported
Area Lextent:	Not reported
Annual Precipitation:	Not reported
Affected Population:	Not reported
Population Setting:	Not reported
Ground Water Direction:	Not reported
Ground Water Gradient:	Not reported
Hydro Basin:	Not reported
Drastic:	Not reported
Geo Setting:	Not reported
Ground Water Classification:	Not reported
Receptor:	Not reported
Ground Water Flow Direction:	Not reported
Ground Water Depth:	Not reported
Areas Of Concern:	Not reported
Free Product Inches:	Not reported
Fund Date:	Not reported
Fund Planned:	No
Fund Obligated:	No
Fund Outlayed:	No
Fund Judgment:	No
Fund Recovered:	No
Cellar Borings:	False
Install Micro Wells:	False
Ground Water Sample:	False
Soil Sample:	False
Soil Gas:	False
Site Inspect:	False
Soil Excavate:	False
Geo Probe:	False
Survey:	False
Potable Well Sample:	False
Sample MWS:	False
Ground Water Gauging:	False
Soil Venting:	False
Active:	False
NOV Action:	None
NOV Issued:	Not reported
NOV Due:	Not reported
NOV Received:	Not reported
NOV Closed:	Not reported
NOV Disc Date:	Not reported
NOV Issued Date:	Not reported
NOV Compliance Sched:	Not reported
NOV Admin Order:	Not reported
NOV Referred To Ag:	Not reported
Stop All NOV Actions:	False
Release Invest Rpt:	False
DEP App Letter 1:	False
Correct Action Plan:	False
DEP App Letter 2:	False
Rem Sys Install:	False
Rem Sys Install Date:	Not reported
Closure Date:	Not reported
Rem Sys Monitoring Rpt:	False
Qrtly Gwater Mon Rpts:	False

ESTATE OF MRS EUGENA (Continued) **S104238700**

Closure Req Rpt:	False
DEP Closure Letter:	False
Referred To:	Not reported
No Wells:	Not reported
Lph Wells:	Not reported
User Stamp:	Not reported
Date Stamp:	Not reported
Correspondence:	Not reported
Environmental Impact:	Not reported
FollowUp:	Not reported
GW Comments:	Not reported
Location Desc:	Not reported
NOV Comments:	Not reported
Release Desc:	Not reported
Running Comments:	#2 FUEL OIL, , REMOVAL OF 550 GAL UST AND CONTAMINATED SOIL
Work Performed:	Not reported

SPILLS:

Name:	Not reported
Address:	331 NORTH STEELE RD
City,State,Zip:	GREENWICH, CT
Year of Database:	1998
Case Number:	9802541
Who Took Spill:	923
Assigned To:	No Response
Report Date:	Not reported
Report Time:	Not reported
Date Release:	Not reported
Time Responded:	Not reported
Corrective Action Taken:	Not reported
Cause Info:	Not reported
Media Info:	Not reported
Release Type:	Not reported
Reported By:	SCOTT BRICKEY
Phone:	203 6516545
Representing:	UNDERGROUND SYSTEMS
Terminated:	YES
Recovd (Total):	550
Total (Water):	0
Facility Status:	Closed
Continuous Spill:	False
Released Substance:	#2 FUEL OIL
Qty:	550.00 (Gallons)
Emergency Measure:	REMOVAL OF 550 GAL UST AND CONTAMINATED SOIL
Water Body:	Groundwater
Discharger:	ESTATE OF MRS EUGENA
Telephone:	860 1111111
Responsible Party:	true
RP Address 1:	331 NORTH STEELE RD
RP City,St,Zip:	GREENWICH, CT 06830
Historic:	False
Waterbody:	N/A
Time Stamp:	1998-04-30 08:08:23
Sr Inspector:	McCann, Mike
At Inspctor:	**NO RESPONSE
User Stamp:	Not reported

ESTATE OF MRS EUGENA (Continued) **S104238700**

Comments: Not reported
Action: Removed Tank
Other Action: Not reported
Action: Soil Removed
Other Action: Not reported
Agency ID: DEP Dispatch
Other Agency: Not reported
DEP Bureau: Not reported
DEP Agency: Not reported
Cause ID: Inground Tank Failure
Other Cause: Not reported
Media ID: Ground Water
Other Media: Not reported
Release Type: petroleum
Other Release: Not reported
Waterbody: Groundwater
Other Wtrbody: Not reported

Name: Not reported
Address: 331 NORTH STEELE RD
City,State,Zip: GREENWICH, CT
Year of Database: 1998
Case Number: 9802541
Who Took Spill: 923
Assigned To: No Response
Report Date: Not reported
Report Time: Not reported
Date Release: Not reported
Time Responded: Not reported
Corrective Action Taken: Removed Tank, and Soil Removed
Cause Info: Inground Tank Failure
Media Info: Ground Water
Release Type: petroleum
Reported By: SCOTT BRICKEY
Phone: 203 6516545
Representing: UNDERGROUND SYSTEMS
Terminated: YES
Recovd (Total): 550
Total (Water): 0
Facility Status: Closed
Continuous Spill: False
Released Substance: #2 FUEL OIL
Qty: 550.00 (Gallons)
Emergency Measure: REMOVAL OF 550 GAL UST AND CONTAMINATED SOIL
Water Body: Groundwater
Discharger: ESTATE OF MRS EUGENA
Telephone: 860 1111111
Responsible Party: true
RP Address 1: 331 NORTH STEELE RD
RP City,St,Zip: GREENWICH, CT 06830
Historic: False
Waterbody: N/A
Time Stamp: 1998-04-30 08:08:23
Sr Inspector: McCann, Mike
At Inspctor: **NO RESPONSE
User Stamp: Not reported
Comments: Not reported

ESTATE OF MRS EUGENA (Continued) **S104238700**

Action: Removed Tank
Other Action: Not reported
Action: Soil Removed
Other Action: Not reported
Agency ID: DEP Dispatch
Other Agency: Not reported
DEP Bureau: Not reported
DEP Agency: Not reported
Cause ID: Inground Tank Failure
Other Cause: Not reported
Media ID: Ground Water
Other Media: Not reported
Release Type: petroleum
Other Release: Not reported
Waterbody: Groundwater
Other Wtrbody: Not reported

Name: Not reported
Address: 331 NORTH STEELE RD
City,State,Zip: GREENWICH, CT
Year of Database: 1998
Case Number: 9802541
Who Took Spill: 923
Assigned To: No Response
Report Date: Not reported
Report Time: Not reported
Date Release: Not reported
Time Responded: Not reported
Corrective Action Taken: Not reported
Cause Info: Not reported
Media Info: Not reported
Release Type: Not reported
Reported By: SCOTT BRICKEY
Phone: 203 6516545
Representing: UNDERGROUND SYSTEMS
Terminated: YES
Recovd (Total): 550
Total (Water): 0
Facility Status: Closed
Continuous Spill: False
Released Substance: #2 FUEL OIL
Qty: 550.00 (Gallons)
Emergency Measure: REMOVAL OF 550 GAL UST AND CONTAMINATED SOIL
Water Body: Groundwater
Discharger: ESTATE OF MRS EUGENA
Telephone: 860 1111111
Responsible Party: true
RP Address 1: 331 NORTH STEELE RD
RP City,St,Zip: GREENWICH, CT 06830
Historic: False
Waterbody: N/A
Time Stamp: 1998-04-30 08:08:23
Sr Inspector: McCann, Mike
At Inspctor: **NO RESPONSE
User Stamp: Not reported
Comments: Not reported
Action: Removed Tank

ESTATE OF MRS EUGENA (Continued) **S104238700**

Other Action:	Not reported
Action:	Soil Removed
Other Action:	Not reported
Agency ID:	DEP Dispatch
Other Agency:	Not reported
DEP Bureau:	Not reported
DEP Agency:	Not reported
Cause ID:	Inground Tank Failure
Other Cause:	Not reported
Media ID:	Ground Water
Other Media:	Not reported
Release Type:	petroleum
Other Release:	Not reported
Waterbody:	Groundwater
Other Wtrbody:	Not reported

CPCS:

Name:	ESTATE OF MRS EUGENA
Address:	331 NORTH STEELE RD
City,State,Zip:	GREENWICH, CT 06830
Site Type:	LUST
Lust Status code:	4
Lust Status:	Lust Completed (DEP's significant hazard definition)
PTP Form:	Not reported
Program:	Not reported
Comments:	#2 Fuel Oil, , Removal Of 550 Gal Ust And Contaminated Soil
Site Type Definition:	Leaking Underground Storage Tanks Completed

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32 **MINUTE MAN CLEANERS** **SHWS** **S100997063**
SE **407 POST ROAD** **SDADB** **N/A**
1/2-1 **GREENWICH, CT 06807** **CPCS**
0.693 mi.
3661 ft.

Relative:
Lower

Actual:
12 ft.

SHWS:

State ID:	1284
PTP Id Number:	Not reported
WPC Number:	Not reported
EPA ID:	CTD075396283
PO Office:	Not reported
Lat/Long:	/
Location Method:	Not reported
Groundwater Class:	GB
Surface Water Qualification:	B
Waste Category:	CHLR VOC
Disposal Method:	SPILL/DUMP, DRYWELL
Sample:	False
Other Dept of Env. Protection:	WEED
Updated By:	MCDANIEL, M.
Update Program:	D&A
Date Updated:	4/2/1992
Duplicate:	False
Program:	D&A
Inventory Date:	12/22/1992
On Inventory:	True
Assessed:	True
87 Group:	Not reported

MINUTE MAN CLEANERS (Continued) **S100997063**

87 Origin: Not reported
On 87: False
Comments: AKA: MINUTE MEN, INC ORDERS: HM-473 12-14-87 TO MINUTE MAN CLEANERS FOR PCE. HM-472 TO CHIMBLE BROTHERS AS PROPERTY OWNERS.

Site Discovery and Assessment:
Facility ID: 1284
Rem Master ID: 1030
PTP Id: Not reported
WPC Number: Not reported
Postal District: Not reported
Latitude: Not reported
Longitude: Not reported
Lat/Long Determined By: Not reported
Ground Water Quality Classification: GB
Surface Water Quality Classification: B
Waste Type: CHLR VOC
Disposal: SPILL/DUMP, DRYWELL
Sample Data Available: False
Updated By: MCDANIEL, M.
Update Program: D&A
Updated: 4/2/1992
Date Created: Not reported
Duplicate: False

SDA Federal:
EPA CERCLIS Id: Not reported
Number EPA RCRIS Id: Not reported
Site on EPA's CERCLIS: Not reported
Site Archived from CERCLIS: Not reported
Archive Date: Not reported
EPA's Removal at Site: Not reported
Deferred to another EPA Program: Not reported
EPA Env Priority Initiative Site: Not reported
Federal Facility: Not reported
Site on EPA's National Priority List: Not reported
Part of an NPL site: Not reported
RCRA Generator Status: Not reported
RCRA Permit Status: Not reported

SDA Referral:
Referral Id: 1214
Source of referral: RCRA
Date Received: 3/26/1992
Staff Assigned: MCDANIEL, M.
Remediation Program: D&A
Date dt_assigned: 12/10/1992
Remediation Complete Approved DEP/Verified by LEP: 12/22/1992
Outcome: INVENTORY

SDA Remedial:
Remedial Id: Not reported
PTP Id: Not reported
Remediation Program: Not reported
Remediation Program Entered: Not reported
Staff Assigned: Not reported
Remediation Program: Not reported
Date dt_assign: Not reported

MINUTE MAN CLEANERS (Continued) **S100997063**

Project Phase:	Not reported
Order issued:	Not reported
Order Number:	Not reported
Date order issued:	Not reported
Remedial Investigation Start:	Not reported
Remedial Investigation Completed:	Not reported
Remedial Design Start:	Not reported
Remedial Design complet:	Not reported
Remedial Action Start:	Not reported
Remedial Action Completed:	Not reported
Date Oper/ maintenance Started:	Not reported
GW monitoring:	Not reported
Remediation complete Approved DEP/Verified by LEP:	Not reported

SDA Orders:

Order Id:	Not reported
Order Number:	Not reported
Date order issued:	Not reported
Staff Assigned:	Not reported
Type of Order:	Not reported
Order Respondent:	Not reported
Admin Appeal Date:	Not reported
Date of Admin Appeal Ruling:	Not reported
Date of Admin Appeal Ruling:	Not reported
Date of Final Order:	Not reported
Date of Court Appeal:	Not reported
Date of Court Ruling:	Not reported
Date of Court Ruling:	Not reported
Date Order Modified:	Not reported
Date Referred to AG:	Not reported
Judgement:	Not reported
Date of AGR judgement:	Not reported
Penalty assessed:	Not reported
Order Complete:	Not reported
In compliance:	Not reported
Comments:	Not reported

SDADB:

SDA Waste:

Waste Id:	5
Waste Type:	CHLR VOC
Description:	Chlorinated Volatile Organic Compounds

CPCS:

Name:	MINUTE MAN CLEANERS
Address:	407 POST ROAD
City,State,Zip:	GREENWICH, CT 06830
Site Type:	Sites
Lust Status code:	Not reported
Lust Status:	Not reported
PTP Form:	Not reported
Program:	-1
Comments:	Aka: Minute Men, Inc Orders: Hm-473 12-14-87 To Minute Man Cleaners For Pce. Hm-472 To Chimble Brothers As Property Owners.
Site Type Definition:	Inventory of Hazardous Waste Disposal Sites

Count: 6 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
COS COB	S105458366	WILLIAM BEIHL	COS COB - 18 NOROTON ROAD	06807	LUST, CPCS
GREENWICH	S129078678	CENTRAL JUNIOR HIGH SCHOOL	STANWICH RD		AIRS
GREENWICH	S129083414	CENTRAL JUNIOR HIGH SCHOOL	STANWICH RD		AIRS
GREENWICH	S129078677	CENTRAL JUNIOR HIGH SCHOOL	STANWICH RD		AIRS
GREENWICH	1017438303	CENTRAL JUNIOR HIGH SCHOOL	STANWICH RD	06830	ECHO
GREENWICH	1016218969	CENTRAL JUNIOR HIGH SCHOOL	STANWICH RD	06830	FINDS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 01/25/2023
Date Data Arrived at EDR: 02/03/2023
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 25

Source: EPA
Telephone: N/A
Last EDR Contact: 03/01/2023
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 01/25/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 03/01/2023
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 01/25/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 03/01/2023
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 12/20/2022
Date Data Arrived at EDR: 12/21/2022
Date Made Active in Reports: 03/10/2023
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 12/21/2022
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 01/25/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 26

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/01/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 01/25/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 26

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/01/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (888) 372-7341
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

Lists of Federal RCRA generators

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (888) 372-7341
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (888) 372-7341
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (888) 372-7341
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 11/02/2022
Date Data Arrived at EDR: 11/08/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 63

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/03/2023
Next Scheduled EDR Contact: 05/22/2023
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 10/27/2022
Date Data Arrived at EDR: 11/16/2022
Date Made Active in Reports: 02/09/2023
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/21/2023
Next Scheduled EDR Contact: 06/05/2023
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 10/27/2022
Date Data Arrived at EDR: 11/16/2022
Date Made Active in Reports: 02/09/2023
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/21/2023
Next Scheduled EDR Contact: 06/05/2023
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/12/2022
Date Data Arrived at EDR: 12/14/2022
Date Made Active in Reports: 12/19/2022
Number of Days to Update: 5

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/21/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

SHWS: Inventory of Hazardous Disposal Sites

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 04/23/2010
Date Data Arrived at EDR: 04/23/2010
Date Made Active in Reports: 05/25/2010
Number of Days to Update: 32

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3705
Last EDR Contact: 03/22/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: No Update Planned

SDADB: Site Discovery and Assessment Database

All sites reported to Permitting, Enforcement, and Remediation Division where it is suspected that hazardous waste may have been disposed or sites that are eligible for listing on the State Inventory of Hazardous Waste Disposal Sites.

Date of Government Version: 04/23/2010
Date Data Arrived at EDR: 04/23/2010
Date Made Active in Reports: 05/25/2010
Number of Days to Update: 32

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3705
Last EDR Contact: 03/22/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: No Update Planned

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF: List of Landfills/Transfer Stations

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 09/01/2022
Date Data Arrived at EDR: 10/20/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 82

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3366
Last EDR Contact: 01/20/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Annually

Lists of state and tribal leaking storage tanks

LUST: Leaking Underground Storage Tank List

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 12/06/2022
Date Data Arrived at EDR: 12/21/2022
Date Made Active in Reports: 03/17/2023
Number of Days to Update: 86

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3376
Last EDR Contact: 12/21/2022
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: Semi-Annually

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/20/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/19/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 11/26/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 10/14/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 02/01/2022
Number of Days to Update: 88
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

UST: Underground Storage Tank Data
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 10/25/2022
Date Data Arrived at EDR: 11/16/2022
Date Made Active in Reports: 02/06/2023
Number of Days to Update: 82
Source: Department of Energy & Environmental Protection
Telephone: 860-424-3376
Last EDR Contact: 02/21/2023
Next Scheduled EDR Contact: 06/05/2023
Data Release Frequency: Semi-Annually

AST: Marine Terminals and Tank Information
A listing of bulk petroleum facilities that receive petroleum by a vessel.

Date of Government Version: 07/11/2022
Date Data Arrived at EDR: 08/01/2022
Date Made Active in Reports: 10/18/2022
Number of Days to Update: 78
Source: Department of Energy & Environmental Protection
Telephone: 860-424-3233
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87
Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/19/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/20/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Controls Listing

An Engineered Control is a permanent physical structure designed to safely isolate pollutants which would otherwise not comply with the self-implementing remedial options allowed in the Connecticut Remediation Standard Regulations (RSRs). The ECGD includes a description of what is eligible to be considered as an Engineered Control under section 22a-133k-2(f)(2) of the RSRs, a description of the information necessary for the preparation of complete and approvable applications, a step-by-step outline of the review and approval process, and supplemental resources provided in the appendices.

Date of Government Version: 02/09/2023
Date Data Arrived at EDR: 02/09/2023
Date Made Active in Reports: 03/17/2023
Number of Days to Update: 36

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3000
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Varies

AUL: ELUR Sites

Environmental Land Use Restriction sites.

Date of Government Version: 02/09/2023
Date Data Arrived at EDR: 02/09/2023
Date Made Active in Reports: 03/17/2023
Number of Days to Update: 36

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3912
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Varies

Lists of state and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 03/17/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Varies

VCP: Voluntary Remediation Sites

Sites involved in the Voluntary Remediation Program.

Date of Government Version: 02/09/2023
Date Data Arrived at EDR: 02/09/2023
Date Made Active in Reports: 03/17/2023
Number of Days to Update: 36

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3705
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

Lists of state and tribal brownfield sites

BROWNFIELDS 2: Brownfields Inventory

A brownfield site is generally defined as "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminanta?|"

Date of Government Version: 06/22/2022
Date Data Arrived at EDR: 09/09/2022
Date Made Active in Reports: 11/30/2022
Number of Days to Update: 82

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3705
Last EDR Contact: 03/16/2023
Next Scheduled EDR Contact: 06/26/2023
Data Release Frequency: Varies

BROWNFIELDS: Brownfields Inventory

CBRA has identified over 200 brownfield sites eligible for redevelopment. In most cases these are prime properties for commercial or industrial use. CBRA's grants, assistance and financing lower the financial risks and eliminate the legal, regulatory and environmental risks of redevelopment.

Date of Government Version: 02/24/2022
Date Data Arrived at EDR: 03/15/2022
Date Made Active in Reports: 06/09/2022
Number of Days to Update: 86

Source: Connecticut Brownfields Redevelopment Authority
Telephone: 860-258-7833
Last EDR Contact: 03/14/2023
Next Scheduled EDR Contact: 06/26/2023
Data Release Frequency: No Update Planned

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 02/23/2022
Date Data Arrived at EDR: 03/10/2022
Date Made Active in Reports: 03/10/2022
Number of Days to Update: 0

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/14/2023
Next Scheduled EDR Contact: 06/26/2023
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY: Recycling Facilities

A listing of recycling facilities.

Date of Government Version: 06/06/2022
Date Data Arrived at EDR: 06/09/2022
Date Made Active in Reports: 06/15/2022
Number of Days to Update: 6

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3223
Last EDR Contact: 03/02/2023
Next Scheduled EDR Contact: 06/19/2023
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/20/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/13/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 01/06/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 8

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/02/2023
Next Scheduled EDR Contact: 06/05/2023
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Lab Listing

A listing of clandestine drug lab locations included in the Spills database.

Date of Government Version: 11/30/2022
Date Data Arrived at EDR: 12/21/2022
Date Made Active in Reports: 03/17/2023
Number of Days to Update: 86

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3361
Last EDR Contact: 12/21/2022
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 01/06/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 8

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/02/2023
Next Scheduled EDR Contact: 06/05/2023
Data Release Frequency: Quarterly

Local Land Records

CT PROPERTY: Property Transfer Filings

A listing of sites that meet the definition of a hazardous waste establishment. They can be generators, dry cleaners, furniture strippers, etc. These sites have been sold to another owner.

Date of Government Version: 02/09/2023
Date Data Arrived at EDR: 02/09/2023
Date Made Active in Reports: 03/17/2023
Number of Days to Update: 36

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3705
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Semi-Annually

LIENS: Environmental Liens Listing

A listing of environmental liens placed by the Cost Recovery Program.

Date of Government Version: 02/11/2019
Date Data Arrived at EDR: 02/19/2019
Date Made Active in Reports: 03/04/2019
Number of Days to Update: 13

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3120
Last EDR Contact: 02/03/2023
Next Scheduled EDR Contact: 05/22/2023
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 01/25/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 26

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 03/01/2023
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/13/2022
Date Data Arrived at EDR: 12/14/2022
Date Made Active in Reports: 03/10/2023
Number of Days to Update: 86

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/21/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

SPILLS: Oil & Chemical Spill Database

Oil and Chemical Spill Data.

Date of Government Version: 11/30/2022
Date Data Arrived at EDR: 12/21/2022
Date Made Active in Reports: 03/17/2023
Number of Days to Update: 86

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3024
Last EDR Contact: 12/21/2022
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: Semi-Annually

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 10/15/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/11/2013
Number of Days to Update: 39

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (888) 372-7341
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 11/01/2022
Date Data Arrived at EDR: 11/10/2022
Date Made Active in Reports: 02/09/2023
Number of Days to Update: 91

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 02/14/2023
Next Scheduled EDR Contact: 05/29/2023
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 06/07/2021
Date Data Arrived at EDR: 07/13/2021
Date Made Active in Reports: 03/09/2022
Number of Days to Update: 239

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/13/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/03/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 02/03/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/02/2023
Next Scheduled EDR Contact: 05/22/2023
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 12/13/2022
Date Data Arrived at EDR: 12/14/2022
Date Made Active in Reports: 03/10/2023
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 03/21/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 01/30/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/03/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 06/14/2022
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 283

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/13/2023
Next Scheduled EDR Contact: 06/26/2023
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 11/01/2022
Date Made Active in Reports: 02/09/2023
Number of Days to Update: 100

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/16/2023
Next Scheduled EDR Contact: 05/29/2023
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 10/17/2022
Date Data Arrived at EDR: 10/18/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 84

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/18/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 01/25/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 26

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/01/2023
Next Scheduled EDR Contact: 06/12/2023
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/27/2022
Date Data Arrived at EDR: 05/04/2022
Date Made Active in Reports: 05/10/2022
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/27/2022
Date Data Arrived at EDR: 11/01/2022
Date Made Active in Reports: 11/15/2022
Number of Days to Update: 14

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 03/01/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 01/20/2022
Date Data Arrived at EDR: 01/20/2022
Date Made Active in Reports: 03/25/2022
Number of Days to Update: 64

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/04/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/26/2022
Date Data Arrived at EDR: 11/22/2022
Date Made Active in Reports: 12/05/2022
Number of Days to Update: 13

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/22/2022
Number of Days to Update: 84

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 03/03/2023
Next Scheduled EDR Contact: 06/12/2023
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 02/27/2023
Next Scheduled EDR Contact: 06/12/2023
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 02/03/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 03/23/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/24/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/30/2022
Date Data Arrived at EDR: 10/21/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 81

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/03/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/06/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/26/2021
Date Data Arrived at EDR: 07/27/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 87

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/30/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/13/2023
Next Scheduled EDR Contact: 05/29/2023
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 01/25/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 26
Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 03/01/2023
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36
Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100
Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100
Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/07/2022
Date Data Arrived at EDR: 11/17/2022
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 85
Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/22/2023
Next Scheduled EDR Contact: 06/05/2023
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data
Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 02/27/2023
Date Data Arrived at EDR: 03/01/2023
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 23
Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 02/23/2023
Next Scheduled EDR Contact: 06/12/2023
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 05/06/2020
Date Data Arrived at EDR: 05/27/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 78

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 02/24/2023
Next Scheduled EDR Contact: 06/05/2023
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 02/24/2023
Next Scheduled EDR Contact: 06/05/2023
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 12/20/2022
Date Data Arrived at EDR: 12/20/2022
Date Made Active in Reports: 03/10/2023
Number of Days to Update: 80

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 03/16/2023
Next Scheduled EDR Contact: 06/19/2023
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/02/2023
Date Data Arrived at EDR: 02/28/2023
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 24

Source: EPA
Telephone: (617) 918-1111
Last EDR Contact: 02/28/2023
Next Scheduled EDR Contact: 06/12/2023
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 11/09/2021
Date Data Arrived at EDR: 10/20/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 82

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 01/09/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/25/2022
Date Data Arrived at EDR: 09/30/2022
Date Made Active in Reports: 12/22/2022
Number of Days to Update: 83
Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 01/04/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82
Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 02/24/2023
Next Scheduled EDR Contact: 06/05/2023
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/10/2022
Date Data Arrived at EDR: 11/10/2022
Date Made Active in Reports: 02/09/2023
Number of Days to Update: 91
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/14/2023
Next Scheduled EDR Contact: 05/29/2023
Data Release Frequency: Quarterly

PFAS NPL: Superfund Sites with PFAS Detections Information
EPA's Office of Land and Emergency Management and EPA Regional Offices maintain data describing what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment.

Date of Government Version: 02/23/2022
Date Data Arrived at EDR: 07/08/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 123
Source: Environmental Protection Agency
Telephone: 703-603-8895
Last EDR Contact: 01/10/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS FEDERAL SITES: Federal Sites PFAS Information
Several federal entities, such as the federal Superfund program, Department of Defense, National Aeronautics and Space Administration, Department of Transportation, and Department of Energy provided information for sites with known or suspected detections at federal facilities.

Date of Government Version: 02/23/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222
Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS TSCA: PFAS Manufacture and Imports Information
EPA issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. EPA publishes non-confidential business information (non-CBI) and includes descriptive information about each site, corporate parent, production volume, other manufacturing information, and processing and use information.

Date of Government Version: 01/03/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222
Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS RCRA MANIFEST: PFAS Transfers Identified In the RCRA Database Listing

To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: PFAS, PFOA, PFOS, PERFL, AFFF, GENX, GEN-X (plus the VT waste codes). These keywords were searched for in the following text fields: Manifest handling instructions (MANIFEST_HANDLING_INSTR), Non-hazardous waste description (NON_HAZ_WASTE_DESCRIPTION), DOT printed information (DOT_PRINTED_INFORMATION), Waste line handling instructions (WASTE_LINE_HANDLING_INSTR), Waste residue comments (WASTE_RESIDUE_COMMENTS).

Date of Government Version: 01/03/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS ATSDR: PFAS Contamination Site Location Listing

PFAS contamination site locations from the Department of Health & Human Services, Center for Disease Control & Prevention. ATSDR is involved at a number of PFAS-related sites, either directly or through assisting state and federal partners. As of now, most sites are related to drinking water contamination connected with PFAS production facilities or fire training areas where aqueous film-forming firefighting foam (AFFF) was regularly used.

Date of Government Version: 06/24/2020
Date Data Arrived at EDR: 03/17/2021
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 601

Source: Department of Health & Human Services
Telephone: 202-741-5770
Last EDR Contact: 01/23/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Varies

PFAS WQP: Ambient Environmental Sampling for PFAS

The Water Quality Portal (WQP) is a part of a modernized repository storing ambient sampling data for all environmental media and tissue samples. A wide range of federal, state, tribal and local governments, academic and non-governmental organizations and individuals submit project details and sampling results to this public repository. The information is commonly used for research and assessments of environmental quality.

Date of Government Version: 01/03/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS NPDES: Clean Water Act Discharge Monitoring Information

Any discharger of pollutants to waters of the United States from a point source must have a National Pollutant Discharge Elimination System (NPDES) permit. The process for obtaining limits involves the regulated entity (permittee) disclosing releases in a NPDES permit application and the permitting authority (typically the state but sometimes EPA) deciding whether to require monitoring or monitoring with limits.

Date of Government Version: 01/03/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS ECHO: Facilities in Industries that May Be Handling PFAS Listing

Regulators and the public have expressed interest in knowing which regulated entities may be using PFAS. EPA has developed a dataset from various sources that show which industries may be handling PFAS. Approximately 120,000 facilities subject to federal environmental programs have operated or currently operate in industry sectors with processes that may involve handling and/or release of PFAS.

Date of Government Version: 01/03/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS ECHO FIRE TRAINING: Facilities in Industries that May Be Handling PFAS Listing

A list of fire training sites was added to the Industry Sectors dataset using a keyword search on the permitted facilitys name to identify sites where fire-fighting foam may have been used in training exercises. Additionally, you may view an example spreadsheet of the subset of fire training facility data, as well as the keywords used in selecting or deselecting a facility for the subset. as well as the keywords used in selecting or deselecting a facility for the subset. These keywords were tested to maximize accuracy in selecting facilities that may use fire-fighting foam in training exercises, however, due to the lack of a required reporting field in the data systems for designating fire training sites, this methodology may not identify all fire training sites or may potentially misidentify them.

Date of Government Version: 08/22/2018
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS PART 139 AIRPORT: All Certified Part 139 Airports PFAS Information Listing

Since July 1, 2006, all certified part 139 airports are required to have fire-fighting foam onsite that meet military specifications (MIL-F-24385) (14 CFR 139.317). To date, these military specification fire-fighting foams are fluorinated and have been historically used for training and extinguishing. The 2018 FAA Reauthorization Act has a provision stating that no later than October 2021, FAA shall not require the use of fluorinated AFFF. This provision does not prohibit the use of fluorinated AFFF at Part 139 civilian airports; it only prohibits FAA from mandating its use. The Federal Aviation Administration?s document AC 150/5210-6D - Aircraft Fire Extinguishing Agents provides guidance on Aircraft Fire Extinguishing Agents, which includes Aqueous Film Forming Foam (AFFF).

Date of Government Version: 08/22/2018
Date Data Arrived at EDR: 10/26/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

AQUEOUS FOAM NRC: Aqueous Foam Related Incidents Listing

The National Response Center (NRC) serves as an emergency call center that fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. The spreadsheets posted to the NRC website contain initial incident data that has not been validated or investigated by a federal/state response agency. Response center calls from 1990 to the most recent complete calendar year where there was indication of Aqueous Film Forming Foam (AFFF) usage are included in this dataset. NRC calls may reference AFFF usage in the ?Material Involved? or ?Incident Description? fields.

Date of Government Version: 02/23/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS: PFAS Contamination Site Listing

A listing of spills reported to the department between 1996 and the present that have substance released, such as ?foam? or other materials associated with PFAS.

Date of Government Version: 11/30/2022
Date Data Arrived at EDR: 12/21/2022
Date Made Active in Reports: 03/17/2023
Number of Days to Update: 86

Source: Department of Energy and Environmental Protection
Telephone: 860-424-3705
Last EDR Contact: 12/21/2022
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: Quarterly

AIRS: Permitted Air Sources Listing

A listing of permitted air sources in Connecticut.

Date of Government Version: 11/02/2022
Date Data Arrived at EDR: 11/02/2022
Date Made Active in Reports: 01/20/2023
Number of Days to Update: 79

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3026
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ASBESTOS: Asbestos Notification Listing
A listing of asbestos notification site locations.

Date of Government Version: 05/04/2022
Date Data Arrived at EDR: 05/25/2022
Date Made Active in Reports: 08/09/2022
Number of Days to Update: 76

Source: Department of Public Health
Telephone: 860-509-7371
Last EDR Contact: 02/02/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Varies

CPCS: Contaminated or Potentially Contaminated Sites
A list of Contaminated or Potentially Contaminated Sites within Connecticut. This list represents the "Hazardous Waste Facilities," as defined in Section 22a-134f of the Connecticut General Statutes (CGS). The list contains the following types of sites: Sites listed on the Inventory of Hazardous Waste Disposal Sites; Sites subject to the Property Transfer Act; Sites at which underground storage tanks are known to have leaked; Sites at which hazardous waste subject to the RCRA; Sites that are included in EPA's (CERCLIS); Sites that are the subject of an order issued by the Commissioner of DEP that requires investigation and remediation of a potential or known source of pollution; and Sites that have entered into one of the Department's Voluntary Remediation Programs.

Date of Government Version: 09/01/2022
Date Data Arrived at EDR: 09/19/2022
Date Made Active in Reports: 12/07/2022
Number of Days to Update: 79

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3766
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Quarterly

DRYCLEANERS: Drycleaner Facilities
A listing of drycleaner facility locations.

Date of Government Version: 07/18/2008
Date Data Arrived at EDR: 08/08/2008
Date Made Active in Reports: 08/27/2008
Number of Days to Update: 19

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3026
Last EDR Contact: 03/02/2023
Next Scheduled EDR Contact: 06/19/2023
Data Release Frequency: Varies

ENFORCEMENT: Enforcement Case Listing
The types of enforcement actions included are administrative consent orders, final unilateral orders and final dispositions of civil cases through the Attorney General's Office.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 01/06/2023
Date Made Active in Reports: 03/23/2023
Number of Days to Update: 76

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3265
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
A listing containing RCRA financial assurance information submitted on behalf of the CT DEP's Program Analysis Group of the Waste Engineering and Enforcement Division.

Date of Government Version: 12/06/2022
Date Data Arrived at EDR: 12/07/2022
Date Made Active in Reports: 03/01/2023
Number of Days to Update: 84

Source: Department of Energy & Environmental Protection
Telephone: 860-418-5930
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 06/26/2023
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 06/13/2022
Date Data Arrived at EDR: 06/14/2022
Date Made Active in Reports: 08/31/2022
Number of Days to Update: 78

Source: Department of Energy & Environmental Protection
Telephone: 860-418-5930
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 06/26/2023
Data Release Frequency: Varies

LEAD: Lead Inspection Database

The Lead Poisoning Prevention and Control Program lead inspection database.

Date of Government Version: 03/26/2014
Date Data Arrived at EDR: 03/27/2014
Date Made Active in Reports: 05/08/2014
Number of Days to Update: 42

Source: Department of Public Health
Telephone: 860-509-7299
Last EDR Contact: 02/23/2023
Next Scheduled EDR Contact: 06/12/2023
Data Release Frequency: Varies

LWDS: Connecticut Leachate and Wastewater Discharge Sites

The Leachate and Waste Water Discharge Inventory Data Layer (LWDS) includes point locations digitized from Leachate and Wastewater Discharge Source maps compiled by the Connecticut DEP. These maps locate surface and groundwater discharges that (1) have received a waste water discharge permit from the state or (2) are historic and now defunct waste sites or (3) are locations of accidental spills, leaks, or discharges of a variety of liquid or solid wastes.

Date of Government Version: 07/17/2009
Date Data Arrived at EDR: 10/21/2009
Date Made Active in Reports: 10/30/2009
Number of Days to Update: 9

Source: Department of Energy & Environmental Protection
Telephone: N/A
Last EDR Contact: 10/15/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Varies

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/16/2022
Date Data Arrived at EDR: 11/16/2022
Date Made Active in Reports: 02/06/2023
Number of Days to Update: 82

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/10/2023
Next Scheduled EDR Contact: 05/22/2023
Data Release Frequency: No Update Planned

NPDES: Wastewater Permit Listing

A listing of permits issued by the DEP.

Date of Government Version: 05/02/2022
Date Data Arrived at EDR: 05/05/2022
Date Made Active in Reports: 07/28/2022
Number of Days to Update: 84

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3832
Last EDR Contact: 03/16/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Varies

SEH: List of Significant Environmental Hazards Report to DEEP

The Significant Environmental Hazard Statute is intended to identify and abate short-term risks associated with specific environmental conditions identified in the statute. After abatement of short-term risks (meaning abatement of the significant environmental hazard condition), there may still be potential long-term risks associated with the release. However, a significant environmental hazard can be considered abated under the statute even though potential long-term risks may not have been addressed.

Date of Government Version: 06/22/2022
Date Data Arrived at EDR: 06/23/2022
Date Made Active in Reports: 09/12/2022
Number of Days to Update: 81

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3766
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Varies

UIC: Underground Injection Control Listing

A list of of subsurface disposal permits and their locations.

Date of Government Version: 01/06/2023
Date Data Arrived at EDR: 01/06/2023
Date Made Active in Reports: 03/23/2023
Number of Days to Update: 76

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3058
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

PFAS TRIS: List of PFAS Added to the TRI

Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) immediately added certain per- and polyfluoroalkyl substances (PFAS) to the list of chemicals covered by the Toxics Release Inventory (TRI) under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) and provided a framework for additional PFAS to be added to TRI on an annual basis.

Date of Government Version: 03/07/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 17

Source: Environmental Protection Agency
Telephone: 202-566-0250
Last EDR Contact: 03/07/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System

Mineral Resources Data System

Date of Government Version: 08/23/2022
Date Data Arrived at EDR: 11/22/2022
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 98

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 02/24/2023
Next Scheduled EDR Contact: 06/05/2023
Data Release Frequency: Varies

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Semi-Annually

PCS INACTIVE: Listing of Inactive PCS Permits

An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Semi-Annually

COI: Completion of Investigation

The COI must be signed and submitted by the Certifying Party to document that the investigation of the parcel has been completed in accordance with CGS Section 22a-134a(g)(1).

Date of Government Version: 12/20/2022
Date Data Arrived at EDR: 12/20/2022
Date Made Active in Reports: 03/16/2023
Number of Days to Update: 86

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3000
Last EDR Contact: 03/16/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Energy & Environmental Protection formerly know as the DEP which changes in July 2011 in Connecticut.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/02/2014
Number of Days to Update: 185

Source: Department of Energy & Environmental Protection
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Energy & Environmental Protection formerly know as the DEP which changes in July 2011 in Connecticut.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/02/2014
Number of Days to Update: 185

Source: Department of Energy & Environmental Protection
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 10/29/2021
Date Made Active in Reports: 01/19/2022
Number of Days to Update: 82

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/06/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/18/2022
Number of Days to Update: 80

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/13/2022
Next Scheduled EDR Contact: 05/29/2023
Data Release Frequency: Annually

VT MANIFEST: Hazardous Waste Manifest Data
Hazardous waste manifest information.

Date of Government Version: 10/28/2019
Date Data Arrived at EDR: 10/29/2019
Date Made Active in Reports: 01/09/2020
Number of Days to Update: 72

Source: Department of Environmental Conservation
Telephone: 802-241-3443
Last EDR Contact: 01/06/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/06/2023
Next Scheduled EDR Contact: 06/19/2023
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Child Care Facilities
Source: Department of Public Health
Telephone: 860-509-8045

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Tidal Wetlands
Source: Department of Energy & Environmental Protection
Telephone: 860-424-4054

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
COS COB, CT 06807

TARGET PROPERTY COORDINATES

Latitude (North):	41.048946 - 41ˆ 2’ 56.21’’
Longitude (West):	73.605775 - 73ˆ 36’ 20.79’’
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	617174.4
UTM Y (Meters):	4544915.0
Elevation:	50 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	11730145 STAMFORD, CT
Version Date:	2018
West Map:	11730113 GLENVILLE, CT
Version Date:	2018

EDR’s GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

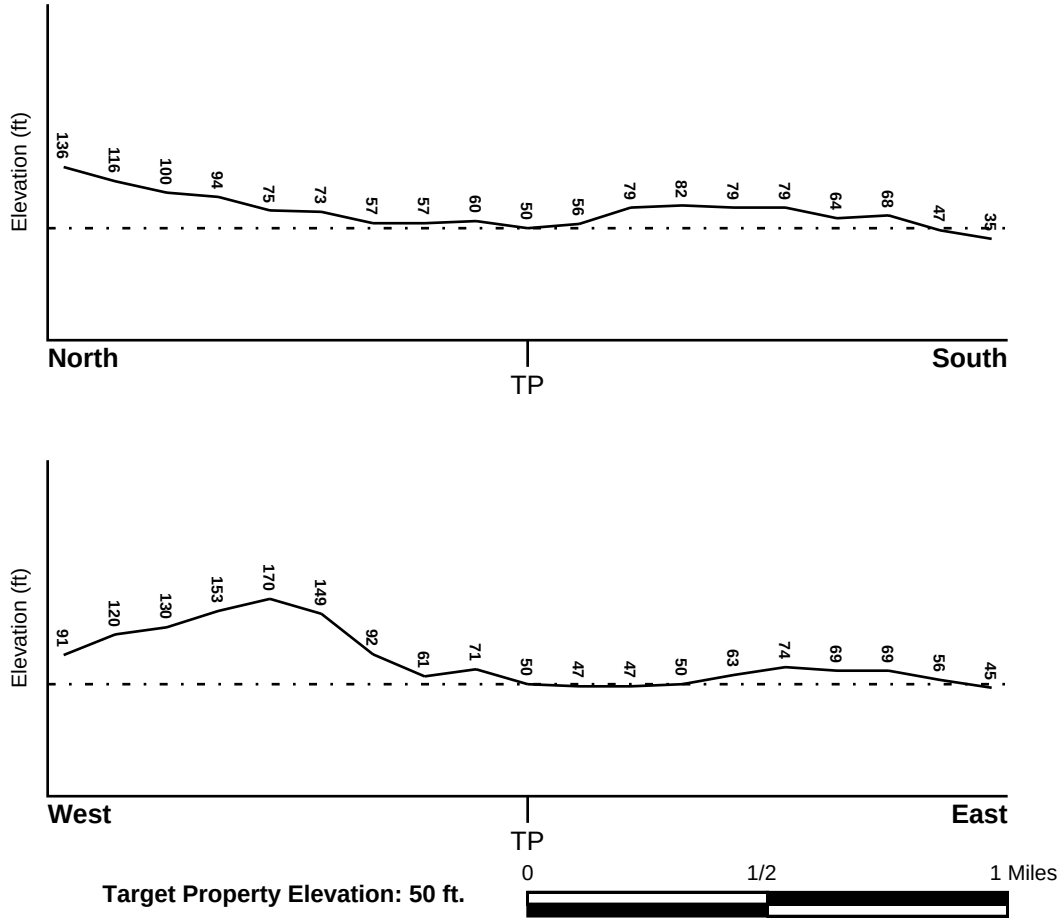
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
09001C0511G	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
09001C0503F	FEMA FIRM Flood data
09001C0512G	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
STAMFORD	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

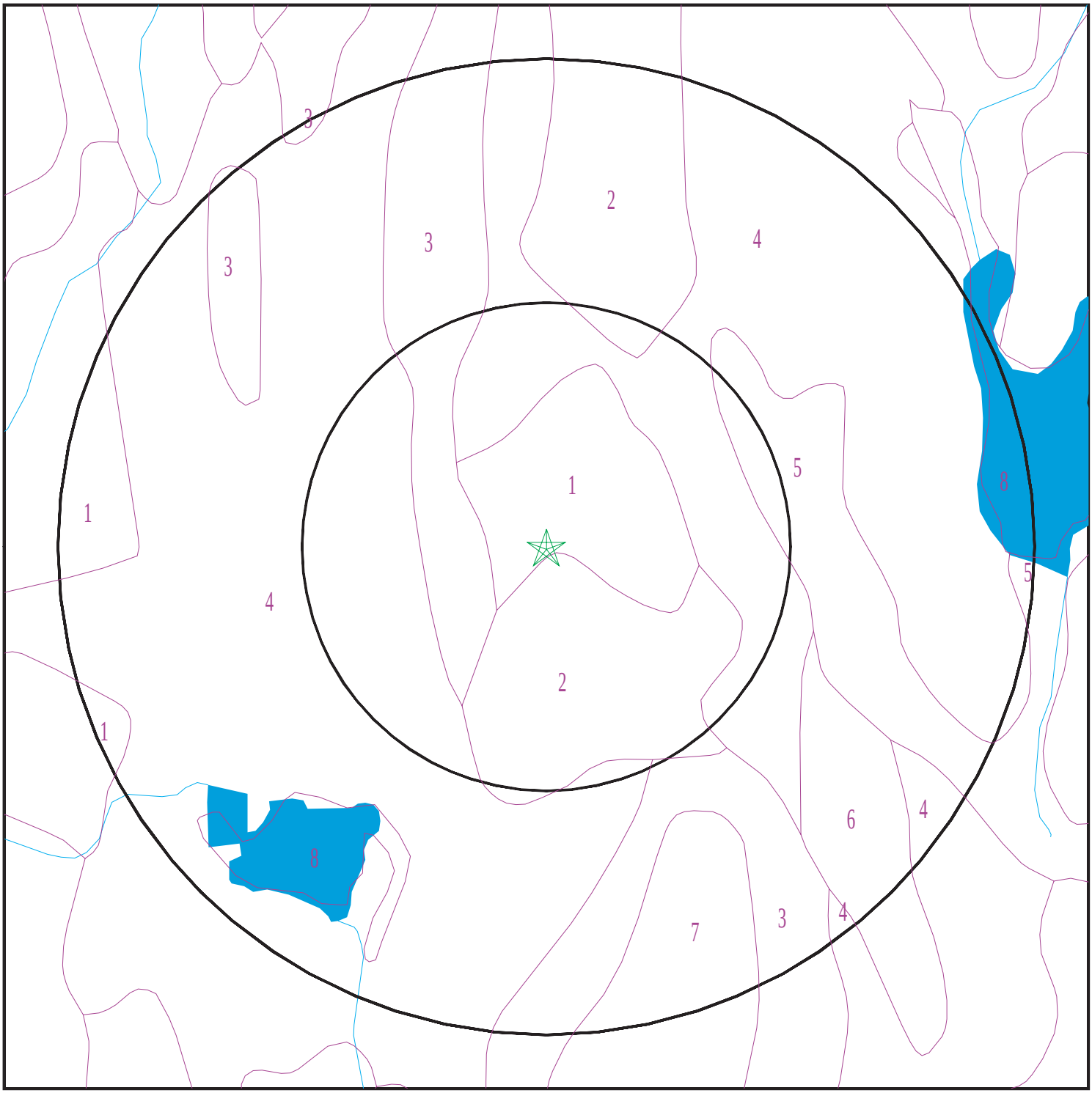
Era:	Paleozoic
System:	Ordovian
Series:	Lower Paleozoic granitic rocks
Code:	Pzg1 *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 7289805.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Central Middle School	CLIENT:	Langan Environmental Services
ADDRESS:	9 Indian Rock Lane Cos Cob CT 06807	CONTACT:	Elyssa Schwendy
LAT/LONG:	41.048946 / 73.605775	INQUIRY #:	7289805.2s
		DATE:	March 27, 2023 9:21 am

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Udorthents

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 0.01	Max: 7.8 Min: 4.5
2	5 inches	21 inches	gravelly loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 0.01	Max: 7.8 Min: 4.5
3	21 inches	79 inches	very gravelly sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 0.01	Max: 7.8 Min: 4.5

Soil Map ID: 2

Soil Component Name: Udorthents

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 0.01	Max: 7.8 Min: 4.5
2	5 inches	21 inches	gravelly loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 0.01	Max: 7.8 Min: 4.5
3	21 inches	79 inches	very gravelly sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 0.01	Max: 7.8 Min: 4.5

Soil Map ID: 3

Soil Component Name: Charlton

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 74 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	3 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5
2	3 inches	7 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5
3	7 inches	18 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5
4	18 inches	27 inches	gravelly fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5
5	27 inches	64 inches	gravelly fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5

Soil Map ID: 4

Soil Component Name: Charlton

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 74 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	3 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5
2	3 inches	7 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5
3	7 inches	18 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5
4	18 inches	27 inches	gravelly fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5
5	27 inches	64 inches	gravelly fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 4	Max: 6 Min: 4.5

Soil Map ID: 5

Soil Component Name: Raypol

Soil Surface Texture: silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 15 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 6.5 Min: 4.5
2	7 inches	11 inches	very fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 6.5 Min: 4.5
3	11 inches	20 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 6.5 Min: 4.5
4	20 inches	25 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 6.5 Min: 4.5
5	25 inches	29 inches	very fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 6.5 Min: 4.5

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
6	29 inches	51 inches	stratified very gravelly coarse sand to loamy fine sand	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 6.5 Min: 4.5
7	51 inches	64 inches	stratified very gravelly coarse sand to loamy fine sand	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 6.5 Min: 4.5

Soil Map ID: 6

Soil Component Name: Ninigret

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 61 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 6.5 Min: 4.5
2	7 inches	16 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 6.5 Min: 4.5
3	16 inches	25 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 6.5 Min: 4.5
4	25 inches	64 inches	stratified very gravelly coarse sand to loamy fine sand	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 703 Min: 42	Max: 6.5 Min: 4.5

Soil Map ID: 7

Soil Component Name: Hollis

Soil Surface Texture: highly decomposed plant material

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 2 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	highly decomposed plant material	A-8	Not reported	Max: 141 Min: 0.07	Max: Min:
2	1 inches	5 inches	gravelly fine sandy loam	A-8	Not reported	Max: 141 Min: 0.07	Max: Min:
3	5 inches	9 inches	channery fine sandy loam	A-8	Not reported	Max: 141 Min: 0.07	Max: Min:
4	9 inches	14 inches	gravelly fine sandy loam	A-8	Not reported	Max: 141 Min: 0.07	Max: Min:
5	14 inches	18 inches		A-8	Not reported	Max: 141 Min: 0.07	Max: Min:

Soil Map ID: 8

Soil Component Name: Water

Soil Surface Texture: highly decomposed plant material

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class:
Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

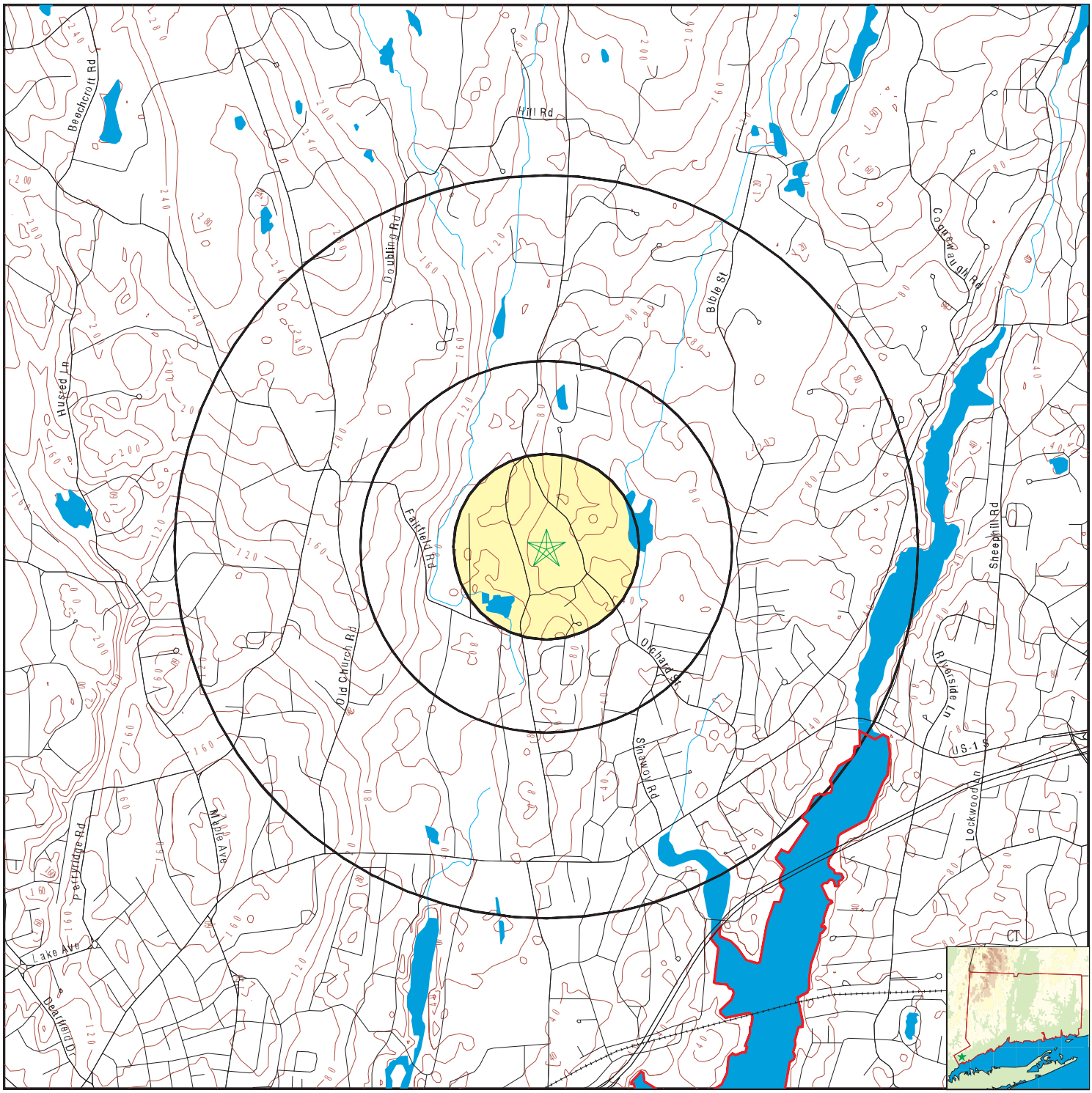
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 7289805.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location (GI)
- Groundwater Flow Varies at Location (GV)
- Closest Hydrogeological Data (HD)
- EPA Designated Sole Src. Aq.

SITE NAME:	Central Middle School	CLIENT:	Langan Environmental Services
ADDRESS:	9 Indian Rock Lane Cos Cob CT 06807	CONTACT:	Elyssa Schwendy
		INQUIRY #:	7289805.2s
LAT/LONG:	41.048946 / 73.605775	DATE:	March 27, 2023 9:21 am

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CT Radon

Radon Test Results

City	# Sites	< 4 Pci/L	4 < 10 Pci/L	10 < 20 Pci/L	20 < 50 Pci/L	50 < 100 Pci/L	> 100 Pci/L
Southport	2	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Stamford	112	69 (61.6)	34 (30.4)	6 (5.3)	3 (2.7)	0 (0)	0 (0)
Stratford	129	96 (74.4)	27 (20.9)	3 (2.3)	1 (.7)	0 (0)	2 (2.3)
Trumbull	114	86 (75.4)	20 (17.5)	5 (4.4)	2 (1.8)	0 (0)	1 (.9)
Weston	111	71 (63.9)	31 (27.9)	5 (4.5)	3 (2.7)	1 (.9)	0 (0)
Westport	154	109 (70.8)	29 (18.8)	12 (7.8)	4 (2.6)	0 (0)	0 (0)
Wilton	14	11 (78.6)	3 (21.4)	0 (0)	0 (0)	0 (0)	0 (0)
Bethel	17	14 (82.4)	3 (17.6)	0 (0)	0 (0)	0 (0)	0 (0)
Bridgeport	102	73 (71.6)	24 (23.5)	3 (3)	2 (2)	0 (0)	0 (0)
Brookfield	5	2 (40)	2 (40)	1 (20)	0 (0)	0 (0)	0 (0)
Cos Cob	4	3 (75)	1 (25)	0 (0)	0 (0)	0 (0)	0 (0)
Danbury	15	14 (93.3)	1 (6.7)	0 (0)	0 (0)	0 (0)	0 (0)
Darien	514	457 (88.9)	49 (9.5)	7 (1.4)	1 (2)	0 (0)	0 (0)
Easton	108	80 (74.1)	27 (25)	1 (.9)	0 (0)	0 (0)	0 (0)
Fairfield	39	37 (94.9)	1 (2.55)	1 (2.55)	0 (0)	0 (0)	0 (0)
Greenwich	136	125 (91.9)	7 (5.1)	3(2.2)	1 (.8)	0 (0)	0 (0)
Monroe	135	115 (85.2)	12 (8.9)	5 (3.7)	3 (2.2)	0 (0)	0 (0)
New Canaan	1	1 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
New Fairfield	8	6 (75)	2 (25)	0 (0)	0 (0)	0 (0)	0 (0)
Newtown	21	7 (33.3)	0 (0)	4 (19.1)	7 (33.3)	1 (4.8)	2 (9.5)
Norwalk	27	21 (77.8)	4 (14.8)	1 (3.7)	1 (3.7)	0 (0)	0 (0)
Old Greenwich	3	3 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Redding	7	5 (71.4)	2 (28.6)	0 (0)	0 (0)	0 (0)	0 (0)
Ridgefield	110	97 (0)	10 (0)	3 (0)	0 (0)	0 (0)	0 (0)
Riverside	5	3 (60)	1 (20)	1 (20)	0 (0)	0 (0)	0 (0)
Rowayton	1	1 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Sandy Hook	48	25 (52.1)	15 (31.25)	5 (10.42)	4 (8.30)	0 (0)	0 (0)
Shelton	23	17 (73.9)	5 (21.7)	1 (4.4)	0 (0)	0 (0)	0 (0)
Sherman	2	1 (50)	4.3 (50)	0 (0)	0 (0)	0 (0)	0 (0)
South Norwalk	1	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	0 (0)

Federal EPA Radon Zone for FAIRFIELD County: 1

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 06807

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.800 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	6.700 pCi/L	0%	100%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Tidal Wetlands
Source: Department of Energy & Environmental Protection
Telephone: 860-424-4054

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Community and Non-Community Water System Wells
Source: Department of Public Health, Water Supplies Section
Telephone: 860-509-7333
Active, emergency and inactive wells used for potable purposes that are owned and operated by active community and non-community water systems in Connecticut.

Wells in Connecticut Listing
Department of Consumer Protection
Telephone: 860-713-6022
Water wells located in the state of Connecticut.

OTHER STATE DATABASE INFORMATION

Connecticut Leachate and Wastewater Discharge Sites
Source: Department of Environmental Protection
Telephone:
The Leachate and Waste Water Discharge Inventory Data Layer (LWDS) includes point locations digitized from Leachate and Wastewater Discharge Source maps compiled by the Connecticut DEP. These maps locate surface and groundwater discharges that (1) have received a waste water discharge permit from the state or (2) are historic and now defunct waste sites or (3) are locations of accidental spills, leaks, or discharges of a variety of liquid or solid wastes.

EPA-Approved Sole Source Aquifers in Connecticut
Source: EPA
Telephone:
Sole source aquifers are defined as an aquifer designated as the sole or principal source of drinking water for a given aquifer service area; that is, an aquifer which is needed to supply 50% or more of the drinking water for the area and for which there are no reasonable alternative sources should the aquifer become contaminated.

RADON

State Database: CT Radon
Source: Department of Public Health
Telephone: 860-509-7367
Radon Statistical Summary

PHYSICAL SETTING SOURCE RECORDS SEARCHED

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

STREET AND ADDRESS INFORMATION

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Appendix G Resumes of Environmental Professionals

DAVID GRANUCCI, LEP

PROJECT ENGINEER

SITE ASSESSMENT COORDINATOR

Mr. Granucci has a strong background in environmental engineering and over eight years of regulatory and consulting experience. During his employment with Langan, Mr. Granucci has worked on numerous environmental and geotechnical projects for industrial, commercial, residential, and public facilities in several states including Connecticut, New York, New Jersey, Massachusetts, and Pennsylvania. He has experience with permitting, compliance tasks associated with Connecticut and New York regulatory programs, and has worked on numerous Connecticut Transfer Act and New York Brownfield Projects.

Mr. Granucci has conducted Phase I Environmental Site Assessments (ESA), Phase II/III Site Investigations (SI) and remedial actions. He has experience designing remedial actions including capping, excavations, sub slab depressurization systems, and administrative closure options. He has provided oversight for environmental and geotechnical soil boring and test pit excavations. He is familiar with conducting subsurface boring investigations, test pit excavations and possesses field sampling experience including soil, sediment, soil vapor, and groundwater.

SELECTED PROJECTS

Former Remington Rand Facility, Middletown, CT – Langan was engaged by Unisys Corporation to prepare and implement a final remedial action plan for the property under a consent order for this brownfield site. Remediation consisted of excavation and off-site disposal of contaminated soils, installation of a geosynthetic membrane cap, and extensive coordination with the owner (City of Middletown) and building tenants. Current activities include groundwater monitoring, cap inspections and maintenance, operation and maintenance of a sub-slab depressurization and annual reporting to CTDEEP.

Former Norton Paper Mill, Colchester, CT – Langan was engaged by the Town of Colchester to provide grant funded environmental assessment and engineering services for this brownfield site. Phase II and III ESAs and a Hazardous Building Material Survey were conducted. A Remedial Action Plan was provided. Remedial Plans and Specs were prepared for bidding, which will occur this year.

Former Winchester Repeating Arms, New Haven, CT – Langan was engaged by Twining Properties/L&M Development Partners to provide environmental Engineering and redevelopment support services for this brownfield site. The initial effort has been to prepare sampling plans, conduct a Hazardous Building Material Survey and an assessment of the oils in the buildings and potential remedies.

Fulfillment Center, Johnston, RI – Langan is providing engineering services for the development of a 4 million SF distribution center. Environmental engineering services included Phase I, II and III

EDUCATION

M.S., Environmental Engineering
University of Connecticut

B.S., Civil Engineering
University of Connecticut

PROFESSIONAL REGISTRATION

Licensed Environmental Professional – CT (#643)

AFFILIATIONS

Environmental Professionals Organization of Connecticut (EPOC)

Environmental Site Assessments and Investigations (ESA and ESI). Field personnel documented subsurface conditions, collected environmental samples, and coordinated a field investigation program, arranging for local contractors to complete the geophysical survey, boring and well installation, and laboratory analysis. A review of analytical results identified elevated concentrations of methane and hydrogen sulfide in subsurface soil vapor which required the completion of additional investigation activities, identification, and chemical assessment of buried organic materials, geophysical mapping of buried organic materials, preparation of a site specific health and safety plan and site-specific materials management plan, and oversight and community air monitoring for methane and hydrogen sulfide during a portion of the construction activities.

Confidential Client Former Manufacturing Site, CT – Langan was engaged by outside counsel to develop a groundwater sampling program for a comprehensive list of parameters, including PFAS, to assess water quality for a due diligence effort. David prepared a comprehensive PFAS sampling plan with SOPs for minimizing cross contamination of PFAS and QA/QC measures to account for laboratory bias. A receptor survey was also prepared for this project.

Ryder Truck Rental, Inc., Various Sites in CT – Langan has provided environmental consulting services for several vehicle maintenance facilities throughout Connecticut. Site investigation and remediation for the designated "Establishments" was performed in accordance with the Connecticut Property Transfer Act (PTA). Langan identified numerous areas of concern including underground storage tanks, historic fill areas, current site operations, and on-site and off-site groundwater contamination. Langan has successfully coordinated investigation and remediation activities with ongoing site operations and incorporated site easements, including a railroad spur track, into remedial designs.

Dyno Nobel Manufacturing Facility, Simsbury, CT - Langan has been retained to provide Licensed Environmental Professional (L.E.P.) services as the explosive manufacturing and testing property proceeds through remedial investigation and implementation in accordance with the Connecticut Property Transfer Act (PTA) and Resource Conservation and Recovery Act (RCRA) 2020 Corrective Action. Activities have included review of completion of investigation activities for soil, sediment, and groundwater sampling, review of previous investigation findings including evaluation and categorization of over 100 areas of concern, and review of numerous regulatory documents including Field Sampling & Analysis Plan, Screening Level Ecological Risk Assessment, and Remedial Action Plans.

JAMIE P. BARR, LEP

PRINCIPAL / VP

GEOLOGICAL ENGINEERING | ENVIRONMENTAL ENGINEERING

Atlas Park, Glendale, NY

The Boathouse at Canal Dock, New Haven, CT

Mr. Barr is a Geological Engineer with over eighteen years of diversified environmental, civil, and geotechnical experience that includes environmental regulatory compliance/negotiation, remedial system design, permitting, public/community outreach, feasibility studies, Phase I/II/III environmental site assessments, construction management, geotechnical investigations, site/civil design, stormwater management, and master planning. Mr. Barr manages Langan's Environmental Engineering has experience coordinating and negotiating with regulatory agencies in Connecticut, New York, New Jersey, Illinois, California, Indiana, and Massachusetts. Mr. Barr has extensive experience with projects in the Connecticut Property Transfer Program, New York State and City Brownfield Cleanup Programs, as well as the USEPA Superfund Program. Mr. Barr served as a co-chair on a committee formed by the CT DEEP for the transformation of the Connecticut regulations, and currently serves on the board of directors for the New Haven Manufacturers Association, and the advisory boards for UCONN Brownfield Initiative, One Village, NanoBank, and Quinnipiac's Engineering Accreditation Board. Mr. Barr's specialties include brownfield redevelopment, transfer act compliance, remediation system design, environmental site assessment, construction management, and real estate due diligence.

SELECTED PROJECTS

- The Shops at Atlas Park, Glendale, NY
- Fashion Outlets of Niagara, Niagara, NY
- Project IPEC DECOM, Buchanan, NY
- Archer Tower Development, Jamaica, NY
- Enclave on 241st, Bronx, NY
- 510 Main and 12 Church, New Rochelle, NY
- University of Connecticut Hazardous Building Materials On-call, Various Campuses in CT
- Printhouse at 165 Huguenot Street, New Rochelle, NY
- The Hershey Company: Former Peter Paul Facility, Naugatuck, CT
- Torrington Commons, Torrington, CT
- Unilever Clinton Plant, Clinton, CT
- UNISYS: Former Remington Rand, Middletown, CT
- Various Hospital Properties, Manchester, CT
- Veterans Affairs Community Resource and Referral Centers, West Haven, CT

EDUCATION

B.S., Geological Engineering
University of New Brunswick

PROFESSIONAL REGISTRATION

Licensed Environmental Professional - CT #511

AFFILIATIONS

New Haven Manufacturers Association (Secretary)

Connecticut Building Congress

Environmental Professionals of CT

National Brownfield Association

Environmental Business Association

Association of Professional Engineers and Geoscientists of New Brunswick

Trailwood Capital Advisors

Paley Advisors

LANGAN

- New Milford Senior Center, New Milford, CT
- Francis Walsh Intermediate School, Branford, CT
- Goodwin College Early Childhood Magnet School, East Hartford, CT
- Goodwin College Elementary School, East Hartford, CT
- Greater New Haven WPCA On-call, New Haven, CT
- Round Hill Club, Greenwich, CT
- Engineering and Science University Magnet School, West Haven, CT
- Naugatuck School District Renovation, Naugatuck, CT
- Nonnewaug High School, Woodbury, CT
- Norden Place, Norwalk, CT
- Oxford Housing Authority, Crestview Bridge, Oxford, CT
- Parkside Apartments, Meriden, CT
- Orange Derby Shopping Center, Derby, CT
- RBS GBM Building, Stamford, CT
- Ryder Systems Inc., Various Locations in CT
- Ronald McDonald House, New Haven, CT
- The Hershey Company: Former Peter Paul Facility, Naugatuck, CT
- The Shops at Atlas Park, Glendale, NY
- Torrington Commons, Torrington, CT
- Unilever Clinton Plant, Clinton, CT
- UNISYS: Former Remington Rand, Middletown, CT
- Various Hospital Properties, Manchester, CT
- West Vine School, Stonington, CT
- Deans Mill School, Stonington, CT
- Andover Elementary School, Andover, CT
- Dr. Helen Baldwin Middle School, Canterbury, CT
- Mansfield Middle School, Mansfield, CT

APPENDIX B - UNDERGROUND STORAGE TANK INVESTIGATION REPORT, DATED NOVEMBER 16, 2023

November 16, 2023

Tony Turner, Chair
Central Middle School Building Committee
290 Greenwich Avenue
Greenwich, CT 06830

RE: Underground Storage Tank (UST) Investigation
Central Middle School
Greenwich, Connecticut
Langan Project No.: 140265802

Dear Tony Turner:

Langan CT, Inc. (Langan) was engaged by the town of Greenwich to collect soil samples from an area at Central Middle School (CMS) at 9 Indian Rock Lane in Greenwich (the "Site"). The investigation was in a grassy area southwest of the northwestern "wing" of the school building. The purpose of the sampling was to confirm the former 7,200-gallon heating oil underground storage tank (UST) (identified as "T1" installed on July 1, 1985) had been removed and that no historical release from the tank had occurred. The following is a summary of the investigation event, including the analytical results of the soil samples collected during the event.

Ground Penetrating Radar (GPR) Geophysical Survey

Prior to initiation of investigation activities, the Call Before You Dig (CBYD) utility mark-out service was contacted by the drilling contractor to provide utility clearance at the Site. On October 27, 2023, New England Subsurface Imaging, LLC (NESI) of Newtown, Connecticut conducted a GPR survey of the intended investigation area to mark out subsurface utilities before the initiation of intrusive sampling and to attempt to locate any other subsurface anomalies, USTs, and/or other potential environmental concerns. The GPR survey identified the location of buried stormwater conveyance lines in the vicinity of the intended investigation area. NESI flagged and painted out these lines and recommended safe locations for soil borings. No USTs or other subsurface anomalies were detected during the GPR survey.

Soil Sampling

On October 27, 2023, four soil borings (LB-01 through LB-04) were advanced around the former UST area. The soil borings were advanced using a truck-mounted, direct-push drill rig by Cisco Geotechnical, LLC (Cisco) of Glastonbury, Connecticut. Soil borings were advanced up to 15 feet below ground surface (bgs) and soil cores were collected

continuously from ground surface. Soil samples retrieved from each boring were classified for soil type, grain size, moisture, and texture. Each soil core was screened for volatile organic compounds (VOCs) using a photoionization detector (PID) equipped with a 10.6-electron volt (eV) lamp. Soil cores were evaluated for visual and olfactory indications of environmental impact. Background PID readings (up to 0.7 parts per million (ppm)) were noted between 8 and 10 feet bgs in soil borings LB-01, LB-02, and LB-04. Soil boring logs are provided in Attachment A, and boring locations are shown on Figure 2.

Subsurface soil conditions around the former UST generally consisted of tannish to grayish brown, fine to coarse sand with varying amounts of silt, gravel, and cobble from 5 to 15 feet bgs, with silty sand up to 12 feet bgs. Refusal was encountered at all four borings from 10 to 15 feet bgs. Groundwater was encountered in all four soil borings between approximately 7.5 to 8 feet bgs.

Six grab soil samples (LB-01 (7.5-8.5), LB-01 (9-10), LB-02 (9-10), LB-02 (14-15), LB-03 (9-10), and LB-04 (8-10)), and one duplicate sample (parent sample from LB-04 (8-10)), were collected in laboratory-supplied bottle ware, labeled, stored in an ice-chilled cooler and transported on under chain of custody to York Analytical Laboratories, Inc. (York) of Stratford, Connecticut. York is a Connecticut Department of Public Health (CTDPH)-certified environmental testing laboratory. The samples were submitted to York for analysis of the following parameters:

- VOCs
- Extractable total petroleum hydrocarbons (ETPH)
- Polycyclic aromatics hydrocarbons (PAHs)

Analytical results of the soil samples are discussed below and summarized in Table 1. The soil analytical laboratory report is provided as Attachment B.

Soil Analytical Results

Soil analytical results were compared to applicable soil criteria from the Connecticut Department of Energy and Environmental Protection (CTDEEP) Remediation Standard Regulations (RSRs).

The VOCs acetone and methyl ethyl ketone (2-butanone) were detected in soil samples LB-01 (7.5-8.5), LB-01 (9-10), and LB-02 (14-15) below RSR criteria; acetone was also detected in LB-02 (14-15) below RSR criteria.

PAHs were not detected in soil samples above laboratory reporting limits.

ETPH was detected in soil samples LB-01 (9-10) and LB-02 (9-10) at concentrations of 48.1 and 116 milligrams per kilogram (mg/kg), below RSR criteria.

Full soil analytical results are summarized in Table 1. The soil analytical laboratory report is included as Attachment B.

Conclusions

Based on the results of the GPR survey at the Site, Langan concluded 7,200-gallon heating oil underground storage tank (UST) (identified as "T1" installed on July 1, 1985) had been removed.

VOCs identified in soil samples are also typical laboratory contaminants and are not attributed to a release from the former tank. Detections of petroleum compounds in soil samples collected from 9 to 10 feet bgs confirm that sampling was performed in the former tank grave. Concentrations were reported below CTDEEP RSR criteria, and no further investigation or remediation related to the former UST is warranted.

If you have any questions, please feel free to contact us at (203) 562-5771 or hgriesbach@langan.com or dgranucci@langan.com.

Sincerely,
Langan CT, Inc.

Hannah Griesbach
Project Engineer

David V. Granucci, LEP
Senior Project Engineer

Enclosure(s):

Table 1 – Summary of Soil Analytical Results
Figure 1 – Site Location Map
Figure 2 – Site Investigation Plan
Attachment A – Soil Boring Logs
Attachment B – Laboratory Analytical Reports

TABLES

Table 1
Soil Analytical Data Summary - UST Investigation
Central Middle School
Greenwich, Connecticut
Langan Project No.: 140235801

Sample ID Sample Date Sample Depth	Residential Direct Exposure Criteria	Industrial/Commercial Direct Exposure Criteria	GB Pollutant Mobility Criteria	LB-01 10/27/2023 7.5-8.5	LB-01 10/27/2023 9-10	LB-02 10/27/2023 9-10	LB-02 10/27/2023 14-15	LB-03 10/27/2023 9-10	LB-04 10/27/2023 8-10	LB-04 (DUP) 10/27/2023 8-10
Analyte				Result	Result	Result	Result	Result	Result	Result
Volatile Organic Compounds (VOCs) (mg/kg)										
Dilution Factor				*1*	*1*	*1*	*1*	*1*	*1*	*1*
Acetone	500	1,000	140	0.03 QL-02, ICVE	0.037 ICVE, QL-02	0.016 ICVE, QL-02	0.03 ICVE, QL-02	<0.0092 U	<0.0094 U, IS-LO	<0.011 U
Methyl Ethyl Ketone (2-Butanone)	500	1,000	8	0.008	0.0088	<0.0042 U	0.0066	<0.0046 U	<0.0047 U, IS-LO	<0.0055 U
Polycyclic Aromatic Hydrocarbons (PAHs) (mg/kg)										
Dilution Factor				*2*	*2*	*2*	*2*	*2*	*2*	*2*
Total PAHs	~	~	~	<0.549 U	<0.574 U	<0.559 U	<0.588 U	<0.549 U	<0.565 U	<0.545 U
Extractable Total Petroleum Hydrocarbons (ETPH) (mg/kg)										
Dilution Factor				*1*	*1*	*1*	*1*	*1*	*1*	*1*
ETPH	500	2,500	2,500	<45.4 U	48.1	116	<46.8 U	<43.7 U	<45 U	<44 U

Notes:

ICVE = The value reported is ESTIMATED. The value is estimated due to its behavior during initial calibration verification (recovery exceeded 30% of expected value).

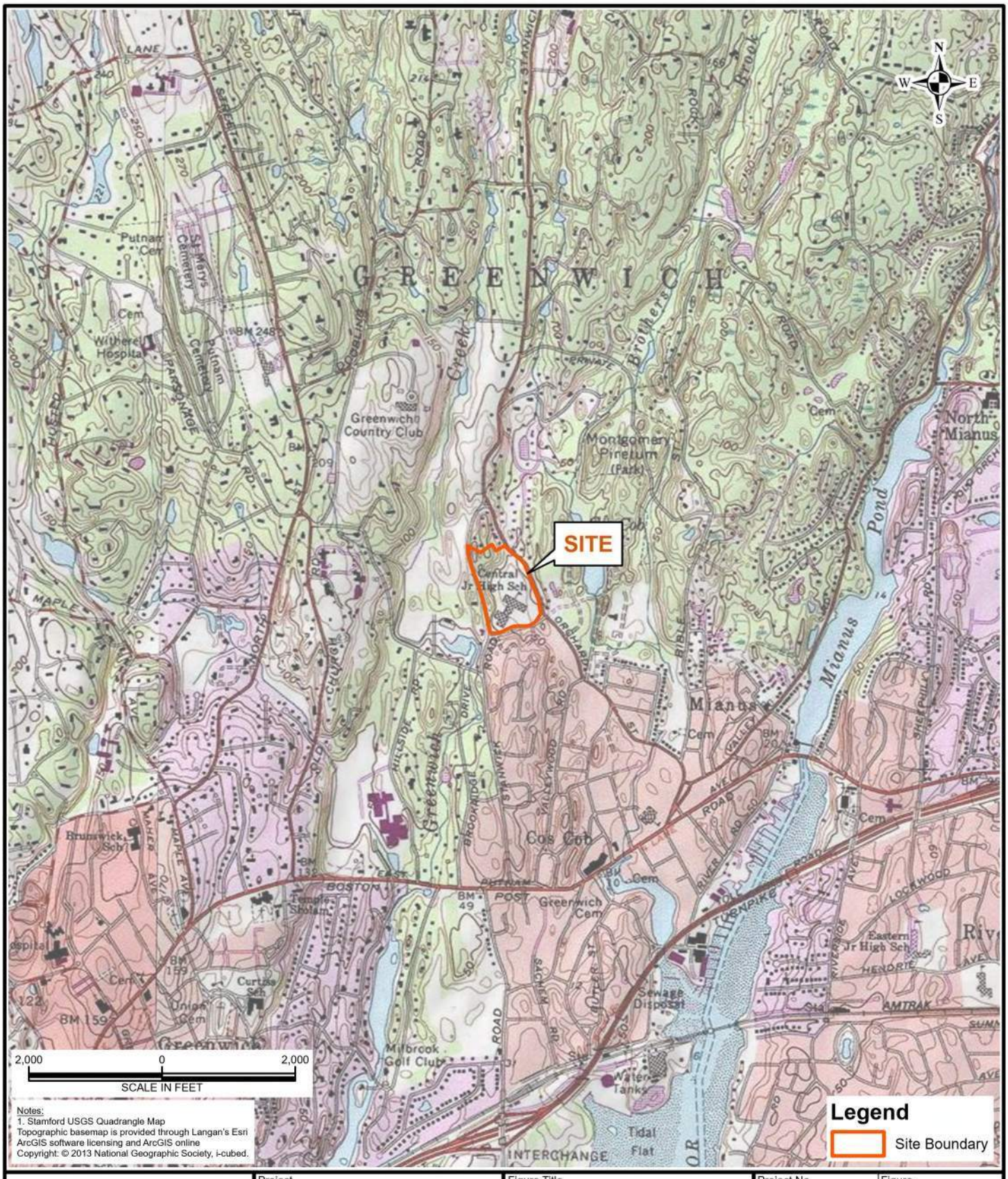
IS-LO = The internal std associated with this target compound did not meet acceptance criteria (area <50% CCV) at the stated dilution due to matrix effects. Sample was rerun to confirm matrix effects.

QL-02 = This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.

U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

1. Acetone was detected in the Trip Blank at a concentration of 2.14 µg/L with ICVE and QL-02 flags.

FIGURES



LANGAN

Langan Engineering and Environmental Services, Inc.

555 Long Wharf Drive, 9th Floor
New Haven, CT 06511-6107

T: 203.562.5771 F: 203.789.6142
www.langan.com

Project	**CENTRAL MIDDLE SCHOOL**
	GREENWICH
	FAIRFIELD COUNTY CT
Figure Title	**SUBJECT PROPERTY LOCATION MAP**
Project No.	140265802
Date	11/6/2023
Scale	1" = 2,000 feet
Drawn By	LB
Figure	1

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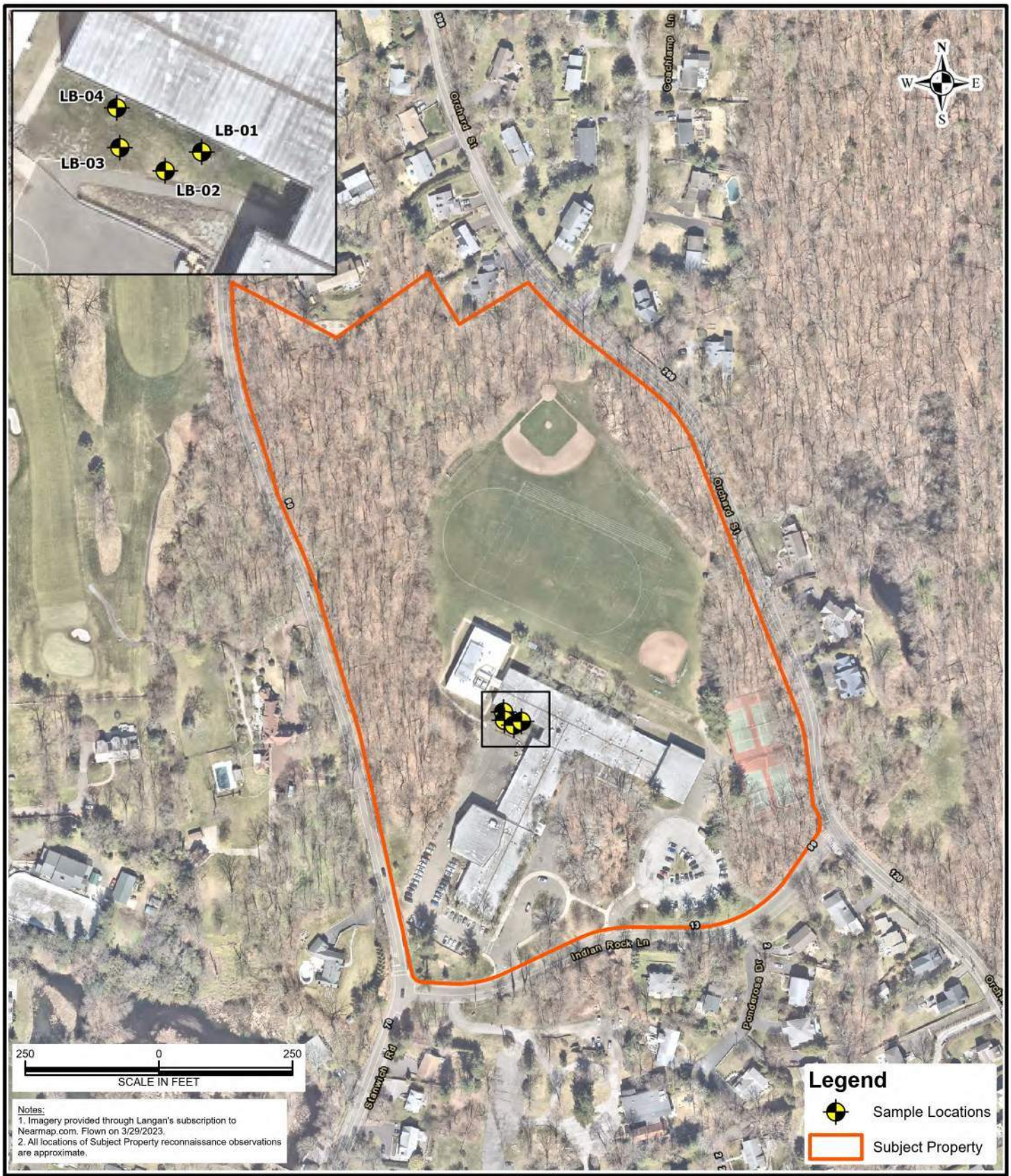
Path: \\langan.com\data\PIT\other\LBalch\GIS_Projects\NHV\140265802\140265802.aprx



LANGAN Langan Engineering and Environmental Services, Inc. 555 Long Wharf Drive, 9th Floor New Haven, CT 06511-6107 T: 203.562.5771 F: 203.789.6142 www.langan.com	Project **CENTRAL MIDDLE SCHOOL** GREENWICH FAIRFIELD COUNTY CT	Figure Title **SITE INVESTIGATION**	Project No. 140265802 Date 11/6/2023 Scale 1" = 250 feet Drawn By LB	Figure 2

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ATTACHMENT A

SOIL BORING LOGS

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Log of Boring **LB-01** Sheet 1 of 1

Project: Central Middle School	Project No.: 140265101
Location: Central Middle School	Elevation and Datum: N/A
Drilling Company: Cisco	Date Started: 10/27/2023 — Date Finished: 10/27/2023
Drilling Equipment: N/A	Completion Depth: 13.0 ft — Rock Depth: Not Encountered
Size and Type of Bit: N/A	Number of Samples: Disturbed 2, Undisturbed 0, Core 0
Casing Diameter (in): N/A — Casing Depth (ft): N/A	Water Level (ft.): First ▽ 8.0, Completion ▼ N/A, 24 HR. ▼ N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: John
Sampler: Macrocore	Field Engineer: William Adsit
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr-resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.)
	0.0	Tannish brown fine to coarse SAND, some gravel, cobble fragments (moist)	0					0.0	Start Drilling: 0 ft, 10/27/2023 10:45:00 AM
			1					0.0	
								0.0	
			2	M-1	Macrocore	28/60		0.0	
								0.0	
			3					0.0	
								0.0	
			4					0.0	
								0.0	
			5					0.0	
								0.0	
		Grayish brown silty SAND, trace gravel (wet)	6					0.0	
								0.0	
			7	M-2B				0.1	
								0.3	11:35:00 - Collect soil sample LB-01 (7.5-8.5)
		▽	8					0.3	
								0.4	
			9					0.7	11:25:00 - Collect soil sample LB-01 (9-10)
								0.7	
		No recovery (stuck macrocore compromised sample)	10						
			11	M-3	Macrocore	0/36			
			12						
		End of Boring at 13ft.	13						Refusal encountered at 13 ft.
			14						
			15						
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LB-02** Sheet 1 of 1

Project: Central Middle School	Project No.: 140265101
Location: Central Middle School	Elevation and Datum: N/A
Drilling Company: Cisco	Date Started: 10/27/2023 / Date Finished: 10/27/2023
Drilling Equipment: N/A	Completion Depth: 15.0 ft / Rock Depth: Not Encountered
Size and Type of Bit: N/A	Number of Samples: Disturbed 3 / Undisturbed 0 / Core 0
Casing Diameter (in): N/A / Casing Depth (ft): N/A	Water Level (ft.): First ▽ 7.5 / Completion ▼ N/A / 24 HR. ▼ N/A
Casing Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: John
Sampler: Macrocore	Field Engineer: William Adsit
Sampler Hammer: N/A / Weight (lbs): N/A / Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr-resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.)
	0.0	Reddish brown to grayish brown fine to medium SAND, trace gravel, trace silt (moist)	0					0.0	Start Drilling: 0 ft, 10/27/2023 10:15:00 AM
			1					0.0	
			2	M-1	Macrocore	39/60		0.0	
			3					0.0	
			4					0.0	
			5					0.0	
			6					0.0	
			7 ▽	M-2	Macrocore	34/60		0.0	
			8					0.4	
			9					0.7	10:45:00 - Collect soil sample LB-02 (9-10)
		Grayish brown fine to medium SAND, some gravel (wet)	10					0.0	
			11					0.0	
			12	M-3	Macrocore	48/60		0.0	
			13					0.0	
			14					0.1	10:55:00 - Collect soil sample LB-02 (14-15)
		End of Boring at 15ft.	15					0.3	Refusal encountered at 15.00 ft.
			16						
			17						
			18						
			19						
			20						

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Log of Boring **LB-03** Sheet 1 of 1

Project: Central Middle School	Project No.: 140265101
Location: Central Middle School	Elevation and Datum: N/A
Drilling Company: Cisco	Date Started: 10/27/2023 — Date Finished: 10/27/2023
Drilling Equipment: N/A	Completion Depth: 10.0 ft — Rock Depth: Not Encountered
Size and Type of Bit: N/A	Number of Samples: Disturbed 2, Undisturbed 0, Core 0
Casing Diameter (in): N/A — Casing Depth (ft): N/A	Water Level (ft.): First ▽ 8.0, Completion ▼ N/A, 24 HR. ▼ N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: John
Sampler: Macrocore	Field Engineer: William Adsit
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr-resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.)
	0.0	Brown fine to medium SAND, some gravel, trace silt (moist)	0–5	M-1	Macrocore	40/60		0.0	Start Drilling: 0 ft, 10/27/2023 9:45:00 AM
		Brown fine to medium SAND, some gravel, trace silt (moist)	5–7	M-2A				0.0	
		Mottled grayish brown silty fine SAND, some gravel, cobble fragments (wet) ▽	7–9	M-2B	Macrocore	54/60		0.0	10:25:00 - Collect soil sample LB-03 (9-10)
		End of Boring at 10ft.	10						Refusal encountered at 10.00 ft.

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Log of Boring **LB-04** Sheet 1 of 1

Project: Central Middle School	Project No.: 140265101
Location:	Elevation and Datum: N/A
Drilling Company: Cisco	Date Started: 10/27/2023 — Date Finished: 10/27/2023
Drilling Equipment: N/A	Completion Depth: 12.0 ft — Rock Depth: Not Encountered
Size and Type of Bit: N/A	Number of Samples: Disturbed 3, Undisturbed 0, Core 0
Casing Diameter (in): N/A — Casing Depth (ft): N/A	Water Level (ft.): First ▽ 8.0, Completion ▼ N/A, 24 HR. ▼ N/A
Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	Drilling Foreman: John
Sampler: Macrocore	Field Engineer: William Adsit
Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr-resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.)
	0.0	Tannish brown silty SAND, trace gravel (moist)	0					0.0	Start Drilling: 0 ft, 10/27/2023 9:00:00 AM
			1	M-1A	Macrocore	48/60			
		Tannish brown to mottled gray silty SAND, trace gravel (moist)	2						
			3	M-1B					
			4						
		Tannish brown medium SAND, some gravel, cobble fragments (wet)	5					0.0	
			6					0.0	
			7	M-2A	Macrocore	43/60		0.0	
			8					0.2	
		▽						0.3	
		Reddish brown medium to coarse SAND, some silt (wet)						0.4	09:45:00 - Collect soil sample LB-04 (8-10) (MS/MSD) and DUP_10.27.2023
			9	M-2B				0.4	
		Tannish brown fine to coarse SAND, trace gravel (moist)	10					0.0	
			11	M-3	Macrocore	39/24		0.0	
								0.0	
		End of Boring at 12ft.	12					0.0	Refusal encountered at 12 ft.
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

ATTACHMENT B

ENVIRONMENTAL ANALYTICAL LABORATORY REPORTS

Technical Report

prepared for:

Langan Engineering & Environmental Services (CT)
Long Wharf Maritime Center, 555 Long Wharf Drive
New Haven CT, 06511-6107
Attention: William Adsit

Report Date: 11/06/2023
Client Project ID: 140265101
York Project (SDG) No.: 23J1769

Report Date: 11/06/2023
Client Project ID: 140265101
York Project (SDG) No.: 23J1769

Langan Engineering & Environmental Services (CT)
Long Wharf Maritime Center, 555 Long Wharf Drive
New Haven CT, 06511-6107
Attention: William Adsit

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on October 27, 2023 and listed below. The project was identified as your project: **140265101**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
23J1769-01	LB-04 (8-10)	Soil	10/27/2023	10/27/2023
23J1769-02	DUP_10.27.2023	Soil	10/27/2023	10/27/2023
23J1769-03	LB-03 (9-10)	Soil	10/27/2023	10/27/2023
23J1769-04	LB-02 (9-10)	Soil	10/27/2023	10/27/2023
23J1769-05	LB-02 (14-15)	Soil	10/27/2023	10/27/2023
23J1769-06	LB-01 (9-10)	Soil	10/27/2023	10/27/2023
23J1769-07	LB-01 (7.5-8.5)	Soil	10/27/2023	10/27/2023
23J1769-08	Trip Blanks	Water	10/27/2023	10/27/2023

General Notes for York Project (SDG) No.: 23J1769

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By **Date:** 11/06/2023

Cassie L. Mosher
Laboratory Manager

Sample Information

Client Sample ID: LB-04 (8-10) **York Sample ID:** 23J1769-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 9:45 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-55-6	1,1,1-Trichloroethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
79-34-5	1,1,2,2-Tetrachloroethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
79-00-5	1,1,2-Trichloroethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-34-3	1,1-Dichloroethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-35-4	1,1-Dichloroethylene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
563-58-6	1,1-Dichloropropylene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
87-61-6	1,2,3-Trichlorobenzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
96-18-4	1,2,3-Trichloropropane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
95-63-6	1,2,4-Trimethylbenzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
96-12-8	1,2-Dibromo-3-chloropropane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-93-4	1,2-Dibromoethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-50-1	1,2-Dichlorobenzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-06-2	1,2-Dichloroethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
78-87-5	1,2-Dichloropropane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-67-8	1,3,5-Trimethylbenzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
541-73-1	1,3-Dichlorobenzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
142-28-9	1,3-Dichloropropane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
106-46-7	1,4-Dichlorobenzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: LB-04 (8-10) **York Sample ID:** 23J1769-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 9:45 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
594-20-7	2,2-Dichloropropane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: NELAC-NY10854,NJDEP-CT005			
78-93-3	2-Butanone	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-49-8	2-Chlorotoluene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
591-78-6	2-Hexanone	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
106-43-4	4-Chlorotoluene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-10-1	4-Methyl-2-pentanone	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-64-1	Acetone	ND	IS-LO	ug/kg dry	9.4	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
107-13-1	Acrylonitrile	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
71-43-2	Benzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-86-1	Bromobenzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-97-5	Bromochloromethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-27-4	Bromodichloromethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-25-2	Bromoform	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
74-83-9	Bromomethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-15-0	Carbon disulfide	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
56-23-5	Carbon tetrachloride	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-90-7	Chlorobenzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-00-3	Chloroethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-66-3	Chloroform	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
74-87-3	Chloromethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-59-2	cis-1,2-Dichloroethylene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
10061-01-5	cis-1,3-Dichloropropylene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: LB-04 (8-10) **York Sample ID:** 23J1769-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 9:45 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
124-48-1	Dibromochloromethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-95-3	Dibromomethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-71-8	Dichlorodifluoromethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
100-41-4	Ethyl Benzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
87-68-3	Hexachlorobutadiene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
98-82-8	Isopropylbenzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
80-62-6	Methyl Methacrylate	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: NELAC-NY10854,NJDEP-CT005			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-09-2	Methylene chloride	ND	IS-LO	ug/kg dry	9.4	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
91-20-3	Naphthalene	ND	IS-LO	ug/kg dry	9.4	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
104-51-8	n-Butylbenzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
103-65-1	n-Propylbenzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-47-6	o-Xylene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
179601-23-1	p- & m- Xylenes	ND	IS-LO	ug/kg dry	9.4	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
99-87-6	p-Isopropyltoluene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
135-98-8	sec-Butylbenzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
100-42-5	Styrene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
98-06-6	tert-Butylbenzene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
127-18-4	Tetrachloroethylene	ND	IS-LO, ICVE	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
109-99-9	Tetrahydrofuran	ND	IS-LO	ug/kg dry	9.4	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:			
108-88-3	Toluene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-60-5	trans-1,2-Dichloroethylene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: LB-04 (8-10) **York Sample ID:** 23J1769-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 9:45 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
10061-02-6	trans-1,3-Dichloropropylene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-57-6	trans-1,4-dichloro-2-butene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:			
79-01-6	Trichloroethylene	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-69-4	Trichlorofluoromethane	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-01-4	Vinyl Chloride	ND	IS-LO	ug/kg dry	4.7	1	EPA 8260C	11/05/2023 10:51	11/05/2023 21:45	ZZZ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result		Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*105 %*	IS-LO	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*94.3 %*	IS-LO	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*92.8 %*	IS-LO	*70-130*

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
91-57-6	2-Methylnaphthalene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
83-32-9	Acenaphthene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
208-96-8	Acenaphthylene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-12-7	Anthracene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-55-3	Benzo(a)anthracene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-32-8	Benzo(a)pyrene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
205-99-2	Benzo(b)fluoranthene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
191-24-2	Benzo(g,h,i)perylene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
207-08-9	Benzo(k)fluoranthene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
218-01-9	Chrysene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53-70-3	Dibenzo(a,h)anthracene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: LB-04 (8-10) **York Sample ID:** 23J1769-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 9:45 am	10/27/2023

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
206-44-0	Fluoranthene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-73-7	Fluorene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
193-39-5	Indeno(1,2,3-cd)pyrene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-20-3	Naphthalene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
85-01-8	Phenanthrene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
129-00-0	Pyrene	ND		mg/kg dry	0.565	2	EPA 8270D	11/02/2023 09:26	11/03/2023 11:59	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*77.6 %*	*30-130*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*72.9 %*	*30-130*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*79.2 %*	*30-130*

Extractable Total Petroleum Hydrocarbons (ETPH)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546 ETPH

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
CT ETPH	ETPH (Extractable Total Petroleum Hydrocarbons)	ND		mg/kg dry	45.0	1	CT DEP ETPH	11/01/2023 10:41	11/02/2023 09:52	GXB
							Certifications:	CTDOH-PH-0723		

	Surrogate Recoveries	Result	Acceptance Range
3386-33-2	*Surrogate: 1-Chlorooctadecane*	*83.0 %*	*50-150*

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	**% Solids**	**88.1**		%	0.100	1	SM 2540G	11/02/2023 07:42	11/02/2023 15:43	sgs
							Certifications:	CTDOH-PH-0723		

Sample Information

Client Sample ID: DUP_10.27.2023 **York Sample ID:** 23J1769-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 12:00 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
563-58-6	1,1-Dichloropropylene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
142-28-9	1,3-Dichloropropane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: DUP_10.27.2023 **York Sample ID:** 23J1769-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 12:00 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
594-20-7	2,2-Dichloropropane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005			
78-93-3	2-Butanone	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-49-8	2-Chlorotoluene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
591-78-6	2-Hexanone	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
106-43-4	4-Chlorotoluene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-64-1	Acetone	ND		ug/kg dry	11	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
107-13-1	Acrylonitrile	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
71-43-2	Benzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-86-1	Bromobenzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-97-5	Bromochloromethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-27-4	Bromodichloromethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-25-2	Bromoform	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
74-83-9	Bromomethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-15-0	Carbon disulfide	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
56-23-5	Carbon tetrachloride	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-90-7	Chlorobenzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-00-3	Chloroethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-66-3	Chloroform	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
74-87-3	Chloromethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: DUP_10.27.2023 **York Sample ID:** 23J1769-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 12:00 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
124-48-1	Dibromochloromethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-95-3	Dibromomethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-71-8	Dichlorodifluoromethane	ND	QL-02	ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
100-41-4	Ethyl Benzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
98-82-8	Isopropylbenzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
80-62-6	Methyl Methacrylate	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-09-2	Methylene chloride	ND		ug/kg dry	11	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
91-20-3	Naphthalene	ND		ug/kg dry	11	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
104-51-8	n-Butylbenzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
103-65-1	n-Propylbenzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-47-6	o-Xylene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	11	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
135-98-8	sec-Butylbenzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
100-42-5	Styrene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
98-06-6	tert-Butylbenzene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
127-18-4	Tetrachloroethylene	ND	ICVE	ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
109-99-9	Tetrahydrofuran	ND		ug/kg dry	11	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:			
108-88-3	Toluene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: DUP_10.27.2023 **York Sample ID:** 23J1769-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 12:00 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:			
79-01-6	Trichloroethylene	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-01-4	Vinyl Chloride	ND		ug/kg dry	5.5	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:20	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*95.3 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*99.1 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*107 %*	*70-130*

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
91-57-6	2-Methylnaphthalene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
83-32-9	Acenaphthene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
208-96-8	Acenaphthylene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-12-7	Anthracene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-55-3	Benzo(a)anthracene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-32-8	Benzo(a)pyrene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
205-99-2	Benzo(b)fluoranthene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
191-24-2	Benzo(g,h,i)perylene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
207-08-9	Benzo(k)fluoranthene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
218-01-9	Chrysene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53-70-3	Dibenzo(a,h)anthracene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: DUP_10.27.2023 **York Sample ID:** 23J1769-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 12:00 am	10/27/2023

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
206-44-0	Fluoranthene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-73-7	Fluorene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
193-39-5	Indeno(1,2,3-cd)pyrene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-20-3	Naphthalene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
85-01-8	Phenanthrene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
129-00-0	Pyrene	ND		mg/kg dry	0.545	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:29	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*60.9 %*	*30-130*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*56.9 %*	*30-130*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*62.7 %*	*30-130*

Extractable Total Petroleum Hydrocarbons (ETPH)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546 ETPH

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
CT ETPH	ETPH (Extractable Total Petroleum Hydrocarbons)	ND		mg/kg dry	44.0	1	CT DEP ETPH	11/01/2023 10:41	11/02/2023 10:30	GXB
							Certifications:	CTDOH-PH-0723		

	Surrogate Recoveries	Result	Acceptance Range
3386-33-2	*Surrogate: 1-Chlorooctadecane*	*85.0 %*	*50-150*

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	**% Solids**	**88.3**		%	0.100	1	SM 2540G	11/02/2023 07:42	11/02/2023 15:43	sgs
							Certifications:	CTDOH-PH-0723		

Sample Information

Client Sample ID: LB-03 (9-10) **York Sample ID:** 23J1769-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:25 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
563-58-6	1,1-Dichloropropylene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
142-28-9	1,3-Dichloropropane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: LB-03 (9-10) **York Sample ID:** 23J1769-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:25 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
594-20-7	2,2-Dichloropropane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005			
78-93-3	2-Butanone	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-49-8	2-Chlorotoluene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
591-78-6	2-Hexanone	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
106-43-4	4-Chlorotoluene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-64-1	Acetone	ND		ug/kg dry	9.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
107-13-1	Acrylonitrile	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
71-43-2	Benzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-86-1	Bromobenzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-97-5	Bromochloromethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-27-4	Bromodichloromethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-25-2	Bromoform	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
74-83-9	Bromomethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-15-0	Carbon disulfide	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
56-23-5	Carbon tetrachloride	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-90-7	Chlorobenzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-00-3	Chloroethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-66-3	Chloroform	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
74-87-3	Chloromethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: LB-03 (9-10) **York Sample ID:** 23J1769-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:25 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
124-48-1	Dibromochloromethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-95-3	Dibromomethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-71-8	Dichlorodifluoromethane	ND	QL-02	ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
100-41-4	Ethyl Benzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
98-82-8	Isopropylbenzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
80-62-6	Methyl Methacrylate	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-09-2	Methylene chloride	ND		ug/kg dry	9.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
91-20-3	Naphthalene	ND		ug/kg dry	9.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
104-51-8	n-Butylbenzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
103-65-1	n-Propylbenzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-47-6	o-Xylene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	9.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
135-98-8	sec-Butylbenzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
100-42-5	Styrene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
98-06-6	tert-Butylbenzene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
127-18-4	Tetrachloroethylene	ND	ICVE	ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
109-99-9	Tetrahydrofuran	ND		ug/kg dry	9.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:			
108-88-3	Toluene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: LB-03 (9-10) **York Sample ID:** 23J1769-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:25 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:			
79-01-6	Trichloroethylene	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-01-4	Vinyl Chloride	ND		ug/kg dry	4.6	1	EPA 8260C	11/03/2023 09:00	11/03/2023 15:47	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*95.0 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*97.4 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*107 %*	*70-130*

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
91-57-6	2-Methylnaphthalene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
83-32-9	Acenaphthene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
208-96-8	Acenaphthylene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-12-7	Anthracene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-55-3	Benzo(a)anthracene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-32-8	Benzo(a)pyrene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
205-99-2	Benzo(b)fluoranthene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
191-24-2	Benzo(g,h,i)perylene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
207-08-9	Benzo(k)fluoranthene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
218-01-9	Chrysene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53-70-3	Dibenzo(a,h)anthracene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: LB-03 (9-10) **York Sample ID:** 23J1769-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:25 am	10/27/2023

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
206-44-0	Fluoranthene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-73-7	Fluorene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
193-39-5	Indeno(1,2,3-cd)pyrene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-20-3	Naphthalene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
85-01-8	Phenanthrene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
129-00-0	Pyrene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 12:58	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*59.4 %*	*30-130*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*56.3 %*	*30-130*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*61.0 %*	*30-130*

Extractable Total Petroleum Hydrocarbons (ETPH)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546 ETPH

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
CT ETPH	ETPH (Extractable Total Petroleum Hydrocarbons)	ND		mg/kg dry	43.7	1	CT DEP ETPH	11/03/2023 08:44	11/04/2023 06:27	GXB
							Certifications:	CTDOH-PH-0723		

	Surrogate Recoveries	Result	Acceptance Range
3386-33-2	*Surrogate: 1-Chlorooctadecane*	*94.0 %*	*50-150*

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	**% Solids**	**88.0**		%	0.100	1	SM 2540G	11/02/2023 07:42	11/02/2023 15:43	sgs
							Certifications:	CTDOH-PH-0723		

Sample Information

Client Sample ID: LB-02 (9-10) **York Sample ID:** 23J1769-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:45 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
563-58-6	1,1-Dichloropropylene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
142-28-9	1,3-Dichloropropane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: LB-02 (9-10) **York Sample ID:** 23J1769-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:45 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
594-20-7	2,2-Dichloropropane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005			
78-93-3	2-Butanone	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-49-8	2-Chlorotoluene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
591-78-6	2-Hexanone	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
106-43-4	4-Chlorotoluene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-64-1	**Acetone**	**16**	ICVE, QL-02	ug/kg dry	8.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
107-13-1	Acrylonitrile	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
71-43-2	Benzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-86-1	Bromobenzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-97-5	Bromochloromethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-27-4	Bromodichloromethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-25-2	Bromoform	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
74-83-9	Bromomethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-15-0	Carbon disulfide	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
56-23-5	Carbon tetrachloride	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-90-7	Chlorobenzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-00-3	Chloroethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-66-3	Chloroform	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
74-87-3	Chloromethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: LB-02 (9-10) **York Sample ID:** 23J1769-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:45 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
124-48-1	Dibromochloromethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-95-3	Dibromomethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-71-8	Dichlorodifluoromethane	ND	QL-02	ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
100-41-4	Ethyl Benzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
98-82-8	Isopropylbenzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
80-62-6	Methyl Methacrylate	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-09-2	Methylene chloride	ND		ug/kg dry	8.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
91-20-3	Naphthalene	ND		ug/kg dry	8.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
104-51-8	n-Butylbenzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
103-65-1	n-Propylbenzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-47-6	o-Xylene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	8.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
135-98-8	sec-Butylbenzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
100-42-5	Styrene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
98-06-6	tert-Butylbenzene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
127-18-4	Tetrachloroethylene	ND	ICVE	ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
109-99-9	Tetrahydrofuran	ND		ug/kg dry	8.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:			
108-88-3	Toluene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: LB-02 (9-10) **York Sample ID:** 23J1769-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:45 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:			
79-01-6	Trichloroethylene	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-01-4	Vinyl Chloride	ND		ug/kg dry	4.2	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:15	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*97.1 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*98.3 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*108 %*	*70-130*

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
91-57-6	2-Methylnaphthalene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
83-32-9	Acenaphthene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
208-96-8	Acenaphthylene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-12-7	Anthracene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-55-3	Benzo(a)anthracene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-32-8	Benzo(a)pyrene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
205-99-2	Benzo(b)fluoranthene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
191-24-2	Benzo(g,h,i)perylene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
207-08-9	Benzo(k)fluoranthene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
218-01-9	Chrysene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53-70-3	Dibenzo(a,h)anthracene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: LB-02 (9-10) **York Sample ID:** 23J1769-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:45 am	10/27/2023

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
206-44-0	Fluoranthene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-73-7	Fluorene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
193-39-5	Indeno(1,2,3-cd)pyrene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-20-3	Naphthalene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
85-01-8	Phenanthrene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
129-00-0	Pyrene	ND		mg/kg dry	0.559	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:27	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*60.6 %*	*30-130*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*60.2 %*	*30-130*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*64.9 %*	*30-130*

Extractable Total Petroleum Hydrocarbons (ETPH)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546 ETPH

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
CT ETPH	**ETPH (Extractable Total Petroleum Hydrocarbons)**	**116**		mg/kg dry	44.5	1	CT DEP ETPH	11/01/2023 10:41	11/02/2023 11:47	GXB
							Certifications:	CTDOH-PH-0723		

	Surrogate Recoveries	Result	Acceptance Range
3386-33-2	*Surrogate: 1-Chlorooctadecane*	*99.4 %*	*50-150*

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	**% Solids**	**88.1**		%	0.100	1	SM 2540G	11/02/2023 07:42	11/02/2023 15:43	sgs
							Certifications:	CTDOH-PH-0723		

Sample Information

Client Sample ID: LB-02 (14-15) **York Sample ID:** 23J1769-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:55 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
563-58-6	1,1-Dichloropropylene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
142-28-9	1,3-Dichloropropane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: LB-02 (14-15) **York Sample ID:** 23J1769-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:55 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
594-20-7	2,2-Dichloropropane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005		
78-93-3	**2-Butanone**	**6.6**		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-49-8	2-Chlorotoluene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
591-78-6	2-Hexanone	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-43-4	4-Chlorotoluene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-64-1	**Acetone**	**30**	ICVE, QL-02	ug/kg dry	8.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-13-1	Acrylonitrile	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-43-2	Benzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-86-1	Bromobenzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
74-97-5	Bromochloromethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
75-27-4	Bromodichloromethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-25-2	Bromoform	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
74-83-9	Bromomethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-15-0	Carbon disulfide	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-23-5	Carbon tetrachloride	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-90-7	Chlorobenzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-00-3	Chloroethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-66-3	Chloroform	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
74-87-3	Chloromethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: LB-02 (14-15) **York Sample ID:** 23J1769-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:55 am	10/27/2023

VOA, 8260 RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
124-48-1	Dibromochloromethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-95-3	Dibromomethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-71-8	Dichlorodifluoromethane	ND	QL-02	ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
100-41-4	Ethyl Benzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
98-82-8	Isopropylbenzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
80-62-6	Methyl Methacrylate	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-09-2	Methylene chloride	ND		ug/kg dry	8.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
91-20-3	Naphthalene	ND		ug/kg dry	8.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
104-51-8	n-Butylbenzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
103-65-1	n-Propylbenzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-47-6	o-Xylene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	8.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
135-98-8	sec-Butylbenzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
100-42-5	Styrene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
98-06-6	tert-Butylbenzene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
127-18-4	Tetrachloroethylene	ND	ICVE	ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
109-99-9	Tetrahydrofuran	ND		ug/kg dry	8.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:			
108-88-3	Toluene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: LB-02 (14-15) **York Sample ID:** 23J1769-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:55 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:			
79-01-6	Trichloroethylene	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-01-4	Vinyl Chloride	ND		ug/kg dry	4.3	1	EPA 8260C	11/03/2023 09:00	11/03/2023 16:43	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*95.4 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*98.2 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*108 %*	*70-130*

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
91-57-6	2-Methylnaphthalene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
83-32-9	Acenaphthene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
208-96-8	Acenaphthylene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-12-7	Anthracene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-55-3	Benzo(a)anthracene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-32-8	Benzo(a)pyrene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
205-99-2	Benzo(b)fluoranthene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
191-24-2	Benzo(g,h,i)perylene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
207-08-9	Benzo(k)fluoranthene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
218-01-9	Chrysene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53-70-3	Dibenzo(a,h)anthracene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: LB-02 (14-15) **York Sample ID:** 23J1769-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 10:55 am	10/27/2023

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
206-44-0	Fluoranthene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-73-7	Fluorene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
193-39-5	Indeno(1,2,3-cd)pyrene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-20-3	Naphthalene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
85-01-8	Phenanthrene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
129-00-0	Pyrene	ND		mg/kg dry	0.588	2	EPA 8270D	11/02/2023 09:26	11/03/2023 13:57	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*62.2 %*	*30-130*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*61.8 %*	*30-130*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*65.8 %*	*30-130*

Extractable Total Petroleum Hydrocarbons (ETPH)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546 ETPH

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
CT ETPH	ETPH (Extractable Total Petroleum Hydrocarbons)	ND		mg/kg dry	46.8	1	CT DEP ETPH	11/01/2023 10:41	11/02/2023 12:25	GXB
							Certifications:	CTDOH-PH-0723		

	Surrogate Recoveries	Result	Acceptance Range
3386-33-2	*Surrogate: 1-Chlorooctadecane*	*76.4 %*	*50-150*

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	**% Solids**	**84.5**		%	0.100	1	SM 2540G	11/02/2023 07:42	11/02/2023 15:43	sgs
							Certifications:	CTDOH-PH-0723		

Sample Information

Client Sample ID: LB-01 (9-10) **York Sample ID:** 23J1769-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 11:25 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
563-58-6	1,1-Dichloropropylene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
142-28-9	1,3-Dichloropropane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: LB-01 (9-10) **York Sample ID:** 23J1769-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 11:25 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
594-20-7	2,2-Dichloropropane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005			
78-93-3	**2-Butanone**	**8.8**		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-49-8	2-Chlorotoluene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
591-78-6	2-Hexanone	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
106-43-4	4-Chlorotoluene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-64-1	**Acetone**	**37**	ICVE, QL-02	ug/kg dry	9.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
107-13-1	Acrylonitrile	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
71-43-2	Benzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-86-1	Bromobenzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-97-5	Bromochloromethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-27-4	Bromodichloromethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-25-2	Bromoform	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
74-83-9	Bromomethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-15-0	Carbon disulfide	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
56-23-5	Carbon tetrachloride	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-90-7	Chlorobenzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-00-3	Chloroethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-66-3	Chloroform	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
74-87-3	Chloromethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: LB-01 (9-10) **York Sample ID:** 23J1769-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 11:25 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
124-48-1	Dibromochloromethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-95-3	Dibromomethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-71-8	Dichlorodifluoromethane	ND	QL-02	ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
100-41-4	Ethyl Benzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
98-82-8	Isopropylbenzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
80-62-6	Methyl Methacrylate	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-09-2	Methylene chloride	ND		ug/kg dry	9.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
91-20-3	Naphthalene	ND		ug/kg dry	9.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
104-51-8	n-Butylbenzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
103-65-1	n-Propylbenzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-47-6	o-Xylene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	9.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
135-98-8	sec-Butylbenzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
100-42-5	Styrene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
98-06-6	tert-Butylbenzene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
127-18-4	Tetrachloroethylene	ND	ICVE	ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
109-99-9	Tetrahydrofuran	ND		ug/kg dry	9.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:			
108-88-3	Toluene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: LB-01 (9-10) **York Sample ID:** 23J1769-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 11:25 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:			
79-01-6	Trichloroethylene	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-01-4	Vinyl Chloride	ND		ug/kg dry	4.7	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:10	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*97.2 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*97.3 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*103 %*	*70-130*

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
91-57-6	2-Methylnaphthalene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
83-32-9	Acenaphthene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
208-96-8	Acenaphthylene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-12-7	Anthracene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-55-3	Benzo(a)anthracene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-32-8	Benzo(a)pyrene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
205-99-2	Benzo(b)fluoranthene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
191-24-2	Benzo(g,h,i)perylene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
207-08-9	Benzo(k)fluoranthene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
218-01-9	Chrysene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53-70-3	Dibenzo(a,h)anthracene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: LB-01 (9-10) **York Sample ID:** 23J1769-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 11:25 am	10/27/2023

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
206-44-0	Fluoranthene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-73-7	Fluorene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
193-39-5	Indeno(1,2,3-cd)pyrene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-20-3	Naphthalene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
85-01-8	Phenanthrene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
129-00-0	Pyrene	ND		mg/kg dry	0.574	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:26	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*60.7 %*	*30-130*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*57.5 %*	*30-130*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*62.7 %*	*30-130*

Extractable Total Petroleum Hydrocarbons (ETPH)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546 ETPH

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
CT ETPH	**ETPH (Extractable Total Petroleum Hydrocarbons)**	**48.1**		mg/kg dry	45.5	1	CT DEP ETPH	11/01/2023 10:41	11/02/2023 13:03	GXB
							Certifications:	CTDOH-PH-0723		

	Surrogate Recoveries	Result	Acceptance Range
3386-33-2	*Surrogate: 1-Chlorooctadecane*	*93.9 %*	*50-150*

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	**% Solids**	**86.3**		%	0.100	1	SM 2540G	11/02/2023 07:42	11/02/2023 15:43	sgs
							Certifications:	CTDOH-PH-0723		

Sample Information

Client Sample ID: LB-01 (7.5-8.5) **York Sample ID:** 23J1769-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 11:35 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
563-58-6	1,1-Dichloropropylene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
142-28-9	1,3-Dichloropropane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: LB-01 (7.5-8.5) **York Sample ID:** 23J1769-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 11:35 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
594-20-7	2,2-Dichloropropane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005		
78-93-3	**2-Butanone**	**8.0**		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-49-8	2-Chlorotoluene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
591-78-6	2-Hexanone	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-43-4	4-Chlorotoluene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-64-1	**Acetone**	**30**	QL-02, ICVE	ug/kg dry	8.8	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-13-1	Acrylonitrile	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-43-2	Benzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-86-1	Bromobenzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
74-97-5	Bromochloromethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
75-27-4	Bromodichloromethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-25-2	Bromoform	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
74-83-9	Bromomethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-15-0	Carbon disulfide	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-23-5	Carbon tetrachloride	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-90-7	Chlorobenzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-00-3	Chloroethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-66-3	Chloroform	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
74-87-3	Chloromethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: LB-01 (7.5-8.5) **York Sample ID:** 23J1769-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 11:35 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
124-48-1	Dibromochloromethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-95-3	Dibromomethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-71-8	Dichlorodifluoromethane	ND	QL-02	ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
100-41-4	Ethyl Benzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
98-82-8	Isopropylbenzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
80-62-6	Methyl Methacrylate	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-09-2	Methylene chloride	ND		ug/kg dry	8.8	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
91-20-3	Naphthalene	ND		ug/kg dry	8.8	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
104-51-8	n-Butylbenzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
103-65-1	n-Propylbenzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-47-6	o-Xylene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	8.8	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
135-98-8	sec-Butylbenzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
100-42-5	Styrene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
98-06-6	tert-Butylbenzene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
127-18-4	Tetrachloroethylene	ND	ICVE	ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
109-99-9	Tetrahydrofuran	ND		ug/kg dry	8.8	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:			
108-88-3	Toluene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: LB-01 (7.5-8.5) **York Sample ID:** 23J1769-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 11:35 am	10/27/2023

VOA, 8260 RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:			
79-01-6	Trichloroethylene	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-01-4	Vinyl Chloride	ND		ug/kg dry	4.4	1	EPA 8260C	11/03/2023 09:00	11/03/2023 17:38	BMT
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*95.5 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*98.1 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*108 %*	*70-130*

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
91-57-6	2-Methylnaphthalene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
83-32-9	Acenaphthene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
208-96-8	Acenaphthylene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-12-7	Anthracene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-55-3	Benzo(a)anthracene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-32-8	Benzo(a)pyrene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
205-99-2	Benzo(b)fluoranthene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
191-24-2	Benzo(g,h,i)perylene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
207-08-9	Benzo(k)fluoranthene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
218-01-9	Chrysene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53-70-3	Dibenzo(a,h)anthracene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: LB-01 (7.5-8.5) **York Sample ID:** 23J1769-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Soil	October 27, 2023 11:35 am	10/27/2023

SVOA, 8270 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
206-44-0	Fluoranthene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-73-7	Fluorene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
193-39-5	Indeno(1,2,3-cd)pyrene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-20-3	Naphthalene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
85-01-8	Phenanthrene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
129-00-0	Pyrene	ND		mg/kg dry	0.549	2	EPA 8270D	11/02/2023 09:26	11/03/2023 14:56	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*66.3 %*	*30-130*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*64.7 %*	*30-130*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*70.6 %*	*30-130*

Extractable Total Petroleum Hydrocarbons (ETPH)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 ETPH

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
CT ETPH	ETPH (Extractable Total Petroleum Hydrocarbons)	ND		mg/kg dry	45.4	1	CT DEP ETPH	11/01/2023 10:41	11/02/2023 13:42	GXB
							Certifications:	CTDOH-PH-0723		

	Surrogate Recoveries	Result	Acceptance Range
3386-33-2	*Surrogate: 1-Chlorooctadecane*	*81.5 %*	*50-150*

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	**% Solids**	**87.1**		%	0.100	1	SM 2540G	11/02/2023 07:42	11/02/2023 15:43	sgs
							Certifications:	CTDOH-PH-0723		

Sample Information

Client Sample ID: **Trip Blanks** **York Sample ID:** **23J1769-08**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Water	October 27, 2023 1:07 pm	10/27/2023

VOA, 8260 RCP LOW MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
79-00-5	1,1,2-Trichloroethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
75-34-3	1,1-Dichloroethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
563-58-6	1,1-Dichloropropylene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP-CT005		
87-61-6	1,2,3-Trichlorobenzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP-CT005,PADEP-68-04		
96-18-4	1,2,3-Trichloropropane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP-CT005,PADEP-68-04		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP-CT005,PADEP-68-04		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
106-93-4	1,2-Dibromoethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
107-06-2	1,2-Dichloroethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
78-87-5	1,2-Dichloropropane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
142-28-9	1,3-Dichloropropane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP-CT005,PADEP-68-04		
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		

Sample Information

Client Sample ID: Trip Blanks

York Sample ID: 23J1769-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Water	October 27, 2023 1:07 pm	10/27/2023

VOA, 8260 RCP LOW MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
594-20-7	2,2-Dichloropropane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP-CT005,PADEP-68-04		
78-93-3	2-Butanone	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
95-49-8	2-Chlorotoluene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
591-78-6	2-Hexanone	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
106-43-4	4-Chlorotoluene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
108-10-1	4-Methyl-2-pentanone	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
67-64-1	**Acetone**	**2.14**	ICVE, QL-02	ug/L	2.00	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
107-13-1	Acrylonitrile	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
71-43-2	Benzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
108-86-1	Bromobenzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP-CT005,PADEP-68-04		
74-97-5	Bromochloromethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP-CT005,PADEP-68-04		
75-27-4	Bromodichloromethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
75-25-2	Bromoform	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
74-83-9	Bromomethane	ND	CCVE	ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
75-15-0	Carbon disulfide	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
56-23-5	Carbon tetrachloride	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
108-90-7	Chlorobenzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
75-00-3	Chloroethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
67-66-3	Chloroform	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
74-87-3	Chloromethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
156-59-2	cis-1,2-Dichloroethylene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		

Sample Information

Client Sample ID: Trip Blanks **York Sample ID:** 23J1769-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Water	October 27, 2023 1:07 pm	10/27/2023

VOA, 8260 RCP LOW MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
124-48-1	Dibromochloromethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
74-95-3	Dibromomethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP-CT005,PADEP-68-04		
75-71-8	Dichlorodifluoromethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP-CT005,PADEP-68-04		
100-41-4	Ethyl Benzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
87-68-3	Hexachlorobutadiene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP-CT005,PADEP-68-04		
98-82-8	Isopropylbenzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
80-62-6	Methyl Methacrylate	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP-CT005		
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
75-09-2	Methylene chloride	ND	CAL-E	ug/L	2.00	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
91-20-3	Naphthalene	ND		ug/L	2.00	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP-CT005,PADEP-68-04		
104-51-8	n-Butylbenzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
103-65-1	n-Propylbenzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
95-47-6	o-Xylene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,PADEP-68		
179601-23-1	p- & m- Xylenes	ND		ug/L	1.00	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,PADEP-68		
99-87-6	p-Isopropyltoluene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
135-98-8	sec-Butylbenzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
100-42-5	Styrene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
98-06-6	tert-Butylbenzene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
127-18-4	Tetrachloroethylene	ND	ICVE, QL-02	ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
109-99-9	Tetrahydrofuran	ND		ug/L	4.00	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:			
108-88-3	Toluene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		

Sample Information

Client Sample ID: **Trip Blanks** **York Sample ID:** **23J1769-08**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
23J1769	140265101	Water	October 27, 2023 1:07 pm	10/27/2023

VOA, 8260 RCP LOW MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP-CT005,PADEP-68-04		
79-01-6	Trichloroethylene	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
75-69-4	Trichlorofluoromethane	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		
75-01-4	Vinyl Chloride	ND		ug/L	0.500	1	EPA 8260C	11/02/2023 12:30	11/03/2023 01:04	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NELAC-NY12058,NJDEP-CT		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*103 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*94.4 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*92.3 %*	*70-130*

Analytical Batch Summary

Batch ID: BK30041 **Preparation Method:** EPA 3546 ETPH **Prepared By:** SAC

YORK Sample ID	Client Sample ID	Preparation Date
23J1769-01	LB-04 (8-10)	11/01/23
23J1769-02	DUP_10.27.2023	11/01/23
23J1769-04	LB-02 (9-10)	11/01/23
23J1769-05	LB-02 (14-15)	11/01/23
23J1769-06	LB-01 (9-10)	11/01/23
23J1769-07	LB-01 (7.5-8.5)	11/01/23
BK30041-BLK1	Blank	11/01/23
BK30041-BS1	LCS	11/01/23
BK30041-MS1	Matrix Spike	11/01/23
BK30041-MSD1	Matrix Spike Dup	11/01/23

Batch ID: BK30091 **Preparation Method:** % Solids Prep **Prepared By:** sgs

YORK Sample ID	Client Sample ID	Preparation Date
23J1769-01	LB-04 (8-10)	11/02/23
23J1769-02	DUP_10.27.2023	11/02/23
23J1769-03	LB-03 (9-10)	11/02/23
23J1769-04	LB-02 (9-10)	11/02/23
23J1769-05	LB-02 (14-15)	11/02/23
23J1769-06	LB-01 (9-10)	11/02/23
23J1769-07	LB-01 (7.5-8.5)	11/02/23
BK30091-DUP1	Duplicate	11/02/23

Batch ID: BK30129 **Preparation Method:** EPA 3546- SVOA RCP **Prepared By:** SAC

YORK Sample ID	Client Sample ID	Preparation Date
23J1769-01	LB-04 (8-10)	11/02/23
23J1769-02	DUP_10.27.2023	11/02/23
23J1769-03	LB-03 (9-10)	11/02/23
23J1769-04	LB-02 (9-10)	11/02/23
23J1769-05	LB-02 (14-15)	11/02/23
23J1769-06	LB-01 (9-10)	11/02/23
23J1769-07	LB-01 (7.5-8.5)	11/02/23
BK30129-BLK1	Blank	11/02/23
BK30129-BS1	LCS	11/02/23
BK30129-MS1	Matrix Spike	11/02/23
BK30129-MSD1	Matrix Spike Dup	11/02/23

Batch ID: BK30158 **Preparation Method:** EPA 5030B **Prepared By:** SMA

YORK Sample ID	Client Sample ID	Preparation Date
23J1769-08	Trip Blanks	11/02/23
BK30158-BLK1	Blank	11/02/23
BK30158-BS1	LCS	11/02/23

BK30158-BSD1	LCS Dup	11/02/23
BK30158-MS1	Matrix Spike	11/02/23
BK30158-MSD1	Matrix Spike Dup	11/02/23

Batch ID: BK30188 **Preparation Method:** EPA 5035A **Prepared By:** SS

YORK Sample ID	Client Sample ID	Preparation Date
23J1769-02	DUP_10.27.2023	11/03/23
23J1769-03	LB-03 (9-10)	11/03/23
23J1769-04	LB-02 (9-10)	11/03/23
23J1769-05	LB-02 (14-15)	11/03/23
23J1769-06	LB-01 (9-10)	11/03/23
23J1769-07	LB-01 (7.5-8.5)	11/03/23
BK30188-BS1	LCS	11/03/23
BK30188-BSD1	LCS Dup	11/03/23
BK30188-MS1	Matrix Spike	11/03/23

Batch ID: BK30203 **Preparation Method:** EPA 3546 ETPH **Prepared By:** JLM

YORK Sample ID	Client Sample ID	Preparation Date
23J1769-03	LB-03 (9-10)	11/03/23
BK30203-BLK1	Blank	11/03/23
BK30203-BS1	LCS	11/03/23
BK30203-MS1	Matrix Spike	11/03/23
BK30203-MSD1	Matrix Spike Dup	11/03/23

Batch ID: BK30280 **Preparation Method:** EPA 5035A **Prepared By:** SKF

YORK Sample ID	Client Sample ID	Preparation Date
23J1769-01	LB-04 (8-10)	11/05/23
BK30280-BLK1	Blank	11/05/23
BK30280-BLK2	Blank	11/05/23
BK30280-BS1	LCS	11/05/23
BK30280-BSD1	LCS Dup	11/05/23
BK30280-MS1	Matrix Spike	11/05/23
BK30280-MSD1	Matrix Spike Dup	11/05/23

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30158 - EPA 5030B											
Blank (BK30158-BLK1) Blank									Prepared & Analyzed: 11/02/2023		
1,1,1,2-Tetrachloroethane	ND	0.500	ug/L								
1,1,1-Trichloroethane	ND	0.500	"								
1,1,2,2-Tetrachloroethane	ND	0.500	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.500	"								
1,1,2-Trichloroethane	ND	0.500	"								
1,1-Dichloroethane	ND	0.500	"								
1,1-Dichloroethylene	ND	0.500	"								
1,1-Dichloropropylene	ND	0.500	"								
1,2,3-Trichlorobenzene	ND	0.500	"								
1,2,3-Trichloropropane	ND	0.500	"								
1,2,4-Trichlorobenzene	ND	0.500	"								
1,2,4-Trimethylbenzene	ND	0.500	"								
1,2-Dibromo-3-chloropropane	ND	0.500	"								
1,2-Dibromoethane	ND	0.500	"								
1,2-Dichlorobenzene	ND	0.500	"								
1,2-Dichloroethane	ND	0.500	"								
1,2-Dichloropropane	ND	0.500	"								
1,3,5-Trimethylbenzene	ND	0.500	"								
1,3-Dichlorobenzene	ND	0.500	"								
1,3-Dichloropropane	ND	0.500	"								
1,4-Dichlorobenzene	ND	0.500	"								
2,2-Dichloropropane	ND	0.500	"								
2-Butanone	ND	0.500	"								
2-Chlorotoluene	ND	0.500	"								
2-Hexanone	ND	0.500	"								
4-Chlorotoluene	ND	0.500	"								
4-Methyl-2-pentanone	ND	0.500	"								
Acetone	ND	2.00	"								
Acrylonitrile	ND	0.500	"								
Benzene	ND	0.500	"								
Bromobenzene	ND	0.500	"								
Bromochloromethane	ND	0.500	"								
Bromodichloromethane	ND	0.500	"								
Bromoform	ND	0.500	"								
Bromomethane	ND	0.500	"								
Carbon disulfide	ND	0.500	"								
Carbon tetrachloride	ND	0.500	"								
Chlorobenzene	ND	0.500	"								
Chloroethane	ND	0.500	"								
Chloroform	ND	0.500	"								
Chloromethane	ND	0.500	"								
cis-1,2-Dichloroethylene	ND	0.500	"								
cis-1,3-Dichloropropylene	ND	0.500	"								
Dibromochloromethane	ND	0.500	"								
Dibromomethane	ND	0.500	"								
Dichlorodifluoromethane	ND	0.500	"								
Ethyl Benzene	ND	0.500	"								
Hexachlorobutadiene	ND	0.500	"								
Isopropylbenzene	ND	0.500	"								
Methyl Methacrylate	ND	0.500	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30158 - EPA 5030B											
Blank (BK30158-BLK1) Blank									Prepared & Analyzed: 11/02/2023		
Methyl tert-butyl ether (MTBE)	ND	0.500	ug/L								
Methylene chloride	ND	2.00	"								
Naphthalene	ND	2.00	"								
n-Butylbenzene	ND	0.500	"								
n-Propylbenzene	ND	0.500	"								
o-Xylene	ND	0.500	"								
p- & m- Xylenes	ND	1.00	"								
p-Isopropyltoluene	ND	0.500	"								
sec-Butylbenzene	ND	0.500	"								
Styrene	ND	0.500	"								
tert-Butylbenzene	ND	0.500	"								
Tetrachloroethylene	ND	0.500	"								
Tetrahydrofuran	ND	4.00	"								
Toluene	ND	0.500	"								
trans-1,2-Dichloroethylene	ND	0.500	"								
trans-1,3-Dichloropropylene	ND	0.500	"								
trans-1,4-dichloro-2-butene	ND	0.500	"								
Trichloroethylene	ND	0.500	"								
Trichlorofluoromethane	ND	0.500	"								
Vinyl Chloride	ND	0.500	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*10.1*		*"*	*10.0*		*101*	*70-130*				
Surrogate: SURR: Toluene-d8	*9.50*		*"*	*10.0*		*95.0*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*8.81*		*"*	*10.0*		*88.1*	*70-130*				
LCS (BK30158-BS1) LCS									Prepared & Analyzed: 11/02/2023		
1,1,1,2-Tetrachloroethane	9.59		ug/L	10.0		95.9	70-130				
1,1,1-Trichloroethane	10.7		"	10.0		107	70-130				
1,1,2,2-Tetrachloroethane	8.19		"	10.0		81.9	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11.5		"	10.0		115	70-130				
1,1,2-Trichloroethane	8.73		"	10.0		87.3	70-130				
1,1-Dichloroethane	9.81		"	10.0		98.1	70-130				
1,1-Dichloroethylene	9.98		"	10.0		99.8	70-130				
1,1-Dichloropropylene	10.1		"	10.0		101	70-130				
1,2,3-Trichlorobenzene	8.36		"	10.0		83.6	70-130				
1,2,3-Trichloropropane	7.93		"	10.0		79.3	70-130				
1,2,4-Trichlorobenzene	8.86		"	10.0		88.6	70-130				
1,2,4-Trimethylbenzene	8.62		"	10.0		86.2	70-130				
1,2-Dibromo-3-chloropropane	8.13		"	10.0		81.3	70-130				
1,2-Dibromoethane	9.20		"	10.0		92.0	70-130				
1,2-Dichlorobenzene	9.06		"	10.0		90.6	70-130				
1,2-Dichloroethane	10.1		"	10.0		101	70-130				
1,2-Dichloropropane	9.22		"	10.0		92.2	70-130				
1,3,5-Trimethylbenzene	8.45		"	10.0		84.5	70-130				
1,3-Dichlorobenzene	9.01		"	10.0		90.1	70-130				
1,3-Dichloropropane	8.85		"	10.0		88.5	70-130				
1,4-Dichlorobenzene	8.92		"	10.0		89.2	70-130				
2,2-Dichloropropane	9.93		"	10.0		99.3	70-130				
2-Butanone	9.22		"	10.0		92.2	70-130				
2-Chlorotoluene	8.98		"	10.0		89.8	70-130				
2-Hexanone	7.01		"	10.0		70.1	70-130				
4-Chlorotoluene	8.49		"	10.0		84.9	70-130				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30158 - EPA 5030B											
LCS (BK30158-BS1) LCS								Prepared & Analyzed: 11/02/2023			
4-Methyl-2-pentanone	7.31		ug/L	10.0		73.1	70-130				
Acetone	18.1		"	10.0		181	70-130	High Bias			
Acrylonitrile	9.15		"	10.0		91.5	70-130				
Benzene	10.5		"	10.0		105	70-130				
Bromobenzene	8.12		"	10.0		81.2	70-130				
Bromochloromethane	9.76		"	10.0		97.6	70-130				
Bromodichloromethane	8.87		"	10.0		88.7	70-130				
Bromoform	9.46		"	10.0		94.6	70-130				
Bromomethane	7.58		"	10.0		75.8	70-130				
Carbon disulfide	10.0		"	10.0		100	70-130				
Carbon tetrachloride	10.9		"	10.0		109	70-130				
Chlorobenzene	10.1		"	10.0		101	70-130				
Chloroethane	11.3		"	10.0		113	70-130				
Chloroform	10.2		"	10.0		102	70-130				
Chloromethane	9.70		"	10.0		97.0	70-130				
cis-1,2-Dichloroethylene	9.77		"	10.0		97.7	70-130				
cis-1,3-Dichloropropylene	8.70		"	10.0		87.0	70-130				
Dibromochloromethane	8.98		"	10.0		89.8	70-130				
Dibromomethane	9.00		"	10.0		90.0	70-130				
Dichlorodifluoromethane	12.4		"	10.0		124	70-130				
Ethyl Benzene	9.58		"	10.0		95.8	70-130				
Hexachlorobutadiene	8.63		"	10.0		86.3	70-130				
Isopropylbenzene	8.97		"	10.0		89.7	70-130				
Methyl Methacrylate	7.95		"	10.0		79.5	70-130				
Methyl tert-butyl ether (MTBE)	9.76		"	10.0		97.6	70-130				
Methylene chloride	7.93		"	10.0		79.3	70-130				
Naphthalene	8.56		"	10.0		85.6	70-130				
n-Butylbenzene	8.84		"	10.0		88.4	70-130				
n-Propylbenzene	8.73		"	10.0		87.3	70-130				
o-Xylene	9.40		"	10.0		94.0	70-130				
p- & m- Xylenes	19.4		"	20.0		97.0	70-130				
p-Isopropyltoluene	9.15		"	10.0		91.5	70-130				
sec-Butylbenzene	9.41		"	10.0		94.1	70-130				
Styrene	9.36		"	10.0		93.6	70-130				
tert-Butylbenzene	8.82		"	10.0		88.2	70-130				
Tetrachloroethylene	5.19		"	10.0		51.9	70-130	Low Bias			
Tetrahydrofuran	10.2		"	10.0		102	70-130				
Toluene	9.68		"	10.0		96.8	70-130				
trans-1,2-Dichloroethylene	10.0		"	10.0		100	70-130				
trans-1,3-Dichloropropylene	8.50		"	10.0		85.0	70-130				
trans-1,4-dichloro-2-butene	7.91		"	10.0		79.1	70-130				
Trichloroethylene	9.15		"	10.0		91.5	70-130				
Trichlorofluoromethane	11.5		"	10.0		115	70-130				
Vinyl Chloride	10.8		"	10.0		108	70-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*9.88*		*"*	*10.0*		*98.8*	*70-130*				
Surrogate: SURR: Toluene-d8	*9.55*		*"*	*10.0*		*95.5*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*8.99*		*"*	*10.0*		*89.9*	*70-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30158 - EPA 5030B											
LCS Dup (BK30158-BSD1) LCS Dup								Prepared & Analyzed: 11/02/2023			
1,1,1,2-Tetrachloroethane	9.27		ug/L	10.0		92.7	70-130		3.39	30	
1,1,1-Trichloroethane	9.89		"	10.0		98.9	70-130		7.77	30	
1,1,2,2-Tetrachloroethane	9.35		"	10.0		93.5	70-130		13.2	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.4		"	10.0		104	70-130		9.97	30	
1,1,2-Trichloroethane	9.06		"	10.0		90.6	70-130		3.71	30	
1,1-Dichloroethane	9.15		"	10.0		91.5	70-130		6.96	30	
1,1-Dichloroethylene	9.23		"	10.0		92.3	70-130		7.81	30	
1,1-Dichloropropylene	9.15		"	10.0		91.5	70-130		9.67	30	
1,2,3-Trichlorobenzene	9.83		"	10.0		98.3	70-130		16.2	30	
1,2,3-Trichloropropane	8.89		"	10.0		88.9	70-130		11.4	30	
1,2,4-Trichlorobenzene	9.35		"	10.0		93.5	70-130		5.38	30	
1,2,4-Trimethylbenzene	8.23		"	10.0		82.3	70-130		4.63	30	
1,2-Dibromo-3-chloropropane	9.06		"	10.0		90.6	70-130		10.8	30	
1,2-Dibromoethane	9.65		"	10.0		96.5	70-130		4.77	30	
1,2-Dichlorobenzene	8.96		"	10.0		89.6	70-130		1.11	30	
1,2-Dichloroethane	10.3		"	10.0		103	70-130		1.97	30	
1,2-Dichloropropane	8.69		"	10.0		86.9	70-130		5.92	30	
1,3,5-Trimethylbenzene	8.00		"	10.0		80.0	70-130		5.47	30	
1,3-Dichlorobenzene	8.52		"	10.0		85.2	70-130		5.59	30	
1,3-Dichloropropane	9.12		"	10.0		91.2	70-130		3.01	30	
1,4-Dichlorobenzene	8.59		"	10.0		85.9	70-130		3.77	30	
2,2-Dichloropropane	9.18		"	10.0		91.8	70-130		7.85	30	
2-Butanone	9.96		"	10.0		99.6	70-130		7.72	30	
2-Chlorotoluene	8.11		"	10.0		81.1	70-130		10.2	30	
2-Hexanone	8.13		"	10.0		81.3	70-130		14.8	30	
4-Chlorotoluene	8.20		"	10.0		82.0	70-130		3.48	30	
4-Methyl-2-pentanone	8.28		"	10.0		82.8	70-130		12.4	30	
Acetone	19.8		"	10.0		198	70-130	High Bias	9.17	30	
Acrylonitrile	9.95		"	10.0		99.5	70-130		8.38	30	
Benzene	9.91		"	10.0		99.1	70-130		6.16	30	
Bromobenzene	8.22		"	10.0		82.2	70-130		1.22	30	
Bromochloromethane	9.95		"	10.0		99.5	70-130		1.93	30	
Bromodichloromethane	8.57		"	10.0		85.7	70-130		3.44	30	
Bromoform	10.2		"	10.0		102	70-130		7.82	30	
Bromomethane	7.43		"	10.0		74.3	70-130		2.00	30	
Carbon disulfide	9.15		"	10.0		91.5	70-130		8.88	30	
Carbon tetrachloride	10.0		"	10.0		100	70-130		8.60	30	
Chlorobenzene	9.56		"	10.0		95.6	70-130		5.89	30	
Chloroethane	10.3		"	10.0		103	70-130		9.73	30	
Chloroform	9.75		"	10.0		97.5	70-130		4.71	30	
Chloromethane	8.81		"	10.0		88.1	70-130		9.62	30	
cis-1,2-Dichloroethylene	9.17		"	10.0		91.7	70-130		6.34	30	
cis-1,3-Dichloropropylene	8.61		"	10.0		86.1	70-130		1.04	30	
Dibromochloromethane	9.25		"	10.0		92.5	70-130		2.96	30	
Dibromomethane	9.17		"	10.0		91.7	70-130		1.87	30	
Dichlorodifluoromethane	11.0		"	10.0		110	70-130		11.8	30	
Ethyl Benzene	8.74		"	10.0		87.4	70-130		9.17	30	
Hexachlorobutadiene	8.34		"	10.0		83.4	70-130		3.42	30	
Isopropylbenzene	8.35		"	10.0		83.5	70-130		7.16	30	
Methyl Methacrylate	8.88		"	10.0		88.8	70-130		11.1	30	
Methyl tert-butyl ether (MTBE)	10.8		"	10.0		108	70-130		10.0	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30158 - EPA 5030B											
LCS Dup (BK30158-BSD1) LCS Dup								Prepared & Analyzed: 11/02/2023			
Methylene chloride	7.84		ug/L	10.0		78.4	70-130		1.14	30	
Naphthalene	10.0		"	10.0		100	70-130		15.6	30	
n-Butylbenzene	7.90		"	10.0		79.0	70-130		11.2	30	
n-Propylbenzene	8.15		"	10.0		81.5	70-130		6.87	30	
o-Xylene	8.81		"	10.0		88.1	70-130		6.48	30	
p- & m- Xylenes	17.8		"	20.0		88.9	70-130		8.77	30	
p-Isopropyltoluene	8.17		"	10.0		81.7	70-130		11.3	30	
sec-Butylbenzene	8.19		"	10.0		81.9	70-130		13.9	30	
Styrene	9.03		"	10.0		90.3	70-130		3.59	30	
tert-Butylbenzene	8.32		"	10.0		83.2	70-130		5.83	30	
Tetrachloroethylene	4.66		"	10.0		46.6	70-130	Low Bias	10.8	30	
Tetrahydrofuran	11.0		"	10.0		110	70-130		6.97	30	
Toluene	9.17		"	10.0		91.7	70-130		5.41	30	
trans-1,2-Dichloroethylene	9.10		"	10.0		91.0	70-130		9.62	30	
trans-1,3-Dichloropropylene	9.09		"	10.0		90.9	70-130		6.71	30	
trans-1,4-dichloro-2-butene	8.60		"	10.0		86.0	70-130		8.36	30	
Trichloroethylene	8.24		"	10.0		82.4	70-130		10.5	30	
Trichlorofluoromethane	10.4		"	10.0		104	70-130		9.97	30	
Vinyl Chloride	9.59		"	10.0		95.9	70-130		11.4	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*10.6*		*"*	*10.0*		*106*	*70-130*				
Surrogate: SURR: Toluene-d8	*9.45*		*"*	*10.0*		*94.5*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*9.20*		*"*	*10.0*		*92.0*	*70-130*				
Matrix Spike (BK30158-MS1) Matrix Spike *Source sample: 23J1840-02 (Matrix Spike)								Prepared: 11/02/2023 Analyzed: 11/03/2023			
1,1,1,2-Tetrachloroethane	12.0		ug/L	10.0	0.00	120	70-130				
1,1,1-Trichloroethane	13.0		"	10.0	0.00	130	70-130				
1,1,2,2-Tetrachloroethane	12.0		"	10.0	0.00	120	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	13.2		"	10.0	0.00	132	70-130	High Bias			
1,1,2-Trichloroethane	12.2		"	10.0	0.00	122	70-130				
1,1-Dichloroethane	12.4		"	10.0	0.370	120	70-130				
1,1-Dichloroethylene	12.7		"	10.0	0.740	119	70-130				
1,1-Dichloropropylene	11.6		"	10.0	0.00	116	70-130				
1,2,3-Trichlorobenzene	10.2		"	10.0	0.00	102	70-130				
1,2,3-Trichloropropane	11.3		"	10.0	0.00	113	70-130				
1,2,4-Trichlorobenzene	10.1		"	10.0	0.00	101	70-130				
1,2,4-Trimethylbenzene	9.73		"	10.0	0.00	97.3	70-130				
1,2-Dibromo-3-chloropropane	11.6		"	10.0	0.00	116	70-130				
1,2-Dibromoethane	12.4		"	10.0	0.00	124	70-130				
1,2-Dichlorobenzene	10.8		"	10.0	0.00	108	70-130				
1,2-Dichloroethane	14.4		"	10.0	0.680	137	70-130	High Bias			
1,2-Dichloropropane	11.6		"	10.0	0.270	114	70-130				
1,3,5-Trimethylbenzene	9.52		"	10.0	0.00	95.2	70-130				
1,3-Dichlorobenzene	10.1		"	10.0	0.00	101	70-130				
1,3-Dichloropropane	11.9		"	10.0	0.00	119	70-130				
1,4-Dichlorobenzene	10.2		"	10.0	0.00	102	70-130				
2,2-Dichloropropane	11.1		"	10.0	0.00	111	70-130				
2-Butanone	48.8		"	10.0	0.00	488	70-130	High Bias			
2-Chlorotoluene	10.5		"	10.0	0.00	105	70-130				
2-Hexanone	10.8		"	10.0	0.00	108	70-130				
4-Chlorotoluene	9.82		"	10.0	0.00	98.2	70-130				
4-Methyl-2-pentanone	11.1		"	10.0	0.00	111	70-130				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30158 - EPA 5030B											
Matrix Spike (BK30158-MS1) Matrix Spike	*Source sample: 23J1840-02 (Matrix Spike)							Prepared: 11/02/2023 Analyzed: 11/03/2023			
Acetone	27.2		ug/L	10.0	0.00	272	70-130	High Bias			
Acrylonitrile	13.3		"	10.0	0.00	133	70-130	High Bias			
Benzene	12.7		"	10.0	0.00	127	70-130				
Bromobenzene	10.4		"	10.0	0.00	104	70-130				
Bromochloromethane	13.2		"	10.0	0.00	132	70-130	High Bias			
Bromodichloromethane	11.3		"	10.0	0.00	113	70-130				
Bromoform	13.4		"	10.0	0.00	134	70-130	High Bias			
Bromomethane	8.39		"	10.0	0.00	83.9	70-130				
Carbon disulfide	11.7		"	10.0	0.00	117	70-130				
Carbon tetrachloride	12.8		"	10.0	0.00	128	70-130				
Chlorobenzene	12.3		"	10.0	0.00	123	70-130				
Chloroethane	13.4		"	10.0	0.00	134	70-130	High Bias			
Chloroform	13.4		"	10.0	0.640	128	70-130				
Chloromethane	11.9		"	10.0	0.00	119	70-130				
cis-1,2-Dichloroethylene	250		"	10.0	248	13.0	70-130	Low Bias			
cis-1,3-Dichloropropylene	11.0		"	10.0	0.00	110	70-130				
Dibromochloromethane	12.1		"	10.0	0.00	121	70-130				
Dibromomethane	11.9		"	10.0	0.00	119	70-130				
Dichlorodifluoromethane	12.8		"	10.0	0.00	128	70-130				
Ethyl Benzene	10.9		"	10.0	0.00	109	70-130				
Hexachlorobutadiene	8.53		"	10.0	0.00	85.3	70-130				
Isopropylbenzene	10.2		"	10.0	0.00	102	70-130				
Methyl Methacrylate	11.0		"	10.0	0.00	110	70-130				
Methyl tert-butyl ether (MTBE)	14.4		"	10.0	0.230	142	70-130	High Bias			
Methylene chloride	10.2		"	10.0	0.00	102	70-130				
Naphthalene	11.5		"	10.0	0.00	115	70-130				
n-Butylbenzene	8.31		"	10.0	0.00	83.1	70-130				
n-Propylbenzene	9.57		"	10.0	0.00	95.7	70-130				
o-Xylene	11.2		"	10.0	0.00	112	70-130				
p- & m- Xylenes	22.1		"	20.0	0.00	110	70-130				
p-Isopropyltoluene	9.06		"	10.0	0.00	90.6	70-130				
sec-Butylbenzene	9.33		"	10.0	0.00	93.3	70-130				
Styrene	11.2		"	10.0	0.00	112	70-130				
tert-Butylbenzene	10.1		"	10.0	0.00	101	70-130				
Tetrachloroethylene	24.9		"	10.0	20.2	46.8	70-130	Low Bias			
Tetrahydrofuran	14.7		"	10.0	0.00	147	70-130	High Bias			
Toluene	11.3		"	10.0	0.00	113	70-130				
trans-1,2-Dichloroethylene	13.4		"	10.0	1.46	120	70-130				
trans-1,3-Dichloropropylene	11.3		"	10.0	0.00	113	70-130				
trans-1,4-dichloro-2-butene	11.1		"	10.0	0.00	111	70-130				
Trichloroethylene	64.8		"	10.0	59.6	51.8	70-130	Low Bias			
Trichlorofluoromethane	13.2		"	10.0	0.00	132	70-130	High Bias			
Vinyl Chloride	14.3		"	10.0	0.00	143	70-130	High Bias			
Surrogate: SURR: 1,2-Dichloroethane-d4	*10.6*		*"*	*10.0*		*106*	*70-130*				
Surrogate: SURR: Toluene-d8	*9.31*		*"*	*10.0*		*93.1*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*9.22*		*"*	*10.0*		*92.2*	*70-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Batch BK30158 - EPA 5030B

Matrix Spike Dup (BK30158-! Matrix Spike Dup Source sample: 23J1840-02 (Matrix Spike Dup) Prepared: 11/02/2023 Analyzed: 11/03/2023

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
1,1,1,2-Tetrachloroethane	12.6		ug/L	10.0	0.00	126	70-130		4.46	30	
1,1,1-Trichloroethane	14.1		"	10.0	0.00	141	70-130	High Bias	8.14	30	
1,1,2,2-Tetrachloroethane	12.7		"	10.0	0.00	127	70-130		6.07	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	13.8		"	10.0	0.00	138	70-130	High Bias	4.21	30	
1,1,2-Trichloroethane	12.7		"	10.0	0.00	127	70-130		4.25	30	
1,1-Dichloroethane	13.4		"	10.0	0.370	130	70-130		7.92	30	
1,1-Dichloroethylene	13.4		"	10.0	0.740	127	70-130		5.68	30	
1,1-Dichloropropylene	12.2		"	10.0	0.00	122	70-130		5.46	30	
1,2,3-Trichlorobenzene	11.9		"	10.0	0.00	119	70-130		15.3	30	
1,2,3-Trichloropropane	12.0		"	10.0	0.00	120	70-130		5.92	30	
1,2,4-Trichlorobenzene	10.5		"	10.0	0.00	105	70-130		3.68	30	
1,2,4-Trimethylbenzene	9.86		"	10.0	0.00	98.6	70-130		1.33	30	
1,2-Dibromo-3-chloropropane	12.2		"	10.0	0.00	122	70-130		5.30	30	
1,2-Dibromoethane	13.0		"	10.0	0.00	130	70-130		4.74	30	
1,2-Dichlorobenzene	11.0		"	10.0	0.00	110	70-130		2.29	30	
1,2-Dichloroethane	15.0		"	10.0	0.680	143	70-130	High Bias	3.82	30	
1,2-Dichloropropane	12.5		"	10.0	0.270	123	70-130		7.36	30	
1,3,5-Trimethylbenzene	9.87		"	10.0	0.00	98.7	70-130		3.61	30	
1,3-Dichlorobenzene	10.2		"	10.0	0.00	102	70-130		0.692	30	
1,3-Dichloropropane	12.5		"	10.0	0.00	125	70-130		5.08	30	
1,4-Dichlorobenzene	10.1		"	10.0	0.00	101	70-130		0.691	30	
2,2-Dichloropropane	12.0		"	10.0	0.00	120	70-130		7.90	30	
2-Butanone	52.1		"	10.0	0.00	521	70-130	High Bias	6.54	30	
2-Chlorotoluene	11.0		"	10.0	0.00	110	70-130		4.85	30	
2-Hexanone	11.1		"	10.0	0.00	111	70-130		3.11	30	
4-Chlorotoluene	9.89		"	10.0	0.00	98.9	70-130		0.710	30	
4-Methyl-2-pentanone	11.5		"	10.0	0.00	115	70-130		3.45	30	
Acetone	27.8		"	10.0	0.00	278	70-130	High Bias	2.00	30	
Acrylonitrile	13.7		"	10.0	0.00	137	70-130	High Bias	3.11	30	
Benzene	13.6		"	10.0	0.00	136	70-130	High Bias	6.90	30	
Bromobenzene	11.0		"	10.0	0.00	110	70-130		5.24	30	
Bromochloromethane	13.9		"	10.0	0.00	139	70-130	High Bias	5.01	30	
Bromodichloromethane	12.2		"	10.0	0.00	122	70-130		6.98	30	
Bromoform	14.6		"	10.0	0.00	146	70-130	High Bias	8.50	30	
Bromomethane	9.65		"	10.0	0.00	96.5	70-130		14.0	30	
Carbon disulfide	12.2		"	10.0	0.00	122	70-130		4.10	30	
Carbon tetrachloride	13.6		"	10.0	0.00	136	70-130	High Bias	6.12	30	
Chlorobenzene	12.7		"	10.0	0.00	127	70-130		3.60	30	
Chloroethane	14.3		"	10.0	0.00	143	70-130	High Bias	6.27	30	
Chloroform	14.4		"	10.0	0.640	137	70-130	High Bias	6.47	30	
Chloromethane	12.5		"	10.0	0.00	125	70-130		4.26	30	
cis-1,2-Dichloroethylene	254		"	10.0	248	59.3	70-130	Low Bias	1.84	30	
cis-1,3-Dichloropropylene	11.6		"	10.0	0.00	116	70-130		5.57	30	
Dibromochloromethane	12.9		"	10.0	0.00	129	70-130		6.65	30	
Dibromomethane	12.6		"	10.0	0.00	126	70-130		5.63	30	
Dichlorodifluoromethane	13.6		"	10.0	0.00	136	70-130	High Bias	6.44	30	
Ethyl Benzene	11.3		"	10.0	0.00	113	70-130		3.51	30	
Hexachlorobutadiene	9.27		"	10.0	0.00	92.7	70-130		8.31	30	
Isopropylbenzene	11.0		"	10.0	0.00	110	70-130		8.40	30	
Methyl Methacrylate	11.6		"	10.0	0.00	116	70-130		4.51	30	
Methyl tert-butyl ether (MTBE)	15.5		"	10.0	0.230	153	70-130	High Bias	7.34	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30158 - EPA 5030B											
Matrix Spike Dup (BK30158-! Matrix Spike Dup	*Source sample: 23J1840-02 (Matrix Spike Dup)								Prepared: 11/02/2023 Analyzed: 11/03/2023		
Methylene chloride	10.8		ug/L	10.0	0.00	108	70-130		6.38	30	
Naphthalene	13.0		"	10.0	0.00	130	70-130		12.4	30	
n-Butylbenzene	8.26		"	10.0	0.00	82.6	70-130		0.604	30	
n-Propylbenzene	9.98		"	10.0	0.00	99.8	70-130		4.19	30	
o-Xylene	12.4		"	10.0	0.00	124	70-130		10.0	30	
p- & m- Xylenes	22.8		"	20.0	0.00	114	70-130		3.21	30	
p-Isopropyltoluene	9.14		"	10.0	0.00	91.4	70-130		0.879	30	
sec-Butylbenzene	9.47		"	10.0	0.00	94.7	70-130		1.49	30	
Styrene	12.1		"	10.0	0.00	121	70-130		8.42	30	
tert-Butylbenzene	10.4		"	10.0	0.00	104	70-130		2.94	30	
Tetrachloroethylene	25.1		"	10.0	20.2	48.8	70-130	Low Bias	0.800	30	
Tetrahydrofuran	14.1		"	10.0	0.00	141	70-130	High Bias	3.89	30	
Toluene	11.8		"	10.0	0.00	118	70-130		4.77	30	
trans-1,2-Dichloroethylene	14.0		"	10.0	1.46	126	70-130		4.52	30	
trans-1,3-Dichloropropylene	11.8		"	10.0	0.00	118	70-130		4.25	30	
trans-1,4-dichloro-2-butene	12.0		"	10.0	0.00	120	70-130		7.54	30	
Trichloroethylene	65.9		"	10.0	59.6	62.7	70-130	Low Bias	1.67	30	
Trichlorofluoromethane	13.8		"	10.0	0.00	138	70-130	High Bias	4.21	30	
Vinyl Chloride	13.3		"	10.0	0.00	133	70-130	High Bias	7.04	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*10.7*		*"*	*10.0*		*107*	*70-130*				
Surrogate: SURR: Toluene-d8	*9.29*		*"*	*10.0*		*92.9*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*9.70*		*"*	*10.0*		*97.0*	*70-130*				
Batch BK30188 - EPA 5035A											
LCS (BK30188-BS1) LCS									Prepared & Analyzed: 11/03/2023		
1,1,1,2-Tetrachloroethane	46.8		ug/L	50.0		93.7	70-130				
1,1,1-Trichloroethane	50.6		"	50.0		101	70-130				
1,1,2,2-Tetrachloroethane	50.6		"	50.0		101	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	49.4		"	50.0		98.8	70-130				
1,1,2-Trichloroethane	46.2		"	50.0		92.4	70-130				
1,1-Dichloroethane	45.4		"	50.0		90.9	70-130				
1,1-Dichloroethylene	45.1		"	50.0		90.3	70-130				
1,1-Dichloropropylene	47.6		"	50.0		95.2	70-130				
1,2,3-Trichlorobenzene	49.4		"	50.0		98.8	70-130				
1,2,3-Trichloropropane	51.8		"	50.0		104	70-130				
1,2,4-Trichlorobenzene	52.3		"	50.0		105	70-130				
1,2,4-Trimethylbenzene	49.5		"	50.0		99.1	70-130				
1,2-Dibromo-3-chloropropane	49.5		"	50.0		99.0	70-130				
1,2-Dibromoethane	48.5		"	50.0		96.9	70-130				
1,2-Dichlorobenzene	50.2		"	50.0		100	70-130				
1,2-Dichloroethane	47.3		"	50.0		94.6	70-130				
1,2-Dichloropropane	46.5		"	50.0		93.0	70-130				
1,3,5-Trimethylbenzene	50.6		"	50.0		101	70-130				
1,3-Dichlorobenzene	51.8		"	50.0		104	70-130				
1,3-Dichloropropane	47.2		"	50.0		94.4	70-130				
1,4-Dichlorobenzene	49.0		"	50.0		98.0	70-130				
2,2-Dichloropropane	47.8		"	50.0		95.6	70-130				
2-Butanone	45.4		"	50.0		90.9	70-130				
2-Chlorotoluene	49.9		"	50.0		99.8	70-130				
2-Hexanone	42.1		"	50.0		84.2	70-130				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30188 - EPA 5035A											
LCS (BK30188-BS1) LCS							Prepared & Analyzed: 11/03/2023				
4-Chlorotoluene	52.0		ug/L	50.0		104	70-130				
4-Methyl-2-pentanone	43.8		"	50.0		87.6	70-130				
Acetone	90.5		"	50.0		181	70-130	High Bias			
Acrylonitrile	46.4		"	50.0		92.9	70-130				
Benzene	49.2		"	50.0		98.4	70-130				
Bromobenzene	50.2		"	50.0		100	70-130				
Bromochloromethane	45.7		"	50.0		91.4	70-130				
Bromodichloromethane	45.0		"	50.0		89.9	70-130				
Bromoform	47.6		"	50.0		95.2	70-130				
Bromomethane	63.7		"	50.0		127	70-130				
Carbon disulfide	47.0		"	50.0		94.1	70-130				
Carbon tetrachloride	50.4		"	50.0		101	70-130				
Chlorobenzene	51.0		"	50.0		102	70-130				
Chloroethane	54.5		"	50.0		109	70-130				
Chloroform	47.7		"	50.0		95.5	70-130				
Chloromethane	45.0		"	50.0		90.1	70-130				
cis-1,2-Dichloroethylene	45.9		"	50.0		91.7	70-130				
cis-1,3-Dichloropropylene	45.1		"	50.0		90.3	70-130				
Dibromochloromethane	47.2		"	50.0		94.5	70-130				
Dibromomethane	44.8		"	50.0		89.7	70-130				
Dichlorodifluoromethane	38.3		"	50.0		76.6	70-130				
Ethyl Benzene	48.7		"	50.0		97.4	70-130				
Hexachlorobutadiene	53.6		"	50.0		107	70-130				
Isopropylbenzene	53.4		"	50.0		107	70-130				
Methyl Methacrylate	42.2		"	50.0		84.4	70-130				
Methyl tert-butyl ether (MTBE)	46.3		"	50.0		92.6	70-130				
Methylene chloride	43.3		"	50.0		86.6	70-130				
Naphthalene	49.0		"	50.0		98.1	70-130				
n-Butylbenzene	53.1		"	50.0		106	70-130				
n-Propylbenzene	51.4		"	50.0		103	70-130				
o-Xylene	49.0		"	50.0		98.0	70-130				
p- & m- Xylenes	99.2		"	100		99.2	70-130				
p-Isopropyltoluene	54.4		"	50.0		109	70-130				
sec-Butylbenzene	52.8		"	50.0		106	70-130				
Styrene	47.2		"	50.0		94.5	70-130				
tert-Butylbenzene	52.7		"	50.0		105	70-130				
Tetrachloroethylene	37.3		"	50.0		74.6	70-130				
Tetrahydrofuran	46.1		"	50.0		92.1	70-130				
Toluene	47.0		"	50.0		94.0	70-130				
trans-1,2-Dichloroethylene	46.5		"	50.0		93.1	70-130				
trans-1,3-Dichloropropylene	44.0		"	50.0		88.0	70-130				
trans-1,4-dichloro-2-butene	50.5		"	50.0		101	70-130				
Trichloroethylene	46.1		"	50.0		92.1	70-130				
Trichlorofluoromethane	58.4		"	50.0		117	70-130				
Vinyl Chloride	49.0		"	50.0		97.9	70-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*47.9*		*"*	*50.0*		*95.8*	*70-130*				
Surrogate: SURR: Toluene-d8	*49.6*		*"*	*50.0*		*99.2*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*51.7*		*"*	*50.0*		*103*	*70-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30188 - EPA 5035A											
LCS Dup (BK30188-BSD1) LCS Dup								Prepared & Analyzed: 11/03/2023			
1,1,1,2-Tetrachloroethane	47.1		ug/L	50.0		94.3	70-130		0.660	30	
1,1,1-Trichloroethane	50.1		"	50.0		100	70-130		0.874	30	
1,1,2,2-Tetrachloroethane	50.3		"	50.0		101	70-130		0.654	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	48.8		"	50.0		97.5	70-130		1.28	30	
1,1,2-Trichloroethane	46.5		"	50.0		93.0	70-130		0.669	30	
1,1-Dichloroethane	45.4		"	50.0		90.8	70-130		0.110	30	
1,1-Dichloroethylene	44.4		"	50.0		88.9	70-130		1.59	30	
1,1-Dichloropropylene	47.2		"	50.0		94.4	70-130		0.907	30	
1,2,3-Trichlorobenzene	47.0		"	50.0		94.0	70-130		4.96	30	
1,2,3-Trichloropropane	52.2		"	50.0		104	70-130		0.731	30	
1,2,4-Trichlorobenzene	48.9		"	50.0		97.8	70-130		6.64	30	
1,2,4-Trimethylbenzene	48.4		"	50.0		96.9	70-130		2.22	30	
1,2-Dibromo-3-chloropropane	47.9		"	50.0		95.9	70-130		3.20	30	
1,2-Dibromoethane	49.0		"	50.0		98.1	70-130		1.19	30	
1,2-Dichlorobenzene	49.0		"	50.0		98.0	70-130		2.52	30	
1,2-Dichloroethane	47.8		"	50.0		95.5	70-130		1.01	30	
1,2-Dichloropropane	46.0		"	50.0		91.9	70-130		1.15	30	
1,3,5-Trimethylbenzene	49.3		"	50.0		98.6	70-130		2.54	30	
1,3-Dichlorobenzene	51.1		"	50.0		102	70-130		1.42	30	
1,3-Dichloropropane	47.0		"	50.0		94.0	70-130		0.382	30	
1,4-Dichlorobenzene	48.7		"	50.0		97.3	70-130		0.696	30	
2,2-Dichloropropane	47.0		"	50.0		93.9	70-130		1.73	30	
2-Butanone	43.3		"	50.0		86.5	70-130		4.87	30	
2-Chlorotoluene	49.2		"	50.0		98.5	70-130		1.31	30	
2-Hexanone	41.6		"	50.0		83.2	70-130		1.24	30	
4-Chlorotoluene	50.1		"	50.0		100	70-130		3.68	30	
4-Methyl-2-pentanone	43.3		"	50.0		86.7	70-130		1.01	30	
Acetone	87.4		"	50.0		175	70-130	High Bias	3.47	30	
Acrylonitrile	47.0		"	50.0		94.1	70-130		1.28	30	
Benzene	49.4		"	50.0		98.8	70-130		0.385	30	
Bromobenzene	49.1		"	50.0		98.2	70-130		2.24	30	
Bromochloromethane	45.2		"	50.0		90.5	70-130		0.946	30	
Bromodichloromethane	44.3		"	50.0		88.6	70-130		1.55	30	
Bromoform	46.7		"	50.0		93.3	70-130		1.99	30	
Bromomethane	62.3		"	50.0		125	70-130		2.24	30	
Carbon disulfide	45.7		"	50.0		91.4	70-130		2.87	30	
Carbon tetrachloride	50.5		"	50.0		101	70-130		0.238	30	
Chlorobenzene	49.8		"	50.0		99.6	70-130		2.28	30	
Chloroethane	53.8		"	50.0		108	70-130		1.33	30	
Chloroform	47.0		"	50.0		94.0	70-130		1.58	30	
Chloromethane	42.7		"	50.0		85.4	70-130		5.36	30	
cis-1,2-Dichloroethylene	45.5		"	50.0		91.0	70-130		0.788	30	
cis-1,3-Dichloropropylene	44.5		"	50.0		89.0	70-130		1.41	30	
Dibromochloromethane	46.8		"	50.0		93.6	70-130		0.957	30	
Dibromomethane	46.0		"	50.0		92.0	70-130		2.49	30	
Dichlorodifluoromethane	34.2		"	50.0		68.3	70-130	Low Bias	11.4	30	
Ethyl Benzene	48.2		"	50.0		96.3	70-130		1.05	30	
Hexachlorobutadiene	51.2		"	50.0		102	70-130		4.62	30	
Isopropylbenzene	53.7		"	50.0		107	70-130		0.579	30	
Methyl Methacrylate	42.5		"	50.0		84.9	70-130		0.662	30	
Methyl tert-butyl ether (MTBE)	46.6		"	50.0		93.2	70-130		0.732	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30188 - EPA 5035A											
LCS Dup (BK30188-BSD1) LCS Dup								Prepared & Analyzed: 11/03/2023			
Methylene chloride	42.6		ug/L	50.0		85.1	70-130		1.72	30	
Naphthalene	47.6		"	50.0		95.3	70-130		2.85	30	
n-Butylbenzene	51.0		"	50.0		102	70-130		4.11	30	
n-Propylbenzene	50.2		"	50.0		100	70-130		2.32	30	
o-Xylene	48.4		"	50.0		96.8	70-130		1.19	30	
p- & m- Xylenes	97.3		"	100		97.3	70-130		1.99	30	
p-Isopropyltoluene	53.0		"	50.0		106	70-130		2.61	30	
sec-Butylbenzene	51.4		"	50.0		103	70-130		2.61	30	
Styrene	46.8		"	50.0		93.6	70-130		0.914	30	
tert-Butylbenzene	51.4		"	50.0		103	70-130		2.40	30	
Tetrachloroethylene	36.5		"	50.0		72.9	70-130		2.33	30	
Tetrahydrofuran	46.5		"	50.0		93.0	70-130		0.994	30	
Toluene	47.2		"	50.0		94.3	70-130		0.340	30	
trans-1,2-Dichloroethylene	46.6		"	50.0		93.3	70-130		0.215	30	
trans-1,3-Dichloropropylene	43.6		"	50.0		87.3	70-130		0.799	30	
trans-1,4-dichloro-2-butene	49.7		"	50.0		99.3	70-130		1.72	30	
Trichloroethylene	46.2		"	50.0		92.4	70-130		0.238	30	
Trichlorofluoromethane	58.1		"	50.0		116	70-130		0.549	30	
Vinyl Chloride	47.5		"	50.0		95.0	70-130		2.96	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*48.4*		*"*	*50.0*		*96.8*	*70-130*				
Surrogate: SURR: Toluene-d8	*49.1*		*"*	*50.0*		*98.2*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*52.2*		*"*	*50.0*		*104*	*70-130*				
Matrix Spike (BK30188-MS1) Matrix Spike		*Source sample: 23J1727-35 (Matrix Spike)						Prepared & Analyzed: 11/03/2023			
1,1,1,2-Tetrachloroethane	34.3		ug/L	50.0		68.5	70-130	Low Bias			
1,1,1-Trichloroethane	37.0		"	50.0		73.9	70-130				
1,1,2,2-Tetrachloroethane	44.0		"	50.0		87.9	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	33.1		"	50.0		66.1	70-130	Low Bias			
1,1,2-Trichloroethane	39.2		"	50.0		78.3	70-130				
1,1-Dichloroethane	33.8		"	50.0		67.5	70-130	Low Bias			
1,1-Dichloroethylene	31.1		"	50.0		62.3	70-130	Low Bias			
1,1-Dichloropropylene	34.0		"	50.0		68.0	70-130	Low Bias			
1,2,3-Trichlorobenzene	27.2		"	50.0		54.4	70-130	Low Bias			
1,2,3-Trichloropropane	42.4		"	50.0		84.9	70-130				
1,2,4-Trichlorobenzene	27.5		"	50.0		55.0	70-130	Low Bias			
1,2,4-Trimethylbenzene	30.4		"	50.0		60.9	70-130	Low Bias			
1,2-Dibromo-3-chloropropane	40.4		"	50.0		80.8	70-130				
1,2-Dibromoethane	41.2		"	50.0		82.4	70-130				
1,2-Dichlorobenzene	32.0		"	50.0		64.1	70-130	Low Bias			
1,2-Dichloroethane	39.4		"	50.0		78.9	70-130				
1,2-Dichloropropane	34.7		"	50.0		69.4	70-130	Low Bias			
1,3,5-Trimethylbenzene	30.9		"	50.0		61.8	70-130	Low Bias			
1,3-Dichlorobenzene	31.4		"	50.0		62.8	70-130	Low Bias			
1,3-Dichloropropane	39.2		"	50.0		78.3	70-130				
1,4-Dichlorobenzene	29.7		"	50.0		59.3	70-130	Low Bias			
2,2-Dichloropropane	33.6		"	50.0		67.3	70-130	Low Bias			
2-Butanone	42.0		"	50.0		84.0	70-130				
2-Chlorotoluene	31.0		"	50.0		62.1	70-130	Low Bias			
2-Hexanone	36.7		"	50.0		73.4	70-130				
4-Chlorotoluene	31.3		"	50.0		62.6	70-130	Low Bias			
4-Methyl-2-pentanone	40.8		"	50.0		81.5	70-130				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30188 - EPA 5035A											
Matrix Spike (BK30188-MS1) Matrix Spike	*Source sample: 23J1727-35 (Matrix Spike)							Prepared & Analyzed: 11/03/2023			
Acetone	83.2		ug/L	50.0		166	70-130	High Bias			
Acrylonitrile	41.9		"	50.0		83.8	70-130				
Benzene	36.3		"	50.0		72.7	70-130				
Bromobenzene	33.7		"	50.0		67.4	70-130	Low Bias			
Bromochloromethane	36.6		"	50.0		73.2	70-130				
Bromodichloromethane	33.7		"	50.0		67.3	70-130	Low Bias			
Bromoform	37.7		"	50.0		75.3	70-130				
Bromomethane	49.1		"	50.0		98.3	70-130				
Carbon disulfide	30.5		"	50.0		61.0	70-130	Low Bias			
Carbon tetrachloride	34.9		"	50.0		69.8	70-130	Low Bias			
Chlorobenzene	34.6		"	50.0		69.2	70-130	Low Bias			
Chloroethane	39.5		"	50.0		79.0	70-130				
Chloroform	35.6		"	50.0		71.3	70-130				
Chloromethane	30.6		"	50.0		61.2	70-130	Low Bias			
cis-1,2-Dichloroethylene	33.7		"	50.0		67.3	70-130	Low Bias			
cis-1,3-Dichloropropylene	32.7		"	50.0		65.4	70-130	Low Bias			
Dibromochloromethane	37.0		"	50.0		73.9	70-130				
Dibromomethane	37.5		"	50.0		75.0	70-130				
Dichlorodifluoromethane	23.5		"	50.0		47.0	70-130	Low Bias			
Ethyl Benzene	33.2		"	50.0		66.4	70-130	Low Bias			
Hexachlorobutadiene	25.4		"	50.0		50.9	70-130	Low Bias			
Isopropylbenzene	34.7		"	50.0		69.4	70-130	Low Bias			
Methyl Methacrylate	41.1		"	50.0		82.2	70-130				
Methyl tert-butyl ether (MTBE)	40.3		"	50.0		80.7	70-130				
Methylene chloride	33.5		"	50.0		67.1	70-130	Low Bias			
Naphthalene	31.4		"	50.0		62.7	70-130	Low Bias			
n-Butylbenzene	28.8		"	50.0		57.6	70-130	Low Bias			
n-Propylbenzene	31.6		"	50.0		63.1	70-130	Low Bias			
o-Xylene	33.7		"	50.0		67.5	70-130	Low Bias			
p- & m- Xylenes	66.2		"	100		66.2	70-130	Low Bias			
p-Isopropyltoluene	32.8		"	50.0		65.6	70-130	Low Bias			
sec-Butylbenzene	31.2		"	50.0		62.5	70-130	Low Bias			
Styrene	32.1		"	50.0		64.2	70-130	Low Bias			
tert-Butylbenzene	33.3		"	50.0		66.6	70-130	Low Bias			
Tetrachloroethylene	24.1		"	50.0		48.3	70-130	Low Bias			
Tetrahydrofuran	42.6		"	50.0		85.1	70-130				
Toluene	32.8		"	50.0		65.7	70-130	Low Bias			
trans-1,2-Dichloroethylene	32.7		"	50.0		65.3	70-130	Low Bias			
trans-1,3-Dichloropropylene	33.2		"	50.0		66.3	70-130	Low Bias			
trans-1,4-dichloro-2-butene	40.8		"	50.0		81.7	70-130				
Trichloroethylene	31.2		"	50.0		62.3	70-130	Low Bias			
Trichlorofluoromethane	41.6		"	50.0		83.2	70-130				
Vinyl Chloride	33.6		"	50.0		67.3	70-130	Low Bias			
Surrogate: SURR: 1,2-Dichloroethane-d4	*50.8*		*"*	*50.0*		*102*	*70-130*				
Surrogate: SURR: Toluene-d8	*48.6*		*"*	*50.0*		*97.1*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*52.2*		*"*	*50.0*		*104*	*70-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag

Batch BK30280 - EPA 5035A

Blank (BK30280-BLK1) Blank — Prepared & Analyzed: 11/05/2023

1,1,1,2-Tetrachloroethane	ND	5.0	ug/kg wet
1,1,1-Trichloroethane	ND	5.0	"
1,1,2,2-Tetrachloroethane	ND	5.0	"
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	5.0	"
1,1,2-Trichloroethane	ND	5.0	"
1,1-Dichloroethane	ND	5.0	"
1,1-Dichloroethylene	ND	5.0	"
1,1-Dichloropropylene	ND	5.0	"
1,2,3-Trichlorobenzene	ND	5.0	"
1,2,3-Trichloropropane	ND	5.0	"
1,2,4-Trichlorobenzene	ND	5.0	"
1,2,4-Trimethylbenzene	ND	5.0	"
1,2-Dibromo-3-chloropropane	ND	5.0	"
1,2-Dibromoethane	ND	5.0	"
1,2-Dichlorobenzene	ND	5.0	"
1,2-Dichloroethane	ND	5.0	"
1,2-Dichloropropane	ND	5.0	"
1,3,5-Trimethylbenzene	ND	5.0	"
1,3-Dichlorobenzene	ND	5.0	"
1,3-Dichloropropane	ND	5.0	"
1,4-Dichlorobenzene	ND	5.0	"
2,2-Dichloropropane	ND	5.0	"
2-Butanone	ND	5.0	"
2-Chlorotoluene	ND	5.0	"
2-Hexanone	ND	5.0	"
4-Chlorotoluene	ND	5.0	"
4-Methyl-2-pentanone	ND	5.0	"
Acetone	ND	10	"
Acrylonitrile	ND	5.0	"
Benzene	ND	5.0	"
Bromobenzene	ND	5.0	"
Bromochloromethane	ND	5.0	"
Bromodichloromethane	ND	5.0	"
Bromoform	ND	5.0	"
Bromomethane	ND	5.0	"
Carbon disulfide	ND	5.0	"
Carbon tetrachloride	ND	5.0	"
Chlorobenzene	ND	5.0	"
Chloroethane	ND	5.0	"
Chloroform	ND	5.0	"
Chloromethane	ND	5.0	"
cis-1,2-Dichloroethylene	ND	5.0	"
cis-1,3-Dichloropropylene	ND	5.0	"
Dibromochloromethane	ND	5.0	"
Dibromomethane	ND	5.0	"
Dichlorodifluoromethane	ND	5.0	"
Ethyl Benzene	ND	5.0	"
Hexachlorobutadiene	ND	5.0	"
Isopropylbenzene	ND	5.0	"
Methyl Methacrylate	ND	5.0	"
Methyl tert-butyl ether (MTBE)	ND	5.0	"

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30280 - EPA 5035A											
Blank (BK30280-BLK1) Blank									Prepared & Analyzed: 11/05/2023		
Methylene chloride	ND	10	ug/kg wet								
Naphthalene	ND	10	"								
n-Butylbenzene	ND	5.0	"								
n-Propylbenzene	ND	5.0	"								
o-Xylene	ND	5.0	"								
p- & m- Xylenes	ND	10	"								
p-Isopropyltoluene	ND	5.0	"								
sec-Butylbenzene	ND	5.0	"								
Styrene	ND	5.0	"								
tert-Butylbenzene	ND	5.0	"								
Tetrachloroethylene	ND	5.0	"								
Tetrahydrofuran	ND	10	"								
Toluene	ND	5.0	"								
trans-1,2-Dichloroethylene	ND	5.0	"								
trans-1,3-Dichloropropylene	ND	5.0	"								
trans-1,4-dichloro-2-butene	ND	5.0	"								
Trichloroethylene	ND	5.0	"								
Trichlorofluoromethane	ND	5.0	"								
Vinyl Chloride	ND	5.0	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*47.2*		*ug/L*	*50.0*		*94.5*	*70-130*				
Surrogate: SURR: Toluene-d8	*48.9*		*"*	*50.0*		*97.8*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*53.6*		*"*	*50.0*		*107*	*70-130*				
Blank (BK30280-BLK2) Blank									Prepared & Analyzed: 11/05/2023		
1,1,1,2-Tetrachloroethane	ND	500	ug/kg wet								
1,1,1-Trichloroethane	ND	500	"								
1,1,2,2-Tetrachloroethane	ND	500	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	500	"								
1,1,2-Trichloroethane	ND	500	"								
1,1-Dichloroethane	ND	500	"								
1,1-Dichloroethylene	ND	500	"								
1,1-Dichloropropylene	ND	500	"								
1,2,3-Trichlorobenzene	ND	500	"								
1,2,3-Trichloropropane	ND	500	"								
1,2,4-Trichlorobenzene	ND	500	"								
1,2,4-Trimethylbenzene	ND	500	"								
1,2-Dibromo-3-chloropropane	ND	500	"								
1,2-Dibromoethane	ND	500	"								
1,2-Dichlorobenzene	ND	500	"								
1,2-Dichloroethane	ND	500	"								
1,2-Dichloropropane	ND	500	"								
1,3,5-Trimethylbenzene	ND	500	"								
1,3-Dichlorobenzene	ND	500	"								
1,3-Dichloropropane	ND	500	"								
1,4-Dichlorobenzene	ND	500	"								
2,2-Dichloropropane	ND	500	"								
2-Butanone	ND	500	"								
2-Chlorotoluene	ND	500	"								
2-Hexanone	ND	500	"								
4-Chlorotoluene	ND	500	"								
4-Methyl-2-pentanone	ND	500	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30280 - EPA 5035A											
Blank (BK30280-BLK2) Blank									Prepared & Analyzed: 11/05/2023		
Acetone	ND	1000	ug/kg wet								
Acrylonitrile	ND	500	"								
Benzene	ND	500	"								
Bromobenzene	ND	500	"								
Bromochloromethane	ND	500	"								
Bromodichloromethane	ND	500	"								
Bromoform	ND	500	"								
Bromomethane	ND	500	"								
Carbon disulfide	ND	500	"								
Carbon tetrachloride	ND	500	"								
Chlorobenzene	ND	500	"								
Chloroethane	ND	500	"								
Chloroform	ND	500	"								
Chloromethane	ND	500	"								
cis-1,2-Dichloroethylene	ND	500	"								
cis-1,3-Dichloropropylene	ND	500	"								
Dibromochloromethane	ND	500	"								
Dibromomethane	ND	500	"								
Dichlorodifluoromethane	ND	500	"								
Ethyl Benzene	ND	500	"								
Hexachlorobutadiene	ND	500	"								
Isopropylbenzene	ND	500	"								
Methyl Methacrylate	ND	500	"								
Methyl tert-butyl ether (MTBE)	ND	500	"								
Methylene chloride	ND	1000	"								
Naphthalene	ND	1000	"								
n-Butylbenzene	ND	500	"								
n-Propylbenzene	ND	500	"								
o-Xylene	ND	500	"								
p- & m- Xylenes	ND	1000	"								
p-Isopropyltoluene	ND	500	"								
sec-Butylbenzene	ND	500	"								
Styrene	ND	500	"								
tert-Butylbenzene	ND	500	"								
Tetrachloroethylene	ND	500	"								
Tetrahydrofuran	ND	1000	"								
Toluene	ND	500	"								
trans-1,2-Dichloroethylene	ND	500	"								
trans-1,3-Dichloropropylene	ND	500	"								
trans-1,4-dichloro-2-butene	ND	500	"								
Trichloroethylene	ND	500	"								
Trichlorofluoromethane	ND	500	"								
Vinyl Chloride	ND	500	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*48.6*		*ug/L*	*50.0*		*97.2*	*70-130*				
Surrogate: SURR: Toluene-d8	*48.3*		*"*	*50.0*		*96.7*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*53.9*		*"*	*50.0*		*108*	*70-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30280 - EPA 5035A											
LCS (BK30280-BS1) LCS							Prepared & Analyzed: 11/05/2023				
1,1,1,2-Tetrachloroethane	48.4		ug/L	50.0		96.8	70-130				
1,1,1-Trichloroethane	52.1		"	50.0		104	70-130				
1,1,2,2-Tetrachloroethane	52.0		"	50.0		104	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	51.2		"	50.0		102	70-130				
1,1,2-Trichloroethane	48.3		"	50.0		96.5	70-130				
1,1-Dichloroethane	47.0		"	50.0		93.9	70-130				
1,1-Dichloroethylene	45.9		"	50.0		91.9	70-130				
1,1-Dichloropropylene	49.3		"	50.0		98.7	70-130				
1,2,3-Trichlorobenzene	48.1		"	50.0		96.3	70-130				
1,2,3-Trichloropropane	53.5		"	50.0		107	70-130				
1,2,4-Trichlorobenzene	49.6		"	50.0		99.2	70-130				
1,2,4-Trimethylbenzene	48.5		"	50.0		97.0	70-130				
1,2-Dibromo-3-chloropropane	47.5		"	50.0		95.0	70-130				
1,2-Dibromoethane	51.2		"	50.0		102	70-130				
1,2-Dichlorobenzene	49.7		"	50.0		99.4	70-130				
1,2-Dichloroethane	51.2		"	50.0		102	70-130				
1,2-Dichloropropane	46.8		"	50.0		93.6	70-130				
1,3,5-Trimethylbenzene	49.7		"	50.0		99.3	70-130				
1,3-Dichlorobenzene	51.9		"	50.0		104	70-130				
1,3-Dichloropropane	49.0		"	50.0		97.9	70-130				
1,4-Dichlorobenzene	48.2		"	50.0		96.3	70-130				
2,2-Dichloropropane	49.4		"	50.0		98.9	70-130				
2-Butanone	45.8		"	50.0		91.7	70-130				
2-Chlorotoluene	48.3		"	50.0		96.7	70-130				
2-Hexanone	41.2		"	50.0		82.4	70-130				
4-Chlorotoluene	50.2		"	50.0		100	70-130				
4-Methyl-2-pentanone	43.5		"	50.0		87.0	70-130				
Acetone	86.4		"	50.0		173	70-130	High Bias			
Acrylonitrile	46.8		"	50.0		93.5	70-130				
Benzene	51.5		"	50.0		103	70-130				
Bromobenzene	50.1		"	50.0		100	70-130				
Bromochloromethane	47.8		"	50.0		95.5	70-130				
Bromodichloromethane	46.0		"	50.0		92.0	70-130				
Bromoform	48.1		"	50.0		96.2	70-130				
Bromomethane	66.5		"	50.0		133	70-130	High Bias			
Carbon disulfide	48.0		"	50.0		96.0	70-130				
Carbon tetrachloride	51.1		"	50.0		102	70-130				
Chlorobenzene	51.4		"	50.0		103	70-130				
Chloroethane	58.1		"	50.0		116	70-130				
Chloroform	50.2		"	50.0		100	70-130				
Chloromethane	48.7		"	50.0		97.5	70-130				
cis-1,2-Dichloroethylene	47.8		"	50.0		95.6	70-130				
cis-1,3-Dichloropropylene	45.0		"	50.0		90.1	70-130				
Dibromochloromethane	48.7		"	50.0		97.4	70-130				
Dibromomethane	48.3		"	50.0		96.5	70-130				
Dichlorodifluoromethane	53.8		"	50.0		108	70-130				
Ethyl Benzene	48.7		"	50.0		97.5	70-130				
Hexachlorobutadiene	49.8		"	50.0		99.5	70-130				
Isopropylbenzene	52.9		"	50.0		106	70-130				
Methyl Methacrylate	42.9		"	50.0		85.8	70-130				
Methyl tert-butyl ether (MTBE)	50.8		"	50.0		102	70-130				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30280 - EPA 5035A											
LCS (BK30280-BS1) LCS							Prepared & Analyzed: 11/05/2023				
Methylene chloride	43.1		ug/L	50.0		86.1	70-130				
Naphthalene	47.2		"	50.0		94.4	70-130				
n-Butylbenzene	50.6		"	50.0		101	70-130				
n-Propylbenzene	50.4		"	50.0		101	70-130				
o-Xylene	48.6		"	50.0		97.2	70-130				
p- & m- Xylenes	98.5		"	100		98.5	70-130				
p-Isopropyltoluene	52.8		"	50.0		106	70-130				
sec-Butylbenzene	50.7		"	50.0		101	70-130				
Styrene	47.0		"	50.0		94.1	70-130				
tert-Butylbenzene	50.3		"	50.0		101	70-130				
Tetrachloroethylene	37.1		"	50.0		74.2	70-130				
Tetrahydrofuran	46.0		"	50.0		92.1	70-130				
Toluene	47.4		"	50.0		94.9	70-130				
trans-1,2-Dichloroethylene	47.8		"	50.0		95.7	70-130				
trans-1,3-Dichloropropylene	45.7		"	50.0		91.3	70-130				
trans-1,4-dichloro-2-butene	50.3		"	50.0		101	70-130				
Trichloroethylene	46.3		"	50.0		92.7	70-130				
Trichlorofluoromethane	64.5		"	50.0		129	70-130				
Vinyl Chloride	54.3		"	50.0		109	70-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*50.6*		*"*	*50.0*		*101*	*70-130*				
Surrogate: SURR: Toluene-d8	*49.2*		*"*	*50.0*		*98.5*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*52.5*		*"*	*50.0*		*105*	*70-130*				
LCS Dup (BK30280-BSD1) LCS Dup							Prepared & Analyzed: 11/05/2023				
1,1,1,2-Tetrachloroethane	47.9		ug/L	50.0		95.9	70-130		1.02	30	
1,1,1-Trichloroethane	51.0		"	50.0		102	70-130		2.10	30	
1,1,2,2-Tetrachloroethane	52.7		"	50.0		105	70-130		1.17	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	49.9		"	50.0		99.7	70-130		2.63	30	
1,1,2-Trichloroethane	49.2		"	50.0		98.3	70-130		1.85	30	
1,1-Dichloroethane	45.8		"	50.0		91.6	70-130		2.44	30	
1,1-Dichloroethylene	45.4		"	50.0		90.8	70-130		1.23	30	
1,1-Dichloropropylene	47.7		"	50.0		95.4	70-130		3.40	30	
1,2,3-Trichlorobenzene	48.4		"	50.0		96.8	70-130		0.559	30	
1,2,3-Trichloropropane	53.5		"	50.0		107	70-130		0.0187	30	
1,2,4-Trichlorobenzene	50.9		"	50.0		102	70-130		2.69	30	
1,2,4-Trimethylbenzene	49.0		"	50.0		98.0	70-130		1.03	30	
1,2-Dibromo-3-chloropropane	47.4		"	50.0		94.8	70-130		0.190	30	
1,2-Dibromoethane	51.0		"	50.0		102	70-130		0.254	30	
1,2-Dichlorobenzene	50.1		"	50.0		100	70-130		0.842	30	
1,2-Dichloroethane	49.7		"	50.0		99.3	70-130		3.05	30	
1,2-Dichloropropane	46.3		"	50.0		92.5	70-130		1.14	30	
1,3,5-Trimethylbenzene	49.9		"	50.0		99.7	70-130		0.402	30	
1,3-Dichlorobenzene	51.4		"	50.0		103	70-130		0.813	30	
1,3-Dichloropropane	49.2		"	50.0		98.3	70-130		0.408	30	
1,4-Dichlorobenzene	48.8		"	50.0		97.7	70-130		1.44	30	
2,2-Dichloropropane	47.5		"	50.0		95.1	70-130		3.96	30	
2-Butanone	44.1		"	50.0		88.2	70-130		3.85	30	
2-Chlorotoluene	48.5		"	50.0		97.1	70-130		0.392	30	
2-Hexanone	42.0		"	50.0		84.0	70-130		1.92	30	
4-Chlorotoluene	50.8		"	50.0		102	70-130		1.27	30	
4-Methyl-2-pentanone	44.3		"	50.0		88.6	70-130		1.75	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30280 - EPA 5035A											
LCS Dup (BK30280-BSD1) LCS Dup								Prepared & Analyzed: 11/05/2023			
Acetone	86.2		ug/L	50.0		172	70-130	High Bias	0.313	30	
Acrylonitrile	46.4		"	50.0		92.8	70-130		0.795	30	
Benzene	50.0		"	50.0		100	70-130		3.01	30	
Bromobenzene	49.4		"	50.0		98.9	70-130		1.39	30	
Bromochloromethane	46.0		"	50.0		92.1	70-130		3.65	30	
Bromodichloromethane	45.7		"	50.0		91.5	70-130		0.610	30	
Bromoform	48.3		"	50.0		96.6	70-130		0.394	30	
Bromomethane	64.8		"	50.0		130	70-130		2.58	30	
Carbon disulfide	47.2		"	50.0		94.4	70-130		1.62	30	
Carbon tetrachloride	50.7		"	50.0		101	70-130		0.766	30	
Chlorobenzene	51.3		"	50.0		103	70-130		0.175	30	
Chloroethane	56.2		"	50.0		112	70-130		3.27	30	
Chloroform	48.2		"	50.0		96.4	70-130		3.97	30	
Chloromethane	46.7		"	50.0		93.4	70-130		4.25	30	
cis-1,2-Dichloroethylene	46.1		"	50.0		92.2	70-130		3.60	30	
cis-1,3-Dichloropropylene	45.0		"	50.0		90.1	70-130		0.0444	30	
Dibromochloromethane	48.6		"	50.0		97.2	70-130		0.164	30	
Dibromomethane	47.3		"	50.0		94.6	70-130		1.99	30	
Dichlorodifluoromethane	50.4		"	50.0		101	70-130		6.51	30	
Ethyl Benzene	48.3		"	50.0		96.6	70-130		0.948	30	
Hexachlorobutadiene	49.4		"	50.0		98.7	70-130		0.827	30	
Isopropylbenzene	53.3		"	50.0		107	70-130		0.810	30	
Methyl Methacrylate	44.1		"	50.0		88.2	70-130		2.81	30	
Methyl tert-butyl ether (MTBE)	49.6		"	50.0		99.2	70-130		2.41	30	
Methylene chloride	41.8		"	50.0		83.7	70-130		2.90	30	
Naphthalene	49.0		"	50.0		98.1	70-130		3.76	30	
n-Butylbenzene	50.4		"	50.0		101	70-130		0.456	30	
n-Propylbenzene	50.9		"	50.0		102	70-130		0.988	30	
o-Xylene	47.6		"	50.0		95.1	70-130		2.18	30	
p- & m- Xylenes	97.6		"	100		97.6	70-130		0.938	30	
p-Isopropyltoluene	53.0		"	50.0		106	70-130		0.283	30	
sec-Butylbenzene	50.4		"	50.0		101	70-130		0.613	30	
Styrene	46.8		"	50.0		93.6	70-130		0.554	30	
tert-Butylbenzene	51.2		"	50.0		102	70-130		1.79	30	
Tetrachloroethylene	36.8		"	50.0		73.7	70-130		0.784	30	
Tetrahydrofuran	44.4		"	50.0		88.9	70-130		3.51	30	
Toluene	46.8		"	50.0		93.6	70-130		1.40	30	
trans-1,2-Dichloroethylene	47.0		"	50.0		94.0	70-130		1.77	30	
trans-1,3-Dichloropropylene	45.4		"	50.0		90.8	70-130		0.615	30	
trans-1,4-dichloro-2-butene	52.3		"	50.0		105	70-130		3.84	30	
Trichloroethylene	45.7		"	50.0		91.4	70-130		1.39	30	
Trichlorofluoromethane	60.9		"	50.0		122	70-130		5.79	30	
Vinyl Chloride	51.3		"	50.0		103	70-130		5.68	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*48.3*		*"*	*50.0*		*96.5*	*70-130*				
Surrogate: SURR: Toluene-d8	*48.8*		*"*	*50.0*		*97.6*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*53.3*		*"*	*50.0*		*107*	*70-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30280 - EPA 5035A											
Matrix Spike (BK30280-MS1) Matrix Spike	*Source sample: 23J1769-01 (LB-04 (8-10))							Prepared & Analyzed: 11/05/2023			
1,1,1,2-Tetrachloroethane	39.7		ug/L	50.0	0.00	79.4	70-130				
1,1,1-Trichloroethane	45.5		"	50.0	0.00	91.0	70-130				
1,1,2,2-Tetrachloroethane	43.6		"	50.0	0.00	87.2	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	44.8		"	50.0	0.00	89.7	70-130				
1,1,2-Trichloroethane	39.2		"	50.0	0.00	78.5	70-130				
1,1-Dichloroethane	39.4		"	50.0	0.00	78.8	70-130				
1,1-Dichloroethylene	39.7		"	50.0	0.00	79.4	70-130				
1,1-Dichloropropylene	42.1		"	50.0	0.00	84.3	70-130				
1,2,3-Trichlorobenzene	35.2		"	50.0	0.00	70.4	70-130				
1,2,3-Trichloropropane	43.2		"	50.0	0.00	86.5	70-130				
1,2,4-Trichlorobenzene	33.5		"	50.0	0.00	67.1	70-130	Low Bias			
1,2,4-Trimethylbenzene	37.0		"	50.0	0.00	74.0	70-130				
1,2-Dibromo-3-chloropropane	36.7		"	50.0	0.00	73.4	70-130				
1,2-Dibromoethane	41.9		"	50.0	0.00	83.8	70-130				
1,2-Dichlorobenzene	38.4		"	50.0	0.00	76.8	70-130				
1,2-Dichloroethane	43.6		"	50.0	0.00	87.2	70-130				
1,2-Dichloropropane	37.8		"	50.0	0.00	75.5	70-130				
1,3,5-Trimethylbenzene	38.3		"	50.0	0.00	76.6	70-130				
1,3-Dichlorobenzene	38.0		"	50.0	0.00	75.9	70-130				
1,3-Dichloropropane	39.9		"	50.0	0.00	79.8	70-130				
1,4-Dichlorobenzene	35.4		"	50.0	0.00	70.8	70-130				
2,2-Dichloropropane	40.9		"	50.0	0.00	81.8	70-130				
2-Butanone	35.6		"	50.0	0.00	71.2	70-130				
2-Chlorotoluene	38.3		"	50.0	0.00	76.6	70-130				
2-Hexanone	32.2		"	50.0	0.00	64.4	70-130	Low Bias			
4-Chlorotoluene	38.0		"	50.0	0.00	75.9	70-130				
4-Methyl-2-pentanone	35.1		"	50.0	0.00	70.3	70-130				
Acetone	83.0		"	50.0	0.00	166	70-130	High Bias			
Acrylonitrile	38.0		"	50.0	0.00	76.1	70-130				
Benzene	43.7		"	50.0	0.00	87.3	70-130				
Bromobenzene	39.0		"	50.0	0.00	78.1	70-130				
Bromochloromethane	40.0		"	50.0	0.00	80.0	70-130				
Bromodichloromethane	36.9		"	50.0	0.00	73.9	70-130				
Bromoform	37.9		"	50.0	0.00	75.8	70-130				
Bromomethane	61.7		"	50.0	0.00	123	70-130				
Carbon disulfide	42.8		"	50.0	0.00	85.5	70-130				
Carbon tetrachloride	44.5		"	50.0	0.00	89.0	70-130				
Chlorobenzene	40.8		"	50.0	0.00	81.6	70-130				
Chloroethane	49.9		"	50.0	0.00	99.8	70-130				
Chloroform	42.5		"	50.0	0.00	85.0	70-130				
Chloromethane	41.6		"	50.0	0.00	83.1	70-130				
cis-1,2-Dichloroethylene	39.7		"	50.0	0.00	79.4	70-130				
cis-1,3-Dichloropropylene	35.5		"	50.0	0.00	70.9	70-130				
Dibromochloromethane	38.4		"	50.0	0.00	76.7	70-130				
Dibromomethane	39.5		"	50.0	0.00	79.0	70-130				
Dichlorodifluoromethane	48.0		"	50.0	0.00	96.0	70-130				
Ethyl Benzene	39.3		"	50.0	0.00	78.6	70-130				
Hexachlorobutadiene	39.8		"	50.0	0.00	79.6	70-130				
Isopropylbenzene	42.8		"	50.0	0.00	85.7	70-130				
Methyl Methacrylate	35.9		"	50.0	0.00	71.8	70-130				
Methyl tert-butyl ether (MTBE)	42.3		"	50.0	0.00	84.7	70-130				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30280 - EPA 5035A											
Matrix Spike (BK30280-MS1) Matrix Spike	*Source sample: 23J1769-01 (LB-04 (8-10))							Prepared & Analyzed: 11/05/2023			
Methylene chloride	38.4		ug/L	50.0	10.2	56.4	70-130	Low Bias			
Naphthalene	37.8		"	50.0	0.00	75.6	70-130				
n-Butylbenzene	37.9		"	50.0	0.00	75.8	70-130				
n-Propylbenzene	39.1		"	50.0	0.00	78.2	70-130				
o-Xylene	39.1		"	50.0	0.00	78.3	70-130				
p- & m- Xylenes	77.4		"	100	0.00	77.4	70-130				
p-Isopropyltoluene	41.4		"	50.0	0.00	82.8	70-130				
sec-Butylbenzene	40.6		"	50.0	0.00	81.2	70-130				
Styrene	37.7		"	50.0	0.00	75.4	70-130				
tert-Butylbenzene	41.7		"	50.0	0.00	83.4	70-130				
Tetrachloroethylene	29.8		"	50.0	0.00	59.5	70-130	Low Bias			
Tetrahydrofuran	37.7		"	50.0	0.00	75.4	70-130				
Toluene	38.7		"	50.0	0.00	77.4	70-130				
trans-1,2-Dichloroethylene	39.9		"	50.0	0.00	79.7	70-130				
trans-1,3-Dichloropropylene	35.6		"	50.0	0.00	71.3	70-130				
trans-1,4-dichloro-2-butene	39.7		"	50.0	0.00	79.3	70-130				
Trichloroethylene	37.2		"	50.0	0.00	74.5	70-130				
Trichlorofluoromethane	53.3		"	50.0	0.00	107	70-130				
Vinyl Chloride	46.9		"	50.0	0.00	93.7	70-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.4*		*"*	*50.0*		*98.8*	*70-130*				
Surrogate: SURR: Toluene-d8	*48.7*		*"*	*50.0*		*97.4*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*51.4*		*"*	*50.0*		*103*	*70-130*				
Matrix Spike Dup (BK30280-! Matrix Spike Dup	*Source sample: 23J1769-01 (LB-04 (8-10))							Prepared & Analyzed: 11/05/2023			
1,1,1,2-Tetrachloroethane	40.3		ug/L	50.0	0.00	80.6	70-130		1.45	30	
1,1,1-Trichloroethane	45.7		"	50.0	0.00	91.4	70-130		0.373	30	
1,1,2,2-Tetrachloroethane	42.8		"	50.0	0.00	85.6	70-130		1.87	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	44.3		"	50.0	0.00	88.6	70-130		1.26	30	
1,1,2-Trichloroethane	39.7		"	50.0	0.00	79.4	70-130		1.14	30	
1,1-Dichloroethane	39.9		"	50.0	0.00	79.8	70-130		1.29	30	
1,1-Dichloroethylene	39.4		"	50.0	0.00	78.9	70-130		0.632	30	
1,1-Dichloropropylene	41.5		"	50.0	0.00	83.0	70-130		1.53	30	
1,2,3-Trichlorobenzene	36.3		"	50.0	0.00	72.6	70-130		3.05	30	
1,2,3-Trichloropropane	43.5		"	50.0	0.00	86.9	70-130		0.484	30	
1,2,4-Trichlorobenzene	35.6		"	50.0	0.00	71.2	70-130		5.99	30	
1,2,4-Trimethylbenzene	37.6		"	50.0	0.00	75.2	70-130		1.63	30	
1,2-Dibromo-3-chloropropane	37.0		"	50.0	0.00	74.1	70-130		0.922	30	
1,2-Dibromoethane	41.7		"	50.0	0.00	83.4	70-130		0.502	30	
1,2-Dichlorobenzene	39.0		"	50.0	0.00	77.9	70-130		1.47	30	
1,2-Dichloroethane	42.5		"	50.0	0.00	85.0	70-130		2.53	30	
1,2-Dichloropropane	39.4		"	50.0	0.00	78.7	70-130		4.15	30	
1,3,5-Trimethylbenzene	38.8		"	50.0	0.00	77.5	70-130		1.19	30	
1,3-Dichlorobenzene	38.9		"	50.0	0.00	77.8	70-130		2.42	30	
1,3-Dichloropropane	40.4		"	50.0	0.00	80.9	70-130		1.39	30	
1,4-Dichlorobenzene	35.7		"	50.0	0.00	71.3	70-130		0.732	30	
2,2-Dichloropropane	40.8		"	50.0	0.00	81.7	70-130		0.147	30	
2-Butanone	34.7		"	50.0	0.00	69.4	70-130	Low Bias	2.59	30	
2-Chlorotoluene	38.2		"	50.0	0.00	76.4	70-130		0.288	30	
2-Hexanone	31.8		"	50.0	0.00	63.7	70-130	Low Bias	1.16	30	
4-Chlorotoluene	38.6		"	50.0	0.00	77.2	70-130		1.70	30	
4-Methyl-2-pentanone	34.4		"	50.0	0.00	68.9	70-130	Low Bias	1.98	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30280 - EPA 5035A											
Matrix Spike Dup (BK30280-! Matrix Spike Dup	*Source sample: 23J1769-01 (LB-04 (8-10))								Prepared & Analyzed: 11/05/2023		
Acetone	77.9		ug/L	50.0	0.00	156	70-130	High Bias	6.35	30	
Acrylonitrile	35.5		"	50.0	0.00	71.0	70-130		6.91	30	
Benzene	44.2		"	50.0	0.00	88.3	70-130		1.14	30	
Bromobenzene	39.6		"	50.0	0.00	79.1	70-130		1.32	30	
Bromochloromethane	40.1		"	50.0	0.00	80.3	70-130		0.399	30	
Bromodichloromethane	38.2		"	50.0	0.00	76.3	70-130		3.25	30	
Bromoform	38.4		"	50.0	0.00	76.8	70-130		1.28	30	
Bromomethane	62.2		"	50.0	0.00	124	70-130		0.823	30	
Carbon disulfide	41.5		"	50.0	0.00	83.1	70-130		2.87	30	
Carbon tetrachloride	44.2		"	50.0	0.00	88.5	70-130		0.654	30	
Chlorobenzene	42.0		"	50.0	0.00	84.1	70-130		2.99	30	
Chloroethane	49.4		"	50.0	0.00	98.8	70-130		1.09	30	
Chloroform	43.1		"	50.0	0.00	86.2	70-130		1.38	30	
Chloromethane	40.8		"	50.0	0.00	81.7	70-130		1.75	30	
cis-1,2-Dichloroethylene	39.5		"	50.0	0.00	79.1	70-130		0.404	30	
cis-1,3-Dichloropropylene	36.7		"	50.0	0.00	73.4	70-130		3.46	30	
Dibromochloromethane	40.4		"	50.0	0.00	80.9	70-130		5.28	30	
Dibromomethane	40.0		"	50.0	0.00	80.0	70-130		1.26	30	
Dichlorodifluoromethane	48.5		"	50.0	0.00	97.1	70-130		1.10	30	
Ethyl Benzene	40.0		"	50.0	0.00	79.9	70-130		1.67	30	
Hexachlorobutadiene	38.8		"	50.0	0.00	77.7	70-130		2.49	30	
Isopropylbenzene	43.0		"	50.0	0.00	85.9	70-130		0.233	30	
Methyl Methacrylate	35.8		"	50.0	0.00	71.7	70-130		0.0837	30	
Methyl tert-butyl ether (MTBE)	42.1		"	50.0	0.00	84.2	70-130		0.545	30	
Methylene chloride	38.2		"	50.0	10.1	56.2	70-130	Low Bias	0.731	30	
Naphthalene	37.9		"	50.0	0.00	75.7	70-130		0.212	30	
n-Butylbenzene	38.6		"	50.0	0.00	77.1	70-130		1.70	30	
n-Propylbenzene	39.5		"	50.0	0.00	78.9	70-130		0.865	30	
o-Xylene	40.2		"	50.0	0.00	80.3	70-130		2.60	30	
p- & m- Xylenes	79.8		"	100	0.00	79.8	70-130		3.05	30	
p-Isopropyltoluene	41.4		"	50.0	0.00	82.7	70-130		0.0966	30	
sec-Butylbenzene	40.6		"	50.0	0.00	81.2	70-130		0.0985	30	
Styrene	39.1		"	50.0	0.00	78.2	70-130		3.57	30	
tert-Butylbenzene	41.9		"	50.0	0.00	83.8	70-130		0.526	30	
Tetrachloroethylene	30.1		"	50.0	0.00	60.2	70-130	Low Bias	1.04	30	
Tetrahydrofuran	34.9		"	50.0	0.00	69.7	70-130	Low Bias	7.80	30	
Toluene	39.6		"	50.0	0.00	79.1	70-130		2.15	30	
trans-1,2-Dichloroethylene	40.6		"	50.0	0.00	81.1	70-130		1.77	30	
trans-1,3-Dichloropropylene	36.3		"	50.0	0.00	72.6	70-130		1.89	30	
trans-1,4-dichloro-2-butene	39.0		"	50.0	0.00	78.1	70-130		1.60	30	
Trichloroethylene	37.5		"	50.0	0.00	75.1	70-130		0.776	30	
Trichlorofluoromethane	52.3		"	50.0	0.00	105	70-130		1.89	30	
Vinyl Chloride	47.0		"	50.0	0.00	94.0	70-130		0.320	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.0*		*"*	*50.0*		*98.0*	*70-130*				
Surrogate: SURR: Toluene-d8	*48.9*		*"*	*50.0*		*97.8*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*50.2*		*"*	*50.0*		*100*	*70-130*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag

Batch BK30129 - EPA 3546- SVOA RCP

Blank (BK30129-BLK1) Blank — Prepared: 11/02/2023 Analyzed: 11/03/2023

2-Methylnaphthalene	ND	0.249	mg/kg wet								
Acenaphthene	ND	0.249	"								
Acenaphthylene	ND	0.249	"								
Anthracene	ND	0.249	"								
Benzo(a)anthracene	ND	0.249	"								
Benzo(a)pyrene	ND	0.249	"								
Benzo(b)fluoranthene	ND	0.249	"								
Benzo(g,h,i)perylene	ND	0.249	"								
Benzo(k)fluoranthene	ND	0.249	"								
Chrysene	ND	0.249	"								
Dibenzo(a,h)anthracene	ND	0.249	"								
Fluoranthene	ND	0.249	"								
Fluorene	ND	0.249	"								
Indeno(1,2,3-cd)pyrene	ND	0.249	"								
Naphthalene	ND	0.249	"								
Phenanthrene	ND	0.249	"								
Pyrene	ND	0.249	"								
Surrogate: SURR: Nitrobenzene-d5	*0.743*		*"*	*1.24*		*59.8*	*30-130*				
Surrogate: SURR: 2-Fluorobiphenyl	*0.682*		*"*	*1.24*		*54.8*	*30-130*				
Surrogate: SURR: Terphenyl-d14	*0.744*		*"*	*1.24*		*59.8*	*30-130*				

LCS (BK30129-BS1) LCS — Prepared: 11/02/2023 Analyzed: 11/03/2023

2-Methylnaphthalene	0.662	0.249	mg/kg wet	1.24		53.2	40-140				
Acenaphthene	0.608	0.249	"	1.24		48.9	40-140				
Acenaphthylene	0.604	0.249	"	1.24		48.6	40-140				
Anthracene	0.601	0.249	"	1.24		48.4	40-140				
Benzo(a)anthracene	0.651	0.249	"	1.24		52.4	40-140				
Benzo(a)pyrene	0.617	0.249	"	1.24		49.6	40-140				
Benzo(b)fluoranthene	0.647	0.249	"	1.24		52.0	40-140				
Benzo(g,h,i)perylene	0.654	0.249	"	1.24		52.6	40-140				
Benzo(k)fluoranthene	0.646	0.249	"	1.24		52.0	40-140				
Chrysene	0.624	0.249	"	1.24		50.2	40-140				
Dibenzo(a,h)anthracene	0.666	0.249	"	1.24		53.5	40-140				
Fluoranthene	0.595	0.249	"	1.24		47.8	40-140				
Fluorene	0.624	0.249	"	1.24		50.2	40-140				
Indeno(1,2,3-cd)pyrene	0.694	0.249	"	1.24		55.8	40-140				
Naphthalene	0.639	0.249	"	1.24		51.4	40-140				
Phenanthrene	0.608	0.249	"	1.24		48.9	40-140				
Pyrene	0.645	0.249	"	1.24		51.9	40-140				
Surrogate: SURR: Nitrobenzene-d5	*0.672*		*"*	*1.24*		*54.0*	*30-130*				
Surrogate: SURR: 2-Fluorobiphenyl	*0.648*		*"*	*1.24*		*52.1*	*30-130*				
Surrogate: SURR: Terphenyl-d14	*0.691*		*"*	*1.24*		*55.6*	*30-130*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30129 - EPA 3546- SVOA RCP											
Matrix Spike (BK30129-MS1) Matrix Spike	*Source sample: 23J1769-01 (LB-04 (8-10))								Prepared: 11/02/2023 Analyzed: 11/03/2023		
2-Methylnaphthalene	0.926	0.562	mg/kg dry	1.41	ND	65.9	40-140				
Acenaphthene	0.862	0.562	"	1.41	ND	61.4	40-140				
Acenaphthylene	0.867	0.562	"	1.41	ND	61.7	40-140				
Anthracene	0.897	0.562	"	1.41	ND	63.8	40-140				
Benzo(a)anthracene	0.949	0.562	"	1.41	ND	67.5	40-140				
Benzo(a)pyrene	0.917	0.562	"	1.41	ND	65.3	40-140				
Benzo(b)fluoranthene	0.972	0.562	"	1.41	ND	69.2	40-140				
Benzo(g,h,i)perylene	0.966	0.562	"	1.41	ND	68.7	40-140				
Benzo(k)fluoranthene	0.971	0.562	"	1.41	ND	69.1	40-140				
Chrysene	0.924	0.562	"	1.41	ND	65.8	40-140				
Dibenzo(a,h)anthracene	0.938	0.562	"	1.41	ND	66.7	40-140				
Fluoranthene	0.884	0.562	"	1.41	ND	62.9	40-140				
Fluorene	0.916	0.562	"	1.41	ND	65.2	40-140				
Indeno(1,2,3-cd)pyrene	0.971	0.562	"	1.41	ND	69.1	40-140				
Naphthalene	0.925	0.562	"	1.41	ND	65.8	40-140				
Phenanthrene	0.884	0.562	"	1.41	ND	62.9	40-140				
Pyrene	0.911	0.562	"	1.41	ND	64.8	40-140				
Surrogate: SURR: Nitrobenzene-d5	*0.914*		*"*	*1.41*		*65.0*	*30-130*				
Surrogate: SURR: 2-Fluorobiphenyl	*0.896*		*"*	*1.41*		*63.8*	*30-130*				
Surrogate: SURR: Terphenyl-d14	*0.941*		*"*	*1.41*		*67.0*	*30-130*				
Matrix Spike Dup (BK30129-! Matrix Spike Dup	*Source sample: 23J1769-01 (LB-04 (8-10))								Prepared: 11/02/2023 Analyzed: 11/03/2023		
2-Methylnaphthalene	1.01	0.562	mg/kg dry	1.41	ND	72.0	40-140		8.82	30	
Acenaphthene	0.972	0.562	"	1.41	ND	69.2	40-140		12.0	30	
Acenaphthylene	0.943	0.562	"	1.41	ND	67.1	40-140		8.45	30	
Anthracene	0.944	0.562	"	1.41	ND	67.2	40-140		5.13	30	
Benzo(a)anthracene	0.976	0.562	"	1.41	ND	69.4	40-140		2.80	30	
Benzo(a)pyrene	0.944	0.562	"	1.41	ND	67.2	40-140		2.90	30	
Benzo(b)fluoranthene	1.01	0.562	"	1.41	ND	71.8	40-140		3.74	30	
Benzo(g,h,i)perylene	0.994	0.562	"	1.41	ND	70.7	40-140		2.87	30	
Benzo(k)fluoranthene	1.01	0.562	"	1.41	ND	71.7	40-140		3.64	30	
Chrysene	0.965	0.562	"	1.41	ND	68.6	40-140		4.29	30	
Dibenzo(a,h)anthracene	1.01	0.562	"	1.41	ND	71.9	40-140		7.50	30	
Fluoranthene	0.951	0.562	"	1.41	ND	67.7	40-140		7.35	30	
Fluorene	0.975	0.562	"	1.41	ND	69.4	40-140		6.18	30	
Indeno(1,2,3-cd)pyrene	1.02	0.562	"	1.41	ND	72.6	40-140		4.97	30	
Naphthalene	1.00	0.562	"	1.41	ND	71.4	40-140		8.05	30	
Phenanthrene	0.954	0.562	"	1.41	ND	67.9	40-140		7.71	30	
Pyrene	0.978	0.562	"	1.41	ND	69.6	40-140		7.14	30	
Surrogate: SURR: Nitrobenzene-d5	*1.08*		*"*	*1.41*		*76.8*	*30-130*				
Surrogate: SURR: 2-Fluorobiphenyl	*1.02*		*"*	*1.41*		*72.9*	*30-130*				
Surrogate: SURR: Terphenyl-d14	*1.09*		*"*	*1.41*		*77.7*	*30-130*				

Gas Chromatography/Flame Ionization Detector - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30041 - EPA 3546 ETPH											
Blank (BK30041-BLK1) Blank								Prepared: 11/01/2023 Analyzed: 11/02/2023			
ETPH (Extractable Total Petroleum Hydrocarbons)	ND	39.6	mg/kg wet								
Surrogate: 1-Chlorooctadecane	*5.55*		"	*9.90*		*56.1*	*50-150*				
LCS (BK30041-BS1) LCS								Prepared: 11/01/2023 Analyzed: 11/02/2023			
ETPH (Extractable Total Petroleum Hydrocarbons)	67.8	39.6	mg/kg wet	74.3		91.3	39.8-123				
Surrogate: 1-Chlorooctadecane	*8.27*		"	*9.90*		*83.6*	*50-150*				
Matrix Spike (BK30041-MS1) Matrix Spike *Source sample: 23J1769-01 (LB-04 (8-10))								Prepared: 11/01/2023 Analyzed: 11/03/2023			
ETPH (Extractable Total Petroleum Hydrocarbons)	97.9	44.5	mg/kg dry	83.5	ND	117	50-150				
Surrogate: 1-Chlorooctadecane	*9.21*		"	*11.1*		*82.8*	*50-150*				
Matrix Spike Dup (BK30041-! Matrix Spike Dup *Source sample: 23J1769-01 (LB-04 (8-10))								Prepared: 11/01/2023 Analyzed: 11/03/2023			
ETPH (Extractable Total Petroleum Hydrocarbons)	84.1	43.7	mg/kg dry	81.9	ND	103	50-150		15.2	30	
Surrogate: 1-Chlorooctadecane	*7.42*		"	*10.9*		*67.9*	*50-150*				
Batch BK30203 - EPA 3546 ETPH											
Blank (BK30203-BLK1) Blank								Prepared & Analyzed: 11/03/2023			
ETPH (Extractable Total Petroleum Hydrocarbons)	ND	39.6	mg/kg wet								
Surrogate: 1-Chlorooctadecane	*8.80*		"	*9.90*		*88.9*	*50-150*				
LCS (BK30203-BS1) LCS								Prepared & Analyzed: 11/03/2023			
ETPH (Extractable Total Petroleum Hydrocarbons)	82.6	39.6	mg/kg wet	74.3		111	39.8-123				
Surrogate: 1-Chlorooctadecane	*9.64*		"	*9.90*		*97.4*	*50-150*				
Matrix Spike (BK30203-MS1) Matrix Spike *Source sample: 23K0016-15 (Matrix Spike)								Prepared & Analyzed: 11/03/2023			
ETPH (Extractable Total Petroleum Hydrocarbons)	69.7	39.6	mg/kg wet	74.3	1390	NR	50-150	Low Bias			
Surrogate: 1-Chlorooctadecane	*8.44*		"	*9.90*		*85.2*	*50-150*				

Gas Chromatography/Flame Ionization Detector - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30203 - EPA 3546 ETPH											
Matrix Spike Dup (BK30203- Matrix Spike Dup	*Source sample: 23K0016-15 (Matrix Spike Dup)								Prepared: 11/03/2023 Analyzed: 11/04/2023		
ETPH (Extractable Total Petroleum Hydrocarbons)	85.2	39.6	mg/kg wet	74.3	1390	NR	50-150	Low Bias	20.1	30	
Surrogate: 1-Chlorooctadecane	*7.96*		*"*	*9.90*		*80.4*	*50-150*				

Miscellaneous Physical Parameters - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK30091 - % Solids Prep											
Duplicate (BK30091-DUP1) Duplicate	*Source sample: 23J1769-01 (LB-04 (8-10))								Prepared & Analyzed: 11/02/2023		
% Solids	88.6	0.100	%		88.1				0.552	20	

Volatile Analysis Sample Containers

Lab ID	Client Sample ID	Volatile Sample Container
23J1769-01	LB-04 (8-10)	40mL Vial with Stir Bar-Cool 4° C
23J1769-02	DUP_10.27.2023	40mL Vial with Stir Bar-Cool 4° C
23J1769-03	LB-03 (9-10)	40mL Vial with Stir Bar-Cool 4° C
23J1769-04	LB-02 (9-10)	40mL Vial with Stir Bar-Cool 4° C
23J1769-05	LB-02 (14-15)	40mL Vial with Stir Bar-Cool 4° C
23J1769-06	LB-01 (9-10)	40mL Vial with Stir Bar-Cool 4° C
23J1769-07	LB-01 (7.5-8.5)	40mL Vial with Stir Bar-Cool 4° C
23J1769-08	Trip Blanks	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C

Sample and Data Qualifiers Relating to This Work Order

QL-02	This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
IS-LO	The internal std associated with this target compound did not meet acceptance criteria (area <50% CCV) at the stated dilution due to matrix effects. Sample was rerun to confirm matrix effects.
ICVE	The value reported is ESTIMATED. The value is estimated due to its behavior during initial calibration verification (recovery exceeded 30% of expected value).
CCVE	The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).
CAL-E	The value reported is ESTIMATED. The value is estimated due to its behavior during initial calibration (average Rf>20%)

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

Field Chain-of-Custody Record

YORK ANALYTICAL LABORATORIES INC

York Analytical Laboratories, Inc. (YORK)'s Standard Terms & Conditions are listed on the back side of this document.
This document serves as your written authorization for YORK to proceed with the analyses requested below.
Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 23J1769

120 Research Drive Stratford, CT 06615 | 132-02 89th Ave Queens, NY 11418 | 56 Church Hill Rd. #2 Newtown, CT 06470 | clientservices@yorklab.com | www.yorklab.com | 800-306-YORK

YOUR Information	Report To:	Invoice To:
Company: Langan Engineering	Company:	Company:
Address: 555 Long Wharf Dr. New Haven, CT 06511	Address: SAME	Address: SAME
Phone.: 203 780 1376	Phone.:	Phone.:
Contact: William Adsit	Contact:	Contact:
E-mail: wadsit@langan.com	E-mail:	E-mail:

YOUR Project Number: 170265101

YOUR Project Name: Central Middle School

YOUR PO#:

Turn-Around Time

- RUSH - Next Day
- RUSH - Two Day
- RUSH - Three Day
- RUSH - Four Day
- RUSH - Five Day
- Standard (6-9 Day) X

PFAS Standard is 7-10 Days

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

William Adsit

Samples Collected by: (print AND sign your name)

Matrix Codes

S - soil / solid
GW - groundwater
DW - drinking water
WW - wastewater
O - Oil | Other

Samples From

New York
New Jersey
Connecticut X
Pennsylvania
Other:

Report / EDD Type (circle selections)

Summary Report | CT RCP | EQuIS (Standard)
QA Report | CT RCP DQA/DUE | NYSDEC EQuIS
CMDP | NJDEP Reduced Deliverables | NJDKQP
Standard Excel EDD | NJDEP SRP HazSite
NY ASP B Package | Other:

YORK Reg. Comp.

Compared to the following Regulation(s): (please fill in)

DEC PMC

Sample Identification	Sample Matrix	Date/Time Sampled	Analyses Requested	Container Type	No.
LB-04 (8-10) (MS/MSD)	S	10/27/23 09:45	VOCs, PAHs, ETPH	1x8oz, 1x VOA vials	
DUP_10.27.2023		—			
LB-03 (9-10)		10:25			
LB-02 (9-10)		10:45			
LB-02 (14-15)		10:55			
LB-01 (9-10)		11:25			
LB-01 (7.5-8.5)		11:35			
Trip Blanks		—	VOCs	2x 40mL	

Comments: Please cc: results to Dave Granucci + Hannah Griesbach.
RLs must meet CTDEEP RSRs + APS criteria.

Preservation: (check all that apply)
HCl ✓ MeOH ✓ HNO3 ___ H2SO4 ___ NaOH ___
ZnAc ___ Ascorbic Acid ___ Other: DI water

Samples iced/chilled at time of lab pickup? circle Yes or No

Special Instruction
Field Filtered
Lab to Filter

1. Samples Relinquished by / Company	Date/Time	1. Samples Received by / Company	Date/Time	2. Samples Relinquished by / Company	Date/Time
	10/27/23 13:07				
2. Samples Received by / Company	Date/Time	3. Samples Relinquished by / Company	Date/Time	3. Samples Received by / Company	Date/Time
4. Samples Relinquished by / Company	Date/Time	4. Samples Received by / Company	Date/Time	Samples Received in LAB by	Date/Time / Temperature
					10/27/23 1307 4.4 Degrees C

APPENDIX C - LIMITED IN-SITU SOIL SAMPLING, DATED APRIL 1, 2024

Laboratory Analytical Summary Table - Preliminary Waste Classification
Central Middle School, 9 Indian Rock Lane
Greenwich, Connecticut
Langan Project No. 140265101

Sample ID Sampling Date Client Matrix	CTDEEP PMC GA/GAA	CTDEEP RDEC	CTDEEP I/CDEC	CMS_WC_Topsoil 2/19/2024 Soil		CMS_WC_Subbase 2/19/2024 Soil		CMS_WC_Fill1 2/19/2024 Soil		CMS_WC_Fill2 2/19/2024 Soil		CMS_WC_Fill3 2/19/2024 Soil	
Compound				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
VOCs (mg/kg)													
Dilution Factor				*1*		*1*		*1*		*1*		*1*	
Acetone	14	500	1,000	0.023	U	0.011		0.0096	U	0.029		0.011	U
TCLP VOCs (mg/L)													
Dilution Factor								*10*					
TCLP VOCs	*Varies*	~	~	NA		NA		ND		NA		NA	
SVOCs (mg/kg)													
Dilution Factor				*2*		*2*		*2*		*2*		*2*	
SVOCs	*Varies*	*Varies*	*Varies*	ND		ND		ND		ND		ND	
TCLP SVOCs (mg/kg)													
Dilution Factor								*1*					
TCLP SVOCs	*Varies*	~	~	NA		NA		ND		NA		NA	
Petroleum Hydrocarbons (mg/kg)													
Dilution Factor				*1*		*1*		*1*		*1*		*1*	
TPH-DRO (C10-C28)	~	~	~	15.6		13.3		12	U	11.2	U	11.5	U
Dilution Factor				*100*		*100*		*100*		*100*		*100*	
TPH-GRO (C5-C10)	~	~	~	107	U	101	U	74	U	95.6	U	107	U
Pesticides (mg/kg)													
Dilution Factor				*5*		*5*		*5*		*5*		*5*	
4,4'-DDD	~	~	~	0.00315	U	0.00271	U	0.00293	U	0.00284	U	0.0107	D
4,4'-DDE	~	~	~	0.0089	D	0.00271	U	0.00293	U	0.00284	U	0.0036	D
4,4'-DDT	~	~	~	0.0142	D	0.00271	U	0.00293	U	0.00284	U	0.00284	U
Total DDT	~	1.8	17	0.0231		ND		ND		ND		0.0143	
TCLP Pesticides (mg/L)													
Dilution Factor								*1*					
TCLP Pesticides	*Varies*	~	~	NA		NA		ND		NA		NA	
SPLP Pesticides (mg/L)													
Dilution Factor				*1*		*1*		*1*		*1*		*1*	
Total DDT	0.003	~	~	ND		ND		ND		ND		ND	
Herbicides (mg/kg)													
Dilution Factor				*1*		*1*		*1*		*1*		*1*	
Total Herbicides	*Varies*	*Varies*	*Varies*	ND		ND		ND		ND		ND	
TCLP Herbicides (mg/L)													
Dilution Factor								*1*					
TCLP Herbicides	*Varies*	~	~	NA		NA		ND		NA		NA	
PCBs (mg/kg)													
Dilution Factor				*1*		*1*		*1*		*1*		*1*	
Total PCBs	~	1	10	0.0318	U	0.0274	U	0.0296	U	0.0287	U	0.0287	U
Total Metals (mg/kg)													
Dilution Factor				*1*		*1*		*1*		*1*		*1*	
Antimony	~	27	8,200	2.25	U	2.07		2.4		2	U	2.02	U
Arsenic	~	10	10	7.59		5.59		5.51		6.76		5.83	
Barium	~	4,700	140,000	221		157		314		140		164	
Chromium, Trivalent	~	3,900	51,000	44.7		52.9		59.8		36.3		38.2	
Chromium, total	~	4,000	51,100	44.7		52.9		59.8		36.3		38.2	
Copper	~	2,500	76,000	23		21.6		28.6		23.5		21.4	
Lead	~	500	1,000	39.4		19		9.77		26.9		15.6	
Mercury	~	20	610	0.132		0.0335	U	0.0362	U	0.0346	U	0.0352	
Nickel	~	1,400	7,500	20.6		26.4		26.6		19.5		22.1	
Selenium	~	340	10,000	2.42		2.23		2.1	U	2.68		2.3	
Vanadium	~	470	14,000	49		50.6		58.1		41.5		43.2	
Zinc	~	20,000	610,000	85.6		63.7		54.5		69.8		58.7	
TCLP Metals (mg/L)													
Dilution Factor								*1*					
Barium	1	~	~	NA		NA		0.734		NA		NA	
Other Parameters													
Dilution Factor				*1*		*1*		*1*		*1*		*1*	
Conductivity (umhos/cm)	~	~	~	866.7		3,534		19,880		10,390		765.8	
Ignitability	~	~	~	Non-Ignit.		Non-Ignit.		Non-Ignit.		Non-Ignit.		Non-Ignit.	
Paint Filter Test	~	~	~	No Free Liquid		No Free Liquid		No Free Liquid		No Free Liquid		No Free Liquid	
pH	~	~	~	5.7		8.39		7.31		7.51		5.15	
Reactivity (mg/kg)													
Dilution Factor				*1*		*1*		*1*		*1*		*1*	
Reactivity - Cyanide	~	~	~	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Reactivity - Sulfide	~	~	~	40		32		56		56		40	

Q is the Qualifier Column with definitions as follows:
D = result is from an analysis that required a dilution
U = analyte not detected at or above the level indicated
ND = Not detected
NA = Not analyzed
~ = this indicates that no regulatory limit has been established for this analyte

CTDEEP PMC = Pollutant Mobility Criteria
CTDEEP RDEC = Residential Direct Exposure Criteria
CTDEEP I/CDEC = Industrial/Commercial Direct Exposure Criteria

VOCs = Volatile Organic Compounds
SVOCs = Semivolatile Organic Compounds
TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics
TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics
PCBs = Polychlorinated Biphenyls
TCLP = Toxic Characteristic Leaching Procedure
mg/kg = miligram per kilogram
mg/L = miligram per liter

Indicates an exceedance of GA/GAA PMC
Indicates an exceedance of RDEC
Indicates an exceedance of I/CDEC

Table 1A
Soil Sample Summary Table - Waste Classification
Yale Parking Lot Expansions
New Haven, Connecticut
Langan Project No. 140235301

Sample Name	Sample Type	Location	Sample Depth Interval	Date/Time	Notes
CMS_WC_Topsoil	Composite	LB-04	0 - 2"	19 February 2024 @ 11:30	
			4 - 6"		
		LB-06	0 - 2"		
			2 - 4"		
			4 - 6"		
	Grab	LB-06	2 - 4"		
CMS_WC_Subbase	Composite	LB-01	6 - 8"	19 February 2024 @ 11:15	
			10 - 12"		
		LB-02	8 - 10"		
			10 - 12"		
		LB-05	8 - 10"		
	Grab	LB-02	8 - 10"		
CMS_WC_Fill1	Composite	LB-01	1.5 - 2'	19 February 2024 @ 11:20	
			2.5 - 3'		
		LB-02	8 - 12"		
			3.5 - 4'		
			5.5 - 6'		
	Grab	LB-01	1.5 - 2'		
CMS_WC_Fill2	Composite	LB-03	0.25 - 0.75'	19 February 2024 @ 11:45	
			2.5 - 3'		
			5.5 - 6'		
		LB-05	1.5 - 2'		
			3.5 - 4'		
	Grab	LB-05	1.5 - 2'		
CMS_WC_Fill3	Composite	LB-04	0.5 - 0.75'	19 February 2024 @ 12:00	
			1 - 1.25'		
		LB-06	0.75 - 1'		
			2.5 - 3'		
			3.5 - 4'		
	Grab	LB-04	0.5 - 0.75'		

LB-01
LB-02
LB-03
LB-04
LB-05
LB-06
Central Middle School
Stanwich Rd
Stanwich Rd
Orchard St
Indian Rock Ln
Indian Rock Ln
Indian Rock Ln
Ponderosa Dr

Technical Report

prepared for:

Langan Engineering & Environmental Services (CT)
Long Wharf Maritime Center, 555 Long Wharf Drive
New Haven CT, 06511-6107
Attention: Elyssa Schwendy

Report Date: 04/01/2024
Client Project ID: 140265101
York Project (SDG) No.: 24B1014

Revision No. 1.0

CT Cert. No. PH-0723 New Jersey Cert. No. CT005 and NY037 New York Cert. Nos. 10854 and 12058 PA Cert. No. 68-04440

120 RESEARCH DRIVE STRATFORD, CT 06615 ■ 132-02 89th AVENUE RICHMOND HILL, NY 11418
www.YORKLAB.com (203) 325-1371 FAX (203) 357-0166 ClientServices@yorklab.com

Report Date: 04/01/2024
Client Project ID: 140265101
York Project (SDG) No.: 24B1014

Langan Engineering & Environmental Services (CT)
Long Wharf Maritime Center, 555 Long Wharf Drive
New Haven CT, 06511-6107
Attention: Elyssa Schwendy

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on February 19, 2024 and listed below. The project was identified as your project: **140265101**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
24B1014-01	CMS_WC_Topsoil	Soil	02/19/2024	02/19/2024
24B1014-02	CMS_WC_Subbase	Soil	02/19/2024	02/19/2024
24B1014-03	CMS_WC_Fill1	Soil	02/19/2024	02/19/2024
24B1014-04	CMS_WC_Fill2	Soil	02/19/2024	02/19/2024
24B1014-05	CMS_WC_Fill3	Soil	02/19/2024	02/19/2024

General Notes for York Project (SDG) No.: 24B1014

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By **Date:** 04/01/2024

Cassie L. Mosher
Laboratory Manager

Sample Information

Client Sample ID: CMS_WC_Topsoil **York Sample ID:** 24B1014-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:30 am	02/19/2024

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
563-58-6	1,1-Dichloropropylene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
142-28-9	1,3-Dichloropropane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Topsoil **York Sample ID:** 24B1014-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:30 am	02/19/2024

VOA, 8260 RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
594-20-7	2,2-Dichloropropane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005			
78-93-3	2-Butanone	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-49-8	2-Chlorotoluene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
591-78-6	2-Hexanone	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
106-43-4	4-Chlorotoluene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-64-1	Acetone	ND	ICVE	ug/kg dry	23	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
107-13-1	Acrylonitrile	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
71-43-2	Benzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-86-1	Bromobenzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-97-5	Bromochloromethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-27-4	Bromodichloromethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-25-2	Bromoform	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
74-83-9	Bromomethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-15-0	Carbon disulfide	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
56-23-5	Carbon tetrachloride	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-90-7	Chlorobenzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-00-3	Chloroethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-66-3	Chloroform	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
74-87-3	Chloromethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: CMS_WC_Topsoil **York Sample ID:** 24B1014-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:30 am	02/19/2024

VOA, 8260 RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
124-48-1	Dibromochloromethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
74-95-3	Dibromomethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
75-71-8	Dichlorodifluoromethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
100-41-4	Ethyl Benzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
98-82-8	Isopropylbenzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
80-62-6	Methyl Methacrylate	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005		
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-09-2	Methylene chloride	ND		ug/kg dry	23	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-20-3	Naphthalene	ND		ug/kg dry	23	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
104-51-8	n-Butylbenzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
103-65-1	n-Propylbenzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-47-6	o-Xylene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440		
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	23	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440		
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
135-98-8	sec-Butylbenzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
100-42-5	Styrene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
98-06-6	tert-Butylbenzene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
127-18-4	Tetrachloroethylene	ND	ICVE	ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
109-99-9	Tetrahydrofuran	ND		ug/kg dry	23	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:			
108-88-3	Toluene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Topsoil **York Sample ID:** 24B1014-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:30 am	02/19/2024

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:			
79-01-6	Trichloroethylene	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-01-4	Vinyl Chloride	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 17:33	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*100 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*103 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*107 %*	*70-130*

SVOA, 8270 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
90-12-0	1-Methylnaphthalene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723		
95-95-4	2,4,5-Trichlorophenol	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
88-06-2	2,4,6-Trichlorophenol	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-83-2	2,4-Dichlorophenol	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
105-67-9	2,4-Dimethylphenol	ND	ICVE	ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
51-28-5	2,4-Dinitrophenol	ND	CAL-E	ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
121-14-2	2,4-Dinitrotoluene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
606-20-2	2,6-Dinitrotoluene	ND	CAL-E	ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-58-7	2-Chloronaphthalene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Topsoil **York Sample ID:** 24B1014-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:30 am	02/19/2024

SVOA, 8270 ASE RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-57-8	2-Chlorophenol	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-57-6	2-Methylnaphthalene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
95-48-7	2-Methylphenol	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
88-74-4	2-Nitroaniline	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
88-75-5	2-Nitrophenol	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
65794-96-9	3- & 4-Methylphenols	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
91-94-1	3,3-Dichlorobenzidine	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
99-09-2	3-Nitroaniline	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
534-52-1	4,6-Dinitro-2-methylphenol	ND	CAL-E	ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
101-55-3	4-Bromophenyl phenyl ether	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
59-50-7	4-Chloro-3-methylphenol	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-47-8	4-Chloroaniline	ND	QL-02	ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7005-72-3	4-Chlorophenyl phenyl ether	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
100-01-6	4-Nitroaniline	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
100-02-7	4-Nitrophenol	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
83-32-9	Acenaphthene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
208-96-8	Acenaphthylene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
62-53-3	Aniline	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-12-7	Anthracene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Topsoil **York Sample ID:** 24B1014-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:30 am	02/19/2024

SVOA, 8270 ASE RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
85-68-7	Benzyl butyl phthalate	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
111-91-1	Bis(2-chloroethoxy)methane	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
111-44-4	Bis(2-chloroethyl)ether	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-60-1	Bis(2-chloroisopropyl)ether	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
117-81-7	Bis(2-ethylhexyl)phthalate	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-74-8	Carbazole	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
218-01-9	Chrysene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
132-64-9	Dibenzofuran	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
84-66-2	Diethyl phthalate	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
131-11-3	Dimethyl phthalate	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
84-74-2	Di-n-butyl phthalate	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
117-84-0	Di-n-octyl phthalate	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
206-44-0	Fluoranthene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-73-7	Fluorene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
118-74-1	Hexachlorobenzene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
77-47-4	Hexachlorocyclopentadiene	ND	ICVE	ug/kg dry	1290	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-72-1	Hexachloroethane	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Topsoil **York Sample ID:** 24B1014-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:30 am	02/19/2024

SVOA, 8270 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
78-59-1	Isophorone	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-20-3	Naphthalene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
98-95-3	Nitrobenzene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
621-64-7	N-nitroso-di-n-propylamine	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-30-6	N-Nitrosodiphenylamine	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
82-68-8	Pentachloronitrobenzene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723		
87-86-5	Pentachlorophenol	ND	CAL-E	ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
85-01-8	Phenanthrene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-95-2	Phenol	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
129-00-0	Pyrene	ND		ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-86-1	Pyridine	ND	ICVE	ug/kg dry	646	2	EPA 8270D	02/21/2024 13:48	02/23/2024 03:43	ss
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*72.4 %*	*30-130*
13127-88-3	*Surrogate: SURR: Phenol-d6*	*67.1 %*	*30-130*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*75.9 %*	*30-130*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*63.0 %*	*30-130*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*63.7 %*	*30-130*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*69.9 %*	*30-130*

PEST, 8081 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-55-9	**4,4'-DDE**	**0.00890**		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-29-3	**4,4'-DDT**	**0.0142**		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
15972-60-8	Alachlor	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723		

Sample Information

Client Sample ID: CMS_WC_Topsoil **York Sample ID:** 24B1014-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:30 am	02/19/2024

PEST, 8081 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
309-00-2	Aldrin	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
319-84-6	alpha-BHC	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
319-85-7	beta-BHC	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
57-74-9	Chlordane, total	ND		mg/kg dry	0.0420	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:			
319-86-8	delta-BHC	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
60-57-1	Dieldrin	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
959-98-8	Endosulfan I	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
33213-65-9	Endosulfan II	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854		
1031-07-8	Endosulfan sulfate	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-20-8	Endrin	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7421-93-4	Endrin aldehyde	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53494-70-5	Endrin ketone	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
58-89-9	gamma-BHC (Lindane)	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-44-8	Heptachlor	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
1024-57-3	Heptachlor epoxide	ND		mg/kg dry	0.00315	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-43-5	Methoxychlor	ND		mg/kg dry	0.0158	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
8001-35-2	Toxaphene	ND		mg/kg dry	0.159	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:35	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*89.0 %*	*30-150*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*95.0 %*	*30-150*

PEST, SPLP RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C/1312

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		ug/L	0.00111	1	EPA 8081B/1312	03/24/2024 07:44	03/27/2024 22:01	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		

Sample Information

Client Sample ID: CMS_WC_Topsoil **York Sample ID:** 24B1014-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:30 am	02/19/2024

PEST, SPLP RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3510C/1312

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-55-9	4,4'-DDE	ND		ug/L	0.00111	1	EPA 8081B/1312	03/24/2024 07:44	03/27/2024 22:01	TAH
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005			
50-29-3	4,4'-DDT	ND		ug/L	0.00111	1	EPA 8081B/1312	03/24/2024 07:44	03/27/2024 22:01	TAH
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005			

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*59.8 %*	*30-150*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*58.7 %*	*30-150*

PCB, 8082 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0318	1	EPA 8082A	02/20/2024 08:25	02/21/2024 19:11	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0318	1	EPA 8082A	02/20/2024 08:25	02/21/2024 19:11	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0318	1	EPA 8082A	02/20/2024 08:25	02/21/2024 19:11	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0318	1	EPA 8082A	02/20/2024 08:25	02/21/2024 19:11	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0318	1	EPA 8082A	02/20/2024 08:25	02/21/2024 19:11	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0318	1	EPA 8082A	02/20/2024 08:25	02/21/2024 19:11	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0318	1	EPA 8082A	02/20/2024 08:25	02/21/2024 19:11	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
37324-23-5	Aroclor 1262	ND		mg/kg dry	0.0318	1	EPA 8082A	02/20/2024 08:25	02/21/2024 19:11	NF
							Certifications: NELAC-NY10854,NJDEP-CT005			
11100-14-4	Aroclor 1268	ND		mg/kg dry	0.0318	1	EPA 8082A	02/20/2024 08:25	02/21/2024 19:11	NF
							Certifications: NELAC-NY10854,NJDEP-CT005			
1336-36-3	Total PCBs	ND		mg/kg dry	0.0318	1	EPA 8082A	02/20/2024 08:25	02/21/2024 19:11	NF
							Certifications:			

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*70.5 %*	*30-150*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*38.5 %*	*30-150*

HERB, 8151 RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C/8151A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: CMS_WC_Topsoil **York Sample ID:** 24B1014-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:30 am	02/19/2024

HERB, 8151 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C/8151A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
93-76-5	2,4,5-T	ND		mg/kg dry	0.0253	1	EPA 8151A	02/20/2024 08:05	02/20/2024 20:46	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
93-72-1	2,4,5-TP (Silvex)	ND		mg/kg dry	0.0253	1	EPA 8151A	02/20/2024 08:05	02/20/2024 20:46	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
94-75-7	2,4-D	ND		mg/kg dry	0.0253	1	EPA 8151A	02/20/2024 08:05	02/20/2024 20:46	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-99-0	Dalapon	ND		mg/kg dry	0.0253	1	EPA 8151A	02/20/2024 08:05	02/20/2024 20:46	BCJ
							Certifications:	CTDOH-PH-0723		
1918-00-9	Dicamba	ND		mg/kg dry	0.0253	1	EPA 8151A	02/20/2024 08:05	02/20/2024 20:46	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
19719-28-9	*Surrogate: 2,4-Dichlorophenylacetic acid (.*	*89.4 %*	*21-150*

Total Petroleum Hydrocarbons-DRO (C10-C28)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	**15.6**		mg/kg dry	12.1	1	EPA 8015D	02/20/2024 08:19	02/20/2024 16:39	GXB
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		

	Surrogate Recoveries	Result	Acceptance Range
638-68-6	*Surrogate: Triacontane*	*70.2 %*	*30-150*

Total Petroleum Hydrocarbons-GRO (C5-C10)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-GRO	ND		mg/kg dry	107	100	EPA 8015D	02/20/2024 09:00	02/20/2024 16:32	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		

	Surrogate Recoveries	Result	Acceptance Range
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*91.0 %*	*52-146*

Antimony by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-36-0	Antimony	ND	M-CCV 1	mg/kg dry	2.25	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:38	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Beryllium by EPA 6010

Log-in Notes:

Sample Notes:

Sample Information

Client Sample ID: CMS_WC_Topsoil **York Sample ID:** 24B1014-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:30 am	02/19/2024

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-41-7	Beryllium	ND		mg/kg dry	0.0454	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:38	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Copper by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-50-8	**Copper**	**23.0**		mg/kg dry	1.80	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:38	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Metals, RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-38-2	**Arsenic**	**7.59**		mg/kg dry	1.35	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:38	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-39-3	**Barium**	**221**		mg/kg dry	2.25	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:38	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-43-9	Cadmium	ND		mg/kg dry	0.271	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:38	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-47-3	**Chromium**	**44.7**		mg/kg dry	0.451	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:38	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7439-92-1	**Lead**	**39.4**		mg/kg dry	0.451	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:38	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7782-49-2	**Selenium**	**2.42**		mg/kg dry	2.25	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:38	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-22-4	Silver	ND		mg/kg dry	0.454	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:38	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Nickel by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-02-0	**Nickel**	**20.6**		mg/kg dry	0.898	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:38	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Thallium by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-28-0	Thallium	ND		mg/kg dry	2.25	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:38	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Vanadium by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: CMS_WC_Topsoil **York Sample ID:** 24B1014-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:30 am	02/19/2024

Vanadium by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-62-2	**Vanadium**	**49.0**		mg/kg dry	0.898	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:38	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Zinc by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-66-6	**Zinc**	**85.6**		mg/kg dry	2.25	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:38	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Mercury by 7473

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 7473 soil

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	**Mercury**	**0.132**		mg/kg dry	0.0390	1	EPA 7473	02/26/2024 08:19	02/26/2024 12:24	DBT
							Certifications:	CTDOH-PH-0723,NJDEP-CT005,NELAC-NY10854,PADEP-68-044		

Chromium, Hexavalent

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW846-3060

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18540-29-9	Chromium, Hexavalent	ND		mg/kg dry	0.649	1	EPA 7196A	02/22/2024 07:54	02/22/2024 13:24	PMB
							Certifications:	NJDEP-CT005,CTDOH-PH-0723,NELAC-NY10854,PADEP-68-044		

Chromium, Trivalent

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16065-83-1	**Chromium, Trivalent**	**44.7**		mg/kg	0.500	1	Calculation	02/27/2024 07:43	02/27/2024 10:21	VR
							Certifications:			

Conductivity (Specific Conductance)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Conductivity	**8.667**		umhos/cm	1.000	1	SM 2510B m	02/21/2024 07:40	02/21/2024 10:35	VR
							Certifications:			

pH

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	pH	**5.70**		pH units	0.500	1	EPA 9045D	02/20/2024 14:29	02/20/2024 18:55	LRS
							Certifications:	NELAC-NY10854,CTDOH-PH-0723,PADEP-68-04440,NJDEP-CT(		

Sample Information

Client Sample ID: CMS_WC_Topsoil **York Sample ID:** 24B1014-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:30 am	02/19/2024

Reactivity-Cyanide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Reactivity - Cyanide	ND		mg/kg	0.250	1	EPA SW-846 Ch.7.3.3	02/23/2024 14:55	02/23/2024 22:04	SL
							Certifications: CTDOH-PH-0723,PADEP-68-04440			

Reactivity-Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Reactivity - Sulfide	**40.0**		mg/kg	15.0	1	EPA SW-846 Ch.7.3.4	02/23/2024 14:57	02/23/2024 22:03	SL
							Certifications: CTDOH-PH-0723,PADEP-68-04440			

Ignitability

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Ignitability	Non-Ignit.		None	1	1	EPA 1030P	02/20/2024 10:31	02/20/2024 13:17	CAM2
							Certifications:			

Paint Filter Test

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Paint Filter Test	No Free Liquid		None	0.05	1	EPA 9095B	02/20/2024 07:42	02/20/2024 08:37	VR
							Certifications: NELAC-NY10854,NJDEP-CT005			

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	**% Solids**	**77.0**		%	0.100	1	SM 2540G	02/23/2024 07:26	02/23/2024 14:08	sgs
							Certifications: CTDOH-PH-0723			

SPLP Extraction for SVOC/PEST/HERB 1312

Log-in Notes: **Sample Notes:** EXT-Temp

Sample Prepared by Method: EPA SW 846-1312 SPLP Extraction for BNA/Pest/Herb

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	SPLP Extraction	Completed	HT-04	N/A	1.00	1	EPA 1312	03/21/2024 11:27	03/22/2024 11:52	TAJ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: CMS_WC_Subbase **York Sample ID:** 24B1014-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:15 am	02/19/2024

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
563-58-6	1,1-Dichloropropylene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
96-12-8	1,2-Dibromo-3-chloropropane	ND	CCVE	ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
142-28-9	1,3-Dichloropropane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Subbase **York Sample ID:** 24B1014-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:15 am	02/19/2024

VOA, 8260 RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
594-20-7	2,2-Dichloropropane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005			
78-93-3	2-Butanone	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-49-8	2-Chlorotoluene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
591-78-6	2-Hexanone	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
106-43-4	4-Chlorotoluene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-64-1	**Acetone**	**11**	ICVE	ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
107-13-1	Acrylonitrile	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
71-43-2	Benzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-86-1	Bromobenzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-97-5	Bromochloromethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-27-4	Bromodichloromethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-25-2	Bromoform	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
74-83-9	Bromomethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-15-0	Carbon disulfide	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
56-23-5	Carbon tetrachloride	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
108-90-7	Chlorobenzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-00-3	Chloroethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-66-3	Chloroform	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
74-87-3	Chloromethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: CMS_WC_Subbase **York Sample ID:** 24B1014-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:15 am	02/19/2024

VOA, 8260 RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
124-48-1	Dibromochloromethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-95-3	Dibromomethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-71-8	Dichlorodifluoromethane	ND	ICVE	ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
100-41-4	Ethyl Benzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
98-82-8	Isopropylbenzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
80-62-6	Methyl Methacrylate	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-09-2	Methylene chloride	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
91-20-3	Naphthalene	ND	CCVE	ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
104-51-8	n-Butylbenzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
103-65-1	n-Propylbenzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-47-6	o-Xylene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
135-98-8	sec-Butylbenzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
100-42-5	Styrene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
98-06-6	tert-Butylbenzene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
127-18-4	Tetrachloroethylene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
109-99-9	Tetrahydrofuran	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:			
108-88-3	Toluene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: CMS_WC_Subbase **York Sample ID:** 24B1014-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:15 am	02/19/2024

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:			
79-01-6	Trichloroethylene	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-01-4	Vinyl Chloride	ND		ug/kg dry	5.4	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:28	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*106 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.2 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*107 %*	*70-130*

SVOA, 8270 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
90-12-0	1-Methylnaphthalene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723		
95-95-4	2,4,5-Trichlorophenol	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
88-06-2	2,4,6-Trichlorophenol	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-83-2	2,4-Dichlorophenol	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
105-67-9	2,4-Dimethylphenol	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
51-28-5	2,4-Dinitrophenol	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
121-14-2	2,4-Dinitrotoluene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
606-20-2	2,6-Dinitrotoluene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-58-7	2-Chloronaphthalene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Subbase **York Sample ID:** 24B1014-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:15 am	02/19/2024

SVOA, 8270 ASE RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-57-8	2-Chlorophenol	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-57-6	2-Methylnaphthalene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
95-48-7	2-Methylphenol	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
88-74-4	2-Nitroaniline	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
88-75-5	2-Nitrophenol	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
65794-96-9	3- & 4-Methylphenols	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
91-94-1	3,3-Dichlorobenzidine	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
99-09-2	3-Nitroaniline	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
534-52-1	4,6-Dinitro-2-methylphenol	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
101-55-3	4-Bromophenyl phenyl ether	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
59-50-7	4-Chloro-3-methylphenol	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-47-8	4-Chloroaniline	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7005-72-3	4-Chlorophenyl phenyl ether	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
100-01-6	4-Nitroaniline	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
100-02-7	4-Nitrophenol	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
83-32-9	Acenaphthene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
208-96-8	Acenaphthylene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
62-53-3	Aniline	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-12-7	Anthracene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Subbase **York Sample ID:** 24B1014-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:15 am	02/19/2024

SVOA, 8270 ASE RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
85-68-7	Benzyl butyl phthalate	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
111-91-1	Bis(2-chloroethoxy)methane	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
111-44-4	Bis(2-chloroethyl)ether	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-60-1	Bis(2-chloroisopropyl)ether	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
117-81-7	Bis(2-ethylhexyl)phthalate	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-74-8	Carbazole	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
218-01-9	Chrysene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
132-64-9	Dibenzofuran	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
84-66-2	Diethyl phthalate	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
131-11-3	Dimethyl phthalate	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
84-74-2	Di-n-butyl phthalate	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
117-84-0	Di-n-octyl phthalate	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
206-44-0	Fluoranthene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-73-7	Fluorene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
118-74-1	Hexachlorobenzene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
77-47-4	Hexachlorocyclopentadiene	ND		ug/kg dry	1110	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-72-1	Hexachloroethane	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Subbase **York Sample ID:** 24B1014-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:15 am	02/19/2024

SVOA, 8270 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
78-59-1	Isophorone	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-20-3	Naphthalene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
98-95-3	Nitrobenzene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
621-64-7	N-nitroso-di-n-propylamine	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-30-6	N-Nitrosodiphenylamine	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
82-68-8	Pentachloronitrobenzene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723		
87-86-5	Pentachlorophenol	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
85-01-8	Phenanthrene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-95-2	Phenol	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
129-00-0	Pyrene	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-86-1	Pyridine	ND		ug/kg dry	555	2	EPA 8270D	02/21/2024 13:48	02/23/2024 23:42	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*90.1 %*	*30-130*
13127-88-3	*Surrogate: SURR: Phenol-d6*	*88.6 %*	*30-130*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*95.3 %*	*30-130*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*83.3 %*	*30-130*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*128 %*	*30-130*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*87.7 %*	*30-130*

PEST, 8081 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-55-9	4,4'-DDE	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-29-3	4,4'-DDT	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
15972-60-8	Alachlor	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723		

Sample Information

Client Sample ID: CMS_WC_Subbase **York Sample ID:** 24B1014-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:15 am	02/19/2024

PEST, 8081 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
309-00-2	Aldrin	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
319-84-6	alpha-BHC	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
319-85-7	beta-BHC	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
57-74-9	Chlordane, total	ND		mg/kg dry	0.0361	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:			
319-86-8	delta-BHC	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
60-57-1	Dieldrin	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
959-98-8	Endosulfan I	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
33213-65-9	Endosulfan II	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854		
1031-07-8	Endosulfan sulfate	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-20-8	Endrin	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7421-93-4	Endrin aldehyde	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53494-70-5	Endrin ketone	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
58-89-9	gamma-BHC (Lindane)	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-44-8	Heptachlor	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
1024-57-3	Heptachlor epoxide	ND		mg/kg dry	0.00271	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-43-5	Methoxychlor	ND		mg/kg dry	0.0135	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
8001-35-2	Toxaphene	ND		mg/kg dry	0.137	5	EPA 8081B	02/20/2024 08:25	02/23/2024 00:53	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*85.9 %*	*30-150*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*90.2 %*	*30-150*

PEST, SPLP RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C/1312

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		ug/L	0.00111	1	EPA 8081B/1312	03/24/2024 07:44	03/27/2024 22:19	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		

Sample Information

Client Sample ID: CMS_WC_Subbase **York Sample ID:** 24B1014-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:15 am	02/19/2024

PEST, SPLP RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C/1312

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-55-9	4,4'-DDE	ND		ug/L	0.00111	1	EPA 8081B/1312	03/24/2024 07:44	03/27/2024 22:19	TAH
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005			
50-29-3	4,4'-DDT	ND		ug/L	0.00111	1	EPA 8081B/1312	03/24/2024 07:44	03/27/2024 22:19	TAH
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005			

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*38.0 %*	*30-150*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*81.4 %*	*30-150*

PCB, 8082 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0274	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:23	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0274	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:23	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0274	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:23	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0274	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:23	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0274	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:23	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0274	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:23	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0274	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:23	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
37324-23-5	Aroclor 1262	ND		mg/kg dry	0.0274	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:23	NF
							Certifications: NELAC-NY10854,NJDEP-CT005			
11100-14-4	Aroclor 1268	ND		mg/kg dry	0.0274	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:23	NF
							Certifications: NELAC-NY10854,NJDEP-CT005			
1336-36-3	Total PCBs	ND		mg/kg dry	0.0274	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:23	NF
							Certifications:			

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*73.5 %*	*30-150*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*63.0 %*	*30-150*

HERB, 8151 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C/8151A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: CMS_WC_Subbase **York Sample ID:** 24B1014-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:15 am	02/19/2024

HERB, 8151 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C/8151A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
93-76-5	2,4,5-T	ND		mg/kg dry	0.0221	1	EPA 8151A	02/20/2024 08:05	02/20/2024 20:56	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
93-72-1	2,4,5-TP (Silvex)	ND		mg/kg dry	0.0221	1	EPA 8151A	02/20/2024 08:05	02/20/2024 20:56	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
94-75-7	2,4-D	ND		mg/kg dry	0.0221	1	EPA 8151A	02/20/2024 08:05	02/20/2024 20:56	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-99-0	Dalapon	ND		mg/kg dry	0.0221	1	EPA 8151A	02/20/2024 08:05	02/20/2024 20:56	BCJ
							Certifications:	CTDOH-PH-0723		
1918-00-9	Dicamba	ND		mg/kg dry	0.0221	1	EPA 8151A	02/20/2024 08:05	02/20/2024 20:56	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
19719-28-9	*Surrogate: 2,4-Dichlorophenylacetic acid (*	*98.8 %*	*21-150*

Total Petroleum Hydrocarbons-DRO (C10-C28)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	**13.3**		mg/kg dry	11.0	1	EPA 8015D	02/20/2024 08:19	02/20/2024 17:03	GXB
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		

	Surrogate Recoveries	Result	Acceptance Range
638-68-6	*Surrogate: Triacontane*	*72.9 %*	*30-150*

Total Petroleum Hydrocarbons-GRO (C5-C10)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-GRO	ND		mg/kg dry	101	100	EPA 8015D	02/20/2024 09:00	02/20/2024 17:06	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		

	Surrogate Recoveries	Result	Acceptance Range
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*88.4 %*	*52-146*

Antimony by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-36-0	**Antimony**	**2.07**	M-CCV 1	mg/kg dry	1.94	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:40	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Beryllium by EPA 6010

Log-in Notes:

Sample Notes:

Sample Information

Client Sample ID: CMS_WC_Subbase **York Sample ID:** 24B1014-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:15 am	02/19/2024

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-41-7	Beryllium	ND		mg/kg dry	0.0391	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:40	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Copper by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-50-8	**Copper**	**21.6**		mg/kg dry	1.55	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:40	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Metals, RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-38-2	**Arsenic**	**5.59**		mg/kg dry	1.16	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:40	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-39-3	**Barium**	**157**		mg/kg dry	1.93	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:40	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-43-9	Cadmium	ND		mg/kg dry	0.233	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:40	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-47-3	**Chromium**	**52.9**		mg/kg dry	0.388	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:40	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7439-92-1	**Lead**	**19.0**		mg/kg dry	0.388	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:40	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7782-49-2	**Selenium**	**2.23**		mg/kg dry	1.94	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:40	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-22-4	Silver	ND		mg/kg dry	0.391	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:40	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Nickel by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-02-0	**Nickel**	**26.4**		mg/kg dry	0.772	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:40	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Thallium by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-28-0	Thallium	ND		mg/kg dry	1.94	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:40	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Vanadium by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: CMS_WC_Subbase **York Sample ID:** 24B1014-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:15 am	02/19/2024

Vanadium by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-62-2	**Vanadium**	**50.6**		mg/kg dry	0.772	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:40	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Zinc by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-66-6	**Zinc**	**63.7**		mg/kg dry	1.93	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:40	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Mercury by 7473

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 7473 soil

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	Mercury	ND		mg/kg dry	0.0335	1	EPA 7473	02/26/2024 08:19	02/26/2024 12:24	DBT
							Certifications:	CTDOH-PH-0723,NJDEP-CT005,NELAC-NY10854,PADEP-68-044		

Chromium, Hexavalent

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW846-3060

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18540-29-9	Chromium, Hexavalent	ND		mg/kg dry	0.558	1	EPA 7196A	02/22/2024 07:54	02/22/2024 13:24	PMB
							Certifications:	NJDEP-CT005,CTDOH-PH-0723,NELAC-NY10854,PADEP-68-044		

Chromium, Trivalent

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16065-83-1	**Chromium, Trivalent**	**52.9**		mg/kg	0.500	1	Calculation	02/27/2024 07:43	02/27/2024 10:21	VR
							Certifications:			

Conductivity (Specific Conductance)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Conductivity	**35.34**		umhos/cm	1.000	1	SM 2510B m	02/21/2024 07:40	02/21/2024 10:35	VR
							Certifications:			

pH

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	pH	**8.39**		pH units	0.500	1	EPA 9045D	02/20/2024 14:29	02/20/2024 18:55	LRS
							Certifications:	NELAC-NY10854,CTDOH-PH-0723,PADEP-68-04440,NJDEP-CT(		

Sample Information

Client Sample ID: CMS_WC_Subbase **York Sample ID:** 24B1014-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:15 am	02/19/2024

Reactivity-Cyanide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Reactivity - Cyanide	ND		mg/kg	0.250	1	EPA SW-846 Ch.7.3.3	02/23/2024 14:55	02/23/2024 22:04	SL
							Certifications: CTDOH-PH-0723,PADEP-68-04440			

Reactivity-Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Reactivity - Sulfide	**32.0**		mg/kg	15.0	1	EPA SW-846 Ch.7.3.4	02/23/2024 14:57	02/23/2024 22:03	SL
							Certifications: CTDOH-PH-0723,PADEP-68-04440			

Ignitability

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Ignitability	Non-Ignit.		None	1	1	EPA 1030P	02/20/2024 10:31	02/20/2024 13:17	CAM2
							Certifications:			

Paint Filter Test

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Paint Filter Test	No Free Liquid		None	0.05	1	EPA 9095B	02/20/2024 07:42	02/20/2024 08:37	VR
							Certifications: NELAC-NY10854,NJDEP-CT005			

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	**% Solids**	**89.6**		%	0.100	1	SM 2540G	02/23/2024 07:26	02/23/2024 14:08	sgs
							Certifications: CTDOH-PH-0723			

SPLP Extraction for SVOC/PEST/HERB 1312

Log-in Notes: **Sample Notes:** EXT-Temp

Sample Prepared by Method: EPA SW 846-1312 SPLP Extraction for BNA/Pest/Herb

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	SPLP Extraction	Completed	HT-04	N/A	1.00	1	EPA 1312	03/21/2024 11:27	03/22/2024 11:52	TAJ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
563-58-6	1,1-Dichloropropylene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
96-12-8	1,2-Dibromo-3-chloropropane	ND	CCVE	ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
142-28-9	1,3-Dichloropropane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

VOA, 8260 RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
594-20-7	2,2-Dichloropropane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005		
78-93-3	2-Butanone	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-49-8	2-Chlorotoluene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
591-78-6	2-Hexanone	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-43-4	4-Chlorotoluene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-64-1	Acetone	ND	ICVE	ug/kg dry	9.6	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-13-1	Acrylonitrile	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-43-2	Benzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-86-1	Bromobenzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
74-97-5	Bromochloromethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
75-27-4	Bromodichloromethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-25-2	Bromoform	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
74-83-9	Bromomethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-15-0	Carbon disulfide	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-23-5	Carbon tetrachloride	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-90-7	Chlorobenzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-00-3	Chloroethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-66-3	Chloroform	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
74-87-3	Chloromethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

VOA, 8260 RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
124-48-1	Dibromochloromethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-95-3	Dibromomethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-71-8	Dichlorodifluoromethane	ND	ICVE	ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
100-41-4	Ethyl Benzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
98-82-8	Isopropylbenzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
80-62-6	Methyl Methacrylate	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-09-2	Methylene chloride	ND		ug/kg dry	9.6	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
91-20-3	Naphthalene	ND	CCVE	ug/kg dry	9.6	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
104-51-8	n-Butylbenzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
103-65-1	n-Propylbenzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-47-6	o-Xylene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	9.6	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
135-98-8	sec-Butylbenzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
100-42-5	Styrene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
98-06-6	tert-Butylbenzene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
127-18-4	Tetrachloroethylene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
109-99-9	Tetrahydrofuran	ND		ug/kg dry	9.6	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:			
108-88-3	Toluene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:			
79-01-6	Trichloroethylene	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-01-4	Vinyl Chloride	ND		ug/kg dry	4.8	1	EPA 8260C	02/21/2024 08:00	02/21/2024 12:54	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*109 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*93.0 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*92.1 %*	*70-130*

Volatile Organics, TCLP RCRA List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		ug/L	25	50	10	EPA 8260C/1311	02/22/2024 12:30	02/23/2024 01:01	SMA
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,NELAC-NY12		
107-06-2	1,2-Dichloroethane	ND		ug/L	25	50	10	EPA 8260C/1311	02/22/2024 12:30	02/23/2024 01:01	SMA
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,NELAC-NY12		
106-46-7	1,4-Dichlorobenzene	ND		ug/L	25	50	10	EPA 8260C/1311	02/22/2024 12:30	02/23/2024 01:01	SMA
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,NELAC-NY12		
78-93-3	2-Butanone	ND		ug/L	25	50	10	EPA 8260C/1311	02/22/2024 12:30	02/23/2024 01:01	SMA
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,NELAC-NY12		
71-43-2	Benzene	ND		ug/L	25	50	10	EPA 8260C/1311	02/22/2024 12:30	02/23/2024 01:01	SMA
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,NELAC-NY12		
56-23-5	Carbon tetrachloride	ND		ug/L	25	50	10	EPA 8260C/1311	02/22/2024 12:30	02/23/2024 01:01	SMA
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,NELAC-NY12		
108-90-7	Chlorobenzene	ND		ug/L	25	50	10	EPA 8260C/1311	02/22/2024 12:30	02/23/2024 01:01	SMA
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,NELAC-NY12		
67-66-3	Chloroform	ND		ug/L	25	50	10	EPA 8260C/1311	02/22/2024 12:30	02/23/2024 01:01	SMA
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,NELAC-NY12		
127-18-4	Tetrachloroethylene	ND	QL-02	ug/L	25	50	10	EPA 8260C/1311	02/22/2024 12:30	02/23/2024 01:01	SMA
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,NELAC-NY12		
79-01-6	Trichloroethylene	ND		ug/L	25	50	10	EPA 8260C/1311	02/22/2024 12:30	02/23/2024 01:01	SMA
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,NELAC-NY12		
75-01-4	Vinyl Chloride	ND		ug/L	25	50	10	EPA 8260C/1311	02/22/2024 12:30	02/23/2024 01:01	SMA
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,NELAC-NY12		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*99.3 %*	*77-125*

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

Volatile Organics, TCLP RCRA List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*101 %*			*84.2-124*						
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.3 %*			*85-120*						

Semi-Volatiles, TCLP RCRA Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3510C/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
106-46-7	1,4-Dichlorobenzene	ND		ug/L	6.45	10.0	1	EPA 8270D/1311	02/21/2024 08:14	02/22/2024 00:19	KH
								Certifications: NELAC-NY10854,PADEP-68-04440			
95-95-4	2,4,5-Trichlorophenol	ND		ug/L	7.22	10.0	1	EPA 8270D/1311	02/21/2024 08:14	02/22/2024 00:19	KH
								Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
88-06-2	2,4,6-Trichlorophenol	ND		ug/L	6.54	10.0	1	EPA 8270D/1311	02/21/2024 08:14	02/22/2024 00:19	KH
								Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
121-14-2	2,4-Dinitrotoluene	ND		ug/L	4.73	10.0	1	EPA 8270D/1311	02/21/2024 08:14	02/22/2024 00:19	KH
								Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-48-7	2-Methylphenol	ND		ug/L	1.71	10.0	1	EPA 8270D/1311	02/21/2024 08:14	02/22/2024 00:19	KH
								Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
65794-96-9	3- & 4-Methylphenols	ND		ug/L	7.43	20.0	1	EPA 8270D/1311	02/21/2024 08:14	02/22/2024 00:19	KH
								Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
1319-77-3	Cresols, total	ND		ug/L	7.40	30.0	1	EPA 8270D/1311	02/21/2024 08:14	02/22/2024 00:19	KH
								Certifications: CTDOH-PH-0723,NELAC-NY10854			
118-74-1	Hexachlorobenzene	ND		ug/L	5.91	10.0	1	EPA 8270D/1311	02/21/2024 08:14	02/22/2024 00:19	KH
								Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
87-68-3	Hexachlorobutadiene	ND		ug/L	6.62	10.0	1	EPA 8270D/1311	02/21/2024 08:14	02/22/2024 00:19	KH
								Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
67-72-1	Hexachloroethane	ND		ug/L	7.26	10.0	1	EPA 8270D/1311	02/21/2024 08:14	02/22/2024 00:19	KH
								Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
98-95-3	Nitrobenzene	ND		ug/L	3.93	10.0	1	EPA 8270D/1311	02/21/2024 08:14	02/22/2024 00:19	KH
								Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
87-86-5	Pentachlorophenol	ND		ug/L	7.53	10.0	1	EPA 8270D/1311	02/21/2024 08:14	02/22/2024 00:19	KH
								Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
110-86-1	Pyridine	ND		ug/L	6.37	10.0	1	EPA 8270D/1311	02/21/2024 08:14	02/22/2024 00:19	KH
								Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*65.8 %*	*10-90.9*
13127-88-3	*Surrogate: SURR: Phenol-d6*	*49.6 %*	*10-69.2*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*97.2 %*	*19.2-141*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*85.3 %*	*24.8-127*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*115 %*	*23-163*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*96.4 %*	*25.8-110*

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
90-12-0	1-Methylnaphthalene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723		
95-95-4	2,4,5-Trichlorophenol	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
88-06-2	2,4,6-Trichlorophenol	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-83-2	2,4-Dichlorophenol	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
105-67-9	2,4-Dimethylphenol	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
51-28-5	2,4-Dinitrophenol	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
121-14-2	2,4-Dinitrotoluene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
606-20-2	2,6-Dinitrotoluene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-58-7	2-Chloronaphthalene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-57-8	2-Chlorophenol	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-57-6	2-Methylnaphthalene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
95-48-7	2-Methylphenol	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
88-74-4	2-Nitroaniline	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
88-75-5	2-Nitrophenol	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
65794-96-9	3- & 4-Methylphenols	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
91-94-1	3,3-Dichlorobenzidine	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
99-09-2	3-Nitroaniline	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
534-52-1	4,6-Dinitro-2-methylphenol	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
101-55-3	4-Bromophenyl phenyl ether	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
59-50-7	4-Chloro-3-methylphenol	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-47-8	4-Chloroaniline	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

SVOA, 8270 ASE RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7005-72-3	4-Chlorophenyl phenyl ether	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
100-01-6	4-Nitroaniline	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
100-02-7	4-Nitrophenol	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
83-32-9	Acenaphthene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
208-96-8	Acenaphthylene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
62-53-3	Aniline	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-12-7	Anthracene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
85-68-7	Benzyl butyl phthalate	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
111-91-1	Bis(2-chloroethoxy)methane	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
111-44-4	Bis(2-chloroethyl)ether	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-60-1	Bis(2-chloroisopropyl)ether	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
117-81-7	Bis(2-ethylhexyl)phthalate	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-74-8	Carbazole	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
218-01-9	Chrysene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
132-64-9	Dibenzofuran	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
84-66-2	Diethyl phthalate	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

SVOA, 8270 ASE RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
131-11-3	Dimethyl phthalate	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
84-74-2	Di-n-butyl phthalate	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
117-84-0	Di-n-octyl phthalate	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
206-44-0	Fluoranthene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-73-7	Fluorene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
118-74-1	Hexachlorobenzene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
77-47-4	Hexachlorocyclopentadiene	ND		ug/kg dry	1190	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-72-1	Hexachloroethane	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
78-59-1	Isophorone	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-20-3	Naphthalene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
98-95-3	Nitrobenzene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
621-64-7	N-nitroso-di-n-propylamine	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-30-6	N-Nitrosodiphenylamine	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
82-68-8	Pentachloronitrobenzene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723		
87-86-5	Pentachlorophenol	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
85-01-8	Phenanthrene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-95-2	Phenol	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
129-00-0	Pyrene	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-86-1	Pyridine	ND		ug/kg dry	595	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:11	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Surrogate Recoveries	Result	Acceptance Range

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

SVOA, 8270 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*73.3 %*		*30-130*						
13127-88-3	*Surrogate: SURR: Phenol-d6*	*69.4 %*		*30-130*						
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*76.6 %*		*30-130*						
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*66.2 %*		*30-130*						
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*99.4 %*		*30-130*						
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*69.0 %*		*30-130*						

PEST, 8081 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-55-9	4,4'-DDE	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-29-3	4,4'-DDT	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
15972-60-8	Alachlor	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723		
309-00-2	Aldrin	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
319-84-6	alpha-BHC	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
319-85-7	beta-BHC	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
57-74-9	Chlordane, total	ND		mg/kg dry	0.0391	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:			
319-86-8	delta-BHC	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
60-57-1	Dieldrin	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
959-98-8	Endosulfan I	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
33213-65-9	Endosulfan II	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854		
1031-07-8	Endosulfan sulfate	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-20-8	Endrin	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7421-93-4	Endrin aldehyde	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53494-70-5	Endrin ketone	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

PEST, 8081 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
58-89-9	gamma-BHC (Lindane)	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-44-8	Heptachlor	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
1024-57-3	Heptachlor epoxide	ND		mg/kg dry	0.00293	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-43-5	Methoxychlor	ND		mg/kg dry	0.0147	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
8001-35-2	Toxaphene	ND		mg/kg dry	0.148	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:11	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*105 %*	*30-150*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*105 %*	*30-150*

PEST, SPLP RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C/1312

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-55-9	4,4'-DDE	ND		ug/L	0.00111	1	EPA 8081B/1312	03/24/2024 07:44	03/27/2024 22:37	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
50-29-3	4,4'-DDT	ND		ug/L	0.00111	1	EPA 8081B/1312	03/24/2024 07:44	03/27/2024 22:37	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*63.2 %*	*30-150*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*79.1 %*	*30-150*

Pesticides, TCLP RCRA List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
57-74-9	Chlordane, total	ND		ug/L	0.222	0.222	1	EPA 8081B/1311	02/24/2024 07:13	02/26/2024 14:47	TAH
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-20-8	Endrin	ND		ug/L	0.0444	0.0444	1	EPA 8081B/1311	02/24/2024 07:13	02/26/2024 14:47	TAH
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
58-89-9	gamma-BHC (Lindane)	ND		ug/L	0.0444	0.0444	1	EPA 8081B/1311	02/24/2024 07:13	02/26/2024 14:47	TAH
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-44-8	Heptachlor	ND		ug/L	0.0444	0.0444	1	EPA 8081B/1311	02/24/2024 07:13	02/26/2024 14:47	TAH
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
1024-57-3	Heptachlor epoxide	ND		ug/L	0.0444	0.0444	1	EPA 8081B/1311	02/24/2024 07:13	02/26/2024 14:47	TAH
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-43-5	Methoxychlor	ND		ug/L	0.0444	0.0444	1	EPA 8081B/1311	02/24/2024 07:13	02/26/2024 14:47	TAH
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
8001-35-2	Toxaphene	ND		ug/L	1.11	1.11	1	EPA 8081B/1311	02/24/2024 07:13	02/26/2024 14:47	TAH
								Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

Pesticides, TCLP RCRA List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*99.3 %*	*30-120*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*97.0 %*	*30-120*

PCB, 8082 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0296	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:40	NF
							Certifications:	NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044		
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0296	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:40	NF
							Certifications:	NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044		
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0296	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:40	NF
							Certifications:	NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044		
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0296	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:40	NF
							Certifications:	NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044		
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0296	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:40	NF
							Certifications:	NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044		
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0296	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:40	NF
							Certifications:	NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044		
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0296	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:40	NF
							Certifications:	NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044		
37324-23-5	Aroclor 1262	ND		mg/kg dry	0.0296	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:40	NF
							Certifications:	NELAC-NY10854,NJDEP-CT005		
11100-14-4	Aroclor 1268	ND		mg/kg dry	0.0296	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:40	NF
							Certifications:	NELAC-NY10854,NJDEP-CT005		
1336-36-3	Total PCBs	ND		mg/kg dry	0.0296	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:40	NF
							Certifications:			

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*84.0 %*	*30-150*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*69.0 %*	*30-150*

HERB, 8151 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C/8151A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
93-76-5	2,4,5-T	ND		mg/kg dry	0.0240	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:07	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
93-72-1	2,4,5-TP (Silvex)	ND		mg/kg dry	0.0240	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:07	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

HERB, 8151 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C/8151A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
94-75-7	2,4-D	ND		mg/kg dry	0.0240	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:07	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-99-0	Dalapon	ND		mg/kg dry	0.0240	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:07	BCJ
							Certifications:	CTDOH-PH-0723		
1918-00-9	Dicamba	ND		mg/kg dry	0.0240	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:07	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
19719-28-9	*Surrogate: 2,4-Dichlorophenylacetic acid (.*	*81.6 %*	*21-150*

Herbicides, TCLP Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
93-72-1	2,4,5-TP (Silvex)	ND		ug/L	5.00	1	EPA 8151A/1311	02/21/2024 12:28	02/22/2024 21:37	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
94-75-7	2,4-D	ND		ug/L	5.00	1	EPA 8151A/1311	02/21/2024 12:28	02/22/2024 21:37	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
19719-28-9	*Surrogate: 2,4-Dichlorophenylacetic acid (.*	*15.8 %*	*10-150*

Total Petroleum Hydrocarbons-DRO (C10-C28)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	ND		mg/kg dry	12.0	1	EPA 8015D	02/20/2024 08:19	02/20/2024 17:27	GXB
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		

	Surrogate Recoveries	Result	Acceptance Range
638-68-6	*Surrogate: Triacontane*	*57.9 %*	*30-150*

Total Petroleum Hydrocarbons-GRO (C5-C10)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-GRO	ND		mg/kg dry	74.0	100	EPA 8015D	02/20/2024 09:00	02/20/2024 17:40	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		

	Surrogate Recoveries	Result	Acceptance Range
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*90.1 %*	*52-146*

Antimony by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

Antimony by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-36-0	**Antimony**	**2.40**	M-CCV 1	mg/kg dry	2.10	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:43	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Beryllium by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-41-7	Beryllium	ND		mg/kg dry	0.0423	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:43	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Copper by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-50-8	**Copper**	**28.6**		mg/kg dry	1.68	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:43	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Metals, RCRA

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-38-2	**Arsenic**	**5.51**		mg/kg dry	1.26	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:43	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-39-3	**Barium**	**314**		mg/kg dry	2.09	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:43	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-43-9	Cadmium	ND		mg/kg dry	0.252	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:43	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-47-3	**Chromium**	**59.8**		mg/kg dry	0.420	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:43	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7439-92-1	**Lead**	**9.77**		mg/kg dry	0.420	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:43	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7782-49-2	Selenium	ND		mg/kg dry	2.10	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:43	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-22-4	Silver	ND		mg/kg dry	0.423	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:43	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Metals, TCLP RCRA

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-38-2	Arsenic	ND		mg/L	0.375	1	EPA 6010D/1311	02/23/2024 08:57	02/26/2024 17:54	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-39-3	**Barium**	**0.734**		mg/L	0.625	1	EPA 6010D/1311	02/23/2024 08:57	02/26/2024 17:54	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

Metals, TCLP RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3015A/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-43-9	Cadmium	ND		mg/L	0.075	1	EPA 6010D/1311	02/23/2024 08:57	02/26/2024 17:54	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-47-3	Chromium	ND		mg/L	0.125	1	EPA 6010D/1311	02/23/2024 08:57	02/26/2024 17:54	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7439-92-1	Lead	ND		mg/L	0.125	1	EPA 6010D/1311	02/23/2024 08:57	02/26/2024 17:54	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7782-49-2	Selenium	ND		mg/L	0.625	1	EPA 6010D/1311	02/23/2024 08:57	02/26/2024 17:54	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-22-4	Silver	ND		mg/L	0.125	1	EPA 6010D/1311	02/23/2024 08:57	02/26/2024 17:54	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Nickel by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-02-0	**Nickel**	**26.6**		mg/kg dry	0.835	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:43	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Thallium by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-28-0	Thallium	ND		mg/kg dry	2.10	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:43	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Vanadium by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-62-2	**Vanadium**	**58.1**		mg/kg dry	0.835	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:43	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Zinc by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-66-6	**Zinc**	**54.5**		mg/kg dry	2.09	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:43	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Mercury by 7473

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 7473 soil

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

Mercury by 7473

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 7473 soil

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	Mercury	ND		mg/kg dry	0.0362	1	EPA 7473	02/26/2024 08:21	02/26/2024 15:10	DBT
							Certifications:	CTDOH-PH-0723,NJDEP-CT005,NELAC-NY10854,PADEP-68-044		

Mercury, TCLP

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW846-7470A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	Mercury	ND		mg/L	0.000200	1	EPA 7470/1311	02/22/2024 08:38	02/22/2024 08:38	PFA
							Certifications:	CTDOH-PH-0723,NJDEP-CT005,PADEP-68-04440,NELAC-NY10		

Chromium, Hexavalent

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW846-3060

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18540-29-9	Chromium, Hexavalent	ND		mg/kg dry	0.604	1	EPA 7196A	02/22/2024 15:37	02/22/2024 20:25	SMK
							Certifications:	NJDEP-CT005,CTDOH-PH-0723,NELAC-NY10854,PADEP-68-044		

Chromium, Trivalent

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16065-83-1	**Chromium, Trivalent**	**59.8**		mg/kg	0.500	1	Calculation	02/27/2024 07:43	02/27/2024 10:21	VR
							Certifications:			

Conductivity (Specific Conductance)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Conductivity	**198.8**		umhos/cm	1.000	1	SM 2510B m	02/21/2024 07:40	02/21/2024 10:35	VR
							Certifications:			

pH

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	pH	**7.31**		pH units	0.500	1	EPA 9045D	02/20/2024 14:29	02/20/2024 18:55	LRS
							Certifications:	NELAC-NY10854,CTDOH-PH-0723,PADEP-68-04440,NJDEP-CT(		

Reactivity-Cyanide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Reactivity - Cyanide	ND		mg/kg	0.250	1	EPA SW-846 Ch.7.3.3	02/23/2024 14:55	02/23/2024 22:04	SL
							Certifications:	CTDOH-PH-0723,PADEP-68-04440		

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

Reactivity-Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Reactivity - Sulfide	**56.0**		mg/kg	15.0	1	EPA SW-846 Ch.7.3.4	02/23/2024 14:57	02/23/2024 22:03	SL
							Certifications: CTDOH-PH-0723,PADEP-68-04440			

Ignitability

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Ignitability	Non-Ignit.		None	1	1	EPA 1030P	02/20/2024 10:31	02/20/2024 13:17	CAM2
							Certifications:			

Paint Filter Test

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Paint Filter Test	No Free Liquid		None	0.05	1	EPA 9095B	02/20/2024 07:42	02/20/2024 08:37	VR
							Certifications: NELAC-NY10854,NJDEP-CT005			

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	**% Solids**	**82.8**		%	0.100	1	SM 2540G	02/23/2024 07:26	02/23/2024 14:08	sgs
							Certifications: CTDOH-PH-0723			

SPLP Extraction for SVOC/PEST/HERB 1312

Log-in Notes: **Sample Notes:** EXT-Temp

Sample Prepared by Method: EPA SW 846-1312 SPLP Extraction for BNA/Pest/Herb

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	SPLP Extraction	Completed	HT-04	N/A	1.00	1	EPA 1312	03/21/2024 11:27	03/22/2024 11:52	TAJ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

TCLP Extraction for METALS EPA 1311

Log-in Notes: **Sample Notes:** EXT-Temp

Sample Prepared by Method: EPA SW 846-1311 TCLP ext. for metals

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	02/20/2024 11:54	02/21/2024 09:14	TAJ
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			

TCLP Extraction for SVOCS/PEST/HERB

Log-in Notes: **Sample Notes:** EXT-Temp

Sample Prepared by Method: EPA SW 846-1311 TCLP extr. for SVOA/PEST/HERBS

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	02/20/2024 11:51	02/21/2024 09:12	TAJ
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: CMS_WC_Fill1 **York Sample ID:** 24B1014-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:20 am	02/19/2024

TCLP Extraction for VOA by EPA 1311 ZHE **Log-in Notes:** **Sample Notes:** EXT-Temp

Sample Prepared by Method: EPA SW 846-1311 TCLP ZHE for VOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	02/20/2024 11:49	02/21/2024 09:10	TAJ
							Certifications:	NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill2 **York Sample ID:** 24B1014-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:45 am	02/19/2024

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
563-58-6	1,1-Dichloropropylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
96-12-8	1,2-Dibromo-3-chloropropane	ND	CCVE	ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
142-28-9	1,3-Dichloropropane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill2 **York Sample ID:** 24B1014-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:45 am	02/19/2024

VOA, 8260 RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
594-20-7	2,2-Dichloropropane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005		
78-93-3	2-Butanone	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-49-8	2-Chlorotoluene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
591-78-6	2-Hexanone	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-43-4	4-Chlorotoluene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-64-1	**Acetone**	**29**	ICVE	ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-13-1	Acrylonitrile	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-43-2	Benzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-86-1	Bromobenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
74-97-5	Bromochloromethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
75-27-4	Bromodichloromethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-25-2	Bromoform	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
74-83-9	Bromomethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-15-0	Carbon disulfide	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-23-5	Carbon tetrachloride	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-90-7	Chlorobenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-00-3	Chloroethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-66-3	Chloroform	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
74-87-3	Chloromethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill2 **York Sample ID:** 24B1014-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:45 am	02/19/2024

VOA, 8260 RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
124-48-1	Dibromochloromethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
74-95-3	Dibromomethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
75-71-8	Dichlorodifluoromethane	ND	ICVE	ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
100-41-4	Ethyl Benzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
98-82-8	Isopropylbenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
80-62-6	Methyl Methacrylate	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005		
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-09-2	Methylene chloride	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-20-3	Naphthalene	ND	CCVE	ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
104-51-8	n-Butylbenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
103-65-1	n-Propylbenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-47-6	o-Xylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440		
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440		
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
135-98-8	sec-Butylbenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
100-42-5	Styrene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
98-06-6	tert-Butylbenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
127-18-4	Tetrachloroethylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
109-99-9	Tetrahydrofuran	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:			
108-88-3	Toluene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill2 **York Sample ID:** 24B1014-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:45 am	02/19/2024

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:			
79-01-6	Trichloroethylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-01-4	Vinyl Chloride	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:20	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*103 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*93.9 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*94.3 %*	*70-130*

SVOA, 8270 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
90-12-0	1-Methylnaphthalene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723		
95-95-4	2,4,5-Trichlorophenol	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
88-06-2	2,4,6-Trichlorophenol	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-83-2	2,4-Dichlorophenol	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
105-67-9	2,4-Dimethylphenol	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
51-28-5	2,4-Dinitrophenol	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
121-14-2	2,4-Dinitrotoluene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
606-20-2	2,6-Dinitrotoluene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-58-7	2-Chloronaphthalene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill2 **York Sample ID:** 24B1014-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:45 am	02/19/2024

SVOA, 8270 ASE RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-57-8	2-Chlorophenol	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-57-6	2-Methylnaphthalene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
95-48-7	2-Methylphenol	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
88-74-4	2-Nitroaniline	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
88-75-5	2-Nitrophenol	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
65794-96-9	3- & 4-Methylphenols	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
91-94-1	3,3-Dichlorobenzidine	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
99-09-2	3-Nitroaniline	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
534-52-1	4,6-Dinitro-2-methylphenol	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
101-55-3	4-Bromophenyl phenyl ether	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
59-50-7	4-Chloro-3-methylphenol	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-47-8	4-Chloroaniline	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7005-72-3	4-Chlorophenyl phenyl ether	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
100-01-6	4-Nitroaniline	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
100-02-7	4-Nitrophenol	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
83-32-9	Acenaphthene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
208-96-8	Acenaphthylene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
62-53-3	Aniline	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-12-7	Anthracene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill2 **York Sample ID:** 24B1014-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:45 am	02/19/2024

SVOA, 8270 ASE RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
85-68-7	Benzyl butyl phthalate	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
111-91-1	Bis(2-chloroethoxy)methane	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
111-44-4	Bis(2-chloroethyl)ether	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-60-1	Bis(2-chloroisopropyl)ether	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
117-81-7	Bis(2-ethylhexyl)phthalate	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-74-8	Carbazole	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
218-01-9	Chrysene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
132-64-9	Dibenzofuran	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
84-66-2	Diethyl phthalate	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
131-11-3	Dimethyl phthalate	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
84-74-2	Di-n-butyl phthalate	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
117-84-0	Di-n-octyl phthalate	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
206-44-0	Fluoranthene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-73-7	Fluorene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
118-74-1	Hexachlorobenzene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
77-47-4	Hexachlorocyclopentadiene	ND		ug/kg dry	1130	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-72-1	Hexachloroethane	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill2 **York Sample ID:** 24B1014-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:45 am	02/19/2024

SVOA, 8270 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
78-59-1	Isophorone	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-20-3	Naphthalene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
98-95-3	Nitrobenzene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
621-64-7	N-nitroso-di-n-propylamine	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-30-6	N-Nitrosodiphenylamine	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
82-68-8	Pentachloronitrobenzene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723		
87-86-5	Pentachlorophenol	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
85-01-8	Phenanthrene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-95-2	Phenol	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
129-00-0	Pyrene	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-86-1	Pyridine	ND		ug/kg dry	566	2	EPA 8270D	02/21/2024 13:48	02/24/2024 00:41	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*55.7 %*	*30-130*
13127-88-3	*Surrogate: SURR: Phenol-d6*	*52.2 %*	*30-130*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*57.4 %*	*30-130*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*49.4 %*	*30-130*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*70.0 %*	*30-130*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*50.6 %*	*30-130*

PEST, 8081 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-55-9	4,4'-DDE	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-29-3	4,4'-DDT	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
15972-60-8	Alachlor	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723		

Sample Information

Client Sample ID: CMS_WC_Fill2 **York Sample ID:** 24B1014-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:45 am	02/19/2024

PEST, 8081 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
309-00-2	Aldrin	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
319-84-6	alpha-BHC	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
319-85-7	beta-BHC	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
57-74-9	Chlordane, total	ND		mg/kg dry	0.0379	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:			
319-86-8	delta-BHC	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
60-57-1	Dieldrin	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
959-98-8	Endosulfan I	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
33213-65-9	Endosulfan II	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854		
1031-07-8	Endosulfan sulfate	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-20-8	Endrin	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7421-93-4	Endrin aldehyde	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53494-70-5	Endrin ketone	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
58-89-9	gamma-BHC (Lindane)	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-44-8	Heptachlor	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
1024-57-3	Heptachlor epoxide	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-43-5	Methoxychlor	ND		mg/kg dry	0.0142	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
8001-35-2	Toxaphene	ND		mg/kg dry	0.144	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:29	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*95.3 %*	*30-150*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*102 %*	*30-150*

PEST, SPLP RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C/1312

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		ug/L	0.00111	1	EPA 8081B/1312	03/24/2024 07:44	03/27/2024 22:55	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		

Sample Information

Client Sample ID: CMS_WC_Fill2 **York Sample ID:** 24B1014-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:45 am	02/19/2024

PEST, SPLP RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3510C/1312

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-55-9	4,4'-DDE	ND		ug/L	0.00111	1	EPA 8081B/1312	03/24/2024 07:44	03/27/2024 22:55	TAH
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005			
50-29-3	4,4'-DDT	ND		ug/L	0.00111	1	EPA 8081B/1312	03/24/2024 07:44	03/27/2024 22:55	TAH
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005			

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*33.4 %*	*30-150*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*68.5 %*	*30-150*

PCB, 8082 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:56	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:56	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:56	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:56	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:56	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:56	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:56	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
37324-23-5	Aroclor 1262	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:56	NF
							Certifications: NELAC-NY10854,NJDEP-CT005			
11100-14-4	Aroclor 1268	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:56	NF
							Certifications: NELAC-NY10854,NJDEP-CT005			
1336-36-3	Total PCBs	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 09:56	NF
							Certifications:			

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*76.5 %*	*30-150*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*68.0 %*	*30-150*

HERB, 8151 RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C/8151A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: CMS_WC_Fill2 **York Sample ID:** 24B1014-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:45 am	02/19/2024

HERB, 8151 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C/8151A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
93-76-5	2,4,5-T	ND		mg/kg dry	0.0229	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:18	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
93-72-1	2,4,5-TP (Silvex)	ND		mg/kg dry	0.0229	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:18	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
94-75-7	2,4-D	ND		mg/kg dry	0.0229	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:18	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-99-0	Dalapon	ND		mg/kg dry	0.0229	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:18	BCJ
							Certifications:	CTDOH-PH-0723		
1918-00-9	Dicamba	ND		mg/kg dry	0.0229	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:18	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
19719-28-9	*Surrogate: 2,4-Dichlorophenylacetic acid (.*	*86.0 %*	*21-150*

Total Petroleum Hydrocarbons-DRO (C10-C28)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	ND		mg/kg dry	11.2	1	EPA 8015D	02/20/2024 08:19	02/20/2024 17:51	GXB
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		

	Surrogate Recoveries	Result	Acceptance Range
638-68-6	*Surrogate: Triacontane*	*55.3 %*	*30-150*

Total Petroleum Hydrocarbons-GRO (C5-C10)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-GRO	ND		mg/kg dry	95.6	100	EPA 8015D	02/20/2024 09:00	02/20/2024 18:14	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		

	Surrogate Recoveries	Result	Acceptance Range
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*92.2 %*	*52-146*

Antimony by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-36-0	Antimony	ND	M-CCV 1	mg/kg dry	2.00	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:45	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Beryllium by EPA 6010

Log-in Notes:

Sample Notes:

Sample Information

Client Sample ID: CMS_WC_Fill2 **York Sample ID:** 24B1014-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:45 am	02/19/2024

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-41-7	Beryllium	ND		mg/kg dry	0.0404	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:45	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Copper by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-50-8	**Copper**	**23.5**		mg/kg dry	1.60	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:45	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Metals, RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-38-2	**Arsenic**	**6.76**		mg/kg dry	1.20	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:45	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-39-3	**Barium**	**140**		mg/kg dry	2.00	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:45	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-43-9	Cadmium	ND		mg/kg dry	0.240	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:45	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-47-3	**Chromium**	**36.3**		mg/kg dry	0.401	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:45	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7439-92-1	**Lead**	**26.9**		mg/kg dry	0.401	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:45	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7782-49-2	**Selenium**	**2.68**		mg/kg dry	2.00	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:45	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-22-4	Silver	ND		mg/kg dry	0.404	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:45	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Nickel by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-02-0	**Nickel**	**19.5**		mg/kg dry	0.798	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:45	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Thallium by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-28-0	Thallium	ND		mg/kg dry	2.00	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:45	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Vanadium by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: CMS_WC_Fill2 **York Sample ID:** 24B1014-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:45 am	02/19/2024

Vanadium by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-62-2	**Vanadium**	**41.5**		mg/kg dry	0.798	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:45	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Zinc by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-66-6	**Zinc**	**69.8**		mg/kg dry	2.00	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:45	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Mercury by 7473

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 7473 soil

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	Mercury	ND		mg/kg dry	0.0346	1	EPA 7473	02/26/2024 08:21	02/26/2024 15:10	DBT
							Certifications:	CTDOH-PH-0723,NJDEP-CT005,NELAC-NY10854,PADEP-68-044		

Chromium, Hexavalent

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW846-3060

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18540-29-9	Chromium, Hexavalent	ND		mg/kg dry	0.577	1	EPA 7196A	02/22/2024 15:37	02/22/2024 20:25	SMK
							Certifications:	NJDEP-CT005,CTDOH-PH-0723,NELAC-NY10854,PADEP-68-044		

Chromium, Trivalent

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16065-83-1	**Chromium, Trivalent**	**36.3**		mg/kg	0.500	1	Calculation	02/27/2024 07:43	02/27/2024 10:21	VR
							Certifications:			

Conductivity (Specific Conductance)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Conductivity	**103.9**		umhos/cm	1.000	1	SM 2510B m	02/21/2024 07:40	02/21/2024 10:35	VR
							Certifications:			

pH

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	pH	**7.51**		pH units	0.500	1	EPA 9045D	02/20/2024 14:29	02/20/2024 18:55	LRS
							Certifications:	NELAC-NY10854,CTDOH-PH-0723,PADEP-68-04440,NJDEP-CT(		

Sample Information

Client Sample ID: CMS_WC_Fill2 **York Sample ID:** 24B1014-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 11:45 am	02/19/2024

Reactivity-Cyanide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Reactivity - Cyanide	ND		mg/kg	0.250	1	EPA SW-846 Ch.7.3.3	02/23/2024 14:55	02/23/2024 22:04	SL
							Certifications: CTDOH-PH-0723,PADEP-68-04440			

Reactivity-Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Reactivity - Sulfide	**56.0**		mg/kg	15.0	1	EPA SW-846 Ch.7.3.4	02/23/2024 14:57	02/23/2024 22:03	SL
							Certifications: CTDOH-PH-0723,PADEP-68-04440			

Ignitability

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Ignitability	Non-Ignit.		None	1	1	EPA 1030P	02/20/2024 10:31	02/20/2024 13:17	CAM2
							Certifications:			

Paint Filter Test

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Paint Filter Test	No Free Liquid		None	0.05	1	EPA 9095B	02/20/2024 07:42	02/20/2024 08:37	VR
							Certifications: NELAC-NY10854,NJDEP-CT005			

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	**% Solids**	**86.6**		%	0.100	1	SM 2540G	02/23/2024 07:26	02/23/2024 14:08	sgs
							Certifications: CTDOH-PH-0723			

SPLP Extraction for SVOC/PEST/HERB 1312

Log-in Notes: **Sample Notes:** EXT-Temp

Sample Prepared by Method: EPA SW 846-1312 SPLP Extraction for BNA/Pest/Herb

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	SPLP Extraction	Completed	HT-04	N/A	1.00	1	EPA 1312	03/21/2024 11:27	03/22/2024 11:52	TAJ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: CMS_WC_Fill3 **York Sample ID:** 24B1014-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 12:00 pm	02/19/2024

VOA, 8260 RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
563-58-6	1,1-Dichloropropylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
87-61-6	1,2,3-Trichlorobenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
96-18-4	1,2,3-Trichloropropane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
96-12-8	1,2-Dibromo-3-chloropropane	ND	CCVE	ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
142-28-9	1,3-Dichloropropane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill3 **York Sample ID:** 24B1014-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 12:00 pm	02/19/2024

VOA, 8260 RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
594-20-7	2,2-Dichloropropane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005		
78-93-3	2-Butanone	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
95-49-8	2-Chlorotoluene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
591-78-6	2-Hexanone	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-43-4	4-Chlorotoluene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-64-1	Acetone	ND	ICVE	ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
107-13-1	Acrylonitrile	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
71-43-2	Benzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-86-1	Bromobenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
74-97-5	Bromochloromethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		
75-27-4	Bromodichloromethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-25-2	Bromoform	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
74-83-9	Bromomethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-15-0	Carbon disulfide	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-23-5	Carbon tetrachloride	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-90-7	Chlorobenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-00-3	Chloroethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-66-3	Chloroform	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
74-87-3	Chloromethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill3 **York Sample ID:** 24B1014-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 12:00 pm	02/19/2024

VOA, 8260 RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
124-48-1	Dibromochloromethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
74-95-3	Dibromomethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
75-71-8	Dichlorodifluoromethane	ND	ICVE	ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
100-41-4	Ethyl Benzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
98-82-8	Isopropylbenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
80-62-6	Methyl Methacrylate	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
75-09-2	Methylene chloride	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
91-20-3	Naphthalene	ND	CCVE	ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: NELAC-NY10854,NJDEP-CT005,PADEP-68-04440			
104-51-8	n-Butylbenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
103-65-1	n-Propylbenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
95-47-6	o-Xylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,PADEP-68-04440			
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
135-98-8	sec-Butylbenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
100-42-5	Styrene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
98-06-6	tert-Butylbenzene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
127-18-4	Tetrachloroethylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
109-99-9	Tetrahydrofuran	ND		ug/kg dry	11	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:			
108-88-3	Toluene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Sample Information

Client Sample ID: CMS_WC_Fill3 **York Sample ID:** 24B1014-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 12:00 pm	02/19/2024

VOA, 8260 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:			
79-01-6	Trichloroethylene	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-01-4	Vinyl Chloride	ND		ug/kg dry	5.3	1	EPA 8260C	02/21/2024 08:00	02/21/2024 13:46	SMA
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*105 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*94.3 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*96.2 %*	*70-130*

SVOA, 8270 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
90-12-0	1-Methylnaphthalene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723		
95-95-4	2,4,5-Trichlorophenol	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
88-06-2	2,4,6-Trichlorophenol	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-83-2	2,4-Dichlorophenol	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
105-67-9	2,4-Dimethylphenol	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
51-28-5	2,4-Dinitrophenol	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
121-14-2	2,4-Dinitrotoluene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
606-20-2	2,6-Dinitrotoluene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-58-7	2-Chloronaphthalene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill3 **York Sample ID:** 24B1014-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 12:00 pm	02/19/2024

SVOA, 8270 ASE RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-57-8	2-Chlorophenol	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-57-6	2-Methylnaphthalene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
95-48-7	2-Methylphenol	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
88-74-4	2-Nitroaniline	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
88-75-5	2-Nitrophenol	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
65794-96-9	3- & 4-Methylphenols	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
91-94-1	3,3-Dichlorobenzidine	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
99-09-2	3-Nitroaniline	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
534-52-1	4,6-Dinitro-2-methylphenol	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
101-55-3	4-Bromophenyl phenyl ether	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
59-50-7	4-Chloro-3-methylphenol	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
106-47-8	4-Chloroaniline	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7005-72-3	4-Chlorophenyl phenyl ether	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
100-01-6	4-Nitroaniline	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
100-02-7	4-Nitrophenol	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
83-32-9	Acenaphthene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
208-96-8	Acenaphthylene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
62-53-3	Aniline	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
120-12-7	Anthracene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill3 **York Sample ID:** 24B1014-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 12:00 pm	02/19/2024

SVOA, 8270 ASE RCP MASTER **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
85-68-7	Benzyl butyl phthalate	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
111-91-1	Bis(2-chloroethoxy)methane	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
111-44-4	Bis(2-chloroethyl)ether	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-60-1	Bis(2-chloroisopropyl)ether	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
117-81-7	Bis(2-ethylhexyl)phthalate	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-74-8	Carbazole	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
218-01-9	Chrysene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
132-64-9	Dibenzofuran	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
84-66-2	Diethyl phthalate	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
131-11-3	Dimethyl phthalate	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
84-74-2	Di-n-butyl phthalate	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
117-84-0	Di-n-octyl phthalate	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
206-44-0	Fluoranthene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-73-7	Fluorene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
118-74-1	Hexachlorobenzene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
77-47-4	Hexachlorocyclopentadiene	ND		ug/kg dry	1160	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
67-72-1	Hexachloroethane	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Sample Information

Client Sample ID: CMS_WC_Fill3 **York Sample ID:** 24B1014-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 12:00 pm	02/19/2024

SVOA, 8270 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546- SVOA RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
78-59-1	Isophorone	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
91-20-3	Naphthalene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
98-95-3	Nitrobenzene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
621-64-7	N-nitroso-di-n-propylamine	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
86-30-6	N-Nitrosodiphenylamine	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		
82-68-8	Pentachloronitrobenzene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723		
87-86-5	Pentachlorophenol	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
85-01-8	Phenanthrene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
108-95-2	Phenol	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
129-00-0	Pyrene	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
110-86-1	Pyridine	ND		ug/kg dry	580	2	EPA 8270D	02/21/2024 13:48	02/24/2024 01:10	KH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*70.0 %*	*30-130*
13127-88-3	*Surrogate: SURR: Phenol-d6*	*68.1 %*	*30-130*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*73.0 %*	*30-130*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*64.4 %*	*30-130*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*92.8 %*	*30-130*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*67.6 %*	*30-130*

PEST, 8081 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	**4,4'-DDD**	**0.0107**		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-55-9	**4,4'-DDE**	**0.00360**		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
50-29-3	4,4'-DDT	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
15972-60-8	Alachlor	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723		

Sample Information

Client Sample ID: CMS_WC_Fill3 **York Sample ID:** 24B1014-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 12:00 pm	02/19/2024

PEST, 8081 ASE RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
309-00-2	Aldrin	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
319-84-6	alpha-BHC	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
319-85-7	beta-BHC	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
57-74-9	Chlordane, total	ND		mg/kg dry	0.0379	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:			
319-86-8	delta-BHC	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
60-57-1	Dieldrin	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
959-98-8	Endosulfan I	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
33213-65-9	Endosulfan II	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854		
1031-07-8	Endosulfan sulfate	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-20-8	Endrin	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7421-93-4	Endrin aldehyde	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
53494-70-5	Endrin ketone	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
58-89-9	gamma-BHC (Lindane)	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
76-44-8	Heptachlor	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
1024-57-3	Heptachlor epoxide	ND		mg/kg dry	0.00284	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
72-43-5	Methoxychlor	ND		mg/kg dry	0.0142	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
8001-35-2	Toxaphene	ND		mg/kg dry	0.144	5	EPA 8081B	02/20/2024 08:25	02/23/2024 01:47	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*110 %*	*30-150*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*110 %*	*30-150*

PEST, SPLP RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C/1312

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		ug/L	0.00111	1	EPA 8081B/1312	03/24/2024 07:44	03/27/2024 23:13	TAH
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005		

Sample Information

Client Sample ID: CMS_WC_Fill3 **York Sample ID:** 24B1014-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 12:00 pm	02/19/2024

PEST, SPLP RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3510C/1312

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-55-9	4,4'-DDE	ND		ug/L	0.00111	1	EPA 8081B/1312	03/24/2024 07:44	03/27/2024 23:13	TAH
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005			
50-29-3	4,4'-DDT	ND		ug/L	0.00111	1	EPA 8081B/1312	03/24/2024 07:44	03/27/2024 23:13	TAH
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005			

	Surrogate Recoveries	Result	Acceptance Range
2051-24-3	*Surrogate: Decachlorobiphenyl*	*47.6 %*	*30-150*
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*72.3 %*	*30-150*

PCB, 8082 ASE RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3546 PCB-RCP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 10:13	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 10:13	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 10:13	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 10:13	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 10:13	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 10:13	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 10:13	NF
							Certifications: NELAC-NY10854,CTDOH-PH-0723,NJDEP-CT005,PADEP-68-044			
37324-23-5	Aroclor 1262	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 10:13	NF
							Certifications: NELAC-NY10854,NJDEP-CT005			
11100-14-4	Aroclor 1268	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 10:13	NF
							Certifications: NELAC-NY10854,NJDEP-CT005			
1336-36-3	Total PCBs	ND		mg/kg dry	0.0287	1	EPA 8082A	02/20/2024 08:25	02/21/2024 10:13	NF
							Certifications:			

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*84.0 %*	*30-150*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*76.0 %*	*30-150*

HERB, 8151 RCP MASTER

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C/8151A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: CMS_WC_Fill3 **York Sample ID:** 24B1014-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 12:00 pm	02/19/2024

HERB, 8151 RCP MASTER

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C/8151A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
93-76-5	2,4,5-T	ND		mg/kg dry	0.0229	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:29	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
93-72-1	2,4,5-TP (Silvex)	ND		mg/kg dry	0.0229	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:29	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
94-75-7	2,4-D	ND		mg/kg dry	0.0229	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:29	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
75-99-0	Dalapon	ND		mg/kg dry	0.0229	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:29	BCJ
							Certifications:	CTDOH-PH-0723		
1918-00-9	Dicamba	ND		mg/kg dry	0.0229	1	EPA 8151A	02/20/2024 08:05	02/20/2024 21:29	BCJ
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

	Surrogate Recoveries	Result	Acceptance Range
19719-28-9	*Surrogate: 2,4-Dichlorophenylacetic acid (.*	*85.0 %*	*21-150*

Total Petroleum Hydrocarbons-DRO (C10-C28)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	ND		mg/kg dry	11.5	1	EPA 8015D	02/20/2024 08:19	02/20/2024 18:15	GXB
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		

	Surrogate Recoveries	Result	Acceptance Range
638-68-6	*Surrogate: Triacontane*	*72.5 %*	*30-150*

Total Petroleum Hydrocarbons-GRO (C5-C10)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-GRO	ND		mg/kg dry	107	100	EPA 8015D	02/20/2024 09:00	02/20/2024 18:48	BMT
							Certifications:	NELAC-NY10854,NJDEP-CT005,PADEP-68-04440		

	Surrogate Recoveries	Result	Acceptance Range
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*91.6 %*	*52-146*

Antimony by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-36-0	Antimony	ND	M-CCV 1	mg/kg dry	2.02	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:47	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Beryllium by EPA 6010

Log-in Notes:

Sample Notes:

Sample Information

Client Sample ID: CMS_WC_Fill3 **York Sample ID:** 24B1014-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 12:00 pm	02/19/2024

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-41-7	Beryllium	ND		mg/kg dry	0.0408	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:47	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Copper by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-50-8	**Copper**	**21.4**		mg/kg dry	1.62	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:47	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Metals, RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-38-2	**Arsenic**	**5.83**		mg/kg dry	1.21	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:47	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-39-3	**Barium**	**164**		mg/kg dry	2.02	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:47	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-43-9	Cadmium	ND		mg/kg dry	0.243	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:47	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-47-3	**Chromium**	**38.2**		mg/kg dry	0.405	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:47	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7439-92-1	**Lead**	**15.6**		mg/kg dry	0.405	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:47	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7782-49-2	**Selenium**	**2.30**		mg/kg dry	2.02	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:47	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		
7440-22-4	Silver	ND		mg/kg dry	0.408	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:47	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Nickel by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-02-0	**Nickel**	**22.1**		mg/kg dry	0.807	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:47	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Thallium by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-28-0	Thallium	ND		mg/kg dry	2.02	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:47	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Vanadium by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: CMS_WC_Fill3 **York Sample ID:** 24B1014-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 12:00 pm	02/19/2024

Vanadium by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-62-2	**Vanadium**	**43.2**		mg/kg dry	0.807	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:47	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Zinc by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3050B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-66-6	**Zinc**	**58.7**		mg/kg dry	2.02	1	EPA 6010D	02/22/2024 14:14	02/26/2024 16:47	AJL
							Certifications:	CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044		

Mercury by 7473

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 7473 soil

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	**Mercury**	**0.0352**		mg/kg dry	0.0350	1	EPA 7473	02/26/2024 08:21	02/26/2024 15:10	DBT
							Certifications:	CTDOH-PH-0723,NJDEP-CT005,NELAC-NY10854,PADEP-68-044		

Chromium, Hexavalent

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW846-3060

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
18540-29-9	Chromium, Hexavalent	ND		mg/kg dry	0.583	1	EPA 7196A	02/22/2024 15:37	02/22/2024 20:25	SMK
							Certifications:	NJDEP-CT005,CTDOH-PH-0723,NELAC-NY10854,PADEP-68-044		

Chromium, Trivalent

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16065-83-1	**Chromium, Trivalent**	**38.2**		mg/kg	0.500	1	Calculation	02/27/2024 07:43	02/27/2024 10:21	VR
							Certifications:			

Conductivity (Specific Conductance)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Conductivity	**7.658**		umhos/cm	1.000	1	SM 2510B m	02/21/2024 07:40	02/21/2024 10:35	VR
							Certifications:			

pH

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	pH	**5.15**		pH units	0.500	1	EPA 9045D	02/22/2024 10:12	02/22/2024 11:22	TCD
							Certifications:	NELAC-NY10854,CTDOH-PH-0723,PADEP-68-04440,NJDEP-CT(		

Sample Information

Client Sample ID: CMS_WC_Fill3 **York Sample ID:** 24B1014-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24B1014	140265101	Soil	February 19, 2024 12:00 pm	02/19/2024

Reactivity-Cyanide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Reactivity - Cyanide	ND		mg/kg	0.250	1	EPA SW-846 Ch.7.3.3	02/23/2024 14:55	02/23/2024 22:04	SL
							Certifications: CTDOH-PH-0723,PADEP-68-04440			

Reactivity-Sulfide

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Reactivity - Sulfide	**40.0**		mg/kg	15.0	1	EPA SW-846 Ch.7.3.4	02/23/2024 14:57	02/23/2024 22:03	SL
							Certifications: CTDOH-PH-0723,PADEP-68-04440			

Ignitability

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Ignitability	Non-Ignit.		None	1	1	EPA 1030P	02/20/2024 10:31	02/20/2024 13:17	CAM2
							Certifications:			

Paint Filter Test

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Paint Filter Test	No Free Liquid		None	0.05	1	EPA 9095B	02/20/2024 07:42	02/20/2024 08:37	VR
							Certifications: NELAC-NY10854,NJDEP-CT005			

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	**% Solids**	**85.7**		%	0.100	1	SM 2540G	02/23/2024 07:26	02/23/2024 14:08	sgs
							Certifications: CTDOH-PH-0723			

SPLP Extraction for SVOC/PEST/HERB 1312

Log-in Notes: **Sample Notes:** EXT-Temp

Sample Prepared by Method: EPA SW 846-1312 SPLP Extraction for BNA/Pest/Herb

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	SPLP Extraction	Completed	HT-04	N/A	1.00	1	EPA 1312	03/21/2024 11:27	03/22/2024 11:52	TAJ
							Certifications: CTDOH-PH-0723,NELAC-NY10854,NJDEP-CT005,PADEP-68-044			

Analytical Batch Summary

Batch ID: BB41200 **Preparation Method:** Analysis Preparation **Prepared By:** VR

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/20/24
24B1014-02	CMS_WC_Subbase	02/20/24
24B1014-03	CMS_WC_Fill1	02/20/24
24B1014-04	CMS_WC_Fill2	02/20/24
24B1014-05	CMS_WC_Fill3	02/20/24

Batch ID: BB41205 **Preparation Method:** EPA 3550C/8151A **Prepared By:** JJP

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/20/24
24B1014-02	CMS_WC_Subbase	02/20/24
24B1014-03	CMS_WC_Fill1	02/20/24
24B1014-04	CMS_WC_Fill2	02/20/24
24B1014-05	CMS_WC_Fill3	02/20/24
BB41205-BLK1	Blank	02/20/24
BB41205-BS1	LCS	02/20/24
BB41205-MS1	Matrix Spike	02/20/24
BB41205-MSD1	Matrix Spike Dup	02/20/24

Batch ID: BB41209 **Preparation Method:** EPA 3550C **Prepared By:** JJP

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/20/24
24B1014-02	CMS_WC_Subbase	02/20/24
24B1014-03	CMS_WC_Fill1	02/20/24
24B1014-04	CMS_WC_Fill2	02/20/24
24B1014-05	CMS_WC_Fill3	02/20/24
BB41209-BLK1	Blank	02/20/24
BB41209-BS1	LCS	02/20/24
BB41209-MS1	Matrix Spike	02/20/24
BB41209-MSD1	Matrix Spike Dup	02/20/24

Batch ID: BB41212 **Preparation Method:** EPA 3546 PCB-RCP **Prepared By:** AN

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/20/24
24B1014-01	CMS_WC_Topsoil	02/20/24
24B1014-02	CMS_WC_Subbase	02/20/24
24B1014-02	CMS_WC_Subbase	02/20/24
24B1014-03	CMS_WC_Fill1	02/20/24
24B1014-03	CMS_WC_Fill1	02/20/24
24B1014-04	CMS_WC_Fill2	02/20/24
24B1014-04	CMS_WC_Fill2	02/20/24
24B1014-05	CMS_WC_Fill3	02/20/24

24B1014-05	CMS_WC_Fill3	02/20/24
BB41212-BLK1	Blank	02/20/24
BB41212-BLK2	Blank	02/20/24
BB41212-BS1	LCS	02/20/24
BB41212-BS2	LCS	02/20/24
BB41212-MS1	Matrix Spike	02/20/24
BB41212-MS2	Matrix Spike	02/20/24
BB41212-MSD1	Matrix Spike Dup	02/20/24
BB41212-MSD2	Matrix Spike Dup	02/20/24

Batch ID: BB41234 **Preparation Method:** Analysis Preparation **Prepared By:** CAM2

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/20/24
24B1014-02	CMS_WC_Subbase	02/20/24
24B1014-03	CMS_WC_Fill1	02/20/24
24B1014-04	CMS_WC_Fill2	02/20/24
24B1014-05	CMS_WC_Fill3	02/20/24

Batch ID: BB41238 **Preparation Method:** EPA SW 846-1311 TCLP ZHE for VO **Prepared By:** TAJ

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-03	CMS_WC_Fill1	02/20/24
BB41238-BLK1	Blank	02/20/24

Batch ID: BB41239 **Preparation Method:** EPA SW 846-1311 TCLP extr. for SV(**Prepared By:** TAJ

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-03	CMS_WC_Fill1	02/20/24
BB41239-BLK1	Blank	02/20/24

Batch ID: BB41240 **Preparation Method:** EPA SW 846-1311 TCLP ext. for meta **Prepared By:** TAJ

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-03	CMS_WC_Fill1	02/20/24
BB41240-BLK1	Blank	02/20/24

Batch ID: BB41246 **Preparation Method:** EPA 5035A **Prepared By:** BMT

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/20/24
24B1014-02	CMS_WC_Subbase	02/20/24
24B1014-03	CMS_WC_Fill1	02/20/24
24B1014-04	CMS_WC_Fill2	02/20/24
24B1014-05	CMS_WC_Fill3	02/20/24
BB41246-BLK1	Blank	02/20/24
BB41246-DUP1	Duplicate	02/20/24
BB41246-SRM1	Reference	02/20/24

Batch ID: BB41261 **Preparation Method:** Analysis Preparation **Prepared By:** LRS

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/20/24
24B1014-02	CMS_WC_Subbase	02/20/24
24B1014-03	CMS_WC_Fill1	02/20/24
24B1014-04	CMS_WC_Fill2	02/20/24
BB41261-DUP1	Duplicate	02/20/24

Batch ID: BB41292 **Preparation Method:** Analysis Preparation **Prepared By:** VR

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/21/24
24B1014-02	CMS_WC_Subbase	02/21/24
24B1014-03	CMS_WC_Fill1	02/21/24
24B1014-04	CMS_WC_Fill2	02/21/24
24B1014-05	CMS_WC_Fill3	02/21/24
BB41292-BLK1	Blank	02/21/24
BB41292-BS1	LCS	02/21/24
BB41292-DUP1	Duplicate	02/21/24

Batch ID: BB41301 **Preparation Method:** EPA 3510C/1311 **Prepared By:** RJ

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-03	CMS_WC_Fill1	02/21/24
BB41301-BLK1	Blank	02/21/24
BB41301-BS1	LCS	02/21/24
BB41301-BSD1	LCS Dup	02/21/24
BB41301-LBK1	Leach Fluid Blank	02/21/24
BB41301-MS1	Matrix Spike	02/21/24

Batch ID: BB41324 **Preparation Method:** EPA 5035A **Prepared By:** PD

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/21/24
BB41324-BLK1	Blank	02/21/24
BB41324-BS1	LCS	02/21/24
BB41324-BSD1	LCS Dup	02/21/24

Batch ID: BB41325 **Preparation Method:** EPA 5035A **Prepared By:** PD

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-02	CMS_WC_Subbase	02/21/24
24B1014-03	CMS_WC_Fill1	02/21/24
24B1014-04	CMS_WC_Fill2	02/21/24
24B1014-05	CMS_WC_Fill3	02/21/24
BB41325-BLK1	Blank	02/21/24

BB41325-BS1	LCS	02/21/24
BB41325-BSD1	LCS Dup	02/21/24

Batch ID: BB41337 **Preparation Method:** EPA 3535A/1311 **Prepared By:** THD

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-03	CMS_WC_Fill1	02/21/24
BB41337-BLK1	Blank	02/21/24
BB41337-BS1	LCS	02/21/24
BB41337-LBK1	Leach Fluid Blank	02/21/24
BB41337-MS1	Matrix Spike	02/21/24

Batch ID: BB41345 **Preparation Method:** EPA 3546- SVOA RCP **Prepared By:** me

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/21/24
24B1014-02	CMS_WC_Subbase	02/21/24
24B1014-03	CMS_WC_Fill1	02/21/24
24B1014-04	CMS_WC_Fill2	02/21/24
24B1014-05	CMS_WC_Fill3	02/21/24
BB41345-BLK1	Blank	02/21/24
BB41345-BS1	LCS	02/21/24
BB41345-MS1	Matrix Spike	02/21/24
BB41345-MSD1	Matrix Spike Dup	02/21/24

Batch ID: BB41391 **Preparation Method:** EPA SW846-3060 **Prepared By:** PMB

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/22/24
24B1014-02	CMS_WC_Subbase	02/22/24
BB41391-BLK1	Blank	02/22/24
BB41391-DUP1	Duplicate	02/22/24
BB41391-MS1	Matrix Spike	02/22/24
BB41391-MSD1	Matrix Spike Dup	02/22/24
BB41391-SRM1	Reference	02/22/24

Batch ID: BB41400 **Preparation Method:** EPA SW846-7470A **Prepared By:** PFA

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-03	CMS_WC_Fill1	02/22/24
BB41400-BLK1	Blank	02/22/24
BB41400-BLK2	Blank	02/22/24
BB41400-BS1	LCS	02/22/24
BB41400-BS2	LCS	02/22/24
BB41400-LBK1	Leach Fluid Blank	02/22/24

Batch ID: BB41433 **Preparation Method:** Analysis Preparation **Prepared By:** TCD

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-05	CMS_WC_Fill3	02/22/24
BB41433-DUP1	Duplicate	02/22/24

Batch ID: BB41454 **Preparation Method:** EPA 3050B **Prepared By:** JEF

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/22/24
24B1014-02	CMS_WC_Subbase	02/22/24
24B1014-03	CMS_WC_Fill1	02/22/24
24B1014-04	CMS_WC_Fill2	02/22/24
24B1014-05	CMS_WC_Fill3	02/22/24
BB41454-BLK1	Blank	02/22/24
BB41454-DUP1	Duplicate	02/22/24
BB41454-MS1	Matrix Spike	02/22/24
BB41454-PS1	Post Spike	02/22/24
BB41454-SRM1	Reference	02/22/24

Batch ID: BB41457 **Preparation Method:** EPA 5030B/1311 **Prepared By:** SMA

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-03	CMS_WC_Fill1	02/22/24
BB41457-BLK1	Blank	02/22/24
BB41457-BS1	LCS	02/22/24
BB41457-BSD1	LCS Dup	02/22/24
BB41457-LBK1	Leach Fluid Blank	02/22/24
BB41457-MS1	Matrix Spike	02/22/24

Batch ID: BB41466 **Preparation Method:** EPA SW846-3060 **Prepared By:** SMK

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-03	CMS_WC_Fill1	02/22/24
24B1014-04	CMS_WC_Fill2	02/22/24
24B1014-05	CMS_WC_Fill3	02/22/24
BB41466-BLK1	Blank	02/22/24
BB41466-DUP1	Duplicate	02/22/24
BB41466-MS1	Matrix Spike	02/22/24
BB41466-MSD1	Matrix Spike Dup	02/22/24
BB41466-SRM1	Reference	02/22/24

Batch ID: BB41485 **Preparation Method:** % Solids Prep **Prepared By:** sgs

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/23/24
24B1014-02	CMS_WC_Subbase	02/23/24
24B1014-03	CMS_WC_Fill1	02/23/24
24B1014-04	CMS_WC_Fill2	02/23/24
24B1014-05	CMS_WC_Fill3	02/23/24

BB41485-DUP1	Duplicate	02/23/24

Batch ID: BB41510 **Preparation Method:** EPA 3015A/1311 **Prepared By:** AD2

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-03	CMS_WC_Fill1	02/23/24
BB41510-BLK1	Blank	02/23/24
BB41510-BS1	LCS	02/23/24
BB41510-DUP1	Duplicate	02/23/24
BB41510-LBK1	Leach Fluid Blank	02/23/24
BB41510-MS1	Matrix Spike	02/23/24
BB41510-PS1	Post Spike	02/23/24

Batch ID: BB41551 **Preparation Method:** Analysis Preparation **Prepared By:** SL

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/23/24
24B1014-02	CMS_WC_Subbase	02/23/24
24B1014-03	CMS_WC_Fill1	02/23/24
24B1014-04	CMS_WC_Fill2	02/23/24
24B1014-05	CMS_WC_Fill3	02/23/24
BB41551-BLK1	Blank	02/23/24

Batch ID: BB41552 **Preparation Method:** Analysis Preparation **Prepared By:** SL

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/23/24
24B1014-02	CMS_WC_Subbase	02/23/24
24B1014-03	CMS_WC_Fill1	02/23/24
24B1014-04	CMS_WC_Fill2	02/23/24
24B1014-05	CMS_WC_Fill3	02/23/24
BB41552-BLK1	Blank	02/23/24
BB41552-DUP1	Duplicate	02/23/24

Batch ID: BB41570 **Preparation Method:** EPA 3510C/1311 **Prepared By:** JJG

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-03	CMS_WC_Fill1	02/24/24
BB41570-BLK1	Blank	02/24/24
BB41570-BS1	LCS	02/24/24
BB41570-BSD1	LCS Dup	02/24/24
BB41570-LBK1	Leach Fluid Blank	02/24/24
BB41570-MS1	Matrix Spike	02/24/24

Batch ID: BB41621 **Preparation Method:** EPA 7473 soil **Prepared By:** DBT

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/26/24

24B1014-02	CMS_WC_Subbase	02/26/24
BB41621-BLK1	Blank	02/26/24
BB41621-DUP1	Duplicate	02/26/24
BB41621-MS1	Matrix Spike	02/26/24
BB41621-SRM1	Reference	02/26/24

Batch ID: BB41622 **Preparation Method:** EPA 7473 soil **Prepared By:** DBT

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-03	CMS_WC_Fill1	02/26/24
24B1014-04	CMS_WC_Fill2	02/26/24
24B1014-05	CMS_WC_Fill3	02/26/24
BB41622-BLK1	Blank	02/26/24
BB41622-DUP1	Duplicate	02/26/24
BB41622-MS1	Matrix Spike	02/26/24
BB41622-SRM1	Reference	02/26/24

Batch ID: BB41710 **Preparation Method:** Analysis Preparation **Prepared By:** VR

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	02/27/24
24B1014-02	CMS_WC_Subbase	02/27/24
24B1014-03	CMS_WC_Fill1	02/27/24
24B1014-04	CMS_WC_Fill2	02/27/24
24B1014-05	CMS_WC_Fill3	02/27/24

Batch ID: BC41538 **Preparation Method:** EPA SW 846-1312 SPLP Extraction fc **Prepared By:** TAJ

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	03/21/24
24B1014-02	CMS_WC_Subbase	03/21/24
24B1014-03	CMS_WC_Fill1	03/21/24
24B1014-04	CMS_WC_Fill2	03/21/24
24B1014-05	CMS_WC_Fill3	03/21/24
BC41538-BLK1	Blank	03/21/24

Batch ID: BC41705 **Preparation Method:** EPA 3510C/1312 **Prepared By:** YL

YORK Sample ID	Client Sample ID	Preparation Date
24B1014-01	CMS_WC_Topsoil	03/24/24
24B1014-02	CMS_WC_Subbase	03/24/24
24B1014-03	CMS_WC_Fill1	03/24/24
24B1014-04	CMS_WC_Fill2	03/24/24
24B1014-05	CMS_WC_Fill3	03/24/24
BC41705-BLK1	Blank	03/24/24
BC41705-BS1	LCS	03/24/24
BC41705-BSD1	LCS Dup	03/24/24
BC41705-LBK1	Leach Fluid Blank	03/24/24
BC41705-MS1	Matrix Spike	03/24/24

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41324 - EPA 5035A											
Blank (BB41324-BLK1) Blank									Prepared & Analyzed: 02/21/2024		
1,1,1,2-Tetrachloroethane	ND	5.0	ug/kg wet								
1,1,1-Trichloroethane	ND	5.0	"								
1,1,2,2-Tetrachloroethane	ND	5.0	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	5.0	"								
1,1,2-Trichloroethane	ND	5.0	"								
1,1-Dichloroethane	ND	5.0	"								
1,1-Dichloroethylene	ND	5.0	"								
1,1-Dichloropropylene	ND	5.0	"								
1,2,3-Trichlorobenzene	ND	5.0	"								
1,2,3-Trichloropropane	ND	5.0	"								
1,2,4-Trichlorobenzene	ND	5.0	"								
1,2,4-Trimethylbenzene	ND	5.0	"								
1,2-Dibromo-3-chloropropane	ND	5.0	"								
1,2-Dibromoethane	ND	5.0	"								
1,2-Dichlorobenzene	ND	5.0	"								
1,2-Dichloroethane	ND	5.0	"								
1,2-Dichloropropane	ND	5.0	"								
1,3,5-Trimethylbenzene	ND	5.0	"								
1,3-Dichlorobenzene	ND	5.0	"								
1,3-Dichloropropane	ND	5.0	"								
1,4-Dichlorobenzene	ND	5.0	"								
2,2-Dichloropropane	ND	5.0	"								
2-Butanone	ND	5.0	"								
2-Chlorotoluene	ND	5.0	"								
2-Hexanone	ND	5.0	"								
4-Chlorotoluene	ND	5.0	"								
4-Methyl-2-pentanone	ND	5.0	"								
Acetone	ND	10	"								
Acrylonitrile	ND	5.0	"								
Benzene	ND	5.0	"								
Bromobenzene	ND	5.0	"								
Bromochloromethane	ND	5.0	"								
Bromodichloromethane	ND	5.0	"								
Bromoform	ND	5.0	"								
Bromomethane	ND	5.0	"								
Carbon disulfide	ND	5.0	"								
Carbon tetrachloride	ND	5.0	"								
Chlorobenzene	ND	5.0	"								
Chloroethane	ND	5.0	"								
Chloroform	ND	5.0	"								
Chloromethane	ND	5.0	"								
cis-1,2-Dichloroethylene	ND	5.0	"								
cis-1,3-Dichloropropylene	ND	5.0	"								
Dibromochloromethane	ND	5.0	"								
Dibromomethane	ND	5.0	"								
Dichlorodifluoromethane	ND	5.0	"								
Ethyl Benzene	ND	5.0	"								
Hexachlorobutadiene	ND	5.0	"								
Isopropylbenzene	ND	5.0	"								
Methyl Methacrylate	ND	5.0	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41324 - EPA 5035A											
Blank (BB41324-BLK1) Blank								Prepared & Analyzed: 02/21/2024			
Methyl tert-butyl ether (MTBE)	ND	5.0	ug/kg wet								
Methylene chloride	ND	10	"								
Naphthalene	ND	10	"								
n-Butylbenzene	ND	5.0	"								
n-Propylbenzene	ND	5.0	"								
o-Xylene	ND	5.0	"								
p- & m- Xylenes	ND	10	"								
p-Isopropyltoluene	ND	5.0	"								
sec-Butylbenzene	ND	5.0	"								
Styrene	ND	5.0	"								
tert-Butylbenzene	ND	5.0	"								
Tetrachloroethylene	ND	5.0	"								
Tetrahydrofuran	ND	10	"								
Toluene	ND	5.0	"								
trans-1,2-Dichloroethylene	ND	5.0	"								
trans-1,3-Dichloropropylene	ND	5.0	"								
trans-1,4-dichloro-2-butene	ND	5.0	"								
Trichloroethylene	ND	5.0	"								
Trichlorofluoromethane	ND	5.0	"								
Vinyl Chloride	ND	5.0	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*48.2*		*ug/L*	*50.0*		*96.5*	*70-130*				
Surrogate: SURR: Toluene-d8	*50.9*		*"*	*50.0*		*102*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*52.7*		*"*	*50.0*		*105*	*70-130*				
LCS (BB41324-BS1) LCS								Prepared & Analyzed: 02/21/2024			
1,1,1,2-Tetrachloroethane	49.2		ug/L	50.0		98.5	70-130				
1,1,1-Trichloroethane	49.6		"	50.0		99.1	70-130				
1,1,2,2-Tetrachloroethane	57.3		"	50.0		115	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	53.3		"	50.0		107	70-130				
1,1,2-Trichloroethane	51.5		"	50.0		103	70-130				
1,1-Dichloroethane	51.4		"	50.0		103	70-130				
1,1-Dichloroethylene	55.0		"	50.0		110	70-130				
1,1-Dichloropropylene	51.5		"	50.0		103	70-130				
1,2,3-Trichlorobenzene	47.6		"	50.0		95.2	70-130				
1,2,3-Trichloropropane	51.6		"	50.0		103	70-130				
1,2,4-Trichlorobenzene	47.8		"	50.0		95.5	70-130				
1,2,4-Trimethylbenzene	51.8		"	50.0		104	70-130				
1,2-Dibromo-3-chloropropane	51.0		"	50.0		102	70-130				
1,2-Dibromoethane	51.6		"	50.0		103	70-130				
1,2-Dichlorobenzene	50.1		"	50.0		100	70-130				
1,2-Dichloroethane	52.2		"	50.0		104	70-130				
1,2-Dichloropropane	53.7		"	50.0		107	70-130				
1,3,5-Trimethylbenzene	51.9		"	50.0		104	70-130				
1,3-Dichlorobenzene	50.3		"	50.0		101	70-130				
1,3-Dichloropropane	52.4		"	50.0		105	70-130				
1,4-Dichlorobenzene	48.4		"	50.0		96.9	70-130				
2,2-Dichloropropane	50.4		"	50.0		101	70-130				
2-Butanone	52.5		"	50.0		105	70-130				
2-Chlorotoluene	52.9		"	50.0		106	70-130				
2-Hexanone	49.9		"	50.0		99.8	70-130				
4-Chlorotoluene	51.6		"	50.0		103	70-130				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41324 - EPA 5035A											
LCS (BB41324-BS1) LCS							Prepared & Analyzed: 02/21/2024				
4-Methyl-2-pentanone	53.4		ug/L	50.0		107	70-130				
Acetone	42.0		"	50.0		84.0	70-130				
Acrylonitrile	57.5		"	50.0		115	70-130				
Benzene	53.6		"	50.0		107	70-130				
Bromobenzene	52.4		"	50.0		105	70-130				
Bromochloromethane	53.7		"	50.0		107	70-130				
Bromodichloromethane	53.4		"	50.0		107	70-130				
Bromoform	50.2		"	50.0		100	70-130				
Bromomethane	59.2		"	50.0		118	70-130				
Carbon disulfide	57.4		"	50.0		115	70-130				
Carbon tetrachloride	51.0		"	50.0		102	70-130				
Chlorobenzene	51.4		"	50.0		103	70-130				
Chloroethane	62.2		"	50.0		124	70-130				
Chloroform	51.3		"	50.0		103	70-130				
Chloromethane	56.3		"	50.0		113	70-130				
cis-1,2-Dichloroethylene	52.2		"	50.0		104	70-130				
cis-1,3-Dichloropropylene	50.5		"	50.0		101	70-130				
Dibromochloromethane	50.6		"	50.0		101	70-130				
Dibromomethane	51.8		"	50.0		104	70-130				
Dichlorodifluoromethane	47.6		"	50.0		95.1	70-130				
Ethyl Benzene	54.5		"	50.0		109	70-130				
Hexachlorobutadiene	47.7		"	50.0		95.3	70-130				
Isopropylbenzene	51.2		"	50.0		102	70-130				
Methyl Methacrylate	52.4		"	50.0		105	70-130				
Methyl tert-butyl ether (MTBE)	48.4		"	50.0		96.8	70-130				
Methylene chloride	58.8		"	50.0		118	70-130				
Naphthalene	50.4		"	50.0		101	70-130				
n-Butylbenzene	53.3		"	50.0		107	70-130				
n-Propylbenzene	52.6		"	50.0		105	70-130				
o-Xylene	52.5		"	50.0		105	70-130				
p- & m- Xylenes	108		"	100		108	70-130				
p-Isopropyltoluene	52.7		"	50.0		105	70-130				
sec-Butylbenzene	51.3		"	50.0		103	70-130				
Styrene	49.8		"	50.0		99.6	70-130				
tert-Butylbenzene	49.6		"	50.0		99.1	70-130				
Tetrachloroethylene	40.6		"	50.0		81.3	70-130				
Tetrahydrofuran	50.3		"	50.0		101	70-130				
Toluene	53.1		"	50.0		106	70-130				
trans-1,2-Dichloroethylene	53.1		"	50.0		106	70-130				
trans-1,3-Dichloropropylene	50.7		"	50.0		101	70-130				
trans-1,4-dichloro-2-butene	55.8		"	50.0		112	70-130				
Trichloroethylene	50.3		"	50.0		101	70-130				
Trichlorofluoromethane	65.3		"	50.0		131	70-130	High Bias			
Vinyl Chloride	58.8		"	50.0		118	70-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*51.2*		*"*	*50.0*		*102*	*70-130*				
Surrogate: SURR: Toluene-d8	*50.3*		*"*	*50.0*		*101*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*49.9*		*"*	*50.0*		*99.8*	*70-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41324 - EPA 5035A											
LCS Dup (BB41324-BSD1) LCS Dup								Prepared & Analyzed: 02/21/2024			
1,1,1,2-Tetrachloroethane	49.2		ug/L	50.0		98.4	70-130		0.142	30	
1,1,1-Trichloroethane	50.7		"	50.0		101	70-130		2.31	30	
1,1,2,2-Tetrachloroethane	53.7		"	50.0		107	70-130		6.42	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	55.2		"	50.0		110	70-130		3.56	30	
1,1,2-Trichloroethane	49.8		"	50.0		99.5	70-130		3.38	30	
1,1-Dichloroethane	51.6		"	50.0		103	70-130		0.369	30	
1,1-Dichloroethylene	55.7		"	50.0		111	70-130		1.17	30	
1,1-Dichloropropylene	52.8		"	50.0		106	70-130		2.57	30	
1,2,3-Trichlorobenzene	46.5		"	50.0		93.1	70-130		2.23	30	
1,2,3-Trichloropropane	49.3		"	50.0		98.5	70-130		4.64	30	
1,2,4-Trichlorobenzene	47.9		"	50.0		95.9	70-130		0.334	30	
1,2,4-Trimethylbenzene	53.7		"	50.0		107	70-130		3.56	30	
1,2-Dibromo-3-chloropropane	48.4		"	50.0		96.8	70-130		5.25	30	
1,2-Dibromoethane	49.6		"	50.0		99.2	70-130		3.87	30	
1,2-Dichlorobenzene	50.1		"	50.0		100	70-130		0.0399	30	
1,2-Dichloroethane	49.7		"	50.0		99.3	70-130		5.04	30	
1,2-Dichloropropane	53.8		"	50.0		108	70-130		0.112	30	
1,3,5-Trimethylbenzene	54.5		"	50.0		109	70-130		4.81	30	
1,3-Dichlorobenzene	51.2		"	50.0		102	70-130		1.76	30	
1,3-Dichloropropane	50.8		"	50.0		102	70-130		3.04	30	
1,4-Dichlorobenzene	48.8		"	50.0		97.6	70-130		0.802	30	
2,2-Dichloropropane	51.6		"	50.0		103	70-130		2.33	30	
2-Butanone	47.5		"	50.0		95.1	70-130		9.90	30	
2-Chlorotoluene	54.8		"	50.0		110	70-130		3.57	30	
2-Hexanone	45.9		"	50.0		91.8	70-130		8.35	30	
4-Chlorotoluene	53.1		"	50.0		106	70-130		2.77	30	
4-Methyl-2-pentanone	49.5		"	50.0		99.0	70-130		7.69	30	
Acetone	39.8		"	50.0		79.5	70-130		5.41	30	
Acrylonitrile	53.0		"	50.0		106	70-130		8.12	30	
Benzene	53.6		"	50.0		107	70-130		0.0746	30	
Bromobenzene	52.7		"	50.0		105	70-130		0.476	30	
Bromochloromethane	51.2		"	50.0		102	70-130		4.67	30	
Bromodichloromethane	53.0		"	50.0		106	70-130		0.714	30	
Bromoform	47.7		"	50.0		95.3	70-130		5.21	30	
Bromomethane	58.9		"	50.0		118	70-130		0.423	30	
Carbon disulfide	58.3		"	50.0		117	70-130		1.54	30	
Carbon tetrachloride	52.2		"	50.0		104	70-130		2.27	30	
Chlorobenzene	51.8		"	50.0		104	70-130		0.679	30	
Chloroethane	60.8		"	50.0		122	70-130		2.29	30	
Chloroform	50.9		"	50.0		102	70-130		0.763	30	
Chloromethane	56.8		"	50.0		114	70-130		0.796	30	
cis-1,2-Dichloroethylene	52.0		"	50.0		104	70-130		0.403	30	
cis-1,3-Dichloropropylene	49.5		"	50.0		98.9	70-130		2.06	30	
Dibromochloromethane	48.8		"	50.0		97.6	70-130		3.62	30	
Dibromomethane	50.2		"	50.0		100	70-130		3.10	30	
Dichlorodifluoromethane	48.4		"	50.0		96.9	70-130		1.83	30	
Ethyl Benzene	55.8		"	50.0		112	70-130		2.30	30	
Hexachlorobutadiene	50.3		"	50.0		101	70-130		5.41	30	
Isopropylbenzene	53.7		"	50.0		107	70-130		4.81	30	
Methyl Methacrylate	48.8		"	50.0		97.7	70-130		7.15	30	
Methyl tert-butyl ether (MTBE)	46.4		"	50.0		92.7	70-130		4.24	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41324 - EPA 5035A											
LCS Dup (BB41324-BSD1) LCS Dup									Prepared & Analyzed: 02/21/2024		
Methylene chloride	57.3		ug/L	50.0		115	70-130		2.53	30	
Naphthalene	48.0		"	50.0		96.1	70-130		4.77	30	
n-Butylbenzene	55.8		"	50.0		112	70-130		4.60	30	
n-Propylbenzene	55.2		"	50.0		110	70-130		4.76	30	
o-Xylene	53.0		"	50.0		106	70-130		1.02	30	
p- & m- Xylenes	111		"	100		111	70-130		2.12	30	
p-Isopropyltoluene	55.3		"	50.0		111	70-130		4.76	30	
sec-Butylbenzene	54.2		"	50.0		108	70-130		5.55	30	
Styrene	49.4		"	50.0		98.8	70-130		0.827	30	
tert-Butylbenzene	52.3		"	50.0		105	70-130		5.34	30	
Tetrachloroethylene	42.3		"	50.0		84.6	70-130		4.00	30	
Tetrahydrofuran	44.7		"	50.0		89.4	70-130		11.8	30	
Toluene	54.2		"	50.0		108	70-130		2.03	30	
trans-1,2-Dichloroethylene	53.6		"	50.0		107	70-130		0.918	30	
trans-1,3-Dichloropropylene	48.9		"	50.0		97.7	70-130		3.68	30	
trans-1,4-dichloro-2-butene	53.3		"	50.0		107	70-130		4.64	30	
Trichloroethylene	52.4		"	50.0		105	70-130		4.13	30	
Trichlorofluoromethane	64.1		"	50.0		128	70-130		1.85	30	
Vinyl Chloride	56.6		"	50.0		113	70-130		3.71	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*48.6*		*"*	*50.0*		*97.2*	*70-130*				
Surrogate: SURR: Toluene-d8	*50.9*		*"*	*50.0*		*102*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*50.6*		*"*	*50.0*		*101*	*70-130*				
Batch BB41325 - EPA 5035A											
Blank (BB41325-BLK1) Blank									Prepared & Analyzed: 02/21/2024		
1,1,1,2-Tetrachloroethane	ND	5.0	ug/kg wet								
1,1,1-Trichloroethane	ND	5.0	"								
1,1,2,2-Tetrachloroethane	ND	5.0	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	5.0	"								
1,1,2-Trichloroethane	ND	5.0	"								
1,1-Dichloroethane	ND	5.0	"								
1,1-Dichloroethylene	ND	5.0	"								
1,1-Dichloropropylene	ND	5.0	"								
1,2,3-Trichlorobenzene	ND	5.0	"								
1,2,3-Trichloropropane	ND	5.0	"								
1,2,4-Trichlorobenzene	ND	5.0	"								
1,2,4-Trimethylbenzene	ND	5.0	"								
1,2-Dibromo-3-chloropropane	ND	5.0	"								
1,2-Dibromoethane	ND	5.0	"								
1,2-Dichlorobenzene	ND	5.0	"								
1,2-Dichloroethane	ND	5.0	"								
1,2-Dichloropropane	ND	5.0	"								
1,3,5-Trimethylbenzene	ND	5.0	"								
1,3-Dichlorobenzene	ND	5.0	"								
1,3-Dichloropropane	ND	5.0	"								
1,4-Dichlorobenzene	ND	5.0	"								
2,2-Dichloropropane	ND	5.0	"								
2-Butanone	ND	5.0	"								
2-Chlorotoluene	ND	5.0	"								
2-Hexanone	ND	5.0	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41325 - EPA 5035A											
Blank (BB41325-BLK1) Blank									Prepared & Analyzed: 02/21/2024		
4-Chlorotoluene	ND	5.0	ug/kg wet								
4-Methyl-2-pentanone	ND	5.0	"								
Acetone	ND	10	"								
Acrylonitrile	ND	5.0	"								
Benzene	ND	5.0	"								
Bromobenzene	ND	5.0	"								
Bromochloromethane	ND	5.0	"								
Bromodichloromethane	ND	5.0	"								
Bromoform	ND	5.0	"								
Bromomethane	ND	5.0	"								
Carbon disulfide	ND	5.0	"								
Carbon tetrachloride	ND	5.0	"								
Chlorobenzene	ND	5.0	"								
Chloroethane	ND	5.0	"								
Chloroform	ND	5.0	"								
Chloromethane	ND	5.0	"								
cis-1,2-Dichloroethylene	ND	5.0	"								
cis-1,3-Dichloropropylene	ND	5.0	"								
Dibromochloromethane	ND	5.0	"								
Dibromomethane	ND	5.0	"								
Dichlorodifluoromethane	ND	5.0	"								
Ethyl Benzene	ND	5.0	"								
Hexachlorobutadiene	ND	5.0	"								
Isopropylbenzene	ND	5.0	"								
Methyl Methacrylate	ND	5.0	"								
Methyl tert-butyl ether (MTBE)	ND	5.0	"								
Methylene chloride	ND	10	"								
Naphthalene	ND	10	"								
n-Butylbenzene	ND	5.0	"								
n-Propylbenzene	ND	5.0	"								
o-Xylene	ND	5.0	"								
p- & m- Xylenes	ND	10	"								
p-Isopropyltoluene	ND	5.0	"								
sec-Butylbenzene	ND	5.0	"								
Styrene	ND	5.0	"								
tert-Butylbenzene	ND	5.0	"								
Tetrachloroethylene	ND	5.0	"								
Tetrahydrofuran	ND	10	"								
Toluene	ND	5.0	"								
trans-1,2-Dichloroethylene	ND	5.0	"								
trans-1,3-Dichloropropylene	ND	5.0	"								
trans-1,4-dichloro-2-butene	ND	5.0	"								
Trichloroethylene	ND	5.0	"								
Trichlorofluoromethane	ND	5.0	"								
Vinyl Chloride	ND	5.0	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*53.0*		*ug/L*	*50.0*		*106*	*70-130*				
Surrogate: SURR: Toluene-d8	*46.8*		*"*	*50.0*		*93.6*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*47.1*		*"*	*50.0*		*94.2*	*70-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41325 - EPA 5035A											
LCS (BB41325-BS1) LCS								Prepared & Analyzed: 02/21/2024			
1,1,1,2-Tetrachloroethane	52.7		ug/L	50.0		105	70-130				
1,1,1-Trichloroethane	59.8		"	50.0		120	70-130				
1,1,2,2-Tetrachloroethane	52.0		"	50.0		104	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	64.0		"	50.0		128	70-130				
1,1,2-Trichloroethane	52.8		"	50.0		106	70-130				
1,1-Dichloroethane	57.6		"	50.0		115	70-130				
1,1-Dichloroethylene	59.4		"	50.0		119	70-130				
1,1-Dichloropropylene	59.3		"	50.0		119	70-130				
1,2,3-Trichlorobenzene	46.4		"	50.0		92.8	70-130				
1,2,3-Trichloropropane	51.6		"	50.0		103	70-130				
1,2,4-Trichlorobenzene	44.8		"	50.0		89.7	70-130				
1,2,4-Trimethylbenzene	48.6		"	50.0		97.1	70-130				
1,2-Dibromo-3-chloropropane	45.0		"	50.0		89.9	70-130				
1,2-Dibromoethane	53.0		"	50.0		106	70-130				
1,2-Dichlorobenzene	50.0		"	50.0		100	70-130				
1,2-Dichloroethane	60.9		"	50.0		122	70-130				
1,2-Dichloropropane	49.7		"	50.0		99.4	70-130				
1,3,5-Trimethylbenzene	49.0		"	50.0		98.1	70-130				
1,3-Dichlorobenzene	48.8		"	50.0		97.7	70-130				
1,3-Dichloropropane	52.1		"	50.0		104	70-130				
1,4-Dichlorobenzene	48.1		"	50.0		96.2	70-130				
2,2-Dichloropropane	55.3		"	50.0		111	70-130				
2-Butanone	53.0		"	50.0		106	70-130				
2-Chlorotoluene	48.5		"	50.0		97.0	70-130				
2-Hexanone	44.9		"	50.0		89.8	70-130				
4-Chlorotoluene	47.7		"	50.0		95.4	70-130				
4-Methyl-2-pentanone	46.3		"	50.0		92.6	70-130				
Acetone	41.8		"	50.0		83.5	70-130				
Acrylonitrile	57.8		"	50.0		116	70-130				
Benzene	63.6		"	50.0		127	70-130				
Bromobenzene	47.6		"	50.0		95.2	70-130				
Bromochloromethane	58.5		"	50.0		117	70-130				
Bromodichloromethane	50.8		"	50.0		102	70-130				
Bromoform	50.7		"	50.0		101	70-130				
Bromomethane	73.7		"	50.0		147	70-130	High Bias			
Carbon disulfide	60.9		"	50.0		122	70-130				
Carbon tetrachloride	61.2		"	50.0		122	70-130				
Chlorobenzene	54.1		"	50.0		108	70-130				
Chloroethane	70.0		"	50.0		140	70-130	High Bias			
Chloroform	61.9		"	50.0		124	70-130				
Chloromethane	56.1		"	50.0		112	70-130				
cis-1,2-Dichloroethylene	58.3		"	50.0		117	70-130				
cis-1,3-Dichloropropylene	47.9		"	50.0		95.8	70-130				
Dibromochloromethane	51.9		"	50.0		104	70-130				
Dibromomethane	51.4		"	50.0		103	70-130				
Dichlorodifluoromethane	58.9		"	50.0		118	70-130				
Ethyl Benzene	54.2		"	50.0		108	70-130				
Hexachlorobutadiene	45.8		"	50.0		91.7	70-130				
Isopropylbenzene	49.8		"	50.0		99.7	70-130				
Methyl Methacrylate	49.0		"	50.0		97.9	70-130				
Methyl tert-butyl ether (MTBE)	57.4		"	50.0		115	70-130				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41325 - EPA 5035A											
LCS (BB41325-BS1) LCS							Prepared & Analyzed: 02/21/2024				
Methylene chloride	62.6		ug/L	50.0		125	70-130				
Naphthalene	41.5		"	50.0		83.0	70-130				
n-Butylbenzene	49.9		"	50.0		99.9	70-130				
n-Propylbenzene	49.9		"	50.0		99.7	70-130				
o-Xylene	51.0		"	50.0		102	70-130				
p- & m- Xylenes	111		"	100		111	70-130				
p-Isopropyltoluene	49.6		"	50.0		99.1	70-130				
sec-Butylbenzene	50.2		"	50.0		100	70-130				
Styrene	52.0		"	50.0		104	70-130				
tert-Butylbenzene	48.3		"	50.0		96.6	70-130				
Tetrachloroethylene	46.6		"	50.0		93.2	70-130				
Tetrahydrofuran	56.5		"	50.0		113	70-130				
Toluene	54.1		"	50.0		108	70-130				
trans-1,2-Dichloroethylene	57.7		"	50.0		115	70-130				
trans-1,3-Dichloropropylene	48.2		"	50.0		96.4	70-130				
trans-1,4-dichloro-2-butene	49.8		"	50.0		99.7	70-130				
Trichloroethylene	49.7		"	50.0		99.4	70-130				
Trichlorofluoromethane	72.1		"	50.0		144	70-130	High Bias			
Vinyl Chloride	65.0		"	50.0		130	70-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*52.1*		*"*	*50.0*		*104*	*70-130*				
Surrogate: SURR: Toluene-d8	*47.0*		*"*	*50.0*		*93.9*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*45.9*		*"*	*50.0*		*91.7*	*70-130*				
LCS Dup (BB41325-BSD1) LCS Dup							Prepared & Analyzed: 02/21/2024				
1,1,1,2-Tetrachloroethane	54.1		ug/L	50.0		108	70-130		2.64	30	
1,1,1-Trichloroethane	61.3		"	50.0		123	70-130		2.49	30	
1,1,2,2-Tetrachloroethane	53.6		"	50.0		107	70-130		2.99	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	65.1		"	50.0		130	70-130		1.75	30	
1,1,2-Trichloroethane	53.6		"	50.0		107	70-130		1.43	30	
1,1-Dichloroethane	59.0		"	50.0		118	70-130		2.49	30	
1,1-Dichloroethylene	60.3		"	50.0		121	70-130		1.64	30	
1,1-Dichloropropylene	61.2		"	50.0		122	70-130		3.09	30	
1,2,3-Trichlorobenzene	46.6		"	50.0		93.3	70-130		0.451	30	
1,2,3-Trichloropropane	52.5		"	50.0		105	70-130		1.81	30	
1,2,4-Trichlorobenzene	46.6		"	50.0		93.2	70-130		3.85	30	
1,2,4-Trimethylbenzene	49.6		"	50.0		99.3	70-130		2.18	30	
1,2-Dibromo-3-chloropropane	44.1		"	50.0		88.2	70-130		1.89	30	
1,2-Dibromoethane	54.0		"	50.0		108	70-130		1.87	30	
1,2-Dichlorobenzene	50.3		"	50.0		101	70-130		0.618	30	
1,2-Dichloroethane	61.8		"	50.0		124	70-130		1.40	30	
1,2-Dichloropropane	51.3		"	50.0		103	70-130		3.15	30	
1,3,5-Trimethylbenzene	49.8		"	50.0		99.5	70-130		1.42	30	
1,3-Dichlorobenzene	49.7		"	50.0		99.4	70-130		1.75	30	
1,3-Dichloropropane	52.7		"	50.0		105	70-130		1.15	30	
1,4-Dichlorobenzene	48.8		"	50.0		97.5	70-130		1.40	30	
2,2-Dichloropropane	56.7		"	50.0		113	70-130		2.48	30	
2-Butanone	55.1		"	50.0		110	70-130		3.91	30	
2-Chlorotoluene	49.8		"	50.0		99.7	70-130		2.71	30	
2-Hexanone	45.6		"	50.0		91.1	70-130		1.48	30	
4-Chlorotoluene	48.6		"	50.0		97.1	70-130		1.83	30	
4-Methyl-2-pentanone	47.0		"	50.0		94.1	70-130		1.54	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41325 - EPA 5035A											
LCS Dup (BB41325-BSD1) LCS Dup								Prepared & Analyzed: 02/21/2024			
Acetone	41.8		ug/L	50.0		83.5	70-130		0.0479	30	
Acrylonitrile	58.5		"	50.0		117	70-130		1.24	30	
Benzene	65.4		"	50.0		131	70-130	High Bias	2.81	30	
Bromobenzene	48.4		"	50.0		96.9	70-130		1.75	30	
Bromochloromethane	60.7		"	50.0		121	70-130		3.66	30	
Bromodichloromethane	51.8		"	50.0		104	70-130		1.99	30	
Bromoform	51.5		"	50.0		103	70-130		1.53	30	
Bromomethane	72.4		"	50.0		145	70-130	High Bias	1.89	30	
Carbon disulfide	62.2		"	50.0		124	70-130		2.21	30	
Carbon tetrachloride	62.6		"	50.0		125	70-130		2.21	30	
Chlorobenzene	54.8		"	50.0		110	70-130		1.27	30	
Chloroethane	69.2		"	50.0		138	70-130	High Bias	1.14	30	
Chloroform	63.3		"	50.0		127	70-130		2.27	30	
Chloromethane	57.7		"	50.0		115	70-130		2.85	30	
cis-1,2-Dichloroethylene	60.1		"	50.0		120	70-130		3.12	30	
cis-1,3-Dichloropropylene	49.3		"	50.0		98.6	70-130		2.86	30	
Dibromochloromethane	52.8		"	50.0		106	70-130		1.66	30	
Dibromomethane	52.6		"	50.0		105	70-130		2.17	30	
Dichlorodifluoromethane	59.4		"	50.0		119	70-130		0.862	30	
Ethyl Benzene	55.6		"	50.0		111	70-130		2.53	30	
Hexachlorobutadiene	46.1		"	50.0		92.1	70-130		0.522	30	
Isopropylbenzene	51.2		"	50.0		102	70-130		2.63	30	
Methyl Methacrylate	49.6		"	50.0		99.2	70-130		1.32	30	
Methyl tert-butyl ether (MTBE)	58.9		"	50.0		118	70-130		2.61	30	
Methylene chloride	64.6		"	50.0		129	70-130		3.10	30	
Naphthalene	41.7		"	50.0		83.3	70-130		0.409	30	
n-Butylbenzene	50.0		"	50.0		99.9	70-130		0.0601	30	
n-Propylbenzene	50.7		"	50.0		101	70-130		1.71	30	
o-Xylene	52.3		"	50.0		105	70-130		2.42	30	
p- & m- Xylenes	114		"	100		114	70-130		2.63	30	
p-Isopropyltoluene	50.4		"	50.0		101	70-130		1.78	30	
sec-Butylbenzene	51.0		"	50.0		102	70-130		1.64	30	
Styrene	53.3		"	50.0		107	70-130		2.55	30	
tert-Butylbenzene	49.2		"	50.0		98.4	70-130		1.80	30	
Tetrachloroethylene	47.4		"	50.0		94.8	70-130		1.74	30	
Tetrahydrofuran	57.1		"	50.0		114	70-130		1.07	30	
Toluene	55.7		"	50.0		111	70-130		2.93	30	
trans-1,2-Dichloroethylene	59.0		"	50.0		118	70-130		2.19	30	
trans-1,3-Dichloropropylene	49.8		"	50.0		99.5	70-130		3.12	30	
trans-1,4-dichloro-2-butene	50.7		"	50.0		101	70-130		1.67	30	
Trichloroethylene	50.7		"	50.0		101	70-130		2.05	30	
Trichlorofluoromethane	72.9		"	50.0		146	70-130	High Bias	1.19	30	
Vinyl Chloride	65.6		"	50.0		131	70-130	High Bias	0.904	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*51.6*		*"*	*50.0*		*103*	*70-130*				
Surrogate: SURR: Toluene-d8	*46.9*		*"*	*50.0*		*93.9*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*46.0*		*"*	*50.0*		*91.9*	*70-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41457 - EPA 5030B/1311											
Blank (BB41457-BLK1) Blank								Prepared & Analyzed: 02/22/2024			
1,1-Dichloroethylene	ND	5.0	ug/L								
1,2-Dichloroethane	ND	5.0	"								
1,4-Dichlorobenzene	ND	5.0	"								
2-Butanone	ND	5.0	"								
Benzene	ND	5.0	"								
Carbon tetrachloride	ND	5.0	"								
Chlorobenzene	ND	5.0	"								
Chloroform	ND	5.0	"								
Tetrachloroethylene	ND	5.0	"								
Trichloroethylene	ND	5.0	"								
Vinyl Chloride	ND	5.0	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.2*		*"*	*50.0*		*98.3*	*77-125*				
Surrogate: SURR: p-Bromofluorobenzene	*49.9*		*"*	*50.0*		*99.7*	*84.2-124*				
Surrogate: SURR: Toluene-d8	*48.9*		*"*	*50.0*		*97.8*	*85-120*				
LCS (BB41457-BS1) LCS								Prepared & Analyzed: 02/22/2024			
1,1-Dichloroethylene	49		ug/L	50.0		98.4	68-134				
1,2-Dichloroethane	47		"	50.0		95.0	69-133				
1,4-Dichlorobenzene	44		"	50.0		88.3	82-124				
2-Butanone	42		"	50.0		83.9	44-169				
Benzene	49		"	50.0		98.1	72-134				
Carbon tetrachloride	50		"	50.0		99.6	62-145				
Chlorobenzene	47		"	50.0		93.4	85-119				
Chloroform	48		"	50.0		95.1	74-131				
Tetrachloroethylene	35		"	50.0		70.1	78-133	Low Bias			
Trichloroethylene	47		"	50.0		94.9	81-125				
Vinyl Chloride	50		"	50.0		99.2	42-136				
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.5*		*"*	*50.0*		*98.9*	*77-125*				
Surrogate: SURR: p-Bromofluorobenzene	*48.8*		*"*	*50.0*		*97.7*	*84.2-124*				
Surrogate: SURR: Toluene-d8	*48.7*		*"*	*50.0*		*97.5*	*85-120*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41457 - EPA 5030B/1311											
LCS Dup (BB41457-BSD1) LCS Dup								Prepared & Analyzed: 02/22/2024			
1,1-Dichloroethylene	52		ug/L	50.0		103	68-134		4.74	30	
1,2-Dichloroethane	50		"	50.0		101	69-133		6.01	30	
1,4-Dichlorobenzene	48		"	50.0		95.3	82-124		7.69	30	
2-Butanone	41		"	50.0		82.1	44-169		2.24	30	
Benzene	53		"	50.0		105	72-134		6.87	30	
Carbon tetrachloride	54		"	50.0		107	62-145		7.31	30	
Chlorobenzene	50		"	50.0		99.3	85-119		6.19	30	
Chloroform	51		"	50.0		101	74-131		6.12	30	
Tetrachloroethylene	38		"	50.0		75.2	78-133	Low Bias	7.08	30	
Trichloroethylene	50		"	50.0		101	81-125		5.95	30	
Vinyl Chloride	50		"	50.0		100	42-136		0.903	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*48.2*		*"*	*50.0*		*96.3*	*77-125*				
Surrogate: SURR: p-Bromofluorobenzene	*49.1*		*"*	*50.0*		*98.2*	*84.2-124*				
Surrogate: SURR: Toluene-d8	*48.9*		*"*	*50.0*		*97.8*	*85-120*				
Leach Fluid Blank (BB41457- Leach Fluid Blank								Prepared & Analyzed: 02/22/2024			
1,1-Dichloroethylene	ND	50	ug/L								
1,2-Dichloroethane	ND	50	"								
1,4-Dichlorobenzene	ND	50	"								
2-Butanone	ND	50	"								
Benzene	ND	50	"								
Carbon tetrachloride	ND	50	"								
Chlorobenzene	ND	50	"								
Chloroform	ND	50	"								
Tetrachloroethylene	ND	50	"								
Trichloroethylene	ND	50	"								
Vinyl Chloride	ND	50	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.7*		*"*	*50.0*		*99.3*	*77-125*				
Surrogate: SURR: p-Bromofluorobenzene	*50.9*		*"*	*50.0*		*102*	*84.2-124*				
Surrogate: SURR: Toluene-d8	*48.8*		*"*	*50.0*		*97.5*	*85-120*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41457 - EPA 5030B/1311											
Matrix Spike (BB41457-MS1) Matrix Spike	*Source sample: 24B1030-01 (Matrix Spike)								Prepared: 02/22/2024 Analyzed: 02/23/2024		
1,1-Dichloroethylene	54		ug/L	50.0	0.0	107	47-150				
1,2-Dichloroethane	52		"	50.0	0.0	104	57-139				
1,4-Dichlorobenzene	47		"	50.0	0.0	94.1	69-125				
2-Butanone	40		"	50.0	0.0	79.7	42-153				
Benzene	53		"	50.0	0.0	106	55-139				
Carbon tetrachloride	57		"	50.0	0.0	113	51-147				
Chlorobenzene	50		"	50.0	0.0	101	75-120				
Chloroform	52		"	50.0	0.0	103	60-137				
Tetrachloroethylene	38		"	50.0	0.0	75.8	51-140				
Trichloroethylene	50		"	50.0	0.0	99.6	61-133				
Vinyl Chloride	52		"	50.0	0.0	104	25-140				
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.2*		*"*	*50.0*		*98.4*	*77-125*				
Surrogate: SURR: p-Bromofluorobenzene	*49.2*		*"*	*50.0*		*98.4*	*84.2-124*				
Surrogate: SURR: Toluene-d8	*48.8*		*"*	*50.0*		*97.5*	*85-120*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41301 - EPA 3510C/1311											
Blank (BB41301-BLK1) Blank								Prepared & Analyzed: 02/21/2024			
1,4-Dichlorobenzene	ND	10.0	ug/L								
2,4,5-Trichlorophenol	ND	10.0	"								
2,4,6-Trichlorophenol	ND	10.0	"								
2,4-Dinitrotoluene	ND	10.0	"								
2-Methylphenol	ND	10.0	"								
3- & 4-Methylphenols	ND	20.0	"								
Cresols, total	ND	30.0	"								
Hexachlorobenzene	ND	10.0	"								
Hexachlorobutadiene	ND	10.0	"								
Hexachloroethane	ND	10.0	"								
Nitrobenzene	ND	10.0	"								
Pentachlorophenol	ND	10.0	"								
Pyridine	ND	10.0	"								
Surrogate: SURR: 2-Fluorophenol	*67.7*		*"*	*100*		*67.7*	*10-90.9*				
Surrogate: SURR: Phenol-d6	*43.0*		*"*	*100*		*43.0*	*10-69.2*				
Surrogate: SURR: Nitrobenzene-d5	*47.1*		*"*	*50.0*		*94.1*	*19.2-141*				
Surrogate: SURR: 2-Fluorobiphenyl	*42.4*		*"*	*50.0*		*84.8*	*24.8-127*				
Surrogate: SURR: 2,4,6-Tribromophenol	*96.8*		*"*	*100*		*96.8*	*23-163*				
Surrogate: SURR: Terphenyl-d14	*50.6*		*"*	*50.0*		*101*	*25.8-110*				
LCS (BB41301-BS1) LCS								Prepared & Analyzed: 02/21/2024			
1,4-Dichlorobenzene	33.7	10.0	ug/L	50.0		67.5	42.7-102				
2,4,5-Trichlorophenol	39.7	10.0	"	50.0		79.4	33-141				
2,4,6-Trichlorophenol	39.0	10.0	"	50.0		78.0	35-138				
2,4-Dinitrotoluene	39.6	10.0	"	50.0		79.1	38.6-153				
2-Methylphenol	37.3	10.0	"	50.0		74.6	34.7-106				
3- & 4-Methylphenols	33.1	20.0	"	50.0		66.2	30.1-94				
Cresols, total	70.4	30.0	"	100		70.4	30.1-106				
Hexachlorobenzene	38.3	10.0	"	50.0		76.6	38.9-109				
Hexachlorobutadiene	29.7	10.0	"	50.0		59.4	24.3-132				
Hexachloroethane	32.9	10.0	"	50.0		65.9	36.7-102				
Nitrobenzene	42.3	10.0	"	50.0		84.6	33.3-122				
Pentachlorophenol	29.3	10.0	"	50.0		58.5	22.2-137				
Pyridine	13.2	10.0	"	70.0		18.9	14.9-73.5				
Surrogate: SURR: 2-Fluorophenol	*71.9*		*"*	*100*		*71.9*	*10-90.9*				
Surrogate: SURR: Phenol-d6	*50.8*		*"*	*100*		*50.8*	*10-69.2*				
Surrogate: SURR: Nitrobenzene-d5	*48.9*		*"*	*50.0*		*97.8*	*19.2-141*				
Surrogate: SURR: 2-Fluorobiphenyl	*44.8*		*"*	*50.0*		*89.6*	*24.8-127*				
Surrogate: SURR: 2,4,6-Tribromophenol	*98.0*		*"*	*100*		*98.0*	*23-163*				
Surrogate: SURR: Terphenyl-d14	*50.7*		*"*	*50.0*		*101*	*25.8-110*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41301 - EPA 3510C/1311											
LCS Dup (BB41301-BSD1) LCS Dup							Prepared & Analyzed: 02/21/2024				
1,4-Dichlorobenzene	33.8	10.0	ug/L	50.0		67.7	42.7-102		0.296	21.2	
2,4,5-Trichlorophenol	36.7	10.0	"	50.0		73.4	33-141		7.80	22.9	
2,4,6-Trichlorophenol	35.5	10.0	"	50.0		71.0	35-138		9.50	23.4	
2,4-Dinitrotoluene	37.1	10.0	"	50.0		74.2	38.6-153		6.47	24.8	
2-Methylphenol	34.4	10.0	"	50.0		68.9	34.7-106		8.03	25.9	
3- & 4-Methylphenols	30.2	20.0	"	50.0		60.5	30.1-94		8.97	24.9	
Cresols, total	64.7	30.0	"	100		64.7	30.1-106		8.47	25.9	
Hexachlorobenzene	36.9	10.0	"	50.0		73.8	38.9-109		3.83	27.1	
Hexachlorobutadiene	31.7	10.0	"	50.0		63.3	24.3-132		6.46	22	
Hexachloroethane	33.4	10.0	"	50.0		66.8	36.7-102		1.39	20.4	
Nitrobenzene	40.3	10.0	"	50.0		80.7	33.3-122		4.70	24.1	
Pentachlorophenol	27.3	10.0	"	50.0		54.6	22.2-137		6.93	36.9	
Pyridine	7.64	10.0	"	70.0		10.9	14.9-73.5	Low Bias	53.6	50	Non-dir.
Surrogate: SURR: 2-Fluorophenol	*66.7*		*"*	*100*		*66.7*	*10-90.9*				
Surrogate: SURR: Phenol-d6	*47.0*		*"*	*100*		*47.0*	*10-69.2*				
Surrogate: SURR: Nitrobenzene-d5	*47.6*		*"*	*50.0*		*95.2*	*19.2-141*				
Surrogate: SURR: 2-Fluorobiphenyl	*41.7*		*"*	*50.0*		*83.4*	*24.8-127*				
Surrogate: SURR: 2,4,6-Tribromophenol	*94.8*		*"*	*100*		*94.8*	*23-163*				
Surrogate: SURR: Terphenyl-d14	*49.4*		*"*	*50.0*		*98.7*	*25.8-110*				
Leach Fluid Blank (BB41301- Leach Fluid Blank							Prepared & Analyzed: 02/21/2024				
1,4-Dichlorobenzene	ND	10.0	ug/L								
2,4,5-Trichlorophenol	ND	10.0	"								
2,4,6-Trichlorophenol	ND	10.0	"								
2,4-Dinitrotoluene	ND	10.0	"								
2-Methylphenol	ND	10.0	"								
3- & 4-Methylphenols	ND	20.0	"								
Cresols, total	ND	30.0	"								
Hexachlorobenzene	ND	10.0	"								
Hexachlorobutadiene	ND	10.0	"								
Hexachloroethane	ND	10.0	"								
Nitrobenzene	ND	10.0	"								
Pentachlorophenol	ND	10.0	"								
Pyridine	ND	10.0	"								
Surrogate: SURR: 2-Fluorophenol	*65.4*		*"*	*100*		*65.4*	*10-90.9*				
Surrogate: SURR: Phenol-d6	*40.2*		*"*	*100*		*40.2*	*10-69.2*				
Surrogate: SURR: Nitrobenzene-d5	*44.7*		*"*	*50.0*		*89.4*	*19.2-141*				
Surrogate: SURR: 2-Fluorobiphenyl	*39.2*		*"*	*50.0*		*78.3*	*24.8-127*				
Surrogate: SURR: 2,4,6-Tribromophenol	*94.6*		*"*	*100*		*94.6*	*23-163*				
Surrogate: SURR: Terphenyl-d14	*52.6*		*"*	*50.0*		*105*	*25.8-110*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41301 - EPA 3510C/1311											
Matrix Spike (BB41301-MS1) Matrix Spike	*Source sample: 24B0975-02 (Matrix Spike)							Prepared & Analyzed: 02/21/2024			
1,4-Dichlorobenzene	42.0	10.0	ug/L	50.0	ND	84.0	26-95				
2,4,5-Trichlorophenol	43.6	10.0	"	50.0	ND	87.2	44-96				
2,4,6-Trichlorophenol	41.6	10.0	"	50.0	ND	83.2	39-107				
2,4-Dinitrotoluene	45.0	10.0	"	50.0	ND	89.9	26-120				
2-Methylphenol	41.5	10.0	"	50.0	ND	82.9	10-118				
3- & 4-Methylphenols	34.7	20.0	"	50.0	ND	69.4	10-102				
Cresols, total	76.2	30.0	"	100	ND	76.2	30-130				
Hexachlorobenzene	41.8	10.0	"	50.0	ND	83.6	24-120				
Hexachlorobutadiene	38.7	10.0	"	50.0	ND	77.4	26-98				
Hexachloroethane	41.9	10.0	"	50.0	ND	83.8	11-102				
Nitrobenzene	48.4	10.0	"	50.0	ND	96.8	25-107				
Pentachlorophenol	32.1	10.0	"	50.0	ND	64.2	10-181				
Pyridine	25.4	10.0	"	70.0	ND	36.3	10-73				
Surrogate: SURR: 2-Fluorophenol	*78.9*		*"*	*100*		*78.9*	*10-90.9*				
Surrogate: SURR: Phenol-d6	*57.0*		*"*	*100*		*57.0*	*10-69.2*				
Surrogate: SURR: Nitrobenzene-d5	*52.2*		*"*	*50.0*		*104*	*19.2-141*				
Surrogate: SURR: 2-Fluorobiphenyl	*47.6*		*"*	*50.0*		*95.3*	*24.8-127*				
Surrogate: SURR: 2,4,6-Tribromophenol	*108*		*"*	*100*		*108*	*23-163*				
Surrogate: SURR: Terphenyl-d14	*55.0*		*"*	*50.0*		*110*	*25.8-110*				
Batch BB41345 - EPA 3546- SVOA RCP											
Blank (BB41345-BLK1) Blank								Prepared: 02/21/2024 Analyzed: 02/22/2024			
1,2,4,5-Tetrachlorobenzene	ND	249	ug/kg wet								
1,2,4-Trichlorobenzene	ND	249	"								
1-Methylnaphthalene	ND	249	"								
2,4,5-Trichlorophenol	ND	249	"								
2,4,6-Trichlorophenol	ND	249	"								
2,4-Dichlorophenol	ND	249	"								
2,4-Dimethylphenol	ND	249	"								
2,4-Dinitrophenol	ND	249	"								
2,4-Dinitrotoluene	ND	249	"								
2,6-Dinitrotoluene	ND	249	"								
2-Chloronaphthalene	ND	249	"								
2-Chlorophenol	ND	249	"								
2-Methylnaphthalene	ND	249	"								
2-Methylphenol	ND	249	"								
2-Nitroaniline	ND	249	"								
2-Nitrophenol	ND	249	"								
3- & 4-Methylphenols	ND	249	"								
3,3-Dichlorobenzidine	ND	249	"								
3-Nitroaniline	ND	249	"								
4,6-Dinitro-2-methylphenol	ND	249	"								
4-Bromophenyl phenyl ether	ND	249	"								
4-Chloro-3-methylphenol	ND	249	"								
4-Chloroaniline	ND	249	"								
4-Chlorophenyl phenyl ether	ND	249	"								
4-Nitroaniline	ND	249	"								
4-Nitrophenol	ND	249	"								
Acenaphthene	ND	249	"								
Acenaphthylene	ND	249	"								

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41345 - EPA 3546- SVOA RCP											
Blank (BB41345-BLK1) Blank									Prepared: 02/21/2024 Analyzed: 02/22/2024		
Aniline	ND	249	ug/kg wet								
Anthracene	ND	249	"								
Benzo(a)anthracene	ND	249	"								
Benzo(a)pyrene	ND	249	"								
Benzo(b)fluoranthene	ND	249	"								
Benzo(g,h,i)perylene	ND	249	"								
Benzo(k)fluoranthene	ND	249	"								
Benzyl butyl phthalate	ND	249	"								
Bis(2-chloroethoxy)methane	ND	249	"								
Bis(2-chloroethyl)ether	ND	249	"								
Bis(2-chloroisopropyl)ether	ND	249	"								
Bis(2-ethylhexyl)phthalate	ND	249	"								
Carbazole	ND	249	"								
Chrysene	ND	249	"								
Dibenzo(a,h)anthracene	ND	249	"								
Dibenzofuran	ND	249	"								
Diethyl phthalate	ND	249	"								
Dimethyl phthalate	ND	249	"								
Di-n-butyl phthalate	ND	249	"								
Di-n-octyl phthalate	ND	249	"								
Fluoranthene	ND	249	"								
Fluorene	ND	249	"								
Hexachlorobenzene	ND	249	"								
Hexachlorobutadiene	ND	249	"								
Hexachlorocyclopentadiene	ND	498	"								
Hexachloroethane	ND	249	"								
Indeno(1,2,3-cd)pyrene	ND	249	"								
Isophorone	ND	249	"								
Naphthalene	ND	249	"								
Nitrobenzene	ND	249	"								
N-nitroso-di-n-propylamine	ND	249	"								
N-Nitrosodiphenylamine	ND	249	"								
Pentachloronitrobenzene	ND	249	"								
Pentachlorophenol	ND	249	"								
Phenanthrene	ND	249	"								
Phenol	ND	249	"								
Pyrene	ND	249	"								
Pyridine	ND	249	"								
Surrogate: SURR: 2-Fluorophenol	*2670*		*"*	*2490*		*108*	*30-130*				
Surrogate: SURR: Phenol-d6	*2580*		*"*	*2490*		*104*	*30-130*				
Surrogate: SURR: Nitrobenzene-d5	*1360*		*"*	*1240*		*110*	*30-130*				
Surrogate: SURR: 2-Fluorobiphenyl	*1200*		*"*	*1240*		*96.5*	*30-130*				
Surrogate: SURR: 2,4,6-Tribromophenol	*2440*		*"*	*2490*		*97.9*	*30-130*				
Surrogate: SURR: Terphenyl-d14	*1330*		*"*	*1240*		*107*	*30-130*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41345 - EPA 3546- SVOA RCP											
LCS (BB41345-BS1) LCS								Prepared: 02/21/2024 Analyzed: 02/22/2024			
1,2,4,5-Tetrachlorobenzene	720	249	ug/kg wet	1240		57.9	40-140				
1,2,4-Trichlorobenzene	752	249	"	1240		60.5	40-140				
1-Methylnaphthalene	762	249	"	1240		61.2	40-140				
2,4,5-Trichlorophenol	795	249	"	1240		63.9	30-130				
2,4,6-Trichlorophenol	761	249	"	1240		61.2	30-130				
2,4-Dichlorophenol	809	249	"	1240		65.0	30-130				
2,4-Dimethylphenol	766	249	"	1240		61.6	30-130				
2,4-Dinitrophenol	493	249	"	1240		39.6	30-130				
2,4-Dinitrotoluene	797	249	"	1240		64.1	40-140				
2,6-Dinitrotoluene	755	249	"	1240		60.7	40-140				
2-Chloronaphthalene	787	249	"	1240		63.2	40-140				
2-Chlorophenol	882	249	"	1240		70.9	30-130				
2-Methylnaphthalene	813	249	"	1240		65.4	40-140				
2-Methylphenol	921	249	"	1240		74.1	30-130				
2-Nitroaniline	887	249	"	1240		71.3	40-140				
2-Nitrophenol	840	249	"	1240		67.5	30-130				
3- & 4-Methylphenols	819	249	"	1240		65.8	40-140				
3,3-Dichlorobenzidine	560	249	"	1240		45.0	40-140				
3-Nitroaniline	731	249	"	1240		58.8	40-140				
4,6-Dinitro-2-methylphenol	776	249	"	1240		62.4	30-130				
4-Bromophenyl phenyl ether	756	249	"	1240		60.8	40-140				
4-Chloro-3-methylphenol	817	249	"	1240		65.7	30-130				
4-Chloroaniline	493	249	"	1240		39.6	40-140	Low Bias			
4-Chlorophenyl phenyl ether	725	249	"	1240		58.3	40-140				
4-Nitroaniline	789	249	"	1240		63.4	40-140				
4-Nitrophenol	693	249	"	1240		55.7	30-130				
Acenaphthene	788	249	"	1240		63.4	40-140				
Acenaphthylene	771	249	"	1240		62.0	40-140				
Aniline	1320	249	"	1240		107	40-140				
Anthracene	810	249	"	1240		65.2	40-140				
Benzo(a)anthracene	843	249	"	1240		67.8	40-140				
Benzo(a)pyrene	771	249	"	1240		62.0	40-140				
Benzo(b)fluoranthene	757	249	"	1240		60.9	40-140				
Benzo(g,h,i)perylene	767	249	"	1240		61.7	40-140				
Benzo(k)fluoranthene	828	249	"	1240		66.6	40-140				
Benzyl butyl phthalate	838	249	"	1240		67.4	40-140				
Bis(2-chloroethoxy)methane	929	249	"	1240		74.7	40-140				
Bis(2-chloroethyl)ether	2060	249	"	1240		165	40-140	High Bias			
Bis(2-chloroisopropyl)ether	1140	249	"	1240		91.8	40-140				
Bis(2-ethylhexyl)phthalate	806	249	"	1240		64.8	40-140				
Carbazole	814	249	"	1240		65.5	40-140				
Chrysene	818	249	"	1240		65.8	40-140				
Dibenzo(a,h)anthracene	767	249	"	1240		61.6	40-140				
Dibenzofuran	792	249	"	1240		63.7	40-140				
Diethyl phthalate	762	249	"	1240		61.3	40-140				
Dimethyl phthalate	775	249	"	1240		62.3	40-140				
Di-n-butyl phthalate	783	249	"	1240		63.0	40-140				
Di-n-octyl phthalate	760	249	"	1240		61.1	40-140				
Fluoranthene	770	249	"	1240		61.9	40-140				
Fluorene	770	249	"	1240		61.9	40-140				
Hexachlorobenzene	833	249	"	1240		67.0	40-140				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41345 - EPA 3546- SVOA RCP											
LCS (BB41345-BS1) LCS								Prepared: 02/21/2024 Analyzed: 02/22/2024			
Hexachlorobutadiene	733	249	ug/kg wet	1240		59.0	40-140				
Hexachlorocyclopentadiene	ND	498	"	1240			40-140	Low Bias			
Hexachloroethane	790	249	"	1240		63.5	40-140				
Indeno(1,2,3-cd)pyrene	809	249	"	1240		65.0	40-140				
Isophorone	942	249	"	1240		75.8	40-140				
Naphthalene	844	249	"	1240		67.8	40-140				
Nitrobenzene	929	249	"	1240		74.7	40-140				
N-nitroso-di-n-propylamine	897	249	"	1240		72.1	40-140				
N-Nitrosodiphenylamine	950	249	"	1240		76.4	40-140				
Pentachloronitrobenzene	729	249	"	1240		58.6	40-140				
Pentachlorophenol	592	249	"	1240		47.6	30-130				
Phenanthrene	818	249	"	1240		65.8	40-140				
Phenol	1040	249	"	1240		83.7	30-130				
Pyrene	893	249	"	1240		71.8	40-140				
Pyridine	708	249	"	1240		57.0	40-140				
Surrogate: SURR: 2-Fluorophenol	*1900*		*"*	*2490*		*76.3*	*30-130*				
Surrogate: SURR: Phenol-d6	*1940*		*"*	*2490*		*77.8*	*30-130*				
Surrogate: SURR: Nitrobenzene-d5	*931*		*"*	*1240*		*74.9*	*30-130*				
Surrogate: SURR: 2-Fluorobiphenyl	*820*		*"*	*1240*		*65.9*	*30-130*				
Surrogate: SURR: 2,4,6-Tribromophenol	*1710*		*"*	*2490*		*68.9*	*30-130*				
Surrogate: SURR: Terphenyl-d14	*861*		*"*	*1240*		*69.2*	*30-130*				
Matrix Spike (BB41345-MS1) Matrix Spike *Source sample: 24B1014-04 (CMS_WC_Fill2)								Prepared: 02/21/2024 Analyzed: 02/22/2024			
1,2,4,5-Tetrachlorobenzene	904	574	ug/kg dry	1440	ND	63.0	40-140				
1,2,4-Trichlorobenzene	882	574	"	1440	ND	61.4	40-140				
1-Methylnaphthalene	945	574	"	1440	ND	65.8	40-140				
2,4,5-Trichlorophenol	964	574	"	1440	ND	67.1	30-130				
2,4,6-Trichlorophenol	921	574	"	1440	ND	64.2	30-130				
2,4-Dichlorophenol	956	574	"	1440	ND	66.6	30-130				
2,4-Dimethylphenol	900	574	"	1440	ND	62.7	30-130				
2,4-Dinitrophenol	418	574	"	1440	ND	29.1	30-130	Low Bias			
2,4-Dinitrotoluene	1010	574	"	1440	ND	70.2	40-140				
2,6-Dinitrotoluene	930	574	"	1440	ND	64.8	40-140				
2-Chloronaphthalene	1000	574	"	1440	ND	69.7	40-140				
2-Chlorophenol	1040	574	"	1440	ND	72.2	30-130				
2-Methylnaphthalene	996	574	"	1440	ND	69.4	40-140				
2-Methylphenol	1070	574	"	1440	ND	74.4	30-130				
2-Nitroaniline	1120	574	"	1440	ND	77.7	40-140				
2-Nitrophenol	1010	574	"	1440	ND	70.0	30-130				
3- & 4-Methylphenols	1000	574	"	1440	ND	69.9	40-140				
3,3-Dichlorobenzidine	750	574	"	1440	ND	52.2	40-140				
3-Nitroaniline	1000	574	"	1440	ND	69.8	40-140				
4,6-Dinitro-2-methylphenol	927	574	"	1440	ND	64.6	30-130				
4-Bromophenyl phenyl ether	930	574	"	1440	ND	64.8	40-140				
4-Chloro-3-methylphenol	1010	574	"	1440	ND	70.1	30-130				
4-Chloroaniline	717	574	"	1440	ND	49.9	40-140				
4-Chlorophenyl phenyl ether	933	574	"	1440	ND	65.0	40-140				
4-Nitroaniline	1050	574	"	1440	ND	72.8	40-140				
4-Nitrophenol	996	574	"	1440	ND	69.4	30-130				
Acenaphthene	1000	574	"	1440	ND	69.8	40-140				
Acenaphthylene	959	574	"	1440	ND	66.8	40-140				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41345 - EPA 3546- SVOA RCP											
Matrix Spike (BB41345-MS1) Matrix Spike	*Source sample: 24B1014-04 (CMS_WC_Fill2)							Prepared: 02/21/2024 Analyzed: 02/22/2024			
Aniline	1610	574	ug/kg dry	1440	ND	112	40-140				
Anthracene	1030	574	"	1440	ND	72.0	40-140				
Benzo(a)anthracene	1100	574	"	1440	ND	76.6	40-140				
Benzo(a)pyrene	1030	574	"	1440	ND	71.6	40-140				
Benzo(b)fluoranthene	1010	574	"	1440	ND	70.2	40-140				
Benzo(g,h,i)perylene	999	574	"	1440	ND	69.6	40-140				
Benzo(k)fluoranthene	1010	574	"	1440	ND	70.6	40-140				
Benzyl butyl phthalate	1050	574	"	1440	ND	73.2	40-140				
Bis(2-chloroethoxy)methane	1130	574	"	1440	ND	79.0	40-140				
Bis(2-chloroethyl)ether	2490	574	"	1440	ND	174	40-140	High Bias			
Bis(2-chloroisopropyl)ether	1410	574	"	1440	ND	98.2	40-140				
Bis(2-ethylhexyl)phthalate	1030	574	"	1440	ND	71.8	40-140				
Carbazole	1080	574	"	1440	ND	74.9	40-140				
Chrysene	1090	574	"	1440	ND	75.7	40-140				
Dibenzo(a,h)anthracene	1000	574	"	1440	ND	69.8	40-140				
Dibenzofuran	985	574	"	1440	ND	68.6	40-140				
Diethyl phthalate	988	574	"	1440	ND	68.8	40-140				
Dimethyl phthalate	979	574	"	1440	ND	68.2	40-140				
Di-n-butyl phthalate	1020	574	"	1440	ND	71.0	40-140				
Di-n-octyl phthalate	956	574	"	1440	ND	66.6	40-140				
Fluoranthene	1070	574	"	1440	ND	74.4	40-140				
Fluorene	977	574	"	1440	ND	68.1	40-140				
Hexachlorobenzene	1060	574	"	1440	ND	73.9	40-140				
Hexachlorobutadiene	880	574	"	1440	ND	61.3	40-140				
Hexachlorocyclopentadiene	ND	1150	"	1440	ND		40-140	Low Bias			
Hexachloroethane	950	574	"	1440	ND	66.2	40-140				
Indeno(1,2,3-cd)pyrene	1040	574	"	1440	ND	72.3	40-140				
Isophorone	1080	574	"	1440	ND	75.2	40-140				
Naphthalene	1020	574	"	1440	ND	70.9	40-140				
Nitrobenzene	1150	574	"	1440	ND	79.8	40-140				
N-nitroso-di-n-propylamine	1090	574	"	1440	ND	76.2	40-140				
N-Nitrosodiphenylamine	1190	574	"	1440	ND	83.2	40-140				
Pentachloronitrobenzene	949	574	"	1440	ND	66.1	40-140				
Pentachlorophenol	752	574	"	1440	ND	52.4	30-130				
Phenanthrene	1060	574	"	1440	ND	73.9	40-140				
Phenol	1260	574	"	1440	ND	88.1	30-130				
Pyrene	1150	574	"	1440	ND	80.1	40-140				
Pyridine	764	574	"	1440	ND	53.2	40-140				
Surrogate: SURR: 2-Fluorophenol	*2280*		*"*	*2870*		*79.4*	*30-130*				
Surrogate: SURR: Phenol-d6	*2290*		*"*	*2870*		*79.9*	*30-130*				
Surrogate: SURR: Nitrobenzene-d5	*1150*		*"*	*1440*		*80.2*	*30-130*				
Surrogate: SURR: 2-Fluorobiphenyl	*1020*		*"*	*1440*		*71.1*	*30-130*				
Surrogate: SURR: 2,4,6-Tribromophenol	*2100*		*"*	*2870*		*73.1*	*30-130*				
Surrogate: SURR: Terphenyl-d14	*1100*		*"*	*1440*		*76.6*	*30-130*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41345 - EPA 3546- SVOA RCP											
Matrix Spike Dup (BB41345-M Matrix Spike Dup	*Source sample: 24B1014-04 (CMS_WC_Fill2)								Prepared: 02/21/2024 Analyzed: 02/22/2024		
1,2,4,5-Tetrachlorobenzene	880	574	ug/kg dry	1440	ND	61.3	40-140		2.70	30	
1,2,4-Trichlorobenzene	888	574	"	1440	ND	61.8	40-140		0.649	30	
1-Methylnaphthalene	976	574	"	1440	ND	68.0	40-140		3.23	30	
2,4,5-Trichlorophenol	1080	574	"	1440	ND	75.2	30-130		11.4	30	
2,4,6-Trichlorophenol	941	574	"	1440	ND	65.5	30-130		2.10	30	
2,4-Dichlorophenol	998	574	"	1440	ND	69.5	30-130		4.35	30	
2,4-Dimethylphenol	925	574	"	1440	ND	64.4	30-130		2.64	30	
2,4-Dinitrophenol	629	574	"	1440	ND	43.8	30-130		40.4	30	Non-dir.
2,4-Dinitrotoluene	1080	574	"	1440	ND	74.9	40-140		6.51	30	
2,6-Dinitrotoluene	992	574	"	1440	ND	69.1	40-140		6.45	30	
2-Chloronaphthalene	992	574	"	1440	ND	69.1	40-140		0.807	30	
2-Chlorophenol	1020	574	"	1440	ND	71.0	30-130		1.56	30	
2-Methylnaphthalene	1020	574	"	1440	ND	71.0	40-140		2.28	30	
2-Methylphenol	1070	574	"	1440	ND	74.4	30-130		0.00	30	
2-Nitroaniline	1150	574	"	1440	ND	79.8	40-140		2.64	30	
2-Nitrophenol	1020	574	"	1440	ND	71.2	30-130		1.70	30	
3- & 4-Methylphenols	1010	574	"	1440	ND	70.3	40-140		0.570	30	
3,3-Dichlorobenzidine	829	574	"	1440	ND	57.8	40-140		10.0	30	
3-Nitroaniline	1030	574	"	1440	ND	71.7	40-140		2.60	30	
4,6-Dinitro-2-methylphenol	980	574	"	1440	ND	68.2	30-130		5.54	30	
4-Bromophenyl phenyl ether	996	574	"	1440	ND	69.4	40-140		6.80	30	
4-Chloro-3-methylphenol	1110	574	"	1440	ND	77.3	30-130		9.77	30	
4-Chloroaniline	795	574	"	1440	ND	55.4	40-140		10.3	30	
4-Chlorophenyl phenyl ether	964	574	"	1440	ND	67.1	40-140		3.27	30	
4-Nitroaniline	1110	574	"	1440	ND	77.1	40-140		5.76	30	
4-Nitrophenol	1020	574	"	1440	ND	70.7	30-130		1.94	30	
Acenaphthene	983	574	"	1440	ND	68.5	40-140		1.85	30	
Acenaphthylene	1000	574	"	1440	ND	69.8	40-140		4.34	30	
Aniline	1540	574	"	1440	ND	107	40-140		4.16	30	
Anthracene	1090	574	"	1440	ND	75.6	40-140		4.88	30	
Benzo(a)anthracene	1180	574	"	1440	ND	82.5	40-140		7.44	30	
Benzo(a)pyrene	1100	574	"	1440	ND	76.3	40-140		6.38	30	
Benzo(b)fluoranthene	1040	574	"	1440	ND	72.7	40-140		3.58	30	
Benzo(g,h,i)perylene	1040	574	"	1440	ND	72.4	40-140		3.94	30	
Benzo(k)fluoranthene	1050	574	"	1440	ND	73.3	40-140		3.67	30	
Benzyl butyl phthalate	1170	574	"	1440	ND	81.3	40-140		10.5	30	
Bis(2-chloroethoxy)methane	1130	574	"	1440	ND	79.0	40-140		0.00	30	
Bis(2-chloroethyl)ether	2390	574	"	1440	ND	166	40-140	High Bias	4.19	30	
Bis(2-chloroisopropyl)ether	1400	574	"	1440	ND	97.8	40-140		0.327	30	
Bis(2-ethylhexyl)phthalate	1140	574	"	1440	ND	79.1	40-140		9.76	30	
Carbazole	1120	574	"	1440	ND	78.2	40-140		4.39	30	
Chrysene	1160	574	"	1440	ND	80.6	40-140		6.35	30	
Dibenzo(a,h)anthracene	1060	574	"	1440	ND	73.8	40-140		5.46	30	
Dibenzofuran	1030	574	"	1440	ND	72.0	40-140		4.78	30	
Diethyl phthalate	1050	574	"	1440	ND	72.9	40-140		5.76	30	
Dimethyl phthalate	1050	574	"	1440	ND	72.8	40-140		6.58	30	
Di-n-butyl phthalate	1100	574	"	1440	ND	76.9	40-140		8.01	30	
Di-n-octyl phthalate	1030	574	"	1440	ND	71.4	40-140		7.07	30	
Fluoranthene	1160	574	"	1440	ND	80.8	40-140		8.25	30	
Fluorene	1040	574	"	1440	ND	72.4	40-140		6.15	30	
Hexachlorobenzene	1100	574	"	1440	ND	76.6	40-140		3.51	30	

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41345 - EPA 3546- SVOA RCP											
Matrix Spike Dup (BB41345-M Matrix Spike Dup	*Source sample: 24B1014-04 (CMS_WC_Fill2)								Prepared: 02/21/2024 Analyzed: 02/22/2024		
Hexachlorobutadiene	861	574	ug/kg dry	1440	ND	60.0	40-140		2.11	30	
Hexachlorocyclopentadiene	ND	1150	"	1440	ND		40-140	Low Bias		30	
Hexachloroethane	914	574	"	1440	ND	63.7	40-140		3.82	30	
Indeno(1,2,3-cd)pyrene	1100	574	"	1440	ND	76.9	40-140		6.11	30	
Isophorone	1120	574	"	1440	ND	77.7	40-140		3.24	30	
Naphthalene	1020	574	"	1440	ND	70.9	40-140		0.00	30	
Nitrobenzene	1140	574	"	1440	ND	79.2	40-140		0.705	30	
N-nitroso-di-n-propylamine	1130	574	"	1440	ND	78.7	40-140		3.20	30	
N-Nitrosodiphenylamine	1230	574	"	1440	ND	85.4	40-140		2.66	30	
Pentachloronitrobenzene	1020	574	"	1440	ND	70.7	40-140		6.78	30	
Pentachlorophenol	824	574	"	1440	ND	57.4	30-130		9.04	30	
Phenanthrene	1120	574	"	1440	ND	78.3	40-140		5.78	30	
Phenol	1270	574	"	1440	ND	88.4	30-130		0.363	30	
Pyrene	1270	574	"	1440	ND	88.5	40-140		9.97	30	
Pyridine	805	574	"	1440	ND	56.1	40-140		5.27	30	
Surrogate: SURR: 2-Fluorophenol	*2220*		*"*	*2870*		*77.2*	*30-130*				
Surrogate: SURR: Phenol-d6	*2340*		*"*	*2870*		*81.6*	*30-130*				
Surrogate: SURR: Nitrobenzene-d5	*1170*		*"*	*1440*		*81.2*	*30-130*				
Surrogate: SURR: 2-Fluorobiphenyl	*1000*		*"*	*1440*		*69.8*	*30-130*				
Surrogate: SURR: 2,4,6-Tribromophenol	*2260*		*"*	*2870*		*78.6*	*30-130*				
Surrogate: SURR: Terphenyl-d14	*1180*		*"*	*1440*		*82.5*	*30-130*				

Organochlorine Pesticides by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41212 - EPA 3546 PCB-RCP											
Blank (BB41212-BLK1) Blank									Prepared: 02/20/2024 Analyzed: 02/22/2024		
4,4'-DDD	ND	0.00246	mg/kg wet								
4,4'-DDE	ND	0.00246	"								
4,4'-DDT	ND	0.00246	"								
Alachlor	ND	0.00246	"								
Aldrin	ND	0.00246	"								
alpha-BHC	ND	0.00246	"								
beta-BHC	ND	0.00246	"								
Chlordane, total	ND	0.0328	"								
delta-BHC	ND	0.00246	"								
Dieldrin	ND	0.00246	"								
Endosulfan I	ND	0.00246	"								
Endosulfan II	ND	0.00246	"								
Endosulfan sulfate	ND	0.00246	"								
Endrin	ND	0.00246	"								
Endrin aldehyde	ND	0.00246	"								
Endrin ketone	ND	0.00246	"								
gamma-BHC (Lindane)	ND	0.00246	"								
Heptachlor	ND	0.00246	"								
Heptachlor epoxide	ND	0.00246	"								
Methoxychlor	ND	0.0123	"								
Toxaphene	ND	0.124	"								
Surrogate: Decachlorobiphenyl	*0.113*		*"*	*0.0995*		*114*	*30-150*				
Surrogate: Tetrachloro-m-xylene	*0.0972*		*"*	*0.0995*		*97.7*	*30-150*				
LCS (BB41212-BS1) LCS									Prepared: 02/20/2024 Analyzed: 02/22/2024		
4,4'-DDD	0.0474	0.00246	mg/kg wet	0.0498		95.3	40-140				
4,4'-DDE	0.0493	0.00246	"	0.0498		99.0	40-140				
4,4'-DDT	0.0429	0.00246	"	0.0498		86.3	40-140				
Alachlor	0.0566	0.00246	"	0.0498		114	40-140				
Aldrin	0.0422	0.00246	"	0.0498		84.8	40-140				
alpha-BHC	0.0417	0.00246	"	0.0498		83.8	40-140				
beta-BHC	0.0383	0.00246	"	0.0498		77.0	40-140				
delta-BHC	0.0401	0.00246	"	0.0498		80.6	40-140				
Dieldrin	0.0501	0.00246	"	0.0498		101	40-140				
Endosulfan I	0.0534	0.00246	"	0.0498		107	40-140				
Endosulfan II	0.0552	0.00246	"	0.0498		111	40-140				
Endosulfan sulfate	0.0443	0.00246	"	0.0498		89.1	40-140				
Endrin	0.0449	0.00246	"	0.0498		90.2	40-140				
Endrin aldehyde	0.0473	0.00246	"	0.0498		95.0	40-140				
Endrin ketone	0.0476	0.00246	"	0.0498		95.6	40-140				
gamma-BHC (Lindane)	0.0420	0.00246	"	0.0498		84.5	40-140				
Heptachlor	0.0443	0.00246	"	0.0498		89.1	40-140				
Heptachlor epoxide	0.0514	0.00246	"	0.0498		103	40-140				
Methoxychlor	0.0593	0.0123	"	0.0498		119	40-140				
Surrogate: Decachlorobiphenyl	*0.106*		*"*	*0.0995*		*106*	*30-150*				
Surrogate: Tetrachloro-m-xylene	*0.0885*		*"*	*0.0995*		*89.0*	*30-150*				

Organochlorine Pesticides by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41212 - EPA 3546 PCB-RCP											
Matrix Spike (BB41212-MS1) Matrix Spike	*Source sample: 24B1014-03 (CMS_WC_Fill1)								Prepared: 02/20/2024 Analyzed: 02/22/2024		
4,4'-DDD	0.0499	0.00297	mg/kg dry	0.0601	ND	83.1	30-150				
4,4'-DDE	0.0489	0.00297	"	0.0601	ND	81.4	30-150				
4,4'-DDT	0.0507	0.00297	"	0.0601	ND	84.3	30-150				
Alachlor	0.0657	0.00297	"	0.0601	ND	109	30-150				
Aldrin	0.0441	0.00297	"	0.0601	ND	73.4	30-150				
alpha-BHC	0.0440	0.00297	"	0.0601	ND	73.2	30-150				
beta-BHC	0.0438	0.00297	"	0.0601	ND	72.9	30-150				
delta-BHC	0.0434	0.00297	"	0.0601	ND	72.2	30-150				
Dieldrin	0.0492	0.00297	"	0.0601	ND	81.8	30-150				
Endosulfan I	0.0513	0.00297	"	0.0601	ND	85.3	30-150				
Endosulfan II	0.0543	0.00297	"	0.0601	ND	90.4	30-150				
Endosulfan sulfate	0.0467	0.00297	"	0.0601	ND	77.8	30-150				
Endrin	0.0513	0.00297	"	0.0601	ND	85.4	30-150				
Endrin aldehyde	0.0501	0.00297	"	0.0601	ND	83.3	30-150				
Endrin ketone	0.0502	0.00297	"	0.0601	ND	83.6	30-150				
gamma-BHC (Lindane)	0.0448	0.00297	"	0.0601	ND	74.5	30-150				
Heptachlor	0.0474	0.00297	"	0.0601	ND	79.0	30-150				
Heptachlor epoxide	0.0505	0.00297	"	0.0601	ND	84.0	30-150				
Methoxychlor	0.0616	0.0149	"	0.0601	ND	102	30-150				
Surrogate: Decachlorobiphenyl	*0.103*		*"*	*0.120*		*85.3*	*30-150*				
Surrogate: Tetrachloro-m-xylene	*0.0956*		*"*	*0.120*		*79.6*	*30-150*				
Matrix Spike Dup (BB41212-M Matrix Spike Dup	*Source sample: 24B1014-03 (CMS_WC_Fill1)								Prepared: 02/20/2024 Analyzed: 02/22/2024		
4,4'-DDD	0.0391	0.00297	mg/kg dry	0.0601	ND	65.0	30-150		24.4	30	
4,4'-DDE	0.0415	0.00297	"	0.0601	ND	69.1	30-150		16.2	30	
4,4'-DDT	0.0387	0.00297	"	0.0601	ND	64.4	30-150		26.7	30	
Alachlor	0.0466	0.00297	"	0.0601	ND	77.6	30-150		33.9	30	Non-dir.
Aldrin	0.0362	0.00297	"	0.0601	ND	60.3	30-150		19.7	30	
alpha-BHC	0.0352	0.00297	"	0.0601	ND	58.6	30-150		22.2	30	
beta-BHC	0.0337	0.00297	"	0.0601	ND	56.1	30-150		26.1	30	
delta-BHC	0.0348	0.00297	"	0.0601	ND	57.9	30-150		22.0	30	
Dieldrin	0.0421	0.00297	"	0.0601	ND	70.1	30-150		15.4	30	
Endosulfan I	0.0443	0.00297	"	0.0601	ND	73.7	30-150		14.6	30	
Endosulfan II	0.0450	0.00297	"	0.0601	ND	74.9	30-150		18.8	30	
Endosulfan sulfate	0.0370	0.00297	"	0.0601	ND	61.5	30-150		23.3	30	
Endrin	0.0397	0.00297	"	0.0601	ND	66.1	30-150		25.5	30	
Endrin aldehyde	0.0422	0.00297	"	0.0601	ND	70.2	30-150		17.0	30	
Endrin ketone	0.0407	0.00297	"	0.0601	ND	67.8	30-150		20.9	30	
gamma-BHC (Lindane)	0.0359	0.00297	"	0.0601	ND	59.7	30-150		22.1	30	
Heptachlor	0.0366	0.00297	"	0.0601	ND	61.0	30-150		25.7	30	
Heptachlor epoxide	0.0432	0.00297	"	0.0601	ND	71.8	30-150		15.6	30	
Methoxychlor	0.0546	0.0149	"	0.0601	ND	90.9	30-150		12.0	30	
Surrogate: Decachlorobiphenyl	*0.0905*		*"*	*0.120*		*75.3*	*30-150*				
Surrogate: Tetrachloro-m-xylene	*0.0784*		*"*	*0.120*		*65.2*	*30-150*				

Organochlorine Pesticides by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41570 - EPA 3510C/1311											
Blank (BB41570-BLK1) Blank									Prepared: 02/24/2024 Analyzed: 02/26/2024		
Chlordane, total	ND	0.200	ug/L								
Endrin	ND	0.0400	"								
gamma-BHC (Lindane)	ND	0.0400	"								
Heptachlor	ND	0.0400	"								
Heptachlor epoxide	ND	0.0400	"								
Methoxychlor	ND	0.0400	"								
Toxaphene	ND	1.00	"								
Surrogate: Decachlorobiphenyl	*1.81*		"	*2.00*		*90.6*	*30-120*				
Surrogate: Tetrachloro-m-xylene	*1.81*		"	*2.00*		*90.7*	*30-120*				
LCS (BB41570-BS1) LCS									Prepared: 02/24/2024 Analyzed: 02/26/2024		
Endrin	1.00	0.0400	ug/L	1.00		100	40-120				
gamma-BHC (Lindane)	0.905	0.0400	"	1.00		90.5	40-120				
Heptachlor	1.13	0.0400	"	1.00		113	40-120				
Heptachlor epoxide	0.944	0.0400	"	1.00		94.4	40-120				
Methoxychlor	1.14	0.0400	"	1.00		114	40-120				
Surrogate: Decachlorobiphenyl	*1.96*		"	*2.00*		*98.2*	*30-120*				
Surrogate: Tetrachloro-m-xylene	*1.97*		"	*2.00*		*98.7*	*30-120*				
LCS Dup (BB41570-BSD1) LCS Dup									Prepared: 02/24/2024 Analyzed: 02/26/2024		
Endrin	0.926	0.0400	ug/L	1.00		92.6	40-120		8.01	30	
gamma-BHC (Lindane)	0.848	0.0400	"	1.00		84.8	40-120		6.49	30	
Heptachlor	1.05	0.0400	"	1.00		105	40-120		7.18	30	
Heptachlor epoxide	0.884	0.0400	"	1.00		88.4	40-120		6.57	30	
Methoxychlor	1.06	0.0400	"	1.00		106	40-120		7.22	30	
Surrogate: Decachlorobiphenyl	*1.75*		"	*2.00*		*87.3*	*30-120*				
Surrogate: Tetrachloro-m-xylene	*1.78*		"	*2.00*		*89.0*	*30-120*				

Organochlorine Pesticides by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41570 - EPA 3510C/1311											
Leach Fluid Blank (BB41570- Leach Fluid Blank									Prepared: 02/24/2024 Analyzed: 02/26/2024		
Chlordane, total	ND	0.286	ug/L								
Endrin	ND	0.0571	"								
gamma-BHC (Lindane)	ND	0.0571	"								
Heptachlor	ND	0.0571	"								
Heptachlor epoxide	ND	0.0571	"								
Methoxychlor	ND	0.0571	"								
Toxaphene	ND	1.43	"								
Surrogate: Decachlorobiphenyl	*2.67*		*"*	*2.86*		*93.3*	*30-120*				
Surrogate: Tetrachloro-m-xylene	*2.53*		*"*	*2.86*		*88.5*	*30-120*				
Matrix Spike (BB41570-MS1) Matrix Spike *Source sample: 24B1030-01 (Matrix Spike)									Prepared: 02/24/2024 Analyzed: 02/26/2024		
Endrin	1.38	0.0500	ug/L	1.25	ND	110	30-150				
gamma-BHC (Lindane)	1.13	0.0500	"	1.25	ND	90.1	30-150				
Heptachlor	1.46	0.0500	"	1.25	ND	117	30-150				
Heptachlor epoxide	1.24	0.0500	"	1.25	ND	99.6	30-150				
Methoxychlor	1.65	0.0500	"	1.25	ND	132	30-150				
Surrogate: Decachlorobiphenyl	*2.52*		*"*	*2.50*		*101*	*30-120*				
Surrogate: Tetrachloro-m-xylene	*2.12*		*"*	*2.50*		*84.9*	*30-120*				
Batch BC41705 - EPA 3510C/1312											
Blank (BC41705-BLK1) Blank									Prepared: 03/24/2024 Analyzed: 03/27/2024		
4,4'-DDD	ND	0.00100	ug/L								
4,4'-DDE	ND	0.00100	"								
4,4'-DDT	ND	0.00100	"								
Surrogate: Decachlorobiphenyl	*0.167*		*"*	*0.200*		*83.7*	*30-150*				
Surrogate: Tetrachloro-m-xylene	*0.123*		*"*	*0.200*		*61.3*	*30-150*				

Organochlorine Pesticides by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BC41705 - EPA 3510C/1312											
LCS (BC41705-BS1) LCS									Prepared: 03/24/2024 Analyzed: 03/27/2024		
4,4'-DDD	0.0753	0.00100	ug/L	0.100		75.3	40-140				
4,4'-DDE	0.0694	0.00100	"	0.100		69.4	40-140				
4,4'-DDT	0.0863	0.00100	"	0.100		86.3	40-140				
Surrogate: Decachlorobiphenyl	*0.172*		"	*0.200*		*85.8*	*30-150*				
Surrogate: Tetrachloro-m-xylene	*0.140*		"	*0.200*		*70.0*	*30-150*				
LCS Dup (BC41705-BSD1) LCS Dup									Prepared: 03/24/2024 Analyzed: 03/27/2024		
4,4'-DDD	0.0718	0.00100	ug/L	0.100		71.8	40-140		4.69	30	
4,4'-DDE	0.0655	0.00100	"	0.100		65.5	40-140		5.76	30	
4,4'-DDT	0.0820	0.00100	"	0.100		82.0	40-140		5.06	30	
Surrogate: Decachlorobiphenyl	*0.174*		"	*0.200*		*87.1*	*30-150*				
Surrogate: Tetrachloro-m-xylene	*0.131*		"	*0.200*		*65.6*	*30-150*				
Leach Fluid Blank (BC41705- Leach Fluid Blank									Prepared: 03/24/2024 Analyzed: 03/27/2024		
4,4'-DDD	ND	0.00111	ug/L								
4,4'-DDE	ND	0.00111	"								
4,4'-DDT	ND	0.00111	"								
Surrogate: Decachlorobiphenyl	*0.196*		"	*0.222*		*88.1*	*30-150*				
Surrogate: Tetrachloro-m-xylene	*0.142*		"	*0.222*		*63.9*	*30-150*				
Matrix Spike (BC41705-MS1) Matrix Spike *Source sample: 24B1014-02 (CMS_WC_Subbase)									Prepared: 03/24/2024 Analyzed: 03/27/2024		
4,4'-DDD	0.0735	0.00111	ug/L	0.111	ND	66.2	30-150				
4,4'-DDE	0.0569	0.00111	"	0.111	ND	51.2	30-150				
4,4'-DDT	0.0737	0.00111	"	0.111	ND	66.4	30-150				
Surrogate: Decachlorobiphenyl	*0.0660*		"	*0.222*		*29.7*	*30-150*				
Surrogate: Tetrachloro-m-xylene	*0.130*		"	*0.222*		*58.4*	*30-150*				

Polychlorinated Biphenyls by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41212 - EPA 3546 PCB-RCP											
Blank (BB41212-BLK2) Blank									Prepared: 02/20/2024 Analyzed: 02/21/2024		
Aroclor 1016	ND	0.0250	mg/kg wet								
Aroclor 1221	ND	0.0250	"								
Aroclor 1232	ND	0.0250	"								
Aroclor 1242	ND	0.0250	"								
Aroclor 1248	ND	0.0250	"								
Aroclor 1254	ND	0.0250	"								
Aroclor 1260	ND	0.0250	"								
Aroclor 1262	ND	0.0250	"								
Aroclor 1268	ND	0.0250	"								
Total PCBs	ND	0.0250	"								
Surrogate: Tetrachloro-m-xylene	*0.112*		"	*0.100*		*112*	*30-150*				
Surrogate: Decachlorobiphenyl	*0.0945*		"	*0.100*		*94.5*	*30-150*				
LCS (BB41212-BS2) LCS									Prepared: 02/20/2024 Analyzed: 02/21/2024		
Aroclor 1016	0.519	0.0249	mg/kg wet	0.498		104	40-140				
Aroclor 1260	0.608	0.0249	"	0.498		122	40-140				
Surrogate: Tetrachloro-m-xylene	*0.0985*		"	*0.0995*		*99.0*	*30-150*				
Surrogate: Decachlorobiphenyl	*0.0881*		"	*0.0995*		*88.5*	*30-150*				
Matrix Spike (BB41212-MS2) Matrix Spike *Source sample: 24B1014-03 (CMS_WC_Fill1)									Prepared: 02/20/2024 Analyzed: 02/21/2024		
Aroclor 1016	0.209	0.0300	mg/kg dry	0.601	ND	34.9	40-140	Low Bias			
Aroclor 1260	0.411	0.0300	"	0.601	ND	68.3	40-140				
Surrogate: Tetrachloro-m-xylene	*0.0998*		"	*0.120*		*83.0*	*30-150*				
Surrogate: Decachlorobiphenyl	*0.0841*		"	*0.120*		*70.0*	*30-150*				
Matrix Spike Dup (BB41212-M Matrix Spike Dup *Source sample: 24B1014-03 (CMS_WC_Fill1)									Prepared: 02/20/2024 Analyzed: 02/21/2024		
Aroclor 1016	0.141	0.0300	mg/kg dry	0.601	ND	23.4	40-140	Low Bias	39.2	50	
Aroclor 1260	0.233	0.0300	"	0.601	ND	38.8	40-140	Low Bias	55.2	50	Non-dir.
Surrogate: Tetrachloro-m-xylene	*0.0673*		"	*0.120*		*56.0*	*30-150*				
Surrogate: Decachlorobiphenyl	*0.0529*		"	*0.120*		*44.0*	*30-150*				

Chlorinated Herbicides by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41205 - EPA 3550C/8151A											
Blank (BB41205-BLK1) Blank								Prepared & Analyzed: 02/20/2024			
2,4,5-T	ND	0.0199	mg/kg wet								
2,4,5-TP (Silvex)	ND	0.0199	"								
2,4-D	ND	0.0199	"								
Dalapon	ND	0.0199	"								
Dicamba	ND	0.0199	"								
Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)	*0.414*		*"*	*0.415*		*99.6*	*21-150*				
LCS (BB41205-BS1) LCS								Prepared & Analyzed: 02/20/2024			
2,4,5-T	0.0922	0.0199	mg/kg wet	0.133		69.4	10-120				
2,4,5-TP (Silvex)	0.110	0.0199	"	0.133		82.5	10-120				
2,4-D	0.104	0.0199	"	0.133		78.1	10-118				
Dalapon	0.115	0.0199	"	0.133		86.2	10-128				
Dicamba	0.105	0.0199	"	0.133		79.4	12-117				
Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)	*0.337*		*"*	*0.415*		*81.2*	*21-150*				
Matrix Spike (BB41205-MS1) Matrix Spike *Source sample: 24B1018-01 (Matrix Spike)								Prepared & Analyzed: 02/20/2024			
2,4,5-T	0.120	0.0221	mg/kg dry	0.147	ND	81.3	10-120				
2,4,5-TP (Silvex)	0.120	0.0221	"	0.147	ND	81.3	10-120				
2,4-D	0.144	0.0221	"	0.147	ND	98.1	10-118				
Dalapon	0.135	0.0221	"	0.147	ND	91.9	10-150				
Dicamba	0.123	0.0221	"	0.147	ND	83.7	12-117				
Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)	*0.411*		*"*	*0.460*		*89.4*	*21-150*				
Matrix Spike Dup (BB41205-M Matrix Spike Dup *Source sample: 24B1018-01 (Matrix Spike Dup)								Prepared & Analyzed: 02/20/2024			
2,4,5-T	0.111	0.0224	mg/kg dry	0.149	ND	74.4	10-120		7.52	35	
2,4,5-TP (Silvex)	0.114	0.0224	"	0.149	ND	76.2	10-120		5.03	35	
2,4-D	0.127	0.0224	"	0.149	ND	85.0	10-118		13.0	35	
Dalapon	0.121	0.0224	"	0.149	ND	81.3	10-150		11.0	35	
Dicamba	0.111	0.0224	"	0.149	ND	74.4	12-117		10.5	35	
Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)	*0.395*		*"*	*0.466*		*84.8*	*21-150*				

Chlorinated Herbicides by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41337 - EPA 3535A/1311											
Blank (BB41337-BLK1) Blank								Prepared & Analyzed: 02/21/2024			
2,4,5-TP (Silvex)	ND	5.00	ug/L								
2,4-D	ND	5.00	"								
Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)	*50.5*		*"*	*125*		*40.4*	*10-150*				
LCS (BB41337-BS1) LCS								Prepared & Analyzed: 02/21/2024			
2,4,5-TP (Silvex)	21.2	5.00	ug/L	40.0		53.1	10-139				
2,4-D	23.8	5.00	"	40.0		59.4	10-140				
Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)	*48.2*		*"*	*125*		*38.6*	*10-150*				
Leach Fluid Blank (BB41337- Leach Fluid Blank								Prepared & Analyzed: 02/21/2024			
2,4,5-TP (Silvex)	ND	5.00	ug/L								
2,4-D	ND	5.00	"								
Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)	*33.8*		*"*	*125*		*27.0*	*10-150*				
Matrix Spike (BB41337-MS1) Matrix Spike *Source sample: 24B1014-03 (CMS_WC_Fill1)								Prepared & Analyzed: 02/21/2024			
2,4,5-TP (Silvex)	23.5	5.00	ug/L	40.0	ND	58.8	20-140				
2,4-D	28.5	5.00	"	40.0	ND	71.2	20-140				
Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)	*32.2*		*"*	*125*		*25.8*	*10-150*				

Gas Chromatography/Flame Ionization Detector - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41209 - EPA 3550C											
Blank (BB41209-BLK1) Blank								Prepared & Analyzed: 02/20/2024			
Total Petroleum Hydrocarbons-DRO	ND	9.90	mg/kg wet								
Surrogate: Triacontane	*7.41*		*"*	*9.90*		*74.8*	*30-150*				
LCS (BB41209-BS1) LCS								Prepared & Analyzed: 02/20/2024			
Total Petroleum Hydrocarbons-DRO	149	9.90	mg/kg wet	170		87.6	40-140				
Surrogate: Triacontane	*7.68*		*"*	*9.90*		*77.6*	*30-150*				
Matrix Spike (BB41209-MS1) Matrix Spike *Source sample: 24B1014-01 (CMS_WC_Topsoil)								Prepared & Analyzed: 02/20/2024			
Total Petroleum Hydrocarbons-DRO	177	12.6	mg/kg dry	217	15.6	74.4	30-150				
Surrogate: Triacontane	*9.54*		*"*	*12.6*		*75.7*	*30-150*				
Matrix Spike Dup (BB41209-M Matrix Spike Dup *Source sample: 24B1014-01 (CMS_WC_Topsoil)								Prepared & Analyzed: 02/20/2024			
Total Petroleum Hydrocarbons-DRO	179	12.9	mg/kg dry	221	15.6	73.9	30-150		1.17	30	
Surrogate: Triacontane	*9.34*		*"*	*12.9*		*72.7*	*30-150*				
Batch BB41246 - EPA 5035A											
Blank (BB41246-BLK1) Blank								Prepared & Analyzed: 02/20/2024			
Total Petroleum Hydrocarbons-GRO	ND	80.0	mg/kg wet								
Surrogate: SURR: p-Bromofluorobenzene	*180*		*ug/L*	*200*		*89.9*	*52-146*				
Duplicate (BB41246-DUP1) Duplicate *Source sample: 24B1014-01 (CMS_WC_Topsoil)								Prepared & Analyzed: 02/20/2024			
Total Petroleum Hydrocarbons-GRO	ND	107	mg/kg dry		ND					30	
Surrogate: SURR: p-Bromofluorobenzene	*182*		*ug/L*	*200*		*90.9*	*52-146*				
Reference (BB41246-SRM1) Reference								Prepared & Analyzed: 02/20/2024			
Total Petroleum Hydrocarbons-GRO	133	20.0	mg/kg wet	178		74.6	24.9-150				
Surrogate: SURR: p-Bromofluorobenzene	*189*		*ug/L*	*200*		*94.6*	*52-146*				

Metals by ICP - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41454 - EPA 3050B											
Blank (BB41454-BLK1) Blank									Prepared: 02/22/2024 Analyzed: 02/26/2024		
Antimony	ND	1.74	mg/kg wet								
Arsenic	ND	1.04	"								
Barium	ND	1.73	"								
Beryllium	ND	0.0350	"								
Cadmium	ND	0.208	"								
Chromium	ND	0.348	"								
Copper	ND	1.39	"								
Lead	ND	0.348	"								
Nickel	ND	0.692	"								
Selenium	ND	1.74	"								
Silver	ND	0.350	"								
Thallium	ND	1.74	"								
Vanadium	ND	0.692	"								
Zinc	ND	1.73	"								
Duplicate (BB41454-DUP1) Duplicate *Source sample: 24B1034-13 (Duplicate)									Prepared: 02/22/2024 Analyzed: 02/26/2024		
Antimony	ND	2.69	mg/kg dry		ND					35	
Arsenic	11.3	1.62	"		12.4				8.58	35	
Barium	1090	2.69	"		412				90.5	35	Non-dir.
Beryllium	0.296	0.0543	"		0.182				47.8	35	Non-dir.
Cadmium	1.65	0.323	"		0.364				128	35	Non-dir.
Chromium	56.8	0.539	"		43.3				27.0	35	
Copper	90.4	2.16	"		79.8				12.5	35	
Lead	492	0.539	"		276				56.4	35	Non-dir.
Nickel	32.9	1.07	"		29.1				12.3	35	
Selenium	4.59	2.69	"		6.85				39.4	35	Non-dir.
Silver	ND	0.543	"		ND					35	
Thallium	ND	2.69	"		ND					35	
Vanadium	18.7	1.07	"		11.6				47.0	35	Non-dir.
Zinc	530	2.68	"		294				57.3	35	Non-dir.

Metals by ICP - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41454 - EPA 3050B											
Matrix Spike (BB41454-MS1) Matrix Spike	*Source sample: 24B1034-13 (Matrix Spike)								Prepared: 02/22/2024 Analyzed: 02/26/2024		
Antimony	16.9	2.69	mg/kg dry	32.3	ND	52.1	75-125	Low Bias			
Arsenic	275	1.62	"	259	12.4	102	75-125				
Barium	1510	2.69	"	259	412	423	75-125	High Bias			
Beryllium	7.04	0.0543	"	6.47	0.182	106	75-125				
Cadmium	8.50	0.323	"	6.47	0.364	126	75-125	High Bias			
Chromium	85.9	0.539	"	25.9	43.3	165	75-125	High Bias			
Copper	123	2.16	"	32.3	79.8	135	75-125	High Bias			
Lead	667	0.539	"	64.7	276	605	75-125	High Bias			
Nickel	104	1.07	"	64.7	29.1	115	75-125				
Selenium	255	2.69	"	259	6.85	95.9	75-125				
Silver	5.65	0.543	"	6.47	ND	87.4	75-125				
Thallium	242	2.69	"	259	ND	93.5	75-125				
Vanadium	87.5	1.07	"	64.7	11.6	117	75-125				
Zinc	748	2.68	"	64.7	294	702	75-125	High Bias			
Post Spike (BB41454-PS1) Post Spike	*Source sample: 24B1034-13 (Post Spike)								Prepared: 02/22/2024 Analyzed: 02/26/2024		
Antimony	0.270		ug/mL	0.250	0.0174	101	75-125				
Arsenic	2.29		mg/L	2.00	0.096	110	75-125				
Barium	5.40		"	2.00	3.18	111	75-125				
Beryllium	0.0559		ug/mL	0.0500	0.00140	109	75-125				
Cadmium	0.056		mg/L	0.0500	0.003	106	75-125				
Chromium	0.550		"	0.200	0.335	107	75-125				
Copper	0.917		"	0.250	0.617	120	75-125				
Lead	2.66		"	0.500	2.13	106	75-125				
Nickel	0.772		"	0.500	0.225	110	75-125				
Selenium	2.21		"	2.00	0.053	108	75-125				
Silver	0.036		"	0.0500	-0.013	71.9	75-125	Low Bias			
Thallium	2.02		ug/mL	2.00	0.0142	100	75-125				
Vanadium	0.635		"	0.500	0.0897	109	75-125				
Zinc	2.77		mg/L	0.500	2.27	99.4	75-125				

Metals by ICP - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41454 - EPA 3050B											
Reference (BB41454-SRM1) Reference								Prepared: 02/22/2024 Analyzed: 02/26/2024			
Antimony	63.6	1.74	mg/kg wet	276		23.0	2.17-110				
Arsenic	174	1.04	"	223		78.0	70.4-102.2				
Barium	400	1.73	"	445		90.0	77.9-110.8				
Beryllium	106	0.0350	"	131		80.9	76.3-107.6				
Cadmium	181	0.208	"	226		79.9	88.1-104.9	Low Bias			
Chromium	198	0.348	"	230		86.0	73.5-107				
Copper	223	1.39	"	239		93.4	75.3-105.9				
Lead	224	0.348	"	275		81.3	74.2-108				
Nickel	101	0.692	"	118		85.5	72-104.2				
Selenium	116	1.74	"	137		84.3	70.9-108.8				
Silver	62.3	0.350	"	75.3		82.7	72-110.1				
Thallium	131	1.74	"	165		79.6	70.9-106.7				
Vanadium	151	0.692	"	183		82.3	67.2-106.6				
Zinc	237	1.73	"	286		82.7	75.9-111.5				
Batch BB41510 - EPA 3015A/1311											
Blank (BB41510-BLK1) Blank								Prepared: 02/23/2024 Analyzed: 02/26/2024			
Arsenic	ND	0.017	mg/L								
Barium	ND	0.028	"								
Cadmium	ND	0.003	"								
Chromium	ND	0.006	"								
Lead	ND	0.006	"								
Selenium	ND	0.028	"								
Silver	ND	0.006	"								
LCS (BB41510-BS1) LCS								Prepared: 02/23/2024 Analyzed: 02/26/2024			
Arsenic	2.15		ug/mL	2.00		108	80-120				
Barium	2.21		"	2.00		110	80-120				
Cadmium	0.058		"	0.0500		115	80-120				
Chromium	0.217		"	0.200		109	80-120				
Lead	0.539		"	0.500		108	80-120				
Selenium	2.18		"	2.00		109	80-120				
Silver	0.050		"	0.0500		99.8	80-120				

Metals by ICP - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41510 - EPA 3015A/1311											
Duplicate (BB41510-DUP1) Duplicate	*Source sample: 24B0975-02 (Duplicate)								Prepared: 02/23/2024 Analyzed: 02/26/2024		
Arsenic	ND	0.375	mg/L		ND					20	
Barium	ND	0.625	"		ND					20	
Cadmium	ND	0.075	"		ND					20	
Chromium	ND	0.125	"		ND					20	
Lead	ND	0.125	"		ND					20	
Selenium	ND	0.625	"		ND					20	
Silver	ND	0.125	"		ND					20	
Leach Fluid Blank (BB41510- Leach Fluid Blank									Prepared: 02/23/2024 Analyzed: 02/26/2024		
Arsenic	ND	0.375	mg/L								
Barium	ND	0.625	"								
Cadmium	ND	0.075	"								
Chromium	ND	0.125	"								
Lead	ND	0.125	"								
Selenium	ND	0.625	"								
Silver	ND	0.125	"								
Matrix Spike (BB41510-MS1) Matrix Spike	*Source sample: 24B0975-02 (Matrix Spike)								Prepared: 02/23/2024 Analyzed: 02/26/2024		
Arsenic	54.5	0.375	mg/L	50.0	ND	109	75-125				
Barium	55.9	0.625	"	50.0	ND	112	75-125				
Cadmium	1.45	0.075	"	1.25	ND	116	75-125				
Chromium	5.47	0.125	"	5.00	ND	109	75-125				
Lead	13.5	0.125	"	12.5	ND	108	75-125				
Selenium	56.1	0.625	"	50.0	ND	112	75-125				
Silver	1.24	0.125	"	1.25	ND	99.4	75-125				
Post Spike (BB41510-PS1) Post Spike	*Source sample: 24B0975-02 (Post Spike)								Prepared: 02/23/2024 Analyzed: 02/26/2024		
Arsenic	2.38		ug/mL	2.00	-0.011	119	75-125				
Barium	2.36		"	2.00	0.022	117	75-125				
Cadmium	0.062		"	0.0500	0.0004	124	75-125				
Chromium	0.235		"	0.200	-0.00005	118	75-125				
Lead	0.590		"	0.500	-0.001	118	75-125				
Selenium	2.38		"	2.00	-0.003	119	75-125				
Silver	0.045		"	0.0500	-0.0002	90.9	75-125				

Mercury by EPA 7000/200 Series Methods - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte		Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41400 - EPA SW846-7470A												
Blank (BB41400-BLK1)	Blank								Prepared & Analyzed: 02/22/2024			
Mercury		ND	0.000200	mg/L								
Blank (BB41400-BLK2)	Blank								Prepared & Analyzed: 02/22/2024			
Mercury		ND	0.000200	mg/L								
LCS (BB41400-BS1)	LCS								Prepared & Analyzed: 02/22/2024			
Mercury		0.00185	0.000200	mg/L	0.00200		92.6	80-120				
LCS (BB41400-BS2)	LCS								Prepared & Analyzed: 02/22/2024			
Mercury		0.00180	0.000200	mg/L	0.00200		89.8	80-120				
Leach Fluid Blank (BB41400-	Leach Fluid Blank								Prepared & Analyzed: 02/22/2024			
Mercury		ND	0.000200	mg/L								
Batch BB41621 - EPA 7473 soil												
Blank (BB41621-BLK1)	Blank								Prepared & Analyzed: 02/26/2024			
Mercury		ND	0.0300	mg/kg wet								
Duplicate (BB41621-DUP1)	Duplicate	*Source sample: 24B1004-01 (Duplicate)							Prepared & Analyzed: 02/26/2024			
Mercury		0.599	0.0359	mg/kg dry		0.0411				174	35	Non-dir.
Matrix Spike (BB41621-MS1)	Matrix Spike	*Source sample: 24B1004-01 (Matrix Spike)							Prepared & Analyzed: 02/26/2024			
Mercury		0.0166		mg/kg	0.500	0.0343	NR	75-125	Low Bias			
Reference (BB41621-SRM1)	Reference								Prepared & Analyzed: 02/26/2024			
Mercury		22.979		mg/kg	18.2		126	59.9-140.1				

Mercury by EPA 7000/200 Series Methods - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41622 - EPA 7473 soil											
Blank (BB41622-BLK1) Blank								Prepared & Analyzed: 02/26/2024			
Mercury	ND	0.0300	mg/kg wet								
Duplicate (BB41622-DUP1) Duplicate	*Source sample: 24B1014-03 (CMS_WC_Fill1)							Prepared & Analyzed: 02/26/2024			
Mercury	ND	0.0362	mg/kg dry		ND					35	
Matrix Spike (BB41622-MS1) Matrix Spike	*Source sample: 24B1014-03 (CMS_WC_Fill1)							Prepared & Analyzed: 02/26/2024			
Mercury	0.490		mg/kg	0.500	0.0208	93.9	75-125				
Reference (BB41622-SRM1) Reference								Prepared & Analyzed: 02/26/2024			
Mercury	24.706		mg/kg	18.2		136	59.9-140.1				

Wet Chemistry Parameters - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte		Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41261 - Analysis Preparation												
Duplicate (BB41261-DUP1)	Duplicate	*Source sample: 24B0994-23 (Duplicate)								Prepared & Analyzed: 02/20/2024		
pH		7.81	0.500	pH units		7.99				2.28	10	
Batch BB41292 - Analysis Preparation												
Blank (BB41292-BLK1)	Blank									Prepared & Analyzed: 02/21/2024		
Conductivity		ND	1.000	umhos/cm								
LCS (BB41292-BS1)	LCS									Prepared & Analyzed: 02/21/2024		
Conductivity		102.6		umhos/cm	100		103	90-110				
Duplicate (BB41292-DUP1)	Duplicate	*Source sample: 24B1075-06 (Duplicate)								Prepared & Analyzed: 02/21/2024		
Conductivity		3.793	1.000	umhos/cm		3.796				0.0791	5	
Batch BB41391 - EPA SW846-3060												
Blank (BB41391-BLK1)	Blank									Prepared & Analyzed: 02/22/2024		
Chromium, Hexavalent		ND	0.500	mg/kg wet								
Duplicate (BB41391-DUP1)	Duplicate	*Source sample: 24B1005-02 (Duplicate)								Prepared & Analyzed: 02/22/2024		
Chromium, Hexavalent		ND	0.530	mg/kg dry		ND					35	
Matrix Spike (BB41391-MS1)	Matrix Spike	*Source sample: 24B1005-02 (Matrix Spike)								Prepared & Analyzed: 02/22/2024		
Chromium, Hexavalent		17.6	0.530	mg/kg dry	21.2	ND	83.2	75-125				
Matrix Spike Dup (BB41391-M	Matrix Spike Dup	*Source sample: 24B1005-02 (Matrix Spike Dup)								Prepared & Analyzed: 02/22/2024		
Chromium, Hexavalent		18.5	0.530	mg/kg dry	21.2	ND	87.2	75-125		4.69	200	

Wet Chemistry Parameters - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte		Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41391 - EPA SW846-3060												
Reference (BB41391-SRM1)	Reference									Prepared & Analyzed: 02/22/2024		
Chromium, Hexavalent		116		mg/L	126		92.4	33.1-203.9				
Batch BB41433 - Analysis Preparation												
Duplicate (BB41433-DUP1)	Duplicate	*Source sample: 24B1014-05 (CMS_WC_Fill3)								Prepared & Analyzed: 02/22/2024		
pH		5.05	0.500	pH units		5.15				1.96	10	
Batch BB41466 - EPA SW846-3060												
Blank (BB41466-BLK1)	Blank									Prepared & Analyzed: 02/22/2024		
Chromium, Hexavalent		ND	0.500	mg/kg wet								
Duplicate (BB41466-DUP1)	Duplicate	*Source sample: 24B1014-04 (CMS_WC_Fill2)								Prepared & Analyzed: 02/22/2024		
Chromium, Hexavalent		ND	0.577	mg/kg dry		ND					35	
Matrix Spike (BB41466-MS1)	Matrix Spike	*Source sample: 24B1014-04 (CMS_WC_Fill2)								Prepared & Analyzed: 02/22/2024		
Chromium, Hexavalent		6.28	0.577	mg/kg dry	23.1	ND	27.2	75-125	Low Bias			
Matrix Spike Dup (BB41466-M	Matrix Spike Dup	*Source sample: 24B1014-04 (CMS_WC_Fill2)								Prepared & Analyzed: 02/22/2024		
Chromium, Hexavalent		5.13	0.577	mg/kg dry	23.1	ND	22.2	75-125	Low Bias	20.2	200	
Reference (BB41466-SRM1)	Reference									Prepared & Analyzed: 02/22/2024		
Chromium, Hexavalent		144		mg/L	126		114	33.1-203.9				
Batch BB41551 - Analysis Preparation												
Blank (BB41551-BLK1)	Blank									Prepared & Analyzed: 02/23/2024		
Reactivity - Cyanide		ND	0.250	mg/kg								

Wet Chemistry Parameters - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41552 - Analysis Preparation											
Blank (BB41552-BLK1) Blank									Prepared & Analyzed: 02/23/2024		
Reactivity - Sulfide	ND	15.0	mg/kg								
Duplicate (BB41552-DUP1) Duplicate	*Source sample: 24B1116-10 (Duplicate)								Prepared & Analyzed: 02/23/2024		
Reactivity - Sulfide	72.0	15.0	mg/kg		56.0				25.0	50	

Miscellaneous Physical Parameters - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41485 - % Solids Prep											
Duplicate (BB41485-DUP1) Duplicate	*Source sample: 24B1006-03 (Duplicate)							Prepared & Analyzed: 02/23/2024			
% Solids	88.3	0.100	%		88.3				0.0203	20	

Leachate Preparations - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BB41238 - EPA SW 846-1311 TCLP ZHE for VOA											
Blank (BB41238-BLK1) TCLP LEACH BLANK									Prepared: 02/20/2024 Analyzed: 02/21/2024		
TCLP Extraction	Completed	1.00	N/A								
Batch BB41239 - EPA SW 846-1311 TCLP extr. for SVOA/PEST/HERBS											
Blank (BB41239-BLK1) TCLP LEACH BLANK									Prepared: 02/20/2024 Analyzed: 02/21/2024		
TCLP Extraction	Completed	1.00	N/A								
Batch BB41240 - EPA SW 846-1311 TCLP ext. for metals											
Blank (BB41240-BLK1) TCLP LEACH BLANK									Prepared: 02/20/2024 Analyzed: 02/21/2024		
TCLP Extraction	Completed	1.00	N/A								
Batch BC41538 - EPA SW 846-1312 SPLP Extraction for BNA/Pest/Herb											
Blank (BC41538-BLK1) SPLP LEACH BLANK									Prepared: 03/21/2024 Analyzed: 03/22/2024		
SPLP Extraction	Completed	1.00	N/A								

Volatile Analysis Sample Containers

Lab ID	Client Sample ID	Volatile Sample Container
24B1014-01	CMS_WC_Topsoil	40mL Vial with Stir Bar-Cool 4° C
24B1014-01	CMS_WC_Topsoil	40mL Pre-Tared Vial + 10mL MeOH; Cool to 4° C
24B1014-02	CMS_WC_Subbase	40mL Vial with Stir Bar-Cool 4° C
24B1014-02	CMS_WC_Subbase	40mL Pre-Tared Vial + 10mL MeOH; Cool to 4° C
24B1014-03	CMS_WC_Fill1	40mL Vial with Stir Bar-Cool 4° C
24B1014-03	CMS_WC_Fill1	40mL Pre-Tared Vial + 10mL MeOH; Cool to 4° C
24B1014-03	CMS_WC_Fill1	1000mL WM Clear Glass Cool to 4° C
24B1014-04	CMS_WC_Fill2	40mL Vial with Stir Bar-Cool 4° C
24B1014-04	CMS_WC_Fill2	40mL Pre-Tared Vial + 10mL MeOH; Cool to 4° C
24B1014-05	CMS_WC_Fill3	40mL Vial with Stir Bar-Cool 4° C
24B1014-05	CMS_WC_Fill3	40mL Pre-Tared Vial + 10mL MeOH; Cool to 4° C

Sample and Data Qualifiers Relating to This Work Order

J	Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.
CCVE	The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
EXT-COMP	Completed
EXT-Temp	Extraction temperture slightly exceeded acceptance range.
HT-04	NON-COMPLIANT- Client requested analysis be conducted outside of holding times.
CAL-E	The value reported is ESTIMATED. The value is estimated due to its behavior during initial calibration (average Rf>20%)
IGN-01	Non-Ignit.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data are acceptable.
M-CCV1	The recovery for this element in the Continuing Calibration Verification (CCV) was outside the 90-110% recovery criteria.
M-DUPS	The RPD between the native sample and the duplicate is outside of limits due to sample non-homogeneity
M-SPKM	The spike recovery is not within acceptance windows due to sample non-homogeneity, or matrix interference.
PF-01	No Free Liquid
QL-02	This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
QM-01	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
ICVE	The value reported is ESTIMATED. The value is estimated due to its behavior during initial calibration verification (recovery exceeded 30% of expected value).

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis

Low Bias — Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.

High Bias — High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.

Non-Dir. — Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

Revision Description: modified the version to include DDD

York Analytical Laboratories, Inc.
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132-02 89th Ave, Queens, NY 11418
clientservices@yorklab.com
www.yorklab.com

Field Chain-of-Custody Record

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document.
This document serves as your written authorization for YORK to proceed with the analyses requested below.
Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 24B1014

Page 1 of 1

YOUR Information	Report To:	Invoice To:
Company: Langan CT	Company: same	Company: same
Address: 555 Long Wharf Dr New Haven CT 06511	Address:	Address:
Phone: 860-930-3689	Phone:	Phone:
Contact: Elyssa Schwendy	Contact:	Contact:
E-mail: eschwendy@langan.com	E-mail:	E-mail:

YOUR Project Number: 140265101

YOUR Project Name: Central Middle School

YOUR PO#:

Turn-Around Time

RUSH - Next Day	
RUSH - Two Day	
RUSH - Three Day	
RUSH - Four Day	
Standard (5-7 Day)	X

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Samples Collected by: (print your name above and sign below)
Elyssa Schwendy
Elyssa S Schwendy

Matrix Codes
S - soil / solid
GW - groundwater
DW - drinking water
WW - wastewater
O - Oil ⋮ Other

Samples From

New York	
New Jersey	
Connecticut	X
Pennsylvania	
Other	

Report / EDD Type (circle selections)
Summary Report | QA Report | NY ASP A Package | NY ASP B Package | CT RCP | CT RCP DQA/DUE | NJDEP Reduced Deliverables | NJDKQP | Standard Excel EDD | EQuIS (Standard) | NYSDEC EQuIS | NJDEP SRP HazSite | Other:

YORK Reg. Comp.
Compared to the following Regulation(s): (please fill in)
PMC
DEC

Sample Identification	Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
CMS_WC_Topsoil	S	19 Feb 24 1130	All samples: VOCs, TPH-DRO and GRO, SVOCs, pest, herb, PCBs, RCRA-8 metals, antimony, copper, beryllium, chromium iii and vi, nickel, thallium, vanadium, zinc, conductivity, ignitability, pH, paint filter, reactivity (cyanide + sulfide)	
CMS-WC-Subbase	↓	1115		
CMS-WC-Fill1		1120		
CMS-WC-Fill2		1145		
CMS-WC-Fill3		1200	CMS_WC_Fill1: above plus full TCLP	

Comments: RLs must meet CTDEEP RSRs
please cc hgriesbach@langan.com
HOLD for additional analysis

Preservation: (check all that apply)
HCl ___ MeOH ___ HNO_3 ___ H_2SO_4 ___ NaOH ___ ZnAc ___
Ascorbic Acid ___ Other: ___

Special Instruction
Field Filtered ___
Lab to Filter ___

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
Langan	19 Feb 24 @ 1325				
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by	Date/Time / Temp. Received at Lab
					2/19/24 13:25 / 2.3 Degrees C

APPENDIX D – STORMWATER POLLUTION AND CONTROL PLAN

STORMWATER POLLUTION CONTROL PLAN

Greenwich Central Middle School

PROJECT NAME AND LOCATION:

Name:	Greenwich Central Middle School Greenwich, Connecticut
Latitude:	41° 2' 53.52"
Longitude:	-73° 36' 20.52"

OPERATOR:

Owner:	Greenwich Public Schools 290 Greenwich Avenue Greenwich, CT 06830
Construction Manager:	Turner Construction

Stormwater Pollution Control Plan

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Appendices

Appendix A General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

Appendix B Site Location Maps and Soils Information

Appendix C Project Development Plans

Appendix D Stormwater Management Calculations

Appendix E Stormwater Monitoring Report

Appendix F Spill Incident Reporting Forms

Appendix G Maintenance and Inspection Reporting Forms

Appendix H Notice of Termination Form

Section 1
Certification Statements

1.1 Permittee

Certification Statement

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute.

Signature: _____ Date: _____

Name: _____Title:_____

Company name: _____

Address: _____

Telephone:_____ Fax: _____

Project Site: 9 Indian Rock Lane Greenwich, CT

1.2 Contractors and Subcontractors

Each Contractor and Subcontractor that will perform actions on the site which may reasonably be expected to cause or have the potential to cause pollution of the waters of the State shall sign the certification statement included in this plan.

Certification Statement

"I certify under penalty of the law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that as a contractor or subcontractor at the site, I am authorized by this general permit, and must comply with the terms and conditions of this general permit, including but not limited to the requirements of the Stormwater Pollution Control Plan prepared for the site."

CONTRACTOR CERTIFICATION

Signature: _____ Date: _____

Name: _____Title:_____

Company name: _____

Address: _____

Telephone:_____ Fax: _____

Project Site: 9 Indian Rock Lane Greenwich, CT

SUBCONTRACTOR CERTIFICATION

Signature: _____ Date: _____

Name: _____Title:_____

Company name: _____

Address: _____

Telephone:_____ Fax: _____

Project Site: 9 Indian Rock Lane Greenwich, CT

SUBCONTRACTOR CERTIFICATION

Signature: _____ Date: _____

Name: _____Title:_____

Company name: _____

Address: _____

Telephone:_____ Fax: _____

Project Site: 9 Indian Rock Lane Greenwich, CT

SUBCONTRACTOR CERTIFICATION

Signature: _____ Date: _____

Name: _____Title:_____

Company name: _____

Address: _____

Telephone:_____ Fax: _____

Project Site: 9 Indian Rock Lane Greenwich, CT

SUBCONTRACTOR CERTIFICATION

Signature: _____ Date: _____

Name: _____Title:_____

Company name: _____

Address: _____

Telephone:_____ Fax: _____

Project Site: 9 Indian Rock Lane Greenwich, CT

Section 2
Stormwater Pollution Control Plan Elements

This Stormwater Pollution Control Plan (SWPCP or Plan) has been in support of the Connecticut Department of Energy and Environmental Protection's (DEEP) General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (General Permit) in connection with proposed 9 Indian Rock Lane Middle School Project in Greenwich, Connecticut. This SWPCP is prepared consistent with Section 5(b) of the General Permit. A copy of the General Permit is attached as **Appendix A**.

2.1 Project Description

The Town of Greenwich proposes to demolish the existing and construct a new Middle School at 9 Indian Rock Lane in Greenwich, Connecticut. The property is bordered to the north by residential properties, west by Stanwich Road, south by Indian Rock Lane, and east by Orchard Street. The 75,877 square foot existing school building is located on a 21.7-acre site, with access to the facility located off of Indian Rock Lane. The site is partially wooded and features two baseball fields, tennis courts, the existing school building, and paved parking and access driveways.

Tighe & Bond evaluated existing (pre-development) and proposed (post-development) hydrologic conditions for the site. Stormwater runoff from the developed site (the proposed building, driveways and site) will primarily be collected in a stormwater management system which will be conveyed to the existing on-site municipal drainage system. The proposed project will reduce peak flow and volumetric runoff compared to existing conditions for various storm events. The stormwater management system will treat the water quality flow and remove total suspended solids. The stormwater management system has been designed to mitigate stormwater runoff and the proposed project will not increase peak flow or exacerbate flooding conditions downstream.

Water and fire protection services will be provided by the Aquarion Water Company, with existing hydrants located around the site. Electric and tel-data services will be underground and provided by Eversource and Cablevision, respectively. Gas service will be supplied by Connecticut Natural Gas. Sanitary sewer services will connect to the existing sanitary sewer main in Indian Rock Lane.

To address soil erosion and sedimentation control, the project will adhere to the guidelines outlined in the Connecticut Department of Energy and Environmental Protection's 2002 Guidelines for Soil Erosion and Sediment Control. Various erosion control measures, including catch basin protection, silt sacks, haybale barriers, and sediment removal, will be implemented and maintained throughout the construction period.

The proposed scope of work is shown on the following drawings and can be found in **Appendix C**:

G-001	COVER SHEET
C-001	GENERAL NOTES, STANDARD ABBREVIATIONS, AND LEGEND
C-002	OVERALL SITE EXISTING CONDITIONS
C-003-006	EXISTING CONDITIONS PART PLAN

C-101	OVERALL SITE STORMWATER MANAGEMENT PLAN
C-102-107	SITE STORMWATER MANAGEMENT PART PLAN
C-301	OVERALL SITE UTILITY PLAN
C-302-305	SITE UTILITY PART PLAN
C-306	SANITARY SEWER EXISTING PLAN AND PROFILE
C-307	SANITARY SEWER PROPOSED PLAN AND PROFILE
C-401	OVERALL PHASE 1 DEMOLITION, ENABLING AND SITE SOIL EROSION AND SEDIMENTATION CONTROL PLAN
C-402-405	PHASE 1 DEMOLITION, ENABLING AND SITE SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN
C-406	PHASE 1 IMPROVED CONDITIONS SOIL EROSION AND SEDIMENTATION CONTROL PLAN
C-407-410	PHASE 1 IMPROVED CONDITIONS SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN
C-411	PHASE 2 DEMOLITION SOIL EROSION AND SEDIMENTATION CONTROL PLAN
C-412-416	PHASE 2 DEMOLITION SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN
C-417	SOIL EROSION AND SEDIMENTATION CONTROL NOTES, CONSTRUCTION SEQUENCE AND DETAILS - 1
C-418	SITE SOIL EROSION AND SEDIMENTATION CONTROL DETAILS - 2
C-501	SITE STORMWATER MANAGEMENT DETAILS - 1
C-502	SITE STORMWATER MANAGEMENT DETAILS - 2
C-503	SITE STORMWATER MANAGEMENT DETAILS - 3
C-504	SITE STORMWATER MANAGEMENT DETAILS - 4
C-505	SITE STORMWATER MANAGEMENT DETAILS - 5
C-506	SANITARY SEWER DETAILS
C-507	SITE UTILITY DETAILS - 1
C-508	SITE UTILITY DETAILS - 2

2.2 Estimated Total Site Area and Total Disturbed Area

The overall subject parcel is approximately 21.7 acres in size. The area to be disturbed by project construction activity is approximately 14.81 acres.

2.3 Soils & Geology

The U.S. Department of Agriculture's National Resource Conservation Service (NRCS) Web Soil Survey indicates the following soil types are present on the site:

Udorthents-Urban Land Complex (306): This consists of moderately well drained to excessively well drained soils that have been disturbed by cutting or filling, and areas that are covered by buildings and pavement.

Udorthents-Smoothed (308): This consists of soils having a layer that is moderately well drained and depth to bedrock is deep.

Charlton-Chatfield Complex (73C): 0 to 15 percent slopes: This consists of coarse-loamy melt-out till derived from granite, gneiss, and/or schist.

Charlton-Chatfield Complex (73E): 15 to 45 percent slopes: This consists of coarse-loamy melt-out till derived from granite and/or schist and gneiss.

2.4 Runoff Coefficient

The weighted runoff coefficient "C" for the completed project will be 0.56.

2.5 Site Map

See Figure 1 in **Appendix B** for site location mapping and see **Appendix C** for detailed site maps that include the existing conditions and proposed work.

2.6 Name of Receiving Water

The site storm water collection systems discharge out to drainage system in Indian Rock Lane.

2.7 Extent of Wetlands

There are no wetlands present on site.

2.8 Sequence of Major Activities

It is expected that the project will begin in fall of 2024 and be completed in the summer of 2027. The following narrative describes the sequence of construction activities.

2.8.1 Construction Sequence

Phase 1:

1. The inspecting engineer and arborist shall meet with the contractor and owner to review the sediment and erosion control (S&E Plan) and discuss any modifications to construction sequence or S&E Plan.
2. Install tree protection and trim limbs that may be damaged by construction equipment.
3. Install construction fence and access gates as shown on the plans.
4. Install tracking pad and establish staging area with trailers.
5. Construct temporary sediment basin and required piping as shown on the plans.
6. Install silt fence and construction fence as shown on the plans.
7. Install remaining sediment and erosion controls.
8. Relocate and install the existing concrete infiltration system as shown on the plans.
9. Demolish any structures or underground utilities as specified on the plans.
10. Perform general earthwork for the building. Excavate and install foundation.
11. Construct the building and backfill the foundation as soon as possible.

12. Install underground stormwater system.
13. Install sanitary sewer, water, gas, electric, and telephone utilities.
14. Rough grade driveway and install driveway base.
15. Install bituminous concrete binder course.
16. Seed & mulch disturbed areas and install landscaping as soon as possible.
17. Maintain all sediment and erosion controls in an effective condition during the phase 1 construction period.
18. Clean effected portion of on & off site roads and driveways.
19. Remove accumulated silt and debris from catch basins, area drain sumps & pipes of effected storm drains.
20. Remove accumulated sediment from effected areas and dispose of legally.
21. Remove temporary sediment and erosion controls and tree protection.

Phase 2:

1. The inspecting engineer and arborist shall meet with the contractor and owner to review the sediment and erosion control (S&E plan) and discuss any modifications to construction sequence or S&E plan.
2. Install tree protection and trim limbs that may be damaged by construction equipment.
3. Install construction fence and access gates as shown on the plans.
4. Install tracking pad and establish staging area with trailers.
5. Install silt fence and construction fence as shown on the plans.
6. Install remaining sediment and erosion controls.
7. Demolish existing building.
8. Demolish any structures or underground utilities as specified on the plans.
9. Perform general earthwork for the building. Excavate and install foundation.
10. Rough grade the ball fields.
11. Install stormwater, sanitary sewer, water, gas, electric, and telephone utilities.
12. Rough grade driveway and install driveway base.
13. Install bituminous concrete binder course.
14. Seed & mulch disturbed areas and install landscaping as soon as possible.
15. Maintain all sediment and erosion controls in an effective condition during the phase 2 construction period.
16. Clean effected portion of on & off site roads and driveways.
17. Remove accumulated silt and debris from catch basins, area drain sumps & pipes of effected storm drains.
18. Remove accumulated sediment from effected areas and dispose of legally.
19. Remove temporary sediment and erosion controls and tree protection.

2.9 Stormwater Management

2.9.1 Existing Site Hydrology and Hydraulic Analysis

The site is approximately 21.7 acres and is located at 9 Indian Rock Lane in Greenwich, Connecticut. Indian Rock Lane borders the southern property boundary. The site is within the R-12 Zone. The existing building is 75,877 SF and has parking areas and driveways to the south and southwest of the facility. There are four tennis courts to the East and a large field to the North, which includes one baseball field and one softball field.

The existing site generally slopes from north to south. The site currently drains overland to multiple yard drains and catch basins located in lawn, hardscape, and paved areas. Approximately 22% of the site is impervious.

A hydrologic study was performed for the existing conditions. The site was delineated into two watershed areas. These watersheds are summarized below:

- **EX-WS-A** drains from the northern border of the property towards the southern border of the property.

- **EX-WS-B** drains from a high point on the western side of the site to the northeast towards the existing building.

See **WM-01** in **Appendix C** for the Existing Conditions Watersheds and Design Points.

Impervious and pervious areas, weighted curve numbers, and times of concentration were calculated for each watershed and inputted into a hydrologic model to determine the project's peak flow and volume as part of the comparative hydrology analysis.

A breakdown of exiting watershed areas, existing volumetric hydrographs, and existing watershed map are included in **Appendix C** of this report.

2.9.2 Proposed Site Hydrology and Hydraulic Analysis

The proposed development consists of a new school building located in the northern portion of the site in the approximate location of the existing baseball and softball fields. The existing school building will be maintained until the construction of the new facility is complete. Utilizing the existing curb cut on Indian Rock Lane and a portion of the driveway located on the southeastern side of the site, a new driveway is proposed to run north along the eastern side of the existing school facility. A new driveway will connect to Orchard Street at the northeast corner of the site and will provide for a separate bus loop. Sidewalks are proposed along both sides of the new driveway from Indian Rock Lane to the existing tennis courts, which are to remain. A bituminous concrete fire lane is proposed to run along the rear of the proposed building that will tie-back into the proposed site drives at the northeastern and southwestern edges of the proposed school. As a result of the proposed site development, there will be a temporary increase in impervious area of approximately 5.9 acres immediately following construction of the proposed building and site as the existing school, driveways, and parking areas will remain in place until the new school opens. Once construction of the new facility is complete, the existing building will be demolished, and the new athletic fields will be constructed in the existing building's approximate location. Once the existing school and associated hardscape is demolished, the increase in impervious area will be 1.8 acres as compared to the pre-development

conditions—with 31% of the site being impervious area under proposed conditions, as compared to 22% under existing conditions.

The site drainage and stormwater management systems are designed to mitigate both the temporary and permanent increase in peak flows from the increase in impervious surfaces. In both conditions, storm water runoff will discharge following the same general drainage patterns as in the existing condition. All surface runoff collected by the proposed drainage system will continue to flow from the north to the southeast and discharge out to drainage system in Indian Rock Lane. Prior to discharge, the stormwater will be treated on-site to meet the Town of Greenwich's Stormwater Drainage Manual.

The proposed Stormwater Management system will utilize a series of porous pavement parking spaces, catch basins, roof leaders, underground detention, rain gardens, and detention basins. The Stormwater Management System will maintain existing drainage patterns while incorporating Low Impact Development (LID) principles described in Section 4.4 of the Greenwich Drainage Manual.

Runoff from the front of the proposed buildings roof will discharge to hydrodynamic separator and then be collected through a series of drains and conveyed to the proposed subsurface infiltration system adjacent to the building to the north. Runoff from the rear of the proposed buildings roof will be discharged to hydrodynamic separators and then collected through a series of roof drains to porous pavement sections along the emergency driveway. Stormwater runoff from proposed parking and driveway area will be collected by a series of rain gardens, porous pavement, deep-sump, hooded catch basins and conveyed to the existing on-site 36" storm sewer. A summary of the square foot and cubic footage of the LID techniques is outlined below in Table 1.

Based upon the impervious area of the site of 266,525 square feet, the minimum required area of treatment using LID techniques is 60% or 159,915 square feet. The impervious area treated with LID techniques is 161,595 square feet, which occurs in the LIDs listed in Table 1 below. The remaining areas of the site are proposed to bypass the infiltration systems and continue to drain in a similar fashion to existing conditions.

Table 1 – Summary of LID Measures

LID	Area (sf)	Volume (cf)	Impervious (sf)
Porous Pavement	**183,363**	**16,162**	**144,506**
PP-D1H	36,236	2,605	33,409
PP-D2A	16,536	2,051	14,098
PP-D2B	1,998	573	928
PP-D2C	6,166	576	5,364
PP-D2D	6,023	576	5,350
PP-D2E	6,016	590	5,312

PP-D2F	5,836	576	5,304
PP-D2G	3,234	732	1,833
PP-02	18,123	1,063	14,849
PP-03	3,180	1,292	23,042
PP-04	9,547	778	6,988
PP-05	9,002	874	6,727
PP-06	7,420	934	6,549
PP-07	27,046	2,942	14,753
Detention Basin 01	**60,955**	**0**	**0**
Detention Basin 02	**10,676**	**490**	**0**
Detention Basin 03	**13,682**	**579**	**0**
Rain Garden 03	**5,425**	**1,854**	**3,093**
Rain Garden 04	**10,548**	**613**	**8,740**
Rain Garden 06	**4,026**	**251**	**2,854**
Rain Garden 07	**4,109**	**243**	**2,402**

The system has been designed to accommodate the water quality volume in addition to reducing peak flows for the 2-, 5- and 10-year storm events. Table 2 below shows the peak discharge from existing to proposed for the 1-, 2-, 5-, 10-, 25-, 50- and 100-year storm events.

Table 2 – Summary of Stormwater Peak Discharge (cfs)

Discharge Location	Condition	1	5	10	25	50	100
Point of Comparison A	Existing	16.09	25.18	33.71	48.09	61.86	79.13
	Proposed	11.10	18.79	26.48	39.61	52.13	66.53

The stormwater management system has been designed to meet the Town of Greenwich Stream Chanel design criteria to reduce the 2-year 24-hour peak flow less than or equal to the 1-year 24-hour peak flow.

Table 3 – Summary of Stormwater Peak Discharge (cfs)

Discharge Location	Condition	1	2
Point of Comparison A	Existing	12.03	17.82
	Proposed	6.73	10.89

Additionally, the site LID BMPs have been sized in accordance with the Town of Greenwich Drainage Manual. To determine the required Runoff Reduction Volume (RRV), the post-development model was run without the inclusion of the LID BMPs to determine the increase volume for the 1-year storm due to the development of the site. The 1-year existing volume is 63,576 cf and the proposed 1-year volume without LID BMPs is 81,742 cf, resulting in a difference of 18,166 cf. As described in Table 1 above, the proposed development includes 22,115 cf of storage in the LID BMPs. Since this reduction is achieved through stormwater infiltration (underground chambers and porous pavement), the requirement for Runoff Reduction Volume is met, and Groundwater Recharge Volume (GRV) criteria are satisfied.

A breakdown of proposed watershed areas, volumetric hydrographs, watershed maps, Runoff Reduction Volume (RRV), Water Quality Volume (WQV), Groundwater Recharge Volume (GRV), and 72-hr Drawdown Times are included in Appendix G of this report.

2.9.3 Structural Practices

Structural control locations are shown on Sheets C-401 to C-418. Structural controls that will be used during construction activities include:

1. **Storm Sewer Inlet Protection:** Hay bales or silt fence around storm sewer yard drains and silt sacks in perimeter catch basins until all disturbed areas surrounding the inlets are stabilized.

2. **Perimeter Controls:** Silt fence and haybales will be installed around the perimeter of the site to prevent off-site sedimentation.

2.9.4. Sequence of Major Erosion and Sediment Control Activities

The construction will proceed in segments. The stabilized construction access, staging, and parking areas will be constructed first. After construction of the stabilized access, staging, and parking area, the following pollution prevention controls and measures will be implemented:

1. **Perimeter Controls:** Silt fence and haybales will be installed as shown on sheets C-401 to C-418.

2. **Temporary Sedimentation Basins/Traps**: The temporary sedimentation basins and traps shown on sheets C-401 to C-418 will be constructed prior to upland soil disturbance. Excavated material will be stockpiled within a perimeter of silt fence and/or haybales.

2.9.5 Waste Materials

All trash and construction debris from the site will be hauled to an approved landfill. No construction waste material will be buried or disposed of on the site.

2.9.6 Hazardous Waste

No hazardous waste is expected to be generated or encountered during this project. If hazardous waste is encountered, all hazardous waste materials will be disposed of in the manner specified by local, state or federal regulation, or by the manufacturer of such waste.

The site construction superintendent will be responsible for seeing that these practices are followed.

2.9.7 Post-Construction Measures

The stormwater management plan for the proposed site has been designed to remove sediment in accordance with the Town of Greenwich 2014 Drainage Manual, Low Impact Development and Stormwater Management.

The stormwater management plan for this site uses "Best Management Practices ("BMPs")" to meet or exceed the goal of 80% removal of total suspended solids and other pollutants as described. Low Impact Development and Stormwater Management Design Manual. BMPs include:

Catch Basins with Deep Sumps: Yard Drains and Catch Basins with deep sumps collect sediment and prevent discharge of oil and other pollutants into the storm drainage system. All new yard drains and catch basins will have 24-inch sumps.

Rain Gardens, Biofiltration Swales, and Infiltration Basins: Rain Gardens, biofiltration swales, and infiltration basins help filter out pollutants from surface runoff and promote groundwater recharge. These BMP's serve as a primary treatment practice utilizing the chemical, biological, and physical properties of plants, microbes, and soils for removal of pollutants from stormwater runoff. Each of these types of BMP's are comprised of plants selected that can tolerate highly variable hydrologic changes and pollutants.

Underground Infiltration: Underground Infiltration serves as a primary treatment practice, reduces peak flow rates and promotes groundwater recharge. The proposed stormwater management system utilizes concrete chambers surrounded by stone and filter fabric and an outlet control structure designed to attenuate peak flows.

Permeable Pavement: Permeable pavement is designed to allow rain and snowmelt to pass through it, thereby reducing runoff from the site, promoting groundwater recharge, and filtering some stormwater pollutants. Permeable paving material is an alternative to conventional pavement surfaces.

2.10 Maintenance of Stormwater Management Measures

The initial inspection will be made during an intense rainfall to check the adequacy of the catch basins, roof leaders, piping, hydrodynamic separators, infiltration basins, biofiltration swales, rain garden, underground infiltration, and system outlet.

The following is a checklist of items that will be checked and maintained during scheduled maintenance operations.

Drainage Structures: The Owner will be responsible for cleaning the catch basins, yard drains, manholes, piping, and outlet protection on their property. A Connecticut licensed hauler shall clean the sumps, and legally dispose of removed sand at an off-site location. The road sand may not be reused or stored on-site. As part of the hauling contract, the hauler shall notify the Owner in writing where the material is being disposed.

Each catch basin and yard drain shall be inspected every four months, with one inspection occurring during the month of April. Any debris occurring within one foot from the bottom

of each sump shall be removed by Vacuum "Vactor" type of maintenance equipment. Maintain a log of inspections. Remove organic matter, sand and debris from catch basins as necessary and dispose of legally.

Underground Infiltration: The underground infiltration system will be cleaned of all silt, debris and sediment from the inlet structure, outlet structure and the chamber lengths. The outlet control structure will be inspected and cleaned to make sure nothing is clogging the discharge pipe.

Rain Gardens, Biofiltration Swales, and Infiltration Basins: Rain Gardens, biofiltration swales, and infiltration basins will be cleaned of all silt, debris, and sediment within the basin and from the inlet structure.

Pavement: Paved areas shall be swept periodically by the Owner to clean trash and other debris. The Owner will sweep paved areas on its property in the spring to remove winter accumulations of road sand.

Perform a visual inspection of paved areas four times per year with one inspection after the last snowfall, but no later than April 1. Sweep accumulated sediment and debris from the paved areas. Clean paved areas as necessary during the remainder of the year.

Permeable Pavement: Permeable pavement is easiest to maintain in areas where access to the pavement is limited and controlled and where pavement maintenance can be incorporated into a routine site maintenance program. Pavement should be inspected once per year for deterioration. Care must be exercised when removing snow to avoid catching the snow plow on the edges of the pavers. Permeable pavement should be regularly cleared of tracked mud or sediment and leaves.

Stormwater maintenance forms and checklists, for the proposed project can be found in **Appendix G.**

2.11 Maintenance of Soil Erosion and Sedimentation Controls

2.11.3 Silt Fence

Control Objective	Intercept, and redirect/detain small amounts of sediment from small disturbed areas; decrease velocity of sheet flow; protect sensitive slopes or soils from excessive water flow.
Inspection/Maintenance	Inspect at least once a week and within 24 hours of the end of a storm with a rainfall of 0.5 inches or more. Accumulated sediment must be removed once the depth of sediment is equal to ½ the height of the barrier. Inspect frequently during pumping operations if used for dewatering operations.
Failure Indicators	Physical damage or decomposition; evidence of overtopped or undercut fence; evidence of significant flows evading capture; repetitive failure

2.11.6 Construction Entrance

Control Objective	Reduce the tracking of sediment off-site onto paved surface
Inspection/Maintenance	Inspect at the end of each workday and immediately repair damages. Periodic addition of stone or lengthening of entrance may be required as conditions demand. All sediment spilled, dropped, washed, or tracked onto paved surfaces as a result of inefficiency of construction entrance shall be immediately removed.
Failure Indicators	Sediment in roadway adjacent to site.

2.11.7 Catch Basin Inlet Protection

Control Objective	Prohibit silt in construction-related runoff from entering storm drainage system.
Inspection/Maintenance	Inspect after any rain event. If filter bag inside catch basin contains more than 6" of sediment, remove sediment from bag. Check surrounding silt fence and hay bales per noted above.
Failure Indicators	Ripped bag; failed hay bales/silt fence; significant silt presence in storm drainage system outflow.

2.11.8 Stockpile Protection

Control Objective	Retain soil stockpile in locations specified and reduce water-transport.
Inspection/Maintenance	Inspect silt fence at the end of each workday and immediately repair damages. Periodic reinforcement of silt fence or addition of hay bales may be necessary.
Failure Indicators	Evidence of stockpile diminishing due to rain events; failure of silt fence.

2.12 Inspection Procedures

2.12.1 Plan Implementation Inspection

Within the first 30 days following commencement of the construction activity on the site, the permittee shall contact: (1) the appropriate District; or (2) a qualified soil erosion and sediment control professional or a qualified professional engineer to inspect the site. The site shall be inspected at least once and no more than three times during the first 90 days to confirm compliance with the General Permit and proper initial implementation of all controls measures designated in the Plan for the site for the initial phase of construction.

2.12.2 Routine Inspections

The permittee shall routinely inspect the site for compliance with the general permit and the Plan for the site until a Notice of Termination has been submitted. Inspection

procedures for these routine inspections shall be addressed and implemented in the following manner:

a. The permittee shall maintain a rain gauge on-site to document rainfall amounts. At least once a week and within 24 hours of the end of a storm that generates a discharge, a qualified inspector (provided by the permittee), as defined in the "Definitions" section (Section 2) of the General Permit, shall inspect, at a minimum, the following: disturbed areas of the construction activity that have not been finally stabilized; all erosion and sedimentation control measures; all structural control measures; soil stockpile areas; washout areas and locations where vehicles enter or exit the site. These areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system and impacts to the receiving waters. Locations where vehicles enter or exit the site shall also be inspected for evidence of off-site sediment tracking. For storms that end on a weekend, holiday or other time after which normal working hours will not commence within 24 hours, an inspection is required within 24 hours only for storms that equal or exceed 0.5 inches. For storms of less than 0.5 inches, an inspection shall occur immediately upon the start of the subsequent normal working hours. Where sites have been temporarily or finally stabilized, such inspection shall be conducted at least once every month for three months.

b. The qualified inspector(s) shall evaluate the effectiveness of erosion and sediment controls, structural controls, stabilization practices, and any other controls implemented to prevent pollution and determine if it is necessary to install, maintain, or repair such controls and/or practices to improve the quality of stormwater discharge(s).

c. A report shall be prepared for every inspection and retained as part of the Plan. This report shall summarize: the scope of the inspection; name(s) and qualifications of personnel making the inspection; the date(s) of the inspection; weather conditions including precipitation information; major observations relating to erosion and sediment controls and the implementation of the Plan; a description of the stormwater discharge(s) from the site; and any water quality monitoring performed during the inspection. The report shall be signed by both the qualified inspector and the permittee or his/her authorized representative in accordance with the "Certification of Documents" section (subsection 5(i)) of the General Permit). The report shall include a statement that, in the judgment of the qualified inspector(s) conducting the site inspection, the site is either in compliance or out of compliance with the terms and conditions of the Plan and permit. If the site inspection indicates that the site is out of compliance, the inspection report shall include a summary of the remedial actions required to bring the site back into compliance. Non-engineered corrective actions (as identified in the Guidelines) shall be implemented on site within 24 hours and incorporated into a revised Plan within three (3) calendar days of the date of inspection unless another schedule is specified in the Guidelines. Engineered corrective actions (as identified in the Guidelines) shall be implemented on site within seven (7) days and incorporated into a revised Plan within ten (10) days of the date of inspection, unless another schedule is specified in the Guidelines or is approved by the commissioner. During the period in which any corrective actions are being developed and have not yet been fully implemented, interim measures shall be implemented to minimize the potential for the discharge of pollutants from the site.

d. Inspectors from the DEEP and the appropriate Conservation District may inspect the site for compliance with the general permit at any time construction activities are ongoing and upon completion of construction activities to verify the final stabilization of the site and/or the installation of post-construction stormwater management measures pursuant to Section 6(a) of the General Permit.

2.12.3 Inspection Personnel Qualifications

For Plan implementation inspections, the site shall be inspected by a qualified soil erosion and sediment control professional or a qualified professional engineer. For sites not inspected by District personnel, the inspector shall be someone who:

a. is not an employee, as defined by the Internal Revenue Service in the Internal Revenue Code of 1986, of the registrant, and

b. has no ownership interest of any kind in the project for which the registration is being submitted.

2.13 Dewatering Wastewaters

If encountered, dewatering wastewaters will be managed in accordance with Section 5(b)(2)(B) of the General Permit. Unless developed otherwise by the site engineer, all such discharges will be infiltrated into the ground. Any dewatering wastewaters discharged to surface waters shall be discharged in a manner that minimizes the discoloration of the receiving waters. No discharge of dewatering wastewaters shall contain or cause a visible oil sheen, floating solids, or foaming in the receiving water.

2.14 Reporting and Record Keeping

For a period of at least five years from the date that construction is complete, the permittee shall retain copies of the Plan and all reports required by this general permit, and records of all data used to complete the registration for this general permit, unless the commissioner specifies another time period in writing. Inspection records must be retained as part of the Plan for a period of five (5) years after the date of inspection.

The permittee shall retain an updated copy of the Plan required by the General Permit at the construction site from the date construction is initiated at the site until the date construction at the site is completed.

Revisions to the Plan may involve the following actions:

- The Permittee shall amend the Plan if the actions required by the Plan fail to prevent pollution or fail to otherwise comply with any other provision of the general permit. The Plan shall also be amended whenever there is a change in contractors or subcontractors at the site, or a change in design, construction, operation, or maintenance at the site which has the potential for the discharge of pollutants to the waters of the state and which has not otherwise been addressed in the Plan.

- The commissioner may notify the Permittee at any time that the Plan and/or the site do not meet one or more of the minimum requirements of the general permit.

Within 7 days of such notice, or such other time as the commissioner may allow, the permittee shall make the required changes to the Plan and perform all actions required by such revised Plan. Within 15 days of such notice, or such other time as the commissioner may allow, the permittee shall submit to the commissioner a written certification that the requested changes have been made and implemented and such other information as the commissioner requires, in accordance with the "Duty to Provide Information" and "Certification of Documents" (subsections 5(h) and 5(i)) of the General Permit).

2.15 Contractor Certification

All contractors and subcontractors who will perform any construction activity that may reasonably be expected to cause or have the potential to cause erosion, or pollution to the receiving waters will be identified prior to construction and included in Section 1 of this plan. Each such contractor and subcontractors will sign the certification statement set forth in Section 1 of this plan.

2.16 Termination

At the completion of the construction project, a Notice of Termination must be filed with the Commissioner. A copy of the Notice of Termination is attached as **Appendix H**. The project shall be considered complete after all post-construction measures are installed, cleaned and functioning and the site has been stabilized for at least three months following the end of construction activities. The site will be considered stabilized when there is no active erosion or sedimentation present and no disturbed areas remains exposed for all phases. Once the site has been stabilized for at least three months, the site shall be inspected by a qualified inspector to confirm final stabilization. The registrant shall indicate compliance with this requirement on the Notice of Termination form.

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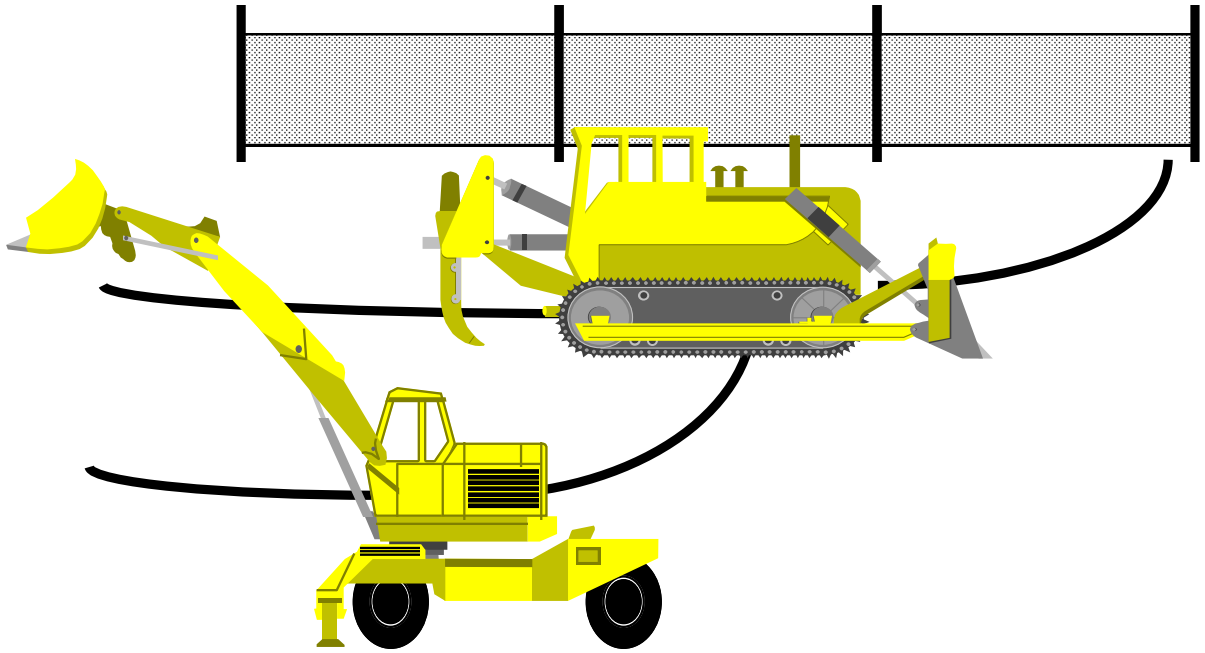
APPENDIX A

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities



Effective Date: December 31, 2020
Modification Date: November 25, 2022
Expiration Date: December 20, 2025

Printed on recycled paper

General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

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General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

Section 1. Authority

This general permit is issued under the authority of section 22a-430b of the Connecticut General Statutes.

Section 2. Definitions

The definitions of terms used in this general permit shall be the same as the definitions contained in section 22a-423 of the Connecticut General Statutes and section 22a-430-3(a) of the Regulations of Connecticut State Agencies. All references to an Appendix in this general permit means the applicable Appendix of this general permit. As used in this general permit, the following definitions shall apply:

"*x-year, 24-hour rainfall event*" means the maximum 24-hour precipitation event with a probable recurrence interval of once in the given number of years (i.e. x=2, 25 or 100), as defined by the National Oceanic and Atmospheric Administration (NOAA) Atlas 14, Volume 10, Version 2, Point Precipitation Frequency Estimates (as amended), or equivalent regional or state rainfall probability information developed therefrom.

"*Annual sediment load*" means the total amount of sediment carried by stormwater runoff on an annualized basis.

"*Aquifer protection area*" has the same meaning as provided in section 22a-354h of the Connecticut General Statutes.

"*Best engineering practices*" means the design of engineered control measures to control pollution to the maximum extent achievable using measures that are technologically available and economically practicable.

"*CFR*" means the Code of Federal Regulations.

"*Coastal area*" means coastal area as defined in section 22a-93(3) of the Connecticut General Statutes.

"*Coastal waters*" means coastal waters as defined in section 22a-93(5) of the Connecticut General Statutes.

"*Commissioner*" means the Commissioner of Energy and Environmental Protection or the Commissioner's designee.

"*Construction activity*" means any activity and discharges associated with construction at a site or the site's preparation for construction, including, but not limited to, clearing, grubbing, pile driving, soil disturbance, soil compaction by construction equipment, staging and stockpiling, cleaning and washout, grading, excavation, and dewatering.

"*DOT"* means the State of Connecticut Department of Transportation.

"*Department*" means the Department of Energy and Environmental Protection.

"*Designing qualified professional*" means the qualified professional engineer or qualified soil erosion and sediment control professional, as defined below, who developed the original Stormwater Pollution Control Plan for which authorization was granted under this general permit.

"*Developer*" means a person who or municipality which is responsible, either solely or partially through contract, for the design and construction of a project site.

"*Dewatering wastewater*" means wastewater associated with the construction activity generated from the lowering of the groundwater table, the pumping of accumulated stormwater or uncontaminated groundwater from an excavation, the pumping of surface water from a cofferdam, or pumping of other surface water that has been diverted into a construction site.

"*District*" means a soil and water conservation district established pursuant to section 22a-315 of the Connecticut General Statutes. Appendices E and F list the Districts, their geographic delineations, and contact information.

"*Disturbance*" means the area on a site where soil will be exposed or susceptible to erosion during any construction activity.

"*Effective Impervious Cover*" is the area of impervious cover that is hydraulically connected to a water or wetland by means of continuous paved surfaces, gutters, swales, ditches, drain pipes or other conventional conveyance and detention structures that do not reduce runoff volume. Impervious cover is a surface composed of any material that impedes or prevents infiltration of water into the soil. Impervious surfaces shall include, but are not limited to, roofs, solid decks, driveways, patios, sidewalks, parking areas, tennis courts, concrete or asphalt streets, or compacted soils or compacted gravel surfaces.

"*Engineered stormwater management system*" means any control measure and related appurtenances which requires engineering analysis and/or design by a professional engineer.

"*Erosion*" means the detachment and movement of soil or rock fragments by water, wind, ice and gravity.

"*Final stabilization*" for a site authorized by this general permit means that no disturbed areas remain exposed, there is no active erosion or sedimentation present on the site, and that vegetation or permanent non-vegetative ground cover, as specified in the Permittee's Plan, have been fully established over the entire site.

"*Fresh-tidal wetland*" means a tidal wetland with an average salinity level of less than 0.5 parts per thousand.

"*General Permit*" means the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities issued by the Commissioner effective on December 31, 2020.

"*Groundwater*" means those waters of the state that naturally exist or flow below the surface of the ground.

"*Guidelines*" means the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, established pursuant to section 22a-328 of the Connecticut General Statutes.

"*High Quality Waters*" means those waters defined as high quality waters in RCSA 22a-426-1, as may be amended.

"*Impaired water(s)*" means those surface waters of the state designated by the commissioner as impaired pursuant to Section 303(d) of the Clean Water Act and as identified in the most recent State of Connecticut Integrated Water Quality Report.

"*In Responsible charge*" means professional experience for which the Commissioner determines that a professional's primary duties consistently involve a high level of responsibility and decision making in the planning and designing of engineered stormwater management systems or in the planning and designing of soil erosion and sediment controls for residential and commercial construction projects. The Commissioner

shall consider the following in determining whether a professional's experience qualifies as responsible charge experience:

(i) the level of independent decision-making exercised;

(ii) the number of individuals and the disciplines of the other professionals that the professional supervised or coordinated;

(iii) the extent to which a professional's responsibilities consistently involved the review of work performed by other professionals involved the planning and designing of engineered stormwater management systems or the planning and designing of soil erosion and sediment controls for residential and commercial construction projects;

(iv) the extent to which a professional's responsibilities consistently involved the planning and designing of engineered stormwater management systems or the planning and designing of soil erosion and sediment controls for residential and commercial construction projects and whether such responsibilities were an integral and substantial component of the professional's position;

(v) the nature of a professional's employer's primary business interests and the relation of those interests to planning and designing of engineered stormwater management systems or to planning and designing of soil erosion and sediment controls for residential and commercial construction projects;

(vi) the extent to which a professional has engaged in the evaluation and selection of scientific or technical methodologies for planning and designing of engineered stormwater management systems or for planning and designing of soil erosion and sediment controls for residential and commercial construction projects;

(vii) the extent to which a professional drew technical conclusions, made recommendations, and issued opinions based on the results of planning and designing of engineered stormwater management systems or of planning and designing of soil erosion and sediment controls for residential and commercial construction projects; or

(viii) any other factor that the Commissioner deems relevant.

"*Individual permit*" means a permit issued to a specific permittee under section 22a-430 of the Connecticut General Statutes.

"*Inland wetland*" means wetlands as defined in section 22a-38 of the Connecticut General Statutes.

"*Landscape Architect*" means a person with a currently effective license issued in accordance with chapter 396 of the Connecticut General Statutes.

"*Linear Project*" includes the construction of roads, railways, bridges, bikeways, conduits, substructures, pipelines, sewer lines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities in a long, narrow area.

"*Locally approvable project*" means a construction activity for which the registration is not for a municipal, state or federal project and is required to obtain municipal approval for the project.

"*Locally exempt project*" means a construction activity for which a registration is required under this general permit and which is not a locally approvable project.

"*Low Impact Development*" or "*LID*" means a site design strategy that maintains, mimics or replicates pre-development hydrology through the use of numerous site design principles and small-scale treatment practices distributed throughout a site to manage runoff volume and water quality at the source.

"*Minimize*", for purposes of implementing the control measures in Section 5(*b*)(2) of this general permit, means to reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.

"*Municipal separate storm sewer system*" or "*MS4*" means conveyances for stormwater (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains) owned or operated by any municipality, DOT or by any other state or federal institution (as defined in the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems) and discharging to surface waters of the state.

"*Municipality*" has the same meaning as provided in section 22a-423 of the Connecticut General Statutes.

"*Normal Working Hours*" are considered to be, at a minimum, Monday through Friday, between the hours of 8:00 am and 6:00 pm, unless additional working hours are specified by the permittee.

"*Permittee*" means any person who or municipality which initiates, creates or maintains a discharge in accordance with Section 3 of this general permit.

"*Person*" means person as defined in section 22a-423 of the Connecticut General Statutes.

"*Phase*" means a portion of a project possessing a distinct and complete set of activities that have a specific functional goal wherein the work to be completed in the phase is not dependent upon the execution of work in a later phase in order to make it functional.

"*Point Source*" means any discernible, confined and discrete stormwater conveyance (including but not limited to, any pipe, ditch, channel, tunnel, conduit, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft) from which pollutants are or may be discharged.

"*Professional Engineer*" or *"P.E.*" means a person with a currently effective license issued in accordance with chapter 391 of the Connecticut General Statutes.

"*Qualified Inspector*" means an individual possessing either (1) a professional license or certification by a professional organization recognized by the commissioner related to agronomy, civil engineering, landscape architecture, soil science, and two years of demonstrable and focused experience in erosion and sediment control plan reading, installation, inspection and/or report writing for residential and commercial construction projects in accordance with the Guidelines; or (2) five years of demonstrable and focused experience in erosion and sediment control plan reading, installation, inspection and/or report writing for residential and commercial construction projects in accordance with the Guidelines; or (3) certification by the DOT. For purposes of solar array projects, a Qualified Inspector shall be selected as specified in Appendix I of the general permit.

"*Qualified professional engineer*" means a professional engineer who has, for a minimum of eight years, engaged in the planning and designing of engineered stormwater management systems for residential and commercial construction projects in accordance with the Guidelines and the Stormwater Quality Manual including, but not limited to, a minimum of four years in responsible charge of the planning and designing of engineered stormwater management systems for such projects. Such qualified professional engineer shall remain in good standing with the Connecticut Department of Consumer Protection and the Commissioner.

"*Qualified soil erosion and sediment control professional*" means a landscape architect or a professional engineer who: (1) has for a minimum of eight years engaged in the planning and designing of soil erosion and sediment controls for residential and commercial construction projects in accordance with the Guidelines including, but not limited to, a minimum of four years in responsible charge of the planning and designing of soil erosion and sediment controls for such projects; or (2) is currently certified as a professional in erosion and sediment control as designated by EnviroCert International, Incorporated (or other certifying organization acceptable to the commissioner) and has, for a minimum of six years, engaged in the planning and designing of soil erosion and sediment controls for residential and commercial construction projects in accordance with the Guidelines including, but not limited to, a minimum of four years in responsible charge in the planning and designing of soil erosion and sediment controls for such projects. Such qualified soil erosion and sediment control professional shall remain in good standing with the Connecticut Department of Consumer Protection and the Commissioner.

"*Registrant*" means a person or municipality that files a registration.

"*Registration*" means a registration filed with the commissioner pursuant to Section 4 of this general permit.

"*Regulated Municipal Separate Storm Sewer System*" or "*Regulated MS4*" means any MS4 (as defined above) authorized by the most recently issued General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, as well as the separate storm sewer system of the DOT and the City of Stamford including all those located partially or entirely within an Urbanized Area and those additional MS4s located outside an Urbanized Area as may be designated by the commissioner.

"*Retain*" means to hold runoff on-site to promote vegetative uptake and groundwater recharge through the use of runoff reduction or LID practices or other measures. In addition, it means there shall be no subsequent point source release to surface waters from a storm event defined in this general permit or as approved by the commissioner.

"*Runoff reduction practices*" means those post-construction stormwater management practices used to reduce post-development runoff volume delivered to the receiving water, as defined by retaining the volume of runoff from a storm up to the first half inch or one inch of rainfall. Runoff reduction is quantified as the total annual post-development runoff volume reduced through canopy interception, soil amendments, evaporation, rainfall harvesting, engineered infiltration, extended filtration or evapo-transpiration.

"*Sediment*" means solid material, either mineral or organic, that is in suspension, is transported, or has been moved from its site of origin by erosion.

"*Site*" means geographically contiguous land on which a construction activity takes place or on which a construction activity for which authorization is sought under this general permit is proposed to take place. Non-contiguous land or water owned by the same person shall be deemed the same site if such land is part of a linear project (as defined in this section) or is otherwise connected by a right-of-way, which such person controls.

"*Soil*" means any unconsolidated mineral and organic material of any origin.

"*Soil Scientist*" shall be as defined in Conn. Gen. Stat. § 22a-38.

"*Solar array*" means an on-the-ground installation of arrays of photovoltaic cell panels, supporting structures and related equipment for the production of electricity.

"*Stabilize"* means the use of measures as outlined in the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, or as approved by the commissioner, to prevent the visible movement of soil particles and development of rills.

"*Standard of care*", as used in Section 3(*b*), means to endeavor to perform in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

"*Structural measure*" means a measure constructed for the temporary storage and/or treatment of stormwater runoff.

"*Stormwater*" means waters consisting of rainfall runoff, including snow or ice melt during a rain event.

"*Stormwater Pollution Control Plan*", "*SWPCC*", or "*Plan*" means the stormwater pollution control plan required under Section 5(*b*) of the general permit and approved by Commissioner as part of the approval of a registration.

"*Stormwater Quality Manual*" means the 2004 Connecticut Stormwater Quality Manual published by the Connecticut Department of Energy & Environmental Protection, as amended.

"*Surface water*" means that portion of waters, as the term "waters" is defined in section 22a-423 of the Connecticut General Statutes, located above the ground surface.

"*Tidal wetland*" means a wetland as that term is defined in section 22a-29(2) of the Connecticut General Statutes.

"*Total disturbance*" means the total area of disturbance on a site during all phases of construction activity.

"*Total Maximum Daily Load*" or "*TMDL*" means the maximum capacity of a surface water to assimilate a pollutant as established by the commissioner, including pollutants contributed by point and non-point sources and a margin of safety.

"*Upland soils*" means soils which are not designated as poorly drained, very poorly drained, alluvial, or flood plain by the National Cooperative Soils Survey, as may be amended, of the Natural Resources Conservation Service of the United States Department of Agriculture and/or the inland wetlands agency of the municipality in which the project will take place.

"*Water company*" means water company as defined in section 25-32a of the Connecticut General Statutes.

"*Waters*" shall be as defined in Conn. Gen. Stat. § 22a-423, and for clarification shall include vernal pools and intermittent waters.

"*Water Quality Standards*" means the water quality standards in RCSA 22a-426-1 et seq, and the classification maps adopted pursuant to section 22a-426 of the Connecticut General Statutes, as both may be amended.

"*Water Quality Volume*" or "*WQV*" means the volume of runoff generated by one inch of rainfall on a site as defined in the 2004 Connecticut Stormwater Quality Manual, as amended.

"*Wetland*" shall mean and include both "wetland" as defined in Conn. Gen. Stat. § 22a-29 and "wetlands" as defined in Conn. Gen. Stat. § 22a-38.

Section 3. Authorization Under This General Permit

(a) Eligible Activities

This general permit authorizes construction activities and associated stormwater and dewatering wastewater discharges on a site, as defined in this general permit, with a total disturbance of one or more acres of land area on a site, *regardless of project phasing*.

In the case of a larger plan of development (such as a subdivision), the estimate of total acres of site disturbance shall include, but is not limited to, road and utility construction, individual lot construction (e.g. house, driveway, septic system, etc.), and all other construction associated with the overall plan, regardless of the individual parties responsible for construction of these various elements.

(b) Requirements for Authorization

This general permit authorizes the construction activity and associated discharges listed in the "Eligible Activities" section (Section 3(*a*)) of this general permit provided:

(1) Coastal Management Act

Such construction activity must be consistent with all applicable goals and policies in section 22a-92 of the Connecticut General Statutes, and must not cause adverse impacts to coastal resources as defined in section 22a-93(15) of the Connecticut General Statutes. Please refer to the Appendix D for additional guidance.

(2) Endangered and Threatened Species

Such activity must not threaten the continued existence of any species listed pursuant to section 26-306 of the Connecticut General Statutes as endangered or threatened and must not result in the destruction or adverse modification of habitat designated as essential to such species. See Appendix A for conditions and requirements for compliance.

(3) Aquifer Protection Areas

Such construction activity, if it is located within an aquifer protection area as mapped under section 22a-354b of the General Statutes, must comply with regulations adopted pursuant to section 22a-354i of the General Statutes. Please refer to the Appendix C for additional guidance.

For any construction activity regulated pursuant to sections 22a-354i-8(c) and 9(b) of the Regulations of Connecticut State Agencies (Aquifer Protection Regulations), the Stormwater Pollution Control Plan (Plan) must assure that stormwater run-off generated from the regulated construction activity (i) is managed in a manner so as to prevent pollution of groundwater, and (ii) complies with all the requirements of this general permit.

(4) Mining Operations Exception

The stormwater discharge resulting from an activity classified by the Standard Industrial Classification 10 and 12 through 14 (the mining industry) is not eligible to be authorized by this general permit and is regulated under the most recently issued General Permit for the Discharge of Stormwater Associated with Industrial Activity.

(5) Discharge to POTW

The stormwater is *not* discharged to a Publicly Owned Treatment Works (POTW).

(6) Discharge to Groundwater

The stormwater is *not* discharged entirely to groundwater under all conditions before, during or after construction.

(7) Such construction activity must be consistent with the Wild and Scenic Rivers Act (16 U.S.C. 1271-1287) for those river components and tributaries which have been designated as Wild and Scenic by the United States Congress. Further, such construction activities must not have a direct and adverse effect on the values for which such river designation was established. Please refer to Appendix H for additional guidance.

(8) Certification Requirements for Registrants and other Individuals

As part of the registration for this general permit, the registrant and any other individual or individuals responsible for preparing the registration submits to the commissioner a written certification which, at a minimum, complies with the following requirements:

(A) The registrant and any other individual or individuals responsible for preparing the registration and signing the certification has completely and thoroughly reviewed, at a minimum, this general permit and the following regarding the activities to be authorized under such general permit:

(i) all registration information provided in accordance with Section 4(*c*)(2) of such general permit;

(ii) the project site, based on a site inspection;

(iii) the Stormwater Pollution Control Plan; and

(iv) any plans and specifications and any Department approvals regarding such Stormwater Pollution Control Plan;

(B) The registrant and any other individual or individuals responsible for preparing the registration and signing the certification pursuant to this general permit has, based on the review described in section 3(*b*)(8)(A) of this general permit, made an affirmative determination to:

(i) comply with the terms and conditions of this general permit;

(ii) maintain compliance with all plans and documents prepared pursuant to this general permit including, but not limited to, the Stormwater Pollution Control Plan;

(iii) properly implement and maintain the elements of the Stormwater Pollution Control Plan; and

(iv) properly operate and maintain all stormwater management systems in compliance with the terms and conditions of this general permit to protect the waters of the state from pollution;

(C) Such registrant and any other individual or individuals responsible for preparing the registration certifies to the following statement: "I hereby certify that I am making this certification in connection with a registration under such general permit, submitted to the commissioner by [INSERT NAME OF REGISTRANT] for an activity located at [INSERT

ADDRESS OF PROJECT OR ACTIVITY] and that all terms and conditions of the general permit are being met for all discharges which have been initiated and such activity is eligible for authorization under such permit. I further certify that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that the registration filed pursuant to this general permit is on complete and accurate forms as prescribed by the commissioner without alteration of their text. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(*b*)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify that I have made an affirmative determination in accordance with Section 3(*b*)(8)(B) of this general permit. I understand that the registration filed in connection with such general permit is submitted in accordance with and shall comply with the requirements of Section 22a-430b of Connecticut General Statutes. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

(9) The registrant has submitted to the commissioner a written certification by a professional engineer or, where appropriate, a landscape architect licensed in the State of Connecticut for the preparation, planning and design of the Stormwater Pollution Control Plan ("Plan" or "SWPCP") and stormwater management systems:

The professional engineer or landscape architect shall certify to the following statement:

"I hereby certify that I am a [professional engineer][landscape architect] licensed in the State of Connecticut. I am making this certification in connection with a registration under such general permit, submitted to the commissioner by [INSERT NAME OF REGISTRANT] for an activity located at [INSERT ADDRESS OF PROJECT OR ACTIVITY]. I certify that I have thoroughly and completely reviewed the Stormwater Pollution Control Plan for the project or activity covered by this certification. I further certify, based on such review and on the standard of care for such projects, that the Stormwater Pollution Control Plan has been prepared in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, the Stormwater Quality Manual, as amended, and the conditions of the general permit, and that the controls required for such Plan are appropriate for the site. I further certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I also understand that knowingly making any false statement in this certification may subject me to sanction by the Department and/or be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

(10) Plan Review and Certification by a District for Locally Approvable Projects

For locally approvable Plans not reviewed in accordance with Section 3(*b*)(11), below, the registrant has submitted to the commissioner a written certification by the appropriate regional District for the review of the Stormwater Pollution Control Plan pursuant to Appendix E, which, at a minimum, complies with the following requirements:

(A) the Plan Review Certification must be signed by the District. Information on the District review process is outlined in the Memorandum of Agreement provided in Appendix E. In cases where the District is unable to complete review of the Plan within the time limits

specified in the Memorandum of Agreement in Appendix E, a notice to that effect signed by the District may be submitted in lieu of the certification.

(B) the Stormwater Pollution Control Plan has been prepared in accordance with the requirements of Section 5(*b*) of the general permit.

(11) Plan Review and Certification by a Qualified Soil Erosion and Sediment Control Professional and Qualified Professional Engineer for Locally Approvable Projects

For those Plans not reviewed in accordance with Section 3(*b*)(10), above, the registrant has submitted to the commissioner a written certification by a qualified professional engineer or a qualified soil erosion and sediment control professional in accordance with the following requirements:

(A) for projects disturbing more than one acre and less than fifteen (15) acres, such qualified soil erosion and sediment control professional or qualified professional engineer:

(i) is not an employee, as defined by the Internal Revenue Service in the Internal Revenue Code of 1986, of the registrant; and

(ii) has no ownership interest of any kind in the project for which the registration is being submitted.

(B) for projects disturbing fifteen (15) acres or more, such qualified soil erosion and sediment control professional or qualified professional engineer:

(i) is not an employee, as defined by the Internal Revenue Service in the Internal Revenue Code of 1986, of the registrant;

(ii) did not engage in any activities associated with the preparation, planning, designing or engineering of such plan for soil erosion and sediment control or plan for stormwater management systems on behalf of such registrant;

(iii) is not under the same employ as any person who engaged in any activities associated with the preparation, planning, designing or engineering of such plans and specifications for soil erosion and sediment control or plans and specifications for stormwater management systems on behalf of such registrant; and

(iv) has no ownership interest of any kind in the project for which the registration is being submitted.

(C) The qualified professional engineer or qualified soil erosion and sediment control professional signing the certification has, at a minimum, completely and thoroughly reviewed this general permit and the following regarding the discharges to be authorized under such general permit:

(i) all registration information provided in accordance with Section 4(*c*)(1) of such general permit;

(ii) the site, based on a site inspection;

(iii) the Stormwater Pollution Control Plan;

(iv) the Guidelines;

(v) the Stormwater Quality Manual, if applicable; and

(vi) all non-engineered and engineered stormwater management systems, including any plans and specifications and any Department approvals regarding such stormwater management systems.

(D) Affirmative Determination

(i) The qualified soil erosion and sediment control professional signing the certification must have made an affirmative determination, based on the review described in section 3(*b*)(11)(C) of this general permit that:

(a) the Stormwater Pollution Control Plan prepared and certified pursuant to the registration is adequate to assure that the project or activity authorized under this general permit, if implemented in accordance with the Stormwater Pollution Control Plan, will comply with the terms and conditions of such general permit; and

(b) all non-engineered stormwater management systems:

(*1*) have been designed to control pollution to the maximum extent achievable using measures that are technologically available and economically practicable and that conform to those in the Guidelines and the Stormwater Quality Manual;

(*2*) will function properly as designed;

(*3*) are adequate to ensure compliance with the terms and conditions of this general permit; and

(*4*) will protect the waters of the state from pollution.

(ii) The qualified professional engineer signing the certification must have made an affirmative determination, based on the review described in section 3(*b*)(11)(C) of this general permit that:

(a) the Stormwater Pollution Control Plan prepared and certified pursuant to the registration is adequate to assure that the activity authorized under this general permit, if implemented in accordance with the Stormwater Pollution Control Plan, will comply with the terms and conditions of such general permit; and

(b) all non-engineered and engineered stormwater management systems:

(*1*) have been designed to control pollution to the maximum extent achievable using measures that are technologically available and economically practicable and that conform to those in the Guidelines and the Stormwater Quality Manual;

(*2*) will function properly as designed;

(*3*) are adequate to ensure compliance with the terms and conditions of this general permit; and

(*4*) will protect the waters of the state from pollution.

(E) The qualified professional engineer or qualified soil erosion and sediment control professional shall, provided it is true and accurate, certify to the following statement:

"I hereby certify that I am a qualified professional engineer or qualified soil erosion and sediment control professional, or both, as defined in the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and as further specified in sections 3(*b*)(11)(A) and (B) of such general permit. I am making this certification in connection with a registration under such general permit, submitted to the commissioner by [INSERT NAME OF REGISTRANT] for an activity located at [INSERT ADDRESS OF PROJECT OR ACTIVITY]. I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(*b*)(11)(C) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I further certify that I have made the affirmative determination in accordance with Sections 3(*b*)(11)(D)(i) and (ii) of this general permit. I understand that this certification is part of a registration submitted in accordance with Section 22a-430b of Connecticut General Statutes and is subject to the requirements and responsibilities for a qualified professional in such statute. I also understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

(12) Plan Review and Certification for Projects Conducted by State Agencies

For projects conducted by a state agency (e.g. DOT, DAS, etc.), the registering agency has submitted to the commissioner a written certification by a qualified professional engineer or a qualified soil erosion and sediment control professional in accordance with the following requirements:

(A) the registering agency or another state agency has developed a process to establish a list of qualified professional engineers and qualified soil erosion and sediment control professionals for which the process to qualify has been approved in writing by the commissioner;

(B) the qualified professional engineer or qualified soil erosion and sediment control professional reviewing and certifying the Plan is included on the list prepared by a state agency and for which the process to establish the list has been approved by the commissioner pursuant to Section 3(*b*)(12)(A), above;

(C) the qualified professional engineer or qualified soil erosion and sediment control professional signing the certification has, at a minimum, completely and thoroughly reviewed this general permit and the following regarding the discharges to be authorized under such general permit:

(i) all registration information provided in accordance with Section 4(*c*)(2) of such general permit;

(ii) the site, based on a site inspection;

(iii) the Stormwater Pollution Control Plan;

(iv) the Guidelines;

(v) the Stormwater Quality Manual, if applicable; and

(vi) all non-engineered and engineered stormwater management systems, including any plans and specifications and any Department approvals regarding such stormwater management systems.

(D) Affirmative Determination

(i) The qualified soil erosion and sediment control professional signing the certification must have made an affirmative determination, based on the review described in section 3(*b*)(12)(C) of this general permit that:

(a) the Stormwater Pollution Control Plan prepared and certified pursuant to the registration is adequate to assure that the project or activity authorized under this general permit, if implemented in accordance with the Stormwater Pollution Control Plan, will comply with the terms and conditions of such general permit; and

(b) all non-engineered stormwater management systems:

(*1*) have been designed to control pollution to the maximum extent achievable using measures that are technologically available and economically practicable and that conform to those in the Guidelines and the Stormwater Quality Manual;

(*2*) will function properly as designed;

(*3*) are adequate to ensure compliance with the terms and conditions of this general permit; and

(*4*) will protect the waters of the state from pollution.

(ii) The qualified professional engineer signing the certification must have made an affirmative determination, based on the review described in section 3(*b*)(12)(C) of this general permit that:

(a) the Stormwater Pollution Control Plan prepared and certified pursuant to the registration is adequate to assure that the activity authorized under this general permit, if implemented in accordance with the Stormwater Pollution Control Plan, will comply with the terms and conditions of such general permit; and

(b) all non-engineered and engineered stormwater management systems:

(*1*) have been designed to control pollution to the maximum extent achievable using measures that are technologically available and economically practicable and that conform to those in the Guidelines and the Stormwater Quality Manual;

(*2*) will function properly as designed;

(*3*) are adequate to ensure compliance with the terms and conditions of this general permit; and

(*4*) will protect the waters of the state from pollution.

(E) The qualified professional engineer or qualified soil erosion and sediment control professional shall, provided it is true and accurate, certify to the following statement:

"I hereby certify that I am a qualified professional engineer or qualified soil erosion and sediment control professional, or both, as defined in the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and as further specified in sections 3(*b*)(12)(A) and (B) of such general permit. I am making this certification in connection with a registration under such general permit, submitted to the commissioner by [INSERT NAME OF REGISTRANT] for an activity located at [INSERT ADDRESS OF PROJECT OR ACTIVITY]. I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(*b*)(12)(C) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I further certify that I have made the affirmative determination in accordance with Sections 3(*b*)(12)(D)(i) and (ii) of this general permit. I understand that this certification is part of a registration submitted in accordance with Section 22a-430b of Connecticut General Statutes and is subject to the requirements and responsibilities for a qualified professional in such statute. I also understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

(F) Projects conducted by a state agency under this subparagraph (Section 3(*b*)(12)) shall be submitted in accordance with the requirements in Sections 3(*c*), 3(*g*)(1)(B) and 4(*c*)(2)(A)(i).

(13) New Discharges to Impaired Waters

(A) For impaired waters identified in the State's most recent Integrated Water Quality Report, new stormwater discharges proposed in a registration submitted under this general permit that will discharge directly to such waters must comply with the requirements of (13)(B), below, if such report indicates the cause or potential cause of the impairment as one of the following:

(i) Site Clearance (Land Development or Redevelopment)

(ii) Post-Development Erosion and Sedimentation

(iii) Source Unknown (if cause of impairment is Sedimentation/Siltation)

(B) Such stormwater discharge is authorized if the permittee complies with the requirements of Section 5(*b*)(3) of this permit and receives a written affirmative determination from the commissioner that the discharge meets the requirements of that section. In such case, the permittee must keep a copy of the written determination onsite with the Plan. If the permittee does not receive such affirmative determination, the construction activity is not authorized by this general permit and must obtain an individual permit.

(14) Solar Arrays

For constructions activities associated with the development of a solar array that is locally exempt, as those respective terms are defined in Section 2, in addition to the other requirements of this general permit a Permittee shall also comply with the requirements in Appendix I.

(15) Cold Water Stream Habitat

Unless otherwise authorized in writing by the Commissioner, a Permittee shall maintain a one-hundred (100) foot buffer of undisturbed soil and well-established vegetation between any construction activity and any stream, river, or tributary that is included within a Cold Water Stream Habitat as defined at: https://portal.ct.gov/DEEP/Water/Inland-Water-Monitoring/Cold-Water-Stream-Habitat-Map.

(16) Other Requirements for Authorization

The following requirements for authorization shall apply to all projects:

(A) Prior to commencement of any construction activity, the Permittee shall conduct a preconstruction meeting with the qualified professional who designed the project, the qualified inspector who will be conducting inspections, and all site contractors and subcontractors to be involved in construction. Such meeting shall convey the design, stormwater control measures, erosion and sediment controls, plan implementation and routine site inspections, and contract requirements for the project prior to earth disturbance. Such meeting shall also include a site walk of the project site. In the case of solar arrays and any other projects that may be reviewed and/or inspected by a District, the preconstruction meeting and site walk shall also include the appropriate District personnel. The Permittee shall ensure that the date of such meeting and a report summarizing the meeting shall be prepared and retained in the Permittee's Plan.

(B) The following contractor certification shall be signed by all contractors and subcontractors that will perform construction activities on the site that have the potential to cause pollution of the waters of the State:

"I certify under penalty of the law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that as a contractor or subcontractor at the site, I am authorized by this general permit, and must comply with the terms and conditions of this general permit, including, but not limited to, the requirements of the Stormwater Pollution Control Plan prepared for the site."

Such signed certifications shall be maintained with the Plan on-site at all times.

(C) The designing qualified professional shall conduct the Plan Implementation Inspection(s) pursuant to Section 5(*b*)(4)(A) and shall submit such Plan Implementation Inspection report(s) to the commissioner confirming compliance with the general permit and proper initial implementation of all control measures designated in the Plan for the initial phase of construction. In the case of solar arrays and any other projects that may be reviewed and/or inspected by a District, the Plan Implementation Inspection(s) shall also include the appropriate District personnel.

(D) For locally approvable projects, the permittee shall indicate whether any financial assurance was required by the town in which the project is being conducted and, if so, indicate what type of assurance was required and in what amount.

(E) Nothing in this subsection or permit shall be construed to authorize District personnel, a qualified soil erosion and sediment control professional or a qualified professional engineer to engage in any profession or occupation requiring a license under any other provision of the general statutes without such license.

(F) Failure to comply with any provisions of Section 3(*b*)(16) is a violation of this general permit and shall be grounds for the commissioner to revoke authorization.

(G) Specific Provisions Applicable to Projects Conducted by State Agencies

(i) Permittee shall conduct a preconstruction meeting with the contractor that conveys the design, stormwater control measures, plan implementation and routine site inspections, erosion and sediment controls, and contract requirements for the project prior to earth disturbance. Such meeting shall include a site walk of the project site.

(ii) The DOT District Engineer, District Environmental Coordinator, or the designated employee of another state agency shall conduct the Plan Implementation Inspection(s) pursuant to Section 5(*b*)(4)(A) of the general permit and shall submit such Plan Implementation Inspection report(s) to the Commissioner confirming compliance with the general permit and proper initial implementation of all control measures designated in the Plan for the initial phase of construction.

(iii) The State is not required to provide evidence of financial assurance.

(c) Registration

Pursuant to the "Registration Requirements" section (Section 4) of this general permit, a completed registration with respect to the construction activity shall be filed with the commissioner.

(d) Small Construction

For construction projects with a total disturbance of between one and five acres, the permittee shall adhere to the erosion and sediment control land use regulations of the municipality in which the construction activity is conducted, as well as the Guidelines and the Stormwater Quality Manual.

No registration or Plan review and certification shall be required for such construction activity provided a land-use commission of the municipality (i.e. planning/zoning, wetland, conservation, etc) reviews and issues a written approval of the proposed erosion and sediment control measures, pursuant to the requirements of section 22a-329 of the Connecticut General Statutes. In the absence of a municipal commission to review and approve such activity, the permittee shall register with the DEEP under the requirements for a Locally Exempt Project and comply with all applicable conditions of this general permit.

(e) Geographic Area

This general permit applies throughout the State of Connecticut.

(f) Effective Date and Expiration Date of this General Permit

This General Permit shall be effective at 12:00 a.m. on December 31, 2020. The provisions of this General Permit shall expire as of 11:59 p.m. on December 30, 2025.

(g) Effective Date of Authorization

A construction activity is not authorized by this general permit unless a registration has been approved by the Commissioner and the following conditions have been met:

(1) General Timelines

(A) for locally approvable projects, sixty (60) days have elapsed after the submission of a complete and sufficient registration form required by Section 4(*c*) of the general permit, or

(B) for locally exempt projects with a total disturbed area of under fifteen (15) acres, sixty (60) days have elapsed after the submission of a complete and sufficient registration form required by Section 4(*c*), or

(C) for locally exempt projects with a total disturbed area equal to or more than fifteen (15) acres, ninety (90) days have elapsed after the submission of a complete and sufficient registration form required by Section 4(*c*) of the general permit.

(2) Exceptions to Authorization Timelines

If one of the following conditions applies, that condition shall supersede those of subsection (1), above:

(A) for sites for which the registration and Plan availability and review provisions of Section 4(*e*) of the general permit are completed prior to the elapse of the authorization periods in subdivision (1), above, the commissioner may authorize the activity upon such completion, or

(B) for sites for which the conditions of Section 3(*b*)(2), 3(*b*)(13) or Section 5(*a*)(2) of the general permit apply, the activity is authorized only upon the date of the commissioner's affirmative determination and/or approval of a registration, or

(C) for sites authorized by any previous version of this general permit and for which no Notice of Termination has been submitted pursuant to the "Termination Requirements" of that general permit, the activity is authorized effective December 31, 2020. Authorization under this general permit shall cease if a re-registration form is not submitted within one hundred twenty (120) days of the effective date of this general permit.

(h) Revocation of an Individual Permit

No person shall seek authorization under this general permit for a construction activity authorized by an individual permit. If a construction activity is eligible for authorization under this general permit and such activity is presently authorized by an individual permit, the existing individual permit may be revoked by the commissioner upon a written request by the permittee. If the commissioner revokes such individual permit in writing, such revocation shall take effect on the effective date of authorization of such activity under this general permit.

(i) Issuance of an Individual Permit

If the commissioner issues an individual permit under section 22a-430 of the Connecticut General Statutes, authorizing a construction activity authorized by this general permit, this general permit shall cease to authorize that activity beginning on the date such individual permit is issued.

Section 4. Registration Requirements

(a) Who Must File a Registration

With the exception noted in the "Small Construction" section (Section 3(*d*)) of this general permit, any person or municipality which initiates, creates, originates or maintains a discharge described in the "Eligible Activities" section (Section 3(*a*)) of this general permit shall file with the commissioner a registration form (or, for existing permittees, a re-registration form) that meets the requirements of the "Contents of Registration" section (Section 4(*d*)) of this general permit (or a re-registration form) and the applicable fee within the timeframes and in the amounts specified in Sections 4(*c*) and 4(*d*)(1)(A), respectively. Any such person or municipality filing a registration remains responsible for maintaining compliance with this general permit.

(b) Scope of Registration

Each registration shall be limited to the discharge at or from one site; no registration shall cover discharges at or from more than one site.

(c) Registration Procedure

(1) Locally Approvable Projects

The registration must:

(A) Be electronically submitted, along with all required elements in subsections (B) through (E), below, at least sixty (60) days prior to the planned commencement of the construction activity. Failure to include any of these required submissions shall, among other potential reasons, be grounds to reject the registration.

(B) Include the electronic Registration Form (available at www.ct.gov/deep/stormwater).

(C) Include any additional forms and information that may be required pursuant to the "Requirements for Authorization" section (Section 3(*b*) of the general permit) regarding compliance and/or consistency with the Coastal Management Act, Impaired Waters (including TMDL requirements), Endangered and Threatened Species, and Aquifer Protection Areas.

(D) Include an electronic copy of the Stormwater Pollution Control Plan. The electronic Plan shall be in Adobe™ PDF format or similar publicly available format in common use. **DO NOT INCLUDE** in this electronic copy any pages or other material that do not pertain to stormwater management or erosion and sediment control (such as electrical and lighting plans, boundary or lot surveys, building plans, non-stormwater related detail sheets, etc.).

(E) Include a Plan Review Certification in accordance with the plan review certification requirements of either Section 5(*b*)(10) or 5(*b*)(11) of the general permit.

(2) Locally Exempt Projects

The registration must be electronically submitted, along with all required elements in subsections (B), (C) and (D) of this section. The sixty (60) or ninety (90) day periods cited in subparagraph (A) of this subdivision shall not begin until all required elements have been submitted. Failure to include any of these required submissions shall be grounds to reject the registration. A registration shall:

(A) Be submitted at least:

(i) sixty (60) days prior to the planned commencement of the construction activity if the site has a total disturbance of between one (1) and fifteen (15) acres; ***or***

(ii) ninety (90) days prior to the planned commencement of construction activity if the site:

(a) has a total disturbance greater than fifteen (15) acres;

(b) discharges to a tidal wetland (that is not a fresh-tidal wetland) within 500 feet of the discharge point; ***or***

(c) is subject to the impaired waters provisions of Section 3(*b*)(13) of the general permit.

(B) Include the electronic Registration Form (available at www.ct.gov/deep/stormwater).

(C) Include any additional forms and information that may be required pursuant to Section 3(*b*)) of the general permit, "Requirements of Authorization", regarding compliance and/or consistency with the Coastal Management Act, Impaired Waters (including TMDL requirements), Endangered and Threatened Species, Solar Array provisions and Aquifer Protection.

(D) Include an electronic copy of the Stormwater Pollution Control Plan (Plan) (or a web address where the electronic Plan can be downloaded) for the commissioner's review. The electronic Plan shall be in Adobe™ PDF format or similar publicly available format in common use. **DO NOT INCLUDE** in this electronic copy any pages or other material that do not pertain to stormwater management or erosion and sediment control (such as electrical and lighting plans, A-2 boundary or similar lot surveys, building plans, non-stormwater related detail sheets, etc.).

(3) Re-Registration of Existing Projects

(A) *Re-Registration*. In order for discharges to continue to be authorized, a Permittee with a registration previously approved by the Commissioner under any previous version of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and for which no Notice of Termination has been submitted pursuant to the "Termination Requirements" of that general permit shall submit a re-registration. Any such registration shall:

(i) be submitted no later than one hundred twenty (120) days after the effective date of this general permit using an electronic Re-Registration Form (available at www.ct.gov/deep/stormwater) pursuant to Section 4(*c*)(3) of the general permit; and

(ii) be accompanied by the fee set forth in Section 4(*d*)(1)(A)(iii) of the general permit unless that section provides for the waiver of such fee. Resubmission of a Permittee's Plan is not required with a re-registration provided, however, that such Plan shall be provided to, if requested by, the commissioner. Such Plan shall be provided within the time frame provided for in any request, or if no timeframe is provided, within thirty (30) days of the date of any such request.

(B) *Existing Projects that are not re-registered.* Discharges at or emanating from a site, for a Permittee with a registration previously approved by the Commissioner, that is not re-registered in accordance with this section shall no longer be authorized. Any re-registration

received more than one hundred twenty (120) days after the effective date of this general permit shall be considered to be a new registration, and shall not be eligible for any exemption from, or waiver of, any condition or requirement of this general permit, as specified in this section, and shall instead be required to comply with this general permit as if it were a new project, i.e., a project that had not been previously registered.

(C) *Exemption for Existing Projects Upon Re-Registration.* A Permittee that submits a re-registration in compliance with this section shall, except as provided in this section, comply with the terms and conditions of this general permit, including, but not limited to, the Plan in effect for the site. Any such Permittee shall be exempt from compliance with Sections 3(*b*)(15) and 5(*b*)(2)(D)(vi) of this general permit and, for a Permittee submitting a re-registration for construction of a solar array, shall be exempt from paragraphs (1) and (2) of Section I, Design and Construction requirements, in Appendix I and Section II, Design requirements for post-constriction stormwater management measures in Appendix I.

Note: For clarification purposes, the provisions of this general permit, including any updates to a Permittee's Plan, shall not apply retroactively to construction activities that may have already commenced – or been completed - before a Permittee submits a re-registration pursuant to section 4(*c*)(3) of this general permit. For example, the plan implementation inspections required by Section 5(*b*)(4)(A) of this general permit would not be applicable to a phase of construction already begun at the time a re-registration is submitted. By contrast, compliance with those same plan implementation inspection requirements would be required for each phase of construction that commences after a re-registration is submitted.

(4) Latest Date for New Registrations

Unless another date is specified by the Commissioner on the Department's Internet website (www.ct.gov/deep/stormwater), no person shall submit a registration under this general permit on or after October 1, 2025.

(d) Contents of Registration

(1) Fees

(A) Registration Fee

A registration, if required, shall not be deemed complete unless the registration fee has been paid in full.

(i) Locally Approvable Projects

A registration fee of $625.00 shall be submitted to the Department with the registration form.

(ii) Locally Exempt Projects

A registration fee shall be submitted with a registration form as follows:

(a) For sites with total disturbance of one (1) or more acres, but less than fifteen (15) acres, the fee shall be $3,000.

(b) For sites with total disturbance equal to or greater than fifteen (15) acres and less than fifty (50) acres, the fee shall be $4,000.

(c) For sites with total disturbance equal to or greater than fifty (50) acres, the fee shall be $5,000.

The fees for municipalities shall be half of those indicated in subsections (a), (b) and (c) above pursuant to section 22a-6(b) of the Connecticut General Statutes. State and Federal agencies shall pay the full fees specified in this subsection.

(iii) Re-registration

(a) For sites that registered under the previous version of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities prior to August 1, 2019 and for which no Notice of Termination has been submitted pursuant to the "Termination Requirements" section (Section 6), the re-registration fee shall be $625 payable with submission of the re-registration form within one hundred twenty (120) days from the effective date of this general permit. If a Notice of Termination is submitted prior to January 1, 2020, no re-registration or associated fee are required.

(b) For sites that registered under the previous version of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities on or after August 1, 2019 and for which no Notice of Termination has been submitted pursuant to the "Termination Requirements" section (Section 6), the permittee shall re-register and there is no re-registration fee.

(B) The registration fee shall be paid electronically or by check or money order payable to the Department of Energy & Environmental Protection in accordance with the instructions on the registration form.

(C) The registration fee is non-refundable.

(2) Registration Form

A registration shall be filed electronically on forms prescribed and provided by the commissioner (available at: www.ct.gov/deep/stormwater).

A registration shall include, but not be limited to, the following:

(A) Legal name, address, email address, and telephone number of the registrant. If the registrant is a person (as defined in Section 2 of this permit) transacting business in Connecticut and is registered with the Connecticut Secretary of the State, provide the exact name as registered with the Connecticut Secretary of the State.

(B) Legal name, address, email address, and telephone number of the owner of the property on which the construction activity will take place.

(C) Legal name, address, email address, and telephone number of the primary contact for departmental correspondence and inquiries, if different from the registrant.

(D) Legal name, address, email address, and telephone number of the developer of the property on which the construction activity is to take place.

(E) Legal name, address, email address, and daytime and off-hours telephone numbers of the general contractor(s) or other representative(s), if different from the developer.

(F) Legal name, address, email address, and telephone number of any consultant(s), engineer(s) or landscape architect(s) retained by the permittee to prepare the registration and Stormwater Pollution Control Plan.

(G) Location address or description of the site for which the registration is filed.

(H) The estimated duration of the construction activity.

(I) Indication of the normal working hours at the site.

(J) A brief description of the construction activity, including, but not limited to:

(i) Total number of acres to be disturbed, regardless of phasing.

(ii) Verification that construction is in accordance with the Guidelines and local erosion and sediment control ordinances, where applicable.

(iii) For sites in the Coastal Boundary, documentation that the DEEP Office of Long Island Sound Programs or local governing authority has issued a coastal site plan approval or a determination that the project is exempt from coastal site plan review (see Appendix D) in accordance with section 22a-92 and 22a-93(15) of the Connecticut General Statutes.

(iv) Documentation that the construction activity will not threaten the continued existence of any species listed pursuant to section 26-306 of the Connecticut General Statutes as endangered or threatened and will not result in the destruction or adverse modification of habitat designated as essential to such species (see Appendix A).

(v) For sites discharging to certain impaired waters, as specified in Section 3(*b*)(13) of the general permit, documentation that the construction activity meets the requirements of that section and Section 5(*b*)(3) of the general permit for authorization under this general permit.

(vi) Verification that the construction activity is not located within an aquifer protection area (see Appendix C) as mapped under section 22a-354b of the Connecticut General Statutes or, if it is located within an aquifer protection area, that the construction activity will comply with regulations adopted pursuant to section 22a-354i of the Connecticut General Statutes.

(vii) For a proposed locally approvable project, a plan review certification from the appropriate District, qualified soil erosion and sediment control professional, and/or qualified professional engineer in accordance with Section 5(*b*)(10) or (11) or a notice from the District that they were unable to complete the Plan review within the time limits specified in the Memorandum of Agreement in Appendix E.

(viii) For construction activities within one-hundred (100) feet of any stream, river, or tributary that is included within a Cold Water Stream Habitat, as may be authorized by the Commissioner pursuant to Section 3(b)(15) of this general permit, a completed Fisheries Consultation Form or documentation of official interagency coordination between the Fisheries Division and other state agency staff.

(K) A brief description of the stormwater discharge, including:

(i) The name of the municipal separate storm sewer system or immediate surface water body or wetland to which the stormwater runoff will discharge;

(ii) Verification of whether or not the site discharges to a tidal wetland (that is not a fresh-tidal wetland) within 500 feet of the discharge point, to a high quality water or to an impaired water with or without a TMDL;

(iii) The name of the watershed or nearest waterbody to which the site discharges.

(iv) Location of the stormwater discharge(s) including latitude and longitude.

(L) The total effective impervious cover for the site before and after the proposed construction activity.

(M) Documentation that the proposed construction activity has been reviewed for consistency with state Historic Preservation statutes, regulations, and policies including identification of any potential impacts on property listed or eligible for listing on the Connecticut Register of Historic Places. A review conducted for an Army Corps of Engineers Section 404 wetland permit would meet this qualification. Refer to Appendix G for guidance on conducting the required review.

(N) An electronic copy of their Plan. The electronic Plan shall be in Adobe™ PDF format or similar publicly available format in common use. **DO NOT INCLUDE** in this Plan any pages or other material that do not pertain to stormwater management or erosion and sediment control (such as electrical and lighting plans, boundary or lot surveys, building plans, non-stormwater related detail sheets, etc.).

(O) The certification of the registrant and of the individual or individuals responsible for actually preparing the registration, in accordance with Section 3(*b*)(8) of the general permit.

(P) A design certification must be signed by a professional engineer or, where appropriate, a landscape architect in accordance with Section 3(*b*)(9) of the general permit.

(Q) For registrations for locally approvable projects a review certification must be signed by either: (i) a District representative in accordance with Section 3(*b*)(10) of the general permit, or (ii) a qualified soil erosion and sediment control professional and/or qualified professional engineer in accordance with either Section 3(*b*)(11) of the general permit.

If the registrant is not capable of submitting electronically, contact the DEEP stormwater staff at DEEP.stormwaterstaff@ct.gov.

(3) Re-Registration Form

For sites previously registered under any previous version of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and for which no Notice of Termination has been submitted pursuant to the "Termination Requirements" in Section 6 of the general permit, a re-registration is required. Such re-registration shall be filed electronically on forms prescribed and provided by the commissioner (available at: www.ct.gov/deep/stormwater) and shall include, but not be limited to, the following:

(A) Legal name, address, email address, and telephone number of the registrant. If the registrant is a person transacting business in Connecticut and is registered with the Connecticut

Secretary of the State, provide the exact name as registered with the Connecticut Secretary of the State.

(B) The previously issued permit number (beginning with GSN).

(C) Legal name, address, email address, and telephone number of the owner of the property on which the construction activity will take place.

(D) Legal name, address, email address, and telephone number of the primary contact for departmental correspondence and inquiries, if different from the registrant.

(E) Legal name, address, email address, and telephone number of the developer of the property on which the subject construction activity is to take place.

(F) Legal name, address, email address, and daytime and off-hours telephone numbers of the general contractor(s) or other representative(s), if different from the developer.

(G) Legal name, address, email address, and telephone number of any consultant(s) or engineer(s) retained by the permittee to prepare the registration and Stormwater Pollution Control Plan.

(H) Location address or description of the site for which the re-registration is filed.

(I) Indication of the normal working hours at the site.

(J) The estimated duration of the construction activity.

(K) The signature of the registrant and of the individual or individuals responsible for actually preparing the re-registration, each of who shall certify in writing as follows:

"I hereby certify that I am making this certification in connection with a registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, submitted to the commissioner by [INSERT NAME OF REGISTRANT] for an activity located at [INSERT ADDRESS OF PROJECT OR ACTIVITY] and that all terms and conditions of the general permit are being met for all discharges which have been initiated and such activity is eligible for authorization under such permit. I further certify that all designs and plans for such activity meet the current terms and conditions of the general permit in accordance with Section 5(b)(5)(C) of such general permit and that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that the registration filed pursuant to this general permit is on complete and accurate forms as prescribed by the commissioner without alteration of their text. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(*b*)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

(e) How to Submit a Registration

A registration or re-registration (available at: www.ct.gov/deep/stormwater) shall be filed electronically with the commissioner in accordance with Section 4(*d*)(2) or (3) of the general permit. If a permittee is not capable of submitting electronically, contact the DEEP stormwater staff at DEEP.stormwaterstaff@ct.gov.

(f) Availability of Registration and Plan

The commissioner shall post on the DEEP website a list of registrations submitted. Plans will be posted electronically with the corresponding registration. On or before thirty (30) days from the date such registration is accessible to the public through posting by the commissioner, members of the public may review and comment on a registration and/or Plan. This provision shall not apply to Permittee's submitting a re-registration for sites registered under any previous version of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and for which no Notice of Termination has been submitted pursuant to the "Termination Requirements" in Section 6 of the general permit.

(g) Additional Information

The commissioner may require a Permittee to submit additional information that the commissioner deems necessary to evaluate compliance of the subject construction activity with the requirements for authorization under this general permit.

(h) Additional Notification

(1) No later than five (5) days after submitting a registration to the commissioner, the Permittee shall provide the following additional notifications:

(A) For discharges authorized by this general permit to a regulated municipal separate storm sewer system, a notification that a registration has been submitted to the Department shall also be submitted to the owner and operator of that system.

(B) For discharges authorized by this general permit to a DOT separate storm sewer system, a copy of the registration and all attachments thereto shall also be submitted to the DOT upon request.

(C) For discharges within a public drinking water supply watershed or aquifer protection area, a copy of the registration and the Plan described in subsection 5(*b*) of this general permit shall be submitted to the water company.

(D) For discharges to river components and tributaries which have been designated as Wild and Scenic under the Wild and Scenic Rivers Act, a copy of the registration and the Plan described in 5(*b*) of this general permit shall be submitted to the applicable Wild and Scenic Coordinating Committee. Please refer to Appendix H for additional guidance.

(2) The Permittee shall ensure that a copy of the registration submitted to the Commissioner and the Plan shall be available upon request to the local inland wetlands agency established pursuant to section 22a-42 of the Connecticut General Statutes, or its duly authorized agent.

(i) Action by Commissioner

(1) The commissioner may reject without prejudice a registration that the commissioner deems insufficient. For example, if it does not satisfy the requirements of the "Contents of Registration"

section (subsection 4(*d*)) of this general permit. Any registration refiled after such a rejection shall be accompanied by the fee specified in the "Fees" subsection (subsection 4(*d*)(1)) of this general permit.

(2) The commissioner may disapprove a registration if it does not comply with the requirements of this general permit or for any other reason provided for by law. For example, if it is inconsistent with the requirements for authorization under the "Requirements for Authorization" section (Section 3(*b*)) of this general permit, or an individual permit is required pursuant to Conn. Gen. Stat. § 22a-430b(c). Disapproval of a registration under this subsection shall constitute notice to the registrant that the subject construction activity must be authorized under an individual permit.

(3) Rejection or disapproval of a registration by the commissioner shall be in writing and state the reasons for such rejection or disapproval.

(4) Pursuant to Conn. Gen. Stat. § 22a-430b(c), the commissioner may require that a person or municipality obtain an individual permit, in which case, such person or municipality will be ineligible for authorization under this general permit.

(5) When approving a registration, the commissioner may include in any such approval any term or condition the commissioner deems necessary to protect human health and the environment..

Section 5. Conditions of this General Permit

The permittee shall comply with all of the requirements of this general permit at all times. In addition, a permittee shall be responsible for conducting authorized construction activities in accordance with the following conditions:

(a) General Conditions

(1) Structures and Dredging in Coastal and Tidal Areas

Any person who or municipality that discharges stormwater into coastal tidal waters for which a permit is required under section 22a-361 of the Connecticut General Statutes (structures and dredging) or section 22a-32 of the Connecticut General Statutes (Tidal Wetlands Act), shall obtain such permit(s) from the commissioner. A tidal wetland permit is required for any regulated activity conducted within a tidal wetland, including, but no limited to, the placement of any sediment upon a tidal wetland, whether it is deposited directly or indirectly.

(2) Discharges to Tidal Wetlands

Any site which has a post-construction stormwater discharge to a tidal wetland (that is not a fresh-tidal wetland) where such discharge is within 500 feet of the tidal wetland, shall discharge such stormwater through a system designed to retain and infiltrate the volume of stormwater runoff generated by 1 inch of rainfall on the site. If there are site constraints that would prevent retention of this volume on-site (e.g., brownfields, capped landfills, bedrock, elevated groundwater, etc.), documentation must be submitted, for the commissioner's review and written approval, which explains the site limitations and offers an alternative retention volume. In such cases, the portion of 1 inch that cannot be retained must be provided with additional stormwater treatment so as to protect water quality. Any such treatment shall be designed, installed and maintained in accordance with the Stormwater Quality Manual.

For sites unable to comply with this section, the commissioner, at the commissioner's sole discretion, may require the submission of an individual permit in lieu of authorization under this general permit.

(3) Toxicity to Aquatic and Marine Life/Risk to Human Health

Any discharge authorized under this general permit shall not cause pollution due to acute or chronic toxicity to aquatic and marine life, impair the biological integrity of aquatic or marine ecosystems, or result in an unacceptable risk to human health.

(4) Water Quality Standards

Any discharge authorized under this general permit shall not cause or contribute to an exceedance of the applicable Water Quality Standards in the receiving water.

(5) High Quality Waters

Any new or increased discharge authorized under this general permit to high quality waters shall be discharged in accordance with the Anti-Degradation Implementation requirements in the Water Quality Standards, section 22a-426-8 of RCSA.

(b) Stormwater Pollution Control Plan

All Permittees shall develop and maintain on-site a Stormwater Pollution Control Plan ("Plan" or "SWPCP") for the construction activity authorized by this general permit. Once the construction activity begins, the permittee shall perform all actions required by such Plan and shall maintain compliance with the Plan at all times. The permittee shall ensure that the design and implementation of the Plan minimizes: (1) soil erosion and sedimentation during and after construction; and (2) stormwater pollution from the site after construction is completed.

(1) Development and Contents of Plan

(A) The Plan shall consist of site plan drawings and a narrative. The Plan shall be prepared in accordance with sound engineering practices, and shall be consistent with the Guidelines, the Stormwater Quality Manual (available at http://www.ct.gov/deep/stormwater) and any applicable requirements of this general permit. The Plan shall also be consistent with any remedial action plan, closure plan or other plan required by any other DEEP permit.

(B) The Plan shall include, at a minimum, the following items:

(i) Site Plan

Site drawings indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of soil disturbance, the location of major structural and non-structural controls (as specified in subsection 5(*b*)(2), below), the location of areas where stabilization practices are expected to occur, areas which will be vegetated following construction, surface waters, impaired waters (identifying those with and without a TMDL), high quality waters, inland wetlands, tidal wetlands, fresh-tidal wetlands, and locations where stormwater will be discharged to a surface water (both during and post-construction);

(ii) Site Description

(a) A narrative description of the nature of the construction activity;

(b) An estimate of the total area of the site and the total area of the site that is expected to be disturbed by construction activities;

(c) An estimate of the average runoff coefficient of the site after construction activities are completed;

(d) The name of the immediate receiving water(s) and the ultimate receiving water(s) of the discharges authorized by this general permit; and

(e) Extent of wetland acreage on the site.

(iii) Construction Sequencing

The Plan shall clearly identify the expected sequence of all construction activities on the site and corresponding erosion and sediment controls and shall include an estimated timetable for all construction activities, which shall be revised as necessary to keep the Plan current. Wherever practicable, site construction activities shall be phased to avoid the disturbance of over five acres at one time (or a lesser area of disturbance as required in Section 5(*b*)(3) of the general permit regarding "Impaired Waters". In addition, permanent stormwater control measures, including, but not limited to, stormwater basins should be constructed, where practicable, in the early phases of the construction sequence. The Plan shall clearly show the limits of total disturbance for the construction activity and for each phase.

(iv) Control Measures

The Plan shall include a description, in a separate narrative and on the site plan drawings, of control measures that will be implemented at the site to minimize the discharge of pollutants. Control measures shall be implemented in accordance with Section 5(*b*)(2) of the general permit. In addition, the following information shall be provided:

(a) Calculations supporting the design of sediment and floatables removal controls pursuant to Section 5(*b*)(2)(C)(ii)(b) of the general permit.

(b) Calculations supporting the design of velocity dissipation controls pursuant to Section 5(*b*)(2)(C)(ii)(c) of the general permit.

(v) Runoff Reduction and Low Impact Development (LID) Information

Where runoff reduction practices and/or LID measures are utilized, the following information shall be included in the site plan and narrative (refer to Appendix B for guidance):

(a) The location of the site's streams, floodplains, all wetlands, riparian buffers, slopes 3:1 and steeper, and vegetation identified for preservation and non-disturbance during construction such as forested areas, hay fields, and old fields;

(b) Natural drainage patterns, swales, and other drainage ways, that are not streams, floodplains, or wetlands;

(c) The location of all areas with soils suitable for infiltration[1] and areas of the site best suited for infiltration for the siting of runoff reduction practices and LID design measures;

1 Infiltration rates must be measured by a field permeability test. The measured field design infiltration rate is equal to one-half the field-measured infiltration rate.

(d) The location of all areas unsuitable or least suitable for infiltration for the siting of areas of development/building;

(e) The location of all post-construction stormwater management measures, runoff reduction practices and LID design measures developed pursuant to subsection 5(*b*)(2)(C)(i) of the general permit;

(f) Identification of areas inappropriate for the infiltration of stormwater runoff from land uses with a significant potential for groundwater pollution;

(g) A narrative describing the nature, purpose, implementation and long-term maintenance of post-construction stormwater management measures, runoff reduction practices and LID design measures;

(h) Calculations, for measures developed pursuant to Section 5(*b*)(2)(C)(i) of the general permit, illustrating the retention of the water quality volume or half the water quality volume for the site, as applicable, including a discussion of the impact of any runoff reduction and/or LID practices on these calculations;

(i) A narrative describing any site constraints that prevent retention of the appropriate volume specified in Section 5(*b*)(2)(C)(i) of the general permit including: an explanation of the site limitations; a description of the runoff reduction practices implemented; an explanation of why the amount retained constitutes the maximum extent achievable; an alternative retention volume; and a description of the measures used to provide additional stormwater treatment for sediment, floatables and nutrients above the alternate volume up to the water quality volume; and

(j) Calculations showing the proposed effective impervious cover for the site and, where required or proposed for linear projects pursuant to Section 5(*b*)(2)(C)(i) of the general permit, each outfall drainage area.

(vi) Inspections

(a) Plan Implementation Inspections

The Plan shall include a Plan Implementation inspection checklist, a schedule for conducting inspections, and identification of the designing qualified professional (and District personnel, as appropriate) conducting such inspections and their responsibilities and procedures pursuant to subsection 5(*b*)(4)(A) of the general permit. The Plan shall also include documentation of the qualifications of the inspector and the findings, actions and results of all inspections conducted at the site. For inspection requirements for solar arrays (as defined in Section 2), see Appendix I.

(b) Routine Inspections

The Plan shall include a routine inspection checklist, schedule for conducting inspections, and identification of the qualified inspector(s) conducting the routine inspections and their responsibilities and procedures pursuant to subsection 5(*b*)(4)(B) of the general permit. The Plan shall also include documentation of the qualifications of the inspector(s) and the findings, actions and results of all inspections conducted at the site.

(c) For additional Plan Implementation and Routine Inspection requirements for solar arrays, see Appendix I.

(d) Inspection Checklists

The checklists required by (vi)(a) and (vi)(b) of this subparagraph shall include the information described in the checklist forms found at: www.ct.gov/deep/stormwater. Such inspection checklists shall comply with the requirements and conditions of Section 5(*b*)(4) of the general permit, and include a space for the qualified professional's signature and professional stamp.

(vii) Contractors

(a) The Plan shall clearly identify each contractor and subcontractor that will perform construction activities on the site that have the potential to cause pollution of the waters of the State. The Plan shall also include a copy of the certification statement pursuant to "Other Requirements for Authorization" in Section 3(*b*)(16) of the general permit, signed by each such contractor and subcontractor.

(b) Subdivisions

Where individual lots in a subdivision or other common plan of development are conveyed or otherwise the responsibility of another person or municipality, those individual lot contractors shall be required to comply with the provisions of this general permit and the Stormwater Pollution Control Plan, regardless of lot size or disturbed area. In such cases, the permittee shall provide a copy of the Plan to each individual lot contractor, obtain signed certifications pursuant to Section 3(*b*)(16)(B) of the general permit from such contractors and retain all signed certifications in the Plan.

(viii) Impaired Waters

For construction activities that discharge to impaired waters, as specified in "New Discharges to Impaired Waters" (Section 3(*b*)(13)), the Plan shall include a description of the provisions for controlling the construction and post-construction stormwater discharges to these waters pursuant to subsection 5(*b*)(3) below.

(2) Stormwater Control Measures

Control Measures are required Best Management Practices (BMPs) that the permittee must implement to minimize the discharge of pollutants from the permitted activity. The term "minimize" is defined in Section 2 of this general permit. The Permittee shall comply with the following requirements.

Control Measures shall be designed in accordance with the Guidelines, the Stormwater Quality Manual or the DOT Qualified Products List (https://portal.ct.gov/-/media/DOT/documents/dresearch/ConnDOT-Qualified-Product-List.pdf?la=en). Use of control measures to comply with the "Erosion and Sediment Controls" section (subsection (A) below) of this general permit that are not included in such references must be approved by the commissioner. The narrative and drawings of controls shall address the following minimum components:

(A) Erosion and Sediment Controls

(i) Soil Stabilization and Protection

The Plan shall include a narrative and drawings of interim and permanent soil stabilization practices for managing disturbed areas and soil stockpiles, including a schedule for implementing the practices. The Permittee shall ensure that existing vegetation is preserved to the maximum extent practicable and that disturbed portions of the site are minimized and stabilized throughout the duration of the construction activity at the site.

Regardless of any provisions for erosion control barriers prescribed in the Guidelines, the Permittee shall ensure that two rows of erosion control barriers are installed and maintained on sites with slopes equal to or greater than eight percent (8%) within the contributing drainage area to such barrier. Notwithstanding the foregoing, use of two rows of erosion control barriers shall not be required on the sites specified in this paragraph when: (i) the Commissioner determines, for a limited section or portion of such erosion control barriers, that it is necessary to accommodate animal crossing or animal movement; (ii) the Commissioner approves a Plan that includes an erosion control system whose performance is equivalent to, or exceeds, two rows of erosion control barriers; or (iii) for *linear projects*, the Commissioner has determined that two rows of erosion control barriers, when compared to one row, will cause greater adverse impact to wetlands, waters, or other sensitive resources. In such situation the Commissioner may approve a Plan with one row of erosion control barriers or an alternative erosion control system. When implementing this paragraph the Commissioner may consider the contributing disturbed area, drainage area, length of the slope, flow conditions to maintain sheet flow, the efficacy of the proposed barrier, any adverse impacts from the use of one or two rows of erosion control barriers, and any other factor the Commissioner deems necessary.

Where construction activities have permanently ceased or when final grades are reached in any portion of the site, stabilization and protection practices as specified in Chapter 5 of the Guidelines or as approved by the commissioner shall be implemented within seven days. Notwithstanding any provisions of the Guidelines, areas that will remain disturbed but inactive for at least fourteen calendar days shall receive temporary seeding or soil protection within seven days in accordance with the Guidelines unless site conditions warrant shorter time periods for these provisions.

Areas that will remain disturbed beyond the seeding season as identified in the Guidelines, shall receive long-term, non-vegetative stabilization and protection sufficient to protect the site through the winter. In all cases, stabilization and protection measures shall be implemented as soon as possible in accordance with the Guidelines or as approved by the commissioner.

Temporary or permanent vegetation or other ground cover shall be maintained at all times in all areas of the site, except those undergoing active disturbance, in order to prevent erosion and soil compaction during construction activities. All new temporary and permanent vegetation shall consist of native plant species. With respect to such vegetation, the Permittee shall not use chemical fertilization, herbicides, or pesticides except as necessary to establish such vegetation.

A reverse slope bench is required for any slope steeper than 3:1 (horizontal: vertical) that exceeds 15 feet vertically, except when engineered slope stabilization structures or measures are included or a detailed soil mechanics analysis has been conducted to

verify stability. Engineered analyses and measures must be designed by a CT licensed Professional Engineer with experience in geotechnical engineering or soil mechanics.

(ii) Wetland Protection

Where site disturbance occurs within fifty (50) feet upgradient of a wetland, wetlands, or waters as defined in Section 2 of the general permit, a double row of sediment barrier (e.g. hay bales, silt fence, wattles, etc.) shall be installed in accordance with the Guidelines between the disturbed area and any such downgradient wetland, wetlands or waters.

(iii) Structural Measures

The Plan shall include a narrative and drawings of structural measures to divert flows away from exposed soils, store flows or otherwise limit runoff and minimize the discharge of pollutants from the site. Unless otherwise specifically approved in writing by the commissioner, or if otherwise authorized by another state or federal permit, structural measures shall be installed on upland soils.

For points of discharge from disturbed sites with a total contributing drainage area of between two to five acres, a temporary sediment trap or temporary sediment basin shall be designed and installed in accordance with the Guidelines. For points of discharge from disturbed sites with a total contributing drainage area greater than five acres, a temporary sediment basin shall be designed and installed in accordance with the Guidelines. Such trap(s) or basin(s) must be maintained until final stabilization of the contributing area as defined in "Notice of Termination" (Section 6(*a*)).

The requirement for sediment traps or basins shall not apply to flows from off-site areas and flows from areas of the site that are either undisturbed or have undergone final stabilization, provided such flows are diverted around the temporary sediment trap or basin and are approved in writing by the commissioner.

(iv) Maintenance

The Plan shall include a narrative of the procedures to maintain, in good and effective operating condition, all erosion and sediment control measures, including vegetation, and all other protective measures identified in the Plan. Maintenance of all erosion and sediment controls shall be performed in accordance with the Guidelines, or more frequently as necessary.

(B) Dewatering Wastewaters

Dewatering wastewaters shall be managed in accordance with the Guidelines. Dewatering wastewaters discharged to surface waters shall be discharged in a manner that minimizes the discoloration of the receiving waters. The Plan shall include a narrative and drawings of the operational and structural measures that will be used to ensure that all dewatering wastewaters will not cause scouring or erosion or contain suspended solids in amounts that could reasonably be expected to cause pollution of surface waters of the State. Unless otherwise specifically approved in writing by the commissioner, or if otherwise authorized by another state or federal permit, dewatering measures shall be installed on upland soils.

No discharge of dewatering wastewater(s) shall contain or cause a visible oil sheen, floating solids, or foaming in the receiving water.

(C) Post-Construction Stormwater Management

The Plan shall include a narrative and drawings of measures that will be installed during the construction process to minimize the discharge of pollutants in stormwater discharges that will occur after construction operations have been completed. Post-construction stormwater management measures shall be designed and implemented in accordance with the Stormwater Quality Manual, the DOT Qualified Products List or as approved by the commissioner. Unless otherwise specifically provided by the commissioner in writing, or authorized by another state or federal permit, structural measures shall be placed on upland soils. The Plan shall include provisions to address the long-term maintenance of any post-construction stormwater management measure installed.

(i) Post-Construction Performance Standards

The permittee shall utilize runoff reduction practices (as defined in Section 2 of the general permit) to meet runoff volume requirements based on the conditions below.

(a) Redevelopment

For sites that are currently developed with an effective impervious cover of forty percent or more and for which the permittee is proposing redevelopment, the permittee shall design the site in such a manner as to retain on-site half the water quality volume (as defined in Section 2 of the general permit) for the site and provide additional stormwater treatment without retention for discharges up to the full water quality volume for sediment, floatables and nutrients to the maximum extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice. In cases where the permittee is not able to retain half the water quality volume (e.g., brownfields, capped landfills, bedrock, elevated groundwater, etc.), the permittee shall design the redevelopment to retain runoff volume to the maximum extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice. In such cases, additional stormwater treatment up to the full water quality volume is still required. Any such treatment shall be designed, installed and maintained in accordance with the Stormwater Quality Manual. If retention of half the water quality volume is not achieved, the permittee shall submit a report for the commissioner's review and written approval describing: the measures taken to maximize runoff reduction practices on the site; the reasons why those practices constitute the maximum extent achievable; the alternative retention volume; and a description of the measures used to provide additional stormwater treatment above the alternate volume up to the water quality volume.

(b) Linear Redevelopment

In the case of linear redevelopment projects (e.g. roadway reconstruction or widening or public utility rights of way) for the developed portion of the right of way: (1) for projects that may be unable to comply with the retention of the appropriate portion of the water quality volume specified in subparagraphs (a) and (c) of this subsection, the alternate retention and treatment provisions may also be applied as specified in such subparagraphs, or (2) for projects that will not increase the effective impervious cover within a given watershed, the permittee shall implement the additional stormwater treatment measures referenced in subsections (a) and (c) of this subsection, but will not be required to retain the appropriate portion of the water quality volume specified in such paragraphs.

(c) Other Development

The following performance standard applies to all sites that are currently undeveloped or are currently developed with less than forty percent effective impervious cover. For these sites, the permittee shall design the site to retain the water quality volume for the site. If there are site constraints that would prevent retention of this volume on-site (e.g., brownfields, capped landfills, bedrock, elevated groundwater, etc.), documentation must be submitted, for the commissioner's review and written approval, which: explains the site limitations; provides a description of the runoff reduction practices implemented; provides an explanation of why this constitutes the maximum extent achievable; offers an alternative retention volume; and provides a description of the measures used to provide additional stormwater treatment for sediment, floatables and nutrients above the alternate volume up to the water quality volume. In the case of linear projects that do not involve impervious surfaces (e.g. electrical transmission rights-of-way or natural gas pipelines), retention of the water quality volume is not required as long as the post-development runoff characteristics do not differ significantly from pre-development conditions.

(ii) Post-Construction Control Measures

(a) Runoff Reduction and Low Impact Development ("LID") Practices

The site design shall incorporate runoff reduction practices, low impact development ("LID") practices or other post-construction control measures to meet the performance standards in subsection (i) above, promote groundwater recharge and minimize post-construction impacts to water quality. Please refer to Appendix B for additional guidance information.

(b) Suspended Solids and Floatables Removal

The permittee shall install post-construction stormwater control measures designed to minimize the discharge of suspended solids and floatables (e.g. oil and grease, other floatable liquids, floatable solids, trash, etc.) from stormwater. A goal of 80 percent removal of the annual sediment load from the stormwater discharge shall be used in designing and installing such stormwater control measures. The Plan shall provide calculations supporting the capability of such measures in achieving this goal and any third-party verification, as applicable, of the sediment removal efficiencies of such measures. This goal is not intended to limit local approval authorities from requiring a higher standard pursuant to local requirements.

(c) Velocity Dissipation

Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow to receiving waters so that the natural physical and biological characteristics and functions of such waters are maintained and protected.

(D) Other Controls

The following additional controls shall be implemented:

(i) Waste Disposal

Best management practices shall be implemented to minimize the discharge of litter, debris, building materials, hardened concrete waste, or similar materials to waters of the State. A narrative of these practices shall be provided in the Plan. In addition, the dumping of liquid wastes in storm sewers is prohibited.

(ii) Washout Areas

Washout of applicators, containers, vehicles and equipment for concrete, paint and other materials shall be conducted in a designated washout area. There shall be no surface discharge of washout wastewaters from this area. Such washout shall be conducted: (1) outside of any buffers and at least 50 feet from any stream, wetland or other sensitive resource; or (2) in an entirely self-contained washout system. The permittee shall clearly flag off and designate areas to be used for washing and conduct such activities only in these areas. The permittee shall direct all washwater into a container or pit designed such that no overflows can occur during rainfall or after snowmelt. At least once per week, the permittee shall inspect all of the containers or pits used for washout to ensure structural integrity, adequate holding capacity, and to check for leaks or overflows. If there are signs of leaks, holes or overflows in the containers or pits that could lead to a discharge, the permittee shall repair them prior to further use.

For concrete washout areas, the permittee shall remove hardened concrete waste whenever the hardened concrete has accumulated to a height of ½ of the container or pit or as necessary to avoid overflows. The permittee shall remove and dispose of such hardened concrete waste in accordance with the practices developed for "Waste Disposal" (see Section 5(*b*)(2)(D)(i) of this general permit).

A narrative of maintenance procedures and a record of maintenance and inspections shall be included in the Plan.

(iii) Off-site Vehicle Tracking/Dust Suppression

Off-site vehicle tracking of sediments and the generation of dust shall be minimized. Wet dust suppression shall be used, in accordance with section 22a-174-18(c) of the Regulations of Connecticut State Agencies, for any construction activity that causes airborne particulates. The volume of water sprayed for controlling dust shall be minimized so as to prevent the runoff of water. No discharge of dust control water shall contain a visible oil sheen, floating solids, visible discoloration, or foaming agents or cause a visible sheen, floating solids, visible discoloration, or foaming in any receiving waters.

(iv) Cleaning

All post-construction stormwater structures shall be cleaned of construction sediment and any remaining silt fence shall be removed upon stabilization of the site.

(v) Storage of Chemical and Petroleum Products

All chemical and petroleum product containers stored on the site (excluding those contained within vehicles and equipment) shall be stored within an impermeable containment system that is free of gaps and cracks, can contain any leaks or spills and accumulated precipitation until the collected materials are detected and removed, and

which can hold at least 110% of the volume of the largest container, or 10% of the total volume of all containers in the area, whichever is larger, without overflow from the containment system. In addition, all chemicals and petroleum products shall be stored under a roofed area except for those chemicals stored in containers of 100 gallon capacity or more, in which case a roof is not required. Double-walled tanks satisfy the requirements of this paragraph for containment and roofing.

(vi) Cold Water Stream Habitat

For construction activities within one hundred (100) feet of any stream, river, or tributary that is included within a Cold Water Stream Habitat, as may be authorized by the Commissioner pursuant to Section 3(*b*)(15) of this general permit, any mitigation strategies authorized by the commissioner must be verified post-construction.

(3) Additional Control Measures for Impaired Waters

Construction activities discharging directly to impaired waters that do not comply with this subsection are not authorized by this general permit. For construction activities that discharge directly to impaired waters, as specified in "New Discharges to Impaired Waters" (Section 3(*b*)(13) of this general permit), the Plan shall include the following provisions:

(A) In lieu of the provisions regarding "Construction Sequencing" in Section 5(*b*)(1)(B)(iii) of this general permit, no more than 3 acres may be disturbed at any one time. For those areas for which construction activity will be temporarily suspended for a period of greater than 14 days, temporary stabilization measures shall be implemented within 3 days of such suspension of activity. For all areas, permanent stabilization shall be implemented within 30 days of disturbance; ***or***

(B) The Plan shall document that measures are in place to ensure that there will be no discharge to the impaired water from rain events up to a 2-year, 24-hour rain event while construction activity is occurring; ***or***

(C) For discharges to impaired waters with an established TMDL, the requirements for stormwater discharges specified in the TMDL shall be met, or:

(i) the Plan shall document that there is sufficient remaining Waste Load Allocation (WLA) in the TMDL to allow the discharge;

(ii) measures shall be implemented to ensure the WLA will not be exceeded; ***and***

(iii) stormwater discharges shall be monitored, if applicable, for any indicator pollutant identified in the TMDL for every rain event that produces a discharge to ensure compliance with the WLA.

(4) Inspections

All construction activities authorized by this general permit shall be inspected initially for Plan implementation and then weekly for routine inspections. Upon project completion and prior to submission of a Notice of Termination, post-construction and final stabilization inspections shall also be conducted. For inspections at solar arrays, see additional requirements in Appendix I.

(A) Plan Implementation Inspections

Prior to commencement of each phase of the construction activity on the site, the permittee shall contact the designing qualified professional and, for locally exempt projects including, but not limited to, solar arrays subject to Appendix I, the appropriate District to ensure that all required inspections are conducted. For each phase of construction, the site shall be inspected at least once within the first thirty (30) days of construction activity and at least three times, with seven (7) or more days between inspections, within the first ninety (90) days of construction activity to confirm compliance with the general permit and proper initial implementation of all control measures designated in the Plan for each phase of construction. The following conditions shall apply:

(i) for all projects not conducted by a state agency and which disturb more than one (1) acre, the inspector shall be someone who:

(a) is not an employee, as defined by the Internal Revenue Service in the Internal Revenue Code of 1986, of the registrant, and

(b) has no ownership interest of any kind in the project for which the registration is being submitted.

(ii) for projects conducted by a state agency and which disturb more than one (1) acre, the inspector shall be someone who:

(a) meets the requirements in subparagraph (i), above, or

(b) is included in the list of qualified professionals specified in Section 3(*b*)(12)(B) of the general permit.

(B) Routine Inspections

The permittee shall routinely inspect the site for compliance with the general permit, including, but not limited to, compliance with the Plan for the site, until a Notice of Termination under Section 6 of the general permit has been submitted to the Commissioner. Inspection procedures for these routine inspections shall comply with the following:

(i) The permittee shall maintain a rain gauge on-site to document rainfall amounts. At least once a week and within 24 hours of the end of a storm that generates a discharge, a qualified inspector (provided by the permittee), shall inspect, at a minimum, the following: disturbed areas of the construction activity that have not been finally stabilized; all erosion and sediment control measures; all structural control measures; all soil stockpile areas; all washout areas and locations where vehicles enter or exit the site. For storms that end on a weekend, holiday or other time after which normal working hours will not commence within 24 hours, a routine inspection is required within 24 hours only for storms that equal or exceed 0.5 inches. For storms of less than 0.5 inches, an inspection shall occur immediately upon the start of the subsequent normal working hours.

In areas of the site where temporary stabilization has been implemented, a routine inspection shall be conducted at least weekly until final stabilization has been achieved. Once all post-construction stormwater measures have been installed in accordance with the Post-Construction Stormwater Management section (subsection 5(*b*)(2)(C) of this general permit) and cleaned of any construction sediment or debris, a post-construction inspection shall be conducted in accordance with subsection (C), below. For sites that

have implemented final stabilization, a routine inspection shall be conducted in accordance with subsection (D), below.

(ii) During each routine inspection the qualified inspector(s) shall, among other things, evaluate the effectiveness of erosion and sediment controls, structural controls, stabilization practices, and any other controls implemented to prevent pollution and determine if it is necessary to install, maintain, or repair such controls and/or practices to improve the quality of stormwater discharge(s). In addition, during each routine inspections the site including, but not limited to, all of the areas noted in the preceding paragraph, shall be inspected for evidence of, or the potential for, pollutants discharging to waters, or entering the drainage system and impacts to the receiving waters. Locations where vehicles enter or exit the site shall also be inspected for evidence of off-site sediment tracking.

(iii) The qualified inspector conducting routine inspections shall prepare a report of each inspection. Each such report shall be retained as part of the Plan. A copy of each inspection report shall be submitted electronically in accordance with Section 5(*c*)(2) of the general permit. This report shall summarize: the scope of the inspection; name(s) and qualifications of personnel conducting the inspection; the date(s) of the inspection; weather conditions including precipitation information; major observations relating to erosion and sediment controls and the implementation of the Plan; a description of the stormwater discharge(s) from the site; and any water quality monitoring performed during the inspection. The report shall be signed by the permittee or his/her authorized representative in accordance with the "Certification of Documents," see Section 5(*h*) of this general permit.

The report shall include a statement that, in the judgment of the qualified inspector(s) conducting the site inspection, the site is either in compliance or out of compliance with the terms and conditions of the Plan and permit. If the site inspection indicates that the site is out of compliance, the inspection report shall include a summary of the remedial actions required to bring the site back into compliance. Non-engineered corrective actions (as identified in the Guidelines) shall be implemented on site within 24 hours and incorporated into a revised Plan within three (3) calendar days of the date of inspection unless another schedule is specified in the Guidelines. Engineered corrective actions (as identified in the Guidelines) shall be implemented on site within seven (7) calendar days and incorporated into a revised Plan within ten (10) calendar days of the date of inspection, unless another schedule is specified in the Guidelines or is approved by the commissioner. During the period in which any corrective actions are being developed and have not yet been fully implemented, interim measures shall be implemented to minimize the potential for the discharge of pollutants from the site.

(iv) Inspectors from the DEEP and the appropriate District, where applicable, may inspect the site to verify compliance with this general permit at any time construction activities are ongoing, and upon completion of construction activities, until a Notice of Termination has been accepted by the Commissioner pursuant to Section 6 of the general permit.

(C) Post-Construction Inspection

(i) For locally approvable projects, once all post-construction stormwater measures have been installed in accordance with Section 5(*b*)(2)(C) of the general permit, Post-Construction Stormwater Management, and cleaned of any construction sediment or debris, the Permittee shall ensure that the appropriate Conservation District or a qualified soil erosion and sediment control professional or a qualified professional

engineer, as appropriate, inspects the site to confirm compliance with the post-construction stormwater management requirements. The permittee shall ensure that the person inspecting the site pursuant to this paragraph is not an employee, as defined by the Internal Revenue Service in the Internal Revenue Code of 1986, of the Permittee and that such person has no ownership interest of any kind in the project for which the site's registration was submitted. A report shall be prepared and certified in accordance with Sections 6(*a*) and (*b*) of the general permit to indicate compliance with this requirement on the Notice of Termination form.

(ii) For locally exempt projects except those conducted by state agencies, once all post-construction stormwater measures have been installed in accordance with the Section 5(*b*)(2)(C) of the general permit, "Post-Construction Stormwater Management", and cleaned of any construction sediment or debris, the permittee shall ensure that a qualified soil erosion and sediment control professional or a qualified professional engineer inspects the site to confirm compliance with the post-construction stormwater management requirements of the general permit. A report shall be prepared and certified in accordance with Sections 6(*a*) and (*b*) of the general permit to indicate compliance with this requirement on the Notice of Termination form.

(iii) For projects conducted by state agencies, once all post-construction stormwater measures have been installed in accordance with the Post-Construction Stormwater Management section (subsection 5(*b*)(2)(C)) and cleaned of any construction sediment or debris, the DOT District Engineer or his/her designee and/or DOT District Environmental Coordinator, or the designated employee of another state agency, will inspect the site to confirm compliance with the post-construction stormwater management requirements of the general permit.

(D) Final Stabilization Inspection

For all projects, once the site has achieved final stabilization for at least one full growing season (April – October) in the year following the end of construction, the Permittee shall have the site inspected by a qualified inspector to confirm such stabilization is maintained. The Permittee shall indicate compliance with this requirement on the Notice of Termination form.

(5) Keeping Plans Current

The Permittee is responsible for keeping their Plan in compliance with this general permit at all times. This may involve any or all of the following:

(A) The permittee shall amend the Plan if the actions required by the Plan fail to prevent pollution or unauthorized discharges to the waters of the state, or fail to comply with any other provision of this general permit. The Plan shall also be amended whenever there is an addition of or change in contractors or subcontractors at the site, the designing qualified professional, District personnel, or a change in design, construction, operation, or maintenance at the site which has not otherwise been addressed in the Plan.

The permittee shall submit a new registration to the commissioner in accordance with Section 4 of this general permit if the amount of disturbed area increases from the amount specified in the registration approved by the Commissioner or there are changes to engineered or non-engineered construction or post-construction control measures that have the potential to increase the quantity or quantity of pollution in the site's stormwater discharges. Such new registration shall be submitted before any such increases or changes are implemented.

(B) The commissioner may notify the permittee at any time that the Plan or the site does not meet one or more requirements of this general permit. Within seven (7) days of such notice, or such other time as the commissioner may allow, the permittee shall make the required changes to the Plan and perform all actions required by such revised Plan. Within 15 days of such notice, or such other time as the commissioner may allow, the permittee shall submit to the commissioner a written certification that the requested changes have been made and implemented and such other information as the commissioner requires. Any such certification or information shall be submitted in accordance with the 'Duty to Provide Information" and "Certification of Documents," Sections 5(*g*) and 5(*h*) of this general permit.

(C) For any stormwater discharges authorized under any previous version of this general permit, the Permittee shall, excluding any provisions for which an exemption is provided for in Section 4(*c*)(3)(C) of the general permit, update their Plan prior to their re-registration pursuant to Section 4(*c*)(3) of the general permit, and in no case later than one hundred twenty (120) days after the effective date of this general permit to ensure and maintain compliance with any applicable term and condition of this general permit. For previously authorized sites discharging to impaired waters or other sensitive areas, the commissioner may require additional control measures or provide authorization under an individual permit pursuant to Sections 4(*i*) and 3(*i*).

(D) The Permittee shall ensure that any person keeping this Plan or part thereof current, under the Keeping Plans Current section of this permit, has qualifications that would be required under this general permit to initially prepare the Plan or part thereof.

(E) The permittee shall retain as part of the Plan all modifications, and any documentation associated with each modification, made under this section.

(6) Failure to Prepare, Maintain or Update Plan

In no event shall failure to complete, maintain or update a Plan, in accordance with the "Development of Contents of the Plan" and "Keeping Plans Current" sections (subsections 5(*b*)(1) and 5(*b*)(5)) of this general permit, excuse non-compliance or relieve a permittee of responsibility to implement any actions required to protect the waters of the state or comply with the requirements of this permit.

(7) Plan Signature

The Plan shall be signed and certified as follows:

(A) The Plan shall be signed by the permittee in accordance with the Section 5(*h*) of this general permit, "Certification of Documents".

(B) The Plan shall include certification by all contractors and subcontractors in accordance with Section 5(*b*)(1)(B)(vii)) of this general permit, "Contractors".

(C) The Plan shall include a copy of the certification by a professional engineer or landscape architect made in accordance with Section 3(*b*)(9) of this general permit.

(8) Plan Review Certification

For a locally approvable project pursuant to Section 4(*c*) of this general permit, a copy of the Plan review certification made in accordance with Section 3(*b*)(10) or (11) of this general permit, as

applicable, shall be maintained with the Plan. (Note: Construction activities reviewed and certified pursuant to those sections are still subject to the local erosion and sediment control and stormwater management regulations of the municipality in which the activity is conducted.)

(9) Plan Submittal

The Permittee shall ensure that the Plan is submitted to the commissioner and other parties as follows:

(A) For all Locally Exempt Projects with greater than one acre of soil disturbance, the Permittee shall submit an electronic copy of the Plan and a completed Registration Form to the commissioner.

(B) For Locally Approvable projects, the permittee shall provide an electronic copy of the Plan and a completed Registration Form to the commissioner. In addition, a completed Registration Form for this general permit shall be submitted to the following persons immediately upon request:

(i) The municipal planning commission, zoning commission and/or inland wetlands agency, or its respective enforcement officer or designated agent; and

(ii) In the case of a stormwater discharge through a municipal separate storm sewer system, the municipal operator of the system; and

(iii) In the case of a stormwater discharge located within a public drinking water supply watershed or aquifer area, the water company responsible for that water supply.

DO NOT SUBMIT any information that does not pertain to stormwater management or erosion and sediment control (such as electrical and lighting plans, boundary or lot surveys, building plans, non-stormwater related detail sheets, etc.). Any plans stamped "not for construction" will not be accepted.

(c) Reporting and Record Keeping Requirements

(1) Record Keeping

(A) For a period of at least five years from the date the Notice of Termination is accepted by the Commissioner, the permittee shall retain copies of the Plan and all reports required by this general permit, and records of all data used to complete the registration for this general permit, unless the commissioner specifies another time period in writing.

(B) The permittee shall retain an updated copy of the Plan required by this general permit at the construction site from the date construction is initiated at the site until the date construction at the site is completed.

(C) Inspection records must be retained as part of the Plan for a period of five (5) years after the date of inspection. In addition, the following inspection reports shall be kept on-site with the Plan and shall be submitted to the Commissioner upon request:

(i) Plan Implementation Inspections conducted in accordance with Section 5(*b*)(4)(A) and recorded on checklist forms prepared pursuant to Section 5(*b*)(1)(B)(vi)(a).

(ii) Routine Inspections conducted in accordance with Section 5(*b*)(4)(B) and recorded on checklist forms prepared pursuant to Section 5(*b*)(1)(B)(vi)(b).

(D) Plan Modification

Plan modifications made pursuant to Section 5(*b*)(5) of this general permit and any documentation associated with such modification shall be kept on-site with the Plan.

(2) Reporting

(A) The reports specified in this section shall be provided to the Commissioner within the timeframe specified in any request by the Commissioner, and if no timeframe is specified, no later than thirty (30) days after the date of any such request. If requested by the Commissioner, the reports shall be submitted to the Commissioner using NetDMR in the manner specified in subsection (B), below.

(B) NetDMR Reporting

The permittee shall submit all reporting of inspections, Plan updates or other reporting electronically using NetDMR, a web-based tool that allows Permittees to electronically submit stormwater reports through a secure internet connection. Unless otherwise approved in writing by the commissioner, no later than thirty (30) days after authorization under this permit the Permittee shall begin reporting electronically using NetDMR. Specific requirements regarding subscription to NetDMR and submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

(i) Submittal of NetDMR Subscriber Agreement

At or before the time the Permittee submits a registration for this permit, the Permittee and/or the person authorized to sign the Permittee's reports ("Signatory Authority") as described in RCSA Section 22a-430-3(b)(2) shall contact the Department at deep.netdmr@ct.gov and initiate the NetDMR subscription process for electronic submission of Stormwater Report information. Information on NetDMR is available on the Department's website at www.ct.gov/deep/netdmr. On or before the date of authorization under this permit the Permittee shall submit a signed and notarized copy of the *Connecticut DEEP NetDMR Subscriber Agreement* to the Department.

(ii) Submittal of Reports and other documents Using NetDMR

Unless otherwise approved by the commissioner, on or before thirty (30) days following authorization under this permit, the Permittee and/or the Signatory Authority shall electronically submit reports and any other documents required under this permit or by request of the Commissioner to the Department using NetDMR in satisfaction of the requirements of Section 5(*c*)(2)(A) of this permit.

Reports shall be submitted electronically to the Department no later than fifteen (15) days following the completed reporting period. NetDMR is accessed from: http://www.epa.gov/netdmr.

(iii) Submittal of NetDMR Opt-Out Requests

If the Permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for electronically submitting reports, the commissioner may approve an alternative for the submission of reports. Any such request shall be submitted in writing to the Department for written approval on or before the Permittee's date of permit authorization. This demonstration shall be valid for twelve (12) months from the date of the Department's approval and

shall thereupon expire. At such time, reports shall be submitted electronically to the Department using NetDMR unless the Permittee submits a renewed request for an alternative and such request is approved by the Department.

All requests under this provision and requests for the NetDMR subscriber form should be sent to the following address or by email at deep.netdmr@ct.gov:

Attn: NetDMR Coordinator
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

(d) Regulations of Connecticut State Agencies Incorporated into this General Permit

The permittee shall comply with sections 22a-430-3 and 22a-430-4 of the Regulations of Connecticut State Agencies which are hereby incorporated into this general permit, as if fully set forth herein.

(e) Reliance on Registration

In evaluating a registration submitted under this general permit, the commissioner has relied on information provided by the registrant. If such information proves to be false or incomplete, any authorization reliant on such information may be suspended or revoked in accordance with law, and the commissioner may take any other action authorized by law.

(f) Duty to Correct and Report Violations

Upon learning of any violation of this general permit, including, but not limited to, any failure to follow the Plan or any adverse impacts on wetlands or waters a permittee shall immediately cease all construction activities and take all reasonable action to determine the cause of such violation, return to compliance, correct and mitigate the results of such violation, and prevent such violation from recurring. Construction activities shall not recommence until such reasonable action(s) have been taken and such violation and/or adverse impacts have been corrected and compliance has been restored. The permittee shall ensure that any violations of the terms and conditions of the general permit, including but not limited to, the Plan, identified during an inspection or at any other time, that result in the potential to discharge pollutants to waters of the state are reported to the commissioner within two (2) hours of discovery, or, for those violations discovered outside normal business hours, at the start of the next business day. Violations shall be reported to the DEEP stormwater staff at deep.stormwaterstaff@ct.gov and by calling (860) 424-3025. Furthermore, within five (5) days of discovery of a violation, the Permittee shall prepare and submit to the commissioner a written report signed by the Permittee, which documents the cause of the violation, duration including dates and times, and corrective action taken to address the violation and any action taken or planned to prevent future occurrences. Such information shall be filed in accordance with Section 5(*h*) of this general permit, "Certification of Documents".

In addition, nothing in this section shall affect any other action the commissioner is authorized to take regarding a violation of this general permit.

(g) Duty to Provide Information

The commissioner may request any information pertinent to the construction activity or concerning the Permittee's compliance with this general permit. If requested, the permittee shall provide any such information within fifteen (15) days of such request or other time period as may be specified in writing by the commissioner.

(h) Certification of Documents

Unless otherwise specified in this general permit, any document, including but not limited to any notice, information or report, which is submitted to the commissioner under this general permit shall be signed by the permittee, or a duly authorized representative of the permittee, and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with section 22a-6 of the Connecticut General Statutes, pursuant to section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

(i) Date of Filing

For purposes of this general permit, the date of filing with the commissioner of any document is the date such document is received by the commissioner. The word "day" as used in this general permit means the calendar day; if any date specified in the general permit falls on a Saturday, Sunday, or legal holiday, such deadline shall be the next business day thereafter.

(j) False Statements

Any false statement in any information submitted pursuant to this general permit may be punishable as a criminal offense, in accordance with section 22a-6 of the Connecticut General Statutes, pursuant to section 53a-157b of the Connecticut General Statutes.

(k) Correction of Inaccuracies

Within fifteen (15) days after the date a permittee becomes aware of a change in any information submitted pursuant to this general permit, or becomes aware that any such information is inaccurate or misleading or that any relevant information has been omitted, such permittee shall correct the inaccurate or misleading information or supply the omitted information in writing to the commissioner. Such information shall be filed in accordance with the certification requirements prescribed in Section 5(*h*) of this general permit.

(l) Transfer of Authorization

Any authorization issued by the commissioner under this general permit is transferable only in accordance with the provisions of section 22a-6o of the General Statutes. Any person or municipality proposing to transfer any such authorization shall submit a license transfer form to the commissioner. For state projects, the Permittee must be contractually authorized to conduct the transfer. The transferee is not authorized to conduct any activities under this general permit until the transfer is approved by the commissioner. The transferee may adopt by reference the Plan developed by the transferor. The transferee shall update the Plan as required by Section 5(*b*)(5) of this general permit, "Keeping Plans Current".

(m) Other Applicable Requirements

Nothing in this general permit shall relieve the permittee of the obligation to comply with any other applicable federal, state and local requirements, including but not limited to the obligation to obtain any other required authorizations or licenses.

(n) Other Rights

This general permit is subject to and does not derogate any present or future rights or powers of the State of Connecticut and conveys no rights in real or personal property nor any exclusive privileges, and is subject to all public and private rights and to any federal, state, and local laws pertinent to the property or construction activity affected by such general permit. In conducting any construction activity authorized hereunder, the permittee shall not cause pollution, impairment, or destruction of the air, water, or other natural resources of this state. The issuance of this general permit shall not create any presumption that this general permit should or will be renewed.

Section 6. Termination Requirements

(a) Notice of Termination

At the completion of a construction project the Permittee shall submit a Notice of Termination in accordance with the requirements of this section. A project shall be considered complete after all post-construction measures are installed, cleaned, functioning, and inspected and the site has achieved final stabilization and inspection (see Sections 5(*b*)(4)(C) & (D) of the general permit, respectively) for at least one full growing season (i.e. April through October) in the year following the cessation of construction activities. Final stabilization must be achieved for all phases of construction, and for solar projects, any additional requirements in Appendix I complied with, before a Notice of Termination may be submitted.

(b) Termination Form

A Notice of Termination shall be filed on forms prescribed and provided by the commissioner and shall include the following:

(1) The permit number as provided to the permittee on the permit certificate;

(2) The name of the registrant as reported on the general permit registration form (DEEP-PED-REG-015), or if a license transfer has been approved by the commissioner, the name of the permittee on a license transfer form;

(3) The address of the completed construction site;

(4) The dates when:

(A) Construction was completed;

(B) All storm drainage structures were cleaned of construction debris pursuant to the "Other Controls" section (subsection 5(*b*)(2)(D)) of this general permit;

(C) The post-construction inspection was conducted pursuant to Section 5(*b)(*4)(C);

(D) The final stabilization inspection was conducted pursuant to Section 5(*b*)(4)(D).

(5) A description of the post-construction activities at the site; and

(6) Signatures of:

(A) The permittee; and

(B) The person who conducted the post-construction inspection pursuant to Section 5(*b*)(4)(C) of the general permit.

(C) The person who conducted the final stabilization inspection pursuant to Section 5(*b*)(4)(D) of the general permit.

(c) Where to File a Termination Form

A termination form shall be filed with the commissioner at the following address:

WATER PERMITTING AND ENFORCEMENT DIVISION/STORMWATER GROUP
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Section 7. Commissioner's Powers

(a) Abatement of Violations

The commissioner may take any action provided by law to abate a violation of this general permit, including but not limited to penalties of up to $25,000 per violation per day under Chapter 446k of the Connecticut General Statutes, for such violation. The commissioner may, by summary proceedings or otherwise and for any reason provided by law, including violation of this general permit, revoke a permittee's authorization hereunder in accordance with sections 22a-3a-2 through 22a-3a-6, inclusive, of the Regulations of Connecticut State Agencies. Nothing herein shall be construed to affect any remedy available to the commissioner by law.

(b) General Permit Revocation, Suspension, or Modification

The commissioner may, for any reason provided by law, by summary proceedings or otherwise, revoke or suspend this general permit or modify to establish any appropriate conditions, schedules of compliance, or other provisions which may be necessary to protect human health or the environment.

(c) Filing of an Individual Permit Application

If the commissioner notifies a permittee in writing that such permittee must obtain an individual permit, the permittee shall file an application for an individual permit within thirty (30) days of receiving the commissioner's notice or such other time that the commissioner specified in the notice to the permittee. While such application is pending before the commissioner, the permittee shall continue to comply with the terms and conditions of this general permit. Nothing herein shall affect the commissioner's power to revoke a permittee's authorization under this general permit at any time.

Issued: November 25, 2022

for Katherine S. Dykes
Commissioner

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

APPENDIX A

Endangered and Threatened Species

In order to be eligible for coverage under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ("GP" or "the GP"), under section 3(*b*)(2) of the GP, a registrant must ensure that the construction activity, as defined in Section 2 of the GP, does not threaten the continued existence of any state or federal species listed as endangered or threatened ("listed species") or result in the destruction or adverse modification of any habitat associated with such species.

In order to prevent significant, unforeseen delays in the processing of a registration under the GP, registrants should assess compliance with section 3(*b*)(2) early in the planning stages of a project. The Department of Energy and Environmental Protection ("the Department") strongly recommends that this assessment *be initiated up to one year, or more,* prior to the projected construction initiation date, and even before the purchase of the site of the construction activity. At a minimum, registrants must assess compliance with section 3(*b*)(2) prior to submission of the Registration Form for the GP.

This Appendix describes the ways that a registrant can comply with section 3(*b*)(2) of the GP. In connection with the filing of a registration a registrant can perform a self-assessment described in Section 1, seek a limited two-year determination or a safe harbor determination from the Department's Wildlife Division under Sections 2 or 3, respectively, or stipulate in writing to the presence of listed species or any habitat associated with such species and develop a mitigation plan pursuant to Section 5 of this Appendix. While some means of compliance are more limited than others, the options set out in this Appendix are not mutually exclusive and all options remain available to a registrant. For example, a registrant may perform a self-assessment under Section 1 and seek a safe harbor determination under Section 3 of this Appendix. Provided the requirements of this Appendix are met, the choice of how to proceed is the registrant's.

Section 1. Self Assessment through Natural Diversity Database Map Review and Screening

Before submission of a registration for coverage under this GP, a registrant must review the current versions of the Department's Natural Diversity Data Base ("NDDB") maps. Except as provided for in Sections 2, 3 or 5 of this Appendix, such review must occur no more than six months before such submission. Such review provides a method for screening whether the Department is already aware of listed species that may be present on the site of the construction activity. These maps can be viewed online at:

CT DEEP Natural Diversity Data Base Maps
CTECO Webpage (in the interactive Map Viewer)

Screening

The site of the construction activity must be compared to the shaded areas depicted on the NDDB map to determine if the site is entirely or partially within a shaded area. If the site is entirely or partially within a shaded area for a listed species a registrant can only achieve compliance with section 3(*b*)(2) of the GP by obtaining a limited two-year determination under Section 2, a safe harbor determination under Section 3, or an approved mitigation plan under Section 5 of this Appendix from the Department's Wildlife Division.

If the site of the construction activity is not entirely or partially within a shaded area, then the Department is not aware of any listed species at the site of the construction activity. Based upon this screening, and provided the registrant has no reasonably available verifiable, scientific or other credible information that the construction activity could reasonably be expected to violate section 3(*b*)(2) of the GP, when completing the Registration Form for this GP a registrant may check the box that indicates that the construction activity will not impact federal or state listed species.

A registrant using only self-assessment under this section may utilize the results of any such self-assessment for up to, but no more than, six months from the date of such assessment. Note, however, that the NDDB maps are not the result of comprehensive state-wide field investigations, but rather serve as a screening tool. Using such maps as a screening tool does not provide a registrant with an assurance that listed species or their associated habitat may not be encountered at the site of the construction activity. Notwithstanding the NDDB screening results, if a listed species is encountered at the site of the construction activity, the registrant shall promptly contact the Department and may need to take additional action to ensure that the registrant does not violate section 3(*b*)(2) of the GP.

Section 2. Obtaining a Limited Two-Year Determination

A registrant may seek a written determination from the Department's Wildlife Division, good for two years, that the proposed construction activity complies with section 3(*b*)(2) of the GP. To obtain this limited two-year determination, a registrant must, in addition to conducting the NDDB map review in Section 1 of this Appendix, provide the Department's Wildlife Division with (1) any reasonably available verifiable, scientific or other credible information about whether the construction activity could reasonably be expected to result in a violation of section 3(*b*)(2) of the GP, and (2) limited information about the site of the proposed construction activity, but less information than would be necessary for a safe harbor determination under Section 3 of this Appendix. The limited information necessary for a two-year determination is on the current "Request for Natural Diversity Database (NDDB) State Listed Species Review" form on the Department's website. The form and instructions for seeking such a limited two-year determination are available at www.ct.gov/DEEP/nddbrequest.

Provided the registrant's information is accurate and the Department's Wildlife Division determines that the construction activity will not violate section 3(*b*)(2) of the GP, the registrant shall receive a limited two-year determination from the Department. Any such determination may indicate that the construction activity will not impact listed species or their associated habitat, or it may include specific conditions to be implemented to avoid or significantly minimize any impacts that may be encountered at the site of the construction activity. For purposes of submitting a registration for the GP, any such limited two-year determination can be relied upon by the person receiving such determination for two years from the date of such determination. Like, however, the NDDB screening procedure in Section 1 of this Appendix, a limited two-year determination does not provide a registrant with an assurance that listed species or their associated habitat may not be encountered at the site of the construction activity. If a listed species is encountered, the registrant shall promptly contact the Department and may need to take additional action to ensure that the construction activity does not violate section 3(*b*)(2) of the GP.

If a registrant receives a limited two-year determination from the Department, the registrant should check the limited two-year determination box on the GP registration form and include the Department's two-year limited determination letter with the GP Registration form. Checking the limited two-year determination box on the registration form and failing to provide the determination letter from the Department's Wildlife Division with the GP Registration form will delay and may prevent processing of a registration.

If based upon the information provided by a registrant seeking a limited two-year determination the Department's Wildlife Division determines that the construction activity could impact listed species or their associated habitat, or that the Department needs additional information to make a limited two-year determination, the registrant may still achieve compliance with section 3(*b*)(2) of the GP through providing additional information pursuant to Section 4 or developing a mitigation plan pursuant to Section 5 of this Appendix.

A registrant may request one or more one-year extensions to a limited two-year determination under this section. If the Department's Wildlife Division has prescribed a form for requesting an extension, any such request shall be made using the prescribed form. There is a presumption that requests for a one-year extension of a limited two-year determination shall be granted. However, this presumption can be rebutted if the Department determines that a change in any of the following has occurred since an initial limited two-year determination or any extension was granted: the construction activity affecting or potentially affecting listed species or their associated habitat; the NDDB maps for the site of the construction activity; the limited information upon which a limited two-year determination or any extension was granted; or other information indicative of a change in circumstance affecting listed species or their associated habitat. Any one-year extension granted under this paragraph shall run from the date the Department's Wildlife Division issues its determination to grant an extension and shall be treated under the same conditions as a limited two-year determination as provided for in this section. Any letter granting a one-year extension shall be included with a registration along with the original limited two-year determination as provided for in this section.

Section 3. Obtaining a Safe Harbor Determination

A registrant may seek a written determination from the Department's Wildlife Division, good for three years, with the potential to be extended for an additional year, that proposed construction activity complies with section 3(*b*)(2) of the GP. Any such determination shall constitute a "safe harbor" for purposes of section 3(*b*)(2) of the GP.

To obtain a safe harbor determination, a registrant must, in addition to conducting the NDDB review in section 1 of this Appendix, provide the Department's Wildlife Division with any reasonably available verifiable, scientific or other credible information about whether the construction activity could reasonably be expected to result in a violation of section 3(*b*)(2) of the GP and specific information about the site of the construction activity. The specific information necessary for a safe harbor determination is listed in Attachment A to this Appendix. This information must be sufficient to allow the Wildlife Division to adequately assess the site for potential risks to listed species and their associated habitat. While the Department recognizes certain information is necessary to make a safe harbor determination, it also recognizes that a registrant may need to obtain a safe harbor determination early in its project's approval process in order to make prudent business decisions about purchasing a site or proceeding to final project designs. The form and instructions for seeking a safe harbor determination are available at www.ct.gov/DEEP/nddbrequest.

Provided the registrant's information is accurate and the Department's Wildlife Division determines that the construction activity will not violate section 3(*b*)(2) of the GP, the registrant shall receive a safe harbor determination from the Department. A safe harbor determination may indicate that the construction activity will not impact listed species or their associated habitat, or it may include specific conditions to be implemented to avoid or significantly minimize any impacts that may be encountered at the site of the construction activity. The Department shall honor the safe harbor determination for three years from the date it is issued, meaning that unlike the NDDB review in Section 1 or the limited two-year determination in Section 2 of this Appendix, if the Department makes a safe harbor determination and a registrant remains in compliance with any conditions in any such determination, irrespective of what may be found at the site of the construction activity, a registrant shall be considered in compliance with section 3(*b*)(2) of the GP. However, a safe harbor determination shall

not be effective if a construction activity may threaten the continued existence of any federally listed species or its critical habitat under federal law. If a federally listed species or its critical habitat is encountered on the site of the construction activity, the registrant shall promptly contact the Department and may need to take additional action to ensure that the construction activity does not violate federal law or section 3(*b*)(2) of the GP.

If a registrant receives a safe harbor determination from the Department, the registrant should check the safe harbor determination box on the GP registration form and include the Department's safe harbor determination with the GP Registration form. Checking the safe harbor box on the registration form and failing to provide the safe harbor determination letter from the Department's Wildlife Division with the GP Registration form will delay and may prevent processing of a registration.

If based upon the information provided by a registrant seeking a safe harbor determination the Department's Wildlife Division determines that the construction activity could impact listed species or their associated habitat, or that the Department needs additional information to make a safe harbor determination, the registrant may still achieve compliance with section 3(*b*)(2) of the GP through providing additional information pursuant to Section 4 or developing a mitigation plan pursuant to Section 5 of this Appendix.

If a registrant receives a safe harbor determination from the Department's Wildlife Division, anytime during the third year of such safe harbor, a registrant may request a one-year extension of that safe harbor. If the Department's Wildlife Division has prescribed a form for requesting an extension, any such request shall be made using the prescribed form. There is a presumption that a request for a one-year extension of a safe harbor shall be granted. However, this presumption can be rebutted if the Department determines that a change in any of the following has occurred since the safe harbor was granted: the construction activity affecting or potentially affecting listed species or their associated habitat; the NDDB maps for the site of the construction activity; the information upon which the safe harbor was granted; or other information indicative of a change in circumstance affecting listed species or their associated habitat. A registrant may seek only one extension, for one year, to a safe harbor determination. Any one-year extension granted under this paragraph shall run from the date of the Department's Wildlife Division issues its determination to grant an extension and shall be honored by the Department in the same manner as a safe harbor determination noted above. Any letter granting a one-year extension shall be included with a registration along with the original safe harbor determination as provided for in this section.

Section 4. Providing Additional Information

For the Department's Wildlife Division to make a limited two-year determination under Section 2 or a safe harbor determination under section 3 of this Appendix, limited additional information may be required to determine if the construction activity would impact listed species or their associated habitat. If the species in question is a state listed endangered or threatened species under section 26-306 of the general statutes, a registrant shall, in consultation with the Department's Wildlife Division, provide the limited additional information requested by the Department's Wildlife Division. Such information may include, but is not limited to, a survey of specific listed species in question. If the species in question is a federally listed threatened or endangered species, in addition to the Department's Wildlife Division, a registrant shall also consult with the U.S. Fish and Wildlife Service and shall provide any additional information requested by that agency. A registrant that initially sought or obtained a limited two-year determination may, after providing the additional information required under this section request a safe harbor determination under Section 3 of this Appendix.

At any time, as an alternative to proceeding under Section 2, 3 or 4 of this Appendix, a registrant may stipulate, in writing, to the presence of one or more listed species or their associated habitat. A registrant choosing this alternative shall proceed to develop a mitigation plan under Section 5 of this Appendix.

If based upon any additional information provided to the Department's Wildlife Division, and as applicable, the U.S. Fish & Wildlife Service, the Department's Wildlife division determines that construction activity will be in compliance with section 3(*b*)(2) of the GP, a registrant shall receive a limited two-year determination under Section 2 or a safe harbor determination under Section 3 of this Appendix, as applicable.

If the Department's Wildlife Division determines that additional information is necessary to determine if the construction activity has the potential to impact listed species or their associated habitat, and a registrant chooses to not provide such information, a registrant shall proceed with the self-assessment through an NDDB review under Section 1 of this Appendix, or stipulate to the existence of a listed species or associated habitat and develop a mitigation plan under Section 5 or such registrant shall not be eligible to register under the GP.

Section 5. Developing a Mitigation Plan

The Department's Wildlife Division may determine that the construction activity has the potential to adversely impact listed species or their associated habitat. However, it may be possible to modify the construction activity or undertake certain on-site measures to avoid or significantly minimize such impacts. If the species or associated habitat in question is a state listed endangered or threatened species under section 26-306 of the general statutes, a registrant shall consult with the Department's Wildlife Division to determine if an acceptable mitigation plan can be developed so impacts can be avoided or minimized such that a registrant remains in compliance with section 3(*b*)(2). If the species in question is a federally listed threatened or endangered species, any such consultation shall also include the U.S. Fish and Wildlife Service.

If a registrant in consultation with the Department's Wildlife Division, and as applicable, the U.S. Fish & Wildlife Service, develops a mitigation plan that is approved by the Department's Wildlife Division, or as applicable, the U.S. Fish & Wildlife Service, the registrant shall receive a limited two-year determination under Section 2 or a safe harbor determination under Section 3 of this Appendix. In this situation, in addition to checking the two-year determination box or the safe harbor determination box, as applicable, on the registration form, the registrant shall also check the box on the registration form indicating that it has an approved mitigation plan and provide a status update on the registration form as to whether it has completed or is still in the process of implementing the approved mitigation plan.

If an approved mitigation plan has not been fully implemented by the time a registration is submitted, completing all remaining tasks in the plan shall become an enforceable condition of any registration issued to the registrant.

If the Department determines that the construction activity has the potential to adversely impact listed species or their associated habitat and the registrant and the Department, and as applicable, the U.S. Fish & Wildlife Service, are not able to agree on an acceptable mitigation plan that is approved by the Department, and as applicable, the U.S. Fish & Wildlife Service, any such registrant shall not be eligible to register under the GP.

APPENDIX A
ATTACHMENT A

Specific Information Needed to Apply for a Safe Harbor Determination

A Safe Harbor Determination will be made upon the submission of a detailed report that fully addresses the matters noted below. For the Department's Wildlife Division to make a safe harbor determination, the report should synthesize and analyze this information, not simply compile information. Those providing synthesis and analysis need appropriate qualifications and experience. A request for a safe harbor determination shall include:

1) Habitat Information, including GIS mapping overlays, identifying:

- wetlands, including wetland cover types;
- plant community types;
- topography;
- soils;
- bedrock geology;
- floodplains, if any;
- land use history; and
- water quality classifications/criteria.

2) Photographs - The report should also include photographs of the site, including all reasonably available aerial or satellite photographs and an analysis of such photographs.

3) Inspection - The report should include a visual inspection(s) of the site, preferably when the ground is visible. This inspection can also be helpful in confirming or further evaluating the items noted above.

4) Biological Surveys - The report should include all biological surveys of the site where construction activity will take place that are reasonably available to a registrant. A registrant shall notify the Department's Wildlife Division of biological studies of the site where construction activity will take place that a registrant is aware of but are not reasonably available to the registrant.

5) Based on items #1 through 4 above, the report shall include a Natural Resources Inventory of the site of the construction activity. This inventory should also include a review of reasonably available scientific literature and any recommendations for minimizing adverse impacts from the proposed construction activity on listed species or their associated habitat.

6) In addition, to the extent the following is available at the time a safe harbor determination is requested, a request for a safe harbor determination shall include and assess:

- Information on Site Disturbance Estimates/Site Alteration information

- Vehicular Use

- Construction Activity Phasing Schedules, if any; and

- Alternation of Drainage Patterns

APPENDIX B

Connecticut Department of Energy & Environmental Protection
Inland Water Resources Division Fact Sheet
Considering Low Impact Development Principles in Site Design

In order to reduce the impact of development and address stormwater quality issues, the Department requires the use of Low Impact Development (LID) measures in accordance with Sections 5(*b*)(2)(C)(i) and (ii) of the general permit. LID is a site design strategy intended to maintain or replicate predevelopment hydrology through the use of small-scale controls, integrated throughout the site, to manage stormwater runoff as close to its source as possible. Infiltration of stormwater through LID helps to remove sediments, nutrients, heavy metals, and other types of pollutants from runoff.

Key Strategies for LID

Key strategies for effective LID include: infiltrating, filtering, and storing as much stormwater as feasible, managing stormwater close to where the rain/snow falls, managing stormwater at multiple locations throughout the landscape, conserving and restoring natural vegetation and soils, preserving open space and minimizing land disturbance, designing the site to minimize impervious surfaces, and providing for maintenance and education. Water quality and quantity benefits are maximized when multiple techniques are grouped together. In areas of compacted and/or possibly contaminated soils, soil suitability should be further investigated prior to selecting optimum treatment and/or remediation measures. Where soil conditions permit, the DEEP encourages the utilization of one, or a combination of, the following measures:

- the use of pervious pavement or grid pavers (which are very compatible for parking lot and fire lane applications), or impervious pavement without curbs or with notched curbs to direct runoff to properly designed and installed infiltration areas;
- the use of vegetated swales, tree box filters, and/or infiltration islands to infiltrate and treat stormwater runoff (from building roofs, roads, and parking lots);
- the minimization of access road widths and parking lot areas to the maximum extent possible to reduce the area of impervious surface;
- the use of dry wells to manage runoff from building roofs;
- incorporation of proper physical barriers or operational procedures for special activity areas where pollutants could potentially be released (e.g. loading docks, maintenance and service areas, dumpsters, etc.);
- the installation of rainwater harvesting systems to capture stormwater from building roofs for the purpose of reuse for irrigation (i.e. - rain barrels for residential use and cisterns for larger developments);
- the use of residential rain gardens to manage runoff from roofs and driveways;
- the use of vegetated roofs (green roofs) to detain, absorb, and reduce the volume of roof runoff; and
- providing for pollution prevention measures to reduce the introduction of pollutants to the environment.

The 2004 Stormwater Quality Manual LID Appendix and the 2002 Erosion and Sediment Control Guidelines LID Appendix both provide guidance on implementing LID measures. A guide to LID resources can also be found in the DEEP Low Impact Development Resources Factsheet (PDF).

LID in Urban Areas

If the proposed site is located in a highly urbanized area, it is likely underlain by urban land complex soils. The Natural Resources Conservation Service (NRCS) Soil Web Survey (http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm) provides information on soil textures, parent materials, slopes, height of seasonal high water table, depth to restrictive layer, and permeability. In highly developed areas, infiltration may be limited due to the high percentage of impervious cover. However, infiltration practices may be suitable at urban sites depending on:

- Potential contamination of soils in historically industrialized areas. The siting of areas for infiltration must consider any existing soil or groundwater contamination.

- Site specific soil conditions. NRCS mapping consists of a minimum 3 acres map unit and soils may vary substantially within each mapping unit. Test pits should be dug in areas planned for infiltration practices to verify soil suitability and/or limitations.

- Investigation of areas of compacted soils and the utilization of proper construction staging. Planning should insure that areas to be used for infiltration are not compacted during the construction process by vehicles or machinery.

Even if infiltration is limited at a site, it is still possible to implement LID practices. Specifically, potential exists for the installation of green roofs on buildings and/or the use of cisterns to capture and reuse rainwater.

LID in Areas with a High Seasonal Water Table or Hardpan Layer

- The impact of stormwater runoff to any streams and/or wetlands near the site should be considered. Water quality treatment is influenced by hydraulic conductivity and time of travel. If stormwater infiltration is limited by an impermeable layer close to the surface, the water may run laterally through the ground and discharge to the stream or wetlands, providing limited water quality treatment. However, a longer time of travel may provide sufficient treatment. Proper soil testing for infiltration potential will increase the likelihood of successful BMP design.

- In areas with a high seasonal water table, bioretention areas/rain gardens should be planted with water tolerant/wetland plants. The presence of a high seasonal water table suggests that water may drain slowly or not at all during certain parts of the year. Planting native wetland vegetation will help to ensure plant survival and increase the effectiveness of bioretention practices. Information on native plantings that are both drought tolerant and tolerant of wet conditions can be found in The UConn Cooperative Extension System's guide to building a rain garden at http://nemo.uconn.edu/publications/rain_garden_broch.pdf. Native plant lists for Connecticut can also be found at http://www.fhwa.dot.gov/environment/rdsduse/ct.htm.

LID Guidance for Federal Projects

- LID techniques have been utilized by Department of Defense (DoD) agencies during the last several years. The effectiveness of these projects in managing runoff as well as reducing construction and maintenance costs has created significant interest in LID. The DoD has created a Unified Facilities Criteria document, Low Impact Development that provides guidelines for integrating LID planning and design into a facility's regulatory and resource protection programs. It is available on-line at: http://www.wbdg.org/ccb/DOD/UFC/ufc_3_210_10.pdf.

- Section 438 of the Energy Independence and Security Act (EISA) of 2007 requires federal agencies to reduce stormwater runoff from federal development projects to protect water resources. In December 2009, the EPA developed a technical guidance document on implementing the stormwater runoff requirements for federal projects under Section 438 of EISA. The document contains guidance on how compliance with Section 438 can be achieved, measured and evaluated and can be found at: http://www.epa.gov/owow/NPS/lid/section438/pdf/final_sec438_eisa.pdf.

For more information contact the CT DEEP Watershed Management/Low Impact Development Program call (860)424-3716.

List of Runoff Reduction/LID Practices

Re-Forestation
Disconnection of Rooftop Runoff
Disconnection of Non-Rooftop Runoff
Sheetflow to Conservation Areas
Green Roof
Permeable Pavement
Rainwater Harvesting
Submerged Gravel Wetlands
Micro-Infiltration
Rain Gardens
Bioretention
Landscape Infiltration
Grass Swales
Bio-swales
Wet Swales
Stormwater Ponds
Stormwater Wetlands
Stormwater Filtering Systems
Stormwater Infiltration

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

APPENDIX C

AQUIFER PROTECTION AREAS AND OTHER GROUNDWATER DRINKING SUPPLY AREAS GUIDANCE INFORMATION

The Stormwater Pollution Control Plan ("the Plan") shall consider measures to reduce or mitigate potential impacts to both ground water (aquifers) and surface waters, taking into consideration both quantity and quality of the runoff. The emphasis should be to minimize, to the extent possible, changes between pre-development and post-development runoff rates and volumes.

The basic stormwater principals for Aquifer Protection Areas (and other groundwater drinking supply areas) are to prevent inadvertent pollution discharges/releases to the ground, while encouraging recharge of stormwater where it does not endanger groundwater quality. Measures include:

- prevent illicit discharges to storm water, including fuel/chemical pollution releases to the ground;
- minimize impervious coverage and disconnect large impervious areas with natural or landscape areas;
- direct paved surface runoff to aboveground type land treatment structures – sheet flow, surface swales, depressed grass islands, detention/retention and infiltration basins, and wet basins. These provide an opportunity for volatilization of volatile organic compounds to the extent possible before the stormwater can infiltrate into the ground;
- provide necessary impervious pavement in high potential pollutant release areas. These "storm water hot spots" include certain land use types or storage and loading areas, fueling areas, intensive parking areas and roadways (see table below);
- only use subsurface recharge structures such as dry wells, galleries, or leaching trenches, to directly infiltrate clean runoff such as rooftops, or other clean surfaces. These structures do not adequately allow for attenuation of salts, solvents, fuels or other soluble compounds in groundwater that may be contained in runoff; and
- restrict pavement deicing chemicals, or use an environmentally suitable substitute such as sand only, or alternative de-icing agents such as calcium chloride or calcium magnesium.

Infiltration of stormwater should be **restricted** under the following site conditions:

- ***Land Uses or Activities with Potential for Higher Pollutant Loads:*** Infiltration of stormwater from these land uses or activities (refer to Table 7-5 below), also referred to as stormwater "hotspots," can contaminate public and private groundwater supplies. Infiltration of stormwater from these land uses or activities may be allowed by the review authority with appropriate pretreatment. Pretreatment could consist of one or a combination of the primary or secondary treatment practices described in the Stormwater Quality Manual provided that the treatment practice is designed to remove the stormwater contaminants of concern.

- ***Subsurface Contamination:*** Infiltration of stormwater in areas with soil or groundwater contamination such as brownfield sites and urban redevelopment areas can mobilize contaminants.

- ***Groundwater Supply and Wellhead Areas:*** Infiltration of stormwater can potentially contaminate groundwater drinking water supplies in immediate public drinking water wellhead areas.

Land Uses or Activities with Potential for Higher Pollutant Loads
Table 7-5 of the 2004 Stormwater Quality Manual

Land Use/Activities	
• Industrial facilities subject to the DEEP Industrial Stormwater General Permit or the U.S. EPA National Pollution Discharge Elimination System (NPDES) Stormwater Permit Program • Vehicle salvage yards and recycling facilities • Vehicle fueling facilities (gas stations and other facilities with on-site vehicle fueling) • Vehicle service, maintenance, and equipment cleaning facilities • Fleet storage areas (cars, buses, trucks, public works) • Commercial parking lots with high intensity use (shopping malls, fast food restaurants, convenience stores, supermarkets, etc.) • Public works storage areas	• Road salt storage facilities (if exposed to rainfall) • Commercial nurseries • Flat metal rooftops of industrial facilities • Facilities with outdoor storage and loading/unloading of hazardous substances or materials, regardless of the primary land use of the facility or development • Facilities subject to chemical inventory reporting under Section 312 of the Superfund Amendments and Reauthorization Act of 1986 (SARA), if materials or containers are exposed to rainfall • Marinas (service and maintenance) • Other land uses and activities as designated by the review authority

For further information regarding the design of stormwater collection systems in Aquifer Protection Areas, contact the Aquifer Protection Area Program at (860) 424-3020 or visit www.ct.gov/deep/aquiferprotection.

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

APPENDIX D

Coastal Management Act Determination Form

For sites within the Coastal Boundary, please attach this form and written approval from the local governing authority (or verification of exemption) to the Registration Form for the Discharge of Stormwater and Dewatering Wastewaters From Construction Activities.

SITE INFORMATION

Future Permittee _____

Mailing Address _____

Business Phone _____ ext.: _____ Fax: _____

Contact Person _____ Title: _____

Site Name _____

Site Address/ Location _____

Site Latitude and Longitude _____

Receiving Water (name, basin) _____

Project Description _____

_____

STATEMENT OF REVIEW:

The above referenced project is consistent with the goals and policies in section 22a-92 of the Connecticut General Statutes and will not cause adverse impacts to coastal resources as defined in section 22a-93(15) of the Connecticut General Statutes.

Date of Coastal Site Plan Approval: _____

☐ Copy of written approval attached, or

☐ Verification of exemption attached

APPENDIX E

Memorandum of Agreement
Between
The Connecticut Department of Energy & Environmental Protection
and the
the Five Conservation Districts of Connecticut
for
Technical Assistance for Locally Approvable Stormwater Construction General Permits

WHEREAS, the Commissioner of the Department of Energy and Environmental Protection ("Department" or "DEEP ") is authorized by section 22a-6(a)(2)(3) and (4) of the Connecticut General Statutes ("CGS") to enter into this Agreement; and

WHEREAS, the five Conservation Districts of Connecticut (collectively, the "Districts"), are not-for-profit corporations duly authorized, organized and existing under the laws of the State of Connecticut and are authorized by section 22a-315 of the CGS and section 22a-315-14 of the Regulations of Connecticut State Agencies to enter into this Agreement; and

WHEREAS, section 22a-430b of the Connecticut General Statutes authorizes the Department to regulate stormwater discharges from construction activities under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities ("the Construction General Permit" or "CGP"), which has been or shall be issued on October 1, 2019. The Construction General Permit requires the implementation of erosion and sediment controls to control the discharge of sediment from construction and post-construction discharges; and

WHEREAS, Construction General Permits require the preparation and implementation of a Stormwater Pollution Control Plan ("Plan" or "SWPCP") to prevent erosion and the discharge of sediment to the waters of the state; and

WHEREAS, pursuant to section 22a-315 of the CGS, soil and water conservation districts and boards were established to advise the Commissioner on matters of soil and water conservation and erosion and sediment control and to assist the Commissioner in implementing programs related to soil and water conservation and erosion and sediment control; and

WHEREAS, pursuant to section 22a-315 of the CGS, the soil and water conservation districts and boards may receive funds from private sources for services provided to promote soil and water conservation and to assist the Commissioner in the implementation of related programs; and

WHEREAS, section 22a-326 of the CGS declares the policy of the state "to strengthen and extend its erosion and sediment control activities and programs and to establish and implement, through the Council on Soil and Water Conservation, soil and water conservation districts, the municipalities and the Commissioner of Energy and Environmental Protection, a state-wide coordinated erosion and sediment control program which shall reduce the danger from storm water runoff, minimize nonpoint sediment pollution from land being developed and conserve and protect the land, water, air and other environmental resources of the state;" and

WHEREAS, the Districts have understanding and experience in reviewing erosion and sediment control plans because of their longstanding participation in the municipal approval process, as required by section 22a-329 of the CGS; and

WHEREAS, DEEP and the Districts are jointly dedicated to protecting the waters of the state by controlling the discharge of sediment and the pollution resulting from stormwater runoff.

NOW, THEREFORE, in consideration of the mutual covenants and conditions hereinafter stated, the Parties agree as follows:

Special Conditions

I. REQUIREMENTS FOR TECHNICAL ASSISTANCE BY DISTRICTS

A. SWPCP technical assistance shall be conducted by a District representative having one or more of the following minimum qualifications: (i) a bachelor's degree in hydrology, engineering (agricultural, civil, environmental, or chemical), landscape architecture, geology, soil science, environmental science, natural resources management, or a related field and two years of professional and field experience, or (ii) the EnviroCert International, Inc. designation as a Certified Professional in Erosion and Sediment Control (CPESC), Certified Erosion, Sediment and Stormwater Inspector (CESSWI), or a Certified Professional in Stormwater Quality (CPSWQ).

B. All technical assistance on SWPCPs undertaken by a District shall be conducted in accordance with the guidelines and procedures established by DEEP in consultation with the Districts, as further described below.

II. LOCALLY APPROVABLE PROJECTS

For locally approvable projects, as defined in the Construction General Permit, with five (5) or more acres of soil disturbance, the appropriate District (as indicated in Exhibit 2 of this agreement) shall review Stormwater Pollution Control Plans submitted to the District in accordance with Section 3(*b*)(10) of the CGP, shall determine whether each such SWPCP is consistent with the requirements of the CGP, and shall advise the Commissioner in writing of its determination regarding the SWPCP's consistency. The appropriate District may request assistance from another District or re-assign a project to another District upon mutual consent of the Districts. The Commissioner will be notified in writing of any re-assignment.

A. Components of the SWPCP Review by the Districts

1. Requirements for Conducting a Review:

   The District shall begin a SWPCP review upon the receipt of the all of following: the developer's request for review, two hard copies and a digital copy of the proposed SWPCP, a non-refundable down payment from the permittee as per the Fee Schedule in Exhibit 1 and the written permission of the developer to enter onto and inspect the project site. Once the District is in receipt of all the documents and the fee as delineated above, the developer's SWPCP shall be considered submitted to the District.

2. Determinations of Consistency by the District after Review of the SWPCP and Subsequent Procedures

   (a) If the District determines the developer's SWPCP is:

   (i) Consistent with the requirements of the Construction General Permit, the District shall issue an affirmative determination notice to both the developer or such developer's designee and to DEEP in order to advise them of the adequacy of the SWPCP. The District shall also provide a copy of the SWPCP to DEEP if requested by the Commissioner.

   (ii) Not consistent with the requirements of the Construction General Permit, the District shall provide a written notice of such inconsistency to the developer or such developer's designee; such notice shall include a list of the SWPCP's deficiencies and any appropriate explanatory comments.

(b) If the developer's SWPCP is found to be inconsistent with the CGP, the developer may revise the SWPCP (the "Revised SWPCP") to address any deficiencies noted by the District and resubmit its Revised SWPCP to the District for review.

(c) If the District receives a Revised SWPCP in accordance with subsection (b) above, the District shall perform a review of the Revised SWPCP. If the Revised SWPCP is deemed:

(i) Consistent with the requirements of the Construction General Permit, the District shall (1) issue an affirmative determination notice to both the project developer or such project developer's designee and to DEEP to advise them of the adequacy of the SWPCP and (2) provide a copy of the SWPCP to the DEEP if requested by the Commissioner; or

(ii) Not consistent with the requirements of the CGP after this review, the District shall provide a written notice of such inconsistency to the developer or such developer's designee. This notice shall include a list of all remaining SWPCP deficiencies and any explanatory comments as appropriate.

(d) In the event the District determines after review of the Revised SWPCP in accordance with subsection (c), above, that the Revised SWPCP remains inconsistent with the requirements of the Construction General Permit, the developer shall continue to resubmit a Revised SWPCP in accordance with subsection (c), above, until such time as the District determines that the SWPCP is consistent with the requirements of the Construction General Permit and issues an affirmative determination notice. As such, the resubmitted Revised SWPCP shall be reviewed by the District in accordance with the timeframes set forth in Section II.B., and other applicable sections of this document, and the fee shall remain in accordance with the Fee Schedule in Exhibit 1.

(e) Revisions to a SWPCP subsequent to the District's prior approval of developer's SWPCP

In the event the developer revises a SWPCP after the District has determined that the developer's SWPCP, prior to this revision, was consistent with the requirements of the Construction General Permit, the SWPCP shall be considered a Post-Approval Resubmission. In such a case, the District shall review the SWPCP in accordance with the timeframes set forth in Section II.B., and other applicable sections of this document, and the fee shall be in accordance with the Fee Schedule in Exhibit 1.

B. Plan Review Timeframes

1. The District shall review a new submission of a SWPCP submitted by a developer or such developer's designee and provide review comments or issue an affirmative determination notice within thirty (30) calendar days of the date of a complete submission as specified in Section II.A.1.

2. If the District identifies deficiencies in the SWPCP, the District shall allow the developer or such developer's designee the opportunity to revise their SWPCP and resubmit it to the District within fifteen (15) calendar days after the date of mailing or delivery of the District's written comments to the developer or such developer's designee.

3. The District shall review any SWPCP revised in accordance with subsection II.B.2., above, and provide a written determination of the SWPCP's consistency or inconsistency within fifteen (15) calendar days after the submission of the revised SWPCP. Subsequent resubmissions of a revised SWPCP shall be in accordance with the same timeframes.

4. At the request of the District or the developer and with the agreement of both the District and the developer, the deadlines stated in subsections 1. – 3., above, may be extended. However, any such

extensions shall be limited to no more than double the original amount of time allowed above for the relevant action.

5. Expedited review of a SWPCP may be requested by a developer. However, the Districts shall have complete discretion to accept or decline such request for an expedited review based on the District's circumstances, including, but not limited to: their existing workload, vacation schedules and staffing. If a District grants an expedited review, the timeframe shall be reduced to no more than one third of the timeframes noted in subsection 1. – 3., above, and the fee and non-refundable down payment shall be twice those amounts listed in Exhibit 1.

6. In the event a District does not complete the review of the SWPCP within sixty (60) days (or within the time allowed under any resubmissions or authorized extension pursuant to subsections B.3 and B.4, above, but in no circumstance later than 120 days) of the date the SWPCP was initially submitted to the District, and provided such delay is not the result of the developer's or such developer's designee's failure to address SWPCP deficiencies as noted in subsection B.2, above, the District shall:

   (a) not later than three (3) days after the District's deadline, notify the DEEP that the developer shall be initiating the registration process for the Construction General Permit in accordance with section II.B of this Agreement, for completion of the SWPCP review, and;

   (b) provide to the DEEP, upon request, the District's complete file, including supporting documentation the developer's SWPCP consistency determination, including, but not limited to, the SWPCP, any other documentation submitted to the District by or on behalf of a developer, and any analysis already performed by the District; and

   (c) not later than seven (7) days after the District's deadline, in accordance with section II.B of this Agreement, for completion of the SWPCP review, transfer to the DEEP all fees that were originally submitted by the developer.

C. Inspections of the Project Site

1. Prior to the commencement of project construction and during the course of the SWPCP review process, the District shall conduct at least one inspection of the project site.

2. Once the construction of the project has begun, the District shall make at least one, but not more than three, inspection(s) of the project site to verify that the developer's SWPCP is being implemented as approved by the District. The District shall report the results of the inspection(s) to the developer or such developer's designee and to DEEP in a manner prescribed by the Commissioner.

3. Upon notification from the developer or developer's designee, in accordance with Section 6(a)(1) of the CGP, that construction of the stormwater collection and management system is complete, the District shall conduct one inspection of the project site to verify that the post-construction stormwater management measures were completed in accordance with the approved SWPCP. The District shall report the results of this inspection to DEEP in a manner prescribed by the Commissioner.

D. Audits

The District agrees that all records pertaining to this Agreement shall be maintained for a period of not less than five (5) years. Such records shall be made available to the DEEP and to the state auditors upon request. For the purposes of this Agreement, "Records" are all working papers and such information and materials as may have been accumulated by the District in performing the Agreement, including, but not limited to, documents, data, analysis, plans, books, computations, drawings, specifications, notes, reports, records, estimates, summaries and correspondence, kept or stored in any form.

III. FEE SCHEDULE.

A. A District may assess fees for the services it renders in conjunction with its SWPCP reviews. Such fees shall be assessed in accordance with the Fee Schedule in Exhibit 1. All fees shall be submitted by the developer to the District with the developer's request for review and inspections. These fees are non-refundable.

B. The Fee Schedule shall be reviewed annually by the Parties. The Fee Schedule may be adjusted as warranted, without a formal amendment to this Agreement, by mutual agreement between the Districts and the Commissioner.

IV. RESPONSIBILITIES OF DEEP.

A. In accordance with the Construction General Permit requirements for SWPCP reviews of locally approvable projects by a third party, DEEP shall conduct outreach to inform the development community that a District may review SWPCPs for consistency with the requirements of the Construction General Permit. DEEP shall also inform the development community that a registration form for authorization of a locally approvable project under the Construction General Permit may only be submitted to DEEP if: the District, or other third party in accordance with Section 3(b)(11) of the CGP, determines that the SWPCP is consistent with the requirements of the CGP, or in the event the time schedule is exceeded for a District review as described in section II.B.6, above.

B. In order to institute standard SWPCP review guidelines and procedures, DEEP shall coordinate with the Districts to prepare a SWPCP checklist. The standard review guidelines and procedures established shall be consistent with the requirements of the Construction General Permit, the 2002 CT Guidelines for Soil Erosion and Sediment Control, and the 2004 Stormwater Quality Manual, as respectively amended. The Commissioner shall have final approval of the review guidelines and procedures.

C. DEEP shall provide initial training regarding SWPCP requirements for District staff involved in SWPCP reviews. The frequency of subsequent training shall be determined by the Commissioner.

D. DEEP shall retain final decision making authority regarding the determination that a SWPCP is or is not consistent with the requirements of the Construction General Permit and shall oversee the permitting process for Construction General Permit coverage.

E. Once a SWPCP has been approved, DEEP shall oversee any subsequent compliance and/or enforcement matters related to a developer's adherence to the requirements of the Construction General Permit.

F. DEEP shall have the discretion to review any of the Districts' records pertaining to any aspect this Agreement.

V. POINTS OF CONTACT.

The following shall be points of contact for this Agreement unless otherwise agreed to by all Parties, notwithstanding section VI. All notices, demands, requests, consents, approvals or other communications required or permitted to be given or which are given with respect to this Agreement (for the purpose of this section collectively called "Notices") shall be deemed to have been effected at such time as the notice is placed in the U.S. mail, first class and postage prepaid, return receipt requested, or, placed with a recognized, overnight express delivery service that provides for a return receipt. All such Notices shall be in writing and shall be addressed as follows:

A. DEEP
Director
Water Permitting & Enforcement Division
Bureau of Material Management & Compliance Assurance
Department of Energy & Environmental Protection
79 Elm St.
Hartford, CT 06106
Phone: 860-424-3018
Fax: 860-424-4074

B. Conservation District
Board Chairperson
Address & Phone of appropriate District:

Northwest Conservation District
1185 New Litchfield Street
Torrington, CT 06790
Ph: 860-626-7222
Fax: 860-626-7222
Email: info@nwcd.org

Eastern Connecticut Conservation District
238 West Town Street
Norwich, CT 06360-2111
Ph**:** 860-319-8806
Email: Dan.Mullins@comcast.net

Connecticut River Coastal Conservation District, Inc.
deKoven House Community Center
27 Washington Street
Middletown, CT 06457
Ph: 860-346-3282
Email: ctrivercoastal@conservect.org

Southwest Conservation District
51 Mill Pond Road
Hamden, CT 06514
Ph: 203-859-7014
Email: csullivan@conservect.org

North Central Conservation District
24 Hyde Avenue
Vernon, CT 06066
Ph: 860-875-3881
Email: tollandc@snet.net

General Conditions

VI. EXECUTIVE ORDERS AND ANTI-DISCRIMINATION. This Contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which

are incorporated into and are made a part of the Contract as if they had been fully set forth in it. The Contract may also be subject to Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services and to Executive Order No. 49 of Governor Dannel P. Malloy, promulgated May 22, 2015, mandating disclosure of certain gifts to public employees and contributions to certain candidates for office. If Executive Order 14 and/or Executive Order 49 are applicable, they are deemed to be incorporated into and are made a part of the Contract as if they had been fully set forth in it. At the Contractor's request, the Client Agency or DAS shall provide a copy of these orders to the Contractor.

VII. AMENDMENTS. Either the DEEP or the Districts may recommend revisions to this Agreement as circumstances may warrant; however, any revisions must be upon mutual agreement of DEEP and all five Conservation Districts. Unless otherwise stated in this Agreement, formal written amendment is required for changes to any of the terms and conditions specifically stated in the Agreement, any prior amendments to the Agreement, and any other Agreement revisions determined material by the Department.

VIII. SEVERABILITY. The provisions of this Agreement are severable. If any part of it is found unenforceable, all other provisions shall remain fully valid and enforceable, unless the unenforceable provision is an essential element of the bargain.

IX. SOVEREIGN IMMUNITY. The Parties acknowledge and agree that nothing in the Agreement shall be construed as a modification, compromise or waiver by the State of any rights or defenses of any immunities provided by federal law or the laws of the State of Connecticut to the State or any of the State's, which they may have had, now have or shall have with respect to all matters arising out of the Agreement. To the extent that this section conflicts with any other section, this section shall govern.

X. FORUM AND CHOICE OF LAW. The Agreement shall be deemed to have been made in the City of Hartford, State of Connecticut. Both Parties agree that it is fair and reasonable for the validity and construction of the Agreement to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by federal law or the laws of the State of Connecticut do not bar an action against the State or the Districts, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Districts waive any objection which they may now have or shall have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

XI. TERMINATION. Notwithstanding any provisions in this Agreement, DEEP, through a duly authorized employee, may terminate the Agreement whenever the Agency makes a written determination that such Termination is in the best interests of the State. The Agency shall notify the Districts in writing sent by certified mail, return receipt requested, which notice shall specify the effective date of Termination and the extent to which the Districts must complete its Performance under the Agreement prior to such date; or (b) The Districts may terminate the Agreement for good cause. The Districts shall notify DEEP by written notice at least one hundred eighty (180) days prior to the effective date of termination. In order for the Districts to terminate this Agreement, (1) there must be a consensus between all five Conservation Districts that each District shall be terminating this Agreement with the DEEP; (2) such proof of consensus shall be submitted to the DEEP in the form of a letter signed by the duly authorized agent for each District by certified mail, return receipt requested, at least one hundred eighty (180) days prior to the Districts' intention to cancel or terminate. Upon the Termination of this Agreement by either Party, the Districts shall deliver to the Agency copies of all Records no later than thirty (30) days after the Termination of the Agreement, or fifteen (15) days after the Non-terminating Party receives a written request from the Terminating Party for the Records. The Districts shall deliver those Records that exist in electronic, magnetic or other intangible form in a non-proprietary format, such as, but not limited to, PDF, ASCII or .TXT. Upon receipt of a written notice of

Termination from the Agency, the Districts shall cease operations as the Agency directs in the notice, and take all actions that are necessary or appropriate, or that the Agency may reasonably direct, for the protection, and preservation of records. Except for any work which the Agency directs the Districts to Perform in the notice prior to the effective date of Termination, and except as otherwise provided in the notice, the Districts shall terminate or conclude all existing subcontracts and purchase orders and shall not enter into any further subcontracts, purchase orders or commitments. Upon Termination of the Agreement, all rights and obligations shall be null and void, so that no Party shall have any further rights or obligations to any other Party, except with respect to the sections which survive Termination. All representations, warranties, agreements and rights of the Parties under the Agreement shall survive such Termination to the extent not otherwise limited in the Agreement and without each one of them having to be specifically mentioned in the Agreement. Termination of the Agreement pursuant to this section shall not be deemed to be a breach of Agreement by the Agency.

XII. DURATION OF AGREEMENT. This Agreement shall be effective on July 1, 2019 or on the date of the last signature below, whichever is later, and shall continue in force unless canceled or terminated by either party in accordance with paragraph XI above.

XIII. VOID AB INITIO. Notwithstanding paragraphs XI and XII, the Agreement shall be void *ab initio* if the Construction General Permit is reissued, revoked or modified to eliminate the need for the Districts to review the SWPCP pursuant to such general permit's terms and conditions or if the Construction General Permit expires and is not reissued.

XIV. INTERPRETATION. The Agreement contains numerous references to statutes and regulations. For purposes of interpretation, conflict resolution and otherwise, the content of those statutes and regulations shall govern over the content of the reference in the Agreement to those statutes and regulations.

XV. ENTIRETY OF AGREEMENT. This Agreement is the entire agreement between the Parties with respect to its subject matter, and supersedes all prior agreements, proposals, offers, counteroffers and understandings of the Parties, whether written or oral. The Agreement has been entered into after full investigation, neither Party relying upon any statement or representation by the other unless such statement or representation is specifically embodied in the Agreement.

XVI. PROTECTION OF STATE CONFIDENTIAL INFORMATION.

A. The Districts or District Parties, at their own expense, have a duty to and shall protect from a Confidential Information Breach any and all Confidential Information which they come to possess or control, wherever and however stored or maintained, in a commercially reasonable manner in accordance with current industry standards. Confidential Information is any information that a party claims to be exempt from the state Freedom of Information Act (Section 1-210 et seq of the Connecticut General Statutes, also called FOIA) as specified in that Act.

B. Each District or District Party shall develop, implement and maintain a comprehensive data-security program for the protection of Confidential Information. The safeguards contained in such program shall be consistent with and comply with the safeguards for protection of Confidential Information, and information of a similar character, as set forth in all applicable federal and state law and written policy of the Department or State concerning the confidentiality of Confidential Information. Such data-security program shall include, but not be limited to, the following:

1. A security policy for employees related to the storage, access and transportation of data containing Confidential Information;

2. Reasonable restrictions on access to records containing Confidential Information, including access to any locked storage where such records are kept;

3. A process for reviewing policies and security measures at least annually;

4. Creating secure access controls to Confidential Information, including but not limited to passwords; and

5. Encrypting of Confidential Information that is stored on laptops, portable devices or being transmitted electronically.

C. The District and District Parties shall notify the Department and the Connecticut Office of the Attorney General as soon as practical, but no later than twenty-four (24) hours, after they become aware of or suspect that any Confidential Information which Parties have come to possess or control has been subject to a Confidential Information Breach. If a Confidential Information Breach has occurred, the District shall, within three (3) business days after the notification, present a credit monitoring and protection plan to the Commissioner of Administrative Services, the Department and the Connecticut Office of the Attorney General, for review and approval. Such credit monitoring or protection plan shall be made available by the District at its own cost and expense to all individuals affected by the Confidential Information Breach. Such credit monitoring or protection plan shall include, but is not limited to, reimbursement for the cost of placing and lifting one (1) security freeze per credit file pursuant to Connecticut General Statutes §36a-701a. Such credit monitoring or protection plans shall be approved by the State in accordance with this Section and shall cover a length of time commensurate with the circumstances of the Confidential Information Breach. The District's costs and expenses for the credit monitoring and protection plan shall not be recoverable from the Department, any State of Connecticut entity or any affected individuals.

D. The District shall incorporate the requirements of this Section in all subAgreements requiring each District Party to safeguard Confidential Information in the same manner as provided for in this Section.

E. Nothing in this Section shall supersede in any manner the District's and/ or the District Parties' obligations pursuant to HIPAA or the provisions of this Agreement concerning the obligations of the District as a Business Associate of the Department.

XVII. AMERICANS WITH DISABILITIES ACT. The Districts shall be and remain in compliance with the Americans with Disabilities Act of 1990 ("Act"), to the extent applicable, during the term of the Agreement. The DEEP may cancel the Agreement if the District and District Parties fail to comply with the Act.

XVIII. ADA PUBLICATION STATEMENT. The following statement shall be incorporated into all **publications** prepared under the terms of this Agreement:

"The Department of Energy and Environmental Protection is an affirmative action/equal opportunity employer and service provider. In conformance with the Americans with Disabilities Act, DEEP makes every effort to provide equally effective services for persons with disabilities. Individuals with disabilities who need this information in an alternative format, to allow them to benefit and/or participate in the agency's programs and services, should call DEEP's Human Resources Office at (860) 424-3006, send a fax to (860) 424-3896, or email DEEP.MedRecs@ct.gov. Persons who are hearing impaired should call the State of Connecticut relay number 711."

When advertising any **public meetings** conducted under the terms of this Agreement, the above publications language should be used as well as the following statement:

"Requests for accommodations must be made at least two weeks prior to the program date."

All **videos** produced under the terms of this Agreement must be made available with closed captioning.

XIX. PUBLICATION OF MATERIALS. The District must obtain written approval from the State of Connecticut prior to distribution or publication of any printed material prepared under the terms of this Agreement. Unless specifically authorized in writing by the State, on a case by case basis, the District shall have no right to use, and shall not use, the name of the State of Connecticut, its officials, agencies, or employees or the seal of the State of Connecticut or its agencies: (1) in any advertising, publicity, promotion; or (2) to express or to imply any endorsement of District's products or services; or (3) to use the name of the State of Connecticut, its officials agencies, or employees or the seal of the State of Connecticut or its agencies in any other manner (whether or not similar to uses prohibited by (1) and (2) above), except only to manufacture and deliver in accordance with this Agreement such items as are hereby contracted for by the State. In no event may the Districts use the State Seal in any way without the express written consent of the Secretary of State.

XX. CHANGES IN PRINCIPAL PROJECT STAFF. Any changes in District staff qualified to review Plans must be requested in writing and approved in writing by the Commissioner at the Commissioner's sole discretion. In the event of any unapproved change in District staff, the Commissioner may, in the Commissioner's sole discretion, terminate this Agreement.

XXI. FURTHER ASSURANCES. The Parties shall provide such information, execute and deliver any instruments and documents and take such other actions as may be necessary or reasonably requested by the other Party which are not inconsistent with the provisions of this Agreement and which do not involve the vesting of rights or assumption of obligations other than those provided for in the Agreement, in order to give full effect to the Agreement and to carry out the intent of the Agreement.

XXII. ASSIGNMENT. The Districts shall not assign any of their rights or obligations under the Agreement, voluntarily or otherwise, in any manner without the prior written consent of the Agency. The Agency may void any purported assignment in violation of this section and declare the District in breach of this Agreement. Any termination by the Agency for a breach is without prejudice to the Agency's or the State's rights or possible Claims.

XXIII. EXHIBITS. All exhibits referred to in, and attached to, this Agreement are incorporated in this Agreement by such reference and shall be deemed to be a part of it as if they had been fully set forth in it.

XXIV. FORCE MAJEUR. Events that materially affect the cost of the Goods or Services or the time schedule within which to Perform and are outside the control of the party asserting that such an event has occurred, including, but not limited to, labor troubles unrelated to District(s), failure of or inadequate permanent power, unavoidable casualties, fire not caused by a District, extraordinary weather conditions, disasters, riots, acts of God, insurrection or war.

XXV. INDEMNIFICATION. The Districts shall indemnify, defend and hold harmless the State and its officers, representatives, agents, servants, employees, successors and assigns from and against any and all (1) Claims arising, directly or indirectly, in connection with the Agreement, including the acts of commission or omission (collectively, the "Acts") of the District or District Parties; and (2) liabilities, damages, losses, costs and expenses, including but not limited to, attorneys' and other professionals' fees, arising, directly or indirectly, in connection with Claims, Acts or the Agreement. The Districts obligations under this section to indemnify, defend and hold harmless against Claims includes Claims concerning confidentiality of any part of or all of the Districts' Records, any intellectual property rights, other proprietary rights of any person or entity, copyrighted or uncopyrighted compositions, secret processes, patented or unpatented inventions, articles or appliances furnished or used in the Performance. The Districts shall not be responsible for indemnifying or holding the State harmless from any liability arising due to the negligence of the State or any other person or entity acting under the direct control or supervision of the State. The Districts shall reimburse the State for any and all damages to the real or personal property of the State caused by the Acts of the Districts or any District Parties. The State shall give the Districts reasonable notice of any such Claims. The Districts shall carry and maintain at all times during the term of the Agreement, and during the time that any

provisions survive the term of the Agreement, sufficient general liability insurance to satisfy its obligations under this Agreement. The Districts shall name the State as an additional insured on the policy and shall provide a copy of the policy to the Agency prior to the effective date of the Agreement. The Districts shall not begin Performance until the delivery of the policy to the Agency. The Agency shall be entitled to recover under the insurance policy even if a body of competent jurisdiction determines that the Agency or the State is contributorily negligent. This section shall survive the Termination of the Agreement and shall not be limited by reason of any insurance coverage.

XXVI. DISTRICT PARTIES. A District's members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the District is in privity of oral or written contract and the District intends for such other person or entity to Perform under the Agreement in any capacity

XXVII. CAMPAIGN CONTRIBUTION RESTRICTION. For all State contracts as defined in P.A. 07-1 having a value in a calendar year of $50,000 or more or a combination or series of such agreements or contracts having a value of $100,000 or more, the authorized signatory to this Agreement expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice. See SEEC Form 11.

Authorizing Signatures

For DEEP: _____ _____
Katherine S. Dykes, Commissioner Date

For Northwest Conservation District: _____ _____
Signature Date

_____
Title

For Eastern Connecticut Conservation District: _____ _____
Signature Date

_____
Title

For Connecticut River Coastal Conservation District, Inc.: _____ _____
Signature Date

_____
Title

For Southwest Conservation District: _____ _____
Signature Date

_____
Title

For North Central Conservation District: _____ _____
Signature Date

_____
Title

Exhibit 1

Fee Schedule

The Districts will be paid $120/hour for technical assistance work performed.

Non-refundable down payments required with submission:
$2,500 for sites ≤ 20 acres
$4,000 for sites > 20 acres

Exhibit 2

Conservation Districts of Connecticut
Regional Delineations and Contact Information

Northwest Conservation District
1185 New Litchfield Street
Torrington, CT 06790
Ph: 860-626-7222
Fax: 860-626-7222
Email: info@nwcd.org

Eastern Connecticut Conservation District
238 West Town Street
Norwich, CT 06360-2111
Ph**:** 860-319-8806
Email: Dan.Mullins@comcast.net

Connecticut River Coastal Conservation District, Inc.
deKoven House Community Center
27 Washington Street
Middletown, CT 06457
Ph: 860-346-3282Email: ctrivercoastal@conservect.org

Southwest Conservation District
51 Mill Pond Road
Hamden, CT 06514
Ph: 203-859-7014
Email: csullivan@conservect.org

North Central Conservation District
24 Hyde Avenue
Vernon, CT 06066
Ph: 860-875-3881
Email: tollandc@snet.net

NORTHWEST	SOUTHWEST	NORTH CENTRAL	CT RIVER COASTAL	EASTERN
Barkhamsted	Ansonia	Avon	Berlin	Andover
Bethel	Beacon Falls	Bloomfield	Chester	Ashford
Bethlehem	Bethany	Bolton	Clinton	Bozrah
Bridgewater	Branford	Bristol	Colchester	Brooklyn
Brookfield	Bridgeport	Burlington	Cromwell	Canterbury
Canaan	Cheshire	Canton	Deep River	Chaplin
Colebrook	Darien	Coventry	Durham	Columbia
Cornwall	Derby	East Granby	East Haddam	Eastford
Danbury	East Haven	East Hartford	East Hampton	East Lyme
Goshen	Easton	East Windsor	Essex	Franklin
Hartland	Fairfield	Ellington	Haddam	Griswold
Harwinton	Greenwich	Enfield	Hebron	Groton
Kent	Guilford	Farmington	Killingworth	Hampton
Litchfield	Hamden	Glastonbury	Lyme	Killingly
Morris	Meriden	Granby	Madison	Lebanon
New Fairfield	Middlebury	Hartford	Marlborough	Ledyard
New Hartford	Milford	Manchester	Middlefield	Lisbon
New Milford	Monroe	Plainville	Middletown	Mansfield
Newtown	Naugatuck	Simsbury	Newington	Montville
Norfolk	New Canaan	Somers	New Britain	New
North Canaan	New Haven	South Windsor	Old Lyme	London
Plymouth	North Branford	Stafford	Old Saybrook	North
Roxbury	North Haven	Suffield	Portland	Stonington
Salisbury	Norwalk	Tolland	Rocky Hill	Norwich
Sharon	Orange	Vernon	Salem	Plainfield
Sherman	Oxford	West Hartford	Westbrook	Pomfret
Southbury	Prospect	Wethersfield		Preston
Thomaston	Redding	Willington		Putnam
Torrington	Ridgefield	Windsor		Scotland
Warren	Seymour	Windsor Locks		Sprague
Washington	Shelton			Sterling
Watertown	Southington			Stonington
Winchester	Stamford			Thompson
Woodbury	Stratford			Union
	Trumbull			Voluntown
	Wallingford			Waterford
	Waterbury			Windham
	West Haven			Woodstock
	Weston			
	Westport			
	Wilton			
	Wolcott			
	Woodbridge			

Exhibit 3

CONSERVATION DISTRICT PLAN REVIEW CERTIFICATION

Registrations submitted to DEEP for which a Conservation District has performed the Plan review pursuant to Section 3(*b*)(10) of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities shall include the following certification:

"I hereby certify that I am an employee of the [INSERT NAME OF DISTRICT] Conservation District and that I meet the qualifications to review Stormwater Pollution Control Plans as specified in the Memorandum of Agreement between the Connecticut Department of Energy & Environmental Protection and the Five Conservation Districts of Connecticut for Technical Assistance for Locally Approvable Construction General Permits. I am making this certification in connection with a registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, submitted to the commissioner by [INSERT NAME OF REGISTRANT] for an activity located at [INSERT ADDRESS OF PROJECT OR ACTIVITY]. I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify, based on my review of the requirements of such general permit and on the standard of care for such projects, that the Plan is in compliance with the requirements of the general permit. I understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

Registrations submitted to DEEP for which the District review was begun but ***could not be completed*** within the time limits specified in the Memorandum of Agreement shall include the following statement:

"I hereby certify that I am an employee of the [INSERT NAME OF DISTRICT] Conservation District and that I meet the qualifications to review Stormwater Pollution Control Plans as specified in the Memorandum of Agreement between the Connecticut Department of Energy & Environmental Protection and the Five Conservation Districts of Connecticut for Technical Assistance for Locally Approvable Construction General Permits. I am making this statement in connection with a registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, submitted to the commissioner by [INSERT NAME OF REGISTRANT] for an activity located at [INSERT ADDRESS OF PROJECT OR ACTIVITY]. I hereby state that the review of the Stormwater Pollution Control Plan (Plan) for such registration was not completed within the time frames specified in the Memorandum of Agreement. Consequently, I cannot certify that the Plan is in compliance with the requirements of the general permit."

APPENDIX F
Memorandum of Agreement
Between
The Connecticut Department of Energy & Environmental Protection
and
the Five Conservation Districts of Connecticut
for
Technical Assistance for Locally Exempt Stormwater Construction General Permits

WHEREAS, the Commissioner of the Department of Energy and Environmental Protection ("Department" or "DEEP ") is authorized by section 22a-6(a)(2)(3) and (4) of the Connecticut General Statutes ("CGS") to enter into this Agreement; and

WHEREAS, the five Conservation Districts of Connecticut (collectively, the "Districts"), are not-for-profit corporations duly authorized, organized and existing under the laws of the State of Connecticut and are authorized by section 22a-315 of the CGS and section 22a-315-14 of the Regulations of Connecticut State Agencies to enter into this Agreement; and

WHEREAS, section 22a-430b of the Connecticut General Statutes authorizes the Department to regulate stormwater discharges from construction activities under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities ("the Construction General Permit" or "CGP"), which has been or shall be issued on October 1, 2019. The Construction General Permit requires the implementation of erosion and sediment controls to control the discharge of sediment from construction and post-construction discharges; and

WHEREAS, the Construction General Permit requires the preparation and implementation of a Stormwater Pollution Control Plan ("Plan" or "SWPCP") to prevent erosion and the discharge of sediment to the waters of the state; and

WHEREAS, pursuant to section 22a-315 of the CGS, soil and water conservation districts and boards were established to advise the Commissioner on matters of soil and water conservation and erosion and sediment control and to assist the Commissioner in implementing programs related to soil and water conservation and erosion and sediment control; and

WHEREAS, pursuant to section 22a-315 of the CGS, the soil and water conservation districts and boards may receive funds from private sources for services provided to promote soil and water conservation and to assist the Commissioner in the implementation of related programs; and

WHEREAS, section 22a-326 of the CGS declares the policy of the state "to strengthen and extend its erosion and sediment control activities and programs and to establish and implement, through the Council on Soil and Water Conservation, soil and water conservation districts, the municipalities and the Commissioner of Energy and Environmental Protection, a state-wide coordinated erosion and sediment control program which shall reduce the danger from storm water runoff, minimize nonpoint sediment

pollution from land being developed and conserve and protect the land, water, air and other environmental resources of the state;" and

WHEREAS, the Districts have understanding and experience in reviewing erosion and sediment control plans because of their longstanding participation in the municipal approval process, as required by section 22a-329 of the CGS; and

WHEREAS, DEEP and the Districts are jointly dedicated to protecting the waters of the state by controlling the discharge of sediment and the pollution resulting from stormwater runoff.

NOW, THEREFORE, in consideration of the mutual covenants and conditions hereinafter stated, the Parties agree as follows:

Special Conditions

II. REQUIREMENTS FOR TECHNICAL ASSISTANCE BY DISTRICTS

A. SWPCP technical assistance shall be conducted by a District representative having one or more of the following minimum qualifications: (i) a bachelor's degree in hydrology, engineering (agricultural, civil, environmental, or chemical), landscape architecture, geology, soil science, environmental science, natural resources management, or a related field and two years of professional and field experience, or (ii) the EnviroCert International, Inc. designation as a Certified Professional in Erosion and Sediment Control (CPESC), Certified Erosion, Sediment and Stormwater Inspector (CESSWI), or a Certified Professional in Stormwater Quality (CPSWQ).

B. All technical assistance on SWPCPs undertaken by a District shall be conducted in accordance with the guidelines and procedures established by DEEP in consultation with the Districts, as further described below.

III. LOCALLY EXEMPT PROJECTS

For locally exempt projects, as defined in the Construction General Permit, with five (5) or more acres of soil disturbance, the appropriate District (as specified in the CGP and as indicated in Exhibit 2 appended hereto) shall, upon request by DEEP, provide technical assistance to DEEP for ensuring implementation of the Stormwater Pollution Control Plan in compliance with the CGP.

A. SWPCP Compliance Technical Assistance

1. The District shall be responsible for inspections to ensure that the SWPCP is properly implemented in accordance with the CGP by coordinating with the permittee (or designee) and conducting on-site inspections. Technical assistance will begin upon a written request from DEEP, the receipt of two copies of the approved SWPCP, and a down payment from the permittee as per the fee schedule in Exhibit 1. Once the District is in receipt of the documents and such down payment, the permittee's SWPCP shall be considered submitted to the District and the District will begin the required review in accordance with this agreement and the CGP.

2. Pre-construction Preparation**:** The District will review the approved SWPCP and any other relevant site plans, conduct an on-site visit, and set a date for the pre-construction meeting.

3. Pre-construction Meeting: Before the start of any construction, including any clearing of vegetation or installation of erosion and sediment controls (E&S controls), the District will meet with the permittee (or designee), contractor(s) and the qualified professional engineer who designed the project (designing qualified professional engineer) to review E&S control plans for construction and post-construction stormwater controls. Such meeting will include review of the construction schedule/phasing plan, inspection schedule, exchange of contacts, and discussion of any potential problem areas. If construction begins prior to this meeting, the District shall notify DEEP of non-compliance with the CGP.

4. Plan Implementation Inspection: The permittee (or designee) will notify the District when the E&S controls are installed and coordinate with the designing qualified professional engineer to schedule the Plan Implementation Inspection. The District will conduct the initial on-site inspection accompanied by the permittee (or designee) and the designing qualified professional engineer. If it is determined that the controls are installed properly and are in compliance with the approved SWPCP, the District will issue a notice that construction may proceed according to the SWPCP phasing plan. If the controls are not installed properly, the District will provide written notification to the permittee (or designee) of any action needed to comply with the SWPCP. The District shall re-inspect the site upon notification by the permittee (or designee) that the site is ready for re-inspection and in accordance with the Plan Implementation Inspection requirements in the CGP. Once the controls are properly installed and are in compliance with the approved SWPCP, the District will issue a notice that construction may proceed according to the SWPCP phasing plan.

5. Interim Inspections

   (a) As determined at the pre-construction meeting and according to the approved SWPCP or as otherwise directed by the Commissioner, interim inspections shall be conducted to verify compliance with the CGP and the SWPCP, including but not limited to, verification of site stabilization at the end of each construction phase and proper installation of controls prior to the beginning of the next phase of construction. Similar to the Plan Implementation Inspection, the permittee (or designee) will notify the District that an inspection is needed for either the closeout of one phase and/or the beginning of another.

   (b) Random inspections shall be conducted at least every 6 weeks if needed between scheduled inspections.

   (c) Additional inspections may be scheduled if E&S control objectives are not being met.

   (d) A written report will be generated following each inspection noting site conditions and any action required to maintain proper E&S controls during construction. The report will note whether or not the site is in compliance with the SWPCP and the CGP.

6. Post-Construction Inspection: Once construction is completed the District will conduct a post-construction site inspection with the permittee (or designee), designing qualified professional engineer and contractor to verify that all post-construction stormwater measures

are installed properly in accordance with the CGP and the SWPCP. The District will conduct at least one follow-up site visit after the post-construction site inspection. Additional inspections may be needed if the site is not stable and remedial action is needed. Reports and required actions will follow the same protocol as outlined in II.A.5.(d), above.

7. Final Stabilization Inspection: A final site inspection with the District, contractor, and designing qualified professional engineer will be conducted to ensure the site has been fully stabilized and all post-construction stormwater Best Management Practices (BMPs) are in place and functioning. The final stabilization inspection shall not take place prior to the completion of one (1) full growing season (April – October) following a successful post-construction inspection. The District will notify DEEP to confirm the site has achieved final stabilization. Subsequent to such notification, the permittee shall submit a Notice of Termination in accordance with the CGP.

B. Audits

The District agrees that all records pertaining to this Agreement shall be maintained for a period of not less than five (5) years. Such records shall be made available to the DEEP and to the state auditors upon request. For the purposes of this Agreement, "Records" are all working papers and such information and materials as may have been accumulated by the District in performing the Agreement, including, but not limited to, documents, data, analysis, plans, books, computations, drawings, specifications, notes, inspection reports and records, estimates, summaries and correspondence, kept or stored in any form.

IV. FEE SCHEDULE

A. A District will assess fees for the services it renders in conjunction with its SWPCP technical assistance in accordance with the Fee Schedule provided in Exhibit 1 to this agreement. Fees will be calculated on an hourly basis and paid for by the permittee. A down payment will be required prior to the start of any assistance.

B. The Fee Schedule shall be reviewed annually by the Parties. The Fee Schedule may be adjusted as warranted by mutual written agreement between the Districts and the Commissioner.

V. RESPONSIBILITIES OF DEEP

A. DEEP is responsible for formal review of all locally exempt SWPCPs submitted as part of the CGP and will require performance assurance (in accordance with the CGP) or similar financial mechanisms of the permittee to ensure payments will be made to Districts for technical assistance work.

B. In order to institute standard SWPCP review guidelines and procedures, DEEP shall coordinate with the Districts to prepare a SWPCP checklist. The standard review guidelines and procedures established shall be consistent with the requirements of the Construction General Permit, the 2002 CT Guidelines for Soil Erosion and Sediment Control (as amended), and the 2004 Stormwater Quality Manual (as amended). The Commissioner shall have final approval of the review guidelines and procedures.

C. DEEP shall provide initial training regarding SWPCP requirements for District staff involved in SWPCP technical assistance. The frequency of subsequent training shall be determined by the Commissioner.

D. DEEP shall retain final decision making authority regarding the determination that a construction site is in compliance or not with the SWPCP requirements of the Construction General Permit and shall oversee the permitting process for Construction General Permit coverage.

E. DEEP shall oversee any subsequent compliance and/or enforcement matters related to a permittee's adherence to the requirements of the Construction General Permit.

F. DEEP shall have the discretion to review any of the Districts' records pertaining to any aspect this Agreement.

VI. POINTS OF CONTACT

The following shall be points of contact for this Agreement unless otherwise agreed to by all Parties. All notices, demands, requests, consents, approvals or other communications required or permitted to be given or which are given with respect to this Agreement (for the purpose of this section collectively called "Notices") shall be deemed to have been effected at such time as the notice is emailed, or placed in the U.S. mail, first class and postage pre-paid, return receipt requested, or placed with a recognized overnight express delivery service that provides for a return receipt. All such Notices shall be in writing and shall be addressed as follows:

DEEP
Director Water Permitting & Enforcement Division
Bureau of Material Management & Compliance Assurance
Department of Energy & Environmental Protection
79 Elm St.
Hartford, CT 06106
Phone: 860-424-3018
Fax: 860-424-4074

Conservation District Executive Director and/or Board Chairperson
Address & Phone of appropriate District:

Northwest Conservation District
1185 New Litchfield Street
Torrington, CT 06790
Ph: 860-626-7222
Fax: 860-626-7222
Email: info@nwcd.org

Eastern Connecticut Conservation District
238 West Town Street
Norwich, CT 06360-2111
Ph: 860-319-8806
Email: Dan.Mullins@comcast.net

Connecticut River Coastal Conservation District, Inc.
deKoven House Community Center
27 Washington Street
Middletown, CT 06457
Ph: 860-346-3282
Email: ctrivercoastal@conservect.org

Southwest Conservation District
51 Mill Pond Road
Hamden, CT 06514
Ph: 203-859-7014
Email: csullivan@conservect.org

North Central Conservation District
24 Hyde Avenue
Vernon, CT 06066
Ph: 860-875-3881
Email: tollandc@snet.net

General Conditions

VII. EXECUTIVE ORDERS AND ANTI-DISCRIMINATION.

Executive Orders. . This Contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of the Contract as if they had been fully set forth in it. The Contract may also be subject to Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services and to Executive Order No. 49 of Governor Dannel P. Malloy, promulgated May 22, 2015, mandating disclosure of certain gifts to public employees and contributions to certain candidates for office. If Executive Order 14 and/or Executive Order 49 are applicable, they are deemed to be incorporated into and are made a part of the Contract as if they had been fully set forth in it. At the Contractor's request, the Client Agency or DAS shall provide a copy of these orders to the Contractor.

VIII. AMENDMENTS. Either the DEEP or the Districts may recommend revisions to this Agreement as circumstances may warrant; however, any revisions must be upon mutual agreement of DEEP and all five Conservation Districts. Unless otherwise stated in this Agreement, formal written amendment is required for changes to any of the terms and conditions specifically stated in the Agreement, any prior amendments to the Agreement, and any other Agreement revisions determined

material by the Department.

IX. SEVERABILITY. The provisions of this Agreement are severable. If any part of it is found unenforceable, all other provisions shall remain fully valid and enforceable, unless the unenforceable provision is an essential element of the bargain.

X. SOVEREIGN IMMUNITY. The Parties acknowledge and agree that nothing in the Agreement shall be construed as a modification, compromise or waiver by the State of Connecticut ("State") of any rights or defenses of any immunities provided by federal law or the laws of the State of Connecticut to the State or any of the State's, which they may have had, now have or shall have with respect to all matters arising out of the Agreement. To the extent that this section conflicts with any other section, this section shall govern.

XI. FORUM AND CHOICE OF LAW. The Agreement shall be deemed to have been made in the City of Hartford, State of Connecticut. Both Parties agree that it is fair and reasonable for the validity and construction of the Agreement to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by federal law or the laws of the State of Connecticut do not bar an action against the State or the Districts, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Districts waive any objection which they may now have or shall have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

XII. TERMINATION. Notwithstanding any provisions in this Agreement, DEEP, through a duly authorized employee, may terminate the Agreement whenever the Department makes a written determination that such Termination is in the best interests of the State. The Department shall notify the Districts in writing sent by certified mail, return receipt requested, which notice shall specify the effective date of Termination and the extent to which the Districts must complete its Performance under the Agreement prior to such date; or (b) The Districts may terminate the Agreement for good cause. The Districts shall notify DEEP by written notice at least one hundred eighty (180) days prior to the effective date of termination. In order for the Districts to terminate this Agreement, (1) there must be a consensus between all five Conservation Districts that each District shall be terminating this Agreement with the DEEP; (2) such proof of consensus shall be submitted to the DEEP in the form of a letter signed by the duly authorized agent for each District by certified mail, return receipt requested, at least one hundred eighty (180) days prior to the Districts' intention to cancel or terminate. Upon the Termination of this Agreement by either Party, the Districts shall deliver to the Department copies of all Records no later than thirty (30) days after the Termination of the Agreement, or fifteen (15) days after the Non-terminating Party receives a written request from the Terminating Party for the Records. The Districts shall deliver those Records that exist in electronic, magnetic or other intangible form in a non-proprietary format, such as, but not limited to, PDF, ASCII or .TXT. Upon receipt of a written notice of Termination from the Department, the Districts shall cease operations as the Department directs in the notice, and take all actions that are necessary or appropriate, or that the Department may reasonably direct, for the protection, and preservation of records. Except for any work which the Department directs the Districts to Perform in the notice prior to the effective date of Termination, and except as otherwise provided in the notice, the

Districts shall terminate or conclude all existing subcontracts and purchase orders and shall not enter into any further subcontracts, purchase orders or commitments. Upon Termination of the Agreement, all rights and obligations shall be null and void, so that no Party shall have any further rights or obligations to any other Party, except with respect to the sections which survive Termination. All representations, warranties, agreements and rights of the Parties under the Agreement shall survive such Termination to the extent not otherwise limited in the Agreement and without each one of them having to be specifically mentioned in the Agreement. Termination of the Agreement pursuant to this section shall not be deemed to be a breach of Agreement by the Department.

XIII. DURATION OF AGREEMENT. This Agreement shall be effective on January 1, 2019 or on the date of the last signature below, whichever is later, and shall continue in force unless canceled or terminated by either party in accordance with paragraph X above.

XIV. VOID AB INITIO. Notwithstanding paragraphs X and XI, the Agreement shall be void ab initio if, in the Commissioner's sole discretion, the Construction General Permit is reissued, revoked or modified to eliminate the need for the Districts to review the SWPCP pursuant to such general permit's terms and conditions or if the Construction General Permit expires and is not reissued.

XV. INTERPRETATION. The Agreement contains numerous references to statutes and regulations. For purposes of interpretation, conflict resolution and otherwise, the content of those statutes and regulations shall govern over the content of the reference in the Agreement to those statutes and regulations.

XVI. ENTIRETY OF AGREEMENT. This Agreement is the entire agreement between the Parties with respect to its subject matter, and supersedes all prior agreements, proposals, offers, counteroffers and understandings of the Parties, whether written or oral. The Agreement has been entered into after full investigation, neither Party relying upon any statement or representation by the other unless such statement or representation is specifically embodied in the Agreement.

XVII. PROTECTION OF STATE CONFIDENTIAL INFORMATION

A. The Districts or District Parties, at their own expense, have a duty to and shall protect from a Confidential Information Breach any and all Confidential Information which they come to possess or control, wherever and however stored or maintained, in a commercially reasonable manner in accordance with current industry standards.

B. Each District or District Party shall develop, implement and maintain a comprehensive data-security program for the protection of Confidential Information. The safeguards contained in such program shall be consistent with and comply with the safeguards for protection of Confidential Information, and information of a similar character, as set forth in all applicable federal and state law and written policy of the Department or State concerning the confidentiality of Confidential Information. Such data-security program shall include, but not be limited to, the following:

1. A security policy for employees related to the storage, access and transportation of data containing Confidential Information;

2. Reasonable restrictions on access to records containing Confidential Information, including access to any locked storage where such records are kept;

3. A process for reviewing policies and security measures at least annually;

4. Creating secure access controls to Confidential Information, including but not limited to passwords; and

5. Encrypting of Confidential Information that is stored on laptops, portable devices or being transmitted electronically.

C. The District and District Parties shall notify the Department and the Connecticut Office of the Attorney General as soon as practical, but no later than twenty-four (24) hours, after they become aware of or suspect that any Confidential Information which Parties have come to possess or control has been subject to a Confidential Information Breach. If a Confidential Information Breach has occurred, the District shall, within three (3) business days after the notification, present a credit monitoring and protection plan to the Commissioner of Administrative Services, the Department and the Connecticut Office of the Attorney General, for review and approval. Such credit monitoring or protection plan shall be made available by the District at its own cost and expense to all individuals affected by the Confidential Information Breach. Such credit monitoring or protection plan shall include, but is not limited to, reimbursement for the cost of placing and lifting one (1) security freeze per credit file pursuant to Connecticut General Statutes §36a-701a. Such credit monitoring or protection plans shall be approved by the State in accordance with this Section and shall cover a length of time commensurate with the circumstances of the Confidential Information Breach. The District's costs and expenses for the credit monitoring and protection plan shall not be recoverable from the Department, any State of Connecticut entity or any affected individuals.

D. The District shall incorporate the requirements of this Section in all subAgreements requiring each District Party to safeguard Confidential Information in the same manner as provided for in this Section.

E. Nothing in this Section shall supersede in any manner the District's and/ or the District Parties' obligations pursuant to HIPAA or the provisions of this Agreement concerning the obligations of the District as a Business Associate of the Department.

XVIII. AMERICANS WITH DISABILITIES ACT. The Districts shall be and remain in compliance with the Americans with Disabilities Act of 1990 ("Act"), to the extent applicable, during the term of the Agreement. The DEEP may cancel the Agreement if the District and District Parties fail to comply with the Act.

XIX. ADA PUBLICATION STATEMENT. The following statement shall be incorporated into all publications prepared under the terms of this Agreement:

"The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to complying with the requirements of the Americans with Disabilities Act (ADA). Please contact us at (860) 418-5910 or deep.accommodations@ct.gov if you: have a disability and need a communication aid or service;

have limited proficiency in English and may need information in another language; or if you wish to file an ADA or Title VI discrimination complaint."

When advertising any public meetings conducted under the terms of this Agreement, the above publications language should be used as well as the following statement:

"Requests for accommodations must be made at least two weeks prior to the program date."

All videos produced under the terms of this Agreement must be made available with closed captioning.

XX. PUBLICATION OF MATERIALS. The District must obtain written approval from the State of Connecticut prior to distribution or publication of any printed material prepared under the terms of this Agreement. Unless specifically authorized in writing by the State, on a case by case basis, the District shall have no right to use, and shall not use, the name of the State of Connecticut, its officials, agencies, or employees or the seal of the State of Connecticut or its agencies: (1) in any advertising, publicity, promotion; or (2) to express or to imply any endorsement of District's products or services; or (3) to use the name of the State of Connecticut, its officials agencies, or employees or the seal of the State of Connecticut or its agencies in any other manner (whether or not similar to uses prohibited by (1) and (2) above), except only to manufacture and deliver in accordance with this Agreement such items as are hereby contracted for by the State. In no event may the Districts use the State Seal in any way without the express written consent of the Secretary of State.

XXI. CHANGES IN PRINCIPAL PROJECT STAFF. Any changes in the principal project staff must be requested in writing and approved in writing by the Commissioner at the Commissioner's sole discretion. In the event of any unapproved change in principal project staff, the Commissioner may, in the Commissioner's sole discretion, terminate this Agreement.

XXII. FURTHER ASSURANCES. The Parties shall provide such information, execute and deliver any instruments and documents and take such other actions as may be necessary or reasonably requested by the other Party which are not inconsistent with the provisions of this Agreement and which do not involve the vesting of rights or assumption of obligations other than those provided for in the Agreement, in order to give full effect to the Agreement and to carry out the intent of the Agreement.

XXIII. ASSIGNMENT. The Districts shall not assign any of their rights or obligations under the Agreement, voluntarily or otherwise, in any manner without the prior written consent of the Department. The Department may void any purported assignment in violation of this section and declare the District in breach of this Agreement. Any termination by the Department for a breach is without prejudice to the Agency's or the State's rights or possible Claims.

XXIV. EXHIBITS. All exhibits referred to in, and attached to, this Agreement are incorporated in this Agreement by such reference and shall be deemed to be a part of it as if they had been fully set forth in it.

XXV. FORCE MAJEUR. Events that materially affect the cost of the Goods or Services or the time schedule within which to Perform and are outside the control of the party asserting that such an event has occurred, including, but not limited to, labor troubles unrelated to District(s), failure of or inadequate permanent power, unavoidable casualties, fire not caused by a District, extraordinary

weather conditions, disasters, riots, acts of God, insurrection or war.

XXVI. INDEMNIFICATION. The Districts shall indemnify, defend and hold harmless the State and its officers, representatives, agents, servants, employees, successors and assigns from and against any and all (1) Claims arising, directly or indirectly, in connection with the Agreement, including the acts of commission or omission (collectively, the "Acts") of the District or District Parties; and (2) liabilities, damages, losses, costs and expenses, including but not limited to, attorneys' and other professionals' fees, arising, directly or indirectly, in connection with Claims, Acts or the Agreement. The Districts obligations under this section to indemnify, defend and hold harmless against Claims includes Claims concerning confidentiality of any part of or all of the Districts' Records, any intellectual property rights, other proprietary rights of any person or entity, copyrighted or uncopyrighted compositions, secret processes, patented or unpatented inventions, articles or appliances furnished or used in the Performance. The Districts shall not be responsible for indemnifying or holding the State harmless from any liability arising due to the gross negligence of the State or any other person or entity acting under the direct control or supervision of the State. The Districts shall reimburse the State for any and all damages to the real or personal property of the State caused by the Acts of the Districts or any District Parties. The State shall give the Districts reasonable notice of any such Claims. The Districts shall carry and maintain at all times during the term of the Agreement, and during the time that any provisions survive the term of the Agreement, sufficient general liability insurance to satisfy its obligations under this Agreement. The Districts shall name the State as an additional insured on the policy and shall provide a copy of the policy to the Department prior to the effective date of the Agreement. The Districts shall not begin Performance until the delivery of the policy to the Department. The Department shall be entitled to recover under the insurance policy even if a body of competent jurisdiction determines that the Department or the State is contributorily negligent. This section shall survive the Termination of the Agreement and shall not be limited by reason of any insurance coverage.

XXVII. DISTRICT PARTIES. A District's members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the District is in privity of oral or written contract and the District intends for such other person or entity to Perform under the Agreement in any capacity

Authorizing Signatures

For DEEP: _____ _____
Katherine S. Dykes, Commissioner Date

For Northwest Conservation District:

_____ _____
Signature Date
_____
Title

For Eastern Connecticut Conservation District:

_____ _____
Signature Date
_____
Title

For Connecticut River Coastal Conservation District, Inc.:

_____ _____
Signature Date
_____
Title

For Southwest Conservation District:

_____ _____
Signature Date
_____
Title

For North Central Conservation District:

_____ _____
Signature Date
_____
Title

Exhibit 1

Fee Schedule effective as of January 1, 2019

The Districts will be paid $120/hour for technical assistance work performed. Interim inspections must be estimated based on phasing and complexity of site.

Down payments:
$2,500 for sites ≤ 20 acres
$4,000 for sites > 20 acres

Exhibit 2

Conservation Districts of Connecticut
Regional Delineations and Contact Information

Northwest Conservation District
1185 New Litchfield Street
Torrington, CT 06790
Ph: 860-626-7222
Fax: 860-626-7222
Email: info@nwcd.org

Eastern Connecticut Conservation District
238 West Town Street
Norwich, CT 06360-2111
Ph**:** 860-319-8806
Email: Dan.Mullins@comcast.net

Connecticut River Coastal Conservation District, Inc.
deKoven House Community Center
27 Washington Street
Middletown, CT 06457
Ph: 860-346-3282
Email: ctrivercoastal@conservect.org

Southwest Conservation District
51 Mill Pond Road
Hamden, CT 06514
Ph: 203-859-7014
Email: csullivan@conservect.org

North Central Conservation District
24 Hyde Avenue
Vernon, CT 06066
Ph: 860-875-3881
Email: tollandc@snet.net

NORTHWEST	SOUTHWEST	NORTH CENTRAL	CT RIVER COASTAL	EASTERN
Barkhamsted	Ansonia	Avon	Berlin	Andover
Bethel	Beacon Falls	Bloomfield	Chester	Ashford
Bethlehem	Bethany	Bolton	Clinton	Bozrah
Bridgewater	Branford	Bristol	Colchester	Brooklyn
Brookfield	Bridgeport	Burlington	Cromwell	Canterbury
Canaan	Cheshire	Canton	Deep River	Chaplin
Colebrook	Darien	Coventry	Durham	Columbia
Cornwall	Derby	East Granby	East Haddam	Eastford
Danbury	East Haven	East Hartford	East Hampton	East Lyme
Goshen	Easton	East Windsor	Essex	Franklin
Hartland	Fairfield	Ellington	Haddam	Griswold
Harwinton	Greenwich	Enfield	Hebron	Groton
Kent	Guilford	Farmington	Killingworth	Hampton
Litchfield	Hamden	Glastonbury	Lyme	Killingly
Morris	Meriden	Granby	Madison	Lebanon
New Fairfield	Middlebury	Hartford	Marlborough	Ledyard
New Hartford	Milford	Manchester	Middlefield	Lisbon
New Milford	Monroe	Plainville	Middletown	Mansfield
Newtown	Naugatuck	Simsbury	Newington	Montville
Norfolk	New Canaan	Somers	New Britain	New
North Canaan	New Haven	South Windsor	Old Lyme	London
Plymouth	North Branford	Stafford	Old Saybrook	North
Roxbury	North Haven	Suffield	Portland	Stonington
Salisbury	Norwalk	Tolland	Rocky Hill	Norwich
Sharon	Orange	Vernon	Salem	Plainfield
Sherman	Oxford	West Hartford	Westbrook	Pomfret
Southbury	Prospect	Wethersfield		Preston
Thomaston	Redding	Willington		Putnam
Torrington	Ridgefield	Windsor		Scotland
Warren	Seymour	Windsor Locks		Sprague
Washington	Shelton			Sterling
Watertown	Southington			Stonington
Winchester	Stamford			Thompson
Woodbury	Stratford			Union
	Trumbull			Voluntown
	Wallingford			Waterford
	Waterbury			Windham
	West Haven			Woodstock
	Weston			
	Westport			
	Wilton			
	Wolcott			
	Woodbridge			

APPENDIX G

Historic Preservation Review

Chapter 184a, Section 10-387 of the Connecticut General Statutes states that DEEP shall review, in consultation with the State Historic Preservation Office (SHPO) within the Department of Economic and Community Development, its policies and practices for consistency with the preservation and study of the state's archaeological and historical sites. Pursuant to this requirement, DEEP has outlined the following process for assessing the potential for a proposed development to impact these important resources. DEEP advises a review for resources identified below to ***be initiated up to one year*** prior to registration for this permit and in conjunction with the local project approval process.

Question 1
Will the proposed project will be authorized under an Army Corps of Engineers Section 404 wetland permit?

☐ Yes – Stop here – the Section 404 permit will satisfy all requirements for Appendix G
☐ No – Please answer the following questions

Question 2
Is the project site within an area of significance?

☐ Yes ☐ No ☐ Do Not Know or Unable to Determine

This can be determined by consulting the following resources:

1. National Register of Historic Places found at the link below: https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466
2. The municipality of the proposed development site for locally designated properties (including local historic districts) and any municipal ordinance pertaining to properties over 50 years old.

Question 3
Does the area of anticipated construction or ground disturbance include soils defined by the United States Department of Agriculture as "Loam, Sandy Loam, or Loamy Sand" that also may be Fine or Gravelly with slopes less than or equal to 15% (Soil mapping information is available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx)?

☐ Yes ☐ No ☐ Do Not Know or Unable to Determine

Question 4
Are there buildings or structures over 50 years in age within the project site or evidence of prior human land use (i.e., buildings foundations, wells, stone walls, or other built stone features)?

☐ Yes ☐ No ☐ Do Not Know or Unable to Determine

How to Proceed

If you answered "Yes" or "Do Not Know or Unable to Determine" to any or all of Questions 2, 3, or 4 above; please contact Catherine Labadia at SHPO for additional guidance (email: catherine.labadia@ct.gov or direct phone: 860-500-2329).

If you answered "No" to each one of Questions 2, 3, or 4 above; report in the Registration Form for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities that a self-review has been conducted and report the results provided above.

Appendix H
Wild & Scenic Rivers Guidance

Overview: Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act (WSRA) charges administration of rivers in the National Wild and Scenic Rivers System (National System) to four federal land management agencies (Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, and U.S. Forest Service). However, to protect and enhance river values as directed in the WSRA, it is essential to use the authorities of a number of other federal agencies in administering the water column, river bed/bank, and upland river corridor.

Congress declared a policy to protect selected rivers in the nation through the WSRA. The river-administering agencies are to protect the river's identified values, free-flowing condition, and associated water quality. Specifically, each component is to be "administered in such manner as to protect and enhance the (outstandingly remarkable) values (**ORVs**) which caused it to be included in said system. . . ."

The WSRA also directs other federal agencies to protect river values. It explicitly recognizes the Federal Energy Regulatory Commission, Environmental Protection Agency, Army Corps of Engineers and any other federal department or agency with lands on or adjacent to designated (or congressionally authorized study) rivers or that permit or assist in the construction of water resources projects.

Pertinent Sections of the Wild and Scenic Rivers Act

The full Wild and Scenic Rivers Act can be found at the website: www.rivers.gov
Pertinent Sections related to the mandate to protect river values through coordinated federal actions is found in several sections of the WSRA:

Section 1(b)	Section 7(a)	Section 10(a)
Section 12(a)	Section 12(c)	

Designated Rivers under the Wild and Scenic Rivers Act and Contact Information

The full listing of designated rivers can be found on the website www.rivers.gov
As of the date of this publication, there are two designated rivers in Connecticut, both of which are managed under the Partnership Wild and Scenic Rivers Program, through a Coordinating Committee consisting of representatives from local communities and organizations, state government and the National Park Service. More information about these rivers, their watersheds, approved management plans, the Wild and Scenic Coordinating Committees and specific contact information can be found on the websites.

1. Farmington (West Branch) River: farmingtonriver.org
2. Farmington (Lower) & Salmon Brook: lowerfarmingtonriver.org
3. Eightmile River: eightmileriver.org
4. Wood & Pawcatuck Rivers: wpwildrivers.org

APPENDIX I
Stormwater Management at
Solar Array Construction Projects

Solar development has expanded over the last several years as Connecticut and other states have invested in this important resource to further greenhouse gas emission reductions and other renewable policy objectives. However, construction of a large-scale solar array is unlike most other construction activities regulated under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ("general permit") and entails challenges not encountered in traditional development projects. If not properly managed, stormwater discharged during and after the construction of solar arrays can be a significant source of pollution resulting from increased runoff, erosion, and sedimentation, which can adversely impact wetlands or other natural resources. It is vitally important to stabilize soil, minimize soil disturbance and soil compaction, and manage the total runoff volume and velocity. Proper stormwater management practices can significantly mitigate the loss of topsoil, erosion and sediment discharges from disturbed areas and stormwater outlets, and erosion along downstream channels and streambanks. The opportunities to properly manage runoff decrease as site imperviousness increases.

Therefore, in addition to the terms and conditions of the general permit, registrations for construction of a Solar Array (as that term is defined in Section 2 of the general permit) shall, at a minimum, adhere to the conditions listed below. Depending on site-specific conditions for a particular solar array construction project, additional analyses may be required.

(I) Design and construction requirements

(1) Roadways, gravel surfaces and transformer pads within the solar array are considered effective impervious cover for the purposes of calculating Water Quality Volume (WQV). In addition to these impervious surfaces, all solar panels in the array shall also be considered effective impervious cover for the purposes of calculating Water Quality Volume if the proposed post-construction slopes at a site are equal to or greater than 15% or if the post-construction slopes at a site are less than 15% and the conditions in (a) – (d), inclusive, below have not been met:

(a) The vegetated area receiving runoff between rows of solar panels (see Figures 1 and 2, below) is equal to or greater than the average width of the row of solar panels draining to the vegetated area;

(b) Overall site conditions and solar panel configuration within the array are designed and constructed such that stormwater runoff remains as sheet flow across the entire site and flows towards the intended stormwater management controls;

(c) The following conditions are satisfied regarding the design of the post-construction slope of the site:

(i) For slopes less than or equal to 5%, appropriate vegetation shall be established that will ensure sheet flow conditions and that will provide sufficient ground cover throughout the site; and

(ii) For slopes greater than 5%, but less than 10%, practices including, but not limited to, level spreaders, terraces or berms as described in Figure 2, below, shall be used to ensure long term sheet flow conditions; and

(iii) For slopes greater than or equal to 8%, erosion control blankets or stump grindings or erosion control mix mulch or hydroseed with tackifier shall be applied within 72 hours of final grading, or when a rainfall of 0.5 inches or greater is predicted within 24 hours of final grading, whichever time period is less; and

(iv) For slopes equal to or greater than 10% and less than 15%, the Plan includes specific engineered stormwater control measures with detailed specifications that are designed to provide permanent stabilization and non-erosive conveyance of runoff to the property line of the site or downgradient from the site.

(d) The solar panels shall be designed and constructed in such a manner as to allow the growth of native

vegetation beneath and between the panels. Pollinator-friendly vegetation is strongly encouraged. With respect to such vegetation, the Permittee shall not use chemical fertilization, herbicides, or pesticides except as necessary to establish such vegetation.

(2) (a) Prior to commencing construction activities, the Permittee shall ensure that the following setback and buffer shall be delineated and maintained on the site:

(i) No solar panel associated with a solar array shall be located within one-hundred (100) feet of any wetland or waters ("the 100-foot setback") that, prior to or after construction, is located downgradient of such construction activity or within fifty (50) feet of any property boundary ("the 50-foot setback") that, prior to or after construction, is located downgradient of such construction activity; and

(ii) Except as provided in section 2(a)(iii), there shall be an undisturbed buffer of at least fifty (50) feet between any construction activity at a site and any wetland or waters that, prior to or after construction, is located downgradient of such construction activity ("the 50-foot buffer"). Such buffer shall be comprised of existing dense herbaceous vegetative ground cover (e.g. not forested area). If the entirety of such buffer is not comprised of existing dense herbaceous vegetative ground cover, such buffer shall be at least one-hundred (100) feet ("the 100-foot buffer").

(iii) There shall be an undisturbed buffer of at least ten (10) feet between any construction activity at a site associated with an access road or the electrical interconnection necessary for the solar array and any wetland or waters that, prior to or after construction, is located downgradient of such construction activity ("10-foot buffer"), except if the access road or electrical interconnection passes between two wetland or waters and the undisturbed buffer cannot be achieved. Any crossing through a wetland or waters for an access road or electrical interconnection is exempt from such buffer requirement.

(b) Notwithstanding section 2(a)(ii), the 50-foot buffer or 100-foot buffer, as applicable, may be reduced, only where necessary, but by no more than fifty percent (50%), only if all of the following have been demonstrated to the satisfaction of the commissioner by approval of a Registration:

(i) Stormwater control measures for managing stormwater discharges that will enter or be received by a wetland or waters shall be designed and installed in accordance with the following conditions:

(A) a minimum sediment load reduction of ninety percent (90%) shall be achieved before such discharges enter or are received by a wetland or waters. The required sediment load reduction shall be calculated based solely on the stormwater controls used; no sediment load reduction from conditions on the site (i.e., from any remaining buffer) shall be considered when calculating the sediment load reduction from such stormwater controls. The sediment load reduction may be calculated using a range of available models that are available to facilitate this calculation, including USDA's RUSLE-series programs and the WEPP erosion model, SEDCAD, SEDIMOT, or other equivalent independent third party model or method acceptable to the commissioner;

(B) those portions of a solar array from which stormwater discharges enter or will be received by a wetland or waters shall be deemed effective impervious cover for the purposes of calculating Stream Channel Protection in accordance with Section 7.6.1 of the Stormwater Quality Manual, even if those portions of such array are less than one (1) acre; and

(C) the buffer into which stormwater discharges shall have a slope of less than or equal to fifteen percent (15%)

(c) A soil scientist, as that term is defined in Section 2 of the general permit, shall delineate all wetland or waters by field survey. The location of all wetland or waters and all required setbacks and buffers shall be shown on all mapping and prior to the start of construction be clearly marked on the site with flags, stakes, tape, or a similar marking device by a surveyor licensed in Connecticut.

(d) Delineation of the 100-foot setback and any buffer required under this section shall be measured perpendicularly and laterally from the nearest part of the solar array or construction activity, as applicable, to:

(i) in the case of waters, the ordinary high water mark of the water body, defined as the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, and/or the presence of litter and debris;

(ii) the nearest edge of the stream or river bank, bluff, or cliff, as applicable; and

(iii) the nearest edge of any wetland, as determined by a soil scientist.

(e) The Plan shall indicate how compliance with this section will be achieved.

(f) Prior to the approval of a registration, the commissioner may determine that the 100 foot-setback or any buffer required under this section is not adequate to protect water quality or natural resources (i.e., a vernal pool, cold-water perennial streams, perennial headwater seeps or similar sensitive wetland or waters, or other sensitive habitat). In such a case, the commissioner may reject or disapprove the registration, or may impose additional terms and conditions in the approval of such registration, including, but not limited to, an additional setback, buffer or other control measure.

(g) Nothing in this section is intended to or shall prevent improvements, as may be directed by the commissioner in the approval of a registration, to enhance the water quality benefits or the natural resource value of any buffer required under this section.

(h) The terms "wetland", "wetlands", and "waters" shall be as defined in Section 2 of the general permit. In addition, the term "access road" shall mean a road used for the sole purpose of gaining access to the site from a public road or right-of-way or a road used solely to provide access between separate internal areas of fenced solar arrays. Access road shall *not* include any other road, including, but not limited to, a road around the perimeter of a solar array or a road used to service solar arrays.

(3) The lowest vertical clearance of the solar panels above the ground should not be greater than ten (10) feet. The panels shall, however, be at an adequate height to support vegetative growth and maintenance beneath and between the panels. If the lowest vertical clearance of the solar panels above the ground is greater than ten (10) feet, non-vegetative control measures will be required to prevent/control erosion and scour along the drip line or otherwise provide energy dissipation from water running off the panels. This section does not apply to solar carports that are installed over asphalt pavement.

(4) In addition to the pre-construction meeting required by Section 3(*b*)(15) of the general permit, prior to each phase of any construction activity, the Permittee shall ensure that a preconstruction meeting takes place with the designing qualified professional, qualified inspector, and all site contractors and subcontractors to be involved in construction, and the appropriate District personnel. Such meeting shall include a site walk of the project site. The Permittee shall ensure that a record of the date of such meeting and a report summarizing the meeting shall be prepared and retained in the Permittee's Plan, with a copy sent to all parties who attended the preconstruction meeting.

(5) (a) The Permittee shall retain the designing qualified professional and a qualified inspector (as those terms are defined in Section (2)) to conduct the Plan Implementation and Routine inspections pursuant to Section 5(*b*)(4), provided that any qualified inspector shall be chosen by the designing qualified professional. Unless otherwise approved in writing by the Commissioner, such designing qualified professional and qualified inspector shall be retained for the duration of the construction project until the Notice of Termination has been submitted to the Commissioner and determined to be acceptable, as described below in paragraph (8) below.

(b) Plan Implementation Inspections: Notwithstanding the schedule of inspections set forth in Section 5(*b*)(4) of the general permit, the Permittee shall ensure that the designing qualified professional and the qualified

inspector chosen by such designing qualified professional conduct Plan Implementation Inspections beginning with the commencement of construction activities and through each phase of construction until all perimeter controls, initial erosion and sediment control measures, and construction stormwater traps, basins, swales, and other control measures associated with each phase have been installed and stabilized. In addition, once all of these measures have been installed and stabilized, the Permittee shall ensure that the designing qualified professional certifies in writing to their completion in the applicable inspection report in accordance with the Plan. The Permittee shall ensure that the designing qualified professional conducts a Plan Implementation Inspection of the site at least once a month and the qualified inspector chosen by such designing qualified professional conducts such inspection at least once a week. (The qualified inspector does not need to conduct a weekly inspection during the week the qualified designing professional conducts a monthly inspection).

(c) Routine Inspections: Following the completion of the Plan Implementation Inspections (i.e., after the designing qualified professional has certified that stormwater control measures have been installed and stabilized) and notwithstanding the requirements of Section 5(*b*)(4)(B) of the general permit, either the designing qualified professional or the qualified inspector shall conduct weekly Routine Inspections pursuant to Section 5(*b*)(4)(B) of the general permit, provided that the designing qualified professional shall inspect the site at least once a month, or more frequently if necessary, to confirm that the site is in compliance with the general permit and determine if it is necessary to install, modify, maintain, or repair such controls and/or measures to improve the quality of stormwater discharges.

(d) In addition to any requirements of Section 5(*b*)(4)(B) of the general permit, the designing qualified professional shall seal and certify to the truth and accuracy of each inspection undertaken pursuant to this section regardless of whether the inspection is performed by such designing qualified professional or the qualified inspector. On or before five (5) days after the completion of each inspection, the Permittee shall ensure that certified inspection reports of all inspections undertaken pursuant to this section are provided by the designing qualified professional directly to the Permittee and shall ensure that a copy of the certified inspection report of each such inspection is provided to the appropriate District personnel and submitted electronically to the Department via email at DEEP.stormwaterstaff@ct.gov.

(e) Unless otherwise provided for in this section, the Permittee shall comply with section 5(*b*)(4) of the general permit, including, but not limited to, taking action if an inspection indicates that the site is not in compliance with the terms and conditions of the Plan or the general permit.

(f) The Permittee shall also ensure that the proposed inspection checklist prepared by the designing qualified professional is submitted for the review and approval of the Commissioner and is included with the registration for the general permit. No other professionals may serve as the designing qualified professional or qualified inspector without the prior submittal of relevant credentials and inspection checklist for the Commissioner's review and written approval.

(6) In addition to the requirements of this general permit regarding inspection checklists, the Permittee shall ensure that a copy of all such checklists are submitted electronically to the Department email (DEEP.stormwaterstaff@ct.gov) and the appropriate District within five (5) days from the date an inspection of the site was performed.

(7) The Permittee shall ensure, after completion of a construction project, that a Notice of Termination is filed in compliance with Section 6 of this general permit, including the requirement that such Notice of Termination be signed by a District representative certifying that such District representative has personally conducted a Post-Construction Inspection and Final Stabilization Inspection in accordance with Section 6(*a*) of this general permit and verified compliance with the requirements of that section. The Notice of Termination shall not be submitted until two (2) full growing seasons have passed following final stabilization. Monthly post-construction inspections shall be conducted by the qualified inspector following final stabilization until the Notice of Termination is submitted.

(8) (a) Prior to undertaking any construction activity, the Permittee shall secure and maintain a letter of credit in

accordance with the requirements of this section.

(b) For sites with a total disturbance of twenty (20) acres or more, the amount of the Letter of Credit shall be $15,000.00 per acre of disturbance. For sites with a total disturbance of less than twenty (20) acres, the amount of the Letter of Credit shall be $7,500.00 per acre of disturbance. Should a project developer locate more than one project with a total disturbance of less than twenty (20) acres in the same vicinity, for purposes of this section, the Commissioner reserves the right to combine such projects and consider them as being a site with a total disturbance of twenty (20) acres or more.

(c) The wording of such letter of credit must be identical to the wording specified in Appendix J of the general permit. The Permittee shall maintain such letter of credit in effect until the Commissioner notifies the permittee that the Notice of Termination, filed in compliance with Section 6 of the general permit has been accepted by the Commissioner.

(d) At the option of the Permittee, the amount of the letter of credit required under section 8(b) of Appendix I may be reduced:

(i) By forty (40) percent of the amount of the original letter of credit, only upon a determination by the Commissioner or, after designation of a District by the Commissioner, a representative from such District, that all perimeter controls, initial erosion and sediment control measures, and construction stormwater traps, basins, swales, and other control measures have been installed, functioning and stabilized in accordance with the general permit and the Plan;

(ii) By forty (40) percent of the amount of the original letter of credit, only upon a determination by the Commissioner or, after designation of a District by the Commissioner, a representative from such District, that all post-construction stormwater management measures specified in the SWPCP have been installed, functioning and stabilized in accordance with the general permit and the Plan; and

(iii) Upon the Commissioner's acceptance of the Notice of Termination filed in compliance with Section 6 of the general permit, the letter of credit may be terminated.

(e) The process for reducing the amount of the letter of credit in accordance with section 8(d) of Appendix I shall be as follows: the Permittee shall first submit a new letter of credit identical in all respects to the letter of credit in Appendix J, except for the reduced amount. Once the new letter of credit is received and the Commissioner determines that it is satisfactory, the Commissioner shall follow any reasonable instructions from the issuing bank regarding the termination or return of the previous letter of credit.

II. Design requirements for post-construction stormwater management measures.

(1) Post-construction stormwater control measures shall be designed and constructed to provide permanent stabilization and non-erosive conveyance of runoff on the site, to the property line of the site or downgradient from the site to ensure protection of on- and off-site wetland, wetlands, and waters (as those terms are defined in Section 2 of the general permit) or other natural resources.

(2) Orientation of panels shall be considered with respect to drainage pattern, flow concentration, drainage area and velocity.

(3) The permittee shall conduct a hydrologic analysis that:

(a) Evaluates and controls the 2, 25, 50 and 100-year 24-hour rainfall event post-development peak discharge to the corresponding pre-development peak discharge rates in accordance with the Stormwater Quality Manual, with the following exceptions: that sheet flow is maintained for a maximum length of 100 feet; shallow concentrated flow is calculated using velocity factors per NRCS Part 630 National Engineering Handbook Chapter 15 (the use of TR-55 paved or unpaved velocity factors are not acceptable); if swales are used to convey or control stormwater, such swales shall convey and control stormwater from a 100-year, 24-hour

rainfall event; and

(b) Is based on site specific soil mapping to confirm soil types; and

(c) Is able to determine and confirm the infiltrative capacity of any stormwater management measures . In addition, in areas where grading exceeds a two (2) foot difference between existing and proposed grades, the runoff curve number shall increase by one full HSG (e.g. runoff curve number for soils of HSG B shall be considered HSB C). For the remainder of the entire site, the runoff curve number associated with the Hydrologic Soil Group present on-site shall increase by one half (1/2) the difference between the Hydrologic Soil Group present on-site and the next higher Hydrologic Soil Group (e.g. half the difference between the runoff curve number for HSG B versus HSG C) to account for the compaction of soils that results from extensive machinery traffic over the course of the construction of the array; and

(d) Is based on slope gradient, surveyed soil type (adjusted per subparagraph (c), above), infiltration rate, length of slope, occurrence of bedrock, and change in drainage patterns. Pre- and post-development drainage area maps shall be provided showing this information; and

(e) For an engineered stormwater management system, demonstrates no net increase in peak flows, erosive velocities or volumes, or adverse impacts to downstream properties in accordance with the general permit and the Stormwater Quality Manual.

Figure 1
Solar Panel Installation with Slopes ≤ 5%

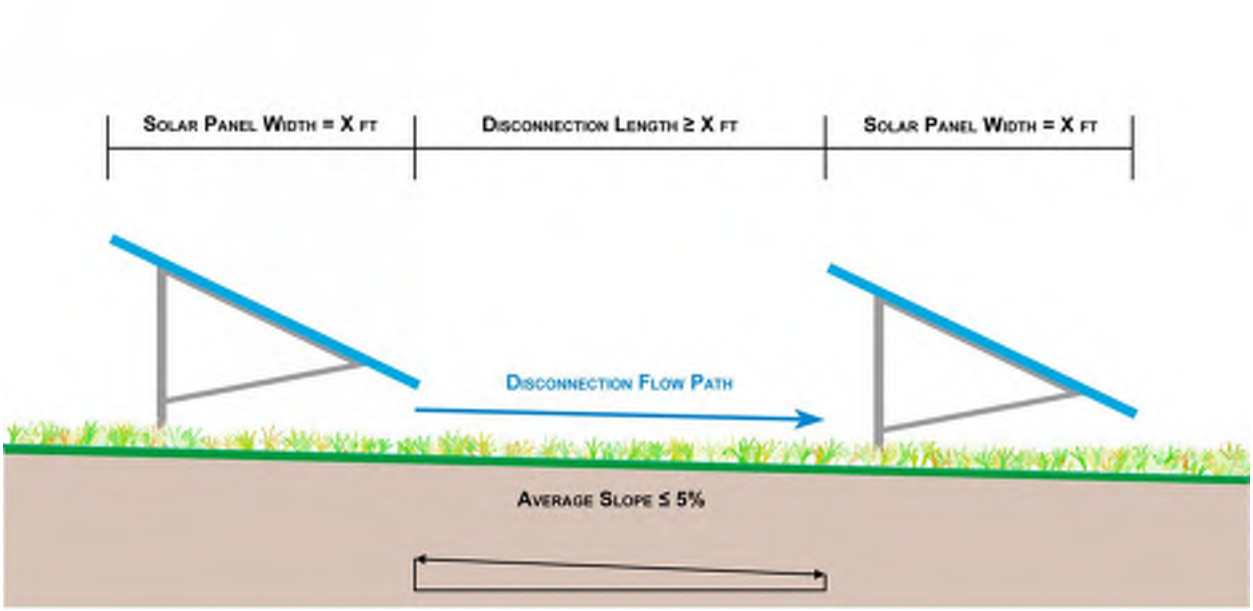
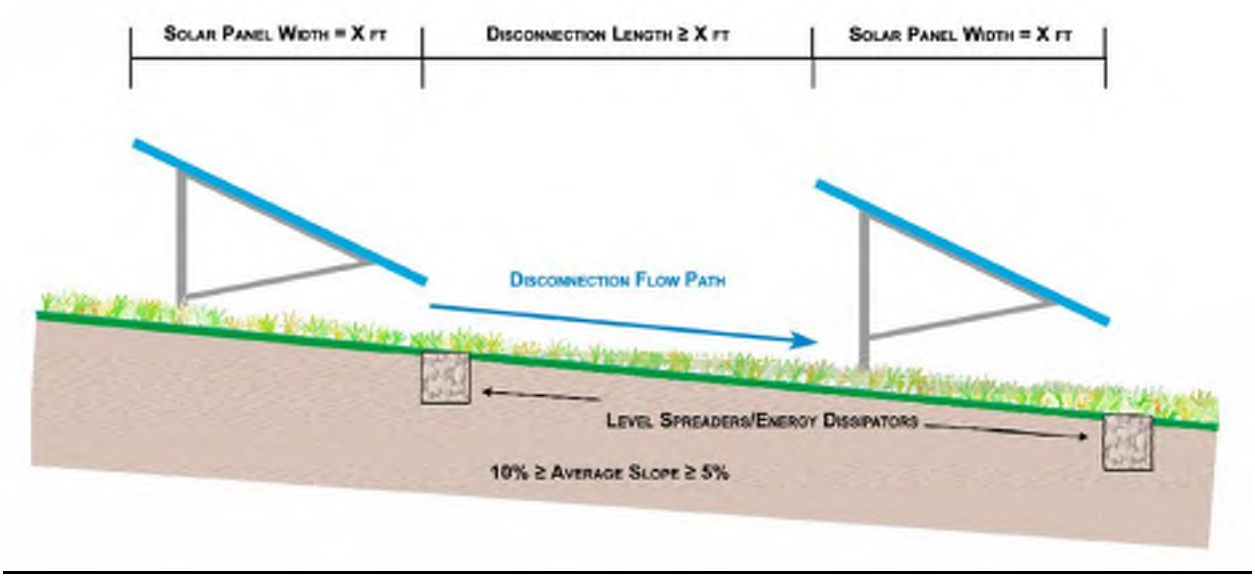


Figure 2
Solar Panel Installation with Slopes > 5% and ≤ 10%



Source: Maryland Department of the Environment: Stormwater Design Guidance – Solar Panel Installations

APPENDIX J
CTDEEP Financial Assurance Irrevocable Letter of Credit

[NAME OF ISSUING BANK]

IRREVOCABLE STANDBY LETTER OF CREDIT NUMBER: [XXXX]

ISSUANCE DATE: [MONTH, DATE, YEAR]

TOTAL AMOUNT: U.S. $[X,XXX.00]

BENEFICIARY: Commissioner, Connecticut Department of Energy and Environmental Protection

APPLICANT: [APPLICANT NAME AND ADDRESS]

Commissioner
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No. [XXXX] in your favor, at the request and for the account of the Applicant, [APPLICANT NAME AND ADDRESS], up to the aggregate total amount of [XXX] U.S. Dollars ($[X,XXX].00). We hereby authorize the Commissioner of the Connecticut Department of Energy and Environmental Protection ("Commissioner") to draw at sight on us, [NAME AND ADDRESS OF ISSUING BANK], an aggregate amount up to the total amount, available upon presentation of:

(1) your sight draft, bearing reference to this Letter of Credit No. [XXXX], and

(2) your signed, dated statement reading as follows: "I certify that the amount of the draft is payable because I have determined one or more of the following has occurred or is occurring:

(a) one or more violations of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities issued by the Commissioner and which is currently in effect, or one or more violations of any other requirement or approval applicable to the management of stormwater at or emanating from [ADDRESS OF SITE] ("the Property"), or

(b) stormwater at or emanating from the Property is or has become a potential source of pollution (as that term is defined in Conn. Gen. Stat. § 22a-423) which has not been

remedied to my satisfaction within five (5) business days of the Applicant's receipt of a written notice from me that a pollution condition exists, or

(c) the Applicant, or any other entity in which the Applicant has a controlling interest, no longer owns, leases, or can control the use of the Property, or no longer owns, operates, or has a controlling interest in the solar array facility located at the Property, or

(d) the issuing bank has notified me that it has decided not to extend this letter of credit beyond the current expiration date."

This letter of credit is effective as of [MONTH, DATE, YEAR] and shall expire on [MONTH, DATE, YEAR AT LEAST ONE YEAR LATER], but such expiration date shall be automatically extended for a period of one year and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify both you and Applicant, [APPLICANT NAME], by certified mail or nationally recognized courier service that we have decided not to extend this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of this letter of credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by you, as shown on the signed return receipts or evidence of courier delivery.

Multiple and partial draws on this letter of credit are expressly permitted, up to an aggregate amount not to exceed the total amount. Whenever this letter of credit is drawn on under and in compliance with the terms of this letter of credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into a Connecticut Department of Energy and Environmental Protection dedicated account in accordance with your instructions.

All banking and other charges under this letter of credit are for the account of the Applicant.

This letter of credit is issued subject to the edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce, in effect on the date this Letter of Credit is issued.

By signing, the signatory below certifies, under penalty of law, that the issuing institution is an entity which has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a Federal or State agency.

_____

[SIGNATURE(S) OF OFFICIAL(S) OF ISSUING INSTITUTION]

_____

[TITLE(S) OF OFFICIAL(S) OF ISSUING INSTITUTION]

Date: [MONTH, DATE, YEAR]

Tighe&Bond

APPENDIX B

FIGURE 1
ORTHOPHOTOGRAPH

Central Middle School
9 Indian Rock Lane
Greenwich, Connecticut

Tighe&Bond

Based on 2019 Statewide Leaf-Off Orthophotography, Courtesy of CTECO.

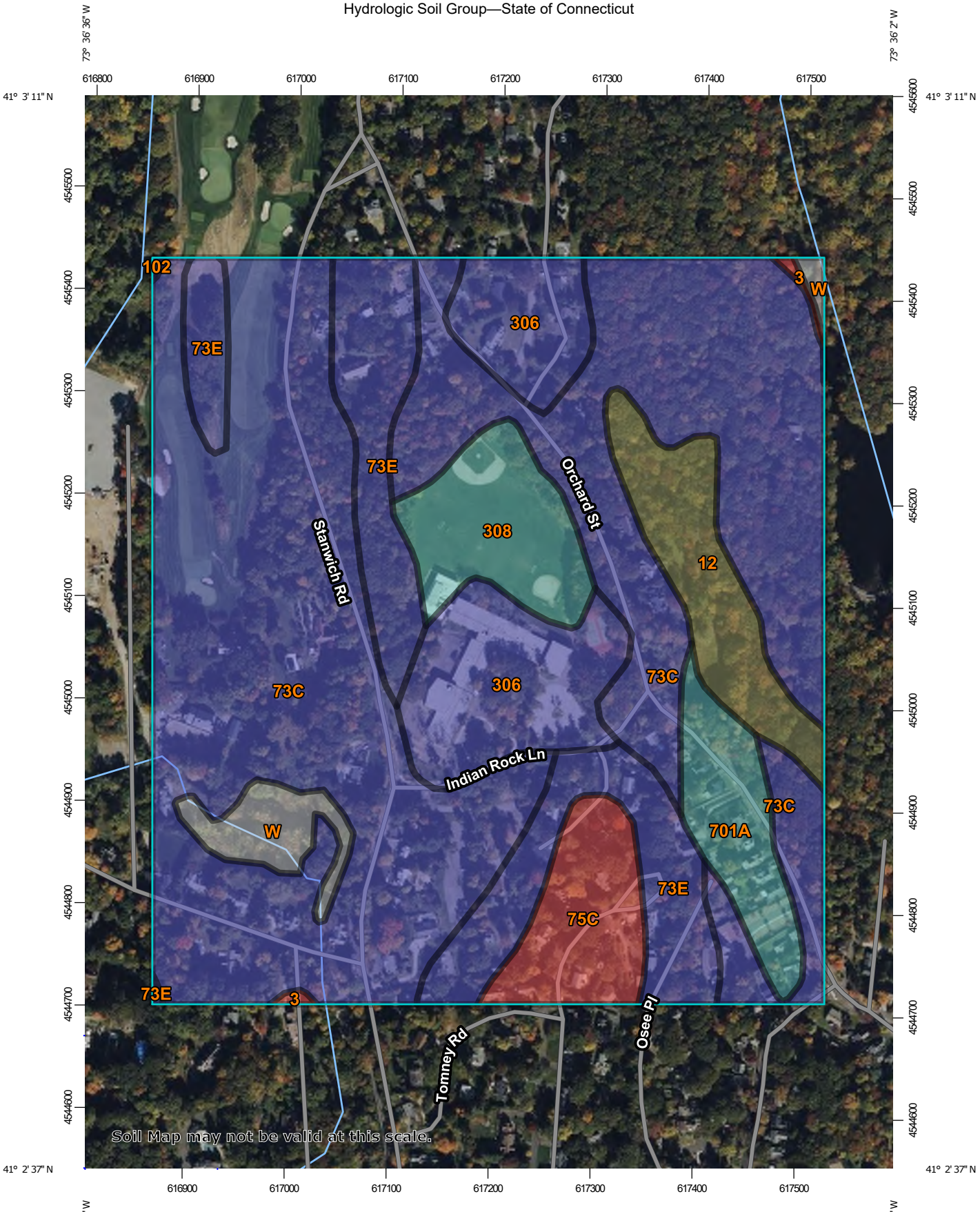
1:3,600
0 150 300
Feet

N

September 2023

G:\GIS\CT\SiteLocus\GreenwichCT\CentralMiddleSchool_GreenwichCT\CentralMiddleSchool_GreenwichCT_Aerial.mxd [Exported By: EMainville, 9/13/2023, 1:52:40 PM]

G-5068



Map Scale: 1:5,110 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 22, Sep 12, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2022—Oct 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	0.2	0.2%
12	Raypol silt loam	C/D	6.4	5.3%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	67.2	56.4%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	B	14.8	12.4%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	D	5.2	4.4%
102	Pootatuck fine sandy loam	B	0.0	0.0%
306	Udorthents-Urban land complex	B	11.8	9.9%
308	Udorthents, smoothed	C	6.0	5.0%
701A	Ninigret fine sandy loam, 0 to 3 percent slopes	C	4.8	4.1%
W	Water		2.7	2.3%
Totals for Area of Interest			**119.2**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Tighe&Bond

APPENDIX C

GENERAL NOTES

1. NOTIFY "CALL BEFORE YOU DIG" AT 1-800-922-4455 AND OTHER UTILITY OWNERS IN THE AREA NOT ON THE "CALL BEFORE YOU DIG" LIST AT LEAST 72 HOURS PRIOR TO ANY DIGGING, TRENCHING, ROCK REMOVAL, DEMOLITION, BORING, BACKFILLING, GRADING, LANDSCAPING, OR ANY OTHER EARTH MOVING OPERATIONS.
2. REFERENCE IS MADE TO PLAN ENTITLED "PROPERTY/ BOUNDARY & TOPOGRAPHIC SURVEY" PREPARED FOR GREENWICH CENTRAL MIDDLE SCHOOL. PREPARED BY MARTIN SURVEYING ASSOCIATES, LLC, DATED MAY 22, 2023.
3. LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE. IN ADDITION, SOME UTILITIES MAY NOT BE SHOWN. DETERMINE THE EXACT LOCATION OF UTILITIES BY TEST PIT OR OTHER METHODS, AS NECESSARY TO PREVENT DAMAGE TO UTILITIES AND/OR INTERRUPTIONS IN UTILITY SERVICE. PERFORM TEST PIT EXCAVATIONS AND OTHER INVESTIGATIONS TO LOCATE UTILITIES, AND PROVIDE THIS INFORMATION TO THE ENGINEER, PRIOR TO CONSTRUCTING THE PROPOSED IMPROVEMENTS. LOCATE ALL EXISTING UTILITIES TO BE CROSSED BY HAND EXCAVATION.
4. NOT ALL OF THE UTILITY SERVICES TO BUILDING ARE SHOWN. THE CONTRACTOR SHALL ANTICIPATE THAT THE PROPERTY HAS SERVICE CONNECTIONS FOR THE VARIOUS UTILITIES.
5. BOLD TEXT AND LINES INDICATE PROPOSED WORK. LIGHT TEXT AND LINES INDICATE APPROXIMATE EXISTING CONDITIONS.
6. TIGHE & BOND ASSUMES NO RESPONSIBILITY FOR ANY ISSUES, LEGAL OR OTHERWISE, RESULTING FROM CHANGES MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM TIGHE & BOND.
7. EXCAVATE ADDITIONAL TEST PITS TO LOCATE EXISTING UTILITIES AS DIRECTED OR APPROVED BY THE ENGINEER.
8. NOTIFY THE ENGINEER OF ANY UTILITIES IDENTIFIED DURING CONSTRUCTION THAT ARE NOT SHOWN ON THE DRAWINGS OR THAT DIFFER IN SIZE OR MATERIAL.
9. THE CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY; COORDINATION WITH THE OWNER, ALL SUBCONTRACTORS, AND WITH OTHER CONTRACTORS WORKING WITHIN THE LIMITS OF WORK, THE MEANS AND METHODS OF CONSTRUCTING THE PROPOSED WORK.
10. OBTAIN, PAY FOR AND COMPLY WITH PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK. ARRANGE AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE JURISDICTIONAL AUTHORITIES.
11. SHORE UTILITY TRENCHES WHERE FIELD CONDITIONS DICTATE AND/OR WHERE REQUIRED BY LOCAL, STATE AND FEDERAL HEALTH AND SAFETY CODES.
12. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS ARE OBSERVED THAT VARY SIGNIFICANTLY FROM THOSE SHOWN ON THE DRAWINGS, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING FOR RESOLUTION OF THE CONFLICTING INFORMATION.
13. ALL CONSTRUCTION SHALL COMPLY WITH THE TOWN OF GREENWICH REQUIREMENTS, THE STATE OF CONNECTICUT BASIC BUILDING CODE, AMERICANS WITH DISABILITIES ACT (ADA), THE CONNECTICUT GUIDELINES FOR SOIL AND EROSION AND SEDIMENT CONTROL, OSHA, CT DOT FORM 818 (LATEST EDITION).
14. ALL DEVELOPMENT ACTIVITIES TO BE UNDERTAKEN WITHIN THE STREET RIGHT-OF-WAY AND OTHER PUBLIC LANDS SHALL COMPLY FULLY WITH TOWN STANDARDS UNLESS APPROVED DEVIATION IS SPECIFICALLY SET FORTH AS PART OF THIS APPLICATION. ALL WORK WITHIN THE STATE RIGHT-OF-WAY WILL COMPLY WITH THE CT DOT FORM 818 WITH THE LATEST SPECIAL PROVISIONS AND TYPICAL STATE STANDARD DETAILS.
15. PROTECT AND MAINTAIN ALL UTILITIES IN THE AREAS UNDER CONSTRUCTION DURING THE WORK. LEAVE ALL PIPES AND STRUCTURES WITHIN THE LIMITS OF THE CONTRACT IN A CLEAN AND OPERABLE CONDITION AT THE COMPLETION OF THE WORK. TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SAND AND SILT FROM DISTURBED AREAS FROM ENTERING THE DRAINAGE SYSTEM.
16. NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICT, ERROR, AMBIGUITY, OR DISCREPANCY WITH THE PLANS OR BETWEEN THE PLANS AND ANY APPLICABLE LAW, REGULATION, CODE, STANDARD SPECIFICATION, OR MANUFACTURER'S INSTRUCTIONS.
17. THE CONTRACTOR IS RESPONSIBLE FOR SUPPORT OF EXISTING UTILITIES AND REPAIR OR REPLACEMENT COSTS OF UTILITIES DAMAGED DURING CONSTRUCTION, WHETHER ABOVE OR BELOW GRADE. REPLACE DAMAGED UTILITIES IMMEDIATELY AT NO ADDITIONAL COST TO THE OWNER AND AT NO COST TO THE PROPERTY OWNER.
18. TAKE NECESSARY MEASURES AND PROVIDE CONTINUOUS BARRIERS OF SUFFICIENT TYPE, SIZE, AND STRENGTH TO PREVENT ACCESS TO ALL WORK AND STAGING AREAS AT THE COMPLETION OF EACH DAYS WORK.
19. NO OPEN TRENCHES WILL BE ALLOWED OVER NIGHT. THE USE OF ROAD PLATES TO PROTECT THE EXCAVATION WILL BE CONSIDERED UPON REQUEST, BUT BACKFILLING IS PREFERRED.
20. THE CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY TRAFFIC CONTROL/SAFETY DEVICES TO ENSURE SAFE VEHICULAR AND PEDESTRIAN ACCESS THROUGH THE WORK AREA, OR FOR SAFELY IMPLEMENTING DETOURS AROUND THE WORK AREA. PERFORM TRAFFIC CONTROL IN ACCORDANCE WITH THE CONTRACTOR'S APPROVED TRAFFIC CONTROL PLAN.
21. MAINTAIN EMERGENCY ACCESS TO ALL PROPERTIES WITHIN THE PROJECT AREA AT ALL TIMES DURING CONSTRUCTION.
22. WHEN WORKING IN THE ROAD, PROVIDE THE OWNER AND LOCAL FIRE/POLICE/SCHOOL AUTHORITIES A DETAILED PLAN OF APPROACH INDICATING METHODS OF PROPOSED TRAFFIC ROUTING ON A DAILY BASIS. PROVIDE COORDINATION TO ENSURE COMMUNICATION AND COORDINATION BETWEEN THE OWNER, CONTRACTOR AND LOCAL FIRE/POLICE/SCHOOL AUTHORITIES THROUGHOUT THE CONSTRUCTION PERIOD.
23. REMOVE AND DISPOSE OF ALL CONSTRUCTION-RELATED WASTE MATERIALS AND DEBRIS IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL LAWS.
24. REMOVE STUMPS AND BRUSH FROM SITE, OR CHIP AND USE DURING LANDSCAPING. DO NOT BURY STUMPS ON SITE.
25. THE TERM "DEMOLISH" USED ON THE DRAWINGS MEANS TO REMOVE AND DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
26. THE TERM "ABANDON" USED ON THE DRAWINGS MEANS TO LEAVE IN PLACE AND TAKE APPROPRIATE MEASURES TO DECOMMISSION AS SPECIFIED OR NOTED ON THE DRAWINGS.
27. ALL PROPOSED WORK MAY BE ADJUSTED IN THE FIELD BY THE OWNER'S PROJECT REPRESENTATIVE TO MEET EXISTING CONDITIONS.
28. SPECIAL ATTENTION OF THE CONTRACTOR IS CALLED TO THE REQUIRED TYPE AND COMPACTION OF PIPE BEDDING AND BACKFILL SPECIFIED ON THESE DRAWINGS. THESE REQUIREMENTS WILL BE STRICTLY ENFORCED.
29. THE GENERAL CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER OR LAND SURVEYOR REGISTERED BY THE STATE OF CONNECTICUT TO LAY OUT THE BUILDING, UNDERGROUND UTILITY LINES, AND OTHER SITE WORK FROM THE HORIZONTAL AND VERTICAL CONTROL INFORMATION FURNISHED BY THE OWNER AND TO ESTABLISH AND RECORD THE NECESSARY ELEVATIONS, AT NO ADDITIONAL COST TO THE OWNER.
30. THE GENERAL CONTRACTOR SHALL FORWARD A LETTER FROM HIS LAND SURVEYOR OR PROFESSIONAL ENGINEER STATING THAT THE CONTROL INFORMATION FURNISHED BY THE OWNER IS ACCURATE OR SHALL IDENTIFY INACCURACIES, IF THEY EXIST. THE GENERAL CONTRACTOR SHALL NOT TAKE ADVANTAGE OF ERRORS, WHICH MAY BE INCLUDED IN THE CONTROL INFORMATION. STAKES AND MARKINGS SHALL BE PRESERVED.
31. PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY, THE ENGINEERING BUREAU MAY REQUIRE A CERTIFICATION LETTER STATING THAT THE DEVELOPMENT WAS CONSTRUCTED IN ACCORDANCE TO THE APPROVED PLANS, AND AN "AS-BUILT" DRAWING SHALL BE SUBMITTED.
32. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH A LICENSED SURVEYOR TO PREPARE AN "AS-BUILT" PLAN. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH A SITE ENGINEER 48 HOURS PRIOR TO ANY INSPECTIONS.
33. THE ENGINEERING DIVISION OF THE DEPARTMENT OF PUBLIC WORKS AND THE INSPECTING ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR THREE (3) DAYS PRIOR TO THE COMMENCEMENT OF EACH PHASE OF CONSTRUCTION.
34. THE WORK SHALL BE DONE IN CONFORMANCE WITH THE CONTRACT DOCUMENTS/PLANS UNLESS CHANGES HAVE BEEN APPROVED IN WRITING BY THE DESIGN ENGINEER PRIOR TO THE WORK BEING DONE.
35. A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE OWNER, ARCHITECT AND ENGINEER TO REVIEW THE SCOPE OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE THE PRECONSTRUCTION MEETING.
36. ALL CONSTRUCTION SHALL MEET OR EXCEED TOWN OF GREENWICH AND STATE OF CONNECTICUT STANDARDS AND SPECIFICATIONS, INCLUDING APPLICABLE SECTIONS OF THE CONNECTICUT AND TOWN OF GREENWICH BUILDING AND HEALTH CODES.
37. ALL CONSTRUCTION SHALL BE OBSERVED BY A PROFESSIONAL ENGINEER PRIOR TO BACKFILL AND AS THE WORK PROGRESSES.
38. UPON COMPLETION OF CONSTRUCTION AND PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY, A LETTER OF CERTIFICATION FROM A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT AND AN "IMPROVEMENT SURVEY" MAP THAT DEPICTS AS-BUILT CONDITIONS FROM A LAND SURVEYOR REGISTERED IN THE STATE OF CONNECTICUT SHALL BE SUBMITTED TO THE ENGINEERING DIVISION OF THE PUBLIC WORKS DEPARTMENT FOR REVIEW AND APPROVAL FOR THE PURPOSE OF CONFIRMING THAT CONSTRUCTION WAS COMPLETED SUBSTANTIALLY IN COMPLIANCE WITH THE APPROVED PLANS AS AMENDED FROM TIME TO TIME.
39. A CERTIFICATION TO THE SATISFACTION OF THE TOWN ENGINEER SHALL BE SUBMITTED BY A REGISTERED PROFESSIONAL ENGINEER DECLARING THAT CONSTRUCTION HAS BEEN COMPLETED SUBSTANTIALLY IN ACCORDANCE WITH THE APPROVED PLANS.

TOWN OF GREENWICH STANDARD CONSTRUCTION NOTES

1. A HIGHWAY PERMIT IS REQUIRED FOR ALL WORK WITHIN THE TOWN OF GREENWICH - RIGHT OF WAY.
2. ALL WORK WITHIN THE TOWN OF GREENWICH -- RIGHT OF WAY SHALL BE CONSTRUCTED TO TOWN OF GREENWICH STANDARDS.
3. CATCH BASINS FOR PRIVATE DRIVEWAYS SHALL HAVE A MINIMUM GRATE OF TWO FEET BY TWO FEET. IF THE DRIVEWAY IS CURBED THE CATCH BASIN SHALL HAVE A MINIMUM CURB INLET OF SIX INCHES. EACH DRIVEWAY CATCH BASIN SHALL ALSO HAVE A MINIMUM TWO -FOOT SUMP AND BELL TRAP.
4. ALL DRAINAGE CONNECTIONS TO THE TOWN DRAINAGE SYSTEM SHALL BE GRAVITY LINES. IF A DISCHARGE FROM A SUMP PUMP IS CONNECTED TO THE TOWN DRAINAGE SYSTEM, IT MUST DISCHARGE TO A DRAINAGE STRUCTURE ON PRIVATE PROPERTY AND THEN BE CONNECTED TO THE TOWN DRAINAGE SYSTEM. ALL SUMP PUMPS REQUIRE A BACKFLOW PREVENTER (CHECK VALVE) BETWEEN THE PUMP AND THE DRAINAGE STRUCTURE. A DRAIN CONNECTION PERMIT FROM THE HIGHWAY DIVISION IS REQUIRED FOR ALL CONNECTIONS TO THE TOWN DRAINAGE SYSTEM.
5. IN ROADWAY CUTS, SUBDRAINS SHALL BE REQUIRED IF SEEPAGE OCCURS DURING CONSTRUCTION OR WITHIN ONE YEAR AFTER ROAD CONSTRUCTION IS COMPLETED AND ACCEPTED, EVEN THOUGH PLANS MAY HAVE BEEN APPROVED WITHOUT SUBDRAINS AND/OR ROADWAY CONSTRUCTION HAS BEEN COMPLETED.
6. ALL RETAINING WALLS GREATER THAN THREE FEET ARE REQUIRED TO BE DESIGNED, AND INSPECTED DURING CONSTRUCTION BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT.
7. ALL DETENTION/RETENTION SYSTEMS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL SYSTEMS SHALL USE A MANIFOLD SYSTEM TO DISTRIBUTE RUNOFF EVENLY INTO EACH ROW OF INFILTRATORS. DETENTION SYSTEMS WILL HAVE A MANIFOLD SYSTEM THAT CREATES THE LONGEST TRAVEL TIME TO THE CONTROL STRUCTURE. ALL DETENTION/RETENTION SYSTEMS MUST USE A STRUCTURE SUCH AS A MANHOLE FOR THE CONTROL STRUCTURE SO ALL FLOW CONTROL DEVICES CAN BE ACCESSED FOR MAINTENANCE.
8. ALL INFILTRATION SYSTEMS MUST MEET THE STORMWATER INFILTRATION/RECHARGE DESIGN REQUIREMENTS IN APPENDIX B OF THE TOWN OF GREENWICH DRAINAGE MANUAL. THERE MUST BE AT LEAST A 2-FOOT SEPARATION DISTANCE FROM THE BOTTOM OF STONE BELOW THE INFILTRATION STRUCTURE TO THE SEASONAL HIGH GROUNDWATER OR BEDROCK/LEDGE (THIS SEPARATION REQUIREMENT MAY BE WAIVED OR REDUCED BY THE APPROVING AUTHORITY ON A CASE-BY-CASE BASIS). A 3-FOOT SEPARATION DISTANCE IS REQUIRED FROM THE BOTTOM OF STONE BELOW THE INFILTRATION STRUCTURE TO SEASONAL HIGH GROUNDWATER FOR LAND USES WITH HIGHER POTENTIAL POLLUTANT LOADS (HIGH LOAD AREAS). PRIOR TO THE INSTALLATION OF THE INFILTRATORS THE ENGINEER SHALL VERIFY THE INFILTRATION STRUCTURE IS BEING INSTALLED IN THE APPROVED LOCATION AND IF THE LOCATION HAS BEEN CHANGED ADDITIONAL SOIL TESTING SHALL BE PERFORMED AND THE ENGINEER SHALL APPROVE THE REVISED LOCATION. A REVIEW BY THE APPROVING AUTHORITY' WILL BE REQUIRED.
9. EACH BMP TO BE INSTALLED SHALL HAVE THE SOILS BENEATH THE BMP SCARIFIED OR TILLED TO IMPROVE INFILTRATION.
10. THE CONTRACTOR MUST CONSTRUCT THE BIORETENTION AREA FOLLOWING THE SPECIFICATIONS IN APPENDIX G OF THE TOWN OF GREENWICH DRAINAGE MANUAL FEBRUARY 2012 AS AMENDED.
11. ALL AREAS THAT ARE USED BY CONSTRUCTION EQUIPMENT AND USED FOR CONTRACTOR PARKING MUST HAVE THE SOIL TILLED 12 TO 16 INCHES AND AMENDED WITH SMALL AMOUNTS OF ORGANIC MATERIAL IF NEEDED. THE AREA TO BE RESTORED SHALL BE DETERMINED BY THE SITE ENGINEER.
12. COMPOST-AMENDED SOILS MUST FOLLOW THE REQUIREMENTS AS STATED IN THE TOWN OF GREENWICH DRAINAGE MANUAL FEBRUARY 2012 AS AMENDED.
13. TO OBTAIN A CERTIFICATE OF OCCUPANCY THE SUBMITTAL MUST INCLUDE THE FOLLOWING:
    - ITEMS ON CHECKLIST FOR CERTIFICATE OF OCCUPANCY -- FORM CL-105
    - IMPROVEMENT LOCATION SURVEY (ITEMS ON CHECKLIST FOR IMPROVEMENT LOCATION SURVEY DEPICTING "AS-BUILT" CONDITIONS - FORM CL-106)

LEGEND

DESCRIPTION	EXISTING	PROPOSED
PROPERTY LINE		
RIGHT-OF-WAY LINE		
EASEMENT LINE		
LIMITS OF WORK		
INTERMEDIATE CONTOURS		
INDEX CONTOURS	25	25
SPOT GRADE	X 141.2	+ 32.0
MAGNITUDE & DIRECTION OF SLOPE		0.0%
STORM DRAIN	SD	SD
STORM UNDERDRAIN		UD
GRAVITY SANITARY SEWER	SS	SS
SANITARY SEWER FORCE MAIN	SFM	SFM
SANITARY SEWER LOW PRESSURE	SSLP	SSLP
SANITARY SEWER COMBINED	COMB	COMB
WATER SERVICE	W	W
POTABLE WATER	PW	PW
FIRE SERVICE		F
HIGH PRESSURE FIRE SERVICE		F-HP
UNDERGROUND ELECTRIC	E	E
PRIMARY ELECTRIC SERVICE	PE	PE
SECONDARY ELECTRIC	SE	SE
OVERHEAD ELECTRIC	OE	OE
TELEPHONE SERVICE	T	T
TEL-DATA SERVICE	T–D	T-D
COMMUNICATIONS SERVICE	T–C	T-C
CABLE TV SERVICE	CTV	CTV
GAS SERVICE	G	G
CHILLED WATER RETURN	CWR	CWR
CHILLED WATER SUPPLY	CWS	CWS
HOT WATER RETURN	HWR	HWR
HOT WATER SUPPLY	HWS	HWS
STEAM CONDENSATE	C	C
LOW PRESSURE STEAM	LPS	LPS
MEDIUM PRESSURE STEAM	MPS	MPS
HIGH PRESSURE STEAM	HPS	HPS
OXYGEN SERVICE		O
OVERHEAD UTILITY (UNSPECIFIED)	OHW	OHW
CURB		
EDGE OF PAVEMENT		
DIRT ROAD		
SIDEWALK		
RETAINING WALL		
STONE WALL		
FENCE - UNSPECIFIED	X	X
FENCE - CHAIN LINK		
FENCE - WOOD POST		
GUARDRAIL		
METAL BEAM RAIL		
TRAIN TRACKS		
STORM DRAIN STRUCTURES	MANHOLE, CATCH BASIN CB	MANHOLE, AREA DRAIN, CATCH BASIN
SANITARY SEWER MANHOLE	S	S
WATER SERVICE STRUCTURES	HYDRANT, MANHOLE W, VALVE	HYDRANT, MANHOLE, W, VALVE
GAS SERVICE STRUCTURES	MANHOLE G, VALVE, GG	MANHOLE, G, VALVE
ELECTRIC SERVICE STRUCTURES	UTILITY CO. POLE #, MANHOLE E, LIGHT	UTILITY CO. POLE #, MANHOLE, E, LIGHT
TELECOMMUNICATIONS MANHOLE	T	T
TREELINE		
TREE	EVERGREEN, DECIDUOUS	EVERGREEN, DECIDUOUS

ABBREVIATIONS

ABDN'D	ABANDON(ED)
AC	ASBESTOS CEMENT PIPE
BC	BITUMINOUS CURB
BFP	BACK FLOW PREVENTOR
BIT	BITUMINOUS
BL	BASELINE
BLDG	BUILDING
BND	BOUND
BOC	BOTTOM OF CURB
BOT	BOTTOM
BS	BOTTOM OF STEP
BW	BOTTOM OF WALL
CATV	CABLE TELEVISION
CB	CATCH BASIN
CEM	CEMENT
CI	CAST IRON PIPE
CL	CENTERLINE
CLF	CHAIN LINK FENCE
CO	CLEAN OUT
CONC	CONCRETE
CPP	CORRUGATED POLYETHYLENE PIPE
CY	CUBIC YARD
DH	DRILL HOLE
DI	DUCTILE IRON PIPE
DIA	DIAMETER
DMH	DRAIN MANHOLE
E	EAST
EF	EACH FACE
EG	EXISTING GRADE
EL/ELEV	ELEVATION
ELEC	ELECTRIC
EMH	ELECTRIC MANHOLE
EOP	EDGE OF PAVEMENT
EW	EACH WAY
EXIST	EXISTING
FES	FLARED END SECTION
FF	FINISH FLOOR
FM	FORCE MAIN
G	GAS
GG	GAS GATE
GRAN	GRANITE
HC	HANDICAP
HDPE	HIGH DENSITY POLYETHYLENE
HMA	HOT MIX ASPHALT
HYD	HYDRANT
IN	INCHES
INV	INVERT
IP	IRON PIN
L	LENGTH OF CURB
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MON	MONUMENT
MJ	MECHANICAL JOINT

ABBREVIATIONS CONT'D

N	NORTH
NITC	NOT IN THIS CONTRACT
NTS	NOT TO SCALE
N/A	NOT APPLICABLE
N/F	NOW OR FORMERLY
OC	ON CENTER
OCS	OUTLET CONTROL STRUCTURE
OH	OVERHEAD
PB	PLANT BED
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCPP	PERFORATED CORRUGATED POLYETHYLENE PIPE
PERF	PERFORATED
PI	POINT OF INTERSECTION
PRC	POINT OF REVERSE CURVATURE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYLCHLORIDE
PVMT	PAVEMENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REV	REVISION
ROW	RIGHT OF WAY
RT	RIGHT
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
S	SOUTH
SAN	SANITARY
SCH	SCHEDULE
SF	SQUARE FOOT
SMH	SEWER MANHOLE
SS	STAINLESS STEEL
STA	STATION
STL	STEEL
STRM	STORM
T	TANGENT LENGTH
TC	TOP OF CURB
TEL	TEL-DATA
TP	TEST PIT
TS	TOP OF STEP
TW	TOP OF WALL
TYP	TYPICAL
UP	UTILITY POLE
W	WATER
WG	WATER GATE
WV	WATER VALVE
XFMR	TRANSFORMER
VIF	VERIFY IN FIELD

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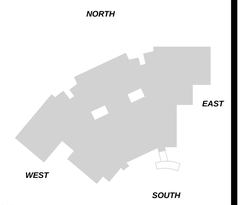
Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N



KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

GENERAL NOTES, ABBREVIATIONS, AND LEGEND

Date: 07/08/2024
Scale: AS SHOWN
Proj. Number: 22367.00
Drawing Number: C001

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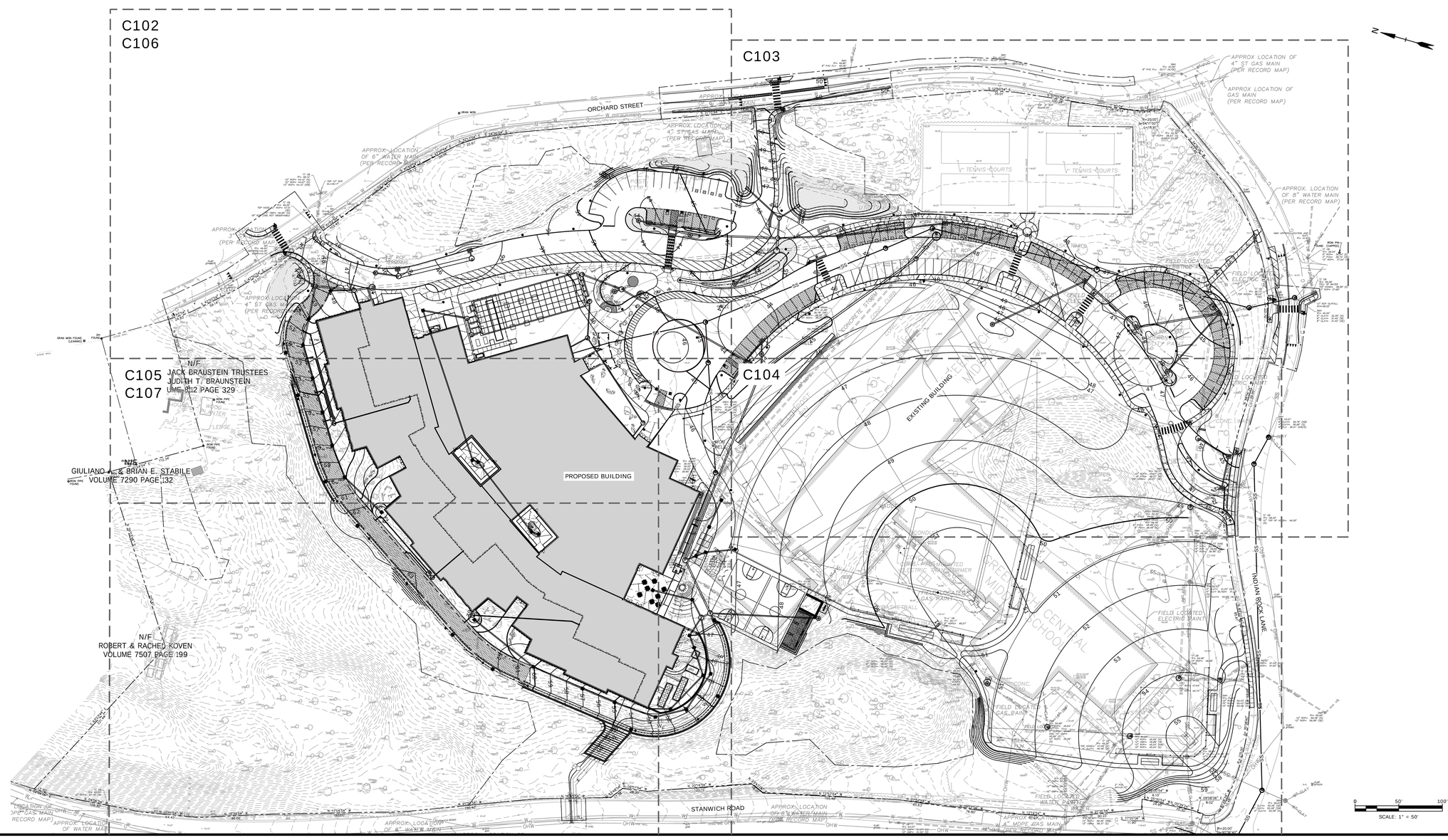

SITE STORMWATER NOTES

1. REFERENCE IS MADE TO PLAN ENTITLED "PROPERTY/ BOUNDARY & TOPOGRAPHIC SURVEY" PREPARED FOR GREENWICH CENTRAL MIDDLE SCHOOL. PREPARED BY MARTIN SURVEYING ASSOCIATES, LLC, DATED MAY 22, 2023.
2. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 - NAVD88.
3. THE CONTRACTOR SHALL COORDINATE/VERIFY THE EXACT SIZES, LOCATIONS, ELEVATIONS, OF ALL PROPOSED BUILDING UTILITY SERVICES WITH THE PROJECT MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS PRIOR TO ANY CONSTRUCTION OPERATIONS.
4. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK DONE BY THE RESPECTIVE UTILITY COMPANIES.
5. INSTALL CLEANOUT TO GRADE 5' OFF FACE OF BUILDING ON ALL ROOF LEADERS.
6. THE CONTRACTOR SHALL MAINTAIN EXISTING STORM SEWER FLOWS BY PUMPING OR OTHER MEANS APPROVED BY THE OWNER'S REPRESENTATIVE DURING CONSTRUCTION OF THE PROPOSED STORM SEWER IN LOCATIONS WHERE SEWERS ARE BEING INSTALLED, REPLACED OR RELOCATED.
7. ALL PROPOSED ROOF DRAINS FOR THE PROPOSED BUILDINGS SHALL BE CONNECTED TO THE PROPOSED STORM DRAINAGE SYSTEMS AS DEPICTED ON SHEETS C-102 - C-105. FINAL LOCATION OF THE PROPOSED ROOF DRAINS SHALL BE COORDINATED BETWEEN THE CONTRACTOR, THE ARCHITECT, AND THE PROJECT ENGINEER.
8. THE PROPOSED BUILDING FOOTING DRAINS SHALL DISCHARGE VIA GRAVITY TO GRADE AS DEPICTED ON SHEET SHEETS C-102 - C-105. THE CONTRACTOR SHALL VERIFY THE EXISTING PIPE INVERT IN THE FILED PRIOR TO START OF CONSTRUCTION.
9. MINIMUM COVER ON ALL PIPES SHALL BE TWO FEET (2') UNLESS OTHERWISE NOTED.
10. ALL PIPE SHALL BE INSTALLED STRAIGHT AND AT THE VERTICAL AND HORIZONTAL ALIGNMENT SHOWN. PIPES SHALL HAVE A UNIFORM SLOPE AS SPECIFIED.
11. ALL STORM PIPES AND FITTINGS SPECIFIED AS HDPE SHALL BE ADS N-12 WT (WATERTIGHT) PIPE AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, HILLIARD, OHIO, OR APPROVED EQUAL.
12. ALL STORM PIPE SPECIFIED AS POLY VINYL CHLORIDE PIPE (PVC) SHALL BE SDR 35 WITH RUBBER GASKETED JOINTS AND MEET THE REQUIREMENTS OF ASTM D3034 AND D3212.
13. INSTALL "FERNCO" STYLE SHIELDED COUPLINGS AT ALL LOCATIONS WHERE JOINING PIPES OF DIFFERENT MATERIALS AND/OR SIZES PER MANUFACTURER'S RECOMMENDATIONS. "FERNCO" STYLE SHIELDED COUPLINGS SHALL BE BANDED RUBBER (SHIELD COUPLINGS) GASKETED COUPLING TYPE WITH TYPE 316 S.S. HARDWARE AND OUTSIDE SHEER RING SHALL BE STRONG BACK SEWER COUPLING RC 5000 SERIES BY FERNCO, FLEX-SEAL ADJUSTABLE REPAIR COUPLING (ARC) BY MISSION RUBER COMPANY, OR APPROVED EQUAL.
14. ALL CATCH BASINS SHALL HAVE A FOUR-FOOT (4') SUMP WITH BELL TRAPS OR 90° PVC ELBOWS PER TOWN OF GREENWICH STANDARD DETAILS AND YARD DRAINS SHALL HAVE A TWO-FOOT (2') SUMP WITH BELL TRAPS OR 90° PVC ELBOWS.
15. THE LOCATIONS OF ITEMS NOT DIMENSIONED ON THE DRAWINGS SHALL BE FIELD STAKED BY THE CONTRACTOR AND THEIR LOCATIONS APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
16. THE CONTRACTOR SHALL ADJUST THE TOP OF FRAME/GRATE ELEVATIONS OF ALL EXISTING AND PROPOSED SANITARY/STORM/WATER MANHOLES, CATCH BASINS, AREA DRAINS, VALVE COVERS AND APPURTENANCES, WITHIN THE PROJECT LIMIT LINE TO MEET THE PROPOSED GRADES.
17. WHEN RAISING EXISTING CATCH BASINS AND MANHOLES TO FINISHED GRADE, CONTRACTOR SHALL NOT EXCEED THE MAXIMUM AMOUNT OF BRICK COURSES AS SHOWN ON THE DETAILS. CONTRACTOR SHALL RAISE STRUCTURE WITH STANDARD MANHOLE/CATCH BASIN COMPONENTS AS APPROVED BY THE ENGINEER.
18. THE MANHOLE FRAME AND COVER SHALL BE CENTERED ON THE PRECAST OPENING. UNDER NO CIRCUMSTANCES WILL AN OFFSET FRAME AND COVER BE ACCEPTABLE. PRIOR TO FINAL PAVING, THE CONTRACTOR SHALL CHECK ALL MANHOLE STRUCTURES TO ASSURE THE FRAME AND COVER IS CENTERED ON THE PRECAST OPENING. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL WORK REQUIRED TO CENTER FRAME AND COVER.
19. WHEN CONNECTING NEW PIPES TO EXISTING STRUCTURES SUCH AS MANHOLES AND CATCH BASINS, THE STRUCTURE SHALL BE COMPLETELY CLEANED OUT. THE HOLE MADE IN THE STRUCTURE SHALL BE MADE AS SMALL AS POSSIBLE. THE STRUCTURE SHALL BE REPAIRED TO MATCH ITS ORIGINAL TYPE OF CONSTRUCTION. THE JOINT BETWEEN THE STRUCTURE AND THE PIPE SHALL BE MADE WATERTIGHT BY UTILIZING AN A-LOK SYSTEM OR KOR-N-SEAL-BOOT CONNECTION.
20. UNDER NO CIRCUMSTANCES SHALL TRENCH WATER BE ALLOWED TO DRAIN OFF THROUGH SANITARY SEWER LINES.
21. ALL CRUSHED STONE SHALL BE GRADATION NO. 4 AS PER CT DOT FORM 818, ARTICLE M.01.01. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS, OR DISINTEGRATED PIECES OF MUD, DIRT OR OTHER DELETERIOUS MATERIAL.
22. THE STORM AND SANITARY SEWER SHALL BE ENCASED IN CONCRETE FOR A DISTANCE OF 10 FEET ON EITHER SIDE OF ANY INTERSECTION BETWEEN THE SANITARY SEWER AND STORM SEWER. WHERE CONCRETE ENCASEMENT IS REQUIRED, TEMPORARILY SUPPORT THE PIPES IN PLACE. USE SUFFICIENT CONCRETE TO ENCASE PIPING NOT LESS THAN 6 INCHES AT ALL POINTS. THE ENCASEMENT SHALL BE ADEQUATELY SUPPORTED WITH A STONE BASE AND SHALL BE KEYED INTO THE FOUNDATION WALL TO PREVENT DAMAGE FROM SETTLEMENT.
23. UNDERGROUND-TYPE PLASTIC LINE MARKER: MANUFACTURER'S STANDARD PERMANENT, BRIGHT-COLORED DETECTABLE TAPE, CONTINUOUS-PRINTED PLASTIC TAPE, INTENDED FOR DIRECT-BURIAL SERVICE; NOT LESS THAN 6" WIDE X 4 MILS THICK.
24. THE CONTRACTOR SHALL COMPLETE TWO CCTV INSPECTION OF THE 36" RCP PIPE TO REMAIN. ONE INSPECTION SHALL OCCUR PRIOR TO OBTAINING THE ZONING/BUILDING PERMIT AND THE SECOND SHALL OCCUR ONCE CONSTRUCTION IS COMPLETE. THE CCTV INSPECTIONS SHALL BE FORWARDED TO THE ENGINEER-OF-RECORD AND THE GREENWICH ENGINEERING DEPARTMENT. THE COST FOR COMPLETING THE CCTV INSPECTIONS SHALL BE INCLUDED AT NO ADDITIONAL COST TO THE OWNER."

SITE DRAINAGE LEGEND

	EXISTING	PROPOSED
WORK LIMIT LINE		
PROPERTY LINE		
SETBACK LINE		
SAWCUT		
PROPOSED STORM SEWER		
PROPOSED AREA DRAIN		
PROPOSED STORM MANHOLE		
PROPOSED RAIN GARDEN		
ROOF LEADER		RL RL RL RL
UNDER-DRAIN		
MINOR CONTOURS	115	191
MAJOR CONTOURS	120	190
SPOT ELEVATIONS	x 23.6	+ 337.5

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Greenwich Central Middle School

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STATE PROJECT NO: 057-0114 N

NORTH
EAST
WEST
SOUTH

KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

OVERALL SITE STORMWATER MANAGEMENT PLAN

Date: 07/08/2024
Scale: 1" = 50'
Proj. Number: 22367.00

Drawing Number: C101

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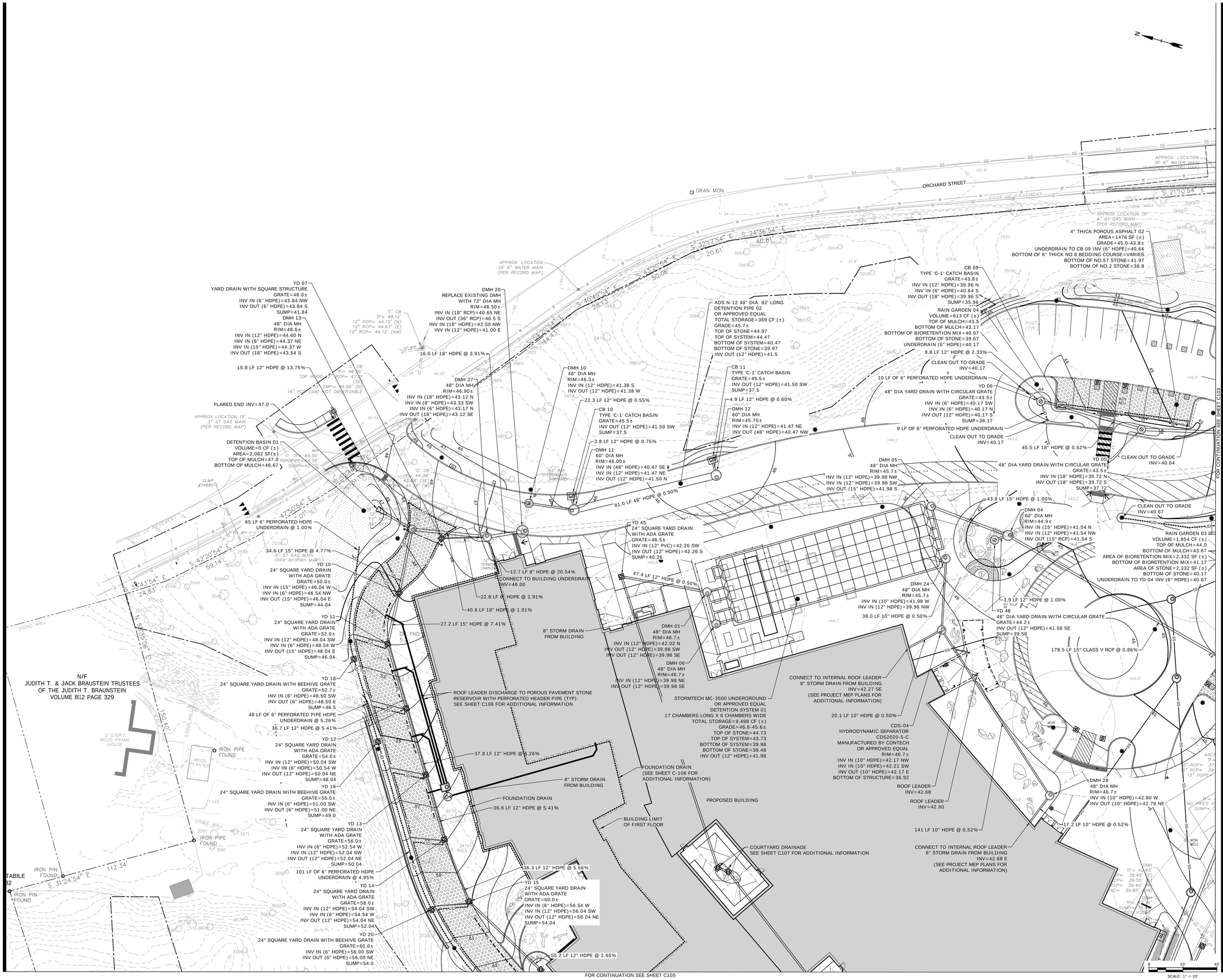

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NORTH
EAST
WEST
SOUTH

KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE STORMWATER MANAGEMENT PART PLAN

Date
07/08/2024
Scale
1" = 20'
Proj. Number
22367.00

Drawing Number
C102

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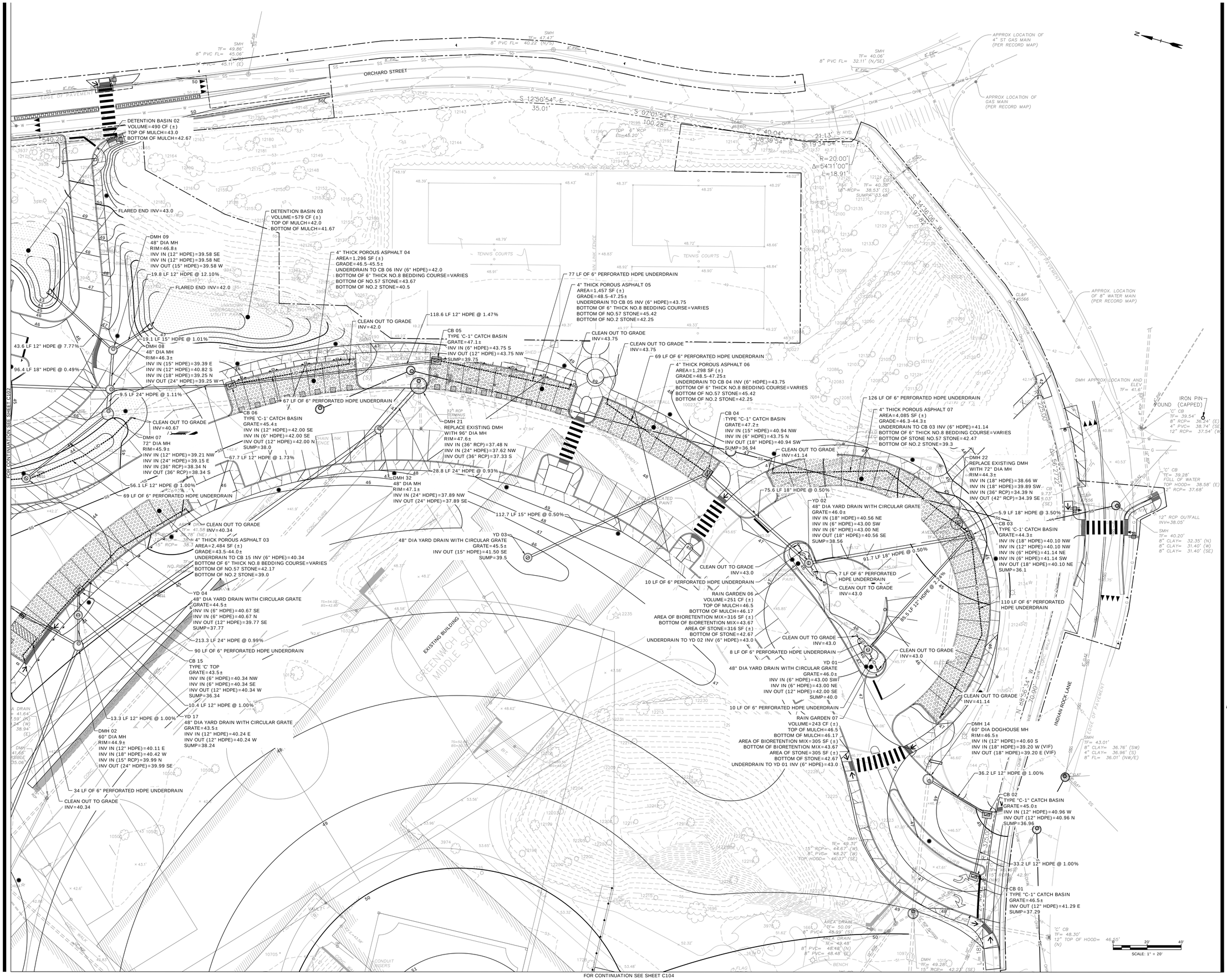

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KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE STORMWATER MANAGEMENT PART PLAN

Date
07/08/2024
Scale
1" = 20'
Proj. Number
22367.00

Drawing Number
C103

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FOR CONTINUATION SEE SHEET C103

DMH 02
60" DIA MH
RIM=44.9±
INV IN (12" HDPE)=40.11 E
INV IN (18" HDPE)=40.42 W
INV IN (15" RCP)=39.99 N
INV OUT (24" HDPE)=39.99 SE

230.0 LF 18" HDPE @ 0.90%

EXISTING BUILDING

DMH 25
60" DIA MH
RIM=46.9±
INV IN (18" HDPE)=42.50 SW
INV IN (12" HDPE)=42.50 SE
INV OUT (18" HDPE)=42.50 E

8.3 LF 12" HDPE @ 0.46% (PHASE II CONSTRUCTION)

YD-55
24" SQUARE YARD DRAIN WITH ADA GRATE
PHASE II CONSTRUCTION
GRATE=46.7±
INV OUT (12" HDPE)=43.19 W
SUMP=41.19

30.8 LF 12" HDPE @ 1.00% (PHASE II CONSTRUCTION)

YD-54
24" SQUARE YARD DRAIN WITH ADA GRATE
PHASE II CONSTRUCTION
GRATE=46.7±
INV IN (12" HDPE)=42.88 E
INV OUT (12" HDPE)=42.88 W
SUMP=40.88

33.6 LF 12" HDPE @ 1.00% (PHASE II CONSTRUCTION)

YD-53
24" SQUARE YARD DRAIN WITH ADA GRATE
PHASE II CONSTRUCTION
GRATE=46.7±
INV IN (12" HDPE)=42.54 SE
INV IN (12" HDPE)=42.54 E
INV OUT (12" HDPE)=42.54 NW
SUMP=40.54

7.1 LF 12" HDPE @ 0.47% (PHASE II CONSTRUCTION)

YD 49
24" SQUARE YARD DRAIN WITH ADA GRATE
PHASE II CONSTRUCTION
GRATE=46.8±
INV IN (12" HDPE)=42.57 S
INV OUT (12" HDPE)=42.57 NW
SUMP=40.57

YD 51
24" SQUARE YARD DRAIN WITH ADA GRATE
PHASE II CONSTRUCTION
GRATE=46.9±
INV OUT (12" HDPE)=42.87 N
SUMP=40.87

30.5 LF 12" HDPE @ 1.00% (PHASE II CONSTRUCTION)

62.2 LF 18" HDPE @ 0.51%

YD 46
24" SQUARE YARD DRAIN
WITH ADA GRATE
GRATE=46.2±
INV IN (12" RCP)=43.29 N
INV OUT (12" HDPE)=43.29 SW
SUMP=41.29

18.1 LF 12" HDPE @ 0.50%

CDS-05
HYDRODYNAMIC SEPARATOR
CDS2020-5-C
MANUFACTURED BY CONTECH
OR APPROVED EQUAL
RIM=46.5±
INV IN (12" HDPE)=43.20 NE
INV IN (12" HDPE)=42.88 W
INV IN (12" HDPE)=42.88 SW
INV OUT (15" HDPE)=42.88 SE

DMH 34
60" DIA MH
RIM=46.5±
INV IN (15" HDPE)=42.82 NW
INV IN (12" RCP)=42.87 SW
INV IN (12" HDPE)=42.87 S
INV OUT (18" HDPE)=42.82 NE

CONNECT TO RETAINING WALL UNDERDRAIN
INV=43.48

6.4 LF 15" HDPE @ 1.00%
5.2 LF 12" RCP @ 2.52%

5.2 LF 6" HDPE @ 1.19%

YD 35
24" SQUARE YARD DRAIN WITH ADA GRATE
GRATE=46.5±
INV IN (6" HDPE)=43.42 W
INV IN (6" HDPE)=43.42 S
INV OUT (12" RCP)=43.00 NE
SUMP=41.0

61.1 LF 12" HDPE @ 1.00%

YD 26
24" SQUARE YARD DRAIN
WITH ADA GRATE
GRATE=48.7±
INV IN (12" HDPE)=44.70 W
INV OUT (12" HDPE)=43.49 NE
SUMP=41.49

89 LF OF 6" PERFORATED HDPE
UNDERDRAIN @ 2.33%

46.4 LF 12" HDPE @ 5.09%

YD 36
24" SQUARE YARD DRAIN WITH BEEHIVE GRATE
GRATE=49.5±
INV IN (6" HDPE)=45.50 NW
INV OUT (6" HDPE)=45.50 E
SUMP=43.5

YD 27
24" SQUARE YARD DRAIN
WITH ADA GRATE
GRATE=51.0±
INV IN (12" HDPE)=47.04 NW
INV OUT (12" HDPE)=47.04 E
SUMP=45.04

110 LF OF 6" PERFORATED HDPE
UNDERDRAIN @ 2.25%

YD 50
48" DIA YARD DRAIN WITH CIRCULAR GRATE
PHASE II CONSTRUCTION
GRATE=48.2±
INV OUT (12" HDPE)=44.08 N
SUMP=42.08

119.5 LF 12" HDPE @ 1.00%
PHASE II CONSTRUCTION

YD 40
48" DIA YARD DRAIN WITH CIRCULAR GRATE
GRATE=49.9±
INV OUT (12" HDPE)=46.08 S
SUMP=44.08

REPLACE EXISTING DMH WITH
60" DIA MH
RIM=48.0± (BURIED 1' BELOW
FINISHED FIELD GRADE)
INV IN= 42.43
INV IN=39.68
INV OUT=39.48

REPLACE EXISTING DMH WITH
60" DIA MH
RIM=53.1± (BURIED 1' BELOW
FINISHED FIELD GRADE)
INV IN= 42.84
INV IN=47.64
INV OUT=42.74

REPLACE EXISTING DMH WITH
60" DIA MH
RIM=53.1± (BURIED 1' BELOW
FINISHED FIELD GRADE)
INV IN= 45.59
INV IN=46.89
INV OUT=45.24

REPLACE EXISTING DMH WITH
60" DIA MH
RIM=51.2± (BURIED 1' BELOW
FINISHED FIELD GRADE)
INV IN=45.64
INV OUT=45.59

REPLACE EXISTING DMH WITH 48" DIA MH
RIM=53.9±
INV IN=50.43
INV OUT=50.38

STANWICH ROAD

INDIAN ROCK LANE

GREENWICH CENTRAL MIDDLE SCHOOL

FOR CONTINUATION SEE SHEET C105

SCALE: 1" = 20'

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	07/08/2024	PHASE 2

SITE STORMWATER MANAGEMENT PART PLAN

Date
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Scale
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Proj. Number
22367.00

Drawing Number
C104

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FOR CONTINUATION SEE SHEET C102

N/F
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OF THE JUDITH T. BRAUNSTEIN
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IRON PIPE FOUND
IRON PIPE FOUND
IRON PIN FOUND
IRON PIN FOUND
S 31°24'54" E 112.34'
150.40'
2 STORY WOOD FRAME HOUSE
WOOD PLANTER
LEDGE
STONE WALL
WOOD FENCE
CHAIN LINK FENCE

N/F
RACHEL KOVEN
7507 PAGE 199
PICNIC TABLE
PLANTER
PLANTER
PICNIC TABLE
PLANTER
STONE WALL
WIRE FENCE

FOUNDATION DRAIN (SEE SHEET C-107 FOR ADDITIONAL INFORMATION)
FOUNDATION DRAIN (SEE SHEET C-102 FOR ADDITIONAL INFORMATION)
BUILDING LIMIT OF FIRST FLOOR
COURTYARD DRAINAGE SEE SHEET C107 FOR ADDITIONAL INFORMATION
PROPOSED BUILDING
55.2 LF 12" HDPE @ 2.65%
YD 16
24" SQUARE YARD DRAIN WITH ADA GRATE
GRATE=61.5±
INV OUT (12" HDPE)=57.50 NE
SUMP=55.50
60 LF OF 6" PERFORATED HDPE UNDERDRAIN @ 2.50%
YD 21
24" SQUARE YARD DRAIN WITH BEEHIVE GRATE
GRATE=61.5±
INV IN (6" HDPE)=57.50 SW
INV OUT (6" HDPE)=57.50 NE
SUMP=55.5
80 LF OF 6" PERFORATED HDPE UNDERDRAIN @ 1.87%
ROOF LEADER DISCHARGE TO POROUS PAVEMENT STONE RESERVOIR WITH PERFORATED HEADER PIPE (TYP) SEE SHEET C107 FOR ADDITIONAL INFORMATION
WORK LIMIT LINE
CLEAN OUT TO GRADE INV=59.0
CLEAN OUT TO GRADE INV=59.0
78 LF OF 6" PERFORATED HDPE UNDERDRAIN @ 2.0%
YD 39
24" SQUARE YARD DRAIN WITH BEEHIVE GRATE
GRATE=61.5±
INV IN (6" HDPE)=57.50 NE
INV OUT (6" HDPE)=57.50 SW
SUMP=55.50
58 LF OF 6" PERFORATED HDPE UNDERDRAIN @ 1.00%
83.2 LF 12" HDPE @ 1.00%
YD 38
24" SQUARE YARD DRAIN WITH BEEHIVE GRATE
GRATE=61.5±
INV IN (6" HDPE)=56.93 NE
INV OUT (6" HDPE)=56.93 S
SUMP=54.93
165 LF OF 6" PERFORATED HDPE UNDERDRAIN @ 4.50%
YD 34
24" SQUARE YARD DRAIN WITH ADA GRATE
GRATE=61.5±
INV OUT (12" HDPE)=57.50 SW
SUMP=55.50
COURTYARD DRAINAGE SEE SHEET C107 FOR ADDITIONAL INFORMATION
FOUNDATION DRAIN (SEE SHEET C-107 FOR ADDITIONAL INFORMATION)
YD 33
24" SQUARE YARD DRAIN WITH ADA GRATE
GRATE=60.0±
INV IN (6" PVC)=57.54 NW
INV IN (12" HDPE)=56.67 NE
INV OUT (12" HDPE)=56.67 S
SUMP=54.67
58.7 LF 12" HDPE @ 6.16%
FOUNDATION DRAIN (SEE SHEET C-107 FOR ADDITIONAL INFORMATION)
YD 30
24" SQUARE YARD DRAIN WITH ADA GRATE
GRATE=57.0±
INV IN (12" HDPE)=53.04 N
INV OUT (12" HDPE)=53.04 S
SUMP=51.04
37.1 LF 12" HDPE @ 5.41%
YD 29
24" SQUARE YARD DRAIN WITH ADA GRATE
GRATE=55.0±
INV IN (12" HDPE)=51.04 N
INV OUT (12" HDPE)=51.04 S
SUMP=49.04
46.4 LF 12" HDPE @ 4.35%
YD 37
24" SQUARE YARD DRAIN WITH BEEHIVE GRATE
GRATE=54.0±
INV IN (6" HDPE)=50.50 N
INV OUT (6" HDPE)=49.50 SE
SUMP=47.5
CONNECT TO FOUNDATION DRAIN (SEE SHEET C-107 FOR ADDITIONAL INFORMATION)
YD 28
24" SQUARE YARD DRAIN WITH ADA GRATE
GRATE=52.7±
INV IN (12" HDPE)=49.04 N
INV OUT (12" HDPE)=49.04 SE
SUMP=47.04
FOUNDATION DRAIN (SEE SHEET C-107 FOR ADDITIONAL INFORMATION)
24" SQUARE YARD DRAIN WITH ADA GRATE
GRATE=46.9±
INV IN (12" HDPE)=42.98 SW
INV IN (6" HDPE)=43.50 S
INV OUT (12" HDPE)=42.98 E
SUMP=40.98
20.5 LF 12" HDPE @ 0.50%
YD 52
10.5 LF 12" HDPE @ 0.50%
YD 23
24" SQUARE YARD DRAIN WITH ADA GRATE
GRATE=46.7±
INV IN (12" HDPE)=43.04 SW
INV OUT=43.04 NE
SUMP=41.04
29.1 LF 12" HDPE @ 0.50%
YD 24
24" SQUARE YARD DRAIN WITH ADA GRATE
GRATE=46.6±
INV IN (12" HDPE)=43.19 NW
INV OUT (12" HDPE)=43.19 NE
SUMP=41.19
50.0 LF 12" HDPE @ 0.50%
YD 27
24" SQUARE YARD DRAIN WITH ADA GRATE
GRATE=51.0±
INV IN (12" HDPE)=47.04 NW
INV OUT (12" HDPE)=47.04 E
SUMP=45.04
33.3 LF 12" HDPE @ 6.06%
YD 25
24" SQUARE YARD DRAIN WITH ADA GRATE
GRATE=46.2±
INV IN (6" HDPE)=43.43 N
INV OUT (12" HDPE)=43.43 SE
SUMP=41.43
21.3 LF 6" HDPE @ 0.50%
YD 22
24" SQUARE YARD DRAIN WITH ADA GRATE
GRATE=46.6±
INV OUT (12" RCP)=43.51 S
SUMP=41.51
43.6 LF 12" RCP @ 0.50%
MON WELL
GEN
TF= 43.65'
12" RCP= 39.40' (E)
12" RCP= 39.55' (E)
12" RCP= 39.40' (E)
15" HDPE= 39.85' (W)
SUMP= 36.15'
TF= 43.25'
NO PIPES
SUMP=
TF= 43.25'
12" HDPE= 43.03' E
12" RCP= 43.23' W
16" RCP= 43.23' W
SUMP= 36.15'
TF= 43.25'
NO PIPES
SUMP=
TF= 43.25'
12" RCP= 39.40' (E)
12" RCP= 39.55' (E)
15" HDPE= 39.85' (W)
SUMP= 36.15'
ARE
TF
12" RCP= 39
12" RCP= 39
15" HDPE=
TF=
NO PIPES
SUMP=

N 50°03'45" E 204.10'
N 10°41'54" W 64.45'
N 18°39'54" W 86.02'
N 17°04'54" W 150.00'
N 21°39'54" W 150.40'
N 16°55'54" W 86.04'
N 9°07'54" W
N 20°19'54" W 120.15'
STONE WALL
EDGE OF PAVEMENT
STANWICH ROAD
APPROX. LOCATION OF 8" WATER MAIN

FOR CONTINUATION SEE SHEET C104

SCALE: 1" = 20'

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22367.00

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Proj. Number
22367.00
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C106

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RACHEL KOVEN
7507 PAGE 199

177.3 LF 12" PVC @ 0.50%

YD 44
24" SQUARE YARD DRAIN WITH BEEHIVE GRATE
GRATE=46.7±
INV IN (12" PVC)=43.14 S
INV OUT (12" PVC)=43.14 NE
SUMP=41.14

2.6 LF 12" PVC @ 1.00%

YD 43
24" SQUARE YARD DRAIN WITH BEEHIVE GRATE
GRATE=46.7±
INV IN (12" PVC)=43.17 SW
INV OUT (12" PVC)=43.17 N
SUMP=41.17

98.0 LF 12" PVC @ 0.82%

BUILDING LIMIT
OF FIRST FLOOR

PROPOSED BUILDING

YD 42
24" SQUARE YARD DRAIN WITH BEEHIVE GRATE
GRATE=46.7±
INV IN (12" PVC)=43.98 S
INV OUT (12" PVC)=43.98 NE
SUMP=41.98

4.6 LF 12" PVC @ 0.50%

YD 41
24" SQUARE YARD DRAIN WITH BEEHIVE GRATE
GRATE=46.7±
INV OUT (12" PVC)=44.00 N
SUMP=42.0

CLEANOUT TO GRADE
INV=59.30

98 LF 8" HDPE @ 1.00%

DMH-31
48" X 72" DIA MANHOLE
RIM=62.9±
INV IN (8" HDPE)=60.17 W
INV OUT (8" HDPE)=60.17 NE
INV OUT (8" HDPE)=60.17 NE

CONNECT TO INTERNAL ROOF LEADER
INV=60.42
(SEE PROJECT MEP PLANS FOR
ADDITIONAL INFORMATION)

STONE DRAINAGE SWALE WITH 6"
PERFORATED HDPE UNDERDRAIN @ 6.00%

74 LF 8" PERFORATED HDPE ROOF LEADER HEADER PIPE
INV=59.18

CLEANOUT TO GRADE
INV=59.84

6" PERFORATED HDPE PERIMETER UNDERDRAIN
INV=56.84

45 LF 8" PERFORATED HDPE ROOF LEADER HEADER PIPE
INV=59.72

45.1 LF 8" HDPE @ 0.50%

CDS-02
HYDRODYNAMIC SEPARATOR
CDS2020-5-C
MANUFACTURED BY CONTECH
OR APPROVED EQUAL
RIM=62.9±
INV IN (8" HDPE)=60.19 SE
INV OUT (8" HDPE)=60.19 NE
BOTTOM OF STRUCTURE=54.94

44 LF 8" HDPE @ 1.00%

2.0 LF 8" HDPE @ 1.00%

CDS-03
HYDRODYNAMIC SEPARATOR
CDS2020-5-C
MANUFACTURED BY CONTECH
OR APPROVED EQUAL
RIM=61.5±
INV IN (8" HDPE)=58.30 S
INV OUT (8" HDPE)=58.30 NW
BOTTOM OF STRUCTURE=53.05

121.0 LF 8" HDPE @ 0.50%

CONNECT TO INTERNAL ROOF LEADER
INV=58.90
(SEE PROJECT MEP PLANS FOR
ADDITIONAL INFORMATION)

6" PERFORATED HDPE PERIMETER UNDERDRAIN
INV=56.84

157 LF 8" PERFORATED HDPE ROOF LEADER HEADER PIPE
INV=58.09

10.6 LF 8" HDPE @ 1.00%

PERMEABLE PAVER CELL 08
AREA=3,618 SF (±)
GRADE=63-60±
UNDERDRAIN TO YD 33 INV (6" HDPE)=56.84
CONCRETE WEIR=59.17
BOTTOM OF 6" THICK NO.8 BEDDING COURSE=VARIES
BOTTOM OF NO.57 STONE=58.17
BOTTOM OF NO.2 STONE=55.0

CONNECT TO FOUNDATION DRAIN
INV=43.54
(SEE PROJECT MEP PLANS FOR
ADDITIONAL INFORMATION)

IRON PIPE FOUND
IRON PIPE FOUND
IRON PIN FOUND
IRON PIN FOUND
S 31°24'54" E 112.34'
N 50°03'46" E 210.41'
N 10°41'54" W 64.45'
N 18°39'54" W 86.02'
N 17°04'54" W 150.00'
N 21°39'54" W 150.40'
N 16°55'54" W 86.60'
N 53°48'54" W 17.39'
N 09°07'54" W 28.30'
N 20°19'54" W 120.15'

STANWICH ROAD
APPROX. LOCATION OF 8" WATER MAIN

FOR CONTINUATION SEE SHEET C104

0 20' 40'
SCALE: 1" = 20'

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Drawing Number
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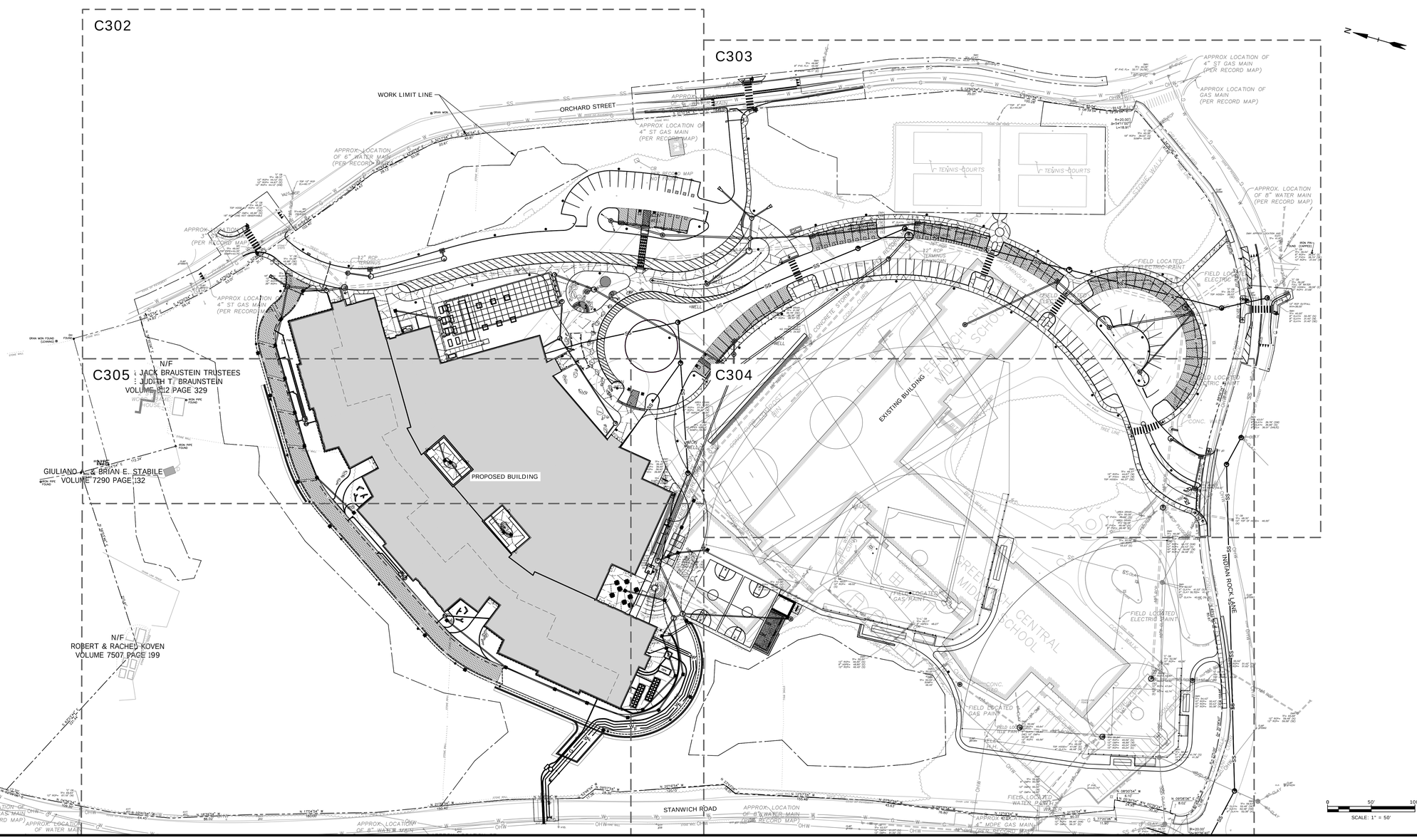

SITE UTILITY NOTES

1. REFERENCE IS MADE TO PLAN ENTITLED "PROPERTY/ BOUNDARY & TOPOGRAPHIC SURVEY" PREPARED FOR GREENWICH CENTRAL MIDDLE SCHOOL. PREPARED BY MARTIN SURVEYING ASSOCIATES, LLC, DATED MAY 22, 2023.
2. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 - NAVD88.
3. THE CONTRACTOR SHALL COORDINATE/VERIFY THE EXACT SIZES, LOCATIONS, ELEVATIONS, OF ALL PROPOSED BUILDING UTILITY SERVICES WITH THE PROJECT MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS PRIOR TO ANY CONSTRUCTION OPERATIONS.
4. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK DONE BY THE RESPECTIVE UTILITY COMPANIES.
5. INSTALL CLEANOUT TO GRADE 5' OFF FACE OF BUILDING ON ALL ROOF LEADERS.
6. THE CONTRACTOR SHALL MAINTAIN EXISTING STORM SEWER FLOWS BY PUMPING OR OTHER MEANS APPROVED BY THE OWNER'S REPRESENTATIVE DURING CONSTRUCTION OF THE PROPOSED STORM SEWER IN LOCATIONS WHERE SEWERS ARE BEING INSTALLED, REPLACED OR RELOCATED.
7. ALL PROPOSED ROOF DRAINS FOR THE PROPOSED BUILDINGS SHALL BE CONNECTED TO THE PROPOSED STORM DRAINAGE SYSTEMS AS DEPICTED ON SHEETS C-102 - C-105. FINAL LOCATION OF THE PROPOSED ROOF DRAINS SHALL BE COORDINATED BETWEEN THE CONTRACTOR, THE ARCHITECT, AND THE PROJECT ENGINEER.
8. THE PROPOSED BUILDING FOOTING DRAINS SHALL DISCHARGE VIA GRAVITY TO GRADE AS DEPICTED ON SHEET SHEETS C-102 - C-105. THE CONTRACTOR SHALL VERIFY THE EXISTING PIPE INVERT IN THE FILED PRIOR TO START OF CONSTRUCTION.
9. MINIMUM COVER ON ALL PIPES SHALL BE TWO FEET (2') UNLESS OTHERWISE NOTED.
10. ALL PIPE SHALL BE INSTALLED STRAIGHT AND AT THE VERTICAL AND HORIZONTAL ALIGNMENT SHOWN. PIPES SHALL HAVE A UNIFORM SLOPE AS SPECIFIED.
13. INSTALL "FERNCO" STYLE SHIELDED COUPLINGS AT ALL LOCATIONS WHERE JOINING PIPES OF DIFFERENT MATERIALS AND/OR SIZES PER MANUFACTURER'S RECOMMENDATIONS. "FERNCO" STYLE SHIELDED COUPLINGS SHALL BE BANDED RUBBER (SHIELD COUPLINGS) GASKETED COUPLING TYPE WITH TYPE 316 S.S. HARDWARE AND OUTSIDE SHEER RING SHALL BE STRONG BACK SEWER COUPLING RC 5000 SERIES BY FERNCO, FLEX-SEAL ADJUSTABLE REPAIR COUPLING (ARC) BY MISSION RUBER COMPANY, OR APPROVED EQUAL.
15. THE LOCATIONS OF ITEMS NOT DIMENSIONED ON THE DRAWINGS SHALL BE FIELD STAKED BY THE CONTRACTOR AND THEIR LOCATIONS APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
16. THE CONTRACTOR SHALL ADJUST THE TOP OF FRAME/GRATE ELEVATIONS OF ALL EXISTING AND PROPOSED SANITARY/STORM/WATER MANHOLES, CATCH BASINS, AREA DRAINS, VALVE COVERS AND APPURTENANCES, WITHIN THE PROJECT LIMIT LINE TO MEET THE PROPOSED GRADES.
17. WHEN RAISING EXISTING MANHOLES TO FINISHED GRADE, CONTRACTOR SHALL NOT EXCEED THE MAXIMUM AMOUNT OF BRICK COURSES AS SHOWN ON THE DETAILS. CONTRACTOR SHALL RAISE STRUCTURE WITH STANDARD MANHOLE COMPONENTS AS APPROVED BY THE ENGINEER.
18. THE MANHOLE FRAME AND COVER SHALL BE CENTERED ON THE PRECAST OPENING. UNDER NO CIRCUMSTANCES WILL AN OFFSET FRAME AND COVER BE ACCEPTABLE. PRIOR TO FINAL PAVING, THE CONTRACTOR SHALL CHECK ALL MANHOLE STRUCTURES TO ASSURE THE FRAME AND COVER IS CENTERED ON THE PRECAST OPENING. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL WORK REQUIRED TO CENTER FRAME AND COVER.
19. WHEN CONNECTING NEW PIPES TO EXISTING STRUCTURES SUCH AS MANHOLES, THE STRUCTURE SHALL BE COMPLETELY CLEANED OUT. THE HOLE MADE IN THE STRUCTURE SHALL BE MADE AS SMALL AS POSSIBLE. THE STRUCTURE SHALL BE REPAIRED TO MATCH ITS ORIGINAL TYPE OF CONSTRUCTION. THE JOINT BETWEEN THE STRUCTURE AND THE PIPE SHALL BE MADE WATERTIGHT BY UTILIZING AN A-LOK SYSTEM OR KOR-N-SEAL-BOOT CONNECTION.
20. THE CONTRACTOR SHALL MAINTAIN SANITARY SEWER FLOWS BY PUMPING OR OTHER MEANS APPROVED BY THE OWNER'S REPRESENTATIVE DURING CONSTRUCTION OF THE PROPOSED SANITARY SEWER IN LOCATIONS WHERE SEWERS ARE BEING INSTALLED, REPLACED OR RELOCATED.
21. UNDER NO CIRCUMSTANCES SHALL TRENCH WATER BE ALLOWED TO DRAIN OFF THROUGH SANITARY SEWER LINES.
22. ALL CRUSHED STONE SHALL BE GRADATION NO. 6 AS PER CT DOT FORM 818, ARTICLE M.01.01. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS, OR DISINTEGRATED PIECES OF MUD, DIRT OR OTHER DELETERIOUS MATERIAL.
23. THE STORM AND SANITARY SEWER SHALL BE ENCASED IN CONCRETE FOR A DISTANCE OF 10 FEET ON EITHER SIDE OF ANY INTERSECTION BETWEEN THE SANITARY SEWER AND STORM SEWER. WHERE CONCRETE ENCASEMENT IS REQUIRED, TEMPORARILY SUPPORT THE PIPES IN PLACE. USE SUFFICIENT CONCRETE TO ENCASE PIPING NOT LESS THAN 6 INCHES AT ALL POINTS. THE ENCASEMENT SHALL BE ADEQUATELY SUPPORTED WITH A STONE BASE AND SHALL BE KEYED INTO THE FOUNDATION WALL TO PREVENT DAMAGE FROM SETTLEMENT.
24. UTILITIES SHOWN ON THESE PLANS ARE "NOT GUARANTEED" TO BE COMPLETE OR CORRECT. PRIOR TO ANY SITE ACTIVITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF CLEARANCES OF PROPOSED UTILITIES FROM EXISTING UTILITIES. THIS VERIFICATION SHALL INCLUDE PHYSICAL OBSERVATION BY MEANS OF TEST PITS OF THE LOCATIONS OF AFFECTED UTILITIES. THE CONTRACTOR SHALL NOTIFY THE SITE ENGINEER IMMEDIATELY OF ANY CONFLICT.
25. EASEMENTS MAY BE REQUIRED IN FAVOR OF THE VARIOUS UTILITY COMPANIES.
26. ELECTRIC, TELEPHONE, AND CABLE SERVICES SHALL BE INSTALLED IN CONFORMANCE TO THE REQUIREMENTS OF THE GOVERNING UTILITY COMPANIES.
27. DOMESTIC WATER, FIRE PROTECTION SERVICES, AND ALL WATER MAIN TAPS SHALL CONFORM TO THE REQUIREMENTS OF THE AQUARION WATER COMPANY.
28. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL UTILITIES AS SHOWN ON THIS SHEET. THE CONTRACTOR SHALL WORK WITH THE UTILITY COMPANIES AND SITE ENGINEER TO ENSURE THE INSTALLATION IS IN CONFORMANCE TO THE REQUIREMENTS OF THE GOVERNING UTILITY COMPANY. ALL CONDUITS SHALL BE CONCRETE ENCASED AS MAY BE REQUIRED BY THE GOVERNING UTILITY COMPANY. PROPOSED ELECTRIC, TELEPHONE, CABLE, GAS AND WATER SERVICES ARE SHOWN FOR SCHEMATIC PURPOSES ONLY AND ARE SUBJECT TO CHANGE PENDING UTILITY COMPANY REVIEW. THESE UTILITIES SHALL BE DESIGNED BY OTHERS AND INSTALLED IN CONFORMANCE TO THE REQUIREMENTS OF THE GOVERNING UTILITY COMPANIES.
29. FOR INFORMATION ON THE PRIMARY ELECTRICAL WIRING AND THE SECONDARY ELECTRICAL CONDUITS, WIRING, AND MATERIALS - SEE PROJECT ELECTRICAL DRAWINGS.
30. THE CONTRACTOR MUST SUPPLY AND INSTALL DRAG LINES WITH ALL CONDUITS.
31. IN GENERAL, EACH UTILITY SHALL HAVE A MINIMUM HORIZONTAL CLEARANCE OF THREE FEET TO ANY OTHER UNDERGROUND UTILITY.
32. ALL UTILITIES ABANDONED SHALL BE CAPPED OR REMOVED IN ACCORDANCE WITH UTILITY COMPANIES' REQUIREMENTS.
33. DETECTABLE TAPE SHALL BE USED TO MARK PIPING LISTED BELOW. THE IDENTIFICATION TAPE SHALL BE BURIED AT LEAST 6-INCHES TO 10-INCHES BELOW FINAL GRADE BUT NO CLOSER THAN 12-INCHES TO THE BURIED UTILITY PIPING OR SERVICE.

ELECTRIC	RED	CAUTION ELECTRIC LINE BURIED BELOW
TELEPHONE & CONTROL	ORANGE	CAUTION TELEPHONE LINE BURIED BELOW
NATURAL GAS	YELLOW	CAUTION GAS LINE BURIED BELOW
WATER SYSTEMS	BLUE	CAUTION WATER LINE BURIED BELOW
FIRE PROTECTION SYSTEMS	BLUE	CAUTION FIRE LINE BURIED BELOW
SEWER SYSTEM	GREEN	CAUTION SEWER LINE BURIED BELOW
COMMUNICATION CONDUIT	ORANGE	CAUTION COMMUNICATION LINE BURIED BELOW

UNDERGROUND-TYPE PLASTIC LINE MARKER: MANUFACTURER'S STANDARD PERMANENT, BRIGHT-COLORED DETECTABLE TAPE, CONTINUOUS-PRINTED PLASTIC TAPE, INTENDED FOR DIRECT-BURIAL SERVICE; NOT LESS THAN 6" WIDE X 4 MILS THICK.

34. FOR ADDITIONAL INFORMATION, SEE DETAIL SHEETS.

SITE UTILITY LEGEND

	EXISTING	PROPOSED
WORK LIMIT LINE		
PROPERTY LINE		
SETBACK LINE		
SAWCUT		
WATER MAIN	W	W
FIRE SERVICE	f	f
WATER VALVE	WV	WV
OVERHEAD WIRES	oh	
UTILITY POLE		
SANITARY SEWER		
ELECTRIC		E
GAS SERVICE	G	G
GAS GATE VALVE	GV	
COMMUNICATION	UT	T-C
COMMUNICATION HANDHOLE	TELE.	

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Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
WEST
SOUTH
KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

OVERALL SITE UTILITY PLAN

Date: 07/08/2024
Scale: 1" = 50'
Proj. Number: 22367.00
Drawing Number: C301

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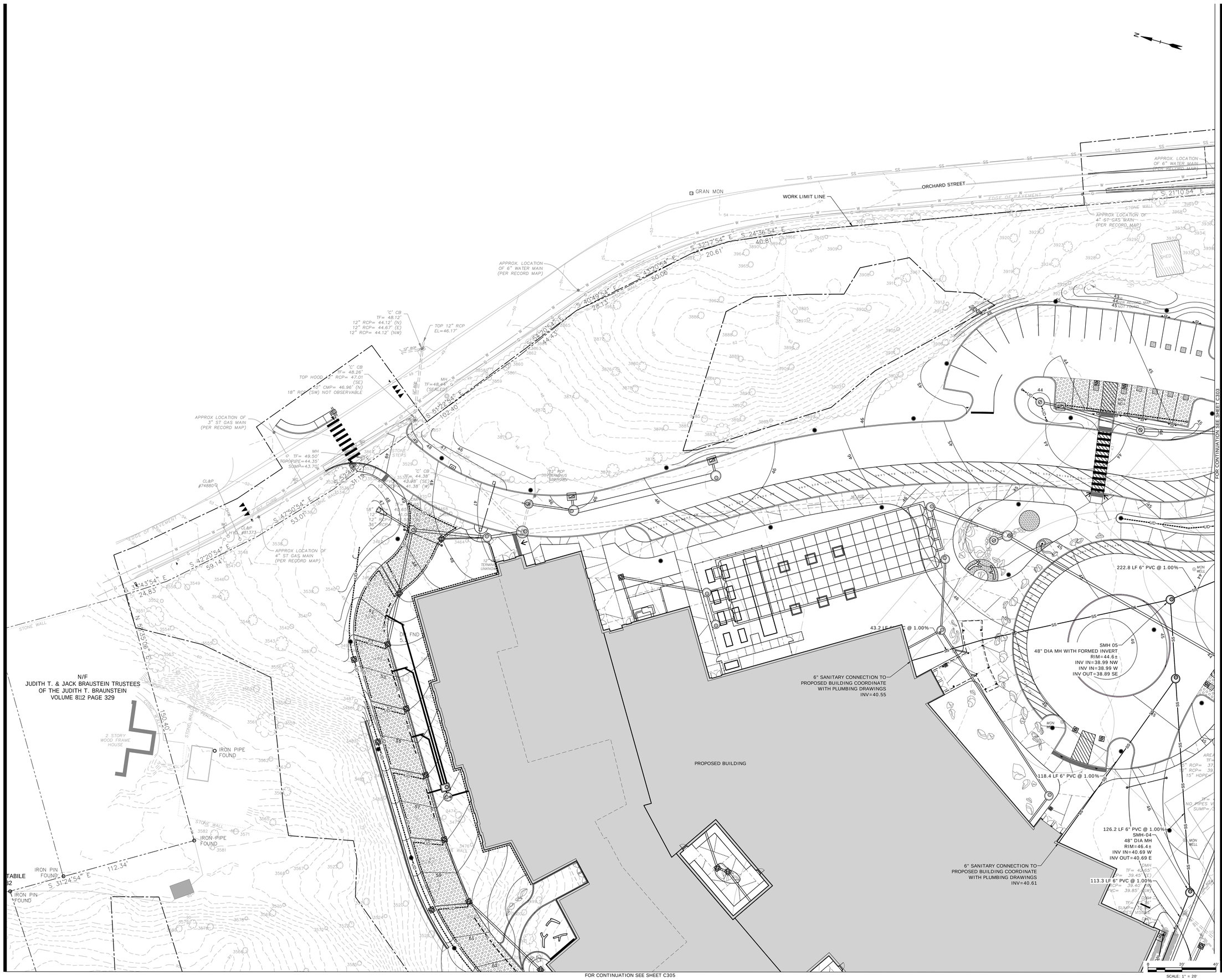

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Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE UTILITY PART PLAN

Date
07/08/2024
Scale
1" = 20'
Proj. Number
22367.00

Drawing Number
C302

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NORTH / EAST / WEST / SOUTH

KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE UTILITY PART PLAN

Date: 07/08/2024
Scale: 1" = 20'
Proj. Number: 22367.00

Drawing Number: **C303**

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FOR CONTINUATION SEE SHEET C303

FOR CONTINUATION SEE SHEET C305

EXISTING BUILDING

126.2 LF 6" PVC @ 1.00%

SMH-04
48" DIA MH
RIM=46.4±
INV IN=40.69 W
INV OUT=40.69 E

FIRE DEPARTMENT CONNECTION
(SEE PROJECT MEP PLANS AND
SPECIFICATIONS FOR ADDITIONAL
INFORMATION)

117.5 LF 6" PVC @ 1.00%

4" FIRE PROTECTION SERVICE MAIN
(SEE PROJECT MEP PLANS AND
SPECIFICATIONS FOR ADDITIONAL
INFORMATION)

2000 GALLON GREASE TRAP
RIM=46.4±
INV IN=42.07
INV OUT=41.82

52.0 LF 6" PVC @ 2.00%

CONNECT TO PROPOSED
BUILDING COORDINATE WITH
PLUMBING DRAWINGS
INV=43.11

CONNECT TO PROPOSED BUILDING
(SEE PROJECT MEP PLANS AND
SPECIFICATIONS FOR ADDITIONAL
INFORMATION)

GREENWICH CENTRAL MIDDLE SCHOOL

STANWICH ROAD

WORK LIMIT LINE

INDIAN ROCK LANE

SEE SHEET C306 AND C307 FOR ADDITIONAL INFORMATION

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STATE PROJECT NO: 057-0114 N

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WEST
SOUTH

KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE UTILITY PART PLAN

Date
07/08/2024
Scale
1" = 20'
Proj. Number
22367.00

Drawing Number
C304

SCALE: 1" = 20'

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FOR CONTINUATION SEE SHEET C302

N/F
JUDITH T. & JACK BRAUSTEIN TRUSTEES
OF THE JUDITH T. BRAUNSTEIN
VOLUME 812 PAGE 329

2 STORY WOOD FRAME HOUSE

WOOD FENCE

STONE WALL

150.40'

IRON PIPE FOUND

IRON PIPE FOUND

IRON PIN FOUND

S 31°24'54" E 112.34'

IRON PIN FOUND

N 56°03'46" E 210.41'

CHAIN LINK FENCE

N/F
RACHEL KOVEN
7507 PAGE 199

STONE WALL

PROPOSED BUILDING

126.2 LF 6" PVC @ 1.00%

SMH-04
48" DIA MH
RIM=46.4±
INV IN=40.69 W
INV OUT=40.69 E

113.3 LF 6" PVC @ 1.00%

2000 GALLON GREASE TRAP
RIM=46.4±
INV IN=42.07
INV OUT=41.82

52.0 LF 6" PVC @ 2.00%
REFER TO MEP PLANS FOR
HEAT TRACE INSTALLATION

6" GREASE WASTE CONNECTION
TO PROPOSED BUILDING
(COORDINATE WITH PLUMBING DRAWINGS)
INV=43.11

CONNECT TO PROPOSED BUILDING
(SEE PROJECT MEP PLANS AND
SPECIFICATIONS FOR ADDITIONAL
INFORMATION)

CONNECT 3" DOMESTIC WATER AND 10"
SPRINKLER FIRE SERVICE TO BUILDING
(SEE PROJECT ARCHITECTURAL AND MEP PLANS AND
SPECIFICATION FOR ADDITIONAL INFORMATION)

PAD MOUNTED TRANSFORMER

CONNECT TO GAS REGULATOR
(SEE PROJECT ARCHITECTURAL AND
MEP PLANS AND SPECIFICATION FOR
ADDITIONAL INFORMATION)

EMERGENCY POWER GENERATOR

SECONDARY ELECTRIC DUCTBANK

CONNECT TO BUILDING
(SEE PROJECT ARCHITECTURAL AND
MEP PLANS AND SPECIFICATION FOR
ADDITIONAL INFORMATION)

GEN

WORK LIMIT LINE

TEL-DATA SERVICE (2) 4"
TYPE "EB" PVC SCH 80
PRIMARY ELECTRIC SERVICE
(2) 4" SCH 80 PVC

AIR-COOLING CHILLER-2

AIR-COOLING CHILLER-1

TEL-DATA SERVICE (2) 4"
TYPE "EB" PVC SCH 40
PRIMARY ELECTRIC SERVICE
(2) 4" SCH 40 PVC

TEL-DATA SERVICE PULL BOX
(SEE DETAIL C-508 FOR ADDITIONAL INFORMATION)

2" PLASTIC GAS SERVICE

FIRE PROTECTION SERVICE
6" DIP CL52 WITH RESTRAINED JOINTS

2" AIR VENT, MJ, RESTRAINED

DOMESTIC WATER SERVICE
4" DIP CL52 WITH RESTRAINED JOINTS

ELECTRICAL SERVICE PULL BOX
(SEE DETAIL SHEET C-308 FOR ADDITIONAL INFORMATION)

DOMESTIC WATER SERVICE TEE
(1)- 6" X 6" X 4" TEE, MJ, RESTRAINED
(1) - 4" GATE VALVE AND BOX, MJ, RESTRAINED

CONNECT TO EXISTING GAS MAIN
COORDINATE WITH CONNECTICUT NATURAL GAS

WATER SERVICE CONNECTION
(1)- 8" X 8" X 6" TAPPING SLEEVE, MJ, RESTRAINED
(1) - 6" GATE VALVE AND BOX, MJ, RESTRAINED
6" DIP CL52 WITH RESTRAINED JOINTS

CONNECT TO EXISTING
UTILITY POLE NYT #39

N 21°39'54" W 150.40'

N 16°39'54" W

N 20°19'54" W 120.15'

N 09°07'54" W

N 17°04'54" W 150.00'

N 18°39'54" W 86.02'

N 10°41'54" W 64.45'

EDGE OF PAVEMENT

STONE WALL

APPROX. LOCATION OF 8" WATER MAIN

STANWICH ROAD

SCALE: 1" = 20'

FOR CONTINUATION SEE SHEET C304

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KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE UTILITY PART PLAN

Date
07/08/2024
Scale
1" = 20'
Proj. Number
22367.00

Drawing Number
C305

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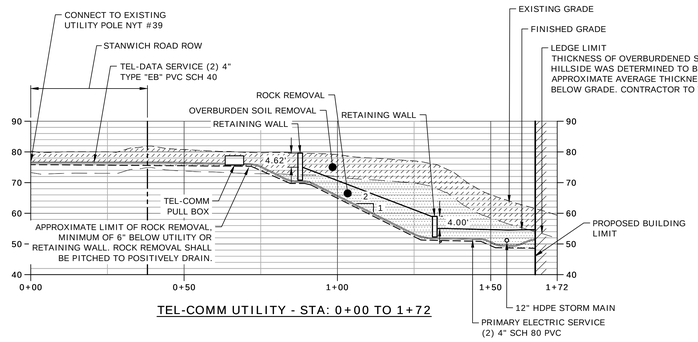
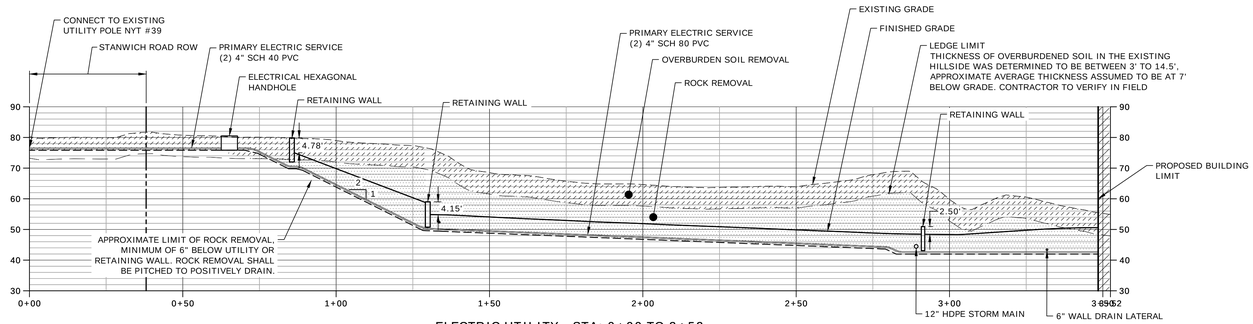
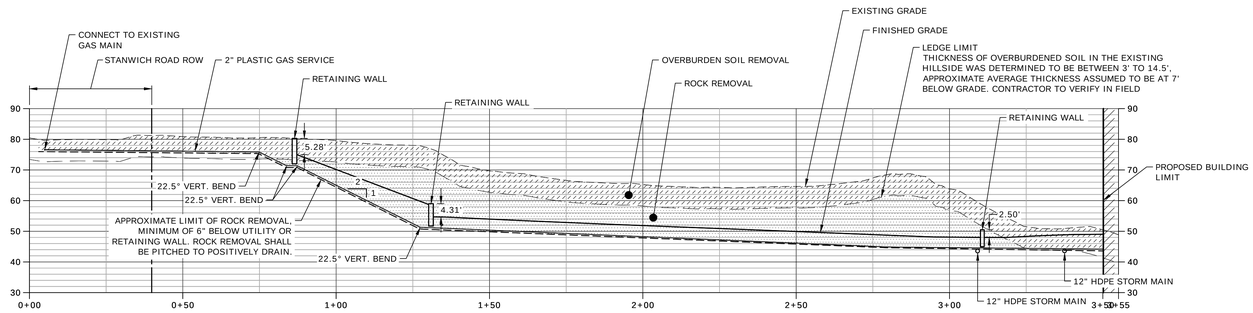


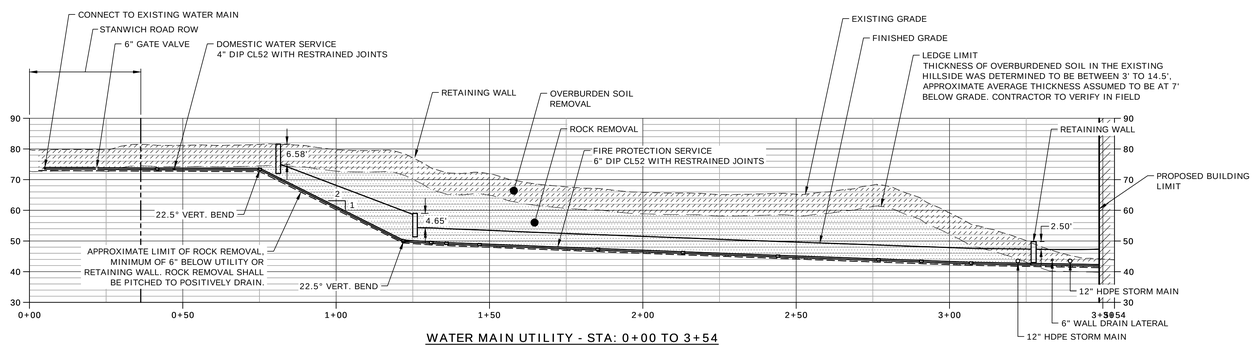
TEL-COMM UTILITY - STA: 0+00 TO 1+72



ELECTRIC UTILITY - STA: 0+00 TO 3+52



GAS UTILITY - STA: 0+00 TO 3+55



WATER MAIN UTILITY - STA: 0+00 TO 3+54

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 1'
0 1' 2'

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KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE UTILITY PROFILES

Date
07/08/2024
Scale
1" = 20'
Proj. Number
22367.00

Drawing Number
C308

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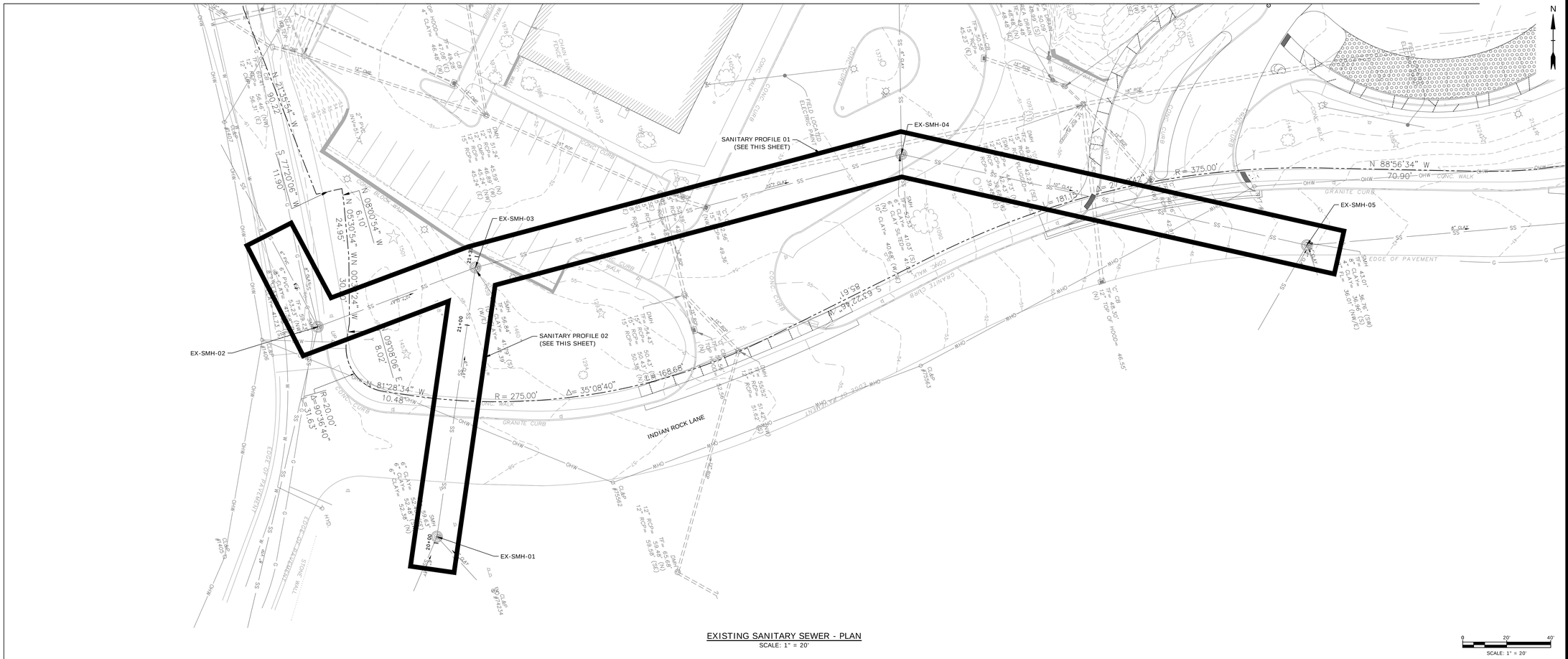
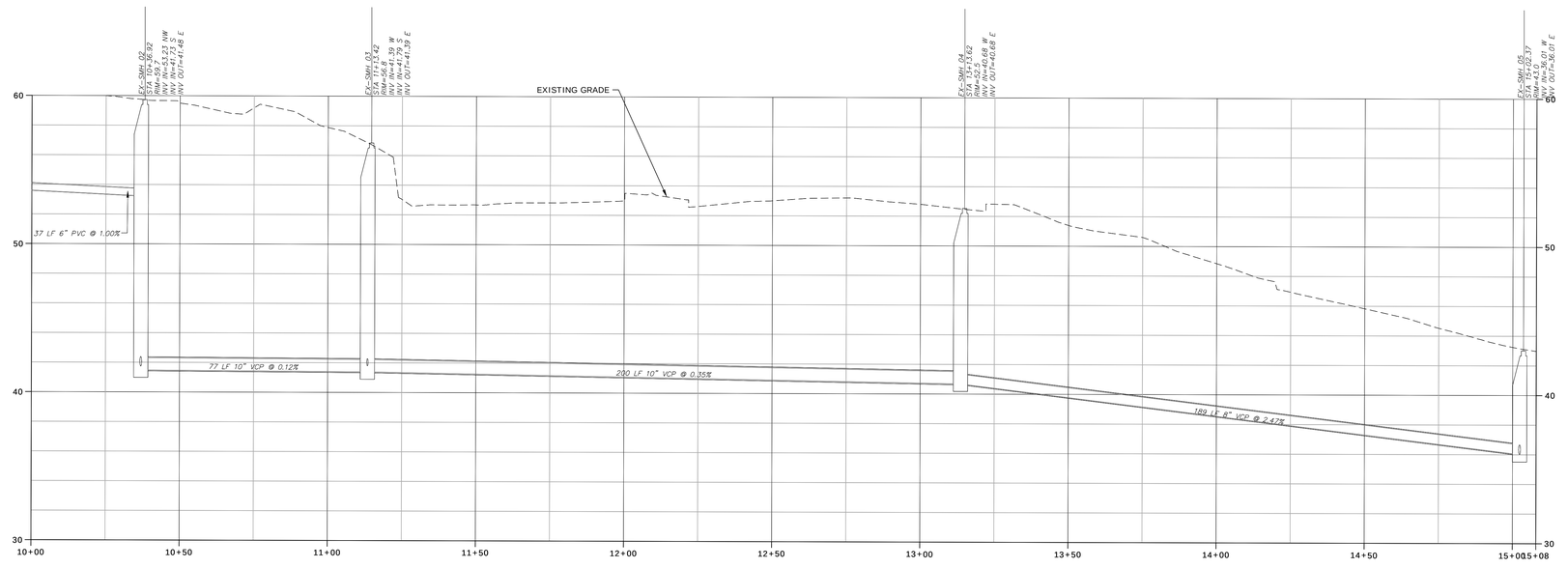


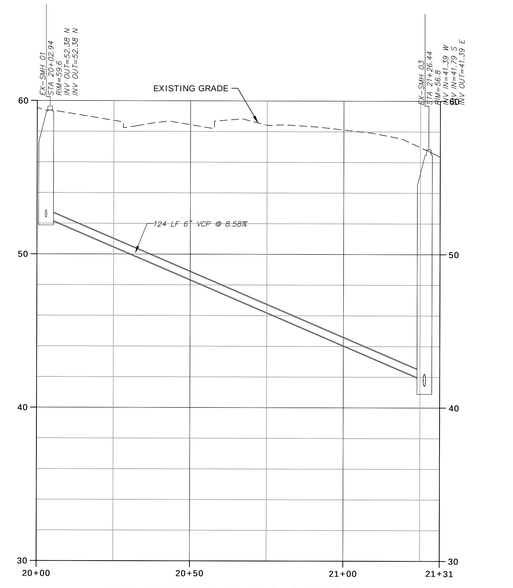
EXISTING SANITARY SEWER - PLAN
SCALE: 1" = 20'

0 20' 40'
SCALE: 1" = 20'



EXISTING SANITARY SEWER - PROFILE 01
SCALE: HOR: 1" = 20'; VERT; 1" = 4'

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'



EXISTING SANITARY SEWER - PROFILE 02
SCALE: HOR: 1" = 20'; VERT; 1" = 4'

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

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KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SANITARY SEWER EXISTING PLAN AND PROFILE

Date
07/08/2024
Scale
1" = 20'
Proj. Number
22367.00

Drawing Number
C306

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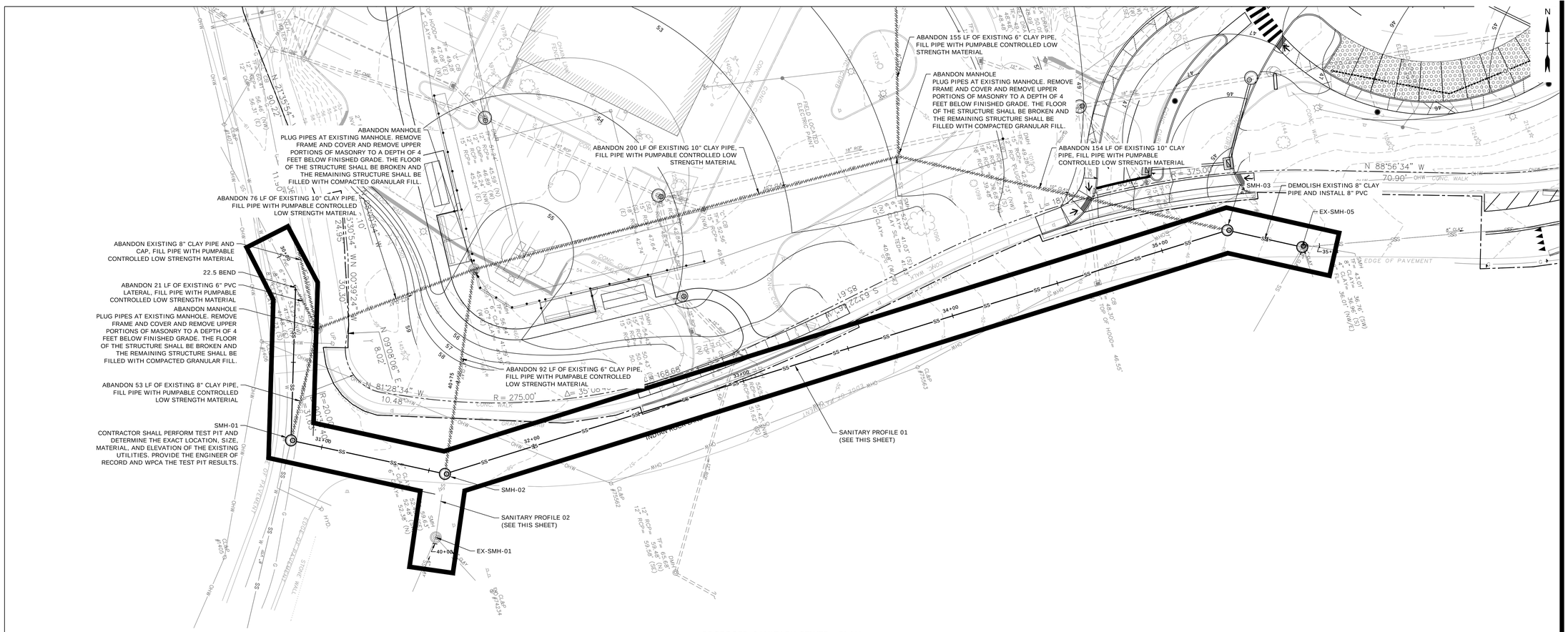
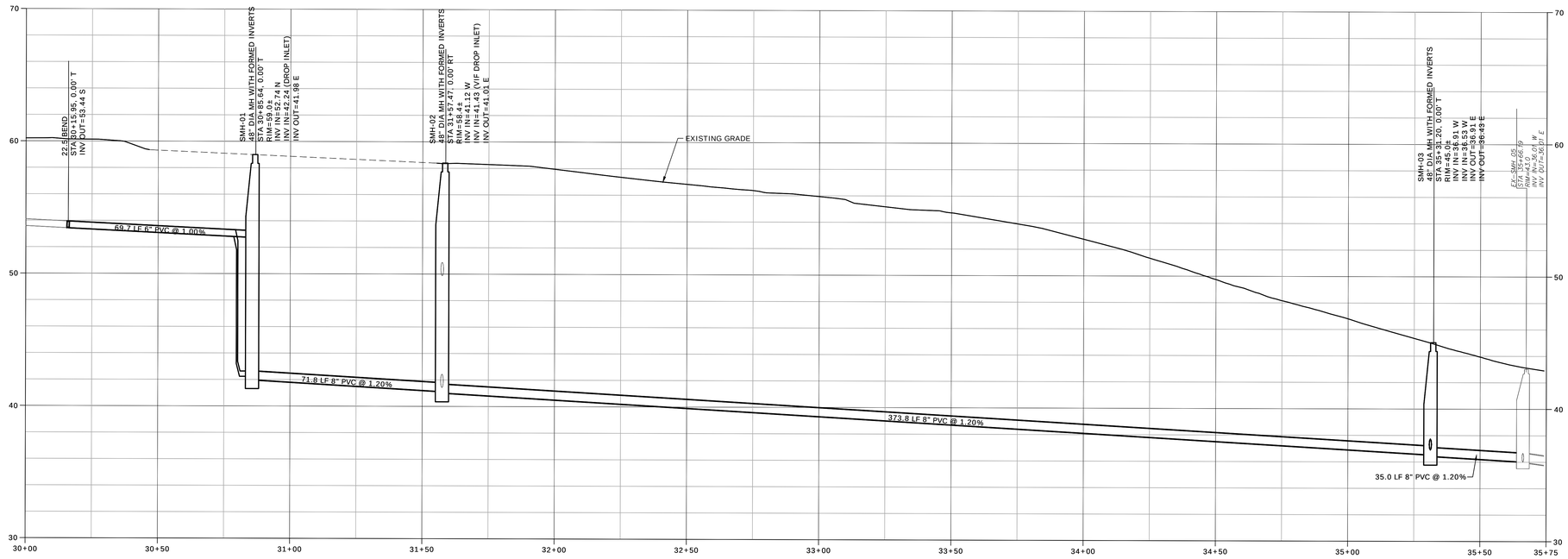
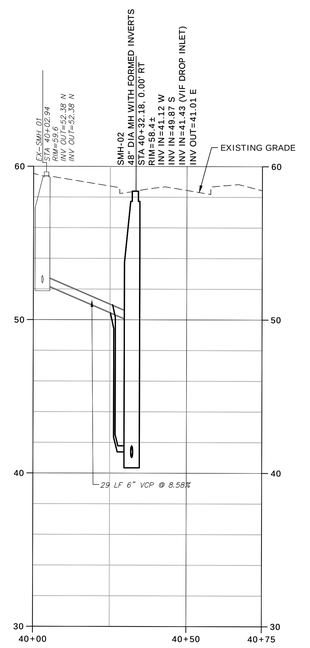


PROPOSED SANITARY SEWER - PLAN
SCALE: 1" = 20'



PROPOSED SANITARY SEWER - PROFILE 01
SCALE: HOR: 1" = 20'; VERT; 1" = 4'



PROPOSED SANITARY SEWER - PROFILE 02
SCALE: HOR: 1" = 20'; VERT; 1" = 4'

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Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SANITARY SEWER PROPOSED PLAN AND PROFILE

Date: 07/08/2024
Scale: 1" = 20'
Proj. Number: 22367.00
Drawing Number: C307

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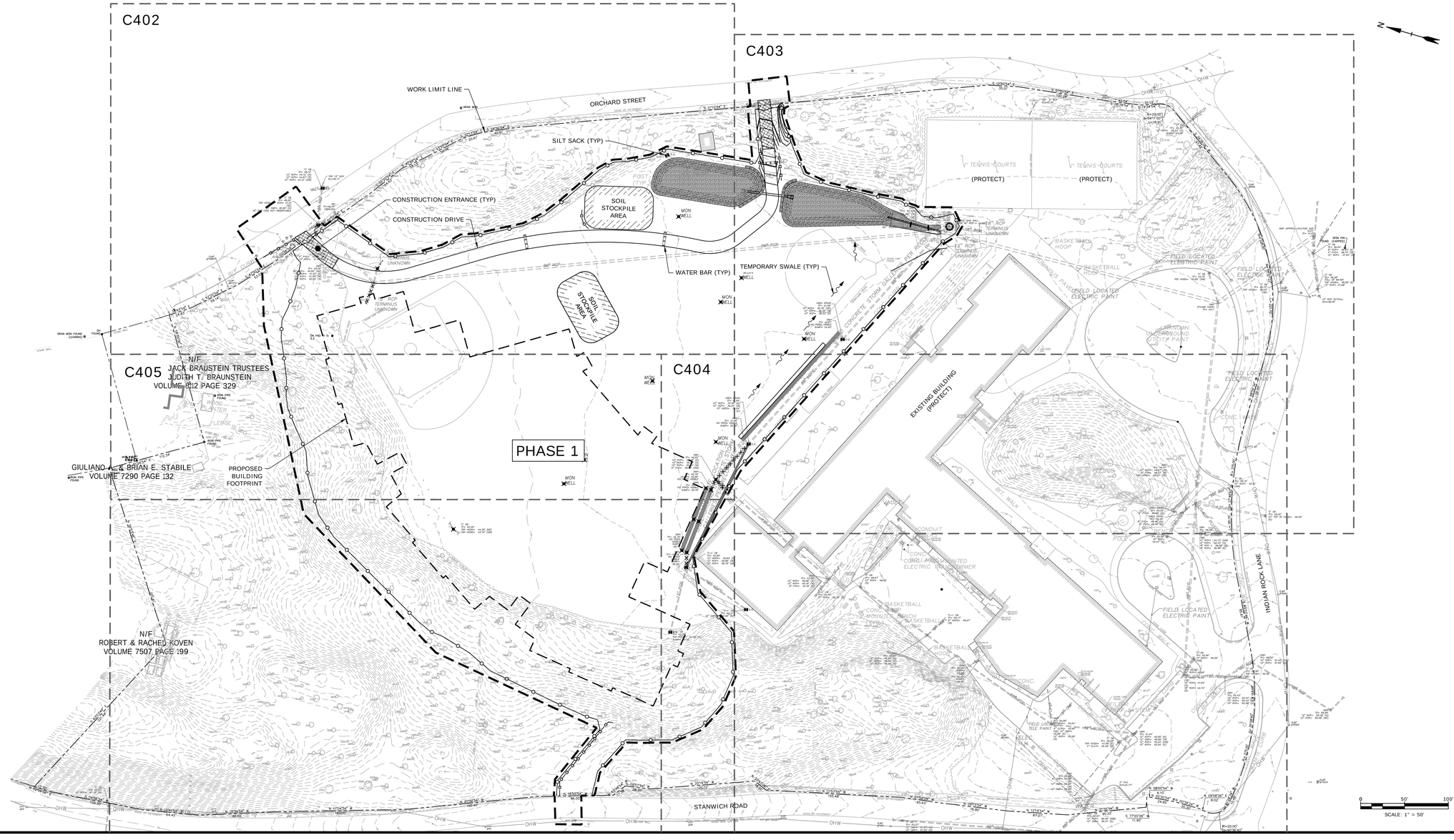

SOIL EROSION AND SEDIMENTATION CONTROL NARRATIVE:

GREENWICH CENTRAL MIDDLE SCHOOL IS A NEW MIDDLE SCHOOL AND BALL FIELDS LOCATED ON THE EXISTING CENTRAL MIDDLE SCHOOL CAMPUS ON INDIAN ROCK LANE IN GREENWICH, CT.

THIS PHASE WILL INCLUDE THE CONSTRUCTION OF A NEW MIDDLE SCHOOL BUILDING, STORMWATER MANAGEMENT SYSTEM, BITUMINOUS CONCRETE DRIVEWAYS AND PARKING, RETAINING WALLS, CURBS, LANDSCAPING, LIGHTING, AND SIDEWALKS

STORMWATER MANAGEMENT WILL BE ACCOMMODATED ON-SITE. SURFACE RUNOFF WILL BE COLLECTED AND CONVEYED IN CATCH BASINS AND LOW IMPACT DEVELOPMENT BEST MANAGEMENT PRACTICES THAT WILL TREAT THE FIRST 1" OF RUNOFF TO MEET THE TOWN OF GREENWICH DRAINAGE MANUAL AND THE CTDEEP WATER QUALITY MANUAL GUIDELINES FOR 80% TSS REMOVAL. THE STORMWATER MANAGEMENT SYSTEM WILL TREAT THE WATER QUALITY VOLUME AND REDUCE THE PEAK FLOW AND RUNOFF QUANTITY FROM THE SITE.

TOTAL PROJECT DISTURBANCE IS APPROXIMATELY 14.81 ACRES, PHASE I DISTURBANCE IS APPROXIMATELY 7.53 ACRES.

PHASE 1 CONSTRUCTION START: FALL 2024

PHASE 1 CONSTRUCTION END: SUMMER 2026

SITE SOIL EROSION AND SEDIMENTATION CONTROL SHALL FOLLOW THE TOWN OF GREENWICH REQUIREMENTS AND DETAILS AS WELL AS THE CTDEEP 2024 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.

SOIL EROSION AND SEDIMENT CONTROL LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- GEOTEXTILE SILTFENCE
- INLET PROTECTION
- S.S — SILT SACK
- HAYBALE BARRIER
- CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- SOIL STOCKPILE AREA — SOIL STOCKPILE AREA
- TEMPORARY SEDIMENT TRAP
- TREE CLEARING

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SOUTH

KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

OVERALL PHASE 1 DEMOLITION, ENABLING AND SITE SOIL EROSION AND SEDIMENTATION CONTROL PLAN

Date: 07/08/2024
Scale: 1" = 50'
Proj. Number: 22367.00
Drawing Number: C401

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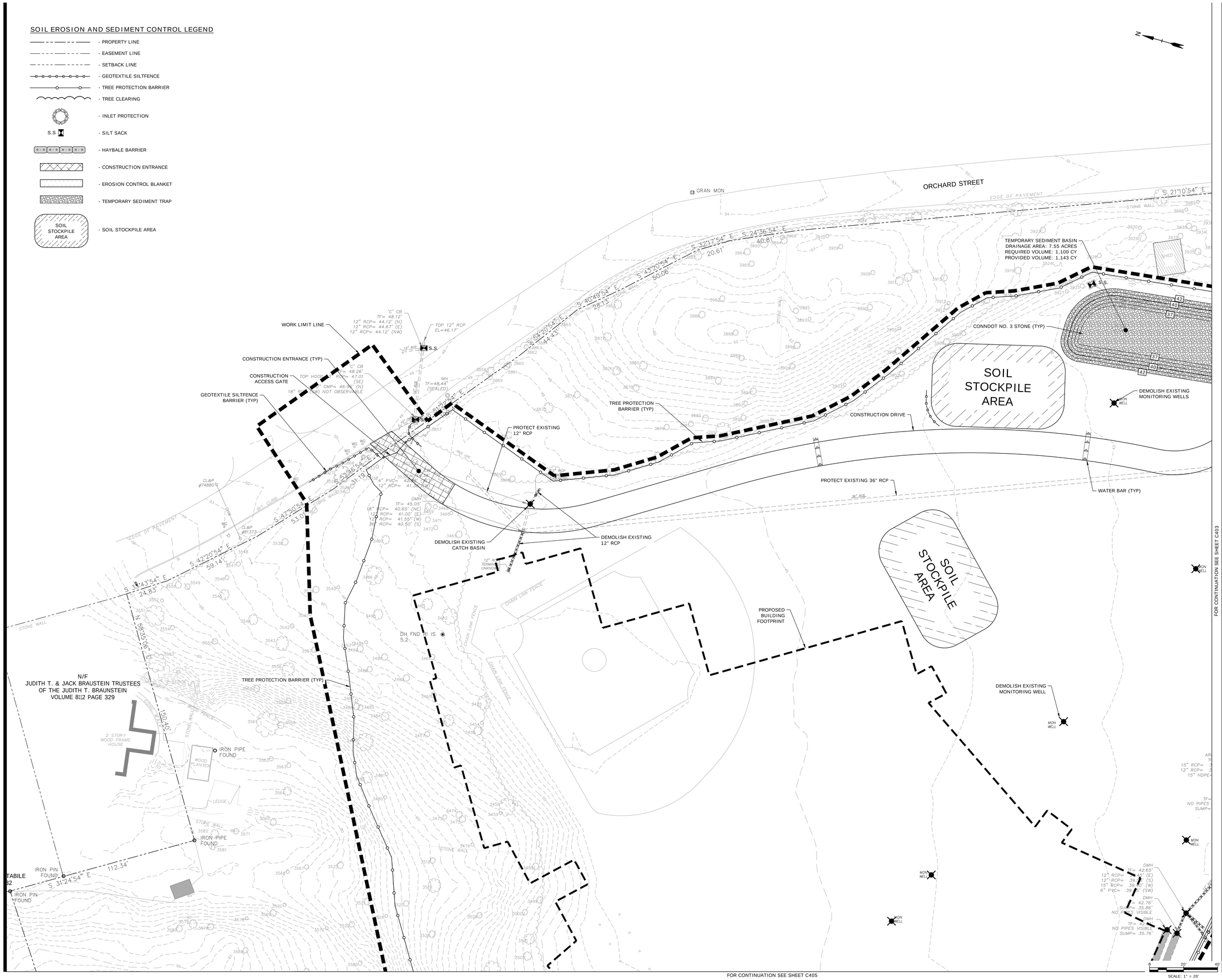

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Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

PHASE 1 DEMOLITION, ENABLING AND SITE SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN

Date
07/08/2024
Scale
1" = 20'
Proj. Number
22367.00

Drawing Number
C402

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SOIL EROSION AND SEDIMENT CONTROL LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- GEOTEXTILE SILTFENCE
- TREE PROTECTION BARRIER
- TREE CLEARING
- INLET PROTECTION
- SILT SACK
- HAYBALE BARRIER
- CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- TEMPORARY SEDIMENT TRAP
- SOIL STOCKPILE AREA — SOIL STOCKPILE AREA

CONSTRUCTION ACCESS GATE
CONSTRUCTION ENTRANCE (TYP)
EROSION CONTROL BLANKET (TYP)
WATER BAR (TYP)
GEOTEXTILE SILTFENCE BARRIER (TYP)
CONNDOT NO. 3 STONE (TYP)
46 LF 24" HDPE @ 0.00%
24" FLARED END INV=37.00
CONNDOT NO. 3 STONE (TYP)
TREE PROTECTION BARRIER (TYP)
EMERGENCY SPILLWAY ELEV=41.5
STONE CHECK DAM (TYP)
CONNDOT NO. 3 STONE APRON
24" FLARED END INV=37.00
TEMPORARY SEDIMENT BASIN
DRAINAGE AREA: 7.55 ACRES
REQUIRED VOLUME: 1,100 CY
PROVIDED VOLUME: 1,143 CY
CONSTRUCTION DRIVE
15" CMP RISER
TOP OF RISER=39.50
INV=38.00
60 LF 15" CMP @ 0.50%
CORE AND CONNECT TO EXISTING MANHOLE INV=37.70
TEMPORARY SWALE (TYP)
WORK LIMIT LINE
DEMOLISH EXISTING MONITORING WELL (TYP)
RELOCATE AND INSTALL 144 LF OF EXISTING CONCRETE INFILTRATION SYSTEM INV=34.92
CORE AND CONNECT TO EXISTING AREA DRAIN INV=39.01
156 LF 15" HDPE @ 0.50%
DEMOLISH EXISTING 12" RCP
CONNECT TO EXISTING 12" RCP WITH TEE AND BENDS. VERIFY EXISTING INVERT IN FIELD.
EXISTING TREE TO REMAIN (TYP) (SEE PROJECT LANDSCAPE PLANS AND DETAILS FOR ADDTIONAL INFORMATION)
SILT SACK (TYP)
12" RCP OUTFALL INV=38.05'
ORCHARD STREET
INDIAN ROCK LANE
EXISTING BUILDING GREENWICH CENTRAL MIDDLE SCHOOL (PROTECT)
TENNIS COURTS (PROTECT)
BASKETBALL HOOP
SHED
CHAIN LINK FENCE
WOOD FENCE
CONC. CURB
BIT. WALK
GRANITE CURB
EDGE OF PAVEMENT
FIELD LOCATED ELECTRIC PAINT
UNKNOWN UNDERGROUND UTILITY PAINT
DMH APPROX LOCATION AND ELEV TF= 41.6'
DMH (PAVED OVER) TF= 44.1'
DMH TF= 49.37' 15" RCP= 44.67' (W) TOP HOOD= 46.37' (SE)
AREA DRAIN TF= 41.58' 15" RCP= 36.08' (NE) 12" RCP= 38.38' (W) 15" RCP= 38.33' (E)
DMH TF= 41.67' NO PIPES VISIBLE SUMP= 34.92'
AREA DRAIN TF= 41.64' 37.59' (N) 39.24' (W) E= 38.94' (E)
DMH TF= 41.66' S VISIBLE = 35.06'
AREA DRAIN TF= 50.09' 8" PVC= 48.99' (S)
AREA DRAIN TF= 49.48' 8" PVC= 48.48' (N) 8" PVC= 48.48' (E)
'C' CB TF= 43.13' 40.95' (SW)
'C' CB TF= 39.73' 38.03' (SE)
'C' CB TF= 39.28' FULL OF WATER TOP HOOD= 38. 12" RCP= 37.68'
'C' CB TF= 46.16' 15" RCP= 42.91' (NW)
'C' CB TF= 48.30' 12" TOP OF HOOD= 46.55' (N)
IRON PIN FOUND (CAPPED) 'C' CB TF= 39.54' 8" RCP= 36. 4" PVC= 38. 12" RCP= 37.
CL&P #7556
CL&P #5566
NYT #2
NYT #3
S 12°50'54" E 35.01'
S 07°01'54" E 100.28'
R=20.00' Δ=54°11'00" L=18.91'
S 08°39'54" E 40.04'
S 19°34'54" E 21.13'
S 34°36'06" W 97.82'
N 86°56'34" W 20.96'
R = 375.00'
Δ= 5°27'22"
L= 181.15'
FOR CONTINUATION SEE SHEET C402
FOR CONTINUATION SEE SHEET C405
SCALE: 1" = 20'

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Greenwich Central Middle School

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STATE PROJECT NO: 057-0114 N

NORTH
EAST
WEST
SOUTH
KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

PHASE 1 DEMOLITION, ENABLING AND SITE SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN

Date: 07/08/2024
Scale: 1" = 20'
Proj. Number: 22367.00
Drawing Number: C403

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FOR CONTINUATION SEE SHEET C405

TEMPORARY SWALE (TYP)

PROTECT EXISTING CONCRETE INFILTRATION SYSTEM

RELOCATE AND INSTALL 144 LF OF EXISTING CONCRETE INFILTRATION SYSTEM INV=34.92

AREA DRAIN
TF= 41.64'
15" RCP= 37.59' (N)
12" RCP= 39.24' (W)
15" HDPE= 38.94' (E)

DMH
TF= 41.66'
NO PIPES VISIBLE
SUMP= 35.06'

DEMOLISH EXISTING MONITORING WELL (TYP)

PROPOSED BUILDING FOOTPRINT

S.S.

CORE AND CONNECT TO EXISTING AREA DRAIN INV=39.01

DMH
TF= 42.65'
12" RCP= 39.45' (E)
12" RCP= 39.45' (S)
15" RCP= 39.25' (E)
6" PVC= 39.65' (E)

DEMOLISH EXISTING 12" RCP

DEMOLISH EXISTING 6" PVC

DMH
TF= 42.75'
NO PIPES VISIBLE
SUMP= 35.86'

DMH
TF= 42.75'
NO PIPES VISIBLE
SUMP= 35.76'

CONNECT TO EXISTING 12" RCP WITH TEE AND BENDS. VERIFY EXISTING INVERT IN FIELD.

DEMOLISH EXISTING MANHOLE

CONNECT TO EXISTING 6" PVC WITH TEE AND BENDS. VERIFY EXISTING INVERT IN FIELD.

156 LF 15" HDPE @ 0.50%

DEMOLISH EXISTING MANHOLE

DEMOLISH EXISTING 15" RCP

L CB
TF= 42.76'
NO PIPES VISIBLE
SUMP= 36.46'
12" HDPE
12" RCP= 39.79' (NE)

CORE AND CONNECT TO EXISTING CB INV=39.79

S.S.

'C-L' CB
TF= 42.21'
12" HDPE= 40.46' (N)

S.S.

S.S. CB
TF= 43.38'
TOP HOOD= 41.38' (E)
SUMP= 39.18'

TEMPORARY CONSTRUCTION FENCE

WORK LIMIT LINE

EXISTING BUILDING

GREENWICH CENTRAL MIDDLE SCHOOL

VAULT (E)

CONDUIT RISERS
TS=54.02'
BS=51.06'

CONC. BOLLARDS

CONC. PAD MOUNTED ELECTRIC TRANSFORMER

'C' CB
TF= 48.67'
12" RCP= 48.02' (S)

DMH
TF= 43.08'
12" RCP= 39.98' (N)
12" RCP= 40.18' (W)
8" PVC= 40.18' (E)

'C-L' CB
TF= 42.44'
12" RCP= 40.39' (E)

BASKETBALL HOOP

CONC. PAD MOUNTED BENCH (TYP.)

'C-L' CB
TF= 50.17'
8" HDPE= 48.27' (W)

DMH
TF= 50.50'
12" RCP= 46.55' (N)
8" HDPE= 45.80' (E)
12" RCP= 46.45' (S)

DMH
TF= 50.55'
SUMP= 47.05'

DMH
TF= 50.55'
SUMP= 46.45'

FIELD LOCATED TELE PAINT

ELEC. H.H.

CL&P #81084

DMH
TF= 50.99'
12" RCP= 45.64' (N)
4" CLAY= 45.84' (NE) 10" CMP= 45.99' (E)
12" RCP= 45.59' (S)

'C' CB
TF= 49.28'
TOP HOOD= 47.08' (E)
4" CLAY= 46.48' (W)

DMH
TF= 51.24'
12" RCP= 45.59' (N)
12" CMP= 46.89' (W)
12" RCP= 45.24' (NW)
15" RCP= 45.24' (E)

2" PVC
INV=51.77'

WATER

CHAIN LINK FENCE

STANWICH ROAD

EDGE OF PAVEMENT

'C' CB
TF= 63.57'
12" CMP= 61.59' (N)
12" CMP= 61.52' (S)

CL&P #1409

CL&P #1408

'C' CB
TF= 60.86'
12" RCP= 58.26' (SE)
12" CMP= 58.61' (N)

CL&P #1407

CL&P #1406

N 57°57'54" W
55.48'

N 07°57'54" W
45.63'

N 09°13'54" W
76.80'

N 12°19'54" W
67.27'

N 21°35'54" W
90.22'

S 77°20'06" W
11.90'

N 08°00'54" W
6.10'

N 05°30'54" W
24.95'

N 00°39'24" W
30.30'

N 09°08'06" E
8.02'

S 81°28'34" W
10.48'

R=20.00'
Δ=90°36'40"
L=31.63'

R = 375.00'
L = 181.15'
Δ= 27°40'42"

R = 225.00'
L = 168.66'
Δ= 35°08'40"

N 69°56'34" W
70.80'

S 63°27'46" W
85.61'

FIELD LOCATED ELECTRIC PAINT

CONC. WALK

CONC. CURB

GRANITE CURB

FENCE CURB

BIT. WALK

CONC. RAMP

CONC. PAD

INDIAN ROCK LANE

'C' CB
TF= 46.16'
15" RCP= 42.91' (NW)

'C' CB
TF= 48.30'
12" TOP OF HO (N)

'C' CB
TF= 50.59'
15" RCP= 45.23' (E)

DMH
TF= 49.26'
15" RCP= 42.23' (SE)
12" RCP PLUGGED= 44.83' (SW)
12" RCP= 44.73' (NW)
12" RCP= 42.43' (S)
18" RCP = 39.68' (W)
18" RCP= 39.48' (E)

'C' CB
TF= 52.56'
15" RCP= 49.36' (NW)

'C' CB
TF= 52.39'
8" RCP= 42.84'
12" RCP= 48.54' (SE)
15" RCP= 47.64' (S)
18" RCP= 42.74' (E)

'C' CB
TF= 53.56'
TOP HOOD= 52.56' (N)

DMH
TF= 55.52'
15" RCP= 51.42' (NW)
12" RCP= 51.62' (S)

DMH
TF= 54.43'
15" RCP= 50.43' (E)
15" RCP= 50.43' (W)
15" RCP= 50.35' (N)

AREA DRAIN
TF= 50.09'
8" PVC= 45.99' (S)

AREA DRAIN
TF= 49.48'
8" PVC= 48.48' (N)
8" PVC= 48.48' (E)

BENCH

FLAG POLE

SOIL EROSION AND SEDIMENT CONTROL LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- GEOTEXTILE SILTFENCE
- TREE PROTECTION BARRIER
- TREE CLEARING
- INLET PROTECTION
- SILT SACK
- HAYBALE BARRIER
- CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- TEMPORARY SEDIMENT TRAP
- SOIL STOCKPILE AREA (SOIL STOCKPILE AREA)

SCALE: 1" = 20'

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KEYPLAN

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PHASE 1 DEMOLITION, ENABLING AND SITE SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN

Date
07/08/2024
Scale
1" = 20'
Proj. Number
22367.00

Drawing Number
C404

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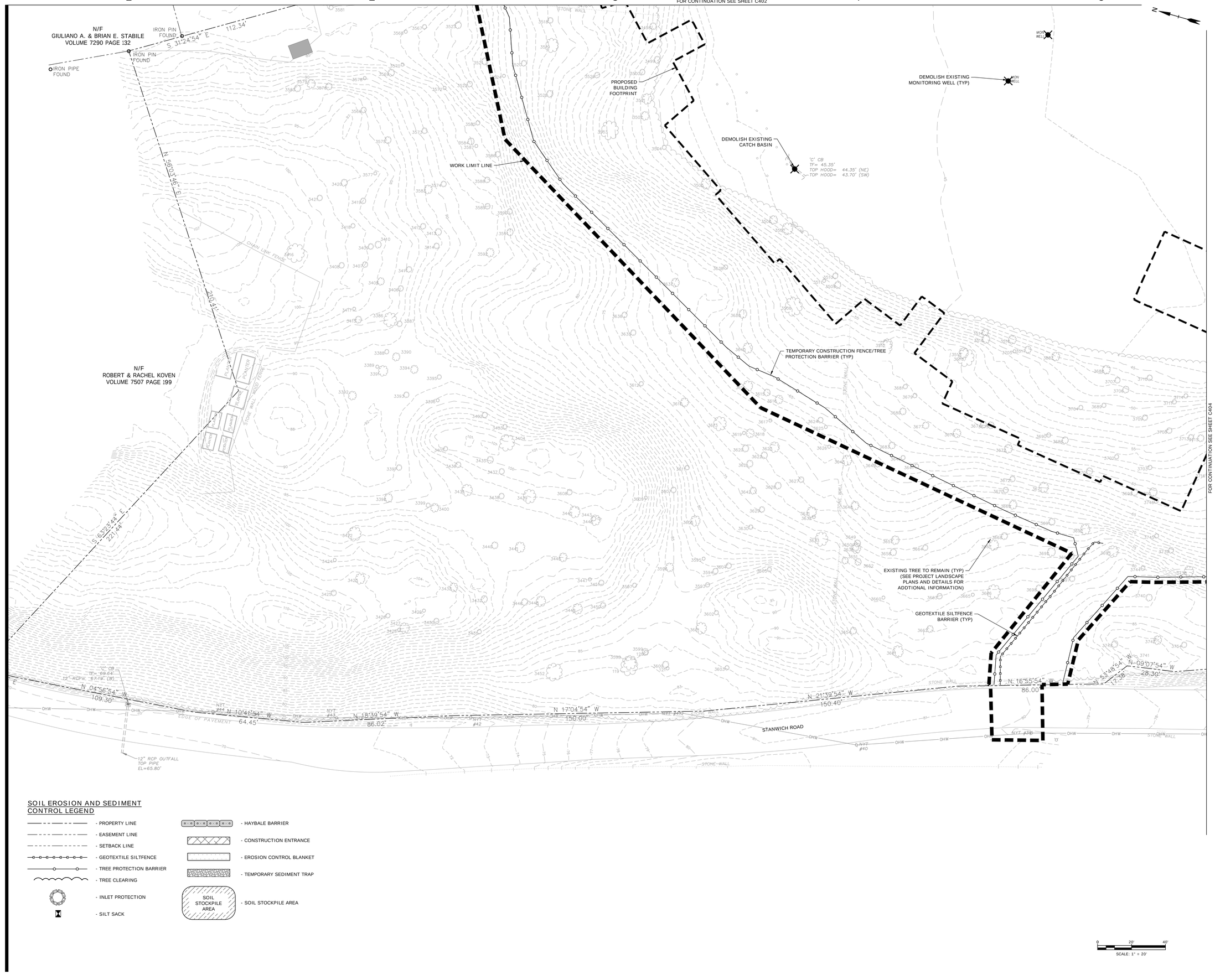

SOIL EROSION AND SEDIMENT CONTROL LEGEND

- PROPERTY LINE
- EASEMENT LINE
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Date: 07/08/2024
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Proj. Number: 22367.00

Drawing Number: **C405**

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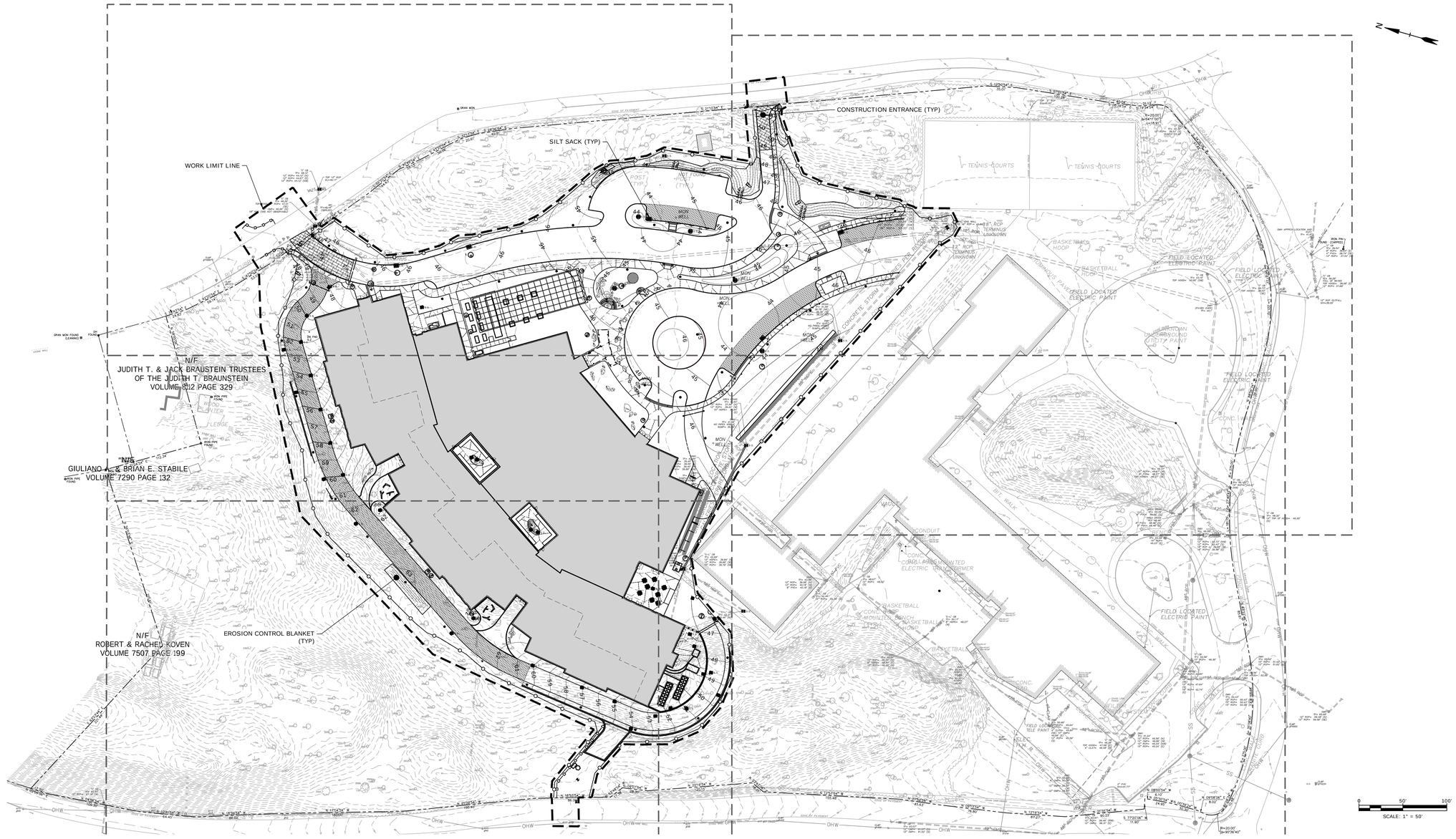

SOIL EROSION AND SEDIMENT CONTROL LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- GEOTEXTILE SILTFENCE
- INLET PROTECTION
- SILT SACK
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- SOIL STOCKPILE AREA (SOIL STOCKPILE AREA)
- TEMPORARY SEDIMENT TRAP
- TREE CLEARING

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	07/08/2024	PHASE 2

PHASE 1 IMPROVED CONDITIONS SOIL EROSION AND SEDIMENTATION CONTROL PLAN

Date: 07/08/2024
Scale: 1" = 50'
Proj. Number: 22367.00

Drawing Number: C406

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SOIL EROSION AND SEDIMENT CONTROL LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- GEOTEXTILE SILTFENCE
- TREE PROTECTION BARRIER
- TREE CLEARING
- INLET PROTECTION
- SILT SACK
- HAYBALE BARRIER
- CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- TEMPORARY SEDIMENT TRAP
- SOIL STOCKPILE AREA — SOIL STOCKPILE AREA

WORK LIMIT LINE

CONSTRUCTION ENTRANCE (TYP)

GEOTEXTILE SILTFENCE BARRIER (TYP)

EXISTING TREE TO REMAIN (TYP) (SEE PROJECT LANDSCAPE PLANS AND DETAILS FOR ADDTIONAL INFORMATION)

TREE PROTECTION BARRIER (TYP)

SILT SACK (TYP)

EROSION CONTROL BLANKET (TYP)

TREE PROTECTION BARRIER (TYP)

N/F
JUDITH T. & JACK BRAUSTEIN TRUSTEES
OF THE JUDITH T. BRAUNSTEIN
VOLUME 812 PAGE 329

IRON PIPE FOUND

IRON PIN FOUND

TABILE
32

FOR CONTINUATION SEE SHEET C408

FOR CONTINUATION SEE SHEET C410

SCALE: 1" = 20'

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PHASE 1 IMPROVED CONDITIONS SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN

Date: 07/08/2024
Scale: 1" = 20'
Proj. Number: 22367.00
Drawing Number: C407

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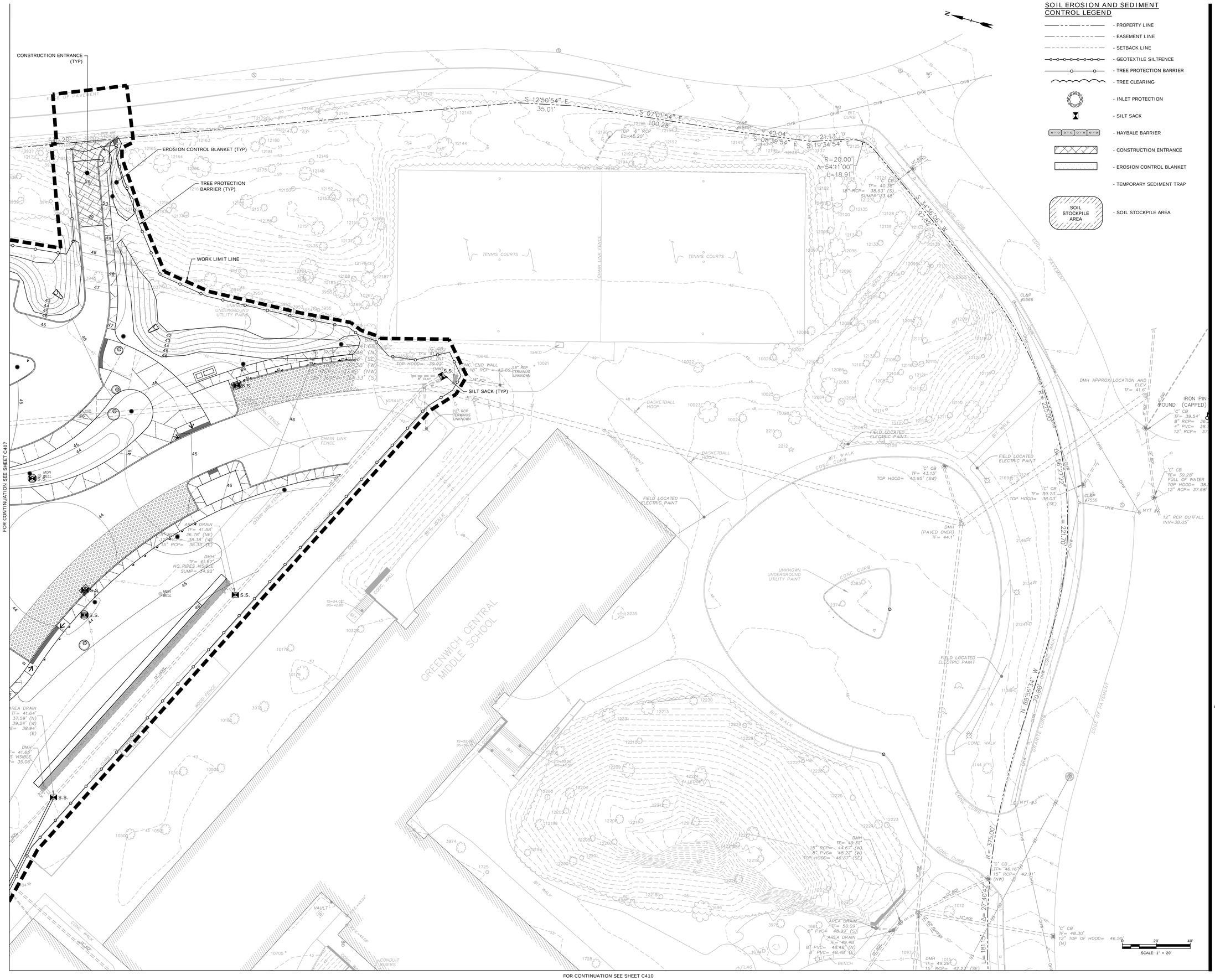

SOIL EROSION AND SEDIMENT CONTROL LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- GEOTEXTILE SILTFENCE
- TREE PROTECTION BARRIER
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- CONSTRUCTION ENTRANCE
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- TEMPORARY SEDIMENT TRAP
- SOIL STOCKPILE AREA — SOIL STOCKPILE AREA

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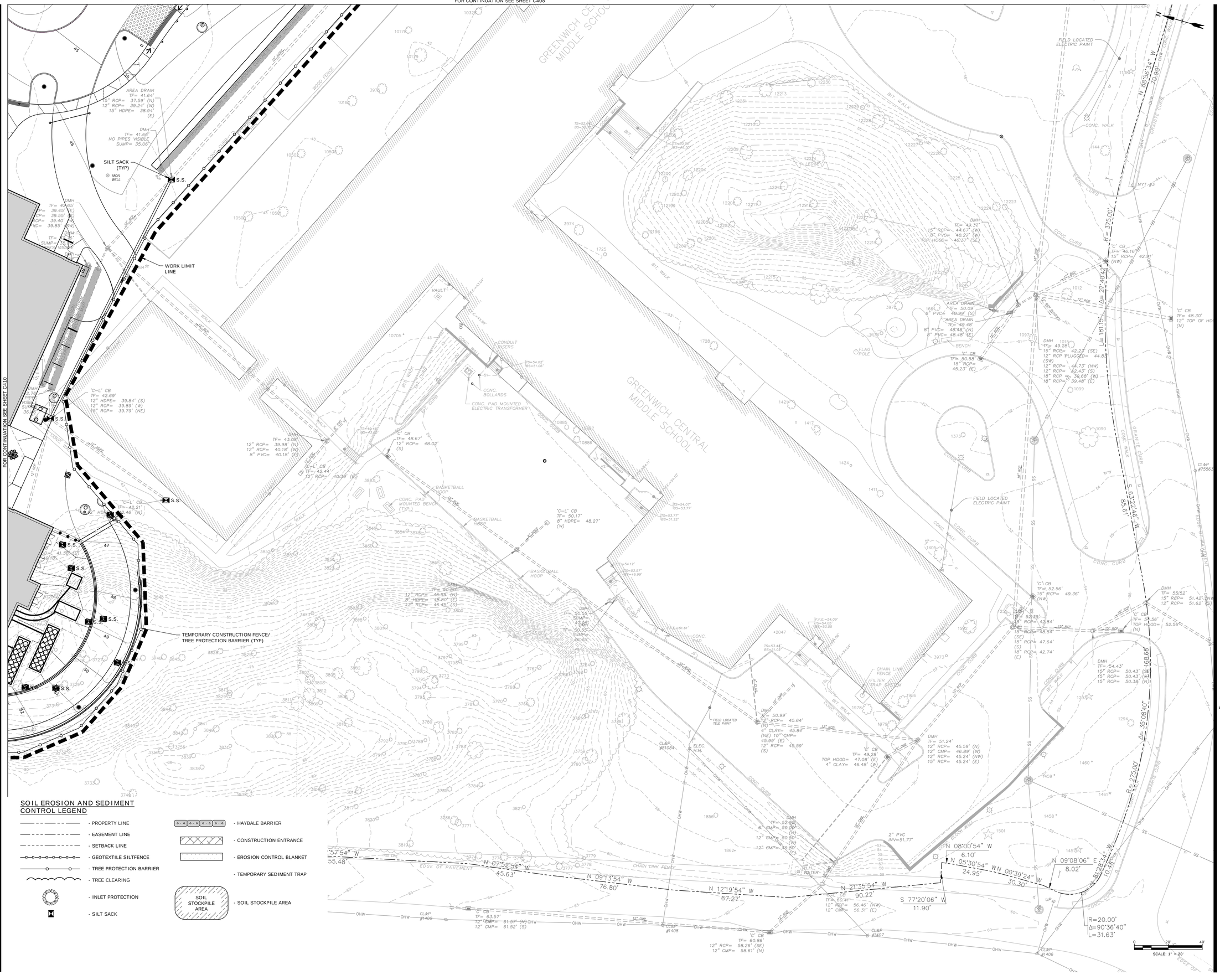

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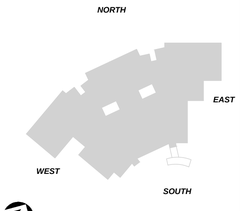

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SOIL EROSION AND SEDIMENT CONTROL LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- GEOTEXTILE SILTFENCE
- TREE PROTECTION BARRIER
- TREE CLEARING
- INLET PROTECTION
- SILT SACK
- HAYBALE BARRIER
- CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- TEMPORARY SEDIMENT TRAP
- SOIL STOCKPILE AREA

SCALE: 1" = 20'

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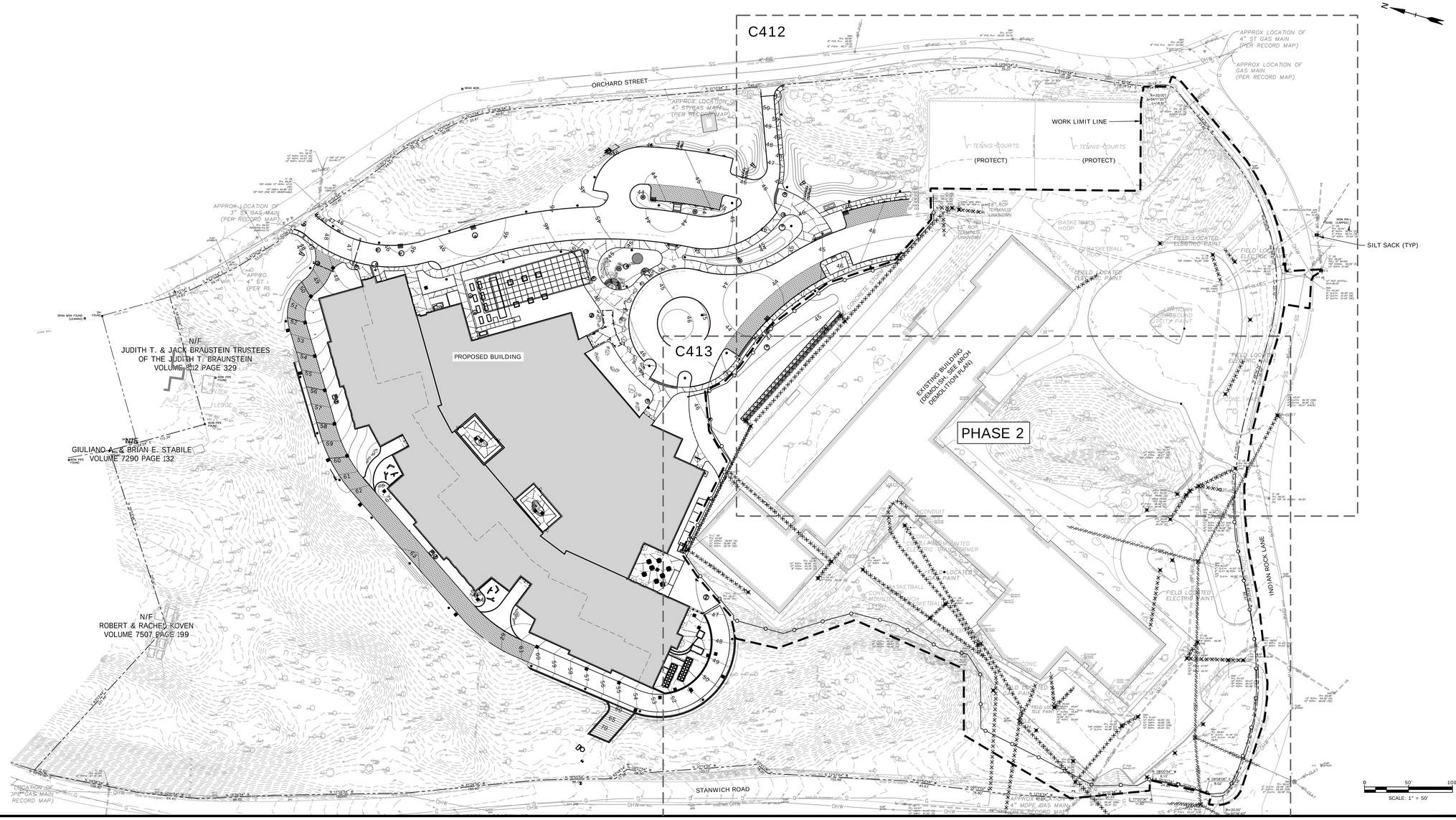

SOIL EROSION AND SEDIMENTATION CONTROL NARRATIVE:

GREENWICH CENTRAL MIDDLE SCHOOL IS A NEW MIDDLE SCHOOL AND BALL FIELDS LOCATED ON THE EXISTING CENTRAL MIDDLE SCHOOL CAMPUS ON INDIAN ROCK LANE IN GREENWICH, CT.

THE PHASE WILL INCLUDE DEMOLITION OF THE EXISTING MIDDLE SCHOOL, CONSTRUCTION OF BALL FIELDS, SANITARY SEWER, GAS, WATER, UNDERGROUND ELECTRIC AND TEL-DATA UTILITIES, STORMWATER MANAGEMENT SYSTEM, BITUMINOUS CONCRETE DRIVEWAYS AND PARKING, RETAINING WALLS, CURBS, LANDSCAPING, LIGHTING, AND SIDEWALKS

STORMWATER MANAGEMENT WILL BE ACCOMMODATED ON-SITE. SURFACE RUNOFF WILL BE COLLECTED AND CONVEYED IN CATCH BASINS AND LOW IMPACT DEVELOPMENT BEST MANAGEMENT PRACTICES THAT WILL TREAT THE FIRST 1" OF RUNOFF TO MEET THE TOWN OF GREENWICH DRAINAGE MANUAL AND THE CTDEEP WATER QUALITY MANUAL GUIDELINES FOR 80% TSS REMOVAL. THE STORMWATER MANAGEMENT SYSTEM WILL TREAT THE WATER QUALITY VOLUME AND REDUCE THE PEAK FLOW AND RUNOFF QUANTITY FROM THE SITE.

TOTAL PROJECT DISTURBANCE IS APPROXIMATELY 14.81 ACRES, PHASE II DISTURBANCE IS APPROXIMATELY 7.28 ACRES.

PHASE 2 CONSTRUCTION START: SUMMER 2026

PHASE 2 CONSTRUCTION END: SUMMER 2027

SITE SOIL EROSION AND SEDIMENTATION CONTROL SHALL FOLLOW THE TOWN OF GREENWICH REQUIREMENTS AND DETAILS AS WELL AS THE CTDEEP 2024 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.

SOIL EROSION AND SEDIMENT CONTROL LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- GEOTEXTILE SILTFENCE
- INLET PROTECTION
- S.S - SILT SACK
- HAYBALE BARRIER
- CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- SOIL STOCKPILE AREA - SOIL STOCKPILE AREA
- TEMPORARY SEDIMENT TRAP
- TREE CLEARING

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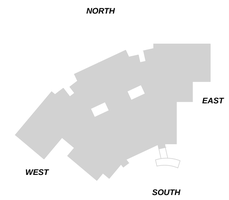

KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

PHASE 2 DEMOLITION SOIL EROSION AND SEDIMENTATION CONTROL PLAN

Date
07/08/2024
Scale
1" = 50'
Proj. Number
22367.00

Drawing Number
C411

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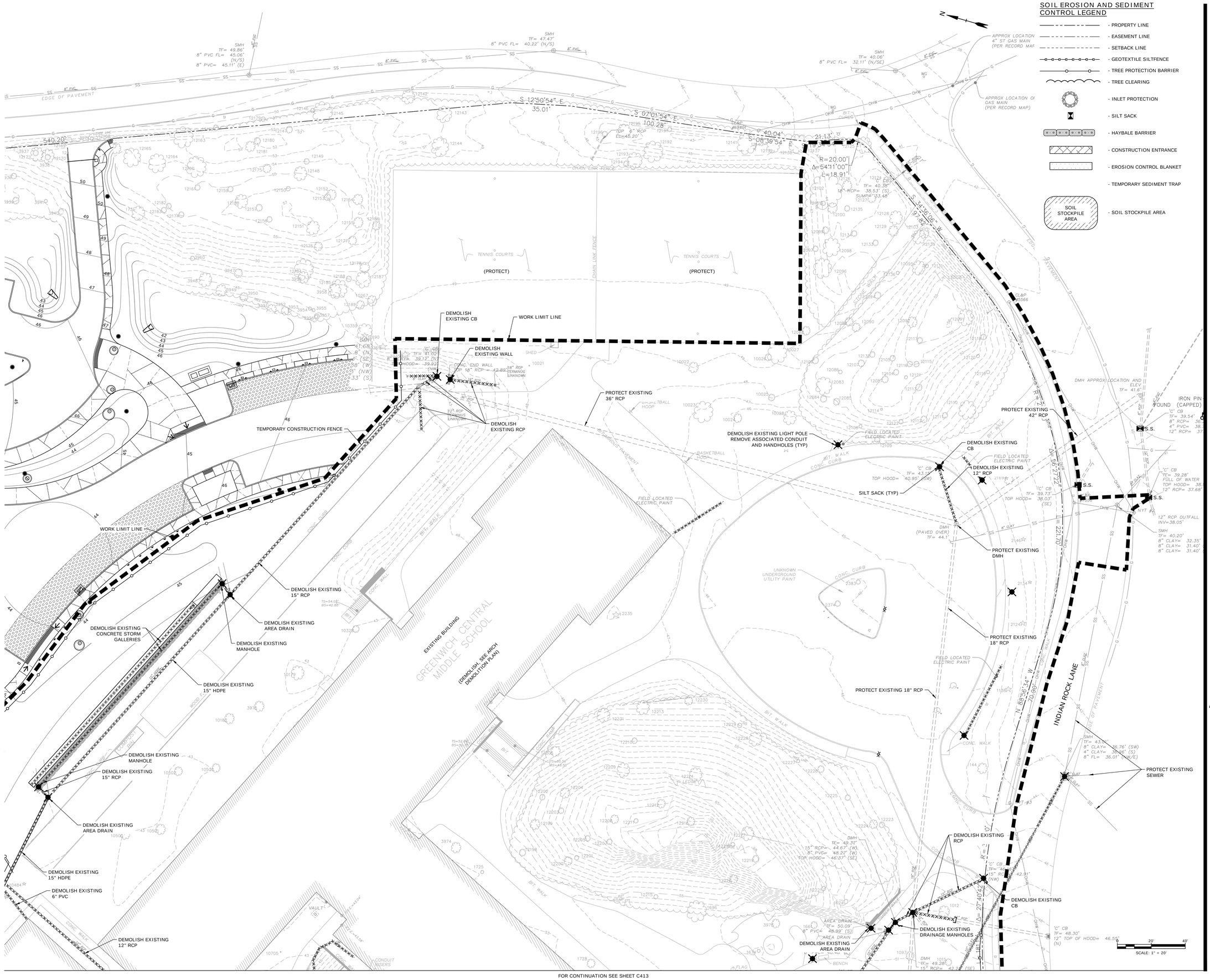

FOR CONTINUATION SEE SHEET C413

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Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
WEST
SOUTH
KEYPLAN

Number	Date	Issued For
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	07/08/2024	PHASE 2

PHASE 2 DEMOLITION SOIL EROSION AND SEDIMENTATION CONTROL PART PLAN

Date: 07/08/2024
Scale: 1" = 20'
Proj. Number: 22367.00
Drawing Number: C412

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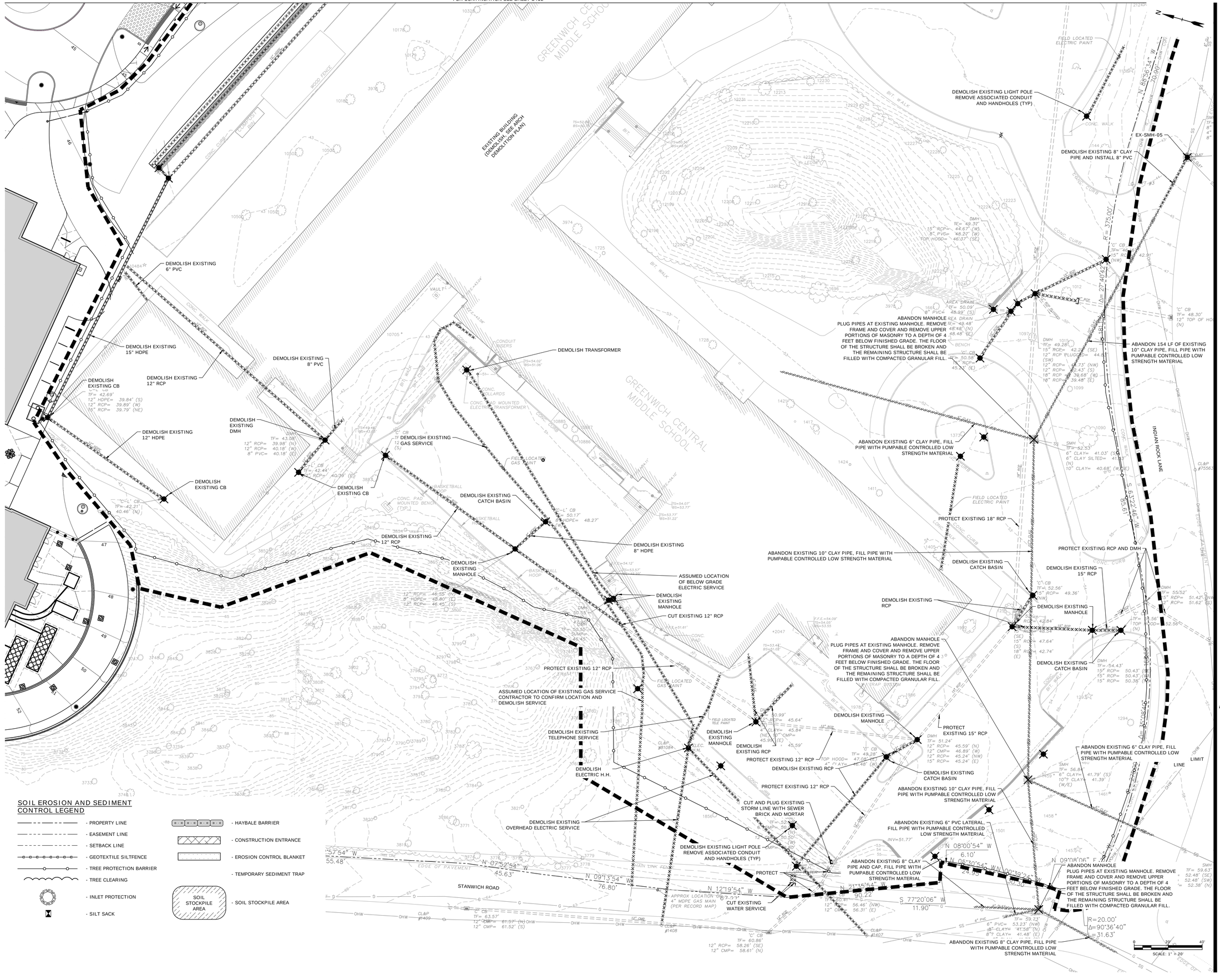
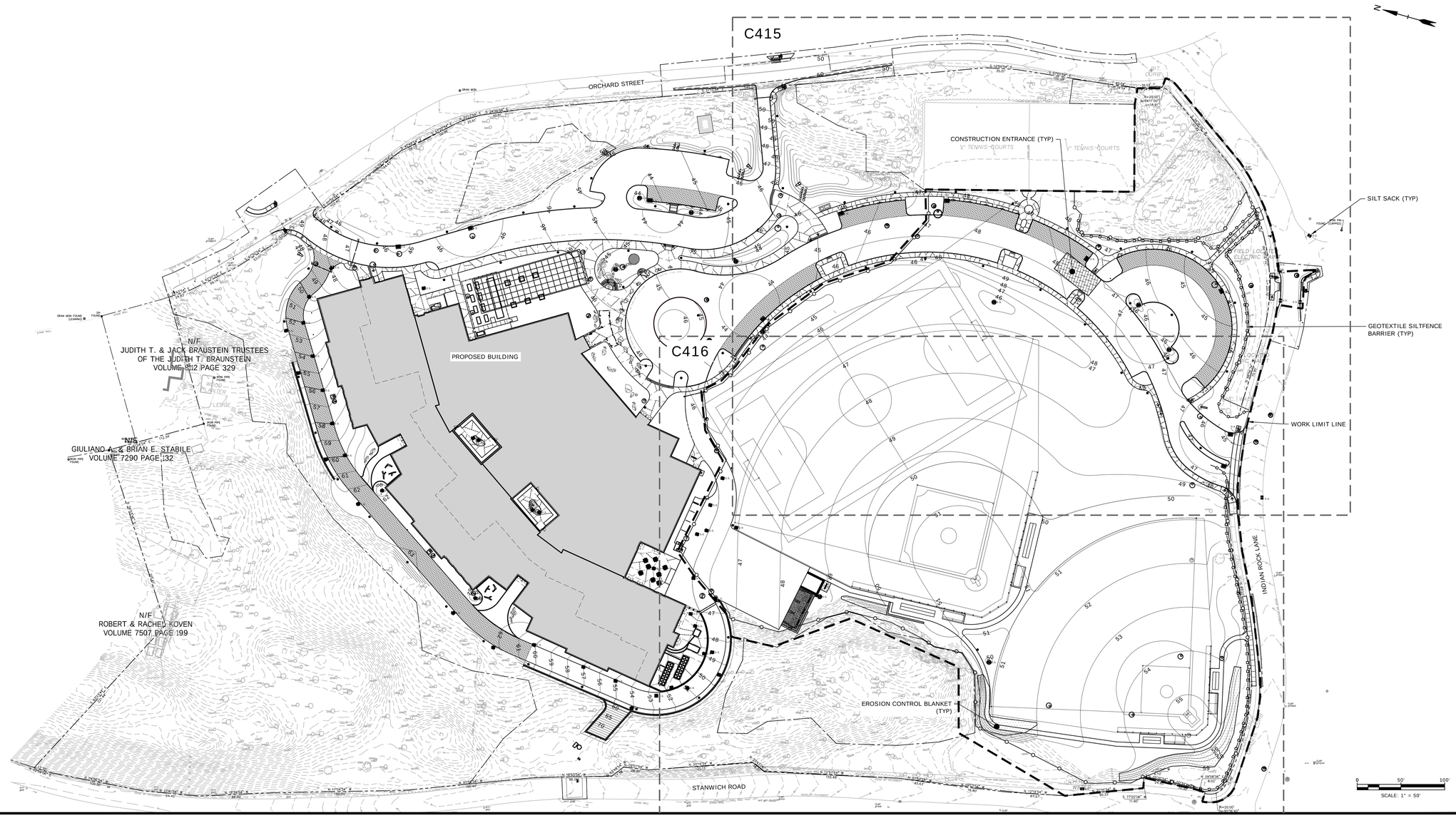

DEMOLISH EXISTING 6" PVC
DEMOLISH EXISTING 15" HDPE
DEMOLISH EXISTING 12" RCP
DEMOLISH EXISTING CB
DEMOLISH EXISTING 12" HDPE
DEMOLISH EXISTING CB
DEMOLISH EXISTING 8" PVC
DEMOLISH EXISTING DMH
DEMOLISH EXISTING CB
DEMOLISH EXISTING CB
DEMOLISH EXISTING 12" RCP
DEMOLISH EXISTING CATCH BASIN
DEMOLISH EXISTING MANHOLE
DEMOLISH EXISTING TELEPHONE SERVICE
DEMOLISH ELECTRIC H.H.
DEMOLISH EXISTING OVERHEAD ELECTRIC SERVICE
DEMOLISH TRANSFORMER
DEMOLISH EXISTING GAS SERVICE
DEMOLISH EXISTING 8" HDPE
ASSUMED LOCATION OF BELOW GRADE ELECTRIC SERVICE
DEMOLISH EXISTING MANHOLE
CUT EXISTING 12" RCP
PROTECT EXISTING 12" RCP
ASSUMED LOCATION OF EXISTING GAS SERVICE CONTRACTOR TO CONFIRM LOCATION AND DEMOLISH SERVICE
CUT EXISTING WATER SERVICE
DEMOLISH EXISTING LIGHT POLE REMOVE ASSOCIATED CONDUIT AND HANDHOLES (TYP)
PROTECT
CUT AND PLUG EXISTING STORM LINE WITH SEWER BRICK AND MORTAR
EXISTING BUILDING (DEMOLISH, SEE ARCH DEMOLITION PLAN)
GREENWICH CENTRAL MIDDLE SCHOOL
STANWICH ROAD
INDIAN ROCK LANE
DEMOLISH EXISTING LIGHT POLE REMOVE ASSOCIATED CONDUIT AND HANDHOLES (TYP)
DEMOLISH EXISTING 8" CLAY PIPE AND INSTALL 8" PVC
EX-SMH-05
ABANDON MANHOLE PLUG PIPES AT EXISTING MANHOLE, REMOVE FRAME AND COVER AND REMOVE UPPER PORTIONS OF MASONRY TO A DEPTH OF 4 FEET BELOW FINISHED GRADE. THE FLOOR OF THE STRUCTURE SHALL BE BROKEN AND THE REMAINING STRUCTURE SHALL BE FILLED WITH COMPACTED GRANULAR FILL.
ABANDON 154 LF OF EXISTING 10" CLAY PIPE, FILL PIPE WITH PUMPABLE CONTROLLED LOW STRENGTH MATERIAL
ABANDON EXISTING 6" CLAY PIPE, FILL PIPE WITH PUMPABLE CONTROLLED LOW STRENGTH MATERIAL
ABANDON EXISTING 10" CLAY PIPE, FILL PIPE WITH PUMPABLE CONTROLLED LOW STRENGTH MATERIAL
ABANDON EXISTING 6" PVC LATERAL, FILL PIPE WITH PUMPABLE CONTROLLED LOW STRENGTH MATERIAL
ABANDON EXISTING 8" CLAY PIPE AND CAP, FILL PIPE WITH PUMPABLE CONTROLLED LOW STRENGTH MATERIAL
ABANDON EXISTING 8" CLAY PIPE, FILL PIPE WITH PUMPABLE CONTROLLED LOW STRENGTH MATERIAL
ABANDON EXISTING 10" CLAY PIPE, FILL PIPE WITH PUMPABLE CONTROLLED LOW STRENGTH MATERIAL
ABANDON EXISTING 6" CLAY PIPE, FILL PIPE WITH PUMPABLE CONTROLLED LOW STRENGTH MATERIAL
ABANDON MANHOLE PLUG PIPES AT EXISTING MANHOLE. REMOVE FRAME AND COVER AND REMOVE UPPER PORTIONS OF MASONRY TO A DEPTH OF 4 FEET BELOW FINISHED GRADE. THE FLOOR OF THE STRUCTURE SHALL BE BROKEN AND THE REMAINING STRUCTURE SHALL BE FILLED WITH COMPACTED GRANULAR FILL.
PROTECT EXISTING 18" RCP
PROTECT EXISTING RCP AND DMH
PROTECT EXISTING 15" RCP
DEMOLISH EXISTING 15" RCP
DEMOLISH EXISTING RCP
DEMOLISH EXISTING MANHOLE
DEMOLISH EXISTING CATCH BASIN
DEMOLISH EXISTING CATCH BASIN
DEMOLISH EXISTING MANHOLE
DEMOLISH EXISTING RCP
PROTECT EXISTING 12" RCP
DEMOLISH EXISTING RCP
DEMOLISH EXISTING CATCH BASIN
PROTECT EXISTING 12" RCP
PROTECT EXISTING 12" RCP
DEMOLISH EXISTING MANHOLE
DEMOLISH EXISTING RCP
PROTECT EXISTING 12" RCP
DEMOLISH EXISTING RCP
DEMOLISH EXISTING CATCH BASIN
PROTECT EXISTING 12" RCP
DEMOLISH EXISTING MANHOLE
DEMOLISH EXISTING CATCH BASIN
DEMOLISH EXISTING



SOIL EROSION AND SEDIMENTATION CONTROL NARRATIVE:

GREENWICH CENTRAL MIDDLE SCHOOL IS A NEW MIDDLE SCHOOL AND BALL FIELDS LOCATED ON THE EXISTING CENTRAL MIDDLE SCHOOL CAMPUS ON INDIAN ROCK LANE IN GREENWICH, CT.

THE PHASE WILL INCLUDE DEMOLITION OF THE EXISTING MIDDLE SCHOOL, CONSTRUCTION OF BALL FIELDS, SANITARY SEWER, GAS, WATER, UNDERGROUND ELECTRIC AND TEL-DATA UTILITIES, STORMWATER MANAGEMENT SYSTEM, BITUMINOUS CONCRETE DRIVEWAYS AND PARKING, RETAINING WALLS, CURBS, LANDSCAPING, LIGHTING, AND SIDEWALKS

STORMWATER MANAGEMENT WILL BE ACCOMMODATED ON-SITE. SURFACE RUNOFF WILL BE COLLECTED AND CONVEYED IN CATCH BASINS AND LOW IMPACT DEVELOPMENT BEST MANAGEMENT PRACTICES THAT WILL TREAT THE FIRST 1" OF RUNOFF TO MEET THE TOWN OF GREENWICH DRAINAGE MANUAL AND THE CTDEEP WATER QUALITY MANUAL GUIDELINES FOR 80% TSS REMOVAL. THE STORMWATER MANAGEMENT SYSTEM WILL TREAT THE WATER QUALITY VOLUME AND REDUCE THE PEAK FLOW AND RUNOFF QUANTITY FROM THE SITE.

APPROXIMATELY 6.2 ACRES WILL BE DISTURBED.

PHASE 2 CONSTRUCTION START: SUMMER 2026

PHASE 2 CONSTRUCTION END: SUMMER 2027

SITE SOIL EROSION AND SEDIMENTATION CONTROL SHALL FOLLOW THE TOWN OF GREENWICH REQUIREMENTS AND DETAILS AS WELL AS THE CTDEEP 2024 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.

SOIL EROSION AND SEDIMENT CONTROL LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- GEOTEXTILE SILTFENCE
- INLET PROTECTION
- S.S. SILT SACK
- HAYBALE BARRIER
- CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- SOIL STOCKPILE AREA (SOIL STOCKPILE AREA)
- TEMPORARY SEDIMENT TRAP
- TREE CLEARING

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SOUTH

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PHASE 2 IMPROVED CONDITIONS SOIL EROSION AND SEDIMENTATION CONTROL PLAN

Date: 07/08/2024
Scale: 1" = 50'
Proj. Number: 22367.00
Drawing Number: C414

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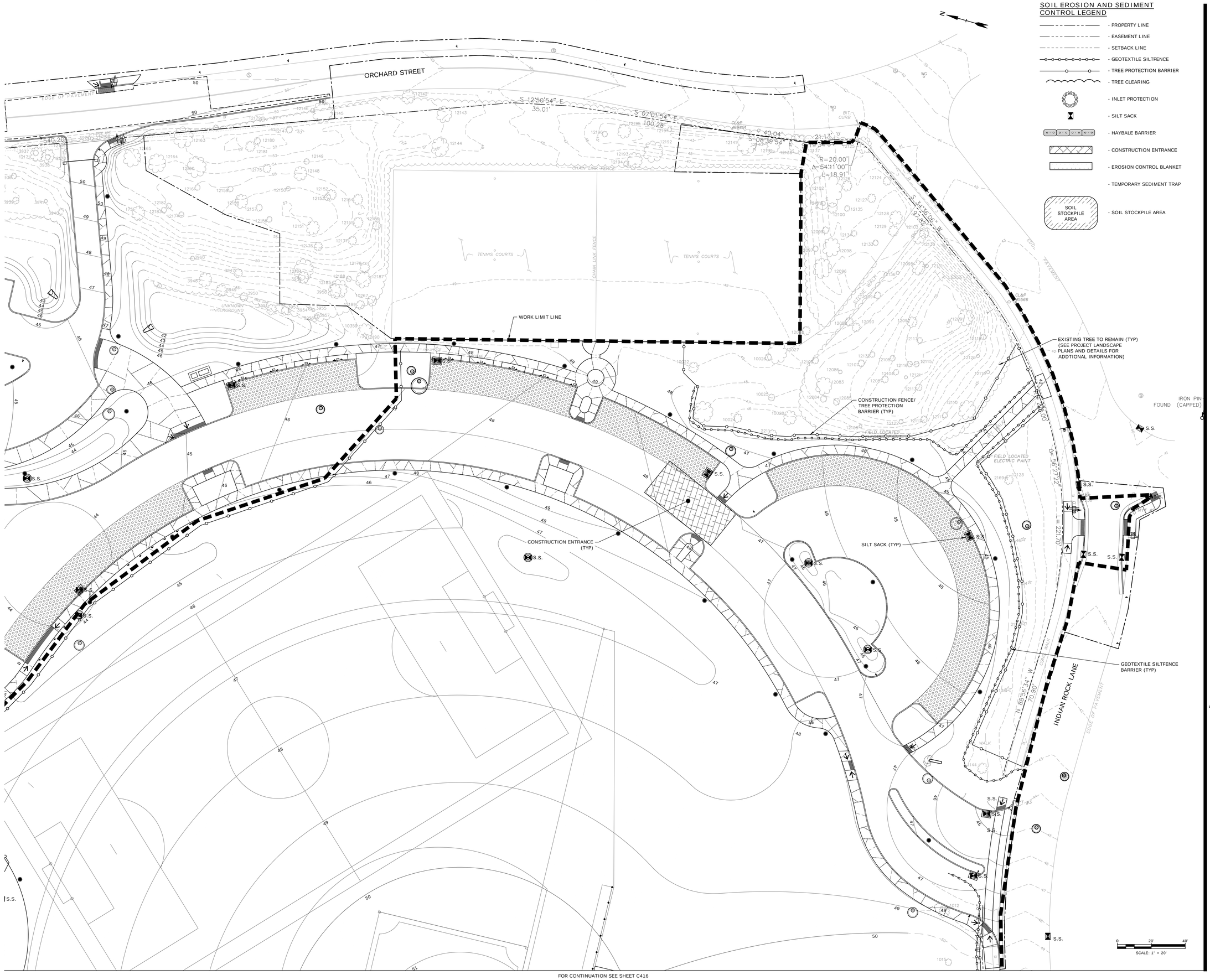

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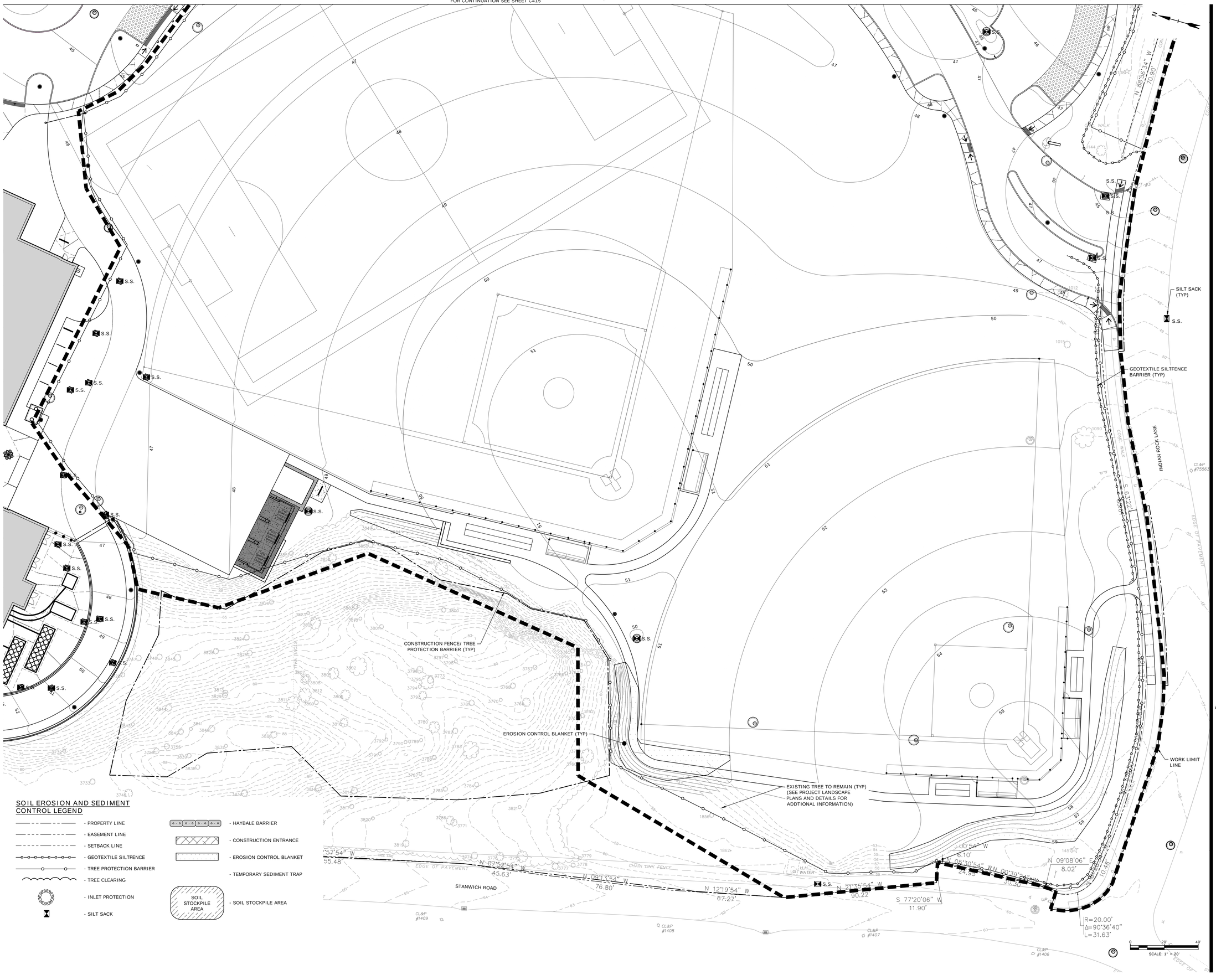

SOIL EROSION AND SEDIMENT CONTROL LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- GEOTEXTILE SILTFENCE
- TREE PROTECTION BARRIER
- TREE CLEARING
- INLET PROTECTION
- SILT SACK
- HAYBALE BARRIER
- CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET
- TEMPORARY SEDIMENT TRAP
- SOIL STOCKPILE AREA (SOIL STOCKPILE AREA)

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SITE SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

1. THE PROPOSED DEVELOPMENT IS ENTITLED "GREENWICH CENTRAL MIDDLE SCHOOL" IN GREENWICH, CONNECTICUT.
2. EROSION CONTROL NARRATIVE REFERS TO DRAWINGS C-401 THROUGH C-416.
3. THE PROPOSED SITE DEVELOPMENT WILL CONSIST OF SELECTIVE CLEARING AND GRUBBING STORMWATER MANAGEMENT, AND UTILITIES.
4. THE DEVELOPMENT IS LOCATED IN GREENWICH, CONNECTICUT AND IS LOCATED OFF OF INDIAN ROCK LANE, BETWEEN ORCHARD STREET AND STANWICH ROAD.
5. SURVEY CONDITIONS TAKEN FROM PLAN ENTITLED "PROPERTY / BOUNDARY & TOPOGRAPHIC SURVEY "GREENWICH CENTRAL MIDDLE SCHOOL" 9 INDIAN ROCK LANE GREENWICH, CONNECTICUT" , PREPARED BY MARTIN SURVEYING ASSOCIATES LLC, 201 CHRISTIAN LANE,SUITE B BERLIN, CT 06037, 860-832-9328, DATED 5-22-2023.
6. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND ELSEWHERE AS ORDERED BY THE OWNER'S REPRESENTATIVE, OR THE TOWN OF GREENWICH.
7. ALL CATCH BASINS SHALL BE PROTECTED WITH SILT SACKS, HAYBALE RING, SILT FENCE OR BLOCK AND STONE INLET PROTECTION THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED.
8. WHEREVER POSSIBLE, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION.
9. ADDITIONAL CONTROL MEASURES SHALL BE INSTALLED DURING CONSTRUCTION PERIOD AS ORDERED BY THE OWNER'S REPRESENTATIVE, OR THE TOWN OF GREENWICH. THE PROCUREMENT, INSTALLATION AND MAINTENANCE OF ADDITIONAL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES TO REPLACE DAMAGED MEASURES, EMERGENCY REPAIRS, AND TO MEET CONDITIONS OF THE SITE AS CONSTRUCTION PROGRESSES SHALL BE INCLUDED IN CONTRACTORS LUMP SUM BID PRICE.
10. ALL SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.
11. SEDIMENT REMOVED SHALL BE DISPOSED OF LEGALLY OFFSITE.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION AND MAINTENANCE OF ALL EROSION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD.
13. THE CONTRACTOR SHALL MAINTAIN A SUPPLY OF SILT FENCE/HAYBALES AND ANTI-TRACKING CRUSHED STONE ON-SITE FOR EMERGENCY REPAIRS.
14. THE CONTRACTOR SHALL UTILIZE APPROVED METHODS/MATERIALS FOR PREVENTING THE BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES ONTO ADJACENT PROPERTIES AND SITE AREAS.
15. ALL DRAINAGE STRUCTURES SHALL BE INSPECTED WEEKLY BY THE CONTRACTOR AND CLEANED TO PREVENT THE BUILD-UP OF SILT.
16. THE CONTRACTOR SHALL CAREFULLY COORDINATE THE PLACEMENT OF EROSION CONTROL MEASURES WITH THE PHASING OF CONSTRUCTION.
17. KEEP ALL PAVED ROADWAYS CLEAN. SWEEP BEFORE FORECASTED STORMS OR WEEKLY AS NECESSARY.
18. TREAT ALL UNPAVED SURFACES IN ACCORDANCE WITH LANDSCAPE PLANS.
19. HAYBALE BARRIERS AND SILT FENCING SHALL BE INSTALLED ALONG THE TOE OF CRITICAL CUT AND FILL SLOPES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE TOWN OF GREENWICH.
20. ALL TRUCKS LEAVING THE SITE MUST BE COVERED.
21. DISTURBED SLOPES GREATER THAN 3:1 AND SEDIMENT TRAPS AS SHOWN ON THE PLANS SHALL BE IMMEDIATELY STABILIZED WITH EROSION CONTROL BLANKET, NORTH AMERICAN GREEN SC150BN OR APPROVED EQUIVALENT.
22. ALL SEDIMENTATION AND EROSION CONTROLS SHALL BE CHECKED WEEKLY AND AFTER EACH RAINFALL EVENT. NECESSARY REPAIRS SHALL BE MADE WITHOUT DELAY.
23. PRIOR TO ANY FORECASTED RAINFALL, EROSION AND SEDIMENT CONTROLS SHALL BE INSPECTED AND REPAIRED AS NECESSARY.
24. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, EROSION CONTROLS MAY BE REMOVED ONCE AUTHORIZATION TO DO SO HAS BEEN SECURED FROM THE TOWN. DISTURBED AREAS SHALL BE SEEDED AND MULCHED.
25. ALL DRAINAGE SWALES SHALL BE STABILIZED WITH EROSION CONTROL BLANKET, NORTH AMERICAN GREEN C125BN OR APPROVED EQUIVALENT.
26. CONTRACTOR IS TO COMPLY WITH THE REQUIREMENTS OF THE SOIL EROSION AND SEDIMENTATION CONTROL PLAN, DETAILS, AND SPECIFICATIONS.

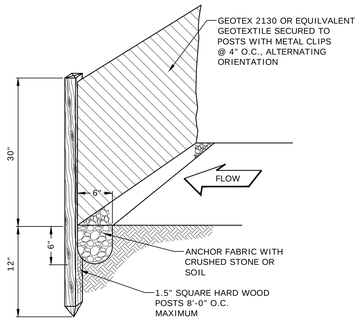
CONSTRUCTION SEQUENCE

PHASE 1:

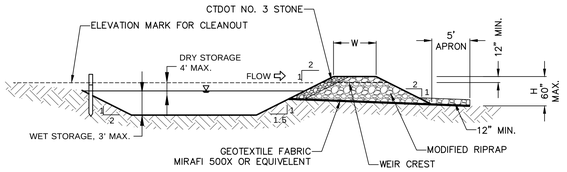
1. THE INSPECTING ENGINEER AND ARBORIST SHALL MEET WITH THE CONTRACTOR AND OWNER TO REVIEW THE SEDIMENT AND EROSION CONTROL (S&E PLAN) AND DISCUSS ANY MODIFICATIONS TO CONSTRUCTION SEQUENCE OR S&E PLAN.
2. INSTALL TREE PROTECTION AND TRIM LIMBS THAT MAY BE DAMAGED BY CONSTRUCTION EQUIPMENT.
3. INSTALL CONSTRUCTION FENCE AND ACCESS GATES AS SHOWN ON THE PLANS.
4. INSTALL TRACKING PAD AND ESTABLISH STAGING AREA WITH TRAILERS.
5. CONSTRUCT TEMPORARY SEDIMENT BASIN AND REQUIRED PIPING AS SHOWN ON THE PLANS.
6. INSTALL SILT FENCE AND CONSTRUCTION FENCE AS SHOWN ON THE PLANS.
7. INSTALL REMAINING SEDIMENT AND EROSION CONTROLS.
8. RELOCATE AND INSTALL THE EXISTING CONCRETE INFILTRATION SYSTEM AS SHOWN ON THE PLANS.
9. DEMOLISH ANY STRUCTURES OR UNDERGROUND UTILITIES AS SPECIFIED ON THE PLANS.
10. PERFORM GENERAL EARTHWORK FOR THE BUILDING. EXCAVATE AND INSTALL FOUNDATION.
11. CONSTRUCT THE BUILDING AND BACKFILL THE FOUNDATION AS SOON AS POSSIBLE.
12. INSTALL UNDERGROUND STORMWATER SYSTEM.
13. INSTALL SANITARY SEWER, WATER, GAS, ELECTRIC, AND TELEPHONE UTILITIES.
14. ROUGH GRADE DRIVEWAY AND INSTALL DRIVEWAY BASE.
15. INSTALL BITUMINOUS CONCRETE BINDER COURSE.
16. SEED & MULCH DISTURBED AREAS AND INSTALL LANDSCAPING AS SOON AS POSSIBLE.
17. MAINTAIN ALL SEDIMENT AND EROSION CONTROLS IN AN EFFECTIVE CONDITION DURING THE PHASE 1 CONSTRUCTION PERIOD.
18. CLEAN EFFECTED PORTION OF ON & OFF SITE ROADS AND DRIVEWAYS.
19. REMOVE ACCUMULATED SILT AND DEBRIS FROM CATCH BASINS, AREA DRAIN SUMPS & PIPES OF EFFECTED STORM DRAINS.
20. REMOVE ACCUMULATED SEDIMENT FROM EFFECTED AREAS AND DISPOSE OF LEGALLY.
21. REMOVE TEMPORARY SEDIMENT AND EROSION CONTROLS AND TREE PROTECTION.

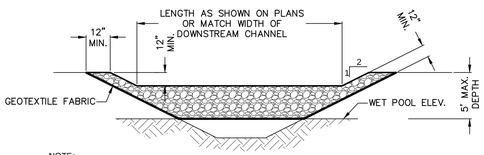
PHASE 2:

1. THE INSPECTING ENGINEER AND ARBORIST SHALL MEET WITH THE CONTRACTOR AND OWNER TO REVIEW THE SEDIMENT AND EROSION CONTROL (S&E PLAN) AND DISCUSS ANY MODIFICATIONS TO CONSTRUCTION SEQUENCE OR S&E PLAN.
2. INSTALL TREE PROTECTION AND TRIM LIMBS THAT MAY BE DAMAGED BY CONSTRUCTION EQUIPMENT.
3. INSTALL CONSTRUCTION FENCE AND ACCESS GATES AS SHOWN ON THE PLANS.
4. INSTALL TRACKING PAD AND ESTABLISH STAGING AREA WITH TRAILERS.
5. INSTALL SILT FENCE AND CONSTRUCTION FENCE AS SHOWN ON THE PLANS.
6. INSTALL REMAINING SEDIMENT AND EROSION CONTROLS.
7. DEMOLISH EXISTING BUILDING.
8. DEMOLISH ANY STRUCTURES OR UNDERGROUND UTILITIES AS SPECIFIED ON THE PLANS.
9. PERFORM GENERAL EARTHWORK FOR THE BUILDING. EXCAVATE AND INSTALL FOUNDATION.
10. ROUGH GRADE THE BALL FIELDS.
11. INSTALL STORMWATER, SANITARY SEWER, WATER, GAS, ELECTRIC, AND TELEPHONE UTILITIES.
12. ROUGH GRADE DRIVEWAY AND INSTALL DRIVEWAY BASE.
13. INSTALL BITUMINOUS CONCRETE BINDER COURSE.
14. SEED & MULCH DISTURBED AREAS AND INSTALL LANDSCAPING AS SOON AS POSSIBLE.
15. MAINTAIN ALL SEDIMENT AND EROSION CONTROLS IN AN EFFECTIVE CONDITION DURING THE PHASE 2 CONSTRUCTION PERIOD.
16. CLEAN EFFECTED PORTION OF ON & OFF SITE ROADS AND DRIVEWAYS.
17. REMOVE ACCUMULATED SILT AND DEBRIS FROM CATCH BASINS, AREA DRAIN SUMPS & PIPES OF EFFECTED STORM DRAINS.
18. REMOVE ACCUMULATED SEDIMENT FROM EFFECTED AREAS AND DISPOSE OF LEGALLY.
19. REMOVE TEMPORARY SEDIMENT AND EROSION CONTROLS AND TREE PROTECTION.



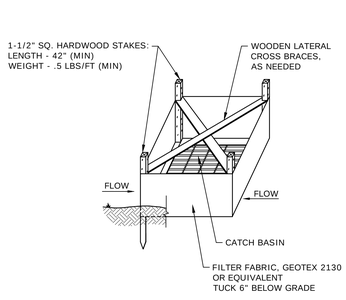
SILT FENCE
NO SCALE



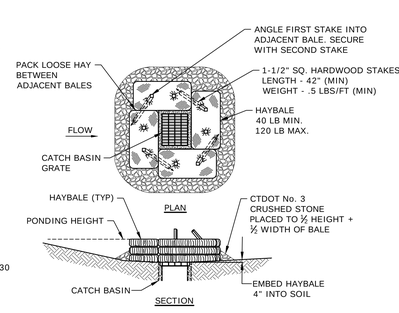


NOTE:
NON-OVERFLOW PORTIONS AND ABUTMENTS MAYBE CONSTRUCTED OF COMPACTED EARTH FILL.

TEMPORARY SEDIMENT TRAP
NO SCALE

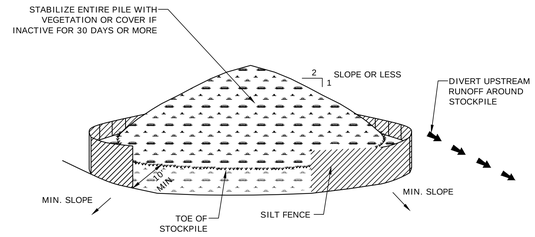


SILT FENCE INSTALLATION AT CATCH BASIN AT LOW POINTS



HAYBALE FILTER INSTALLATION AT CATCH BASIN AT LOW POINTS

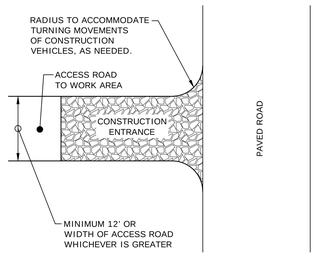
CATCH BASIN EROSION CONTROL
NO SCALE



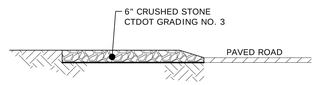
INSTALLATION NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2H:1V.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR HAYBALES, THEN STABILIZED WITH VEGETATION OR COVERED.

TEMPORARY SOIL STOCKPILING
NO SCALE



PLAN



ELEVATION

CONSTRUCTION ENTRANCE
NO SCALE

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Drawn: EG
Checked: APW

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
WEST
SOUTH

KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SOIL EROSION AND SEDIMENTATION CONTROL NOTES, CONSTRUCTION SEQUENCE AND DETAILS - 1

Date: 07/08/2024
Scale: 1" = 20'
Proj. Number: 22367.00
Drawing Number: C417

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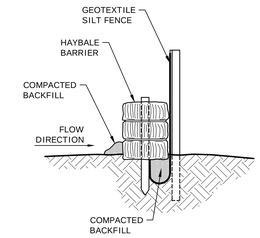
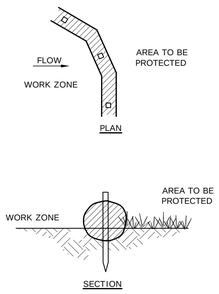


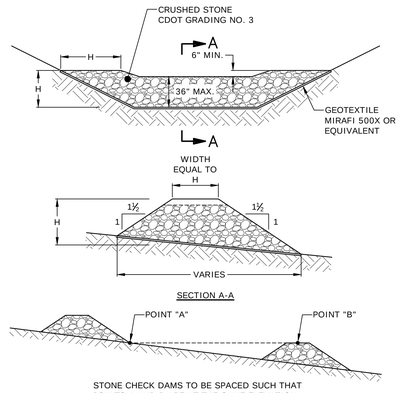
NOTE:

1. BACKFILL AND COMPACT THE EXCAVATED SOIL AS SHOWN ON THE UPHILL SIDE OF THE BARRIER TO PREVENT PIPING.

SILT FENCE AND HAYBALE
COMBINED BARRIER



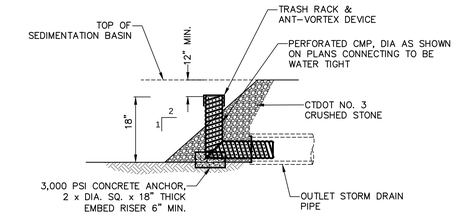
BARK MULCH LOG BARRIER
NO SCALE



STONE CHECK DAMS TO BE SPACED SUCH THAT POINTS A AND B ARE AT THE SAME ELEVATION

STONE CHECK DAM SPACING

STONE CHECK DAM
NO SCALE

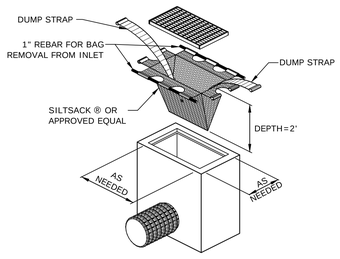


CORRUGATED METAL PIPE REQUIREMENTS FOR RISERS:

CORRUGATED STEEL PIPE								
PIPE DIA. INCHES	8-12	24	30	36	48	54	60	66
MIN. GAUGE	16	16	14	14	12	10	10	10

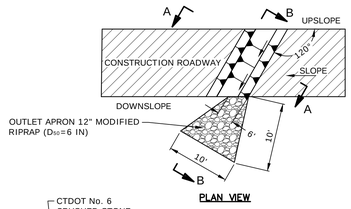
CORRUGATED ALUMINUM PIPE						
PIPE DIA. INCHES	8-12	24	30	36	48	54
MIN. GAUGE	16	14	14	14	10	10

TEMPORARY SEDIMENTATION
BASIN INLET STANDPIPE
NO SCALE



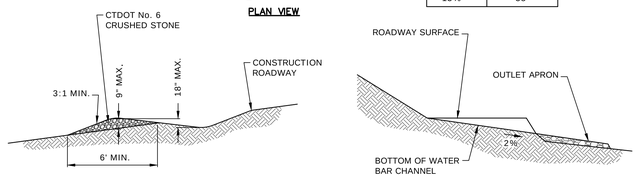
SILTSACK MANUFACTURED BY:
ACF ENFIRONMENTAL
2831 CARDWELL ROAD
RICHMOND, VIRGINIA 23237

SILTSACK®
NO SCALE

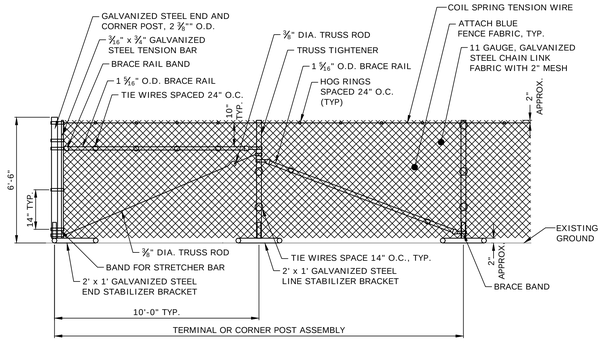


PLAN VIEW

WATER BAR SPACING	
ROADWAY SLOPE	SPACING (FT)
1%	400
2%	245
5%	125
10%	78
15%	58



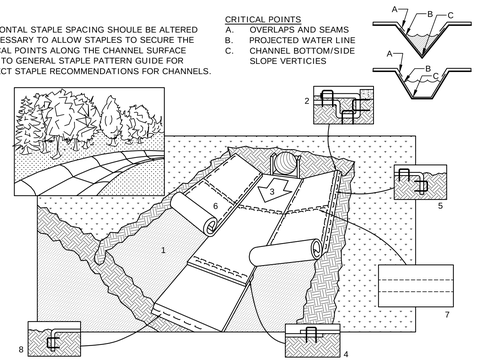
WATER BAR
NO SCALE



6' TEMPORARY CHAIN LINK CONSTRUCTION FENCE
NO SCALE

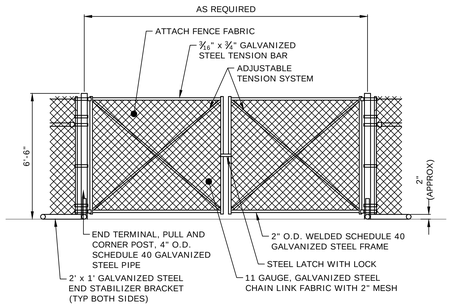
NOTE:
HORIZONTAL STAPLE SPACING SHOULE BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE RECOMMENDATIONS FOR CHANNELS.

CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICIES



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW ON BOTTOM OF CHANNEL.
4. PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH A 6" OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. BLANKETS ON SIDE SLOPES MUST BE OVERLAPPED 4" OVER THE CENTER BLANKET AND STAPLED (2" FOR C350 MATTING).
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A ROW OF STAPLES 4' APART OVER THE ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
8. TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

EROSION CONTROL BLANKET INSTALLATION
NO SCALE



6' TEMPORARY CHAIN LINK CONSTRUCTION GATE
NO SCALE

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Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
WEST
SOUTH

KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE SOIL EROSION AND SEDIMENTATION CONTROL DETAILS - 2

Date
07/08/2024
Scale
1" = 20'
Proj. Number
22367.00

Drawing Number
C418

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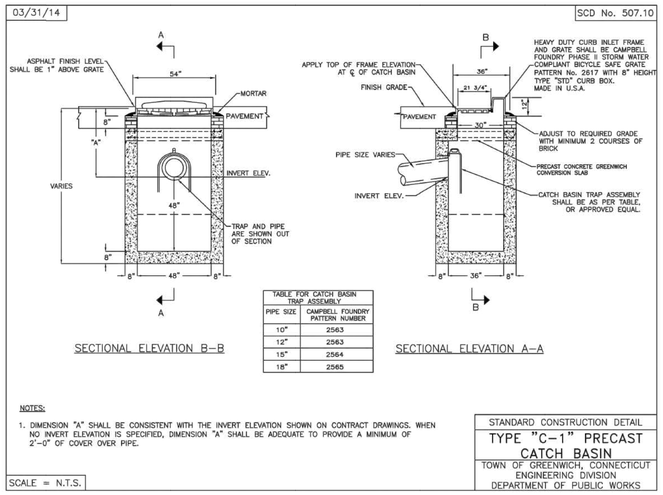

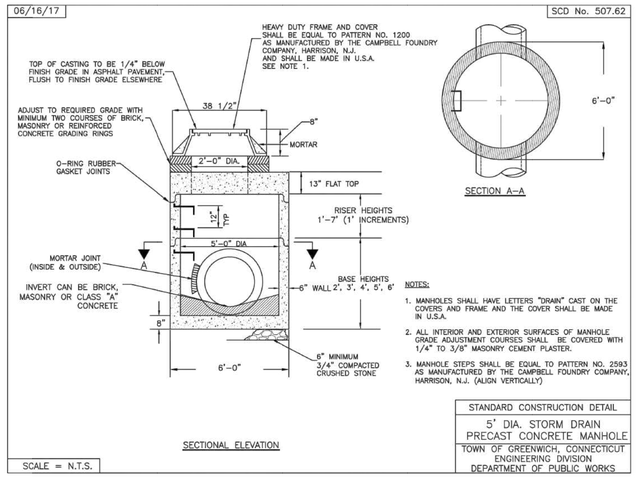

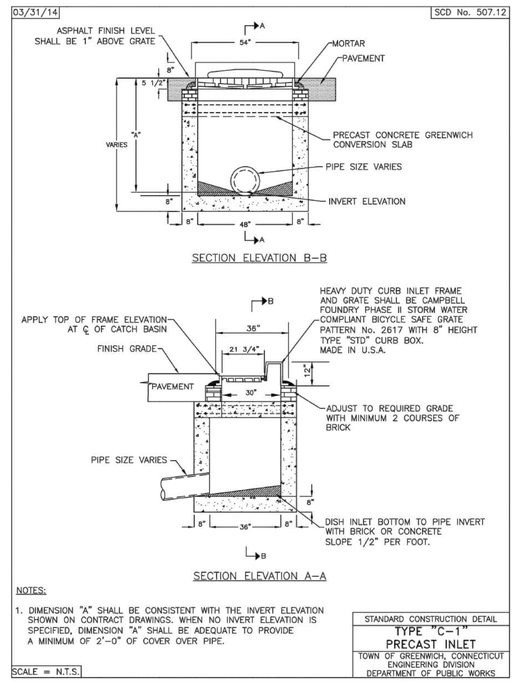

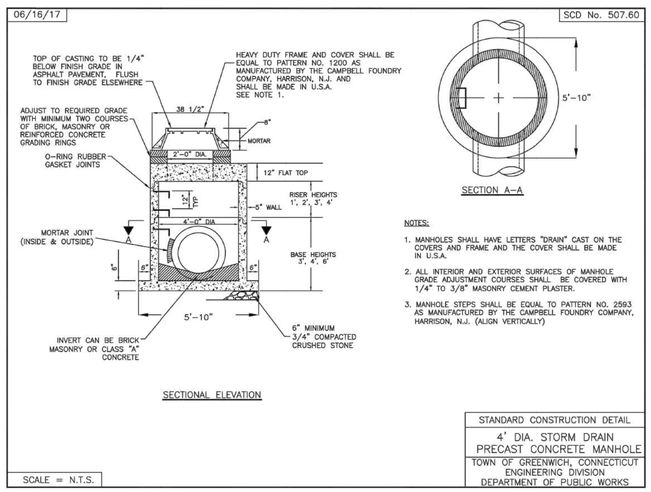

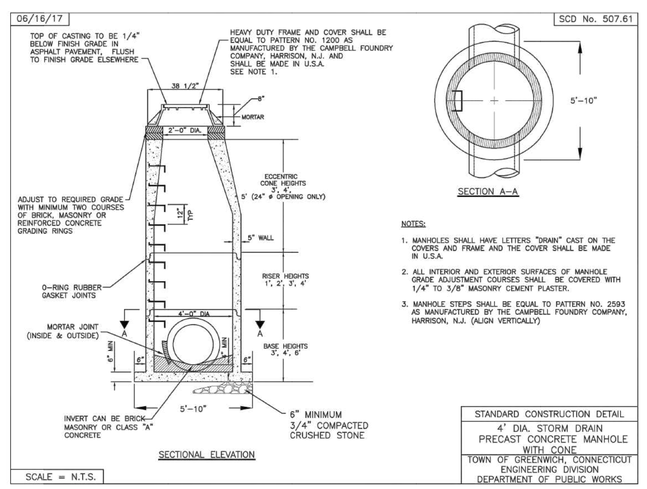

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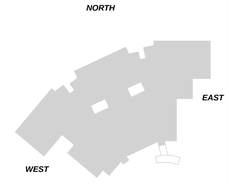
Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N



KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE STORMWATER MANAGEMENT DETAILS - 1

Date
07/08/2024
Scale
AS SHOWN
Proj. Number
22367.00

Drawing Number
C501

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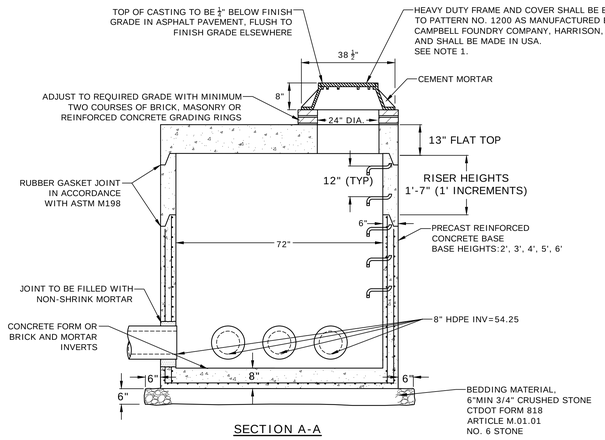
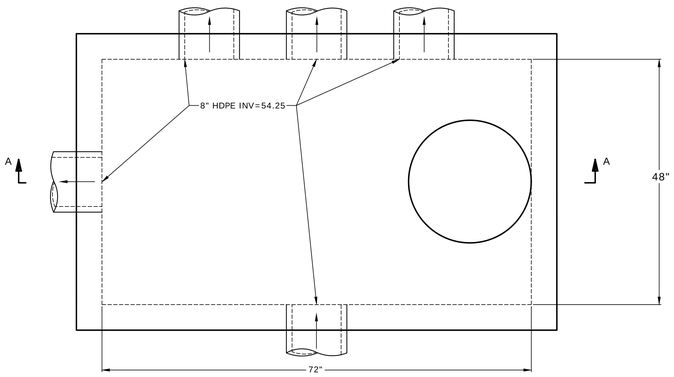
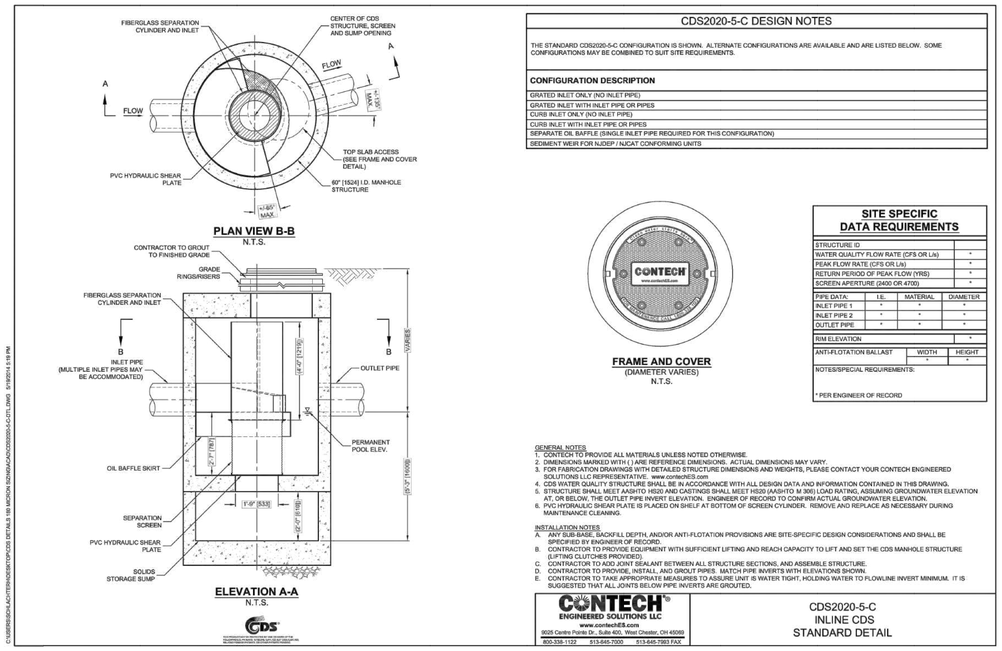


SECTION A-A



NOTES:
1. MANHOLE SHALL HAVE LETTERS "DRAIN" CAST ON THE COVERS AND BE MADE IN THE USA.
2. ALL INTERIOR AND EXTERIOR SURFACES OF MANHOLE GRADE ADJUSTMENT COURSES SHALL BE COVERED WITH ½" TO ⅝" MASONRY CEMENT PLASTER.
3. MANHOLE STEPS SHALL BE EQUAL TO PATTERN NO. 2593 AS MANUFACTURED BY THE CAMPBELL FOUNDRY COMPANY, HARRISON, NJ. (ALIGN VERTICALLY)
4. REINFORCING STEEL WELDED WIRE FABRIC SHALL CONFORM TO LATEST ASTM SPECIFICATION A185.
5. REINFORCING STEEL DEFORMED BARS SHALL CONFORM TO LATEST ASTM SPECIFICATION A615.
6. CONCRETE COMPRESSIVE STRENGTH: 5,000 PSI – 28 DAYS.
7. MONOLITHIC BASE SECTION.

48 x 72" MANHOLE
NO SCALE



CDS2020-5-C DESIGN NOTES

THE STANDARD CDS2020-5-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS

FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)			*
PEAK FLOW RATE (CFS OR L/s)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
SCREEN APERTURE (2400 OR 4700)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*
NOTES/SPECIAL REQUIREMENTS:			

* PER ENGINEER OF RECORD

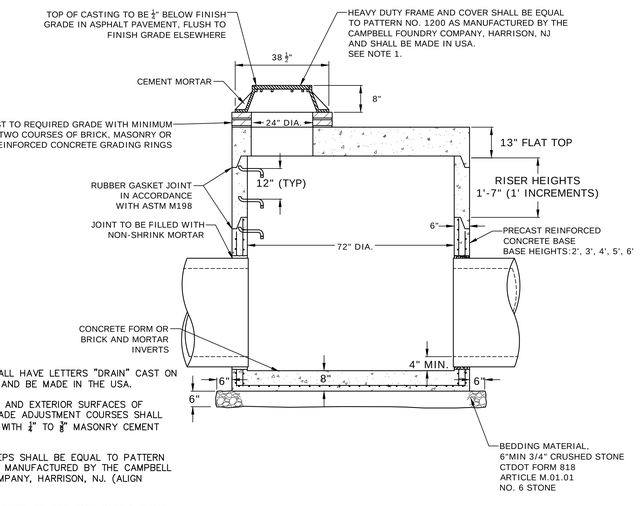
GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH® ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

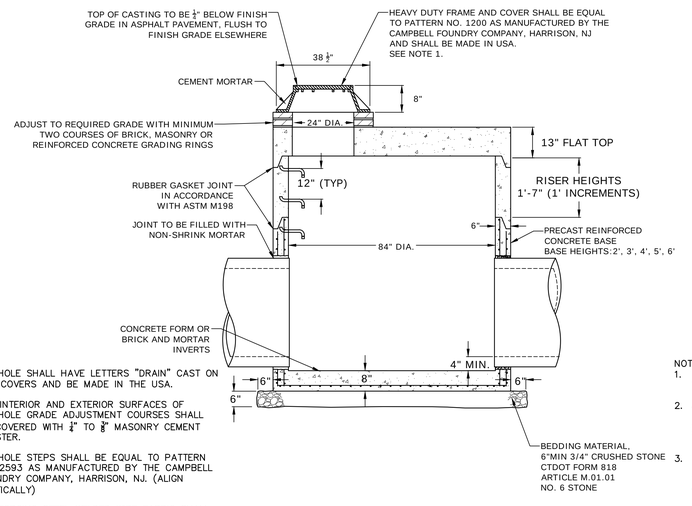
CDS2020-5-C
INLINE CDS
STANDARD DETAIL

HYDRODYNAMIC SEPARATOR
NO SCALE



NOTES:
1. MANHOLE SHALL HAVE LETTERS "DRAIN" CAST ON THE COVERS AND BE MADE IN THE USA.
2. ALL INTERIOR AND EXTERIOR SURFACES OF MANHOLE GRADE ADJUSTMENT COURSES SHALL BE COVERED WITH ½" TO ⅝" MASONRY CEMENT PLASTER.
3. MANHOLE STEPS SHALL BE EQUAL TO PATTERN NO. 2593 AS MANUFACTURED BY THE CAMPBELL FOUNDRY COMPANY, HARRISON, NJ. (ALIGN VERTICALLY)
4. REINFORCING STEEL WELDED WIRE FABRIC SHALL CONFORM TO LATEST ASTM SPECIFICATION A185.
5. REINFORCING STEEL DEFORMED BARS SHALL CONFORM TO LATEST ASTM SPECIFICATION A615.
6. CONCRETE COMPRESSIVE STRENGTH: 5,000 PSI – 28 DAYS.
7. MONOLITHIC BASE SECTION.

72" DIAMETER MANHOLE
NO SCALE



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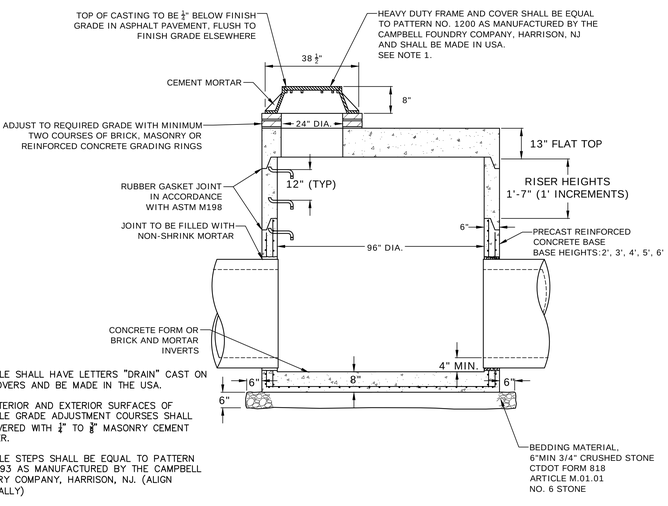
7. MONOLITHIC BASE SECTION.

84" DIAMETER MANHOLE
NO SCALE



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5. REINFORCING STEEL DEFORMED BARS SHALL CONFORM TO LATEST ASTM SPECIFICATION A615.
6. CONCRETE COMPRESSIVE STRENGTH: 5,000 PSI – 28 DAYS.
7. MONOLITHIC BASE SECTION.

96" DIAMETER MANHOLE
NO SCALE

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Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
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KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE STORMWATER MANAGEMENT DETAILS - 2

Date: 07/08/2024
Scale: AS SHOWN
Proj. Number: 22367.00
Drawing Number: C502

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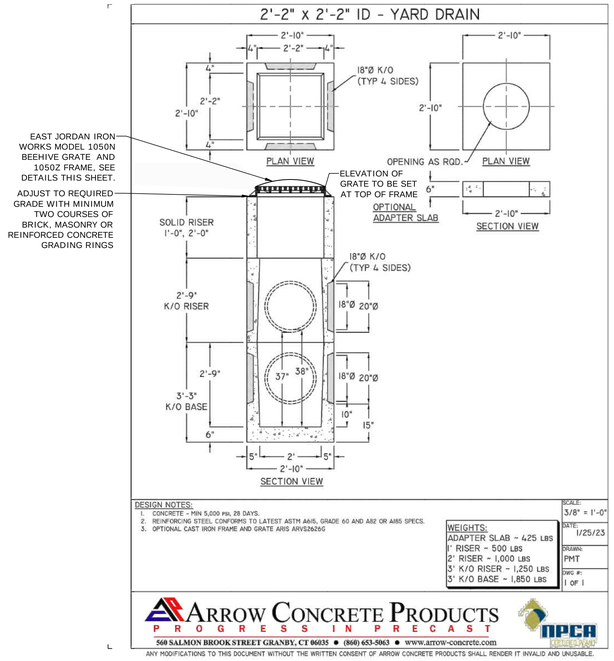
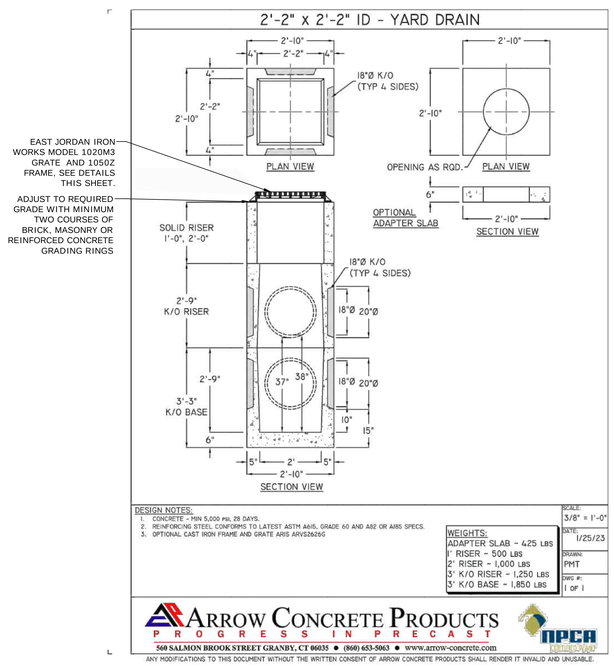
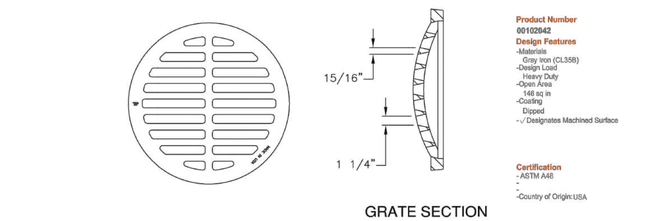


24" SQ YARD DRAIN WITH BEEHIVE GRATE
NO SCALE



24" SQ YARD DRAIN WITH ADA GRADE
NO SCALE

1020N Grate



Product Number
00102042
Design Features
-Materials
Gray Iron (CL35B)
-Design Load
Heavy Duty
-Open Area
146 sq in
-Coating
Dipped
-√ Designates Machined Surface

Certification
- ASTM A48
-
-Country of Origin:USA

Drawing Revision
06/27/2021 Designer: TCL
1/19/2016 Revised By:TWN

Disclaimer
Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.
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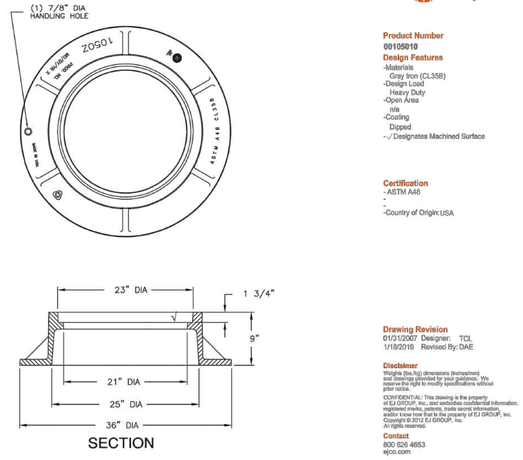
YARD DRAIN BEEHIVE GRATE
NO SCALE

1050Z Frame



Product Number
00105010
Design Features
-Materials
Gray Iron (CL35B)
-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Dipped
-√ Designates Machined Surface

Certification
- ASTM A48
-
-Country of Origin:USA

Drawing Revision
01/01/2007 Designer: TCL
1/18/2019 Revised By: DAE

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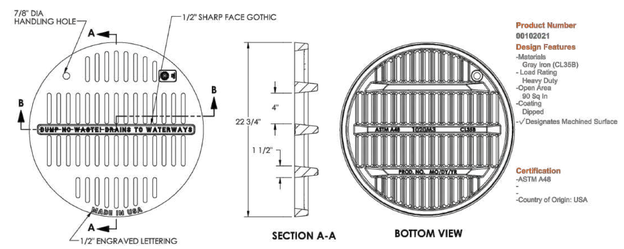
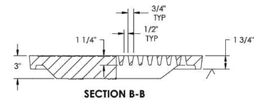
YARD DRAIN FRAME
NO SCALE

1020M3 Grate





Product Number
00102021
Design Features
-Materials
Gray Iron (CL36B)
- Load Rating
Heavy Duty
-Open Area
90 Sq In
-Coating
Dipped
-√ Designates Machined Surface

Certification
-ASTM A48
-
-Country of Origin: USA

Drawing Revision
4/2/2009 Designer: SBB
6/15/2021 Revised By:DAE

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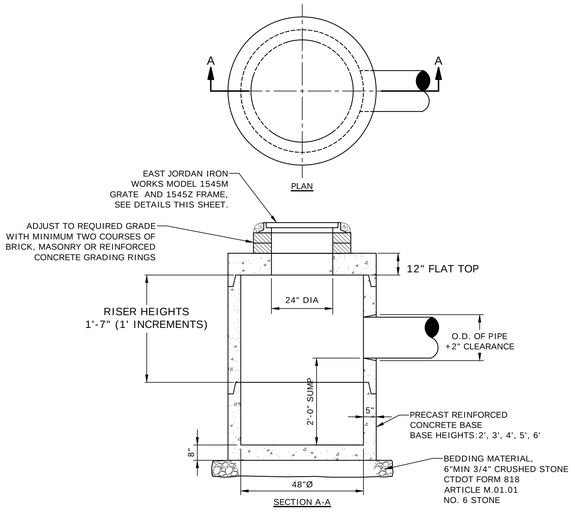
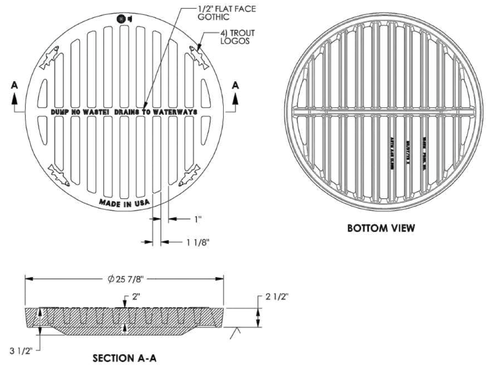
YARD DRAIN ADA GRATE
NO SCALE



48" DIA YARD DRAIN WITH CIRCULAR GRATE
NO SCALE

1545M Grate



Product Number
00154831
Design Features
-Materials
Gray Iron (CL35B)
-Load Rating
Heavy Duty
-Open Area
196 sq. inches
-Coating
Undipped
-√ Designates Machined Surface

Certification
-ASTM A48
-
-Country of Origin: USA

Drawing Revision
12/14/2009 Designer: DEW
03/12/2012 Revised By:DEF

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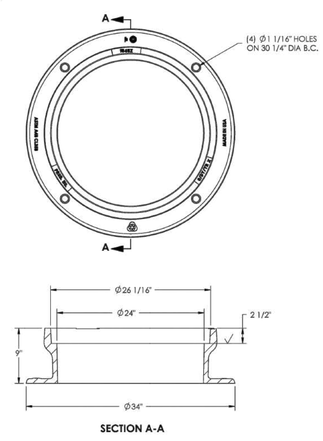
48" YARD DRAIN GRATE
NO SCALE

1545Z Frame



Product Number
00154511
Design Features
-Materials
Gray Iron (CL36B)
-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Undipped
-√ Designates Machined Surface

Certification
-ASTM A48
-AASHTO M306
-Country of Origin: USA

Estimated Weight
274 lbs.

Drawing Revision
3/21/2007 Designer: DEW
11/27/2017 Revised By: MAH

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48" YARD DRAIN FRAME
NO SCALE

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Glastonbury, CT 06033-4410
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www.slamcoll.com

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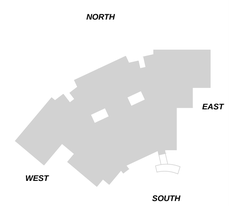
Drawn: EG
Checked: APW

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N



KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE STORMWATER MANAGEMENT DETAILS - 3

Date: 07/08/2024
Scale: AS SHOWN
Proj. Number: 22367.00
Drawing Number: C503

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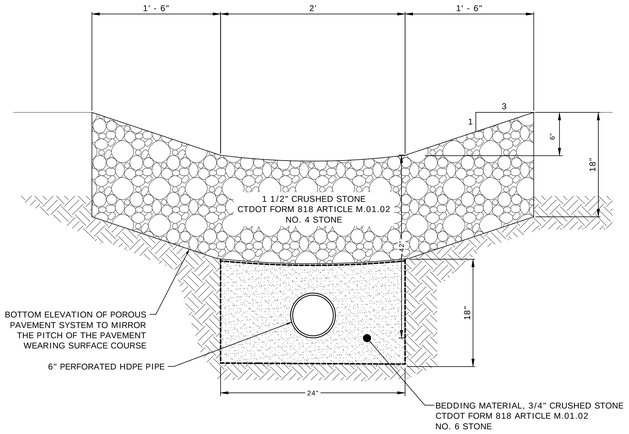
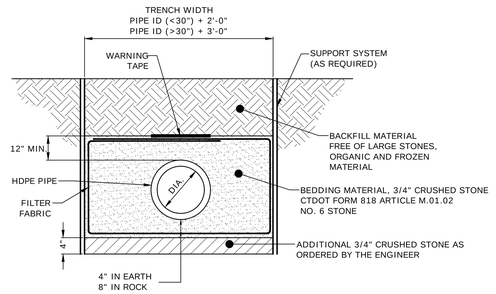
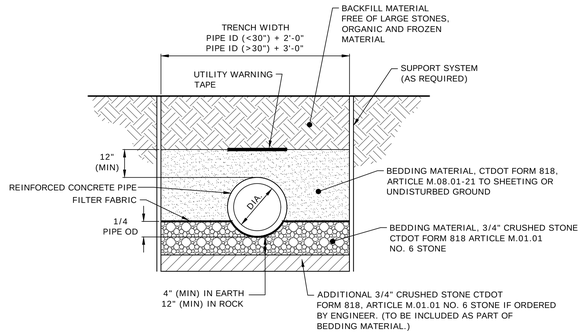


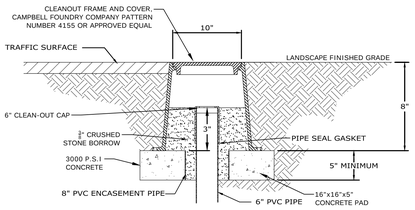
5' WIDE STONE SWALE WITH 6" UNDERDRAIN
NO SCALE



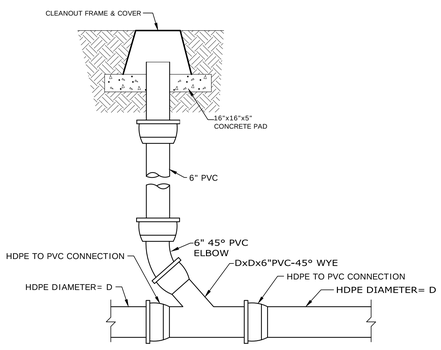
HDPE TRENCH BEDDING
NO SCALE



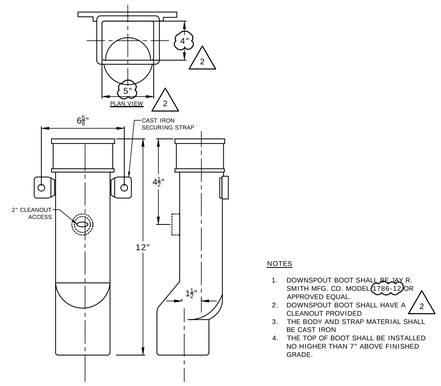
CIRCULAR RCP TRENCH BEDDING
NO SCALE



CLEANOUT FRAME & COVER



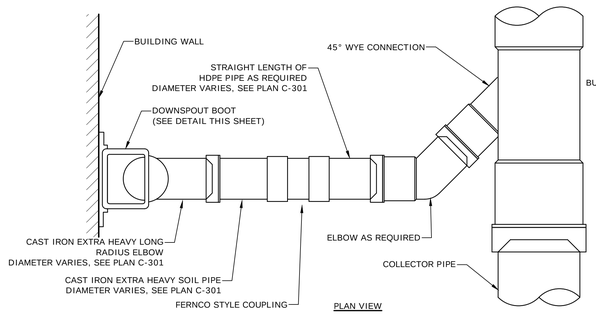
CLEANOUT
NO SCALE



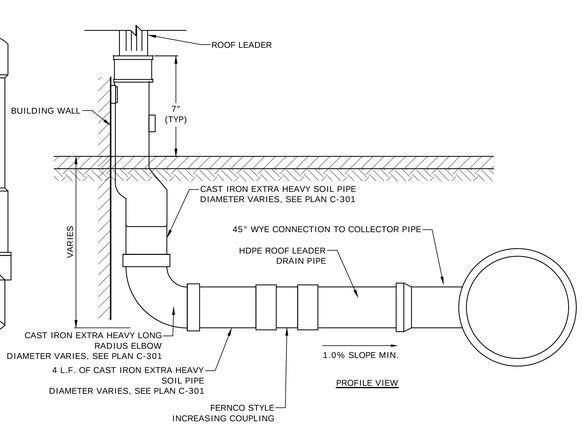
NOTES

1. DOWNSPOUT BOOT SHALL BE JAY R. SMITH MFG. CO. MODEL C786-12 OR APPROVED EQUAL.
2. DOWNSPOUT BOOT SHALL HAVE A CLEANOUT PROVIDED
3. THE BODY AND STRAP MATERIAL SHALL BE CAST IRON
4. THE TOP OF BOOT SHALL BE INSTALLED NO HIGHER THAN 7" ABOVE FINISHED GRADE.

DOWNSPOUT BOOT
NO SCALE



PLAN VIEW

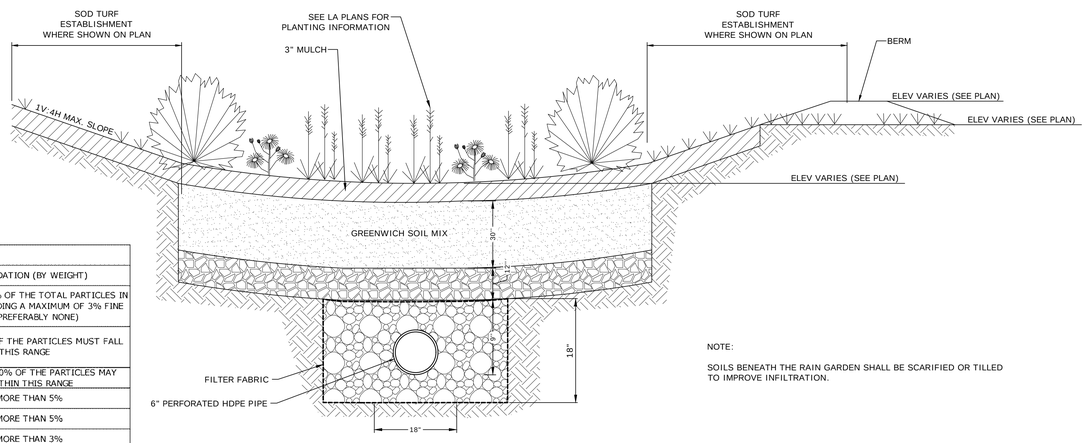


PROFILE VIEW

ROOF LEADER DRAIN LINE
NO SCALE

NOTES:

1. CAST IRON PIPE SHALL BE EXTRA HEAVY CAST IRON SOIL PIPE AS MANUFACTURED BY CHARLOTTE PIPE AND FOUNDRY COMPANY, CHARLOTTE, NC 28235 OR APPROVED EQUAL.
2. PIPE AND FITTINGS SHALL COMPLY WITH ASTM A 74. COMPRESSION GASKETS SHALL COMPLY WITH ASTM C 564. ALL PIPE AND FITTING SHALL BE MADE IN THE UNITED STATES, AND MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE.

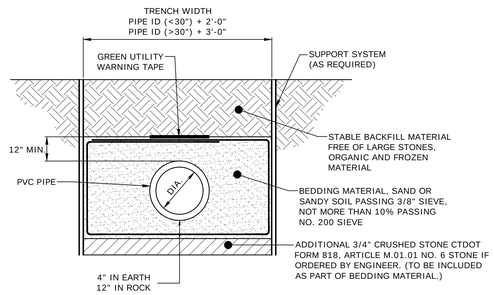


NOTE:

SOILS BENEATH THE RAIN GARDEN SHALL BE SCARIFIED OR TILLED TO IMPROVE INFILTRATION.

RAIN GARDEN TYPICAL CROSS SECTION
NO SCALE

GREENWICH SOIL MIX		
NAME	PARTICLE DIAMETER	RECOMMENDATION (BY WEIGHT)
FINE GRAVEL	2.0 – 3.4 MM	NOT MORE THAN 10% OF THE TOTAL PARTICLES IN THIS RANGE, INCLUDING A MAXIMUM OF 3% FINE GRAVEL (PREFERABLY NONE)
VERY COARSE SAND	1.0 – 2.0 MM	
COARSE SAND	0.5 – 1.0 MM	MINIMUM OF 60% OF THE PARTICLES MUST FALL IN THIS RANGE
MEDIUM SAND	0.25 – 0.50 MM	
FINE SAND	0.15 – 0.25 MM	NOT MORE THAN 20% OF THE PARTICLES MAY FALL WITHIN THIS RANGE
VERY FINE SAND	0.05 – 0.15 MM	NOT MORE THAN 5%
SILT	0.002 – 0.05 MM	NOT MORE THAN 5%
CLAY	LESS THAN 0.002 MM	NOT MORE THAN 3%
TOTAL FINES	VERY FINE SAND + SILT + CLAY	LESS THAN OR EQUAL TO 10%



PVC TRENCH BEDDING
NO SCALE

SLAM
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Drawn: EG
Checked: APW

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
WEST
SOUTH

KEYPLAN

Number	Date	Issued For
2	09/30/2024 07/25/2024 07/08/2024	BIDDING PERMIT REVISED PER SLAM COMMENTS PHASE 2

SITE STORMWATER MANAGEMENT DETAILS - 4

Date: 07/08/2024
Scale: AS SHOWN
Proj. Number: 22367.00
Drawing Number: C504

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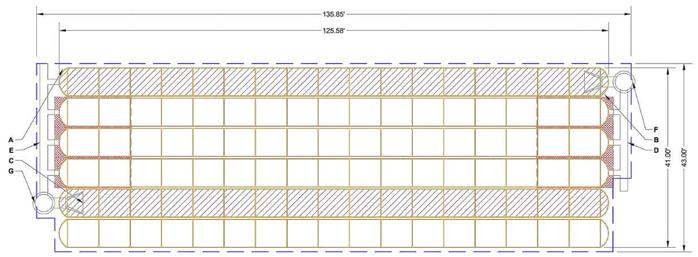
PROPOSED LAYOUT		CONCEPTUAL ELEVATIONS:	
102	STORMTECH MC-3500 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	12.50
12	STORMTECH MC-3500 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	6.50
12	STONE ABOVE (in)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	6.00
9	STONE BELOW (in)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	6.00
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	6.00
19466	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)	TOP OF STONE:	4.50
		TOP OF MC-3500 CHAMBER:	4.50
		18" x 12" TOP MANIFOLD INVERT (12" PIPE):	2.95
		18" x 12" TOP MANIFOLD INVERT (12" PIPE):	2.95
5740	SYSTEM AREA (SF)	18" x 12" TOP MANIFOLD INVERT (18" PIPE):	2.45
357.7	SYSTEM PERIMETER (ft)	18" x 12" TOP MANIFOLD INVERT (18" PIPE):	2.45
		24" ISOLATOR ROW PLUS INVERT:	0.92
		24" ISOLATOR ROW PLUS INVERT:	0.92
		BOTTOM OF MC-3500 CHAMBER:	0.75
		BOTTOM OF STONE:	0.00

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	12" TOP CORED END CAP, PART#: MC3500IEPP12T / TYP OF ALL 12" TOP CONNECTIONS	26.36"	
PREFABRICATED END CAP	B	24" BOTTOM CORED END CAP, PART#: MC3500IEPP24BC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.06"	
FLAMP	C	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MCFLAMP (TYP 2 PLACES)		
MANIFOLD	D	18" x 12" ADS N-12 (18" PIPE)	20.44"	
		18" x 12" ADS N-12 (12" PIPE)	26.36"	
MANIFOLD	E	18" x 12" ADS N-12 (18" PIPE)	20.44"	
		18" x 12" ADS N-12 (12" PIPE)	26.36"	
CONCRETE STRUCTURE	F	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		7.4 CFS IN
CONCRETE STRUCTURE	G	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		9.9 CFS IN



ISOLATOR ROW PLUS
(SEE DETAIL/TYP 2 PLACES)

PLACE MINIMUM 17.50' OF ADSPLUS175 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

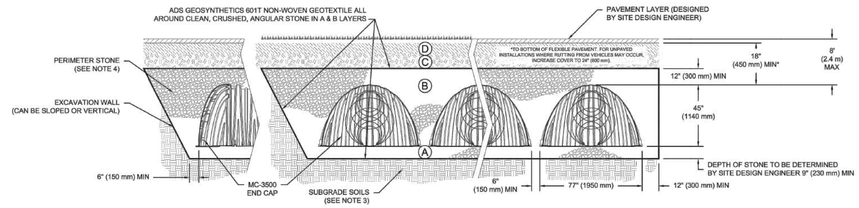
NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE 86.33 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

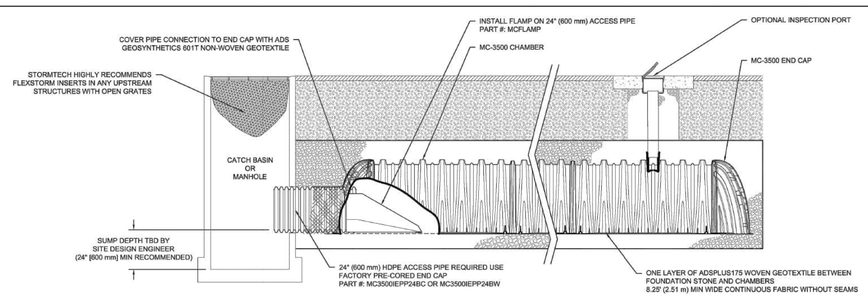
	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[4] A-1, A-2-4, A-3 OR AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[4] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[4] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/% THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.



MC-3500 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

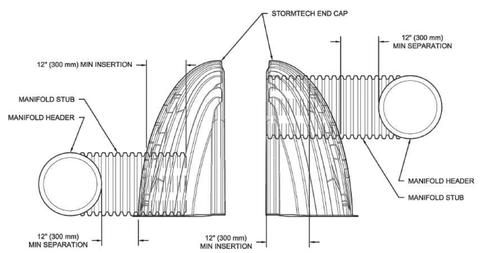
STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

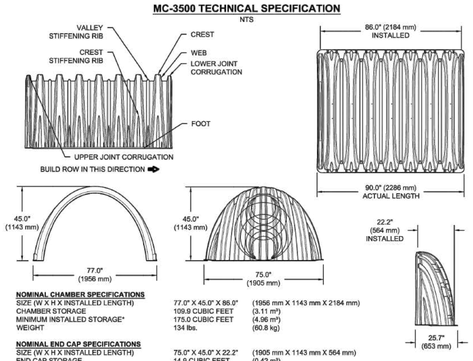
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

MC-SERIES END CAP INSERTION DETAIL
NTS



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-3500 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*	175.0 CUBIC FEET	(4.96 m³)
WEIGHT	134 lbs.	(60.8 kg)

NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
END CAP STORAGE	14.9 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	45.1 CUBIC FEET	(1.28 m³)
WEIGHT	49 lbs.	(22.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" SPACING BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18TW			
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP18BW			
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24TW			
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP24BW			
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

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Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
WEST
SOUTH

KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE STORMWATER MANAGEMENT DETAILS - 5

Date: 07/08/2024
Scale: AS SHOWN
Proj. Number: 22367.00

Drawing Number: C505

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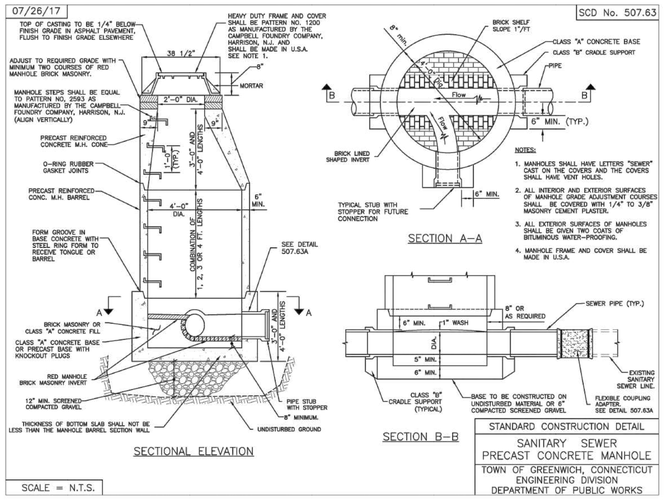

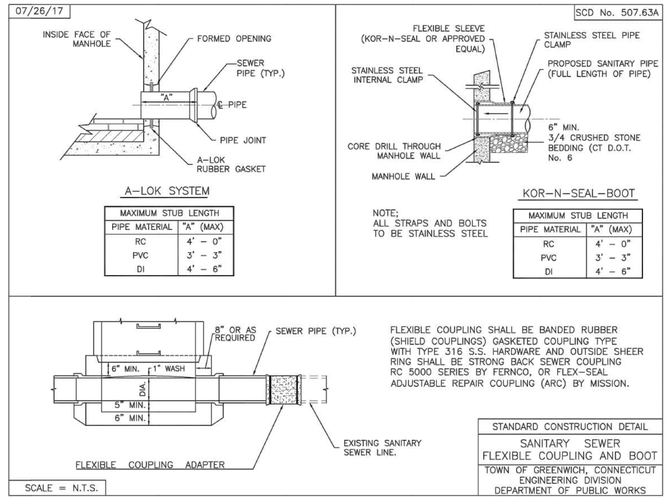

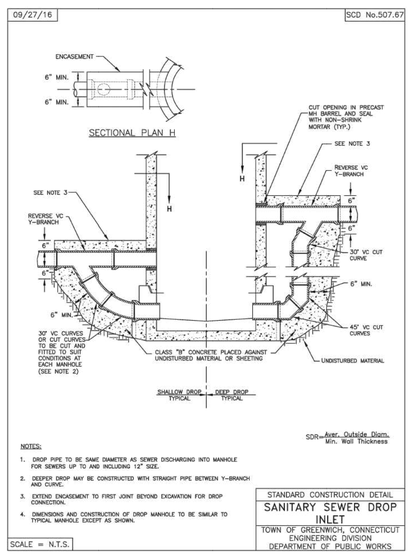

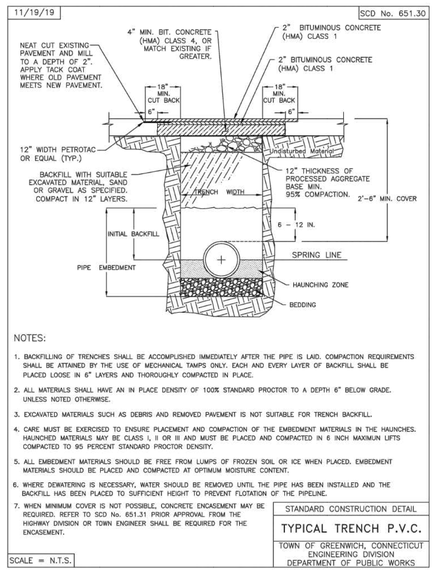

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Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SANITARY SEWER DETAILS

Date: 07/08/2024
Scale: AS SHOWN
Proj. Number: 22367.00
Drawing Number: C506

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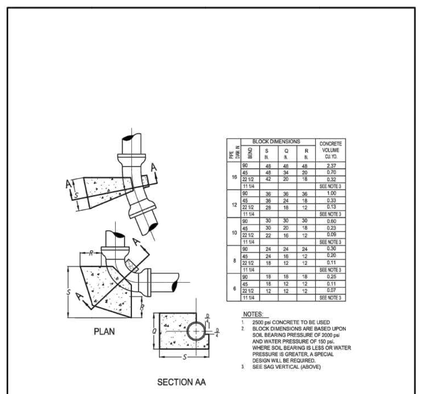
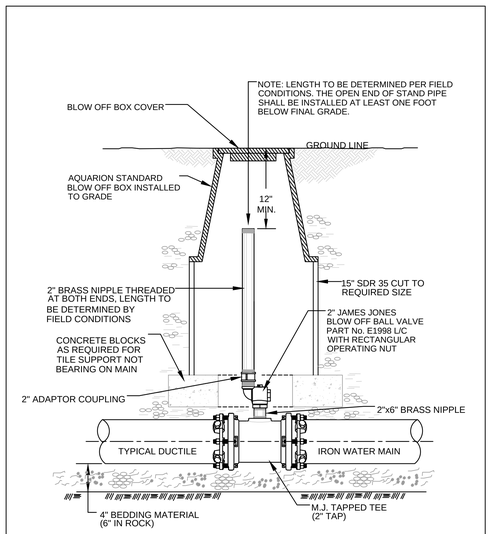


AQUARION Water Company — Stewards of the Environment

THRUST BLOCKS AT HORIZONTAL BENDS

NOT TO SCALE

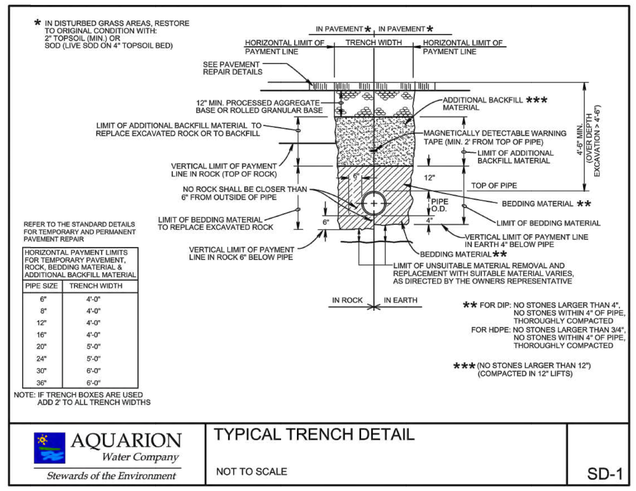
SD-15



AQUARION Water Company — Stewards of the Environment

ON LINE AIR VENT / BLOW-OFF (DIP)

SD-4

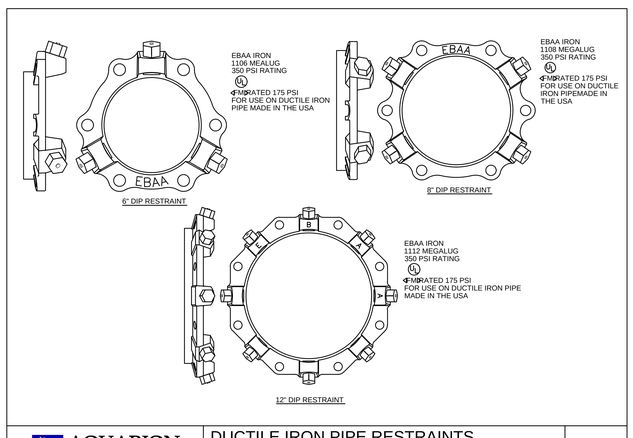


AQUARION Water Company — Stewards of the Environment

TYPICAL TRENCH DETAIL

NOT TO SCALE

SD-1

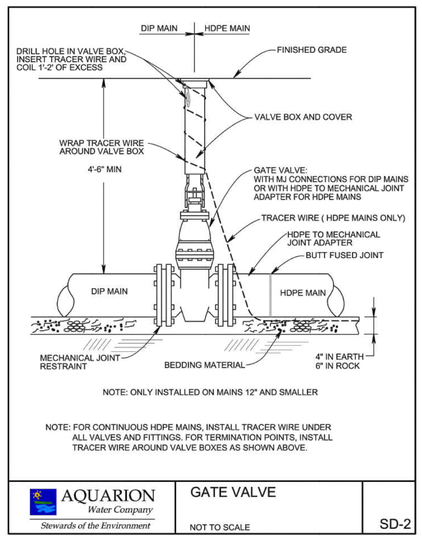


AQUARION Water Company — Stewards of the Environment

DUCTILE IRON PIPE RESTRAINTS

NOT TO SCALE

SD-10



NOTE: ONLY INSTALLED ON MAINS 12" AND SMALLER

NOTE: FOR CONTINUOUS HDPE MAINS, INSTALL TRACER WIRE UNDER ALL VALVES AND FITTINGS. FOR TERMINATION POINTS, INSTALL TRACER WIRE AROUND VALVE BOXES AS SHOWN ABOVE.

AQUARION Water Company — Stewards of the Environment

GATE VALVE

NOT TO SCALE

SD-2

WATER MAIN INSTALLATION NOTES

1. WATER MAIN DETAILS, SPECIFICATION, TESTING AND INSTALLATION SHALL COMPLY WITH THE STANDARDS AND REQUIREMENTS OF AQUARION WATER COMPANY.
2. CONTRACTOR SHALL COORDINATE ALL WATER MAIN INSTALLATION INCLUDING ALL PIPING, FITTINGS, VALVES, TAPPING, SHUT DOWNS, ETC. WITH AQUARION WATER COMPANY.
3. AFTER PLACING APPROXIMATELY 2 FEET OF BACKFILL MATERIAL OVER ALL UTILITY PIPING, THE CONTRACTOR SHALL PLACE A 6" WIDE STRIP OF DURABLE, COLOR CODED (BLUE FOR WATER) UNDERGROUND UTILITY DETECTABLE WARNING TAPE IMPRINTED WITH AN APPROPRIATE WARNING INDICATING THE PRESENCE OF THE BURIED UTILITY.
4. WHEN CROSSING A SEWER, WATER MAIN JOINTS SHALL BE SPACED A MINIMUM OF 9' FROM THE INTERSECTION WITH THE SEWER.
5. CONTRACTOR SHALL EXCAVATE TEST PITS AT LOCATIONS SHOWN ON THE CONTRACT DRAWINGS WELL IN ADVANCE OF PIPE LAYING OPERATIONS TO CHECK FOR POSSIBLE CONFLICTS AND SUBSEQUENT METHODS OF REMEDY, AS DETERMINED BY THE OWNER'S REPRESENTATIVE, SHOULD CONFLICTS EXIST. ALL COST FOR TEST PITS SHALL BE INCLUDED IN THE PRICE BID FOR THE CONTRACT.
6. ALL JOINTS SHALL BE RESTRAINED WITH RETAINER GLANDS (MEGALUG SERIES 1100, MANUFACTURED BY EBAA IRON SALES, INC. OR AQUARION APPROVED EQUIVALENT).
7. ALL FITTINGS SHALL BE MECHANICAL JOINT WITH RETAINER GLANDS IN EACH DIRECTION. ALL FOLLOWER GLANDS SHALL BE REPLACED WITH RETAINER GLANDS.
8. INSTALLATION OF DUCTILE IRON PIPE, FITTINGS, BLOW-OFFS, PIPE SUPPORTS AND APPURTENANCES SHALL BE IN ACCORDANCE WITH AQUARION WATER COMPANY STANDARDS.
9. THE WATER MAIN SHALL BE DUCTILE IRON PIPE CLASS 52, LINED WITH DOUBLE THICKNESS CEMENT MORTAR, IN ACCORDANCE WITH ANSI/AWWA C151/A21. 51-81, AND SPECIFICATIONS INCLUDED IN THIS CONTRACT.
10. ALL EXISTING STRUCTURES, INCLUDING SANITARY SEWERS, LATERALS, STORM SEWERS, CATCH BASINS, MANHOLES AND UTILITY POLES, WHICH DURING THE EXECUTION WILL BE CONSIDERED BY THE OWNER'S REPRESENTATIVE AS BEING DISTURBED OR DAMAGED BY THE WATER MAIN INSTALLATION SHALL BE RESTORED OR REPLACED BY THE CONTRACTOR IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS WHICH GOVERNED THE CONSTRUCTION OF THAT STRUCTURE AND TO THE SATISFACTION OF THE CTARNG, THE AUTHORITY HAVING JURISDICTION, AND THE OWNER'S REPRESENTATIVE. ALL COSTS FOR SUCH WORK, INCLUDING TEMPORARY RELOCATION OF THE AFOREMENTIONED STRUCTURES, SHALL BE CONSIDERED AS HAVING BEEN INCLUDED IN THE LUMP SUM CONTRACT PRICE.
11. ANY DEFLECTION OF THE WATER MAIN SHALL BE MADE ACCORDING TO THE RECOMMENDATION CONTAINED WITHIN DUCTILE IRON PIPE RESEARCH ASSOCIATION STANDARDS.
12. MINIMUM DEPTH OF COVER OVER PROPOSED WATER MAIN SHALL BE 4.5 FEET.
13. ALL INSTALLED WATER MAIN SHALL BE TESTED ACCORDING TO THE REQUIREMENTS OF AQUARION WATER COMPANY. TEST PRESSURE FOR THE WATER MAIN IS 200 PSI.
14. WATER MAIN, FITTINGS, VALVES, CURB BOXES, ETC. SHALL BE INSTALLED ACCORDING TO THE LATEST AQUARION WATER COMPANY RULES, REGULATIONS, AND SPECIFICATIONS.
15. CONTRACTOR SHALL INSTALL TEMPORARY BLOW-OFF ASSEMBLY, INCLUDING GATE VALVE, AS REQUIRED FOR FLUSHING PROPOSED WATER MAIN IN ACCORDANCE WITH AQUARION WATER COMPANY REQUIREMENTS. REMOVAL OF ALL TEMPORARY SYSTEMS IS INCLUDED IN THE LUMP SUM BID PRICE.
16. NOT ALL BENDS, FITTINGS, OFFSETS, CONNECTORS, CHLORINATION VALVES, BLOW-OFF ASSEMBLIES, ETC. ARE NOT SHOWN ON THE DRAWINGS. INSTALLATION OF WATER MAIN AND SERVICES SHALL CONFORM TO AQUARION WATER STANDARDS AND GUIDELINES.

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Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH / EAST / WEST / SOUTH

KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE UTILITY - 1 DETAILS

Date: 07/08/2024
Scale: AS SHOWN
Proj. Number: 22367.00
Drawing Number: C507

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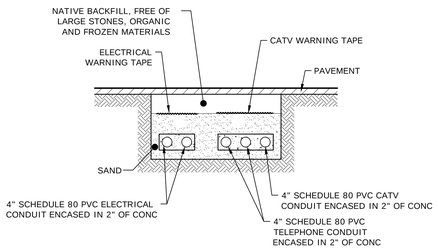
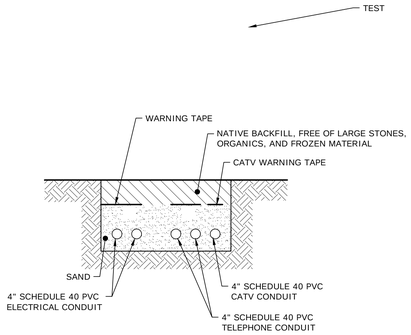


ELECTRIC, CATV, AND TELEPHONE SERVICE
INSTALLATION BENEATH PAVED AREAS

ELECTRIC DUCTBANK NOTES:

1. ALL CONDUIT SHOWN ARE 5" DIAMETER PVC SCHEDULE 40 UNLESS OTHERWISE NOTED.
2. ALL SWEEPS AND RISER CONDUITS SHALL BE SCHEDULE 40 PVC UNLESS OTHERWISE NOTED.
3. PROVIDE BASE AND INTERMEDIATE SPACERS WHICH CONNECT TOGETHER TO FORM A UNIFORM SUPPORT 4'-0" ON CENTER.
4. WHERE NOTED, PROVIDE THE REQUIRED RACKING IN EACH MANHOLE TO ALLOW ALL CARRIERS TO TIE OFF SLACK IN AN ORDERLY FASHION.
5. ALL DUCTS SHALL BE CONCRETE ENCASED.
6. ALL DUCTBANKS SHALL BE FORMED ON ITS SIDES.
7. ALL"SPARE" OR UNUSED CONDUITS SHALL BE PROVIDED WITH A $\frac{3}{4}$" NYLON DRAG LINE.
8. ALL CONDUIT BENDS SHALL BE A MINIMUM OF 12X THE CONDUIT RADIUS.
9. PITCH CONDUITS TOWARDS MANHOLES AND AWAY FROM BUILDINGS. AVOID CREATING LOW POINTS IN CONDUIT RUNS BETWEEN MANHOLES.
10. CONDUITS EXTENDED FROM MANHOLES, TRANSFORMERS, SWITCHGEAR, TUNNEL WALLS, BUILDING FOUNDATION WALLS SHALL BE GALVANIZED RIGID STEEL.
11. ALL DUCTBANK MATERIALS SHALL CONFORM TO THE RESPECTIVE UTILITY COMPANIES' STANDARDS AND MEET ALL REQUIREMENTS.



ELECTRIC, CATV, AND TELEPHONE SERVICE
INSTALLATION BENEATH LANDSCAPED AREAS

TEL-DATA/CATV DUCTBANK NOTES:

1. DUCTS SHOWN ARE 4" DIAMETER PVC TYPE EB UNLESS OTHERWISE NOTED.
2. ALL SEEPS AND RISER CONDUIT SHALL BE PVC TYPE EB UNLESS OTHERWISE NOTED.
3. ALL DUCTS SHALL BE CONCRETE ENCASED.
4. ALL DUCTBANKS SHALL BE FORMED ON ITS SIDES.
5. PROVIDE BASE AND INTERMEDIATE SPACERS WHICH CONNECT TOGETHER TO FORM A UNIFORM SUPPORT 6'-0" ON CENTER.
6. PROVIDE THREE 1 $\frac{1}{2}$" NON-METALLIC FLEX INTERDUCT WITH STRING LINES IN EACH OF THE 6 PVC DUCTS.
7. WHERE NOTED, PROVIDE THE REQUIRED RACKING IN EACH MANHOLE TO ALLOW ALL CARRIERS TO TIE OFF SLACK IN AN ORDERLY FASHION.
8. TEL-CATA/CATV MANHOLES SHALL NOT BE SPACED FURTHER THAN 500 FEET APART.
9. ALL CONDUITS TO BE LABELLED A TO Z.
10. ALL CONDUIT BENDS SHALL BE A MINIMUM OF 12X THE CONDUIT RADIUS.
11. PITCH CONDUITS TOWARDS MANHOLES AND AWAY FROM BUILDINGS. AVOID CREATING LOW POINTS IN CONDUIT RUNS BETWEEN MANHOLES.
12. ALL DUCTBANK MATERIALS SHALL CONFORM TO THE RESPECTIVE UTILITY COMPANIES' STANDARDS AND MEET ALL REQUIREMENTS.

GENERAL – Pad–mounted oil insulated equipment (such as transformers, transclosures, switches, etc) should be installed so as to be accessible, not constitute an environmental hazard or a fire hazard, and be protected from damage. In URD areas transformers installed at residential front lot lines are not subject to the requirements of this Standard, refer to **DTR 42.031**.

LOCATION – The pad–mounted equipment should be installed at a location where permanent access will be assured for future operation and maintenance as well as to permit installation, replacement and removal of the equipment by means of a winch truck with the boom up. Where noise may be a problem, careful consideration should be given when selecting a location. Areas subject to flooding should be avoided, as should other environmentally sensitive areas noted in **DSEM Section 06.32**. The building owner's and/or tenant's fire insurance carrier may restrict the proximity of the equipment to doors, windows or combustible materials and such requirements are the responsibility of the customer subject to the requirements of Northeast Utilities. In the absence of other requirements, the equipment shall be located with the following minimum clearances from various building facilities. The distances mentioned in this section shall not supersede any local ordinance or code which requires greater clearances.

Item	Minimum Distance In Front of In Feet	To Side of In Feet	Below In Feet
Door	20	10	–
Air intake	10	10	25
Window	10	3	5
Fire escape	20	20	–
Combustible wall	6	6	–
Noncombustible wall	5	3	–
Fuel tanks (above and below grade)	10	10	–
Natural gas or propane connections			
CT/MA	3	3	–
NH	15	15	–
Gasoline dispensing unit	20	20	–

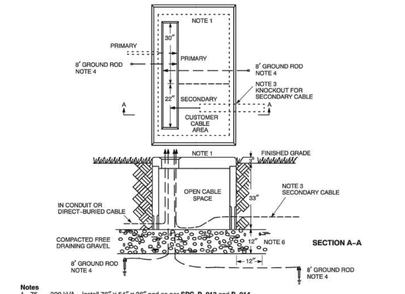
OIL SUMP – If the surrounding grade pitches toward critical areas, it is recommended that an oil sump be provided. This should consist of 3/4–inch trap rock fill under and around the equipment pad adequate to contain the quantity of oil in the equipment to be installed at the given location.

ADDITIONAL FIRE PROTECTION – If the building owner's and/or tenant's combustible facilities adjacent to the equipment require fire protection beyond that provided by oil sump, it shall be their responsibility to provide such protection in the form of space separation, fire resistant barriers, automatic spray systems, other oil containment facilities, or other means approved by their fire insurance company.

EQUIPMENT PROTECTION – Where pad–mounted equipment would be exposed to possible damage by vehicular traffic, protective bumpers are to be installed on exposed sides. Galvanized steel pipes 4–inch minimum diameter filled with concrete, I–beams 5–inch minimum, or other suitable means of protection may be used as bumpers. Such pipes or I–beams shall extend 42–inch minimum both above and below grade. Heavier bumpers set deeper should be considered where exposed to heavy trucks. Bumpers should be 10–foot minimum from the operating side of concrete pad and on the other sides 36–inch minimum from equipment or pad, whichever projects farther. The maximum spacing between bumpers on exposed sides should be 60 inches.

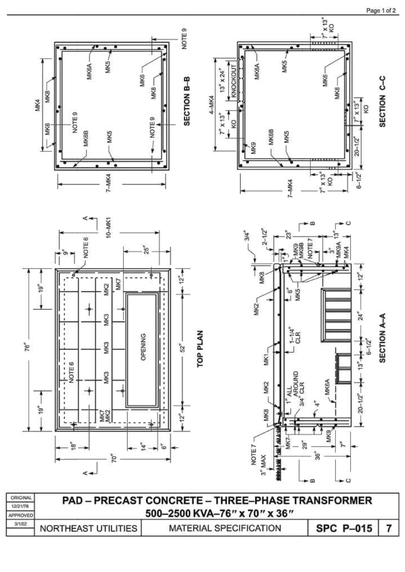
EQUIPMENT LOCKS – Any equipment, with provisions for locking, that is left on site and is accessible to the general public, shall be padlocked. This includes installations that are not complete and not energized. Completed pad–mount transformer installations shall meet "TAMPERPROOF EQUIPMENT LOCK" requirements, **DTR 03.401**.

ORIGINAL 10/03/73	PAD–MOUNTED OIL INSULATED EQUIPMENT LOCATION AND MECHANICAL PROTECTION			
APPROVED 10/0/02	NORTHEAST UTILITIES	DESIGN & APPLICATION STANDARD	DTR 42.061	9

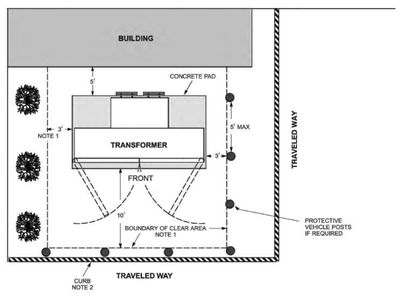


Notes
1. 75 – 300 kVA – Install 76" x 54" x 36" pad as per **SPC P–013** and **P–014**.
   500 – 2500 kVA – Install 76" x 70" x 36" pad as per **SPC P–015** and **P–016**.
2. **Primary Cable**
   a. Install direct–buried cables a minimum of 30 inches below grade.
   b. Install cables in conduit a minimum of 24 inches below grade.
   c. Loop cables in cable pit before making connections.
3. **Secondary Cable** – Leave enough cable to extend 6 feet above pad for future reconnecting to transformers with higher secondary terminals. Customer cable(s) shall enter through the rear knockout and shall be confined to the area defined as the customer cable area.
4. **Galvanized Steel Ground Rods** – Install in trench and connect #2 copper conductors from rods through pad opening and extending 5 feet above pad. Minimum separation of ground rods is 8 feet.
5. The following DTR/DSEM's should also be used:
   a. **DTR 17.083** – **THREE–PHASE TRANSFORMER CONNECTIONS**
   b. **DTR 33.217** – **600–VOLT CONNECTOR GUIDE – FOR NEMA PADS – THREE–PHASE PAD–MOUNT TRANSFORMERS**
   c. **DTR 42.061** – **LOCATION AND MECHANICAL PROTECTION REQUIREMENTS**
   d. **DTR 44.221** – **FAULT INDICATOR GUIDE – SOLID DIELECTRIC CABLES**
   e. **DTR 58.509** – **PRIMARY – SECONDARY AND TRANSFORMER GROUNDING**
   f. **DSEM Section 14.21** – **LOADING LIMITS – THREE–PHASE TRANSFORMERS**
   g. **DSEM Section 07.30** – **CONVENTIONAL UG LOOPS**
   h. **DTR 56.221** – **JACKETED PRIMARY CABLE – GROUNDING**
6. The excavation for the pad shall be carried to a depth of 12 inches below the bottom of the pad. The bottom layer of backfill shall be compacted, clean gravel, free of foreign matter and construction debris, extending 12 inches beyond the circumference of the structure, and in accordance with Connecticut DOT Spec M.02.06 Grading "A" or Massachusetts DPW Spec M1.03.0 Type b. The remaining backfill shall not contain ashes, cinders, refuse, sod, clods, stones, or boulders exceeding 3 inches in maximum dimension. It shall be placed in 6–inch layers and compacted with mechanical tamping tools to not less than 95 percent of the maximum dry density as determined by the standard compaction tests, AASHTO T180 or ASTM D698.

ORIGINAL 10/0/73	INSTALLATION OF CONCRETE PAD FOR THREE–PHASE PAD–MOUNTED TRANSFORMERS 75–2500 KVA – DIRECT–BURIED			
APPROVED 9/30/04	NORTHEAST UTILITIES	CONSTRUCTION STANDARD	DTR 58.301	8

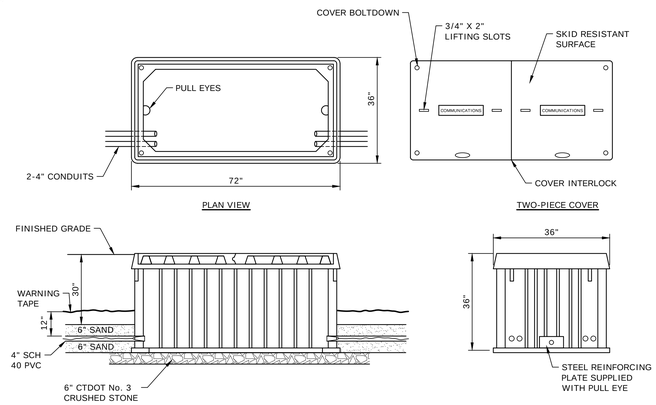


ORIGINAL 12/21/78	PAD – PRECAST CONCRETE – THREE–PHASE TRANSFORMER 500–2500 KVA–76" x 70" x 36"			
APPROVED 9/1/02	NORTHEAST UTILITIES	MATERIAL SPECIFICATION	SPC P–015	7



Notes
1. To inspect, provide access, operate elbow connectors and ventilate the transformer, the above specified clear area distances to buildings or shrubs shall be maintained. The distance from the building is to the concrete transformer pad. Property line shall be considered an obstruction, since fences, shrubs, etc. may be installed at a future date by adjacent property owners. Because of the possibility of cooling fins overhanging the pad, side clearances to be increased to 5 feet for transformers 1000 kVA and larger.
2. If no curb exists, or transformer is located closer than 10 feet to the traveled way, protective vehicle posts (●) shall be installed as specified in **DTR 42.061**.
3. Top of transformer pad shall be installed 3 inches above final grade.
4. Transformer shall not be located on steep grades where access to or elbow operation is made difficult.
5. Transformer shall meet the minimum distances to doors, windows, fire escapes, air intakes and walls as specified in **DTR 42.061**.
6. Transformer *is not* to be located with its doors facing the building.
7. Refer to **DTR 58.301** for specific instructions on the installation of the transformer pad.
8. Refer to **DSEM Section 06.32** for information on environmental considerations.

ORIGINAL 4/10/91	PAD–MOUNTED TRANSFORMERS LOCATION TO BUILDINGS AND ROADWAYS			
APPROVED 1/28/02	NORTHEAST UTILITIES	CONSTRUCTION STANDARD	DTR 42.047	6

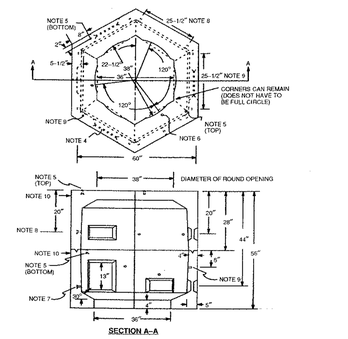


BOX AND COVER SECTION

END VIEW

COMMUNICATIONS PULL BOX
NO SCALE

ML 1245 D



SECTION A–A

NOTES
1. Design loading shall be in accordance with AASHTO HS20–1983.
2. Concrete and concrete design shall be in accordance with ACI 318–1986.
3. Concrete shall have a minimum 28 day strength of 4000 psi and a maximum 28 day strength of 5000 psi.
4. Five inch x 12 inch knockouts, (3) in the top, (3) in the bottom and (1) 12 inch x 13 inch knockout in the bottom shall be clear of reinforcement.
5. 3/4 inch – coil loop inserts – 6 inch – (Dayton B–16) with insert locator plug (Dayton T–21). Two each in top and bottom sections for lifting with swivel plate. Inserts are to be secured in place with rebar.
6. Zinc alloy inserts 5/8 inch – 11 x 1–1/2 inches for extension (3) on 41 inch bolt circle.
7. Zinc alloy inserts 3/4 inch – 10 x 3 inches for cable pulling (4) opposite knockouts in bottom section.
8. Zinc alloy inserts 1/2 inch – 13 x 1–1/2 inches (6) for mounting junction connectors.
9. Zinc alloy inserts 3/8 inch – 16 x 1–1/2 inches (6) for supporting ground bus.
10. Manufacturer's identification and month/year when manufactured shall be legibly marked in/on concrete on the outside upper part.

ORIGINAL 10/3/73	HANDHOLE – HEXAGONAL – PRECAST CONCRETE 60" WIDE X 56" HIGH OUTSIDE			
APPROVED 10/1/96	NORTHEAST UTILITIES	MATERIAL SPECIFICATION	SPC H–019	8

SLAM
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Drawn: EG
Checked: APW

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

KEYPLAN

Number	Date	Issued For
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE UTILITY DETAILS - 2

Date: 07/08/2024
Scale: AS SHOWN
Proj. Number: 22367.00

Drawing Number: C508

F:\Projects\GIS\5068 Greenwich Public Schools\003 Central Middle School\Drawings\AutoCAD\Sheet\G5068-003-C-501 DETL.dwg October 11, 2024 - 4:47 PM

Tighe&Bond

APPENDIX D

Plotted On: Jan 03, 2024 4:39pm By: EGoldberg
File: K:\Work\21\0000\21-0000-0\Greenwich Public Schools\001 Central Middle School\Design\Stormwater\Design Development\Phase 1\GSI\WM-001.FIX.WS.dwg

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2023**

Designation: **WS-A**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	3.987	98	390.758
Landscaped and Lawns - Group B	2.169	69	149.679
Landscaped and Lawns - Group C	4.955	79	391.454
Wooded - Group B	5.316	60	318.952
Wooded - Group C	0.629	73	45.889
	17.056		1296.731

Weighted CN: 76

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	258	0.217	17.4

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	unpaved	0.011	1.69	722	7.1

Total Tc (min.) = 24.5

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2023**

Designation: **WS-B**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.265	98	25.973
Landscaped and Lawns - Group B	0.077	69	5.303
Landscaped and Lawns - Group C	0.082	79	6.458
Wooded - Group B	0.357	60	21.426
Wooded - Group C	0.000	73	0.012
	0.781		59.174

Weighted CN: 76

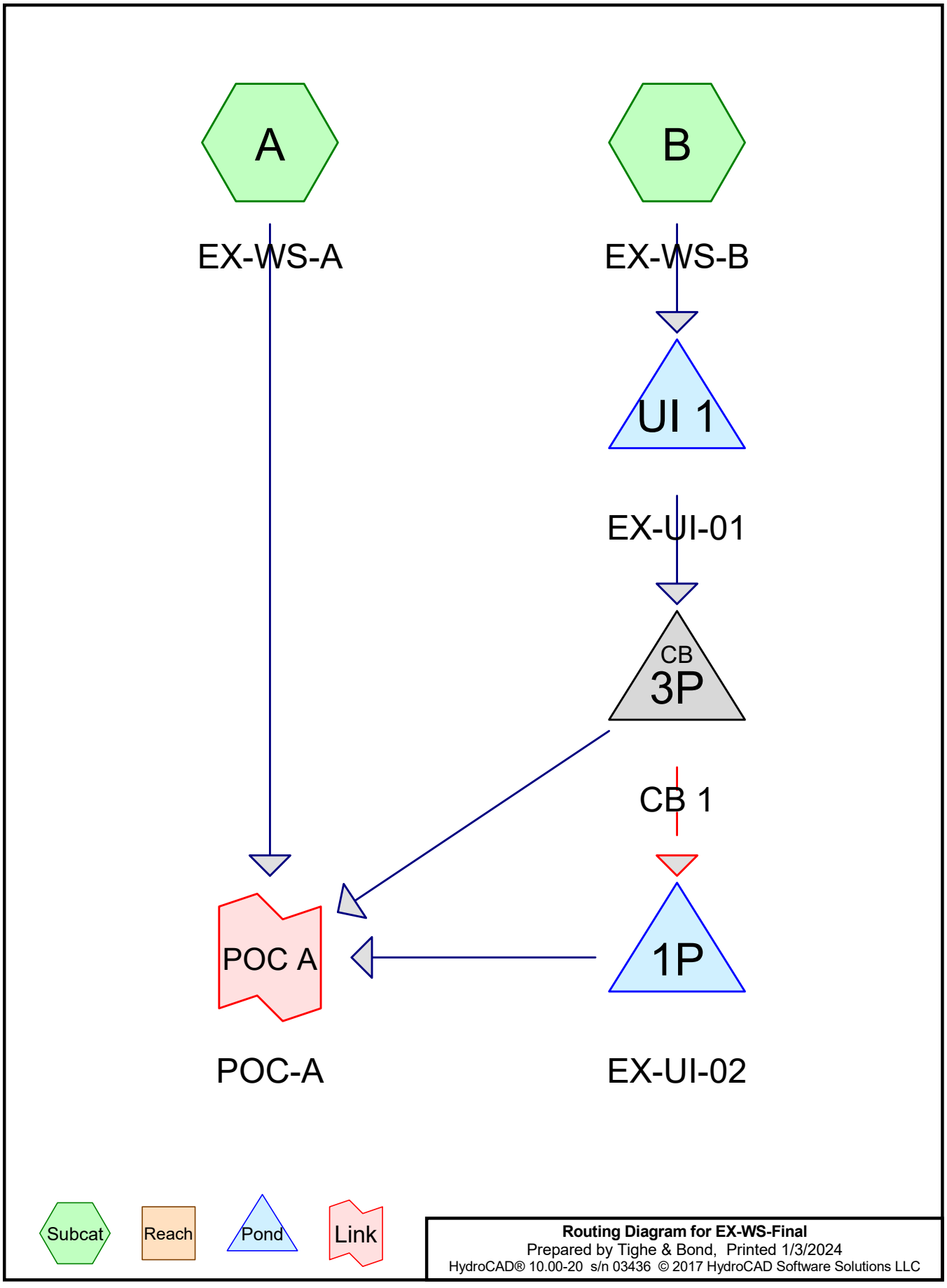
Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	47	0.53	3.1
Segment B - C	0.24	46	0.023	7.1

Total Tc (min.) = 10.3

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation



Routing Diagram for EX-WS-Final
Prepared by Tighe & Bond, Printed 1/3/2024
HydroCAD® 10.00-20 s/n 03436 © 2017 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
185,233	98	IMPERVIOUS (A, B)
94,493	69	LANDSCAPED - B (A)
215,845	79	LANDSCAPED - C (A)
3,348	69	LAWN - B (B)
3,561	79	LAWN - C (B)
247,115	60	WOODED - B (A, B)
27,390	73	WOODED - C (A, B)
776,985	**76**	**TOTAL AREA**

Summary for Subcatchment A: EX-WS-A

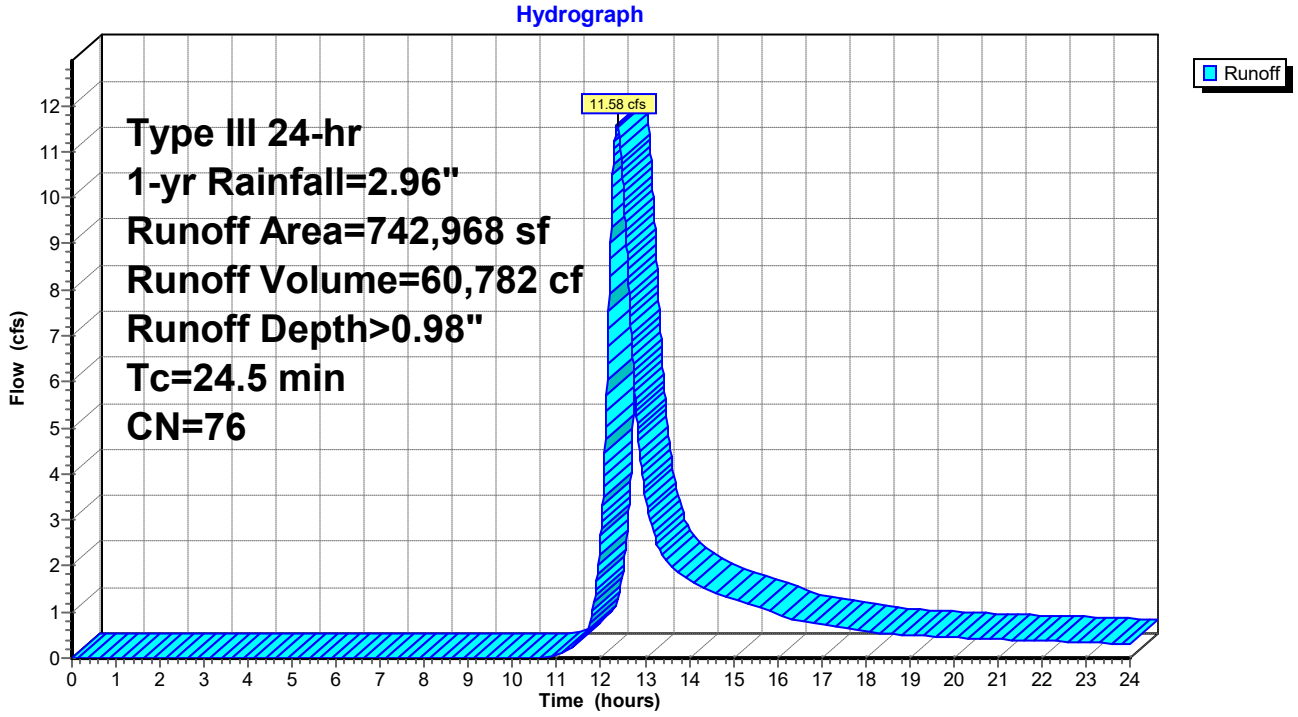
Runoff = 11.58 cfs @ 12.37 hrs, Volume= 60,782 cf, Depth> 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.96"

	Area (sf)	CN	Description
*	173,688	98	IMPERVIOUS
*	94,493	69	LANDSCAPED - B
*	215,845	79	LANDSCAPED - C
*	231,559	60	WOODED - B
*	27,383	73	WOODED - C
	742,968	76	Weighted Average
	569,280		76.62% Pervious Area
	173,688		23.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5					**Direct Entry,**

Subcatchment A: EX-WS-A



Summary for Subcatchment B: EX-WS-B

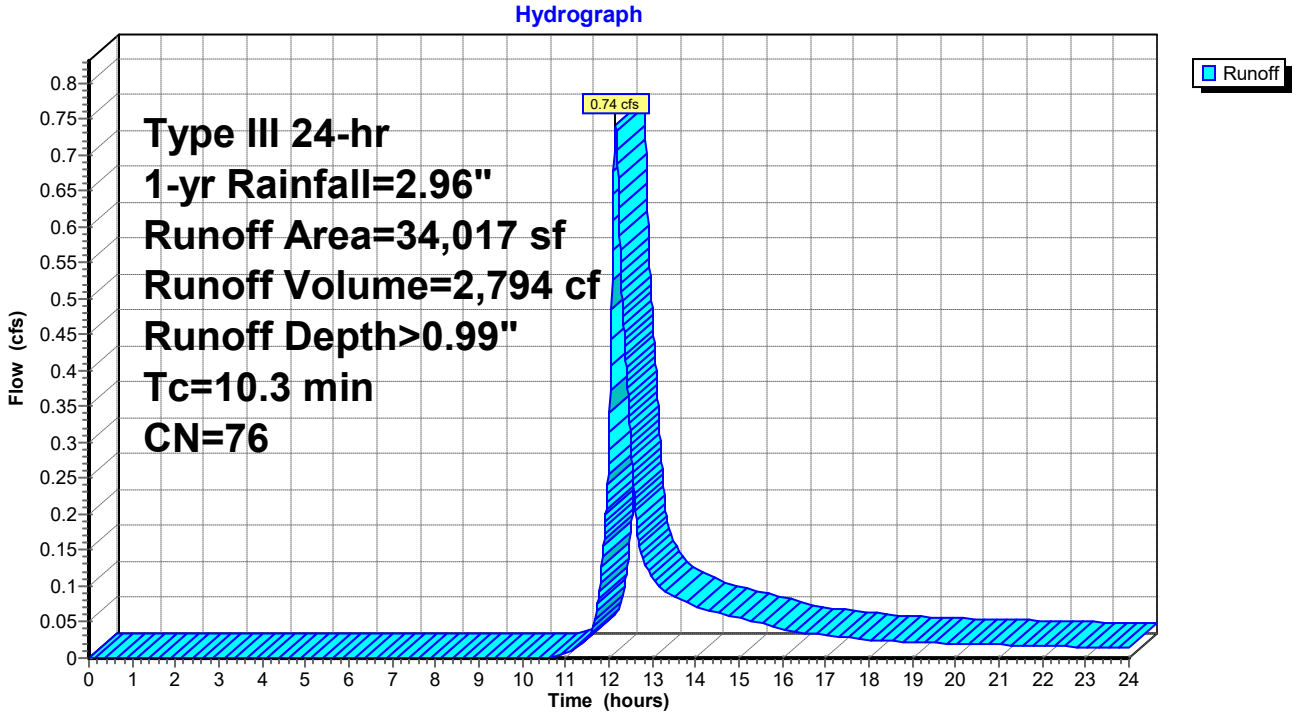
Runoff = 0.74 cfs @ 12.15 hrs, Volume= 2,794 cf, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.96"

	Area (sf)	CN	Description
*	11,545	98	IMPERVIOUS
*	3,348	69	LAWN - B
*	3,561	79	LAWN - C
*	15,556	60	WOODED - B
*	7	73	WOODED - C
	34,017	76	Weighted Average
	22,472		66.06% Pervious Area
	11,545		33.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3					**Direct Entry,**

Subcatchment B: EX-WS-B



Summary for Pond 1P: EX-UI-02

Inflow	=	0.08 cfs @	12.16 hrs, Volume=	55 cf
Outflow	=	0.08 cfs @	12.17 hrs, Volume=	55 cf, Atten= 1%, Lag= 0.4 min
Primary	=	0.08 cfs @	12.17 hrs, Volume=	55 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 35.50' @ 12.17 hrs Surf.Area= 502 sf Storage= 2 cf

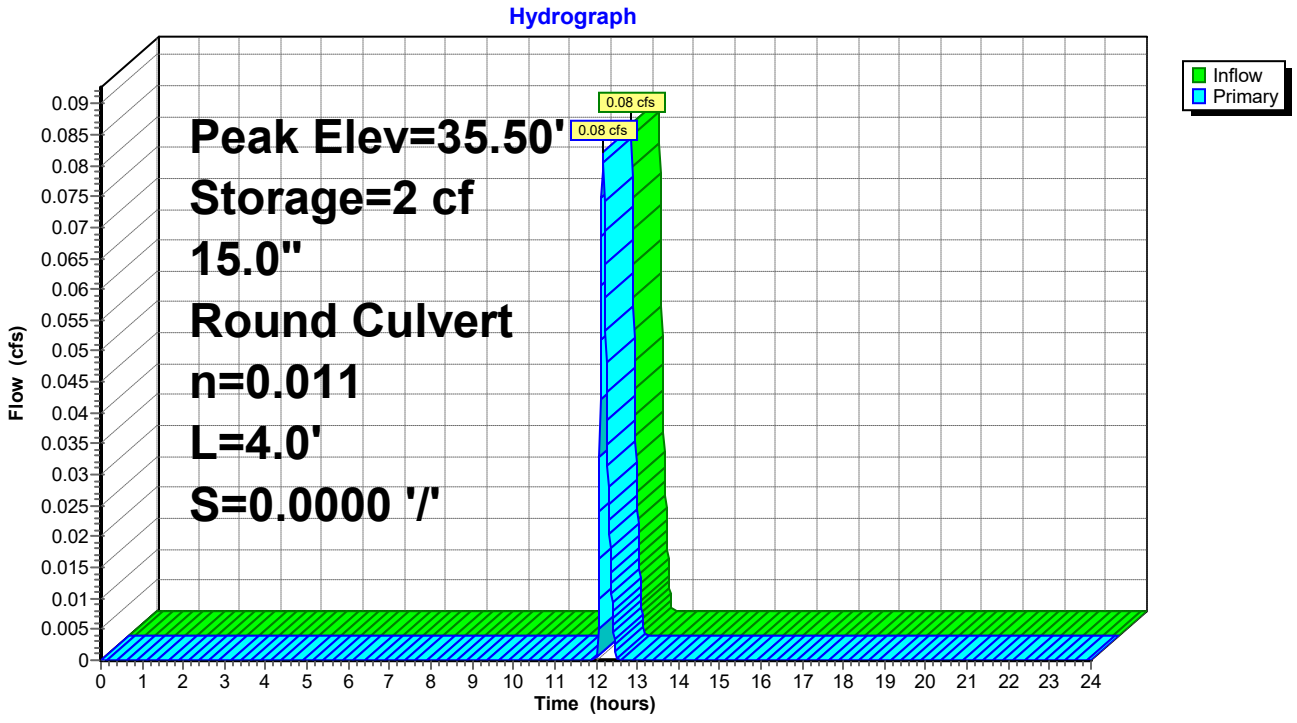
Plug-Flow detention time= 0.4 min calculated for 55 cf (100% of inflow)
Center-of-Mass det. time= 0.4 min (732.2 - 731.8)

Volume	Invert	Avail.Storage	Storage Description
#1	35.50'	1,818 cf	**Concrete Galley 4x4x4** x 41 Inside= 42.0"W x 43.0"H => 12.67 sf x 3.50'L = 44.3 cf Outside= 52.8"W x 48.0"H => 14.72 sf x 4.00'L = 58.9 cf

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**15.0" Round Culvert** L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 35.00' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.70 cfs @ 12.17 hrs HW=35.50' (Free Discharge)
1=Culvert (Barrel Controls 0.70 cfs @ 2.25 fps)

Pond 1P: EX-UI-02



Summary for Pond 3P: CB 1

[57] Hint: Peaked at 39.38' (Flood elevation advised)
[81] Warning: Exceeded Pond UI 1 by 2.34' @ 12.16 hrs

Inflow Area =	34,017 sf,	33.94% Impervious,	Inflow Depth >	0.99"	for 1-yr event
Inflow =	0.74 cfs @	12.16 hrs,	Volume=	2,793 cf	
Outflow =	0.74 cfs @	12.16 hrs,	Volume=	2,793 cf,	Atten= 0%, Lag= 0.0 min
Primary =	0.66 cfs @	12.16 hrs,	Volume=	2,739 cf	
Secondary =	0.08 cfs @	12.16 hrs,	Volume=	55 cf	

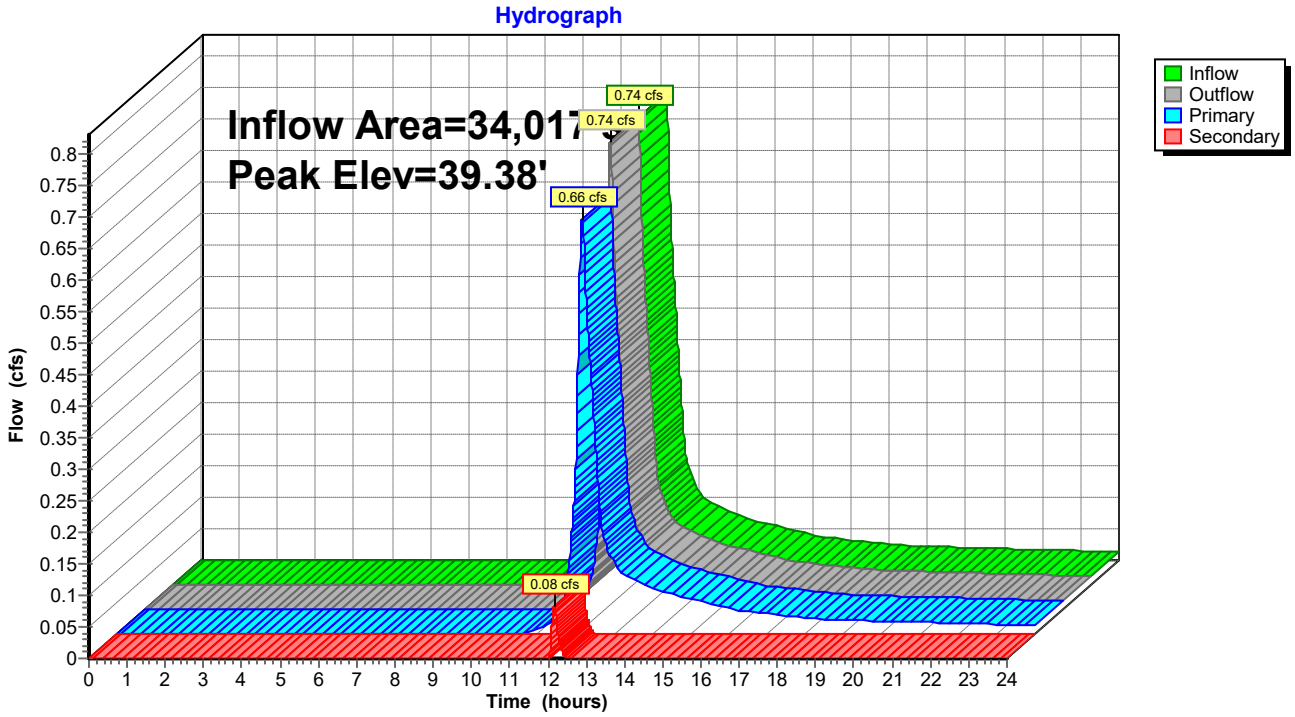
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 39.38' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.94'	**12.0" Round Culvert** L= 326.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.94' / 37.38' S= 0.0048 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Secondary	39.24'	**12.0" Round Culvert** L= 8.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 39.24' / 37.06' S= 0.2725 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.66 cfs @ 12.16 hrs HW=39.38' (Free Discharge)
1=Culvert (Barrel Controls 0.66 cfs @ 2.93 fps)

Secondary OutFlow Max=0.08 cfs @ 12.16 hrs HW=39.38' (Free Discharge)
2=Culvert (Inlet Controls 0.08 cfs @ 1.26 fps)

Pond 3P: CB 1


Hydrograph
Inflow Area=34,017
Peak Elev=39.38'
0.74 cfs
0.74 cfs
0.66 cfs
0.08 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Summary for Pond UI 1: EX-UI-01

Inflow Area = 34,017 sf, 33.94% Impervious, Inflow Depth > 0.99" for 1-yr event
Inflow = 0.74 cfs @ 12.15 hrs, Volume= 2,794 cf
Outflow = 0.74 cfs @ 12.16 hrs, Volume= 2,793 cf, Atten= 0%, Lag= 0.4 min
Primary = 0.74 cfs @ 12.16 hrs, Volume= 2,793 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 37.04' @ 12.16 hrs Surf.Area= 502 sf Storage= 19 cf

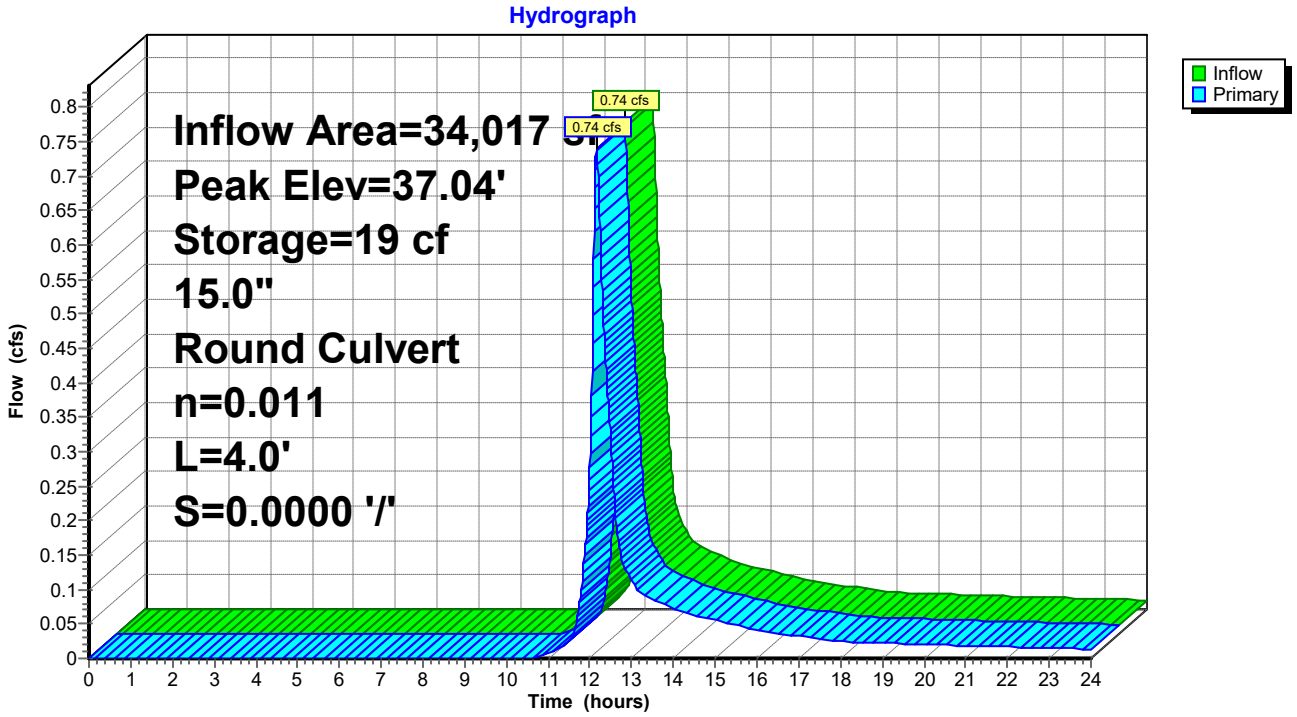
Plug-Flow detention time= 0.4 min calculated for 2,793 cf (100% of inflow)
Center-of-Mass det. time= 0.4 min (863.1 - 862.7)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,774 cf	**Concrete Galley 4x4x4** x 40 Inside= 42.0"W x 43.0"H => 12.67 sf x 3.50'L = 44.3 cf Outside= 52.8"W x 48.0"H => 14.72 sf x 4.00'L = 58.9 cf 2 Rows of 20 Chambers
#2	37.00'	50 cf	**4.00'D x 4.00'H Vertical Cone/Cylinder**
		1,824 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**15.0" Round Culvert** L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.50' / 36.50' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.79 cfs @ 12.16 hrs HW=37.04' (Free Discharge)
↑**1=Culvert** (Barrel Controls 0.79 cfs @ 2.32 fps)

Pond UI 1: EX-UI-01

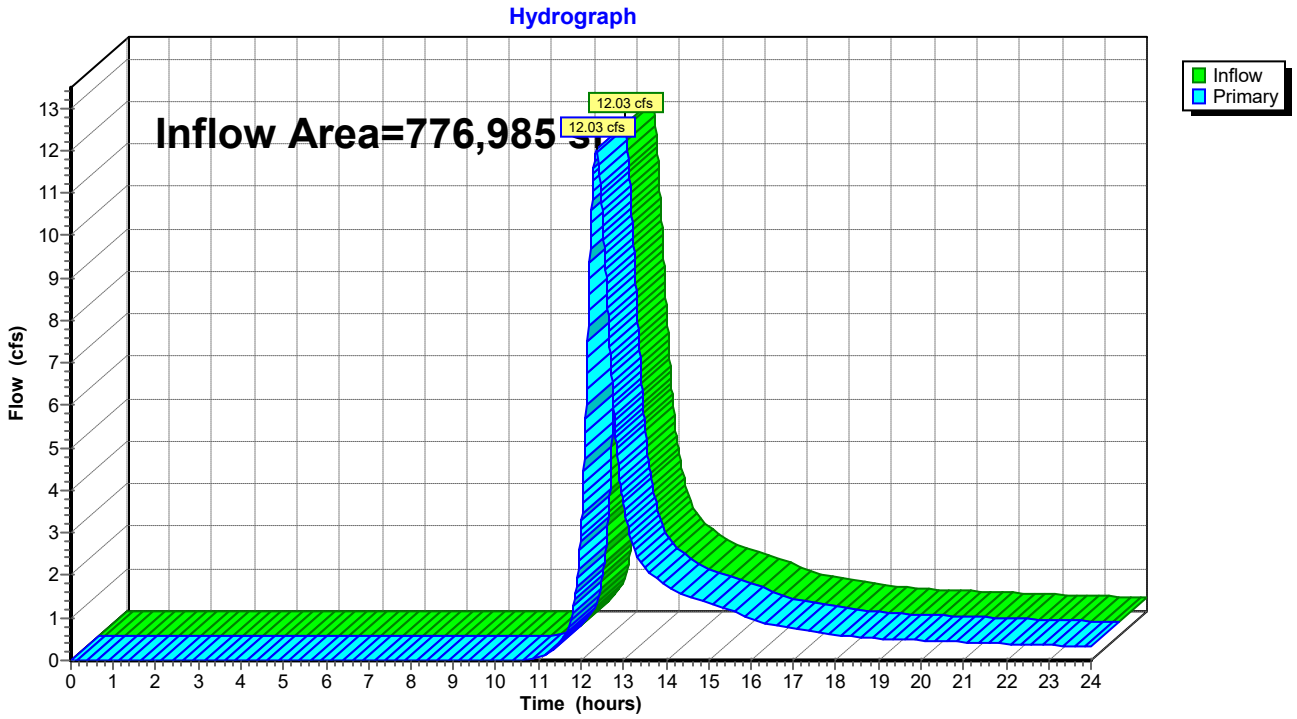


Summary for Link POC A: POC-A

Inflow Area = 776,985 sf, 23.84% Impervious, Inflow Depth > 0.98" for 1-yr event
Inflow = 12.03 cfs @ 12.36 hrs, Volume= 63,576 cf
Primary = 12.03 cfs @ 12.36 hrs, Volume= 63,576 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link POC A: POC-A



Summary for Subcatchment A: EX-WS-A

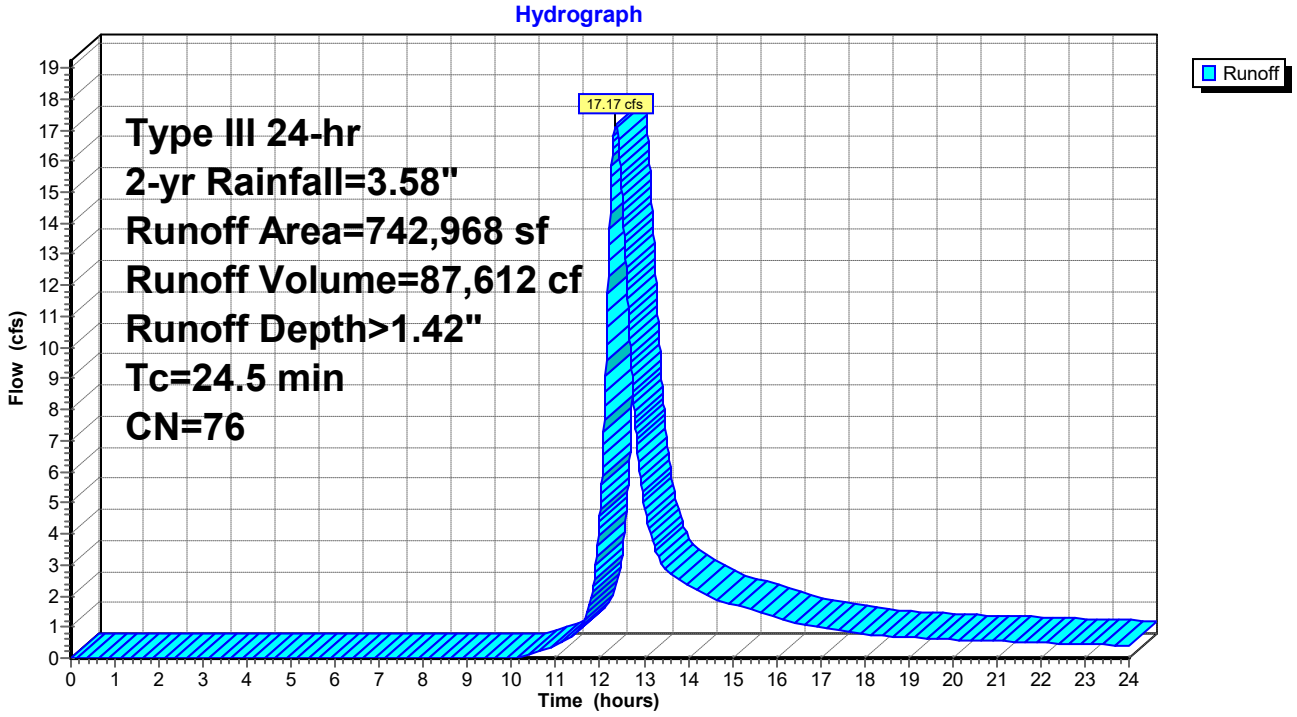
Runoff = 17.17 cfs @ 12.36 hrs, Volume= 87,612 cf, Depth> 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.58"

	Area (sf)	CN	Description
*	173,688	98	IMPERVIOUS
*	94,493	69	LANDSCAPED - B
*	215,845	79	LANDSCAPED - C
*	231,559	60	WOODED - B
*	27,383	73	WOODED - C
	742,968	76	Weighted Average
	569,280		76.62% Pervious Area
	173,688		23.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5					**Direct Entry,**

Subcatchment A: EX-WS-A



Summary for Subcatchment B: EX-WS-B

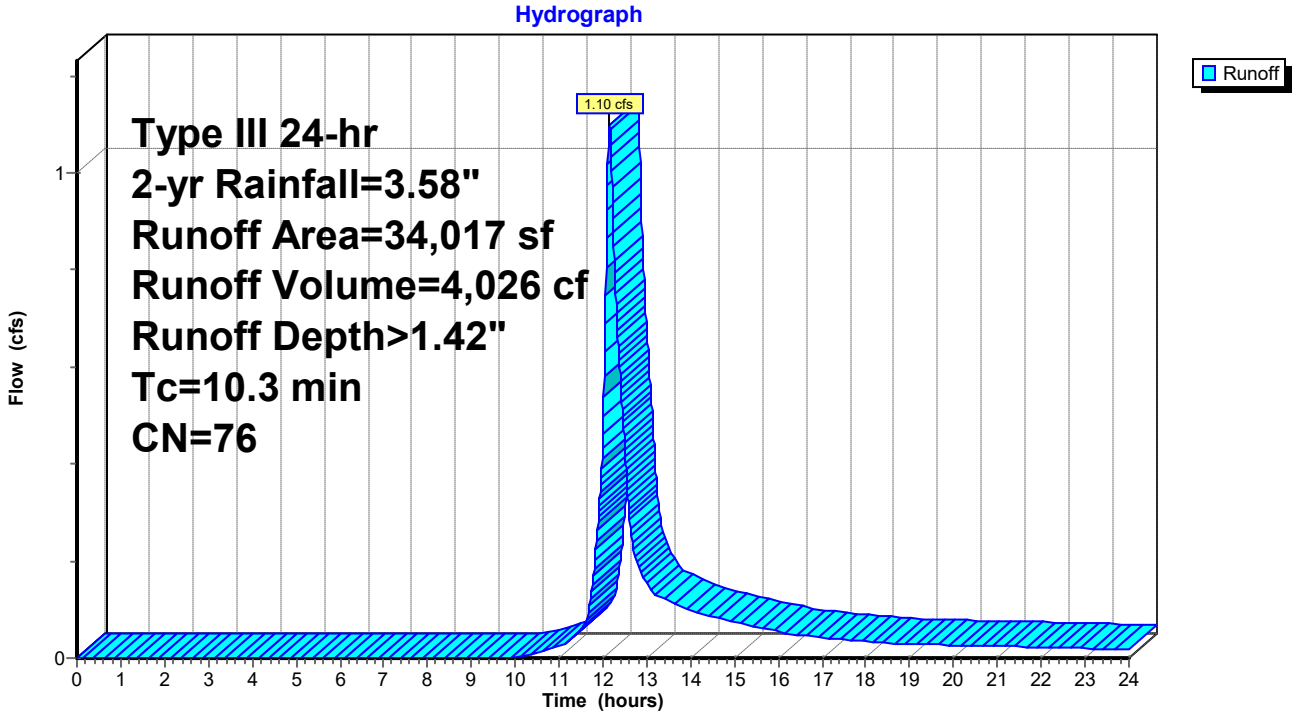
Runoff = 1.10 cfs @ 12.15 hrs, Volume= 4,026 cf, Depth> 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.58"

	Area (sf)	CN	Description
*	11,545	98	IMPERVIOUS
*	3,348	69	LAWN - B
*	3,561	79	LAWN - C
*	15,556	60	WOODED - B
*	7	73	WOODED - C
	34,017	76	Weighted Average
	22,472		66.06% Pervious Area
	11,545		33.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3					**Direct Entry,**

Subcatchment B: EX-WS-B



Summary for Pond 1P: EX-UI-02

Inflow	=	0.18 cfs @	12.19 hrs, Volume=	168 cf
Outflow	=	0.18 cfs @	12.20 hrs, Volume=	168 cf, Atten= 0%, Lag= 0.4 min
Primary	=	0.18 cfs @	12.20 hrs, Volume=	168 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 35.51' @ 12.20 hrs Surf.Area= 502 sf Storage= 5 cf

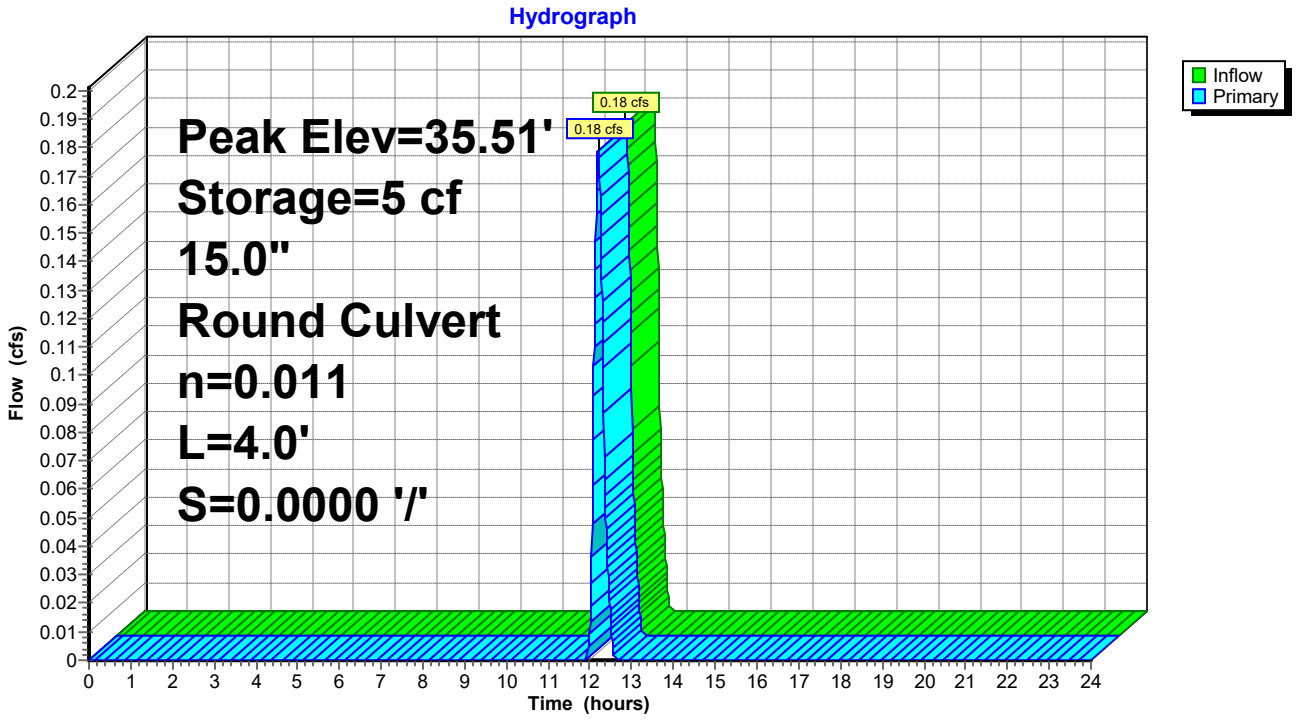
Plug-Flow detention time= 0.4 min calculated for 167 cf (100% of inflow)
Center-of-Mass det. time= 0.4 min (733.4 - 733.0)

Volume	Invert	Avail.Storage	Storage Description
#1	35.50'	1,818 cf	**Concrete Galley 4x4x4** x 41 Inside= 42.0"W x 43.0"H => 12.67 sf x 3.50'L = 44.3 cf Outside= 52.8"W x 48.0"H => 14.72 sf x 4.00'L = 58.9 cf

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**15.0" Round Culvert** L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 35.00' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.72 cfs @ 12.20 hrs HW=35.51' (Free Discharge)
1=Culvert (Barrel Controls 0.72 cfs @ 2.26 fps)

Pond 1P: EX-UI-02



Summary for Pond 3P: CB 1

[57] Hint: Peaked at 39.45' (Flood elevation advised)
[81] Warning: Exceeded Pond UI 1 by 2.35' @ 12.08 hrs

Inflow Area =	34,017 sf,	33.94% Impervious,	Inflow Depth >	1.42"	for 2-yr event
Inflow =	1.04 cfs @	12.19 hrs,	Volume=	4,025 cf	
Outflow =	1.04 cfs @	12.19 hrs,	Volume=	4,025 cf,	Atten= 0%, Lag= 0.0 min
Primary =	0.86 cfs @	12.19 hrs,	Volume=	3,858 cf	
Secondary =	0.18 cfs @	12.19 hrs,	Volume=	168 cf	

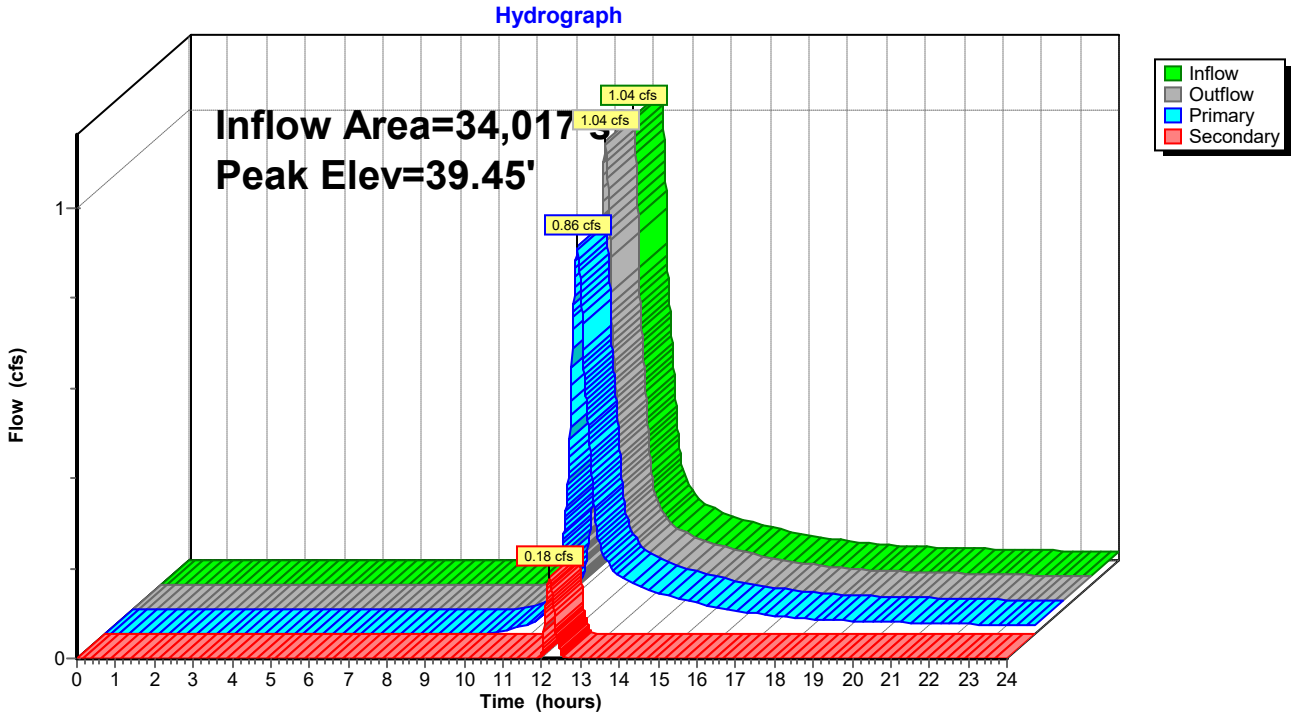
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 39.45' @ 12.19 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.94'	**12.0" Round Culvert** L= 326.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.94' / 37.38' S= 0.0048 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Secondary	39.24'	**12.0" Round Culvert** L= 8.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 39.24' / 37.06' S= 0.2725 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.86 cfs @ 12.19 hrs HW=39.45' (Free Discharge)
1=Culvert (Barrel Controls 0.86 cfs @ 3.14 fps)

Secondary OutFlow Max=0.18 cfs @ 12.19 hrs HW=39.45' (Free Discharge)
2=Culvert (Inlet Controls 0.18 cfs @ 1.54 fps)

Pond 3P: CB 1


Hydrograph
Inflow Area=34,017
Peak Elev=39.45'
1.04 cfs
1.04 cfs
0.86 cfs
0.18 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0
1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time (hours)

Summary for Pond UI 1: EX-UI-01

Inflow Area = 34,017 sf, 33.94% Impervious, Inflow Depth > 1.42" for 2-yr event
Inflow = 1.10 cfs @ 12.15 hrs, Volume= 4,026 cf
Outflow = 1.04 cfs @ 12.19 hrs, Volume= 4,025 cf, Atten= 6%, Lag= 2.4 min
Primary = 1.04 cfs @ 12.19 hrs, Volume= 4,025 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 37.12' @ 12.19 hrs Surf.Area= 501 sf Storage= 62 cf

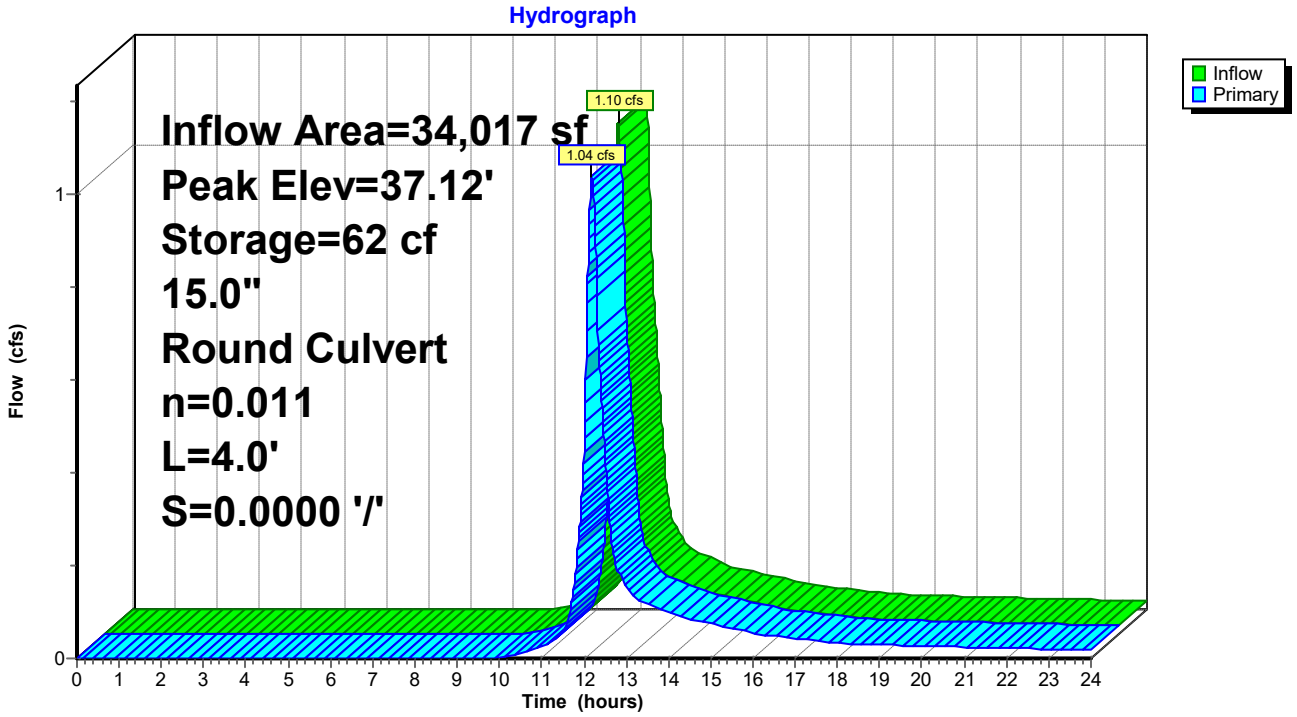
Plug-Flow detention time= 0.5 min calculated for 4,025 cf (100% of inflow)
Center-of-Mass det. time= 0.4 min (852.2 - 851.8)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,774 cf	**Concrete Galley 4x4x4** x 40 Inside= 42.0"W x 43.0"H => 12.67 sf x 3.50'L = 44.3 cf Outside= 52.8"W x 48.0"H => 14.72 sf x 4.00'L = 58.9 cf 2 Rows of 20 Chambers
#2	37.00'	50 cf	**4.00'D x 4.00'H Vertical Cone/Cylinder**
		1,824 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**15.0" Round Culvert** L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.50' / 36.50' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=1.04 cfs @ 12.19 hrs HW=37.12' (Free Discharge)
↑**1=Culvert** (Barrel Controls 1.04 cfs @ 2.50 fps)

Pond UI 1: EX-UI-01

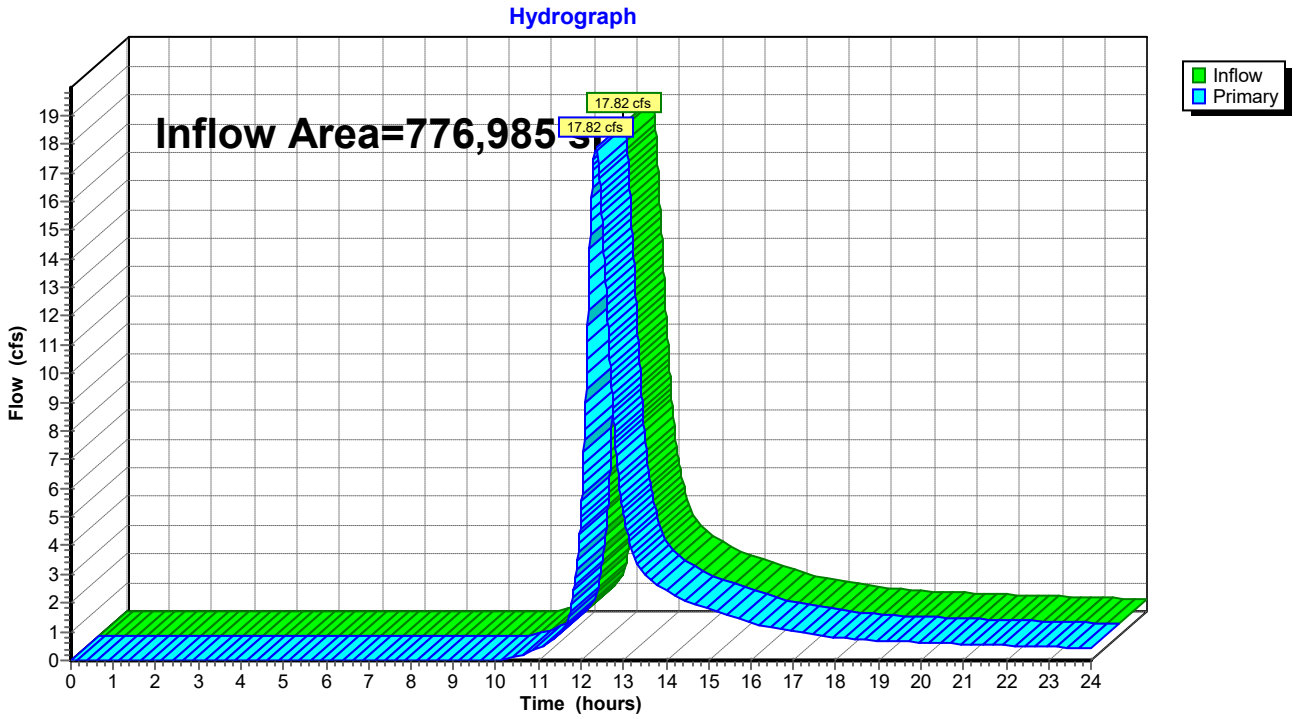


Summary for Link POC A: POC-A

Inflow Area = 776,985 sf, 23.84% Impervious, Inflow Depth > 1.42" for 2-yr event
Inflow = 17.82 cfs @ 12.34 hrs, Volume= 91,637 cf
Primary = 17.82 cfs @ 12.34 hrs, Volume= 91,637 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link POC A: POC-A



Summary for Subcatchment A: EX-WS-A

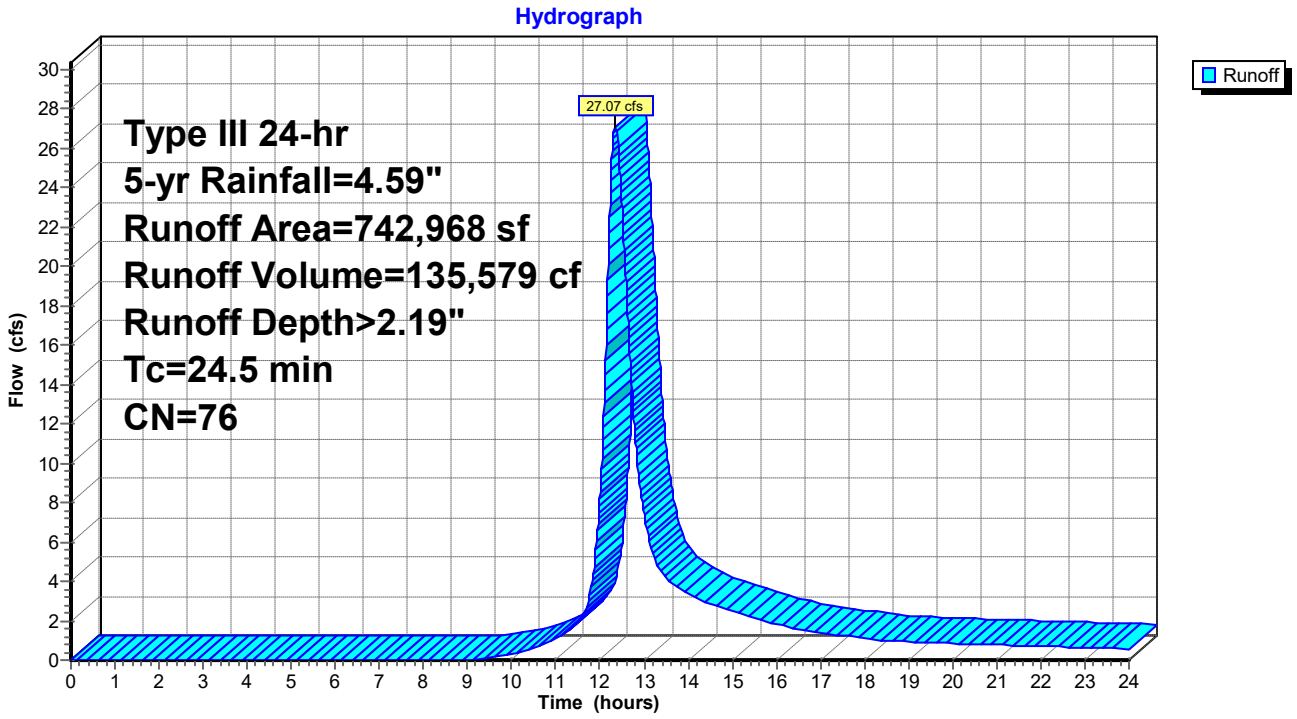
Runoff = 27.07 cfs @ 12.34 hrs, Volume= 135,579 cf, Depth> 2.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.59"

	Area (sf)	CN	Description
*	173,688	98	IMPERVIOUS
*	94,493	69	LANDSCAPED - B
*	215,845	79	LANDSCAPED - C
*	231,559	60	WOODED - B
*	27,383	73	WOODED - C
	742,968	76	Weighted Average
	569,280		76.62% Pervious Area
	173,688		23.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5					**Direct Entry,**

Subcatchment A: EX-WS-A



Summary for Subcatchment B: EX-WS-B

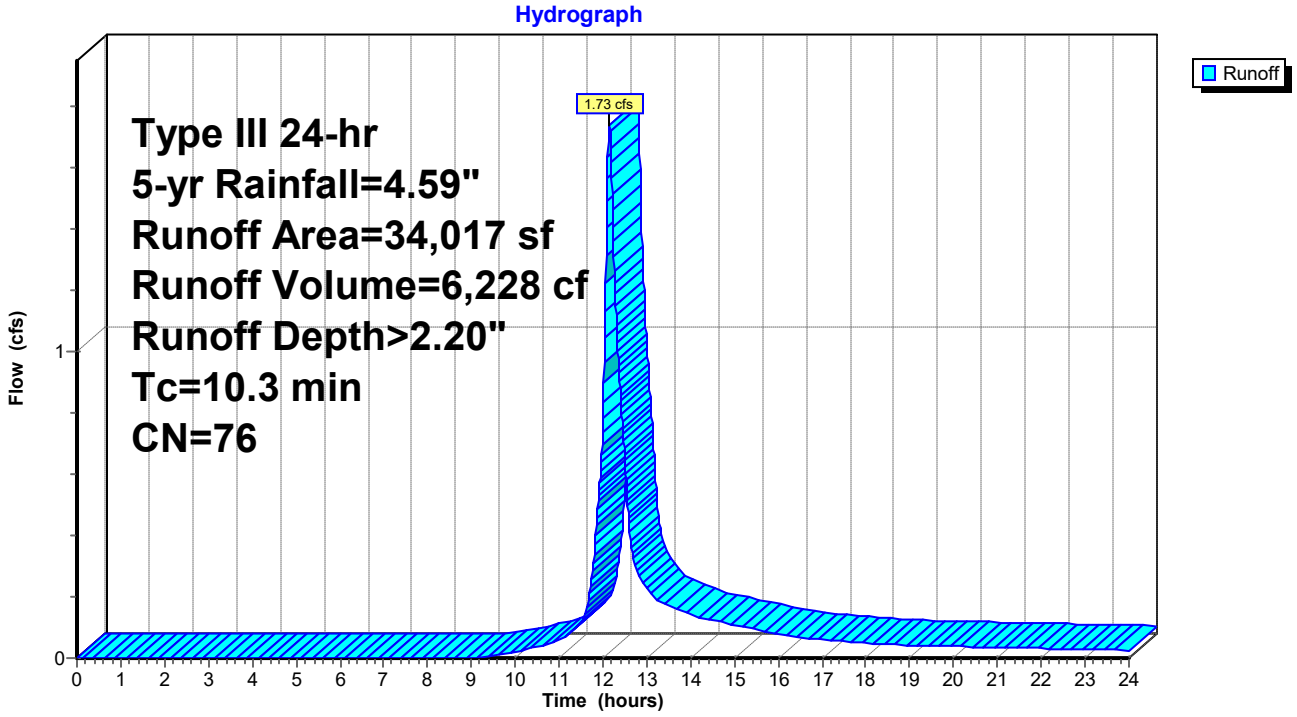
Runoff = 1.73 cfs @ 12.15 hrs, Volume= 6,228 cf, Depth> 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.59"

	Area (sf)	CN	Description
*	11,545	98	IMPERVIOUS
*	3,348	69	LAWN - B
*	3,561	79	LAWN - C
*	15,556	60	WOODED - B
*	7	73	WOODED - C
	34,017	76	Weighted Average
	22,472		66.06% Pervious Area
	11,545		33.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3					**Direct Entry,**

Subcatchment B: EX-WS-B



Summary for Pond 1P: EX-UI-02

Inflow	=	0.41 cfs @	12.18 hrs, Volume=	456 cf
Outflow	=	0.41 cfs @	12.19 hrs, Volume=	456 cf, Atten= 0%, Lag= 0.5 min
Primary	=	0.41 cfs @	12.19 hrs, Volume=	456 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 35.52' @ 12.19 hrs Surf.Area= 502 sf Storage= 11 cf

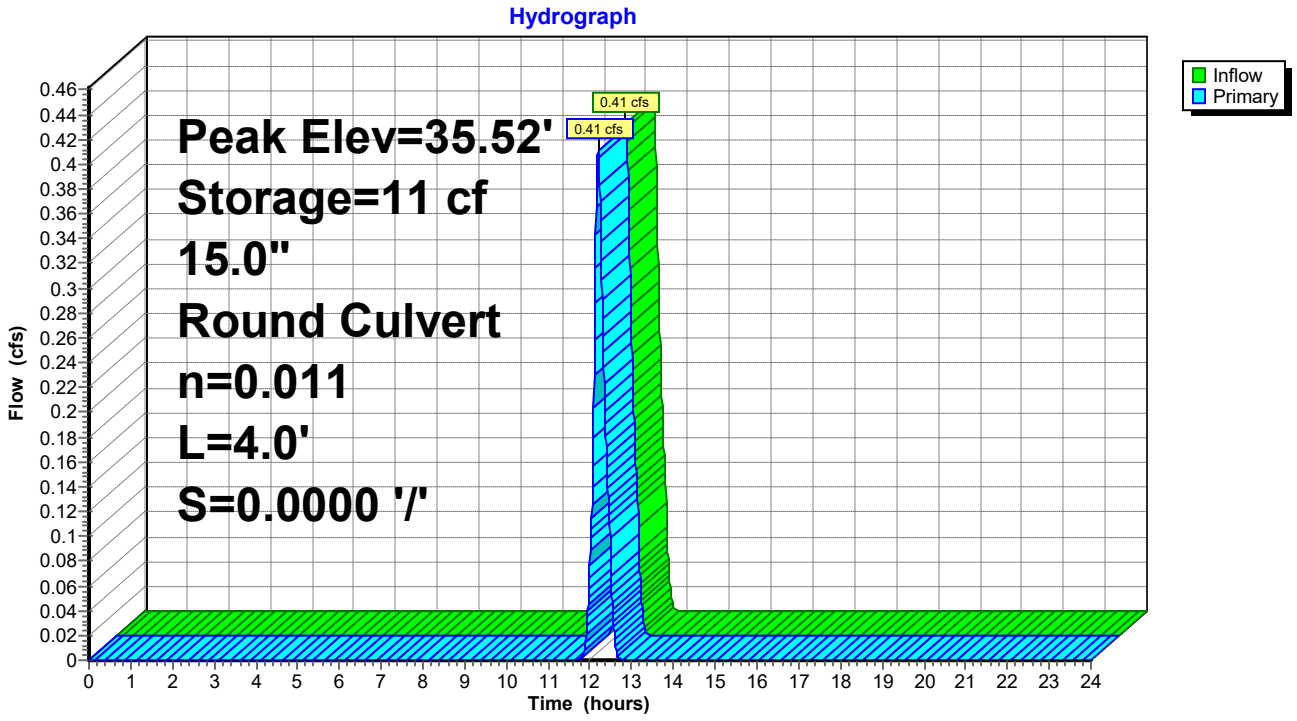
Plug-Flow detention time= 0.4 min calculated for 455 cf (100% of inflow)
Center-of-Mass det. time= 0.4 min (734.1 - 733.7)

Volume	Invert	Avail.Storage	Storage Description
#1	35.50'	1,818 cf	**Concrete Galley 4x4x4** x 41 Inside= 42.0"W x 43.0"H => 12.67 sf x 3.50'L = 44.3 cf Outside= 52.8"W x 48.0"H => 14.72 sf x 4.00'L = 58.9 cf

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**15.0" Round Culvert** L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 35.00' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.75 cfs @ 12.19 hrs HW=35.52' (Free Discharge)
1=Culvert (Barrel Controls 0.75 cfs @ 2.28 fps)

Pond 1P: EX-UI-02



Summary for Pond 3P: CB 1

[57] Hint: Peaked at 39.56' (Flood elevation advised)
[81] Warning: Exceeded Pond UI 1 by 2.35' @ 12.02 hrs

Inflow Area =	34,017 sf,	33.94% Impervious,	Inflow Depth >	2.20"	for 5-yr event
Inflow =	1.64 cfs @	12.18 hrs,	Volume=	6,227 cf	
Outflow =	1.64 cfs @	12.18 hrs,	Volume=	6,227 cf,	Atten= 0%, Lag= 0.0 min
Primary =	1.23 cfs @	12.18 hrs,	Volume=	5,772 cf	
Secondary =	0.41 cfs @	12.18 hrs,	Volume=	456 cf	

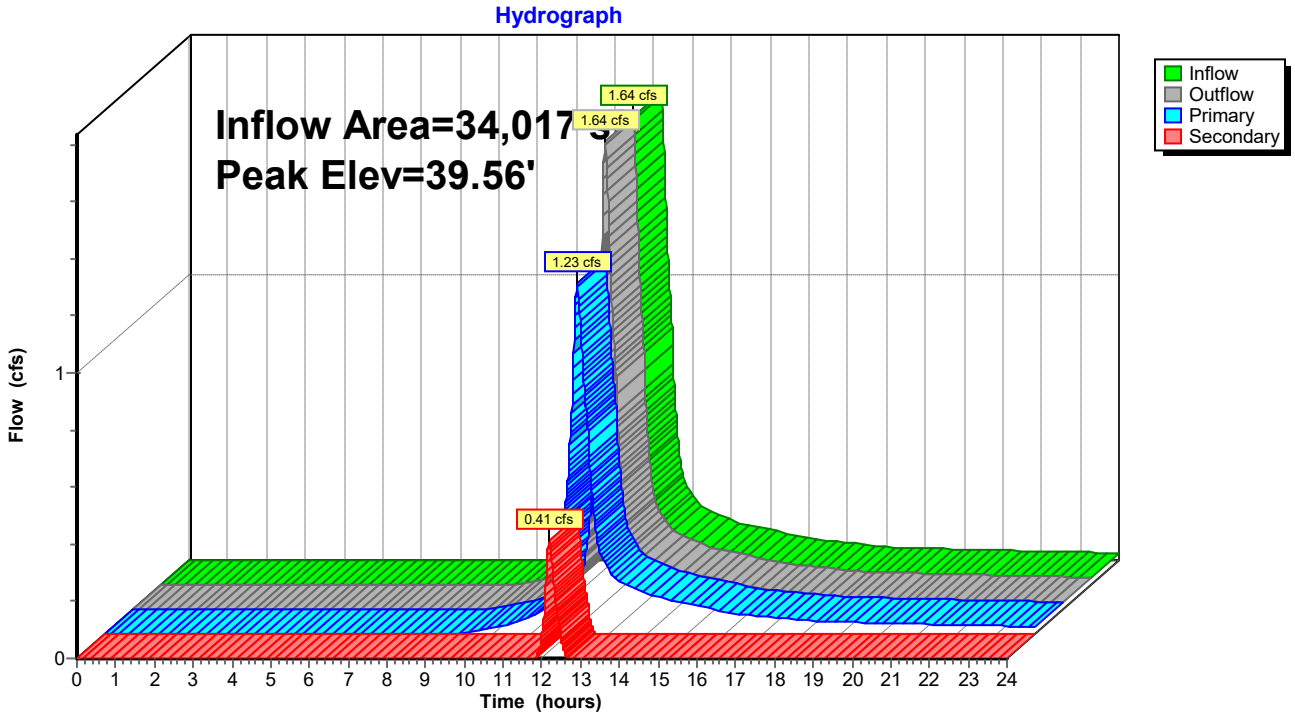
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 39.56' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.94'	**12.0" Round Culvert** L= 326.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.94' / 37.38' S= 0.0048 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Secondary	39.24'	**12.0" Round Culvert** L= 8.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 39.24' / 37.06' S= 0.2725 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.22 cfs @ 12.18 hrs HW=39.56' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.22 cfs @ 3.44 fps)

Secondary OutFlow Max=0.41 cfs @ 12.18 hrs HW=39.56' (Free Discharge)
└**2=Culvert** (Inlet Controls 0.41 cfs @ 1.92 fps)

Pond 3P: CB 1


Hydrograph
Inflow Area=34,017
Peak Elev=39.56'
1.64 cfs
1.64 cfs
1.23 cfs
0.41 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0
1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time (hours)

Summary for Pond UI 1: EX-UI-01

Inflow Area = 34,017 sf, 33.94% Impervious, Inflow Depth > 2.20" for 5-yr event
Inflow = 1.73 cfs @ 12.15 hrs, Volume= 6,228 cf
Outflow = 1.64 cfs @ 12.18 hrs, Volume= 6,227 cf, Atten= 6%, Lag= 2.4 min
Primary = 1.64 cfs @ 12.18 hrs, Volume= 6,227 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 37.29' @ 12.18 hrs Surf.Area= 500 sf Storage= 152 cf

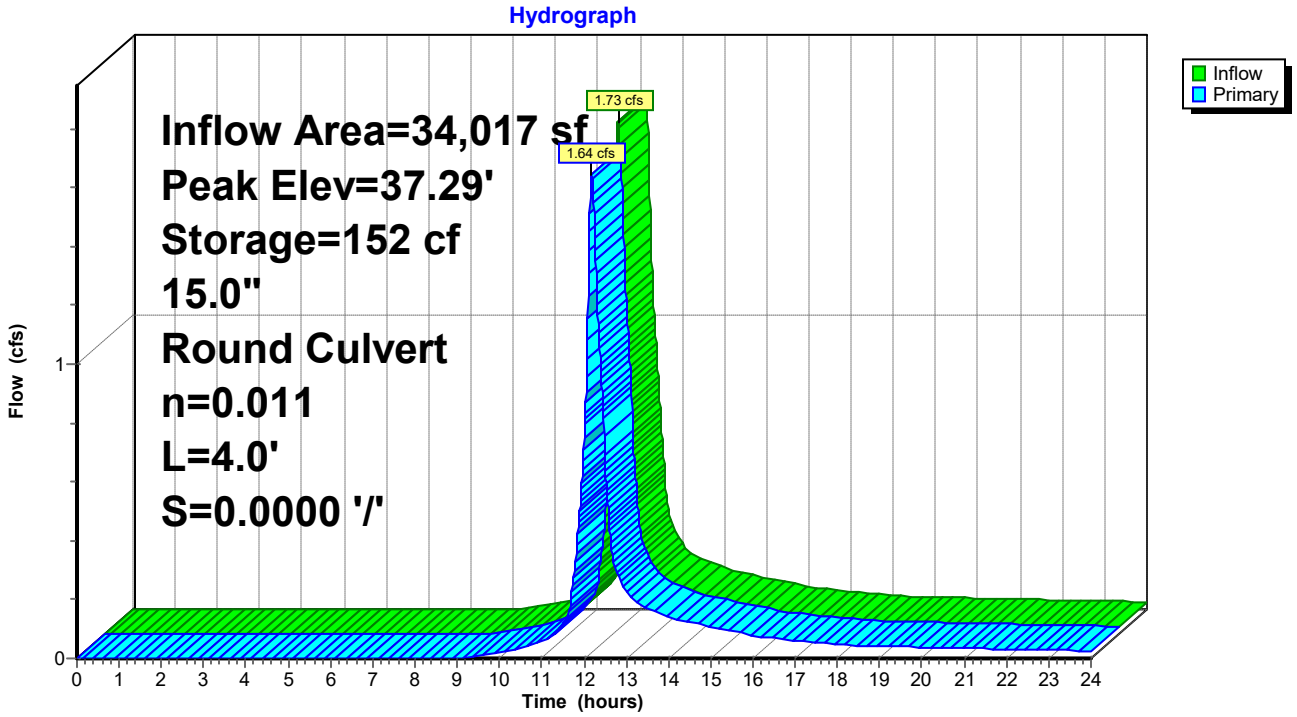
Plug-Flow detention time= 0.7 min calculated for 6,227 cf (100% of inflow)
Center-of-Mass det. time= 0.6 min (839.7 - 839.0)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,774 cf	**Concrete Galley 4x4x4** x 40 Inside= 42.0"W x 43.0"H => 12.67 sf x 3.50'L = 44.3 cf Outside= 52.8"W x 48.0"H => 14.72 sf x 4.00'L = 58.9 cf 2 Rows of 20 Chambers
#2	37.00'	50 cf	**4.00'D x 4.00'H Vertical Cone/Cylinder**
		1,824 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**15.0" Round Culvert** L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.50' / 36.50' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=1.64 cfs @ 12.18 hrs HW=37.29' (Free Discharge)
1=Culvert (Barrel Controls 1.64 cfs @ 2.85 fps)

Pond UI 1: EX-UI-01

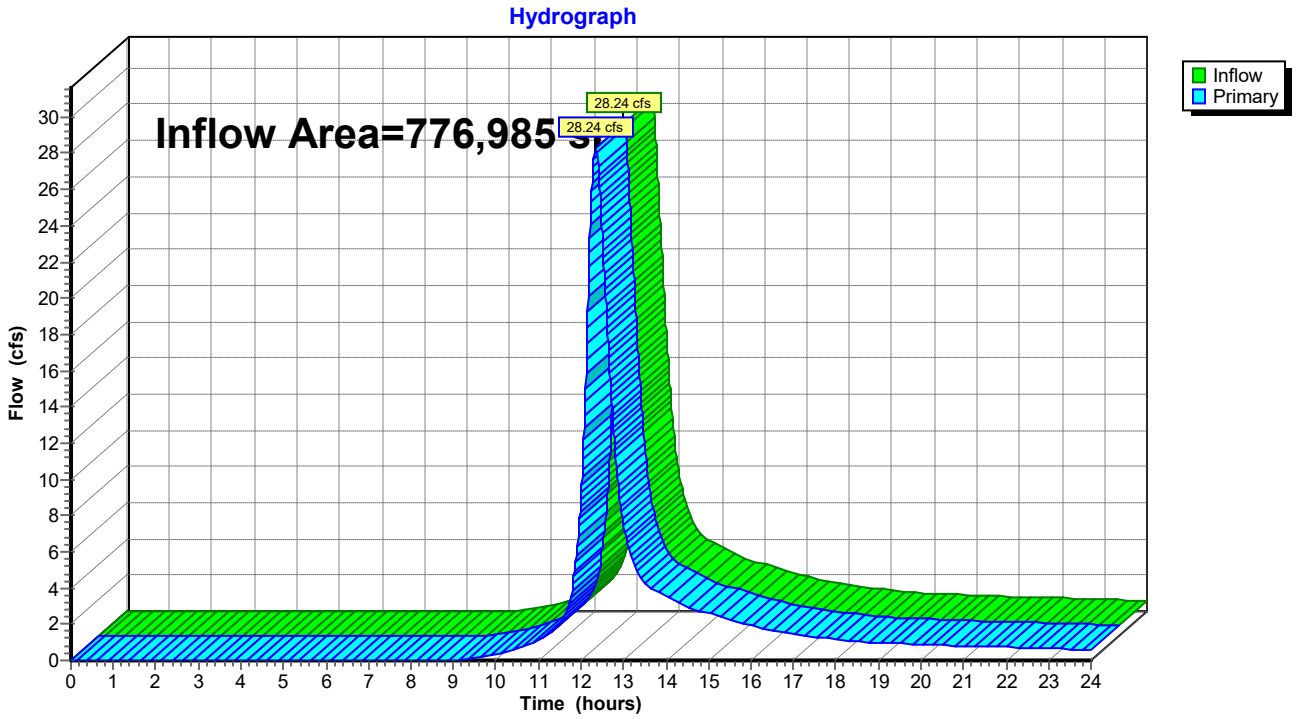


Summary for Link POC A: POC-A

Inflow Area = 776,985 sf, 23.84% Impervious, Inflow Depth > 2.19" for 5-yr event
Inflow = 28.24 cfs @ 12.33 hrs, Volume= 141,806 cf
Primary = 28.24 cfs @ 12.33 hrs, Volume= 141,806 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link POC A: POC-A



Summary for Subcatchment A: EX-WS-A

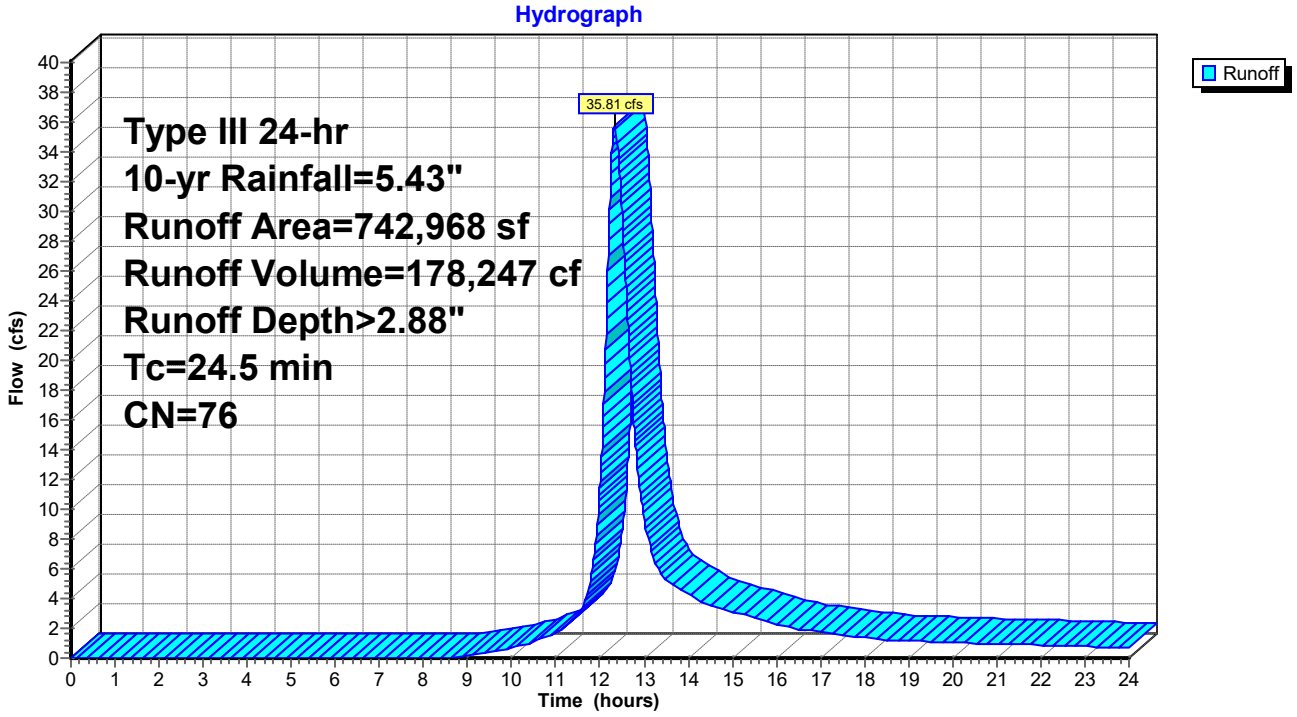
Runoff = 35.81 cfs @ 12.33 hrs, Volume= 178,247 cf, Depth> 2.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.43"

	Area (sf)	CN	Description
*	173,688	98	IMPERVIOUS
*	94,493	69	LANDSCAPED - B
*	215,845	79	LANDSCAPED - C
*	231,559	60	WOODED - B
*	27,383	73	WOODED - C
	742,968	76	Weighted Average
	569,280		76.62% Pervious Area
	173,688		23.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5					**Direct Entry,**

Subcatchment A: EX-WS-A



Summary for Subcatchment B: EX-WS-B

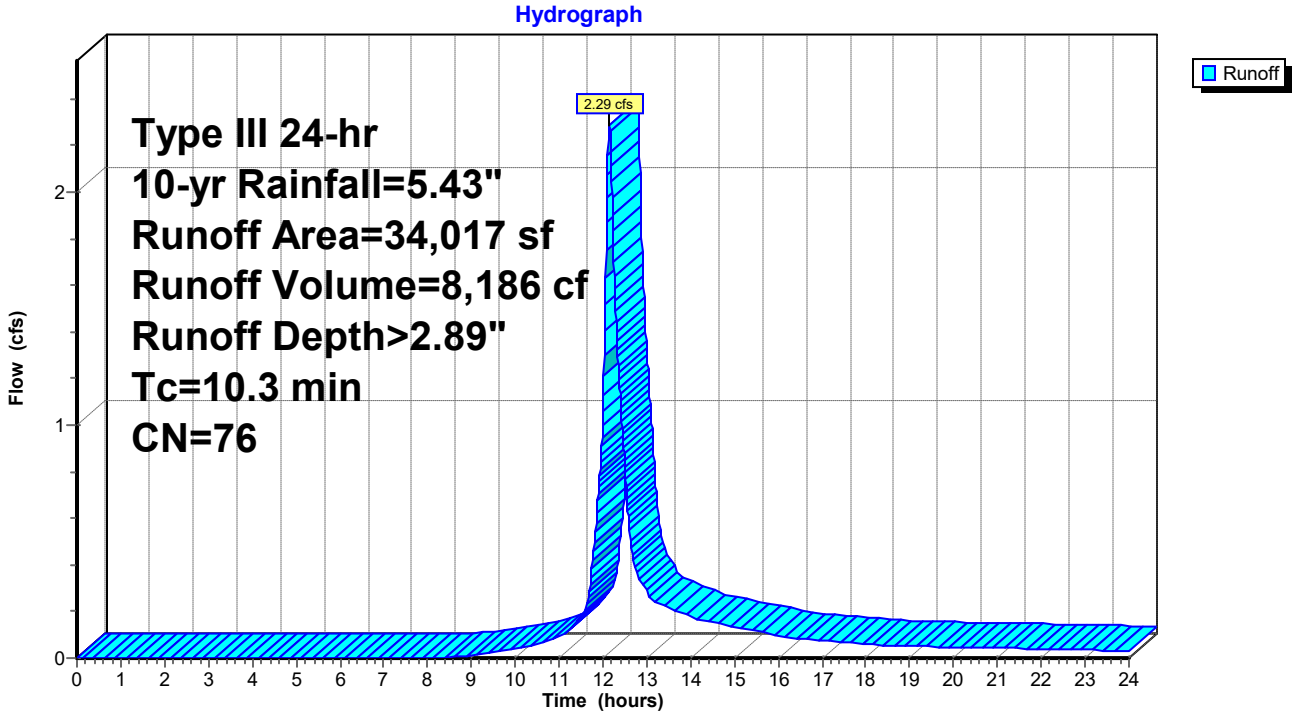
Runoff = 2.29 cfs @ 12.14 hrs, Volume= 8,186 cf, Depth> 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.43"

	Area (sf)	CN	Description
*	11,545	98	IMPERVIOUS
*	3,348	69	LAWN - B
*	3,561	79	LAWN - C
*	15,556	60	WOODED - B
*	7	73	WOODED - C
	34,017	76	Weighted Average
	22,472		66.06% Pervious Area
	11,545		33.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3					**Direct Entry,**

Subcatchment B: EX-WS-B



Summary for Pond 1P: EX-UI-02

Inflow	=	0.65 cfs @	12.18 hrs, Volume=	774 cf
Outflow	=	0.65 cfs @	12.19 hrs, Volume=	774 cf, Atten= 0%, Lag= 0.4 min
Primary	=	0.65 cfs @	12.19 hrs, Volume=	774 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 35.53' @ 12.19 hrs Surf.Area= 502 sf Storage= 17 cf

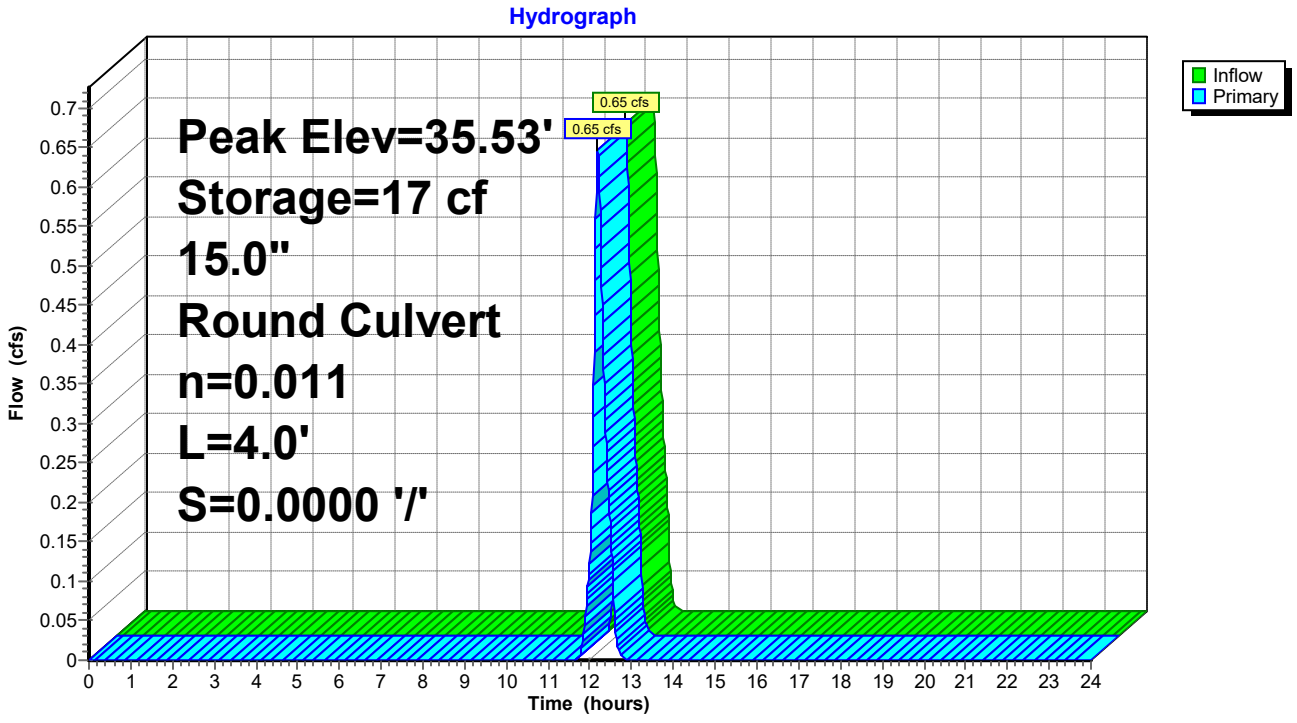
Plug-Flow detention time= 0.4 min calculated for 774 cf (100% of inflow)
Center-of-Mass det. time= 0.4 min (734.2 - 733.7)

Volume	Invert	Avail.Storage	Storage Description
#1	35.50'	1,818 cf	**Concrete Galley 4x4x4** x 41 Inside= 42.0"W x 43.0"H => 12.67 sf x 3.50'L = 44.3 cf Outside= 52.8"W x 48.0"H => 14.72 sf x 4.00'L = 58.9 cf

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**15.0" Round Culvert** L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 35.00' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.78 cfs @ 12.19 hrs HW=35.53' (Free Discharge)
1=Culvert (Barrel Controls 0.78 cfs @ 2.31 fps)

Pond 1P: EX-UI-02



Summary for Pond 3P: CB 1

[57] Hint: Peaked at 39.65' (Flood elevation advised)
[81] Warning: Exceeded Pond UI 1 by 2.35' @ 11.95 hrs

Inflow Area =	34,017 sf,	33.94% Impervious,	Inflow Depth >	2.89"	for 10-yr event
Inflow =	2.18 cfs @	12.18 hrs,	Volume=	8,185 cf	
Outflow =	2.18 cfs @	12.18 hrs,	Volume=	8,185 cf,	Atten= 0%, Lag= 0.0 min
Primary =	1.53 cfs @	12.18 hrs,	Volume=	7,412 cf	
Secondary =	0.65 cfs @	12.18 hrs,	Volume=	774 cf	

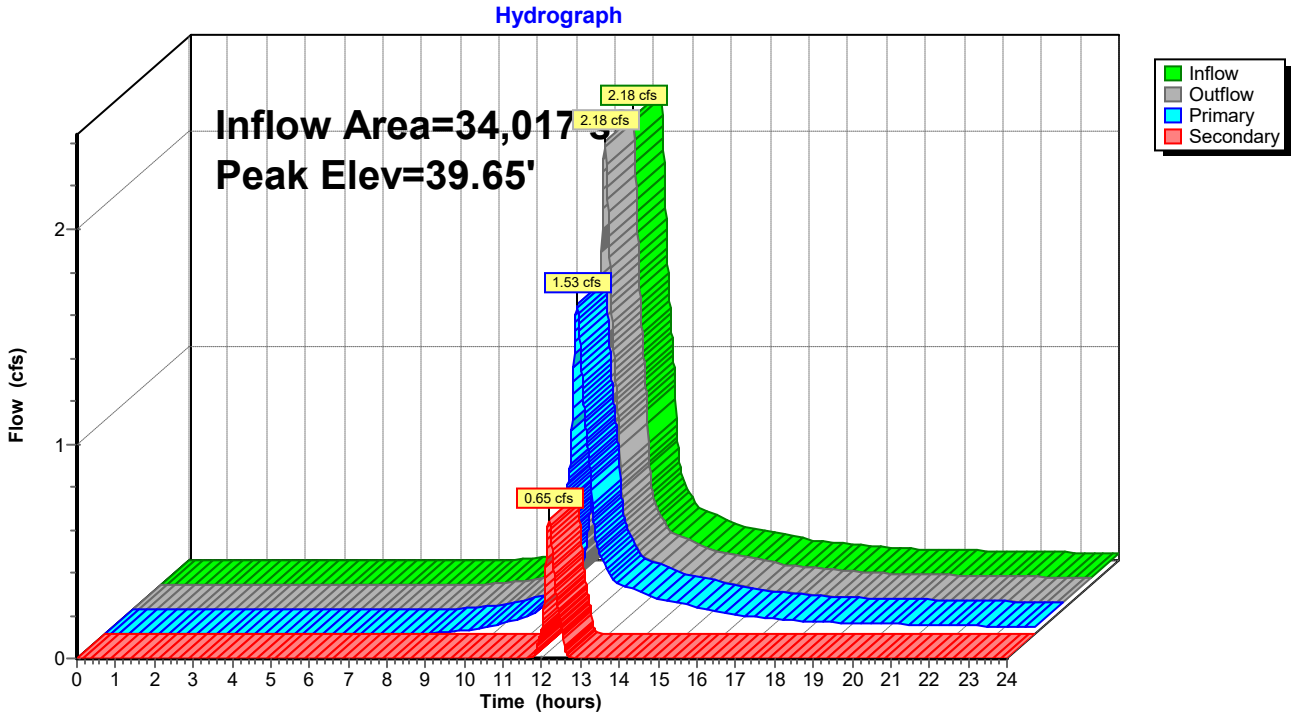
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 39.65' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.94'	**12.0" Round Culvert** L= 326.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.94' / 37.38' S= 0.0048 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Secondary	39.24'	**12.0" Round Culvert** L= 8.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 39.24' / 37.06' S= 0.2725 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.53 cfs @ 12.18 hrs HW=39.65' (Free Discharge)
1=Culvert (Barrel Controls 1.53 cfs @ 3.63 fps)

Secondary OutFlow Max=0.65 cfs @ 12.18 hrs HW=39.65' (Free Discharge)
2=Culvert (Inlet Controls 0.65 cfs @ 2.17 fps)

Pond 3P: CB 1


Hydrograph
Inflow Area=34,017
Peak Elev=39.65'
2.18 cfs
2.18 cfs
1.53 cfs
0.65 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0
1
2
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time (hours)

Summary for Pond UI 1: EX-UI-01

Inflow Area = 34,017 sf, 33.94% Impervious, Inflow Depth > 2.89" for 10-yr event
Inflow = 2.29 cfs @ 12.14 hrs, Volume= 8,186 cf
Outflow = 2.18 cfs @ 12.18 hrs, Volume= 8,185 cf, Atten= 5%, Lag= 2.2 min
Primary = 2.18 cfs @ 12.18 hrs, Volume= 8,185 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 37.43' @ 12.18 hrs Surf.Area= 499 sf Storage= 224 cf

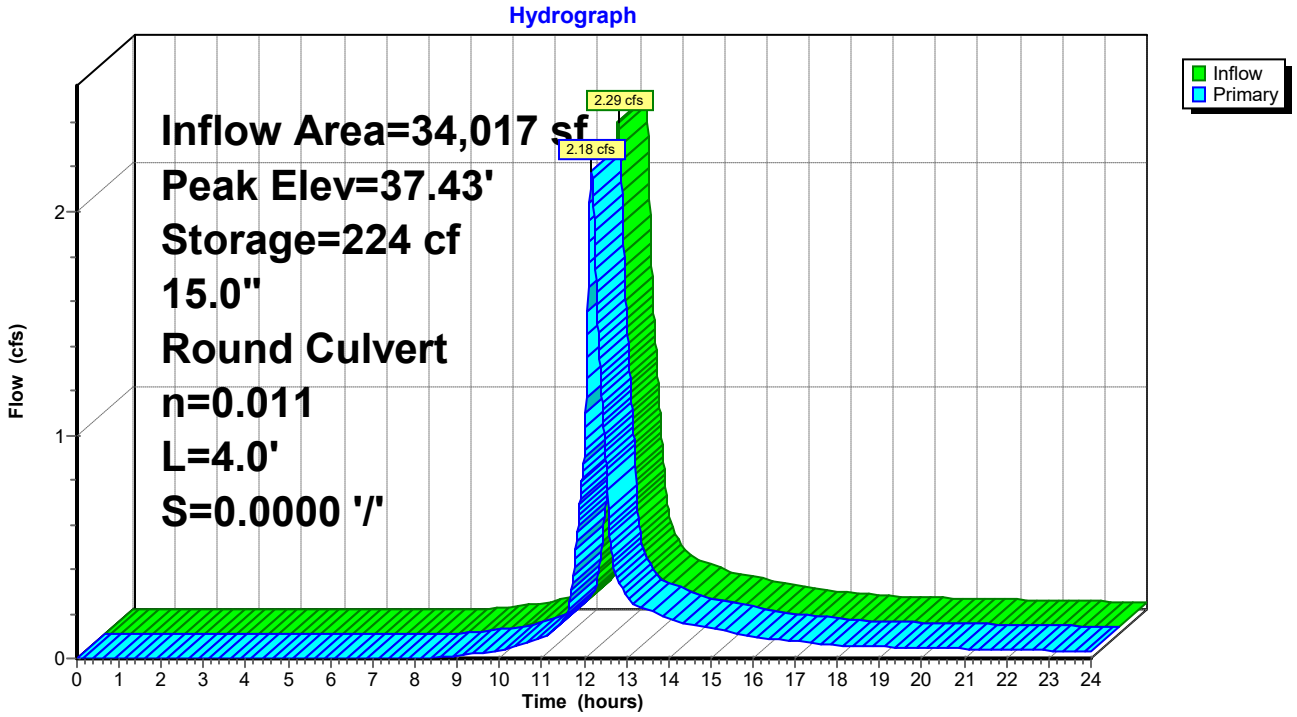
Plug-Flow detention time= 0.8 min calculated for 8,185 cf (100% of inflow)
Center-of-Mass det. time= 0.7 min (831.9 - 831.2)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,774 cf	**Concrete Galley 4x4x4** x 40 Inside= 42.0"W x 43.0"H => 12.67 sf x 3.50'L = 44.3 cf Outside= 52.8"W x 48.0"H => 14.72 sf x 4.00'L = 58.9 cf 2 Rows of 20 Chambers
#2	37.00'	50 cf	**4.00'D x 4.00'H Vertical Cone/Cylinder**
		1,824 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**15.0" Round Culvert** L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.50' / 36.50' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=2.18 cfs @ 12.18 hrs HW=37.43' (Free Discharge)
1=Culvert (Barrel Controls 2.18 cfs @ 3.10 fps)

Pond UI 1: EX-UI-01

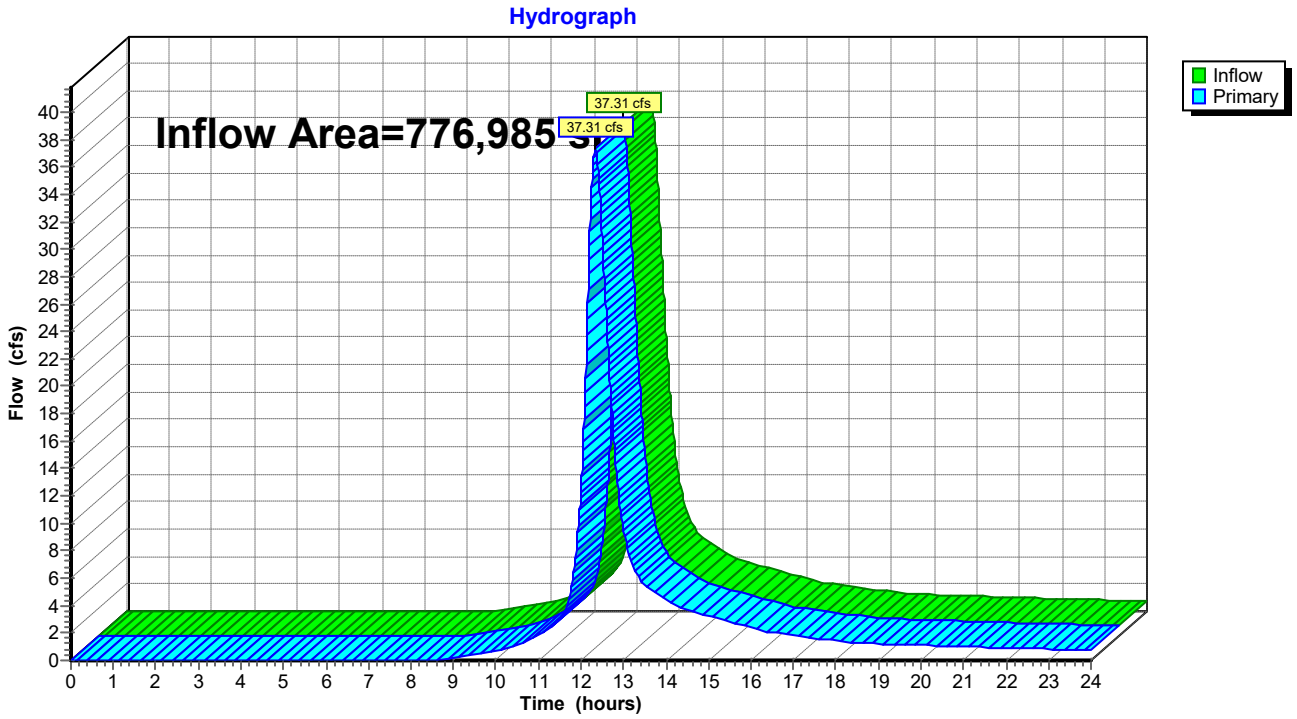


Summary for Link POC A: POC-A

Inflow Area = 776,985 sf, 23.84% Impervious, Inflow Depth > 2.88" for 10-yr event
Inflow = 37.31 cfs @ 12.33 hrs, Volume= 186,432 cf
Primary = 37.31 cfs @ 12.33 hrs, Volume= 186,432 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link POC A: POC-A



Summary for Subcatchment A: EX-WS-A

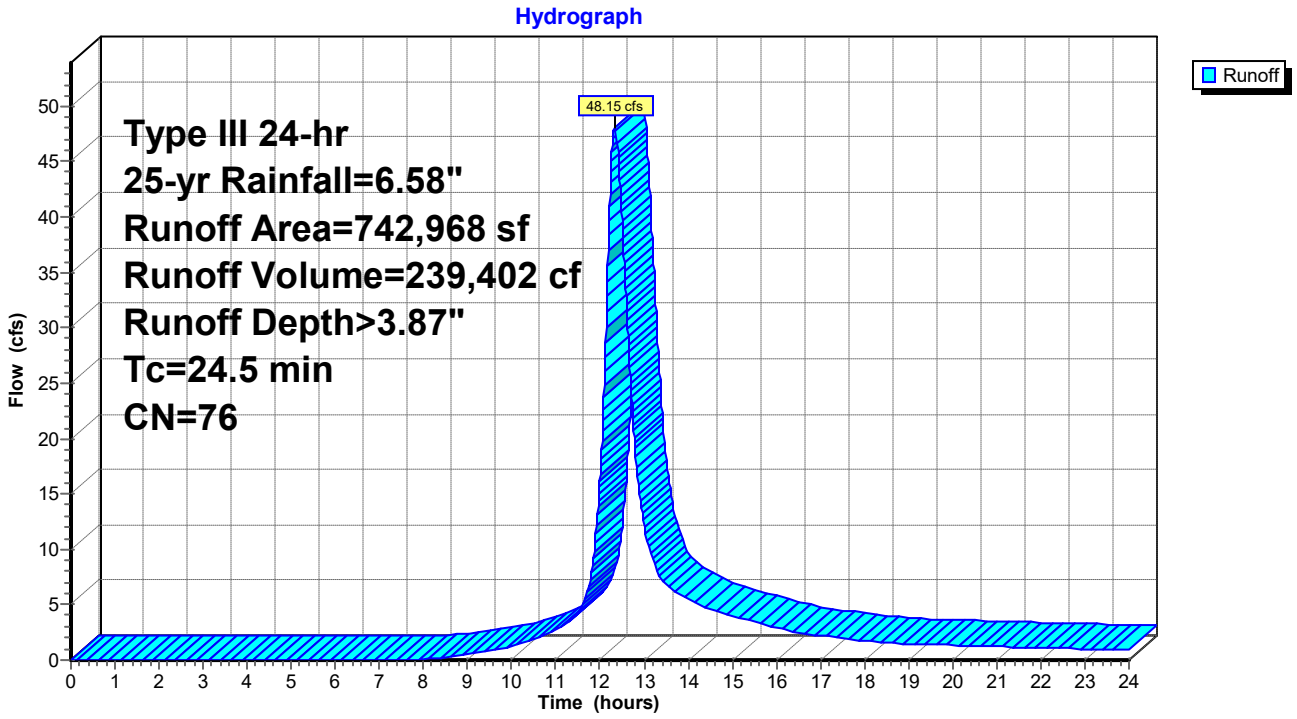
Runoff = 48.15 cfs @ 12.33 hrs, Volume= 239,402 cf, Depth> 3.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.58"

	Area (sf)	CN	Description
*	173,688	98	IMPERVIOUS
*	94,493	69	LANDSCAPED - B
*	215,845	79	LANDSCAPED - C
*	231,559	60	WOODED - B
*	27,383	73	WOODED - C
	742,968	76	Weighted Average
	569,280		76.62% Pervious Area
	173,688		23.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5					**Direct Entry,**

Subcatchment A: EX-WS-A



Summary for Subcatchment B: EX-WS-B

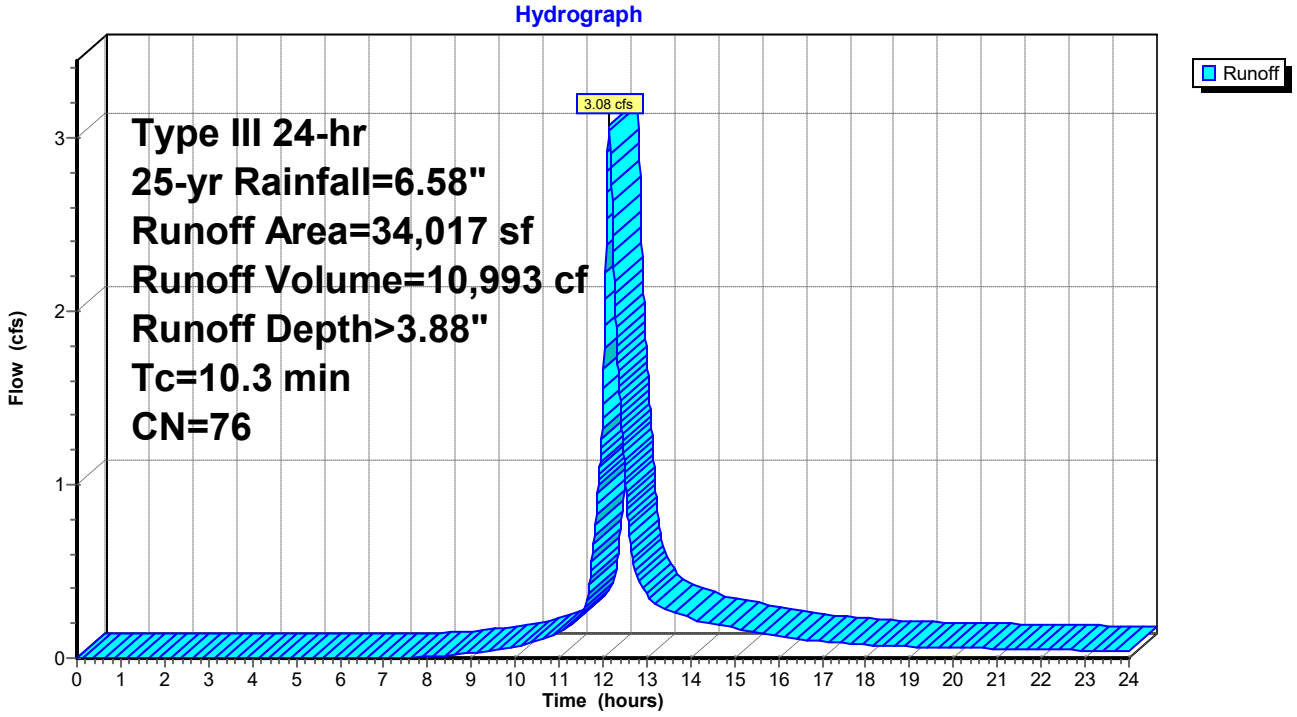
Runoff = 3.08 cfs @ 12.14 hrs, Volume= 10,993 cf, Depth> 3.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.58"

	Area (sf)	CN	Description
*	11,545	98	IMPERVIOUS
*	3,348	69	LAWN - B
*	3,561	79	LAWN - C
*	15,556	60	WOODED - B
*	7	73	WOODED - C
	34,017	76	Weighted Average
	22,472		66.06% Pervious Area
	11,545		33.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3					**Direct Entry,**

Subcatchment B: EX-WS-B



Summary for Pond 1P: EX-UI-02

Inflow	=	1.01 cfs @	12.18 hrs,	Volume=	1,300 cf
Outflow	=	0.95 cfs @	12.21 hrs,	Volume=	1,300 cf, Atten= 6%, Lag= 2.1 min
Primary	=	0.95 cfs @	12.21 hrs,	Volume=	1,300 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 35.59' @ 12.21 hrs Surf.Area= 501 sf Storage= 47 cf

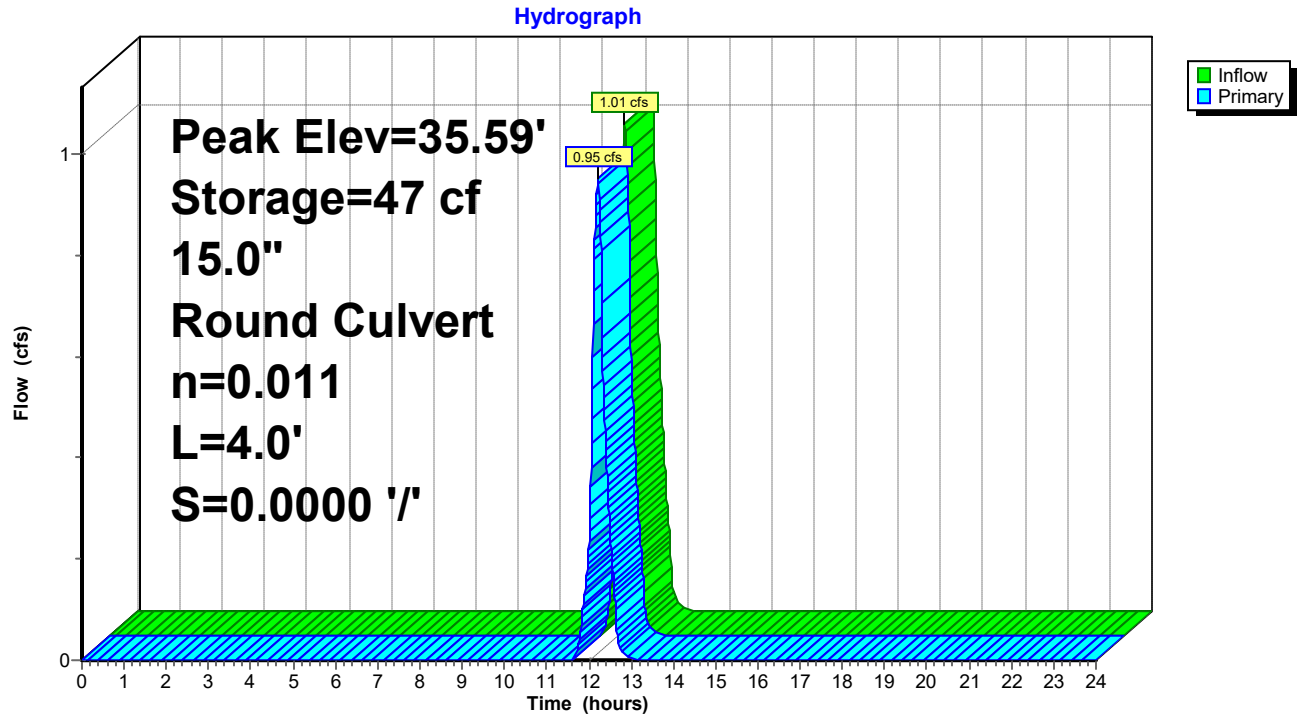
Plug-Flow detention time= 0.5 min calculated for 1,300 cf (100% of inflow)
Center-of-Mass det. time= 0.5 min (734.3 - 733.8)

Volume	Invert	Avail.Storage	Storage Description
#1	35.50'	1,818 cf	**Concrete Galley 4x4x4** x 41 Inside= 42.0"W x 43.0"H => 12.67 sf x 3.50'L = 44.3 cf Outside= 52.8"W x 48.0"H => 14.72 sf x 4.00'L = 58.9 cf

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**15.0" Round Culvert** L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 35.00' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.95 cfs @ 12.21 hrs HW=35.59' (Free Discharge)
1=Culvert (Barrel Controls 0.95 cfs @ 2.44 fps)

Pond 1P: EX-UI-02



Summary for Pond 3P: CB 1

[57] Hint: Peaked at 39.76' (Flood elevation advised)
[81] Warning: Exceeded Pond UI 1 by 2.35' @ 11.85 hrs

Inflow Area =	34,017 sf,	33.94% Impervious,	Inflow Depth >	3.88"	for 25-yr event
Inflow =	2.95 cfs @	12.18 hrs,	Volume=	10,992 cf	
Outflow =	2.95 cfs @	12.18 hrs,	Volume=	10,992 cf,	Atten= 0%, Lag= 0.0 min
Primary =	1.94 cfs @	12.18 hrs,	Volume=	9,692 cf	
Secondary =	1.01 cfs @	12.18 hrs,	Volume=	1,300 cf	

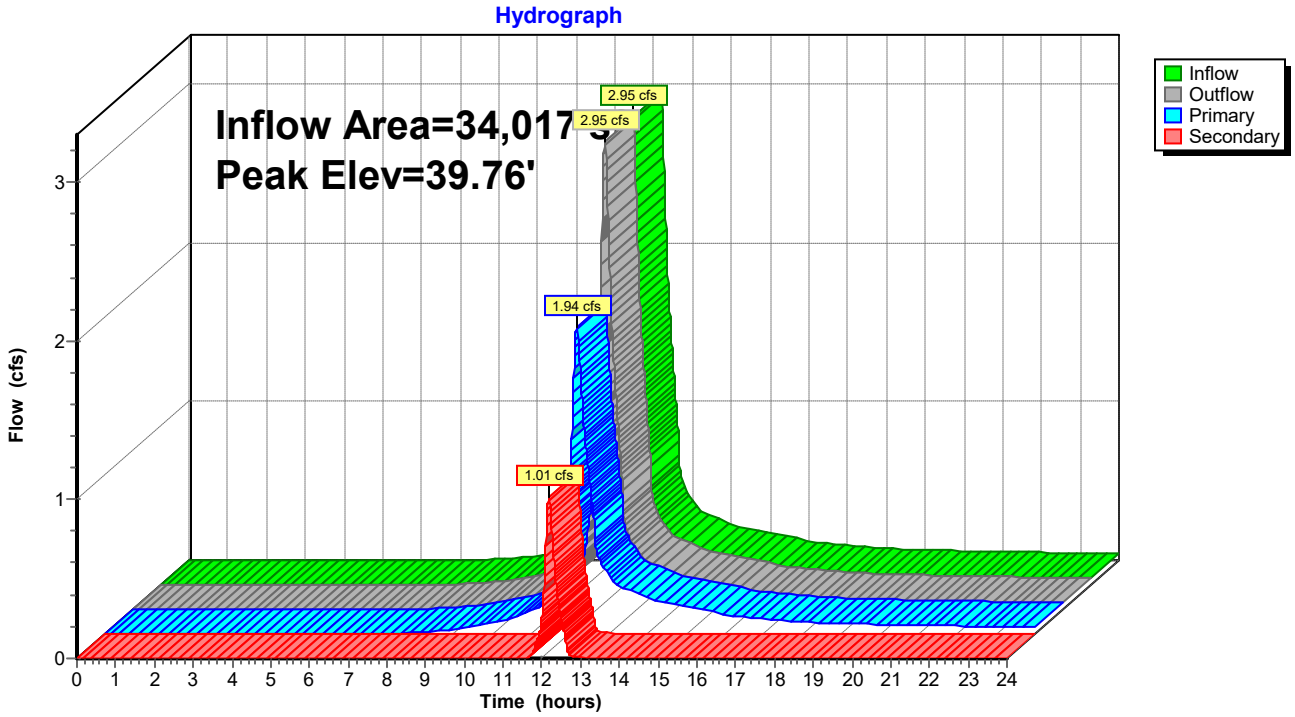
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 39.76' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.94'	**12.0" Round Culvert** L= 326.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.94' / 37.38' S= 0.0048 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Secondary	39.24'	**12.0" Round Culvert** L= 8.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 39.24' / 37.06' S= 0.2725 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.93 cfs @ 12.18 hrs HW=39.76' (Free Discharge)
1=Culvert (Barrel Controls 1.93 cfs @ 3.82 fps)

Secondary OutFlow Max=1.01 cfs @ 12.18 hrs HW=39.76' (Free Discharge)
2=Culvert (Inlet Controls 1.01 cfs @ 2.45 fps)

Pond 3P: CB 1


Hydrograph
Inflow Area=34,017
Peak Elev=39.76'
2.95 cfs
2.95 cfs
1.94 cfs
1.01 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0
1
2
3
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Summary for Pond UI 1: EX-UI-01

Inflow Area = 34,017 sf, 33.94% Impervious, Inflow Depth > 3.88" for 25-yr event
Inflow = 3.08 cfs @ 12.14 hrs, Volume= 10,993 cf
Outflow = 2.95 cfs @ 12.18 hrs, Volume= 10,992 cf, Atten= 4%, Lag= 2.0 min
Primary = 2.95 cfs @ 12.18 hrs, Volume= 10,992 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 37.61' @ 12.18 hrs Surf.Area= 498 sf Storage= 317 cf

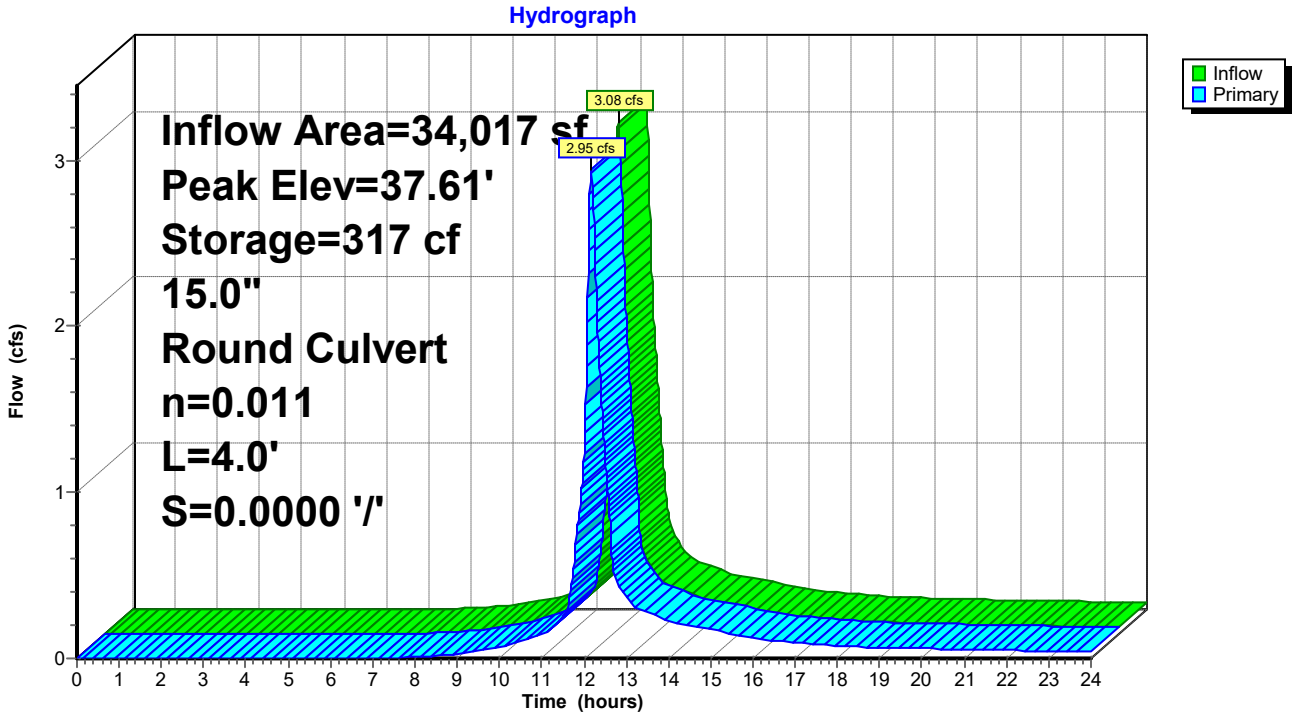
Plug-Flow detention time= 0.9 min calculated for 10,992 cf (100% of inflow)
Center-of-Mass det. time= 0.8 min (823.6 - 822.8)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,774 cf	**Concrete Galley 4x4x4** x 40 Inside= 42.0"W x 43.0"H => 12.67 sf x 3.50'L = 44.3 cf Outside= 52.8"W x 48.0"H => 14.72 sf x 4.00'L = 58.9 cf 2 Rows of 20 Chambers
#2	37.00'	50 cf	**4.00'D x 4.00'H Vertical Cone/Cylinder**
		1,824 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**15.0" Round Culvert** L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.50' / 36.50' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=2.94 cfs @ 12.18 hrs HW=37.61' (Free Discharge)
1=Culvert (Barrel Controls 2.94 cfs @ 3.39 fps)

Pond UI 1: EX-UI-01

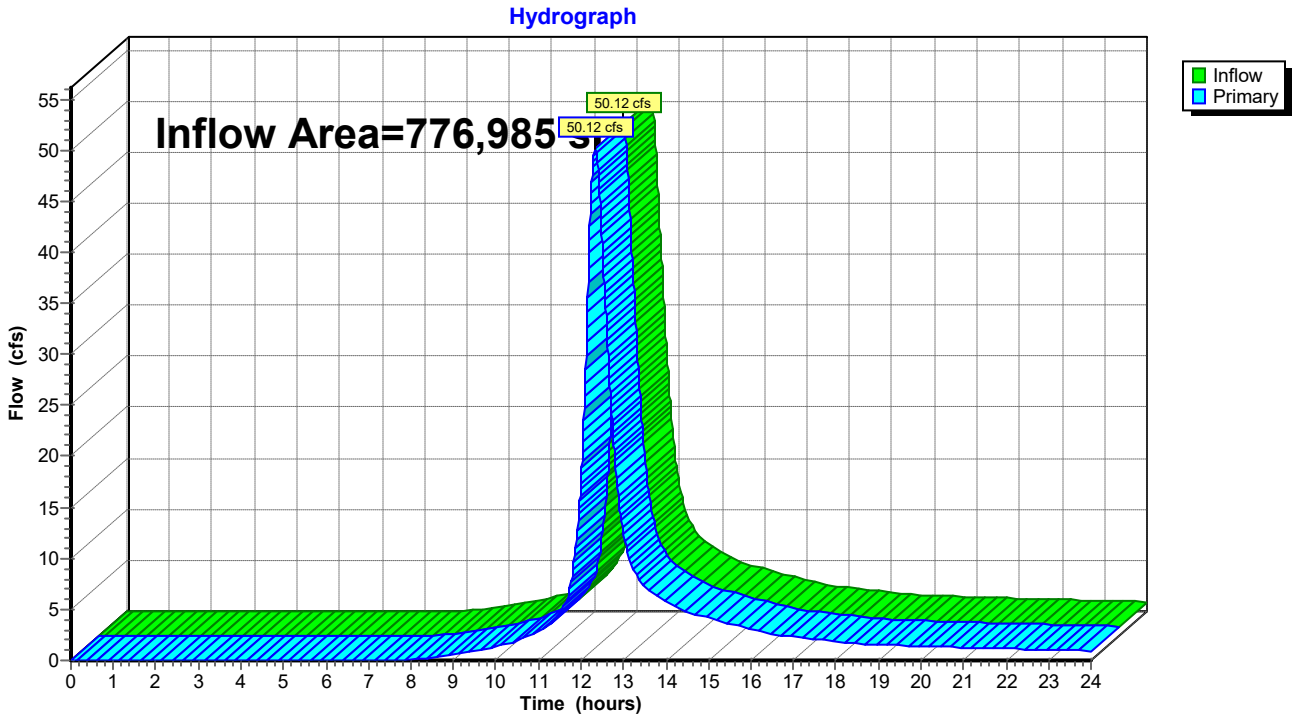


Summary for Link POC A: POC-A

Inflow Area = 776,985 sf, 23.84% Impervious, Inflow Depth > 3.87" for 25-yr event
Inflow = 50.12 cfs @ 12.33 hrs, Volume= 250,394 cf
Primary = 50.12 cfs @ 12.33 hrs, Volume= 250,394 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link POC A: POC-A



Summary for Subcatchment A: EX-WS-A

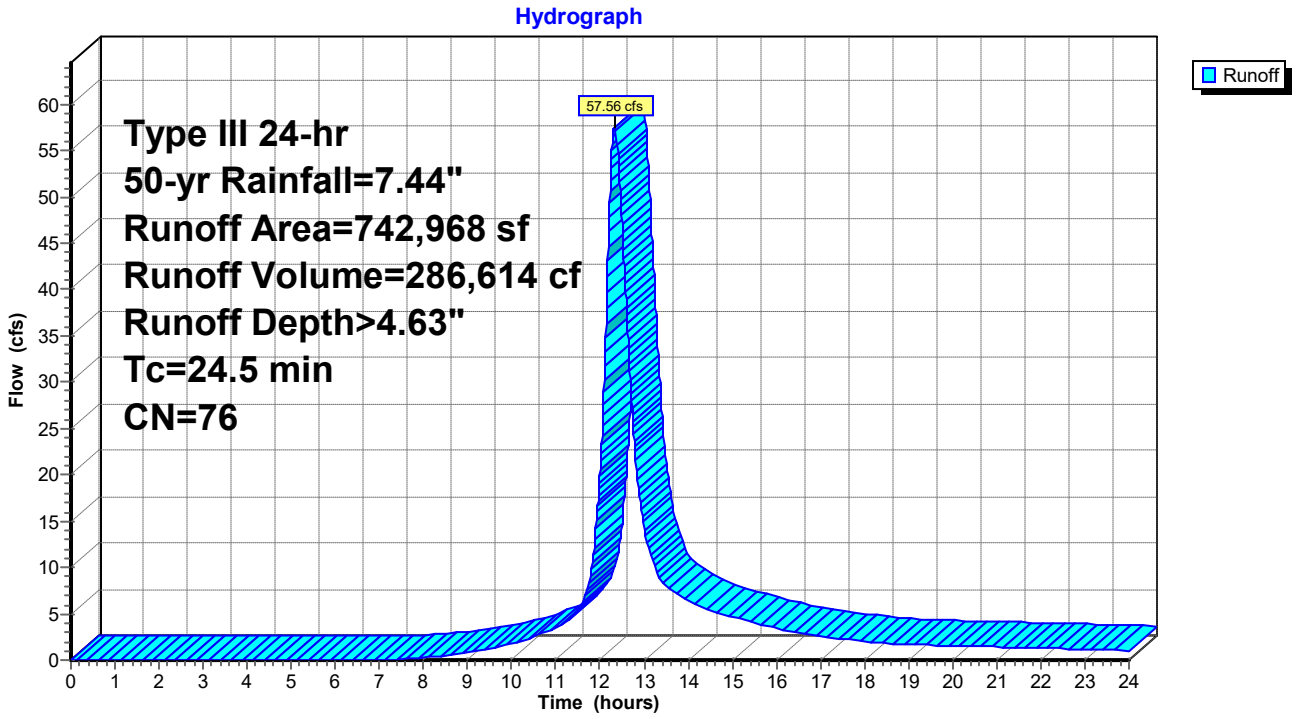
Runoff = 57.56 cfs @ 12.33 hrs, Volume= 286,614 cf, Depth> 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.44"

	Area (sf)	CN	Description
*	173,688	98	IMPERVIOUS
*	94,493	69	LANDSCAPED - B
*	215,845	79	LANDSCAPED - C
*	231,559	60	WOODED - B
*	27,383	73	WOODED - C
	742,968	76	Weighted Average
	569,280		76.62% Pervious Area
	173,688		23.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5					**Direct Entry,**

Subcatchment A: EX-WS-A



Summary for Subcatchment B: EX-WS-B

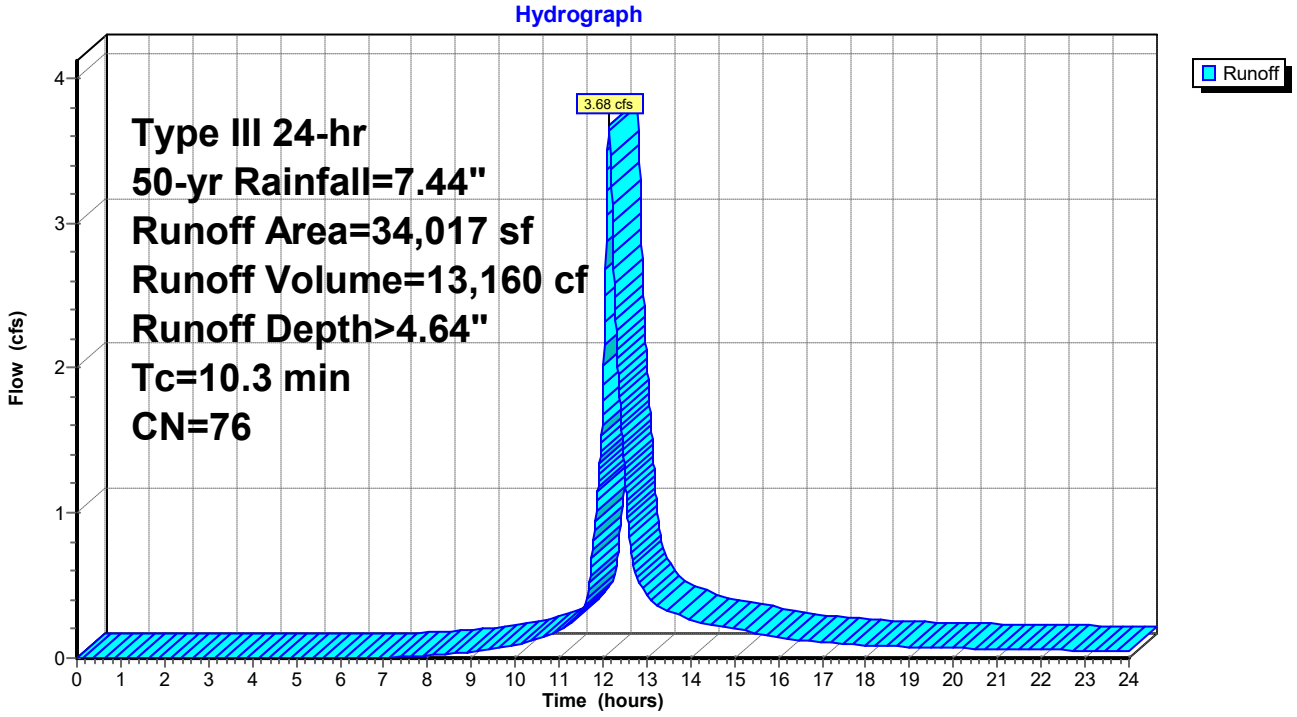
Runoff = 3.68 cfs @ 12.14 hrs, Volume= 13,160 cf, Depth> 4.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.44"

	Area (sf)	CN	Description
*	11,545	98	IMPERVIOUS
*	3,348	69	LAWN - B
*	3,561	79	LAWN - C
*	15,556	60	WOODED - B
*	7	73	WOODED - C
	34,017	76	Weighted Average
	22,472		66.06% Pervious Area
	11,545		33.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3					**Direct Entry,**

Subcatchment B: EX-WS-B



Summary for Pond 1P: EX-UI-02

Inflow	=	1.30 cfs @	12.17 hrs, Volume=	1,751 cf
Outflow	=	1.22 cfs @	12.21 hrs, Volume=	1,751 cf, Atten= 7%, Lag= 2.3 min
Primary	=	1.22 cfs @	12.21 hrs, Volume=	1,751 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 35.67' @ 12.21 hrs Surf.Area= 501 sf Storage= 90 cf

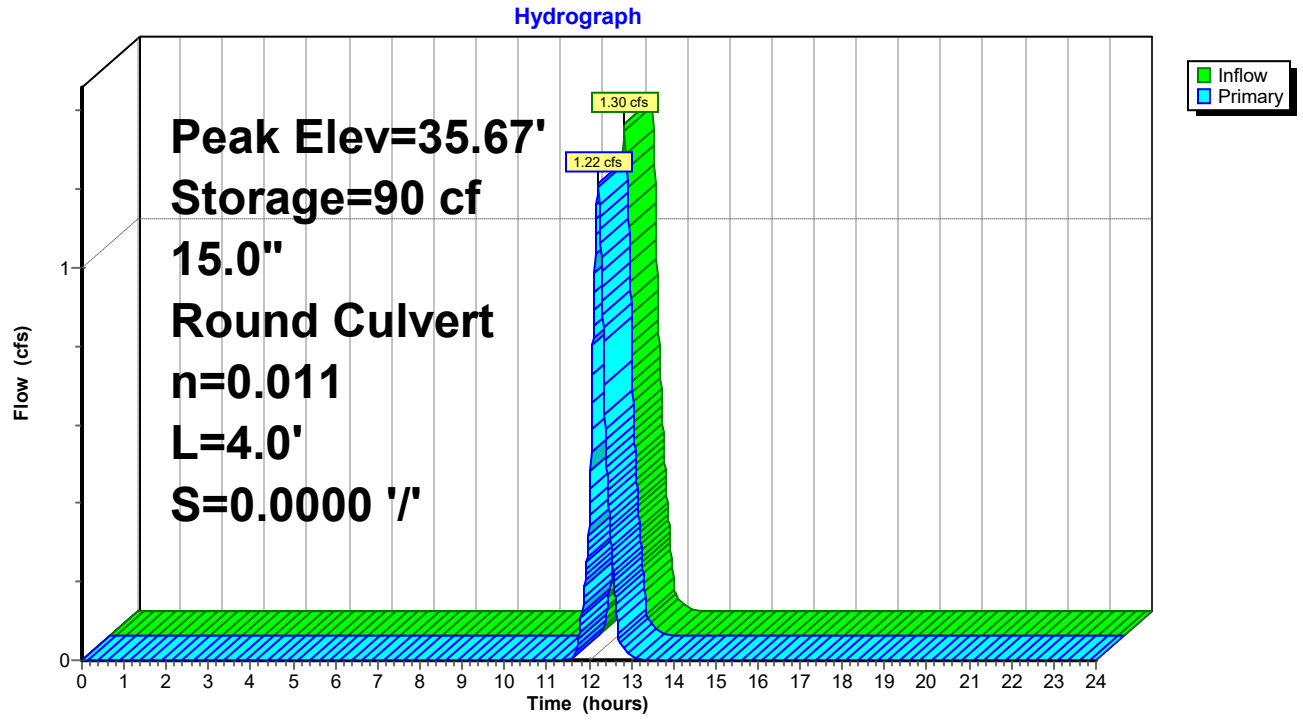
Plug-Flow detention time= 0.7 min calculated for 1,751 cf (100% of inflow)
Center-of-Mass det. time= 0.7 min (734.6 - 733.9)

Volume	Invert	Avail.Storage	Storage Description
#1	35.50'	1,818 cf	**Concrete Galley 4x4x4** x 41 Inside= 42.0"W x 43.0"H => 12.67 sf x 3.50'L = 44.3 cf Outside= 52.8"W x 48.0"H => 14.72 sf x 4.00'L = 58.9 cf

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**15.0" Round Culvert** L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 35.00' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=1.21 cfs @ 12.21 hrs HW=35.67' (Free Discharge)
1=Culvert (Barrel Controls 1.21 cfs @ 2.62 fps)

Pond 1P: EX-UI-02



Summary for Pond 3P: CB 1

[57] Hint: Peaked at 39.84' (Flood elevation advised)
[81] Warning: Exceeded Pond UI 1 by 2.35' @ 11.79 hrs

Inflow Area =	34,017 sf,	33.94% Impervious,	Inflow Depth >	4.64"	for 50-yr event
Inflow =	3.53 cfs @	12.17 hrs,	Volume=	13,158 cf	
Outflow =	3.53 cfs @	12.17 hrs,	Volume=	13,158 cf,	Atten= 0%, Lag= 0.0 min
Primary =	2.22 cfs @	12.17 hrs,	Volume=	11,408 cf	
Secondary =	1.30 cfs @	12.17 hrs,	Volume=	1,751 cf	

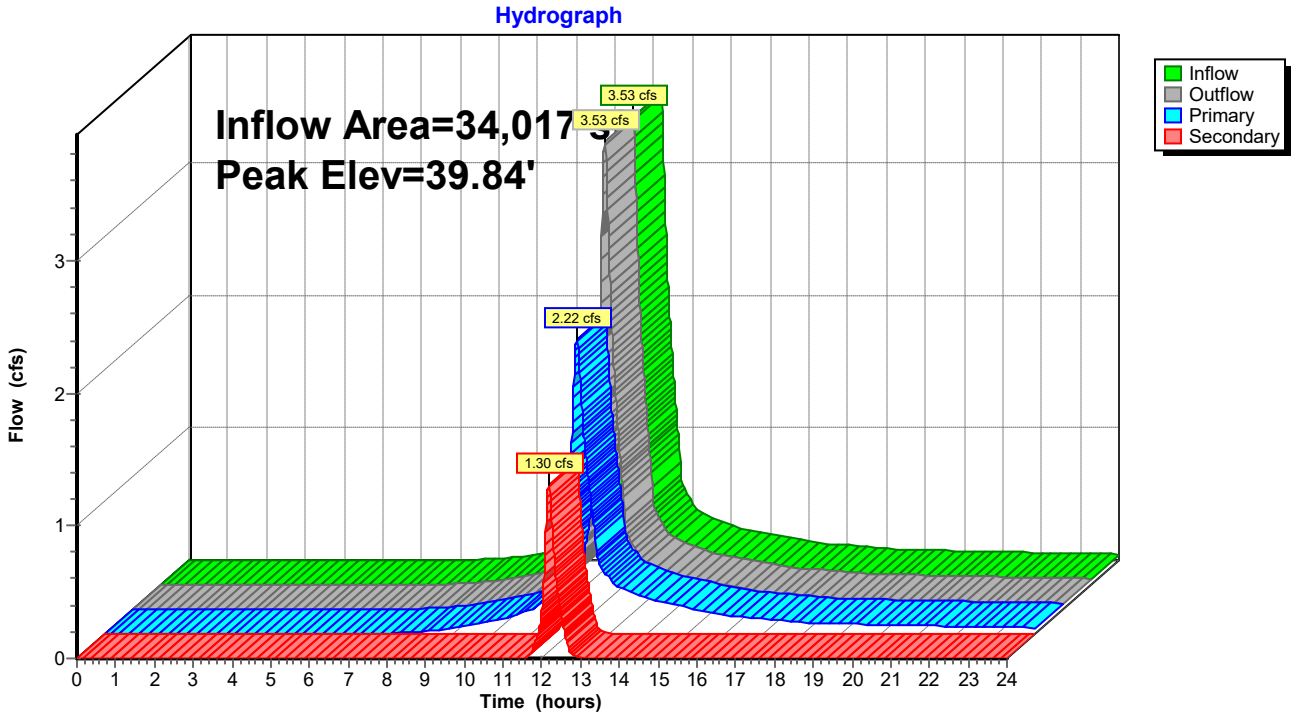
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 39.84' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.94'	**12.0" Round Culvert** L= 326.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.94' / 37.38' S= 0.0048 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Secondary	39.24'	**12.0" Round Culvert** L= 8.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 39.24' / 37.06' S= 0.2725 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=2.22 cfs @ 12.17 hrs HW=39.84' (Free Discharge)
1=Culvert (Barrel Controls 2.22 cfs @ 3.93 fps)

Secondary OutFlow Max=1.30 cfs @ 12.17 hrs HW=39.84' (Free Discharge)
2=Culvert (Inlet Controls 1.30 cfs @ 2.64 fps)

Pond 3P: CB 1


Hydrograph
Inflow Area=34,017
Peak Elev=39.84'
3.53 cfs
3.53 cfs
2.22 cfs
1.30 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0
1
2
3
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Summary for Pond UI 1: EX-UI-01

Inflow Area = 34,017 sf, 33.94% Impervious, Inflow Depth > 4.64" for 50-yr event
Inflow = 3.68 cfs @ 12.14 hrs, Volume= 13,160 cf
Outflow = 3.53 cfs @ 12.17 hrs, Volume= 13,158 cf, Atten= 4%, Lag= 1.9 min
Primary = 3.53 cfs @ 12.17 hrs, Volume= 13,158 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 37.74' @ 12.17 hrs Surf.Area= 497 sf Storage= 386 cf

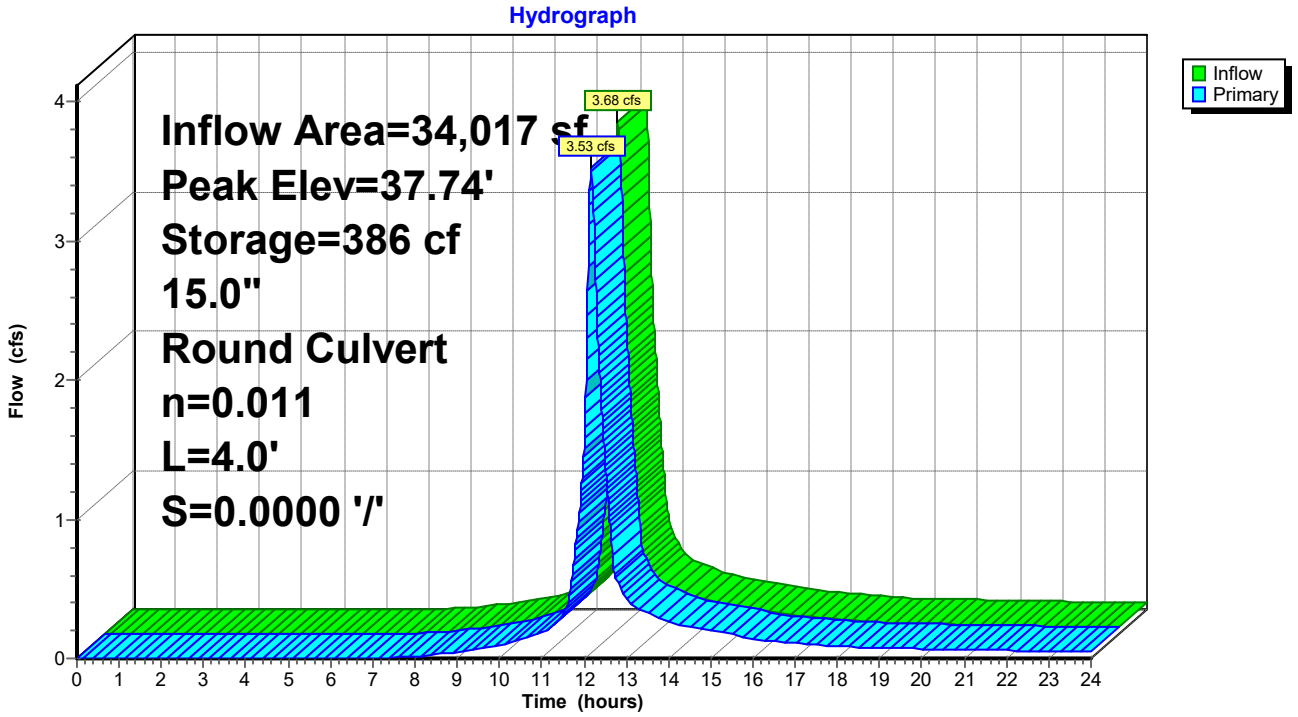
Plug-Flow detention time= 0.9 min calculated for 13,153 cf (100% of inflow)
Center-of-Mass det. time= 0.9 min (818.6 - 817.7)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,774 cf	**Concrete Galley 4x4x4** x 40 Inside= 42.0"W x 43.0"H => 12.67 sf x 3.50'L = 44.3 cf Outside= 52.8"W x 48.0"H => 14.72 sf x 4.00'L = 58.9 cf 2 Rows of 20 Chambers
#2	37.00'	50 cf	**4.00'D x 4.00'H Vertical Cone/Cylinder**
		1,824 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**15.0" Round Culvert** L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.50' / 36.50' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=3.52 cfs @ 12.17 hrs HW=37.74' (Free Discharge)
1=Culvert (Barrel Controls 3.52 cfs @ 3.59 fps)

Pond UI 1: EX-UI-01

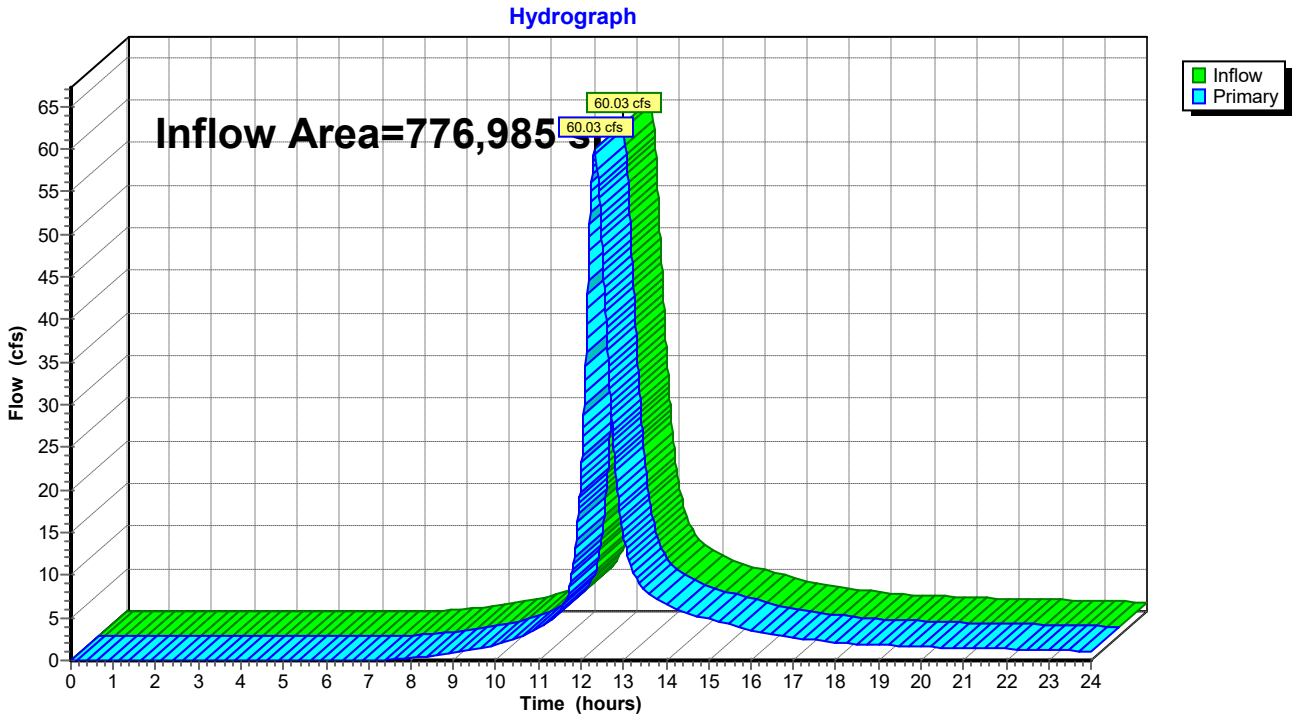


Summary for Link POC A: POC-A

Inflow Area = 776,985 sf, 23.84% Impervious, Inflow Depth > 4.63" for 50-yr event
Inflow = 60.03 cfs @ 12.33 hrs, Volume= 299,772 cf
Primary = 60.03 cfs @ 12.33 hrs, Volume= 299,772 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link POC A: POC-A



Summary for Subcatchment A: EX-WS-A

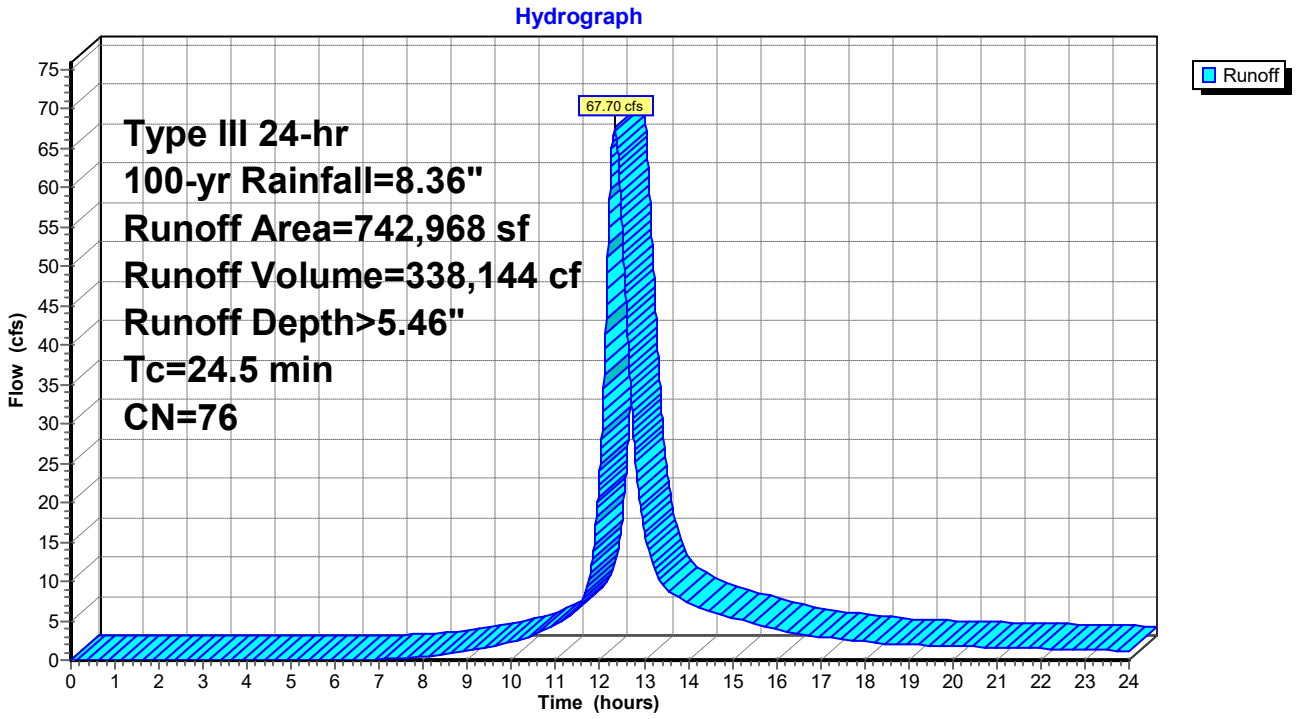
Runoff = 67.70 cfs @ 12.33 hrs, Volume= 338,144 cf, Depth> 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.36"

	Area (sf)	CN	Description
*	173,688	98	IMPERVIOUS
*	94,493	69	LANDSCAPED - B
*	215,845	79	LANDSCAPED - C
*	231,559	60	WOODED - B
*	27,383	73	WOODED - C
	742,968	76	Weighted Average
	569,280		76.62% Pervious Area
	173,688		23.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5					**Direct Entry,**

Subcatchment A: EX-WS-A



Summary for Subcatchment B: EX-WS-B

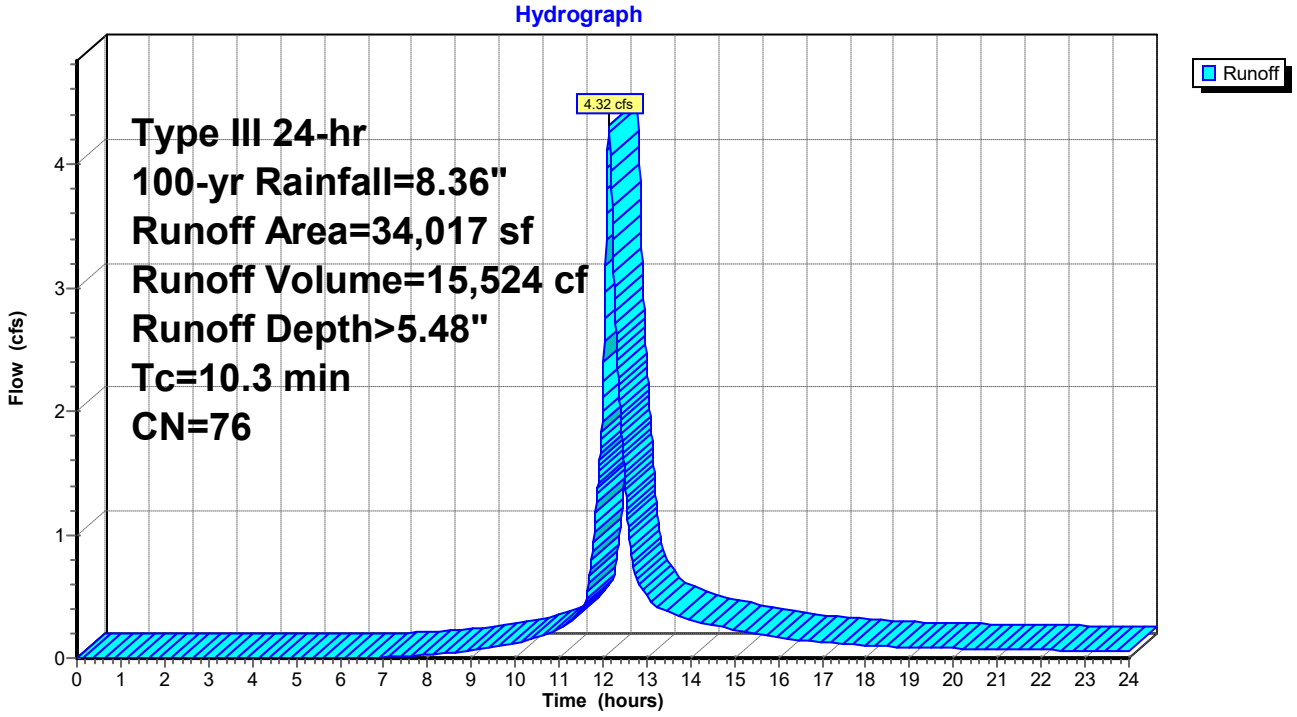
Runoff = 4.32 cfs @ 12.14 hrs, Volume= 15,524 cf, Depth> 5.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.36"

	Area (sf)	CN	Description
*	11,545	98	IMPERVIOUS
*	3,348	69	LAWN - B
*	3,561	79	LAWN - C
*	15,556	60	WOODED - B
*	7	73	WOODED - C
	34,017	76	Weighted Average
	22,472		66.06% Pervious Area
	11,545		33.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3					**Direct Entry,**

Subcatchment B: EX-WS-B



Summary for Pond 1P: EX-UI-02

Inflow	=	1.63 cfs @	12.17 hrs, Volume=	2,283 cf
Outflow	=	1.53 cfs @	12.21 hrs, Volume=	2,283 cf, Atten= 6%, Lag= 2.3 min
Primary	=	1.53 cfs @	12.21 hrs, Volume=	2,283 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 35.76' @ 12.21 hrs Surf.Area= 500 sf Storage= 137 cf

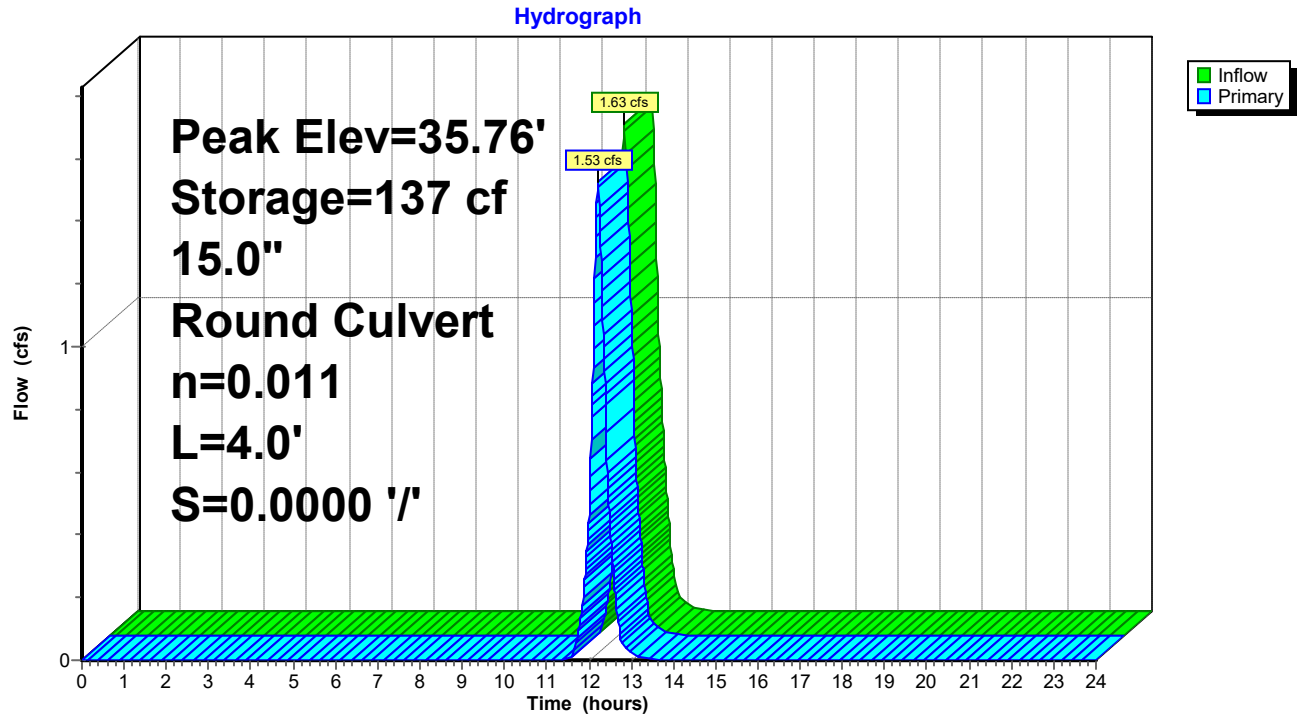
Plug-Flow detention time= 0.9 min calculated for 2,282 cf (100% of inflow)
Center-of-Mass det. time= 0.9 min (735.0 - 734.1)

Volume	Invert	Avail.Storage	Storage Description
#1	35.50'	1,818 cf	**Concrete Galley 4x4x4** x 41 Inside= 42.0"W x 43.0"H => 12.67 sf x 3.50'L = 44.3 cf Outside= 52.8"W x 48.0"H => 14.72 sf x 4.00'L = 58.9 cf

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**15.0" Round Culvert** L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 35.00' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=1.53 cfs @ 12.21 hrs HW=35.76' (Free Discharge)
1=Culvert (Barrel Controls 1.53 cfs @ 2.79 fps)

Pond 1P: EX-UI-02



Summary for Pond 3P: CB 1

[57] Hint: Peaked at 39.93' (Flood elevation advised)
[81] Warning: Exceeded Pond UI 1 by 2.35' @ 11.75 hrs

Inflow Area =	34,017 sf,	33.94% Impervious,	Inflow Depth >	5.48"	for 100-yr event
Inflow =	4.14 cfs @	12.17 hrs,	Volume=	15,523 cf	
Outflow =	4.14 cfs @	12.17 hrs,	Volume=	15,523 cf,	Atten= 0%, Lag= 0.0 min
Primary =	2.51 cfs @	12.17 hrs,	Volume=	13,240 cf	
Secondary =	1.63 cfs @	12.17 hrs,	Volume=	2,283 cf	

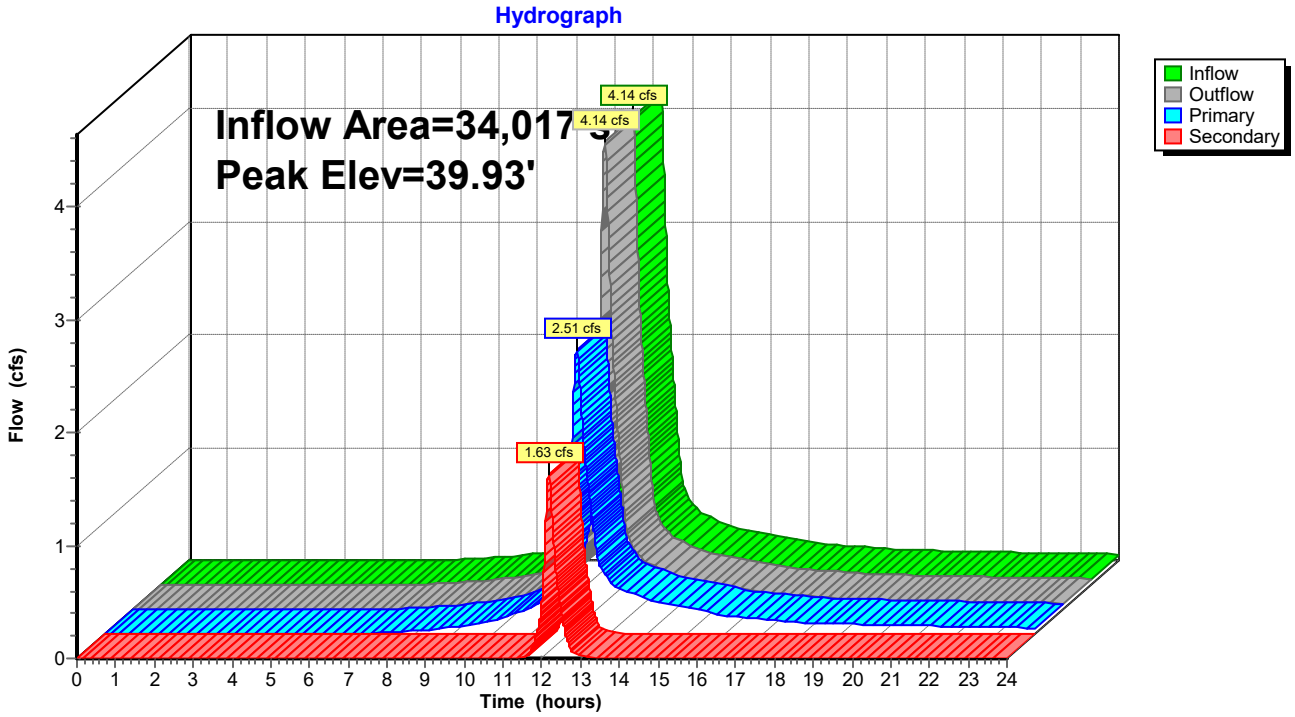
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 39.93' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.94'	**12.0" Round Culvert** L= 326.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.94' / 37.38' S= 0.0048 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Secondary	39.24'	**12.0" Round Culvert** L= 8.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 39.24' / 37.06' S= 0.2725 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=2.51 cfs @ 12.17 hrs HW=39.93' (Free Discharge)
1=Culvert (Barrel Controls 2.51 cfs @ 4.01 fps)

Secondary OutFlow Max=1.63 cfs @ 12.17 hrs HW=39.93' (Free Discharge)
2=Culvert (Inlet Controls 1.63 cfs @ 2.83 fps)

Pond 3P: CB 1


Hydrograph
Inflow Area=34,017
Peak Elev=39.93'
4.14 cfs
4.14 cfs
2.51 cfs
1.63 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0
1
2
3
4
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Summary for Pond UI 1: EX-UI-01

Inflow Area = 34,017 sf, 33.94% Impervious, Inflow Depth > 5.48" for 100-yr event
Inflow = 4.32 cfs @ 12.14 hrs, Volume= 15,524 cf
Outflow = 4.14 cfs @ 12.17 hrs, Volume= 15,523 cf, Atten= 4%, Lag= 1.9 min
Primary = 4.14 cfs @ 12.17 hrs, Volume= 15,523 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 37.89' @ 12.17 hrs Surf.Area= 496 sf Storage= 460 cf

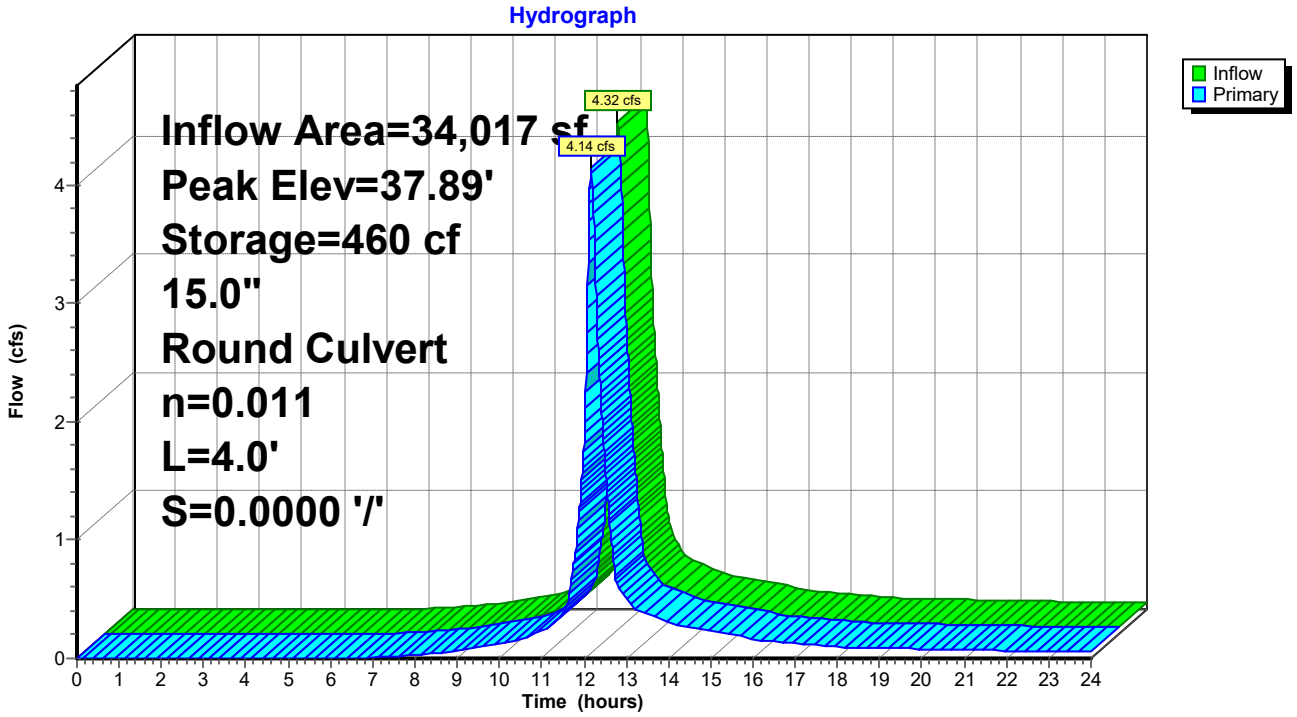
Plug-Flow detention time= 1.0 min calculated for 15,516 cf (100% of inflow)
Center-of-Mass det. time= 0.9 min (813.9 - 813.0)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,774 cf	**Concrete Galley 4x4x4** x 40 Inside= 42.0"W x 43.0"H => 12.67 sf x 3.50'L = 44.3 cf Outside= 52.8"W x 48.0"H => 14.72 sf x 4.00'L = 58.9 cf 2 Rows of 20 Chambers
#2	37.00'	50 cf	**4.00'D x 4.00'H Vertical Cone/Cylinder**
		1,824 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**15.0" Round Culvert** L= 4.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.50' / 36.50' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=4.14 cfs @ 12.17 hrs HW=37.89' (Free Discharge)
1=Culvert (Barrel Controls 4.14 cfs @ 3.79 fps)

Pond UI 1: EX-UI-01

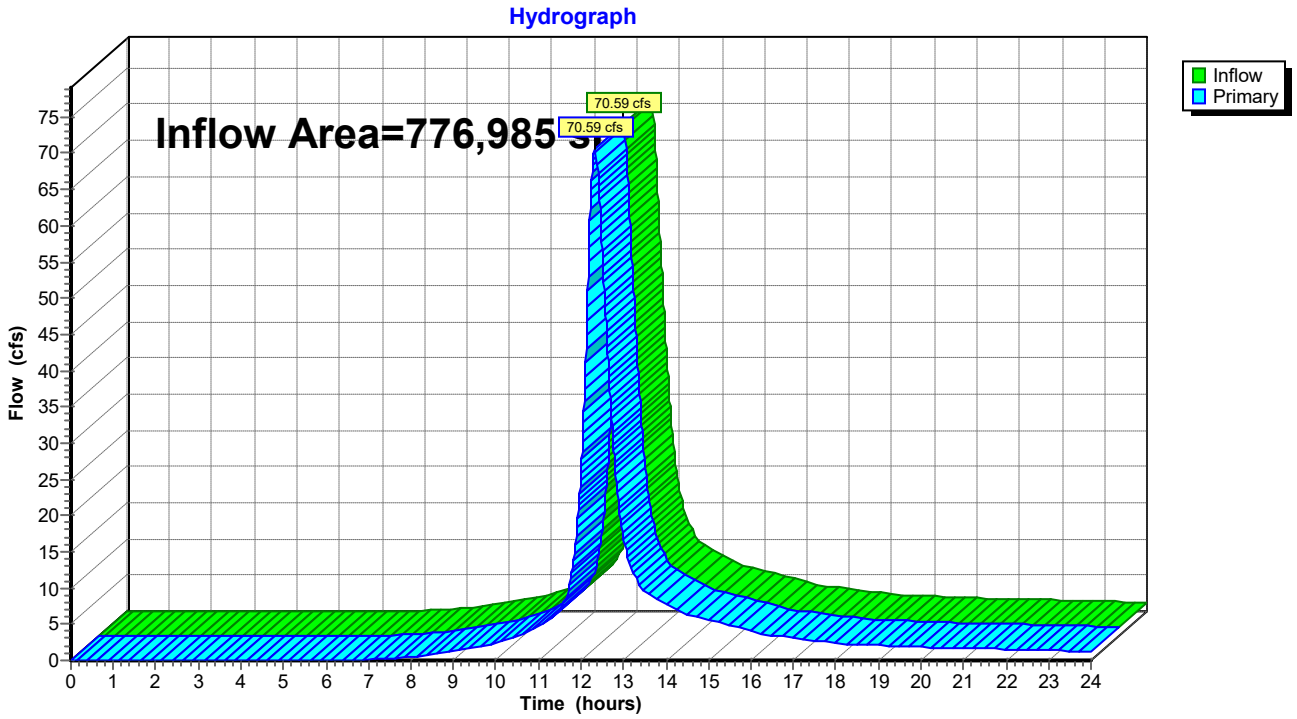


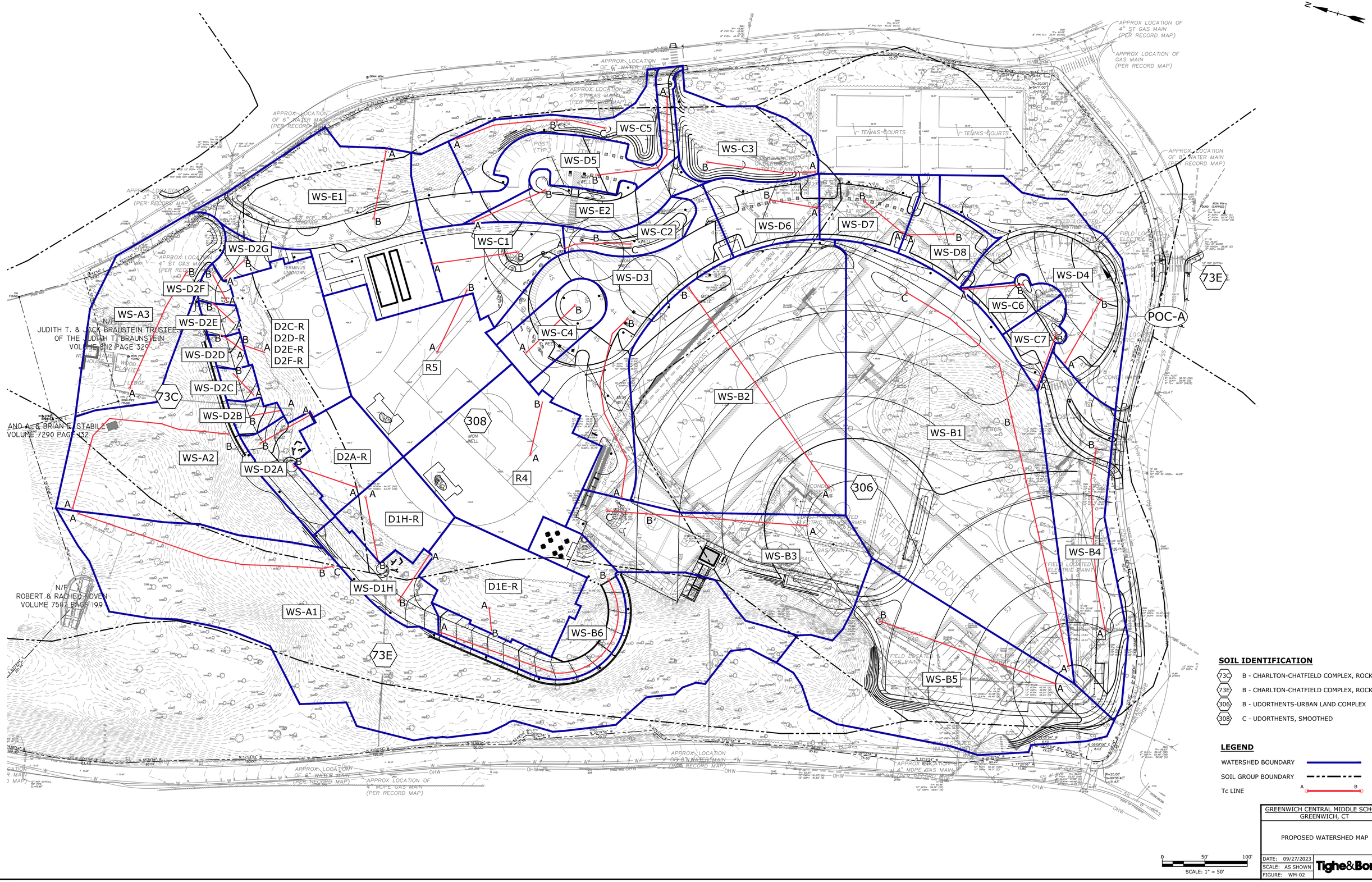
Summary for Link POC A: POC-A

Inflow Area = 776,985 sf, 23.84% Impervious, Inflow Depth > 5.46" for 100-yr event
Inflow = 70.59 cfs @ 12.33 hrs, Volume= 353,667 cf
Primary = 70.59 cfs @ 12.33 hrs, Volume= 353,667 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link POC A: POC-A





Plotted On: Apr 10, 2024 10:03am By: CSicher
P:\Active\ 31000\31000-R\Greenwich Public Schools\31013 Central Middle School\Design\Development\Design Development\Phase 1\05\WM-00-R.WS Phase 1.dwg

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-A1**
Location: Grass-Lined Swale

Cover Type	Area, ac	CN	A x CN
Impervious	0.058	98	5.64
Landscaped and Lawns - Group B	0.211	69	14.57
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	1.841	60	110.46
Wooded - Group C	0.000	73	0.00
	2.110		130.668

Weighted CN: 62

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	300	0.133	23.9

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	unpaved	0.11	5.35	9	0.0

Total Tc (min.) = 23.9

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-A2**
Location: BR01

Cover Type	Area, ac	CN	A x CN
Impervious	0.000	98	0.00
Landscaped and Lawns - Group B	0.133	69	9.18
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.729	60	43.73
Wooded - Group C	0.000	73	0.00
	0.862		52.905

Weighted CN: 61

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	259	0.17	19.2

Total Tc (min.) = 19.2

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-A3**
Location: BR01

Cover Type	Area, ac	CN	A x CN
Impervious	0.000	98	0.00
Landscaped and Lawns - Group B	0.114	69	7.84
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.424	60	25.44
Wooded - Group C	0.000	73	0.00
	0.538		33.276

Weighted CN: 62

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	153	0.21	11.6

Total Tc (min.) = 11.6

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-B1**
Location: Field

Cover Type	Area, ac	CN	A x CN
Impervious	0.036	98	3.57
Landscaped and Lawns - Group B	2.014	69	138.98
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	2.051		142.555

Weighted CN: 70

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	300	0.02	33.8

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	unpaved	0.01	1.61	202	2.1

Total Tc (min.) = 35.9

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-B2**
Location: Field

Cover Type	Area, ac	CN	A x CN
Impervious	0.001	98	0.11
Landscaped and Lawns - Group B	1.285	69	88.64
Landscaped and Lawns - Group C	0.370	79	29.20
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	1.655		117.947

Weighted CN: 71

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	287	0.02	32.7

Total Tc (min.) = 32.7

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-B3**
Location: Field

Cover Type	Area, ac	CN	A x CN
Impervious	0.432	98	42.36
Landscaped and Lawns - Group B	0.472	69	32.58
Landscaped and Lawns - Group C	0.031	79	2.43
Wooded - Group B	0.138	60	8.26
Wooded - Group C	0.000	73	0.02
	1.073		85.643

Weighted CN: 80

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	189	0.021	22.9
Segment B - C	0.015	46	0.011	1.0

Total Tc (min.) = 24.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-B4**
Location: Field

Cover Type	Area, ac	CN	A x CN
Impervious	0.155	98	15.18
Landscaped and Lawns - Group B	0.447	69	30.87
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.602		46.058

Weighted CN: 76

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	215	0.028	22.7

Total Tc (min.) = 22.7

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-B5**
Location: Field

Cover Type	Area, ac	CN	A x CN
Impervious	0.057	98	5.60
Landscaped and Lawns - Group B	0.840	69	57.99
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.188	60	11.29
Wooded - Group C	0.000	73	0.00
	1.086		74.883

Weighted CN: 69

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	218	0.023	24.8

Total Tc (min.) = 24.8

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-B6**
Location: Emergency Driveway

Cover Type	Area, ac	CN	A x CN
Impervious	0.228	98	22.39
Landscaped and Lawns - Group B	0.112	69	7.70
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.340		30.086

Weighted CN: 88

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	300	0.045	2.7

Total Tc (min.) = 2.7
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-C1**
Location: YD-48

Cover Type	Area, ac	CN	A x CN
Impervious	0.115	98	11.26
Landscaped and Lawns - Group B	0.000	69	0.00
Landscaped and Lawns - Group C	0.180	79	14.22
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.295		25.481

Weighted CN: 86

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	101	0.028	12.4

Total Tc (min.) = 12.4

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-C2**
Location: RG03

Cover Type	Area, ac	CN	A x CN
Impervious	0.071	98	6.96
Landscaped and Lawns - Group B	0.000	69	0.00
Landscaped and Lawns - Group C	0.054	79	4.23
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.125		11.188

Weighted CN: 90

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	35	0.028	0.6
Segment B - C	0.24	44	0.023	6.9

Total Tc (min.) = 7.5

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-C3**
Location: BR03

Cover Type	Area, ac	CN	A x CN
Impervious	0.000	98	0.00
Landscaped and Lawns - Group B	0.003	69	0.23
Landscaped and Lawns - Group C	0.116	79	9.13
Wooded - Group B	0.040	60	2.37
Wooded - Group C	0.156	73	11.37
	0.314		23.094

Weighted CN: 74

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	128	0.039	13.1

Total Tc (min.) = 13.1

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-C4**
Location: YD-47

Cover Type	Area, ac	CN	A x CN
Impervious	0.086	98	8.47
Landscaped and Lawns - Group B	0.000	69	0.00
Landscaped and Lawns - Group C	0.092	79	7.27
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.178		15.738

Weighted CN: 88

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	79	0.025	1.2

Total Tc (min.) = 1.2
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-C5**
Location: BR02

Cover Type	Area, ac	CN	A x CN
Impervious	0.000	98	0.00
Landscaped and Lawns - Group B	0.005	69	0.33
Landscaped and Lawns - Group C	0.141	79	11.18
Wooded - Group B	0.013	60	0.78
Wooded - Group C	0.086	73	6.26
	0.245		18.552

Weighted CN: 76

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	121	0.116	12.2
Segment B - C	0.24	58	0.069	5.5

Total Tc (min.) = 17.7

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-C6**
Location: RG06

Cover Type	Area, ac	CN	A x CN
Impervious	0.066	98	6.42
Landscaped and Lawns - Group B	0.027	69	1.86
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.092		8.277

Weighted CN: 90

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	70	0.028	1.0

Total Tc (min.) = 1.0
Minimum Tc. (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-C7**
Location: RG07

Cover Type	Area, ac	CN	A x CN
Impervious	0.055	98	5.40
Landscaped and Lawns - Group B	0.039	69	2.70
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.094		8.108

Weighted CN: 86

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	65	0.031	0.9

Total Tc (min.) = 0.9
Minimum Tc. (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-D1H**
Location: PP1-1

Cover Type	Area, ac	CN	A x CN
Impervious	0.130	98	12.71
Landscaped and Lawns - Group B	0.056	69	3.84
Landscaped and Lawns - Group C	0.009	79	0.73
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.195		17.279

Weighted CN: 89

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	71	0.014	1.3

Total Tc (min.) = 1.3
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-D2A**
Location: PP1-2

Cover Type	Area, ac	CN	A x CN
Impervious	0.101	98	9.91
Landscaped and Lawns - Group B	0.056	69	3.86
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.157		13.770

Weighted CN: 88

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	70	0.014	1.3

Total Tc (min.) = 1.3
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-D2B**
Location: PP1-2

Cover Type	Area, ac	CN	A x CN
Impervious	0.021	98	2.09
Landscaped and Lawns - Group B	0.025	69	1.69
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.046		3.782

Weighted CN: 82

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	56	0.036	0.8

Total Tc (min.) = 0.8
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-D2C**
Location: PP1-2

Cover Type	Area, ac	CN	A x CN
Impervious	0.020	98	1.94
Landscaped and Lawns - Group B	0.018	69	1.27
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.038		3.206

Weighted CN: 84

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	30	0.028	4.7

Total Tc (min.) = 4.7
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-D2D**
Location: PP1-2

Cover Type	Area, ac	CN	A x CN
Impervious	0.019	98	1.90
Landscaped and Lawns - Group B	0.015	69	1.07
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.035		2.970

Weighted CN: 85

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	35	0.057	4.0

Total Tc (min.) = 4.0
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-D2E**
Location: PP1-2

Cover Type	Area, ac	CN	A x CN
Impervious	0.019	98	1.82
Landscaped and Lawns - Group B	0.016	69	1.12
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.035		2.933

Weighted CN: 84

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	31	0.064	3.5

Total Tc (min.) = 3.5
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-D2F**
Location: PP1-2

Cover Type	Area, ac	CN	A x CN
Impervious	0.018	98	1.80
Landscaped and Lawns - Group B	0.012	69	0.84
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.031		2.643

Weighted CN: 86

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	35	0.064	3.8

Total Tc (min.) = 3.8
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-D2G**
Location: PP1-2

Cover Type	Area, ac	CN	A x CN
Impervious	0.042	98	4.12
Landscaped and Lawns - Group B	0.013	69	0.88
Landscaped and Lawns - Group C	0.019	79	1.53
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.074		6.537

Weighted CN: 88

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	24	0.042	0.4

Total Tc (min.) = 0.4
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-D3**
Location: PP03

Cover Type	Area, ac	CN	A x CN
Impervious	0.529	98	51.84
Landscaped and Lawns - Group B	0.000	69	0.00
Landscaped and Lawns - Group C	0.164	79	12.94
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.693		64.784

Weighted CN: 94

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	300	0.01	4.9

Total Tc (min.) = 4.9
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-D4**
Location: PP07

Cover Type	Area, ac	CN	A x CN
Impervious	0.339	98	33.19
Landscaped and Lawns - Group B	0.282	69	19.47
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.621		52.664

Weighted CN: 85

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	87	0.023	1.3

Total Tc (min.) = 1.3
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-D5**
Location: PP02

Cover Type	Area, ac	CN	A x CN
Impervious	0.341	98	33.41
Landscaped and Lawns - Group B	0.000	69	0.00
Landscaped and Lawns - Group C	0.017	79	1.31
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.059	73	4.28
	0.416		38.992

Weighted CN: 94

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	159	0.031	1.9

Total Tc (min.) = 1.9
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-D6**
Location: PP04

Cover Type	Area, ac	CN	A x CN
Impervious	0.160	98	15.72
Landscaped and Lawns - Group B	0.000	69	0.00
Landscaped and Lawns - Group C	0.059	79	4.64
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.219		20.362

Weighted CN: 93

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	58	0.017	1.1

Total Tc (min.) = 1.1
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-D7**
Location: PP05

Cover Type	Area, ac	CN	A x CN
Impervious	0.154	98	15.13
Landscaped and Lawns - Group B	0.038	69	2.65
Landscaped and Lawns - Group C	0.014	79	1.09
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.207		18.876

Weighted CN: 91

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	58	0.017	1.1

Total Tc (min.) = 1.1
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-D8**
Location: PP06

Cover Type	Area, ac	CN	A x CN
Impervious	0.150	98	14.73
Landscaped and Lawns - Group B	0.020	69	1.38
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.170		16.114

Weighted CN: 95

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	55	0.018	1.0

Total Tc (min.) = 1.0
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-E1**
Location: UI02

Cover Type	Area, ac	CN	A x CN
Impervious	0.234	98	22.93
Landscaped and Lawns - Group B	0.044	69	3.06
Landscaped and Lawns - Group C	0.208	79	16.46
Wooded - Group B	0.073	60	4.40
Wooded - Group C	0.209	73	15.24
	0.769		62.081

Weighted CN: 81

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	81	0.2	7.1

Total Tc (min.) = 7.1

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-E2**
Location: RG04

Cover Type	Area, ac	CN	A x CN
Impervious	0.201	98	19.66
Landscaped and Lawns - Group B	0.000	69	0.00
Landscaped and Lawns - Group C	0.041	79	3.28
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.242		22.941

Weighted CN: 95

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	92	0.022	1.4

Total Tc (min.) = 1.4
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-D1E-R**
Location: PP D1H

Cover Type	Area, ac	CN	A x CN
Impervious	0.415	98	40.69
Landscaped and Lawns - Group B	0.000	69	0.00
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.415		40.687

Weighted CN: 98

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	30	0.3	0.2

Total Tc (min.) = 0.2
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-D1H-R**
Location: PP D1H

Cover Type	Area, ac	CN	A x CN
Impervious	0.222	98	21.77
Landscaped and Lawns - Group B	0.000	69	0.00
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.222		21.767

Weighted CN: 98

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	30	0.3	0.2

Total Tc (min.) = 0.2
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-D2A-R**
Location: PP D2A

Cover Type	Area, ac	CN	A x CN
Impervious	0.223	98	21.81
Landscaped and Lawns - Group B	0.000	69	0.00
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.223		21.809

Weighted CN: 98

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	30	0.3	0.2

Total Tc (min.) = 0.2
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-D2C-R through WS-D2F-R**
Location: PP D2C

Cover Type	Area, ac	CN	A x CN
Impervious	0.414	98	40.53
Landscaped and Lawns - Group B	0.000	69	0.00
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.414		40.530

Weighted CN: 98

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	30	0.3	0.2

Total Tc (min.) = 0.2
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **EG** Date: **January 5, 2024**

Designation: **WS-R4**
Location: UI01

Cover Type	Area, ac	CN	A x CN
Impervious	0.649	98	63.63
Landscaped and Lawns - Group B	0.000	69	0.00
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.649		63.630

Weighted CN: 98

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	85	0.3	0.5

Total Tc (min.) = 0.5
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **WS-R5**
Location: UI01

Cover Type	Area, ac	CN	A x CN
Impervious	0.579	98	56.79
Landscaped and Lawns - Group B	0.000	69	0.00
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	0.579		56.786

Weighted CN: 98

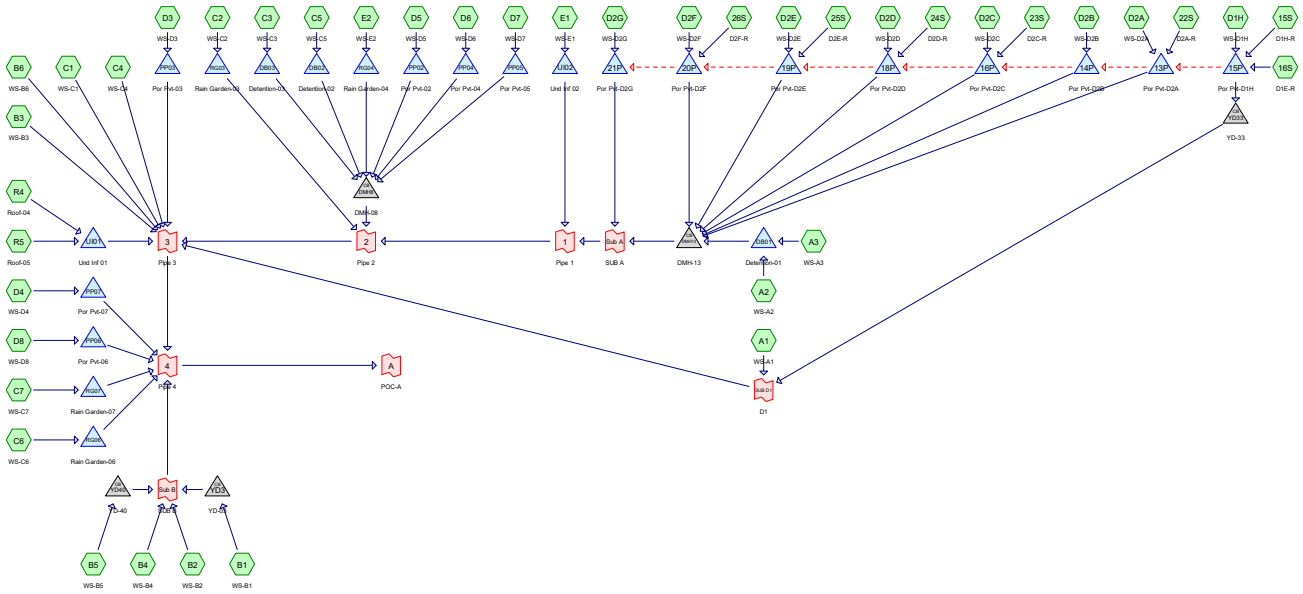
Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	80	0.3	0.4

Total Tc (min.) = 0.4
Minimum Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation



Subcat Reach Pond Link

Routing Diagram for PR-WS-Final_EG Check_04072024
Prepared by Tighe & Bond Consulting, Printed 4/10/2024
HydroCAD® 10.20-4b s/n 03437 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type III 24-hr		Default	24.00	1	2.90	2
2	2-yr	Type III 24-hr		Default	24.00	1	3.40	2
3	5-yr	Type III 24-hr		Default	24.00	1	4.30	2
4	10-yr	Type III 24-hr		Default	24.00	1	5.10	2
5	25-yr	Type III 24-hr		Default	24.00	1	6.40	2
6	50-yr	Type III 24-hr		Default	24.00	1	7.60	2
7	100-yr	Type III 24-hr		Default	24.00	1	9.10	2

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
150,087	60	Forest B (A1, A2, A3, B3, B5, C3, C5, E1)
22,178	73	Forest C (B3, C3, C5, D5, E1)
267,241	98	Impervious (15S, 16S, 22S, 23S, 24S, 25S, 26S, B1, B2, B3, B4, B5, B6, C1, C2, C4, C6, C7, D1H, D2A, D2B, D2C, D2D, D2E, D2F, D2G, D3, D4, D5, D6, D7, D8, E1, E2, R4, R5)
2,508	98	Impervious - Roof (A1)
268,318	69	Lawn B (A1, A2, A3, B1, B2, B3, B4, B5, B6, C3, C5, C6, C7, D1H, D2A, D2B, D2C, D2D, D2E, D2F, D2G, D4, D7, D8, E1)
65,963	79	Lawn C (B2, B3, C1, C2, C3, C4, C5, D1H, D2G, D3, D5, D6, D7, E1, E2)
776,295	**78**	**TOTAL AREA**

Summary for Subcatchment 15S: D1H-R

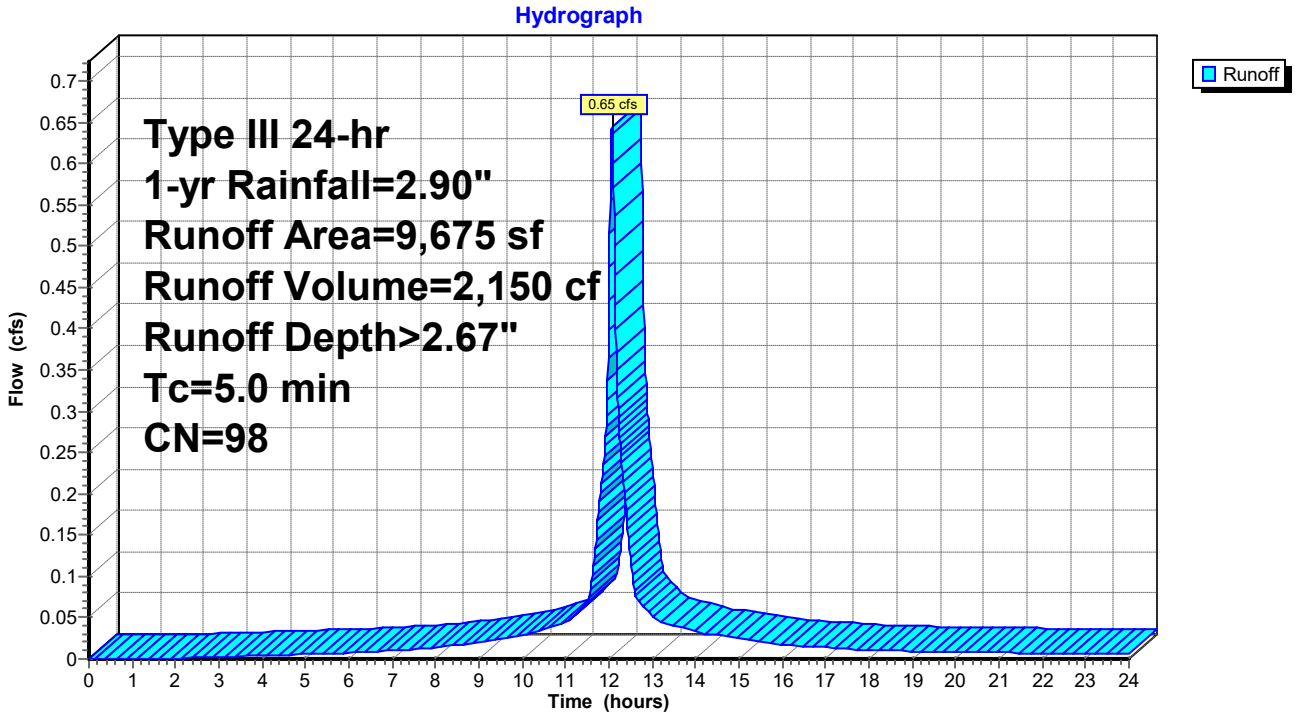
Runoff = 0.65 cfs @ 12.07 hrs, Volume= 2,150 cf, Depth> 2.67"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	9,675	98	Impervious
	9,675		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 15S: D1H-R



Summary for Subcatchment 16S: D1E-R

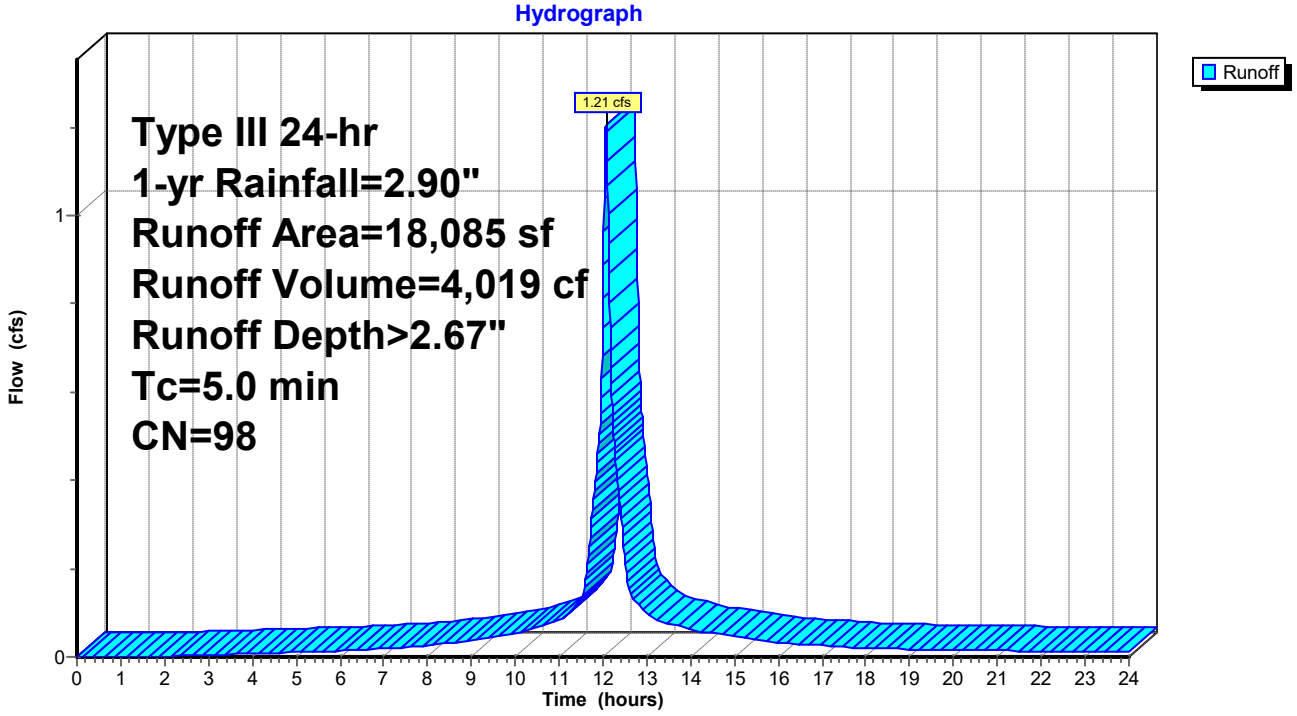
Runoff = 1.21 cfs @ 12.07 hrs, Volume= 4,019 cf, Depth> 2.67"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	18,085	98	Impervious
	18,085		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 16S: D1E-R



Summary for Subcatchment 22S: D2A-R

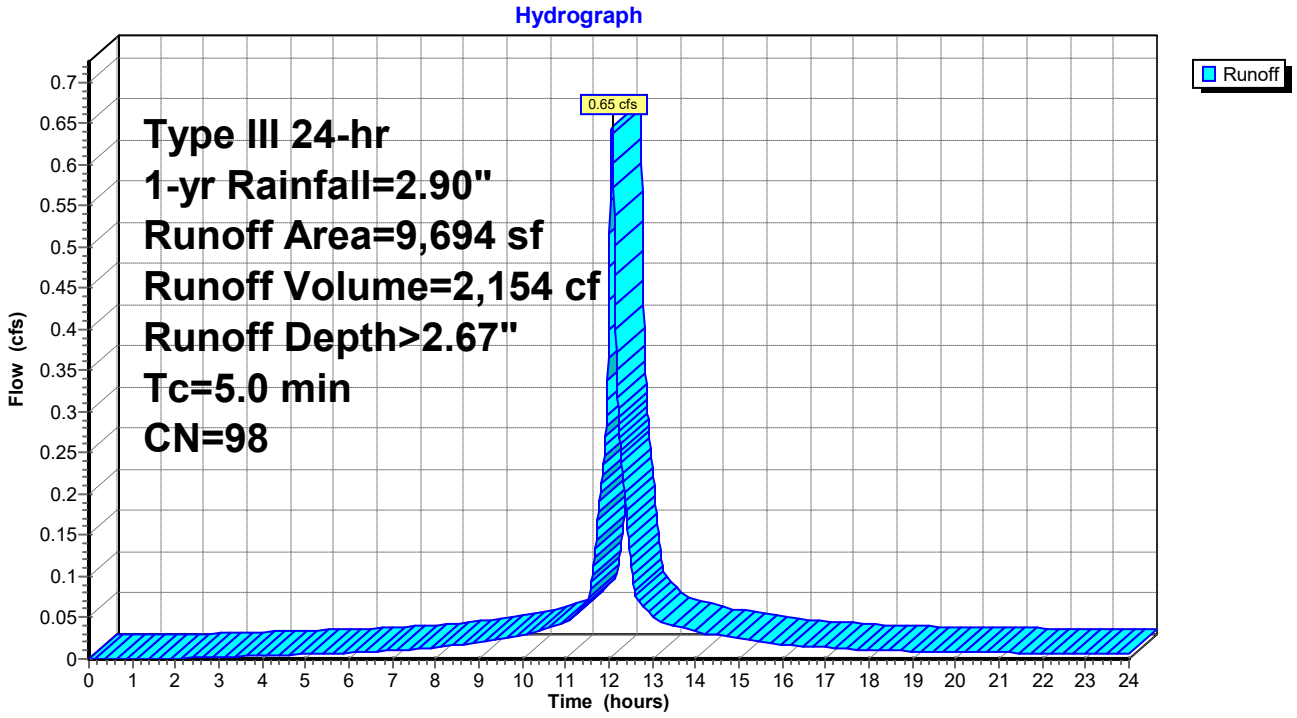
Runoff = 0.65 cfs @ 12.07 hrs, Volume= 2,154 cf, Depth> 2.67"
Routed to Pond 13P : Por Pvt-D2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	9,694	98	Impervious
	9,694		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 22S: D2A-R



Summary for Subcatchment 23S: D2C-R

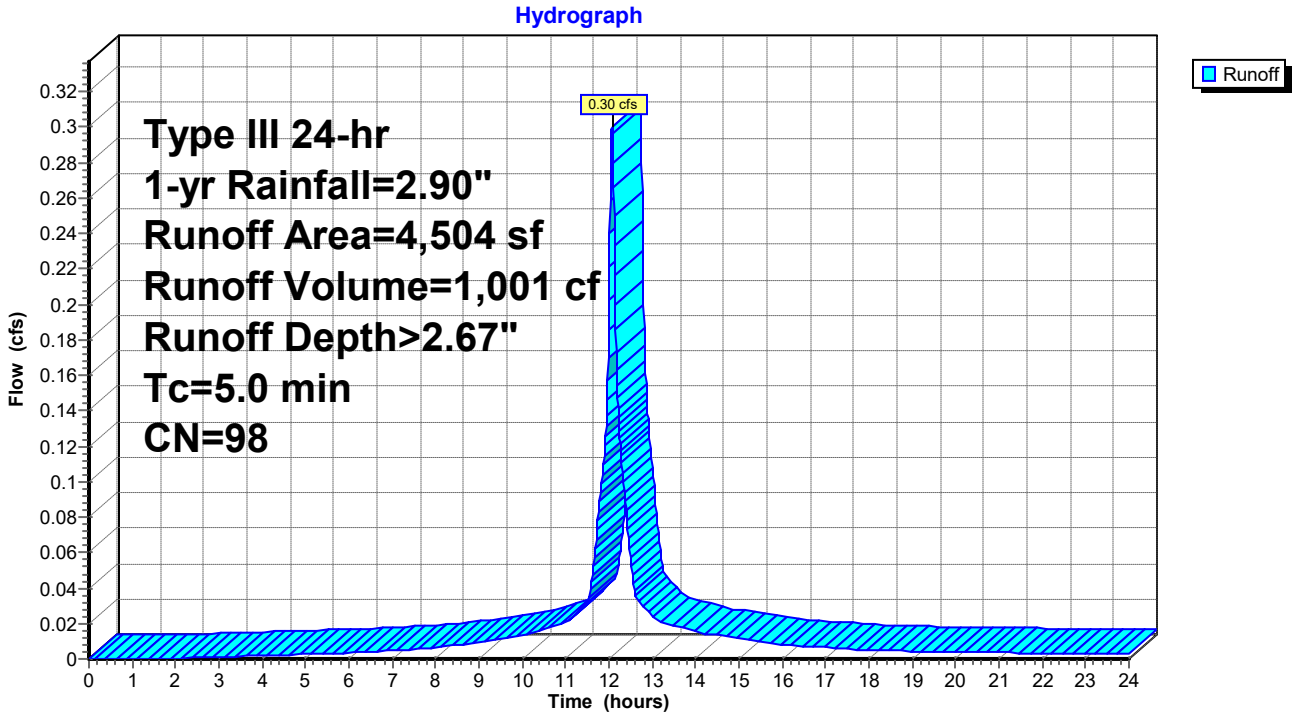
Runoff = 0.30 cfs @ 12.07 hrs, Volume= 1,001 cf, Depth> 2.67"
Routed to Pond 16P : Por Pvt-D2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 23S: D2C-R



Summary for Subcatchment 24S: D2D-R

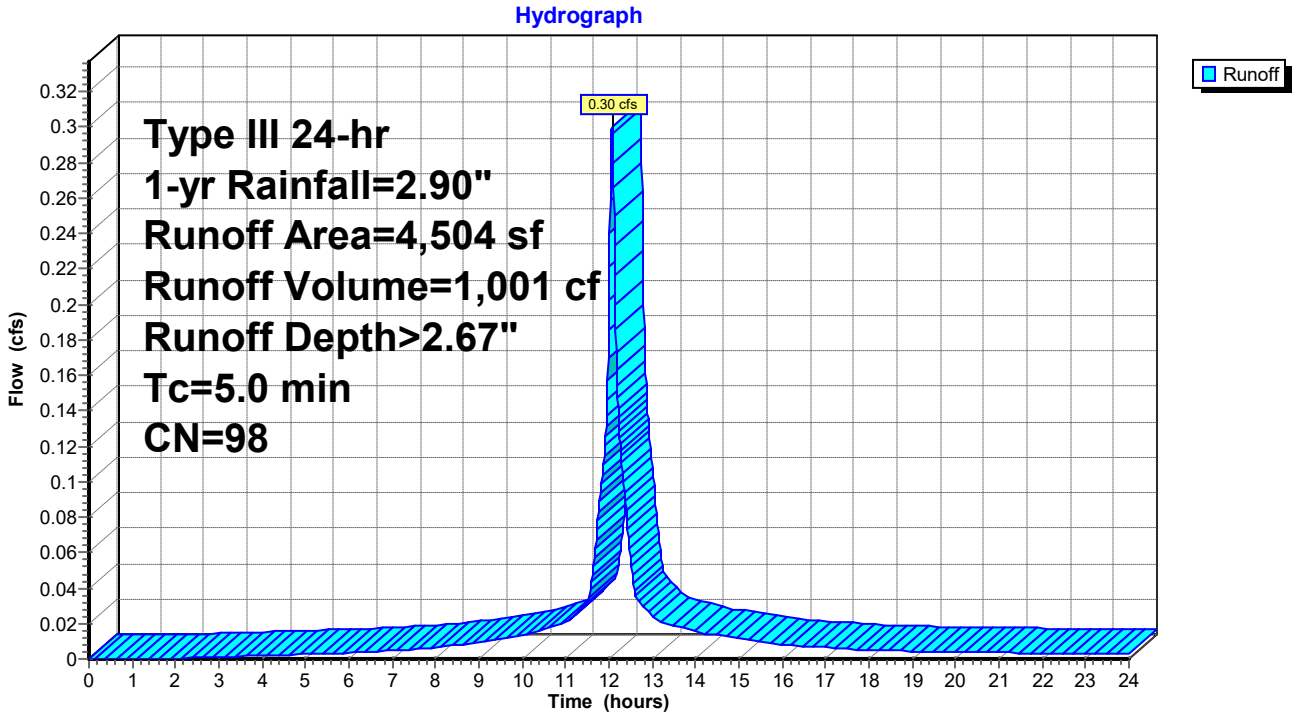
Runoff = 0.30 cfs @ 12.07 hrs, Volume= 1,001 cf, Depth> 2.67"
Routed to Pond 18P : Por Pvt-D2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 24S: D2D-R



Summary for Subcatchment 25S: D2E-R

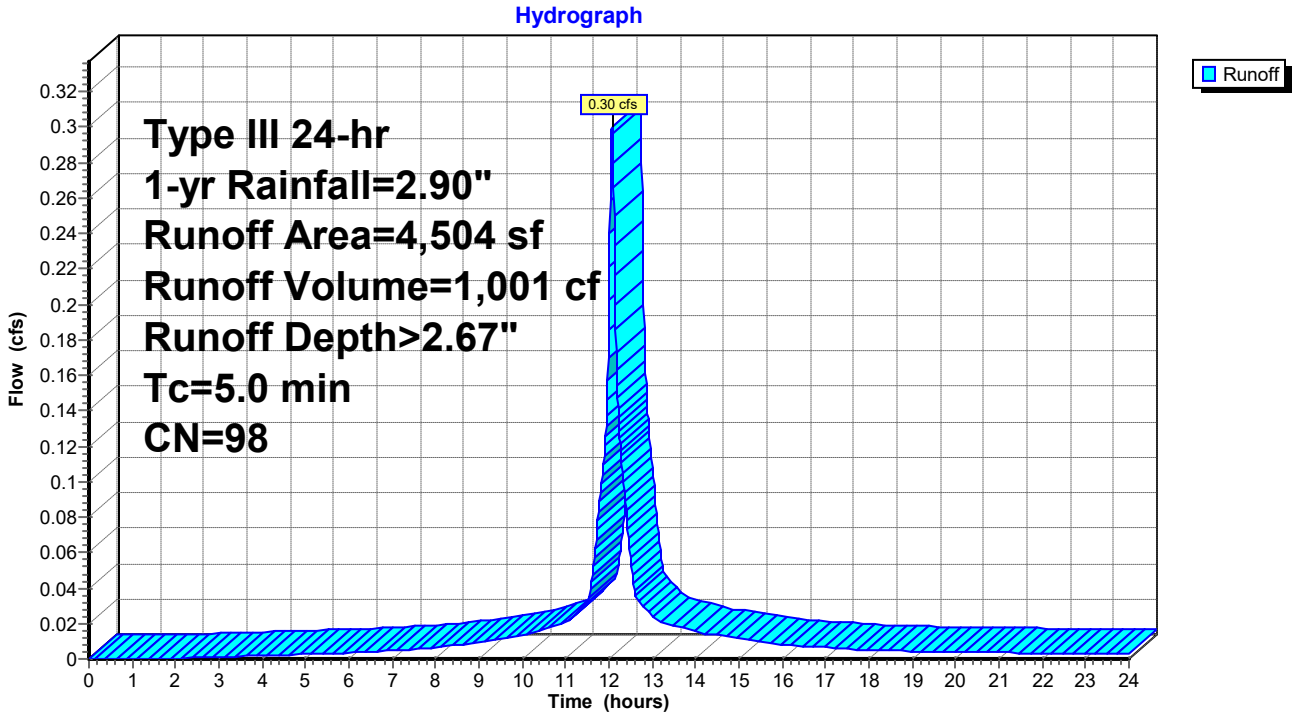
Runoff = 0.30 cfs @ 12.07 hrs, Volume= 1,001 cf, Depth> 2.67"
Routed to Pond 19P : Por Pvt-D2E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 25S: D2E-R



Summary for Subcatchment 26S: D2F-R

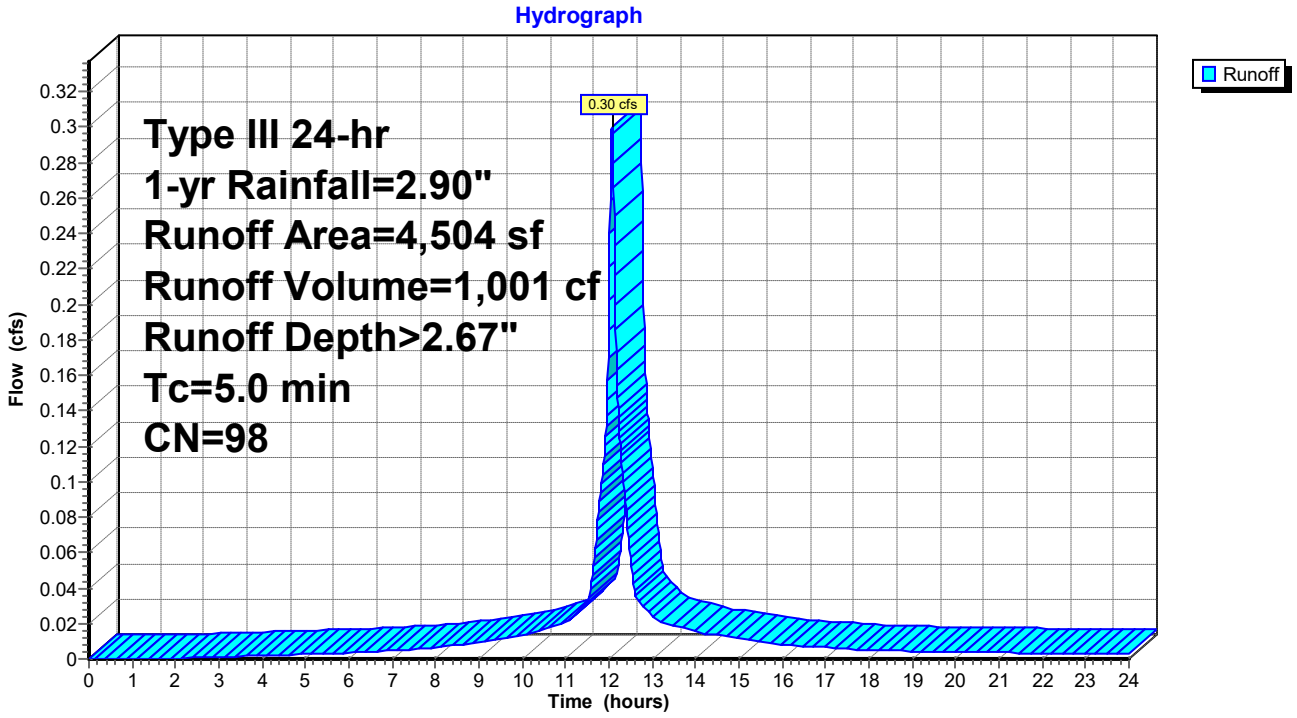
Runoff = 0.30 cfs @ 12.07 hrs, Volume= 1,001 cf, Depth> 2.67"
Routed to Pond 20P : Por Pvt-D2F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 26S: D2F-R



Summary for Subcatchment A1: WS-A1

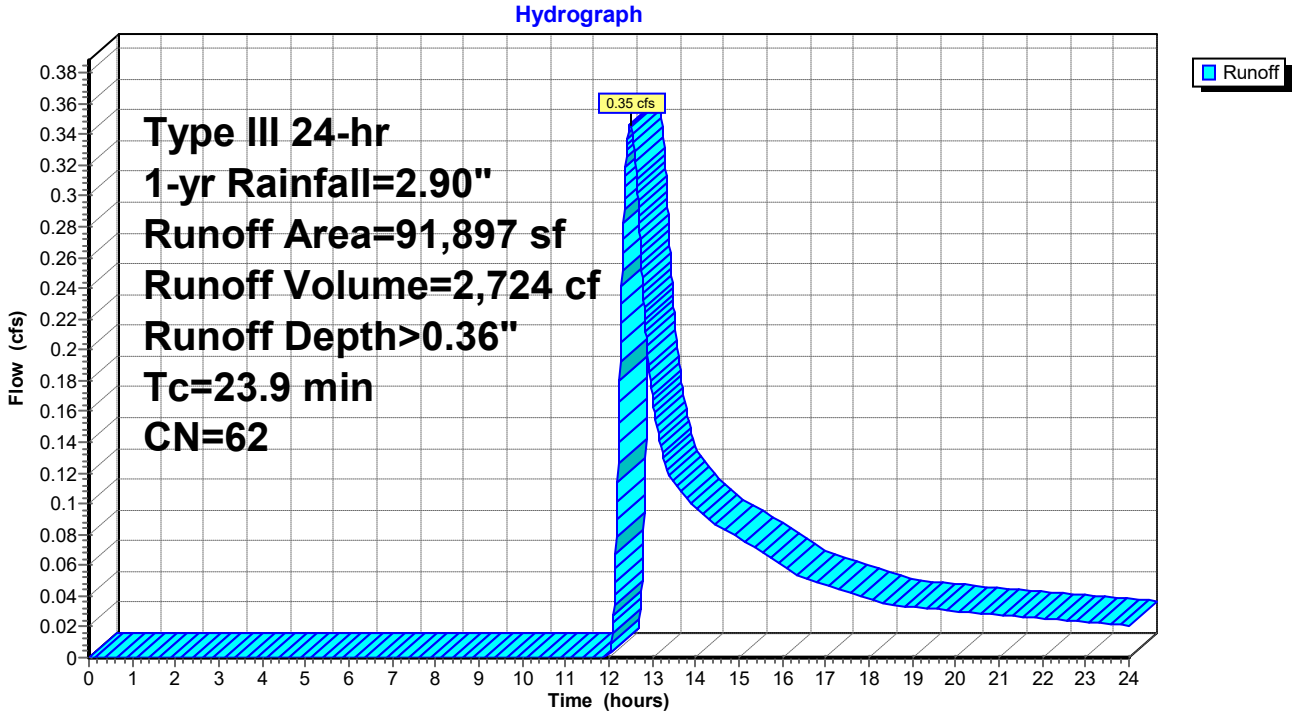
Runoff = 0.35 cfs @ 12.50 hrs, Volume= 2,724 cf, Depth> 0.36"
Routed to Link SUB D1 : D1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	2,508	98	Impervious - Roof
*	9,195	69	Lawn B
*	0	79	Lawn C
*	80,194	60	Forest B
*	0	73	Forest C
	91,897	62	Weighted Average
	89,389		97.27% Pervious Area
	2,508		2.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.9					**Direct Entry,**

Subcatchment A1: WS-A1



Summary for Subcatchment A2: WS-A2

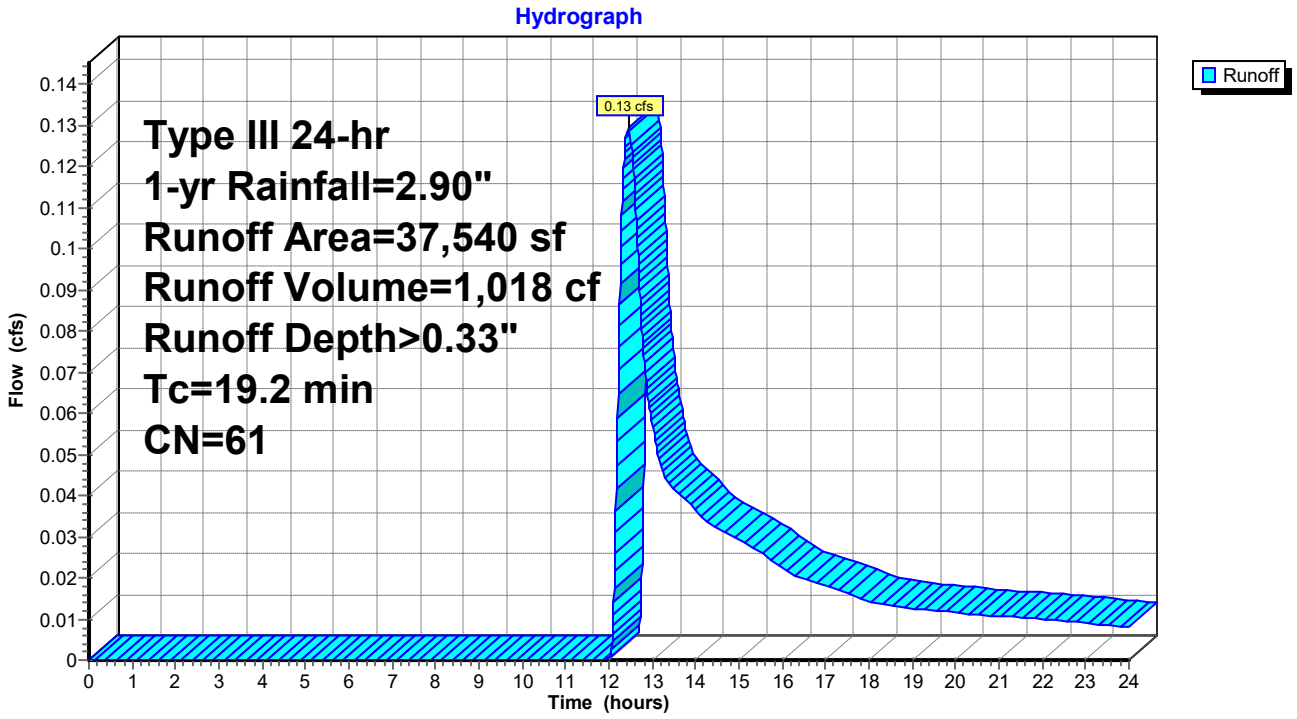
Runoff = 0.13 cfs @ 12.44 hrs, Volume= 1,018 cf, Depth> 0.33"
Routed to Pond DB01 : Detention-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	0	98	Impervious - Roof
*	5,793	69	Lawn B
*	0	79	Lawn C
*	31,747	60	Forest B
*	0	73	Forest C
	37,540	61	Weighted Average
	37,540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2					**Direct Entry,**

Subcatchment A2: WS-A2



Summary for Subcatchment A3: WS-A3

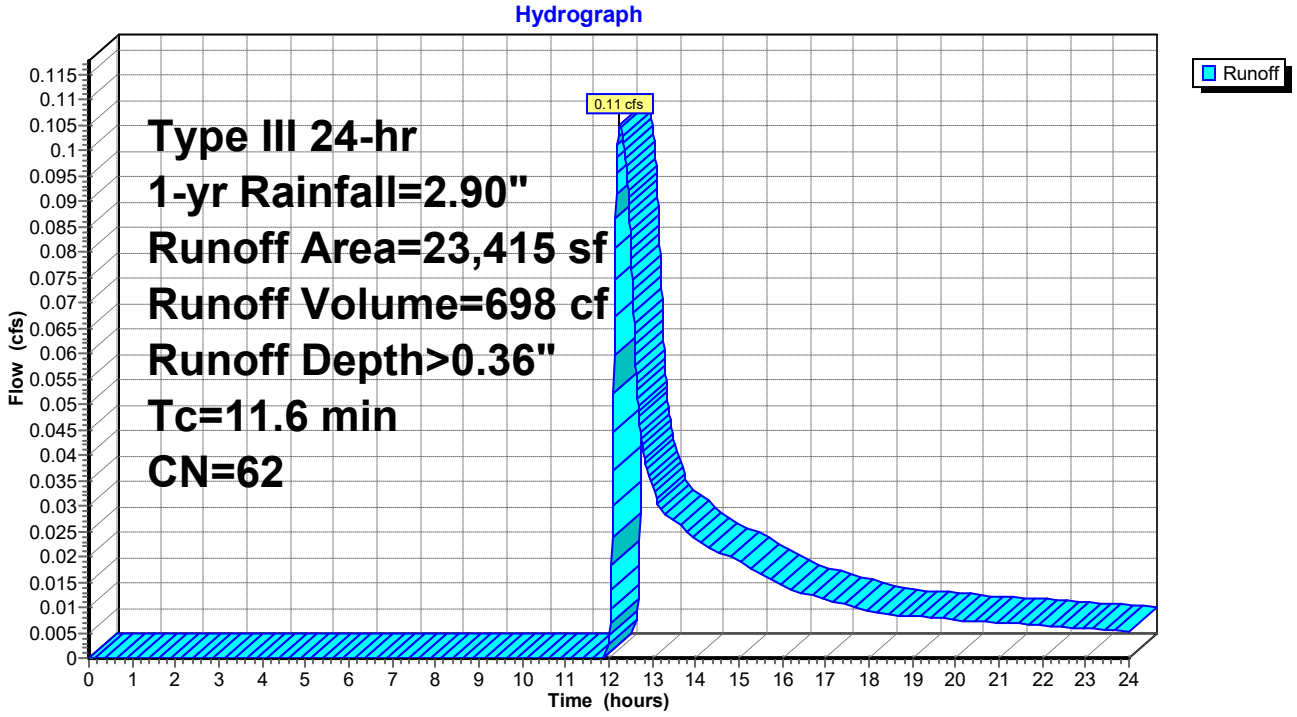
Runoff = 0.11 cfs @ 12.25 hrs, Volume= 698 cf, Depth> 0.36"
Routed to Pond DB01 : Detention-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	0	98	Impervious - Roof
*	4,949	69	Lawn B
*	0	79	Lawn C
*	18,466	60	Forest B
*	0	73	Forest C
	23,415	62	Weighted Average
	23,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6					**Direct Entry,**

Subcatchment A3: WS-A3



Summary for Subcatchment B1: WS-B1

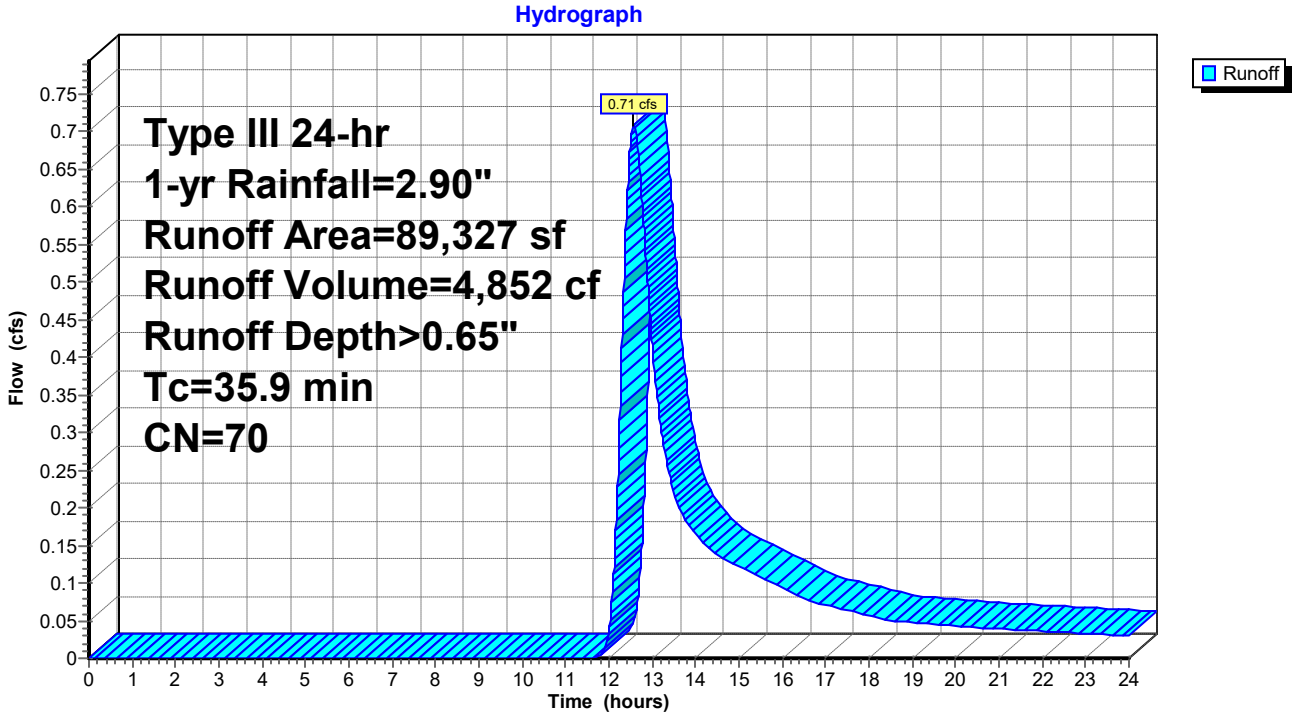
Runoff = 0.71 cfs @ 12.57 hrs, Volume= 4,852 cf, Depth> 0.65"
Routed to Pond YD3 : YD-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	1,588	98	Impervious
*	87,739	69	Lawn B
	89,327	70	Weighted Average
	87,739		98.22% Pervious Area
	1,588		1.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.9					**Direct Entry,**

Subcatchment B1: WS-B1



Summary for Subcatchment B2: WS-B2

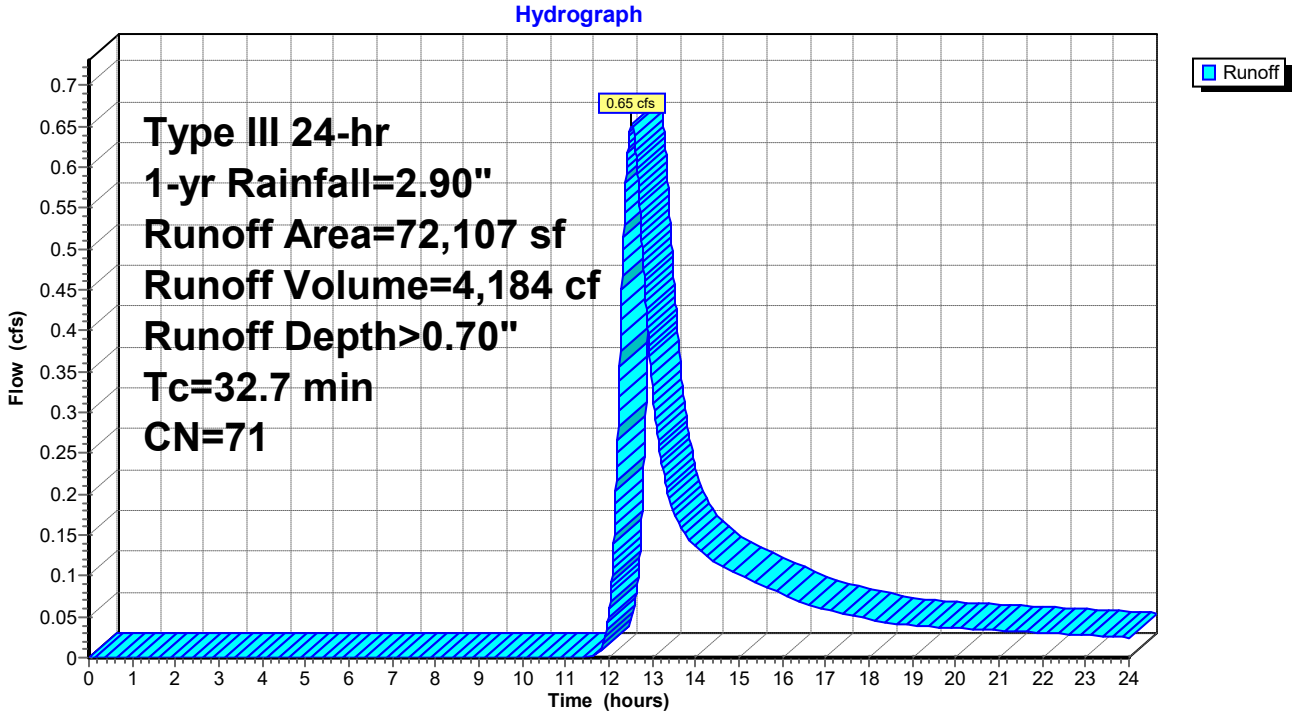
Runoff = 0.65 cfs @ 12.53 hrs, Volume= 4,184 cf, Depth> 0.70"
Routed to Link Sub B : SUB B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	49	98	Impervious
*	55,957	69	Lawn B
*	16,101	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	72,107	71	Weighted Average
	72,058		99.93% Pervious Area
	49		0.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.7					**Direct Entry,**

Subcatchment B2: WS-B2



Summary for Subcatchment B3: WS-B3

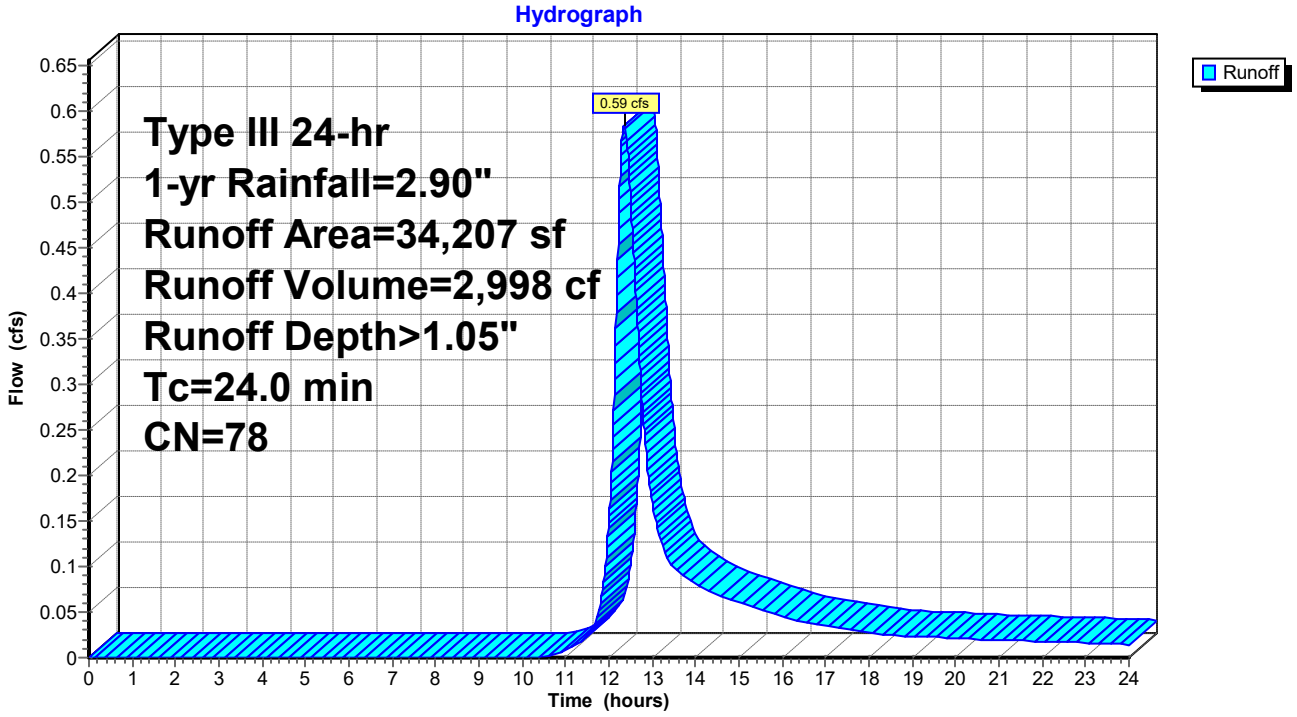
Runoff = 0.59 cfs @ 12.35 hrs, Volume= 2,998 cf, Depth> 1.05"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	12,332	98	Impervious
*	14,526	69	Lawn B
*	1,341	79	Lawn C
*	5,996	60	Forest B
*	12	73	Forest C
	34,207	78	Weighted Average
	21,875		63.95% Pervious Area
	12,332		36.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0					**Direct Entry,**

Subcatchment B3: WS-B3



Summary for Subcatchment B4: WS-B4

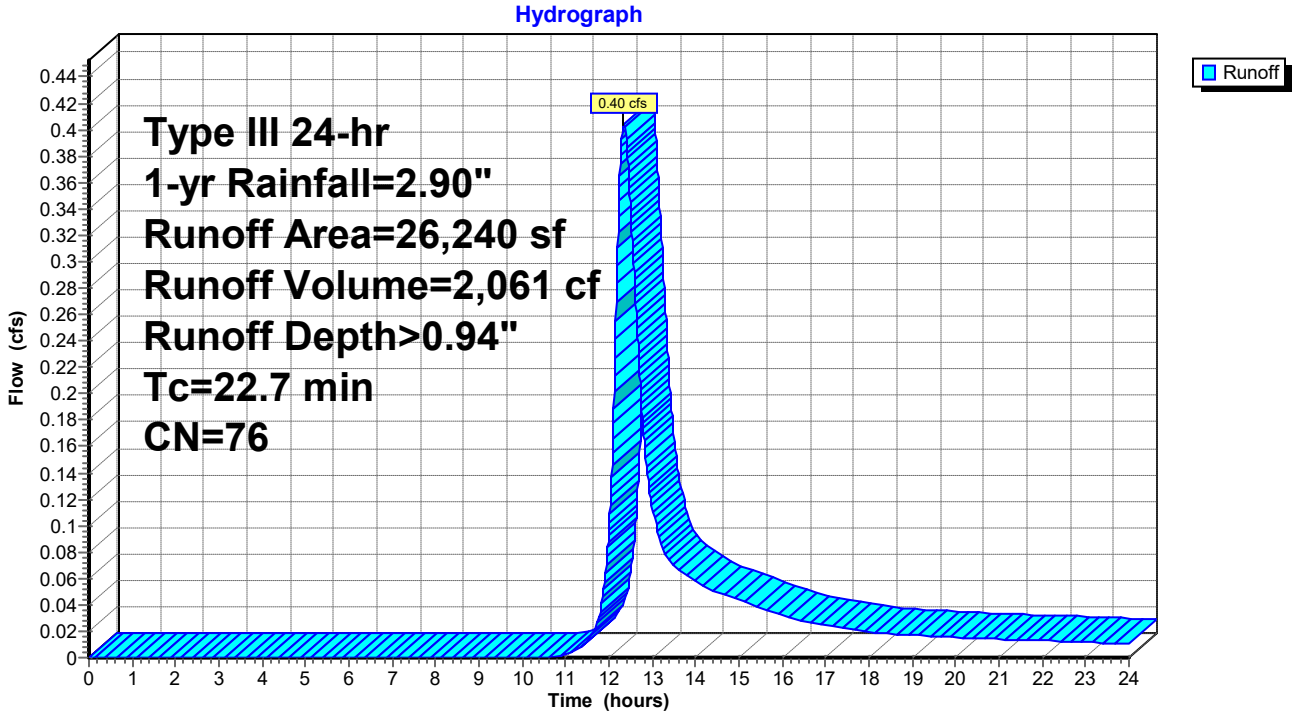
Runoff = 0.40 cfs @ 12.34 hrs, Volume= 2,061 cf, Depth> 0.94"
Routed to Link Sub B : SUB B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	6,749	98	Impervious
*	19,491	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	26,240	76	Weighted Average
	19,491		74.28% Pervious Area
	6,749		25.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.7					**Direct Entry,**

Subcatchment B4: WS-B4



Summary for Subcatchment B5: WS-B5

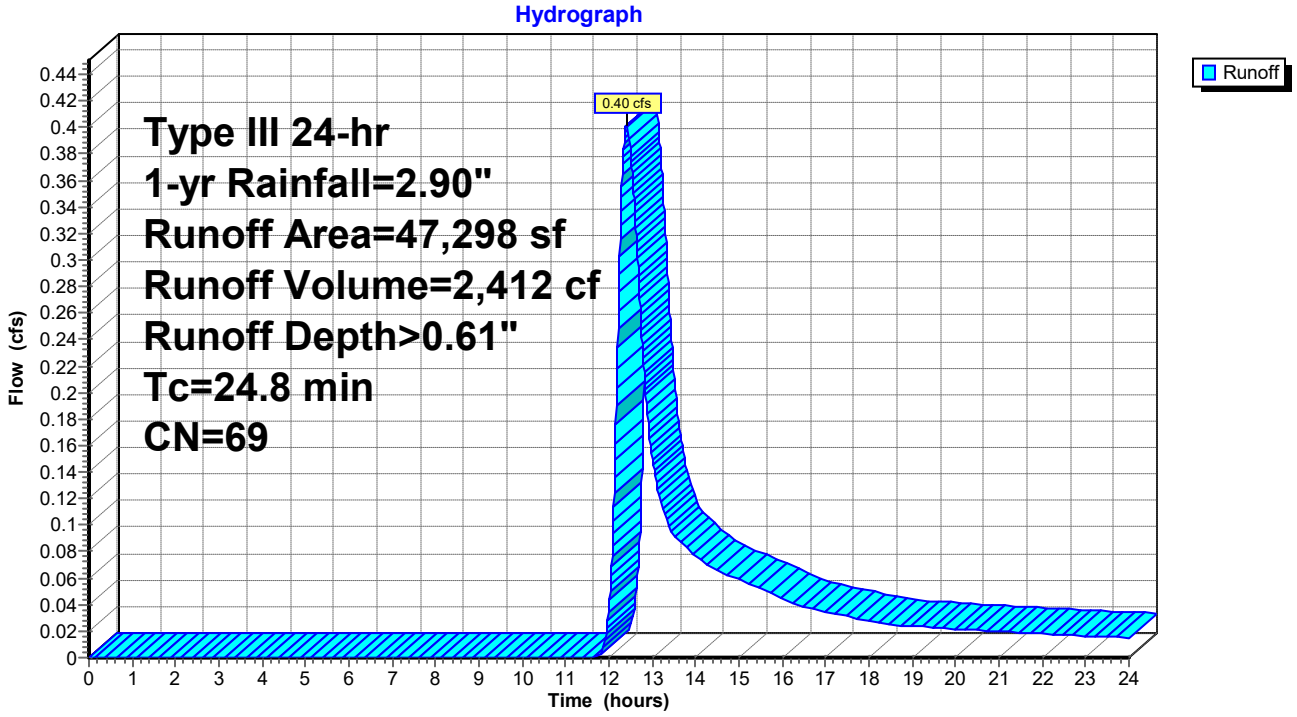
Runoff = 0.40 cfs @ 12.42 hrs, Volume= 2,412 cf, Depth> 0.61"
Routed to Pond YD40 : YD-40

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	2,488	98	Impervious
*	36,610	69	Lawn B
*	0	79	Lawn C
*	8,200	60	Forest B
*	0	73	Forest C
	47,298	69	Weighted Average
	44,810		94.74% Pervious Area
	2,488		5.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8					**Direct Entry,**

Subcatchment B5: WS-B5



Summary for Subcatchment B6: WS-B6

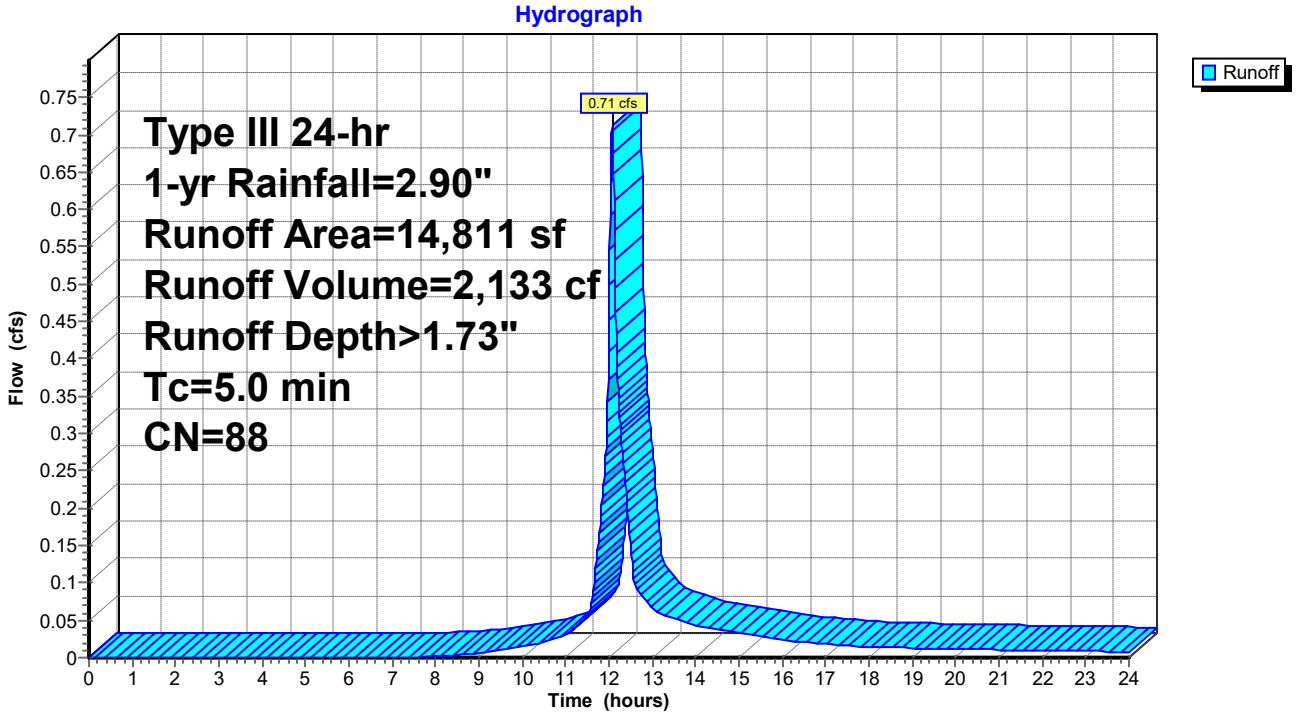
Runoff = 0.71 cfs @ 12.07 hrs, Volume= 2,133 cf, Depth> 1.73"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	9,953	98	Impervious
*	4,858	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	14,811	88	Weighted Average
	4,858		32.80% Pervious Area
	9,953		67.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment B6: WS-B6



Summary for Subcatchment C1: WS-C1

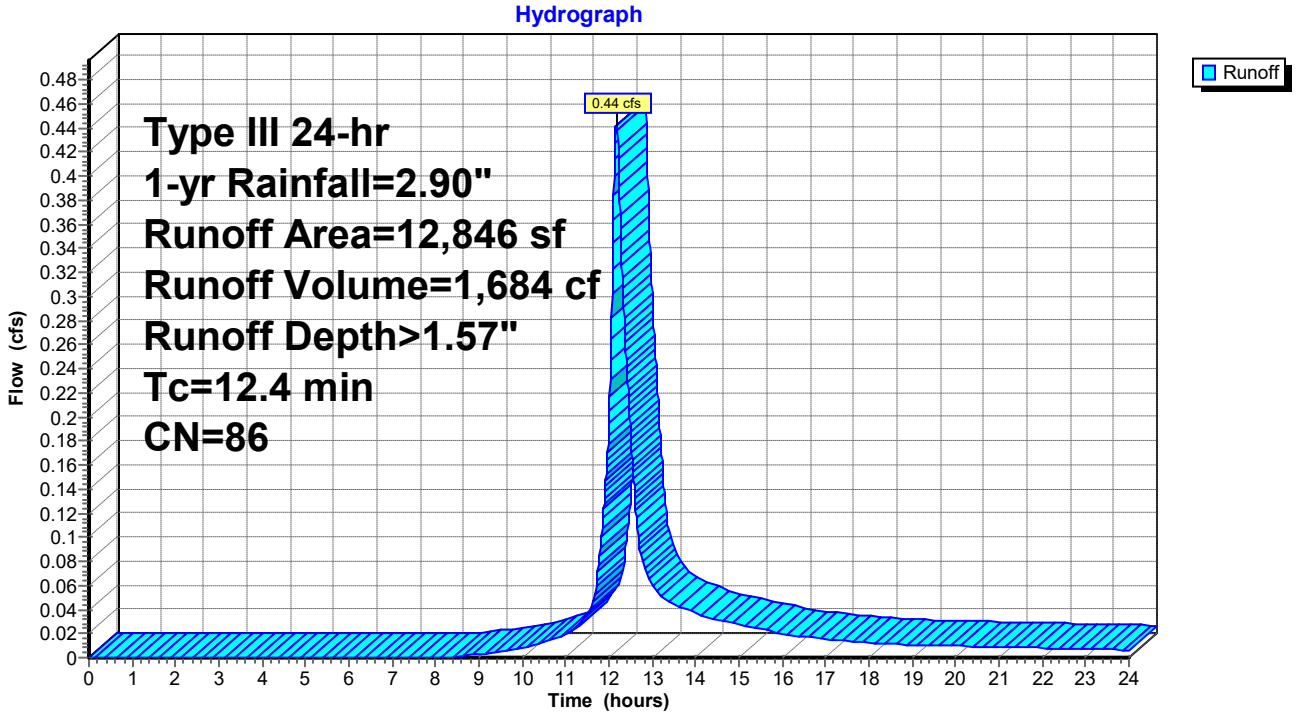
Runoff = 0.44 cfs @ 12.17 hrs, Volume= 1,684 cf, Depth> 1.57"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	5,006	98	Impervious
*	0	69	Lawn B
*	7,840	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	12,846	86	Weighted Average
	7,840		61.03% Pervious Area
	5,006		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4					**Direct Entry,**

Subcatchment C1: WS-C1



Summary for Subcatchment C2: WS-C2

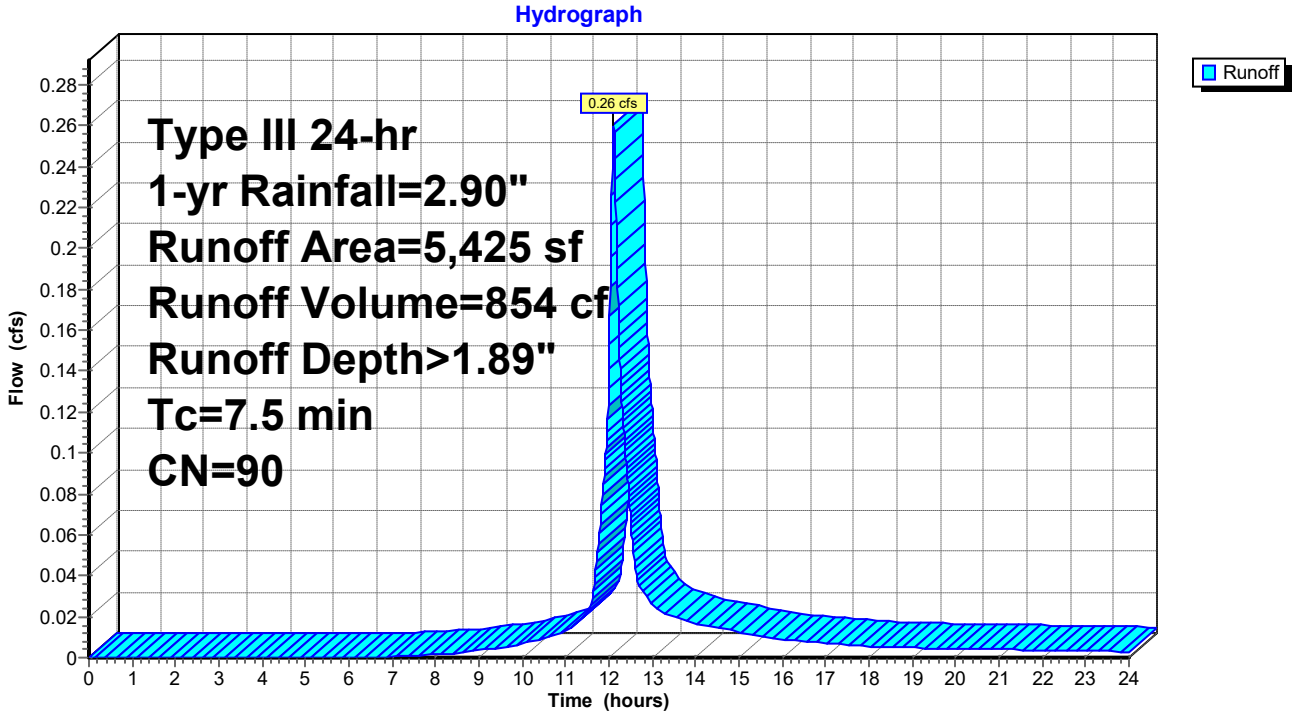
Runoff = 0.26 cfs @ 12.11 hrs, Volume= 854 cf, Depth> 1.89"
Routed to Pond RG03 : Rain Garden-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	3,093	98	Impervious
*	0	69	Lawn B
*	2,332	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	5,425	90	Weighted Average
	2,332		42.99% Pervious Area
	3,093		57.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5					**Direct Entry,**

Subcatchment C2: WS-C2



Summary for Subcatchment C3: WS-C3

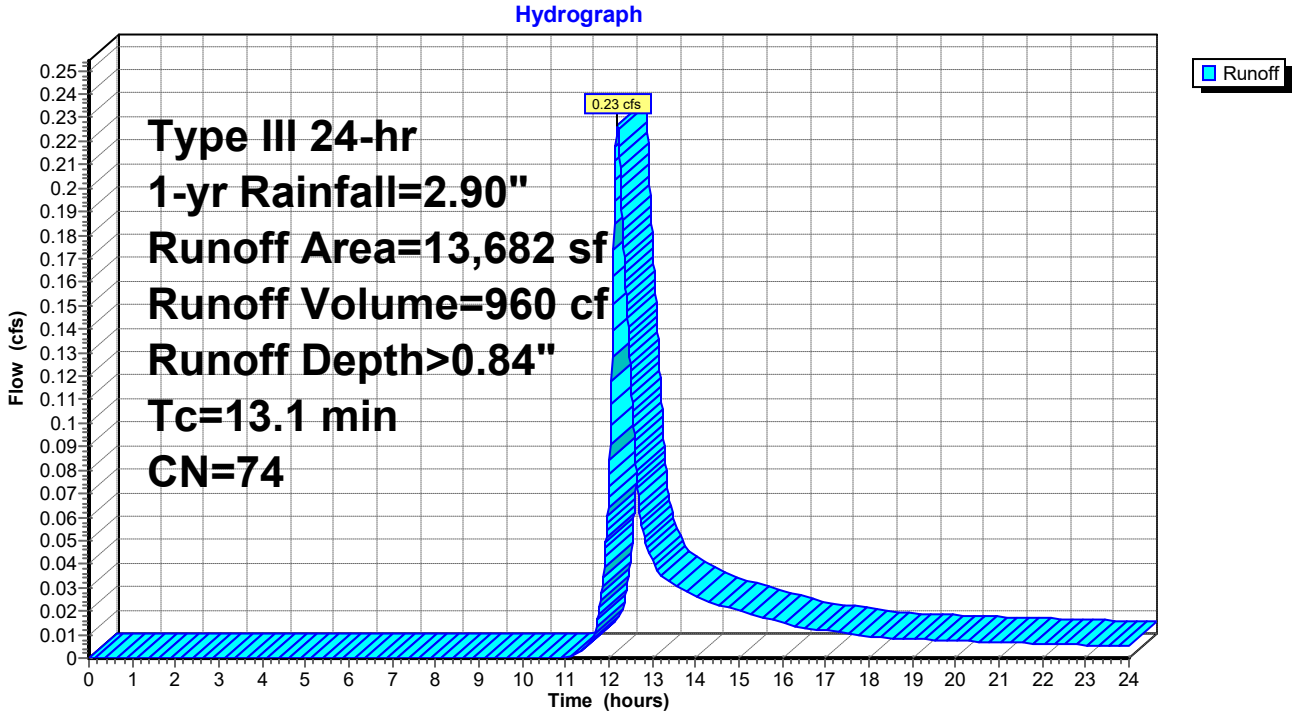
Runoff = 0.23 cfs @ 12.20 hrs, Volume= 960 cf, Depth> 0.84"
Routed to Pond DB03 : Detention-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	0	98	Impervious
*	143	69	Lawn B
*	5,032	79	Lawn C
*	1,722	60	Forest B
*	6,785	73	Forest C
	13,682	74	Weighted Average
	13,682		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1					**Direct Entry,**

Subcatchment C3: WS-C3



Summary for Subcatchment C4: WS-C4

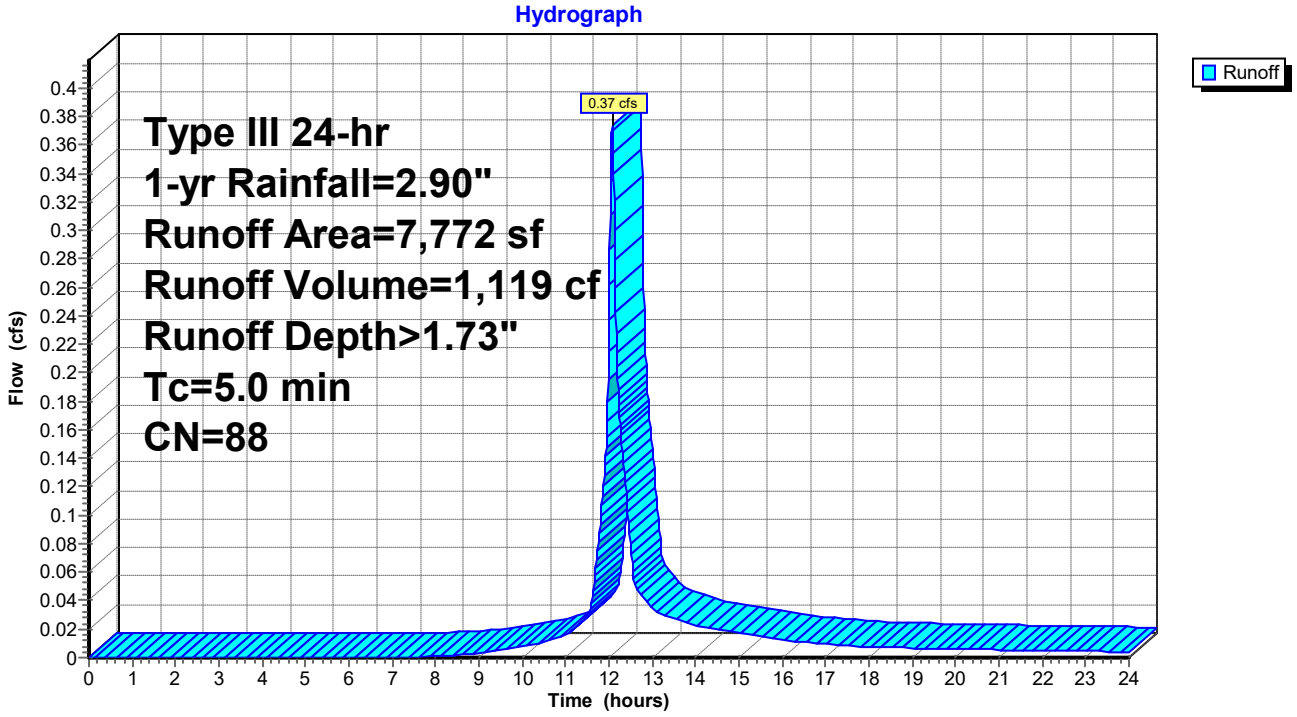
Runoff = 0.37 cfs @ 12.07 hrs, Volume= 1,119 cf, Depth> 1.73"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	3,764	98	Impervious
*	0	69	Lawn B
*	4,008	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	7,772	88	Weighted Average
	4,008		51.57% Pervious Area
	3,764		48.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C4: WS-C4



Summary for Subcatchment C5: WS-C5

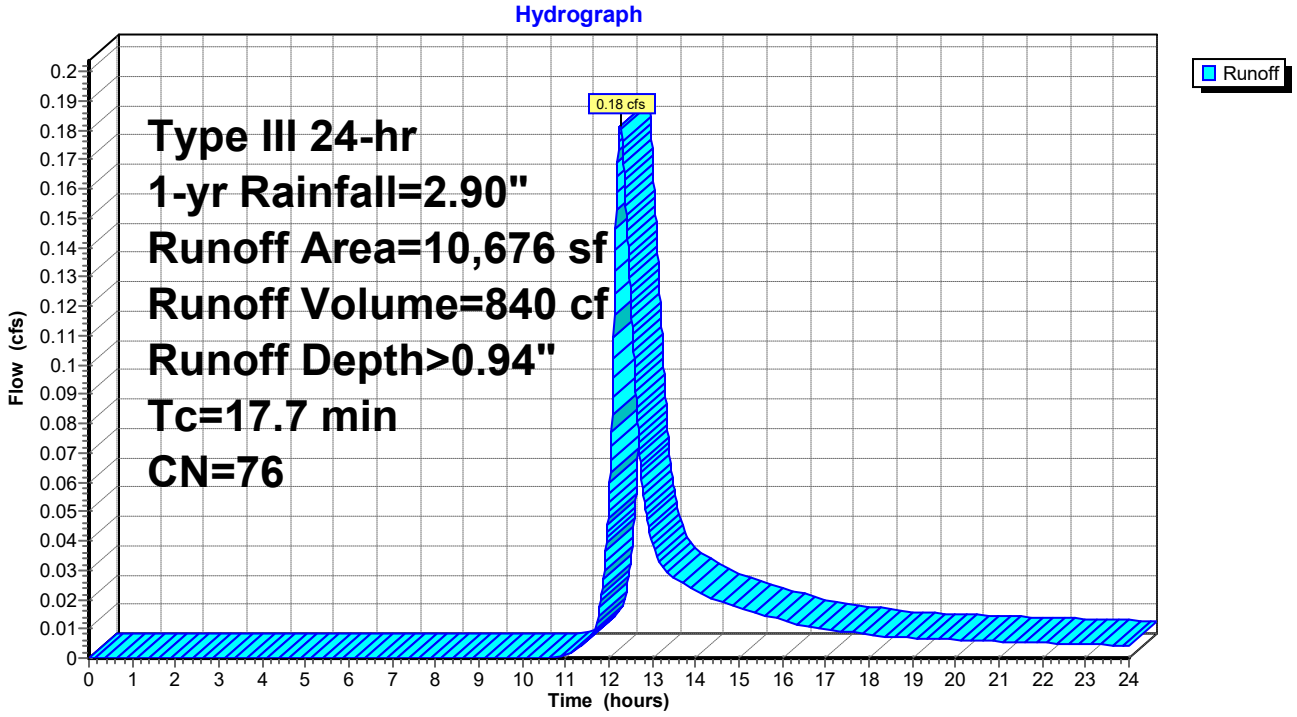
Runoff = 0.18 cfs @ 12.26 hrs, Volume= 840 cf, Depth> 0.94"
Routed to Pond DB02 : Detention-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	0	98	Impervious
*	209	69	Lawn B
*	6,162	79	Lawn C
*	569	60	Forest B
*	3,736	73	Forest C
	10,676	76	Weighted Average
	10,676		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7					**Direct Entry,**

Subcatchment C5: WS-C5



Summary for Subcatchment C6: WS-C6

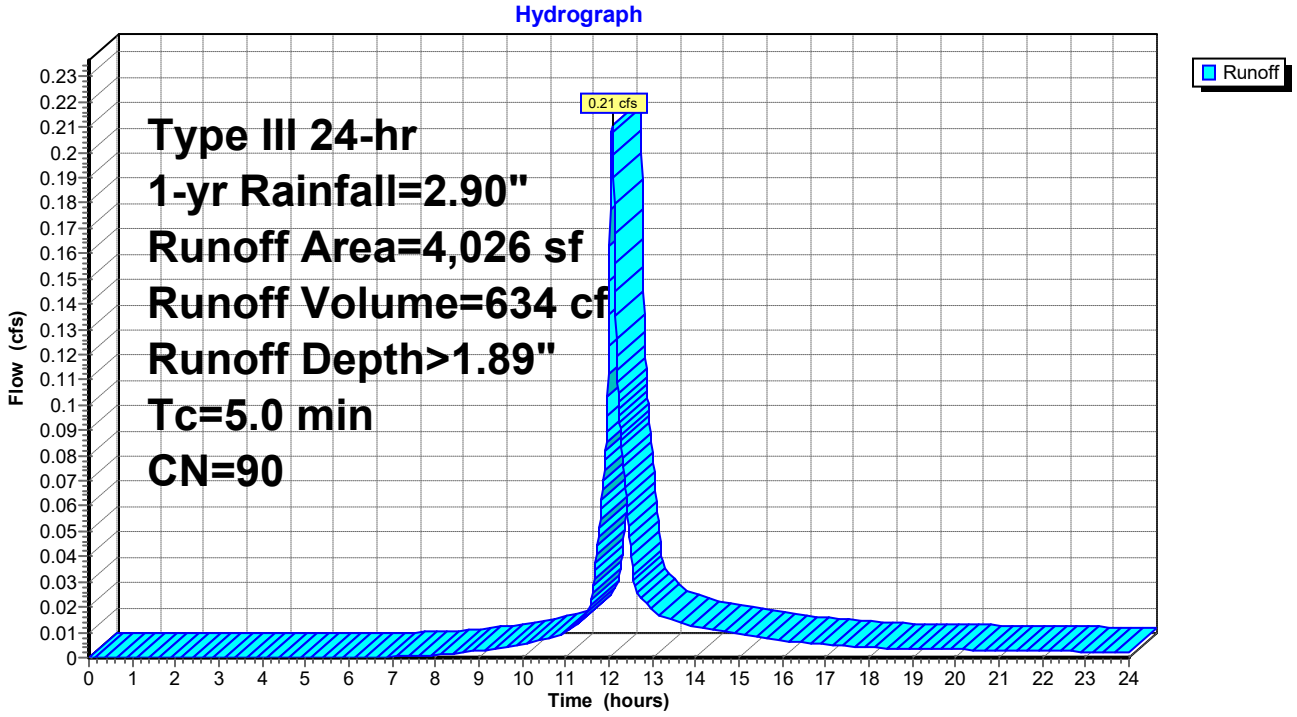
Runoff = 0.21 cfs @ 12.07 hrs, Volume= 634 cf, Depth> 1.89"
Routed to Pond RG06 : Rain Garden-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	2,854	98	Impervious
*	1,172	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	4,026	90	Weighted Average
	1,172		29.11% Pervious Area
	2,854		70.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C6: WS-C6



Summary for Subcatchment C7: WS-C7

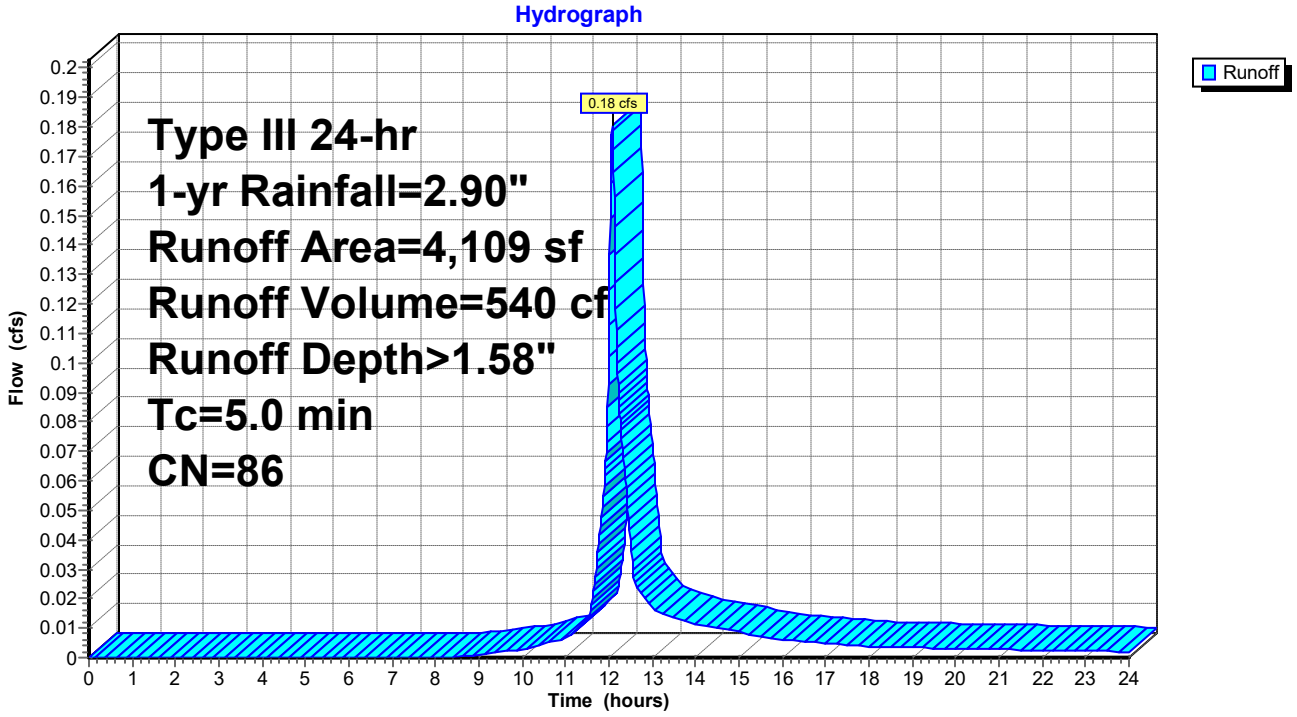
Runoff = 0.18 cfs @ 12.08 hrs, Volume= 540 cf, Depth> 1.58"
Routed to Pond RG07 : Rain Garden-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	2,402	98	Impervious
*	1,707	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	4,109	86	Weighted Average
	1,707		41.54% Pervious Area
	2,402		58.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C7: WS-C7



Summary for Subcatchment D1H: WS-D1H

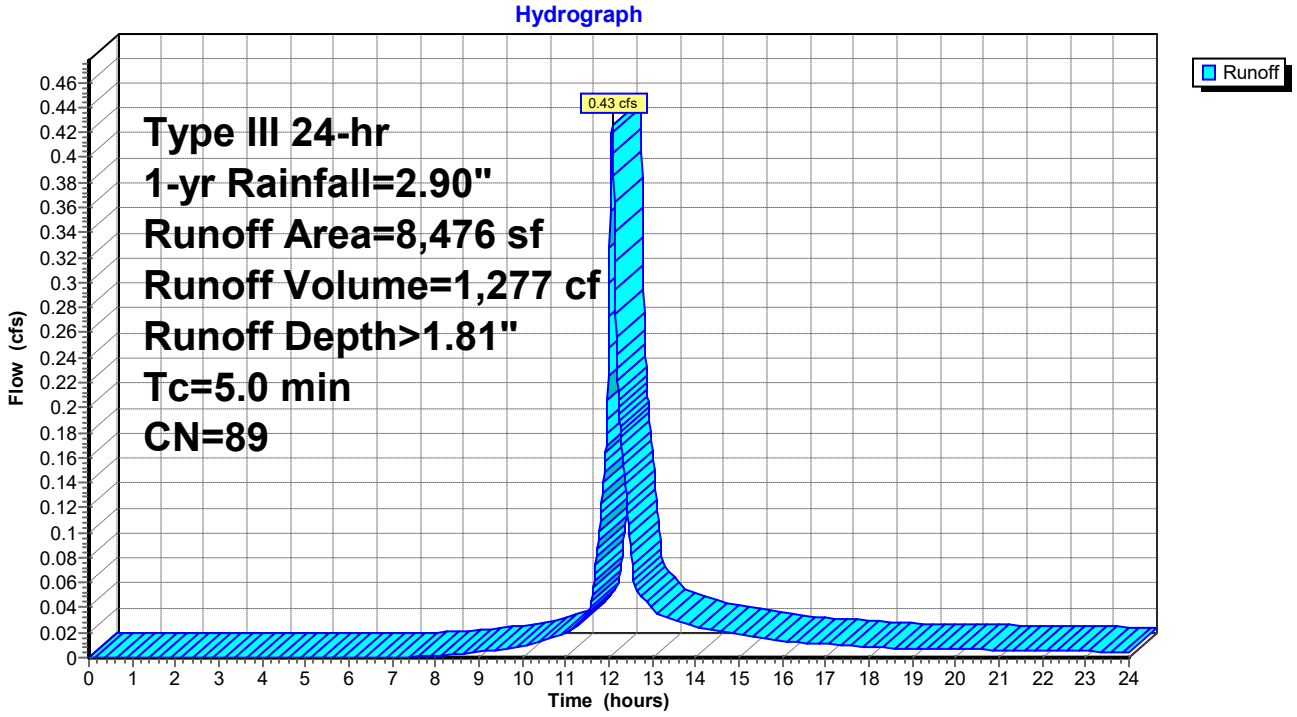
Runoff = 0.43 cfs @ 12.07 hrs, Volume= 1,277 cf, Depth> 1.81"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	5,649	98	Impervious
*	2,426	69	Lawn B
*	401	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	8,476	89	Weighted Average
	2,827		33.35% Pervious Area
	5,649		66.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D1H: WS-D1H



Summary for Subcatchment D2A: WS-D2A

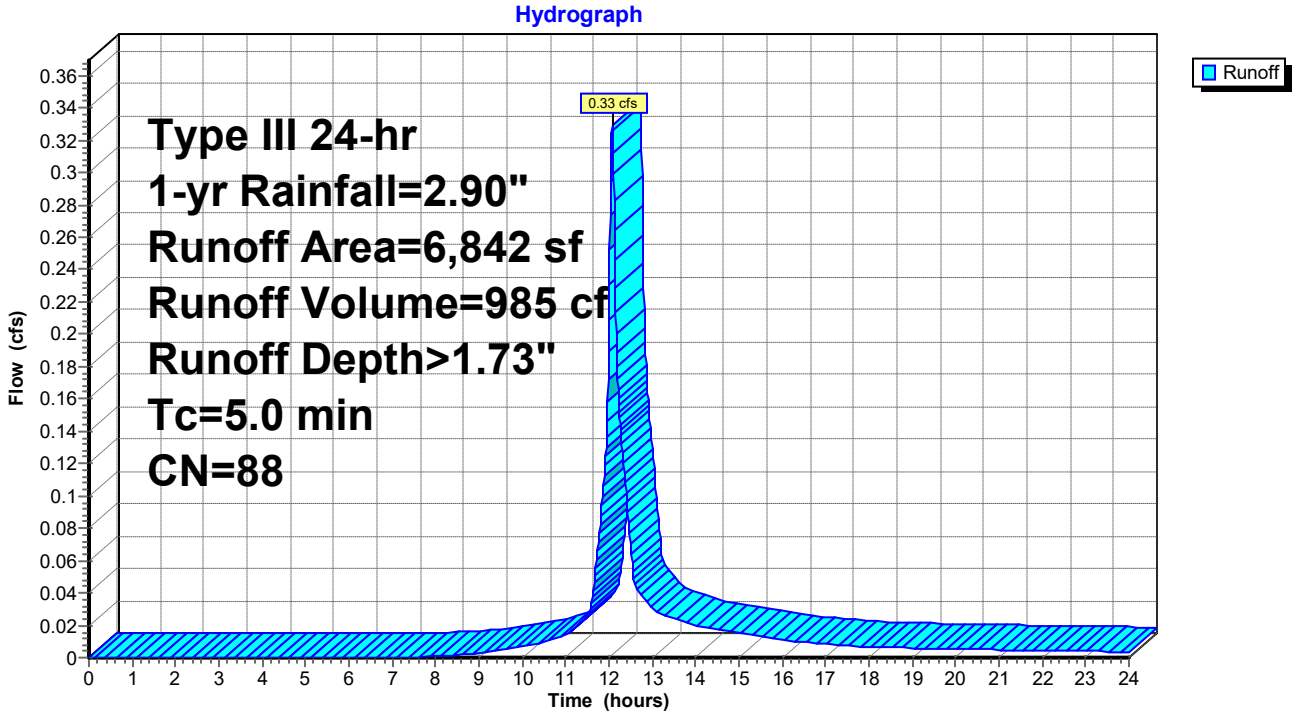
Runoff = 0.33 cfs @ 12.07 hrs, Volume= 985 cf, Depth> 1.73"
Routed to Pond 13P : Por Pvt-D2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	4,404	98	Impervious
*	2,438	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	6,842	88	Weighted Average
	2,438		35.63% Pervious Area
	4,404		64.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2A: WS-D2A



Summary for Subcatchment D2B: WS-D2B

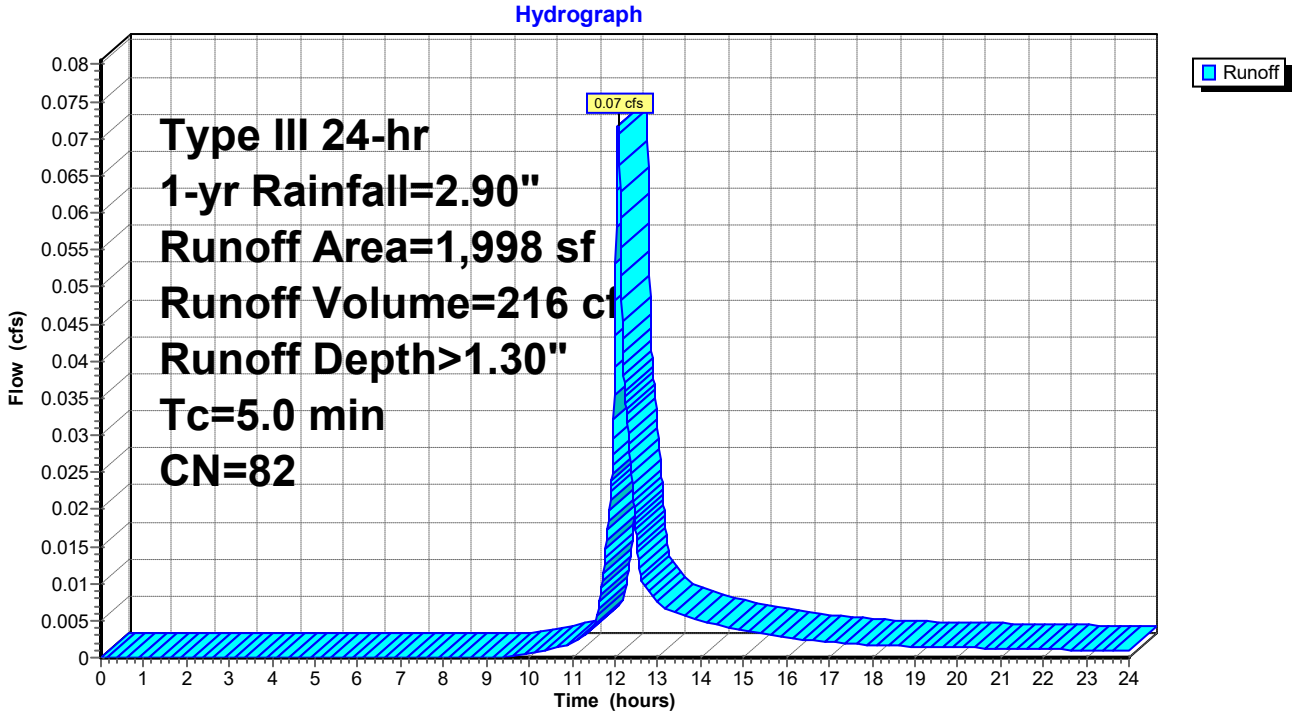
Runoff = 0.07 cfs @ 12.08 hrs, Volume= 216 cf, Depth> 1.30"
Routed to Pond 14P : Por Pvt-D2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	928	98	Impervious
*	1,070	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,998	82	Weighted Average
	1,070		53.55% Pervious Area
	928		46.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2B: WS-D2B



Summary for Subcatchment D2C: WS-D2C

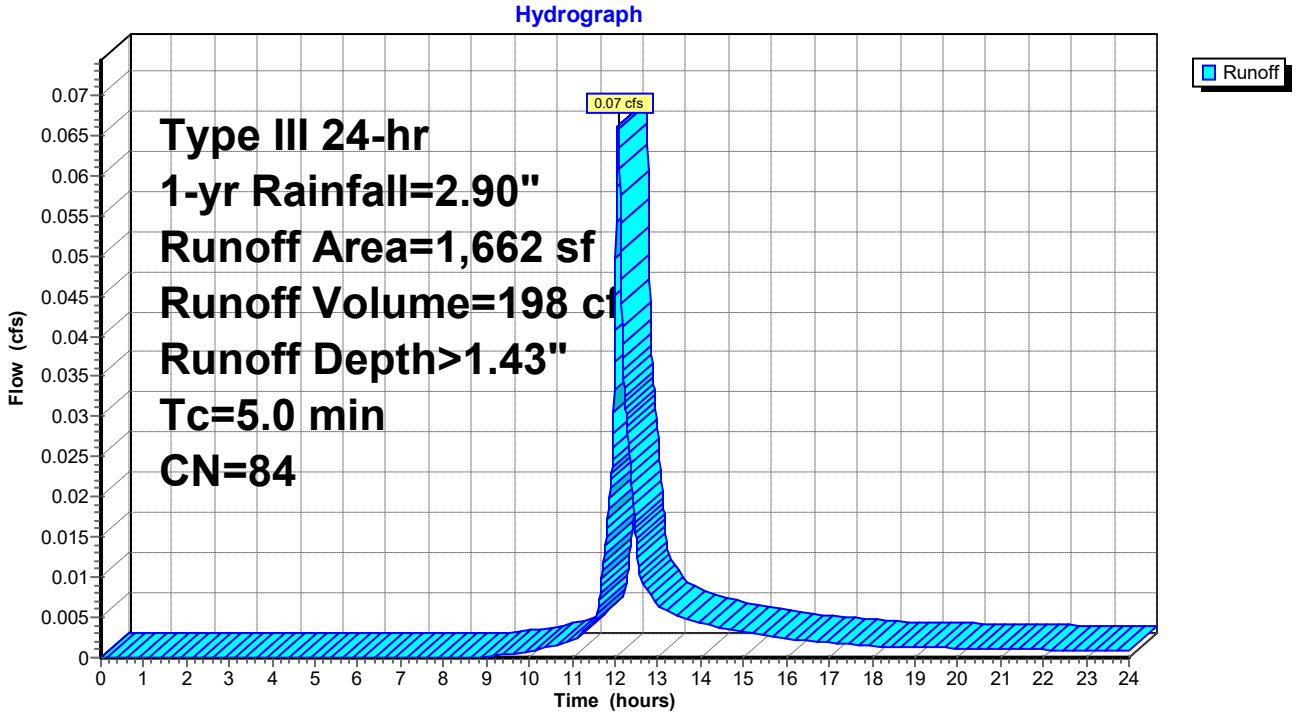
Runoff = 0.07 cfs @ 12.08 hrs, Volume= 198 cf, Depth> 1.43"
Routed to Pond 16P : Por Pvt-D2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	860	98	Impervious
*	802	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,662	84	Weighted Average
	802		48.26% Pervious Area
	860		51.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2C: WS-D2C



Summary for Subcatchment D2D: WS-D2D

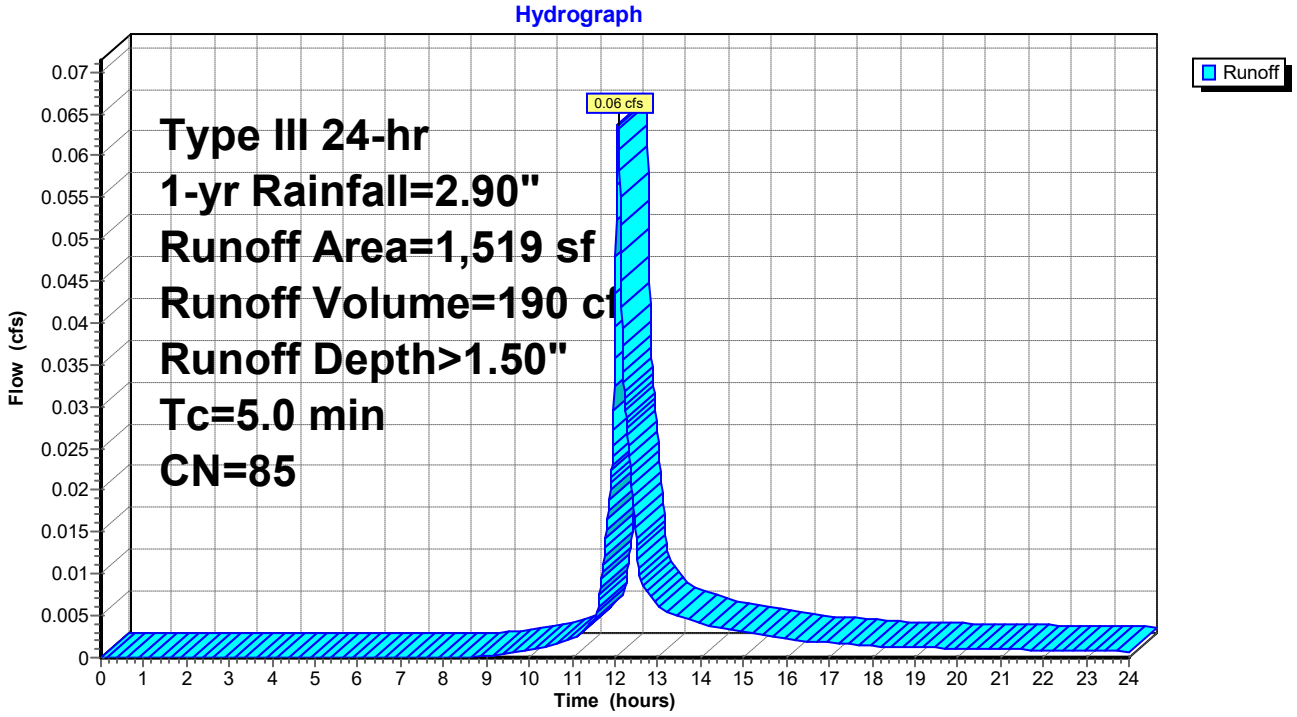
Runoff = 0.06 cfs @ 12.08 hrs, Volume= 190 cf, Depth> 1.50"
Routed to Pond 18P : Por Pvt-D2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	846	98	Impervious
*	673	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,519	85	Weighted Average
	673		44.31% Pervious Area
	846		55.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2D: WS-D2D



Summary for Subcatchment D2E: WS-D2E

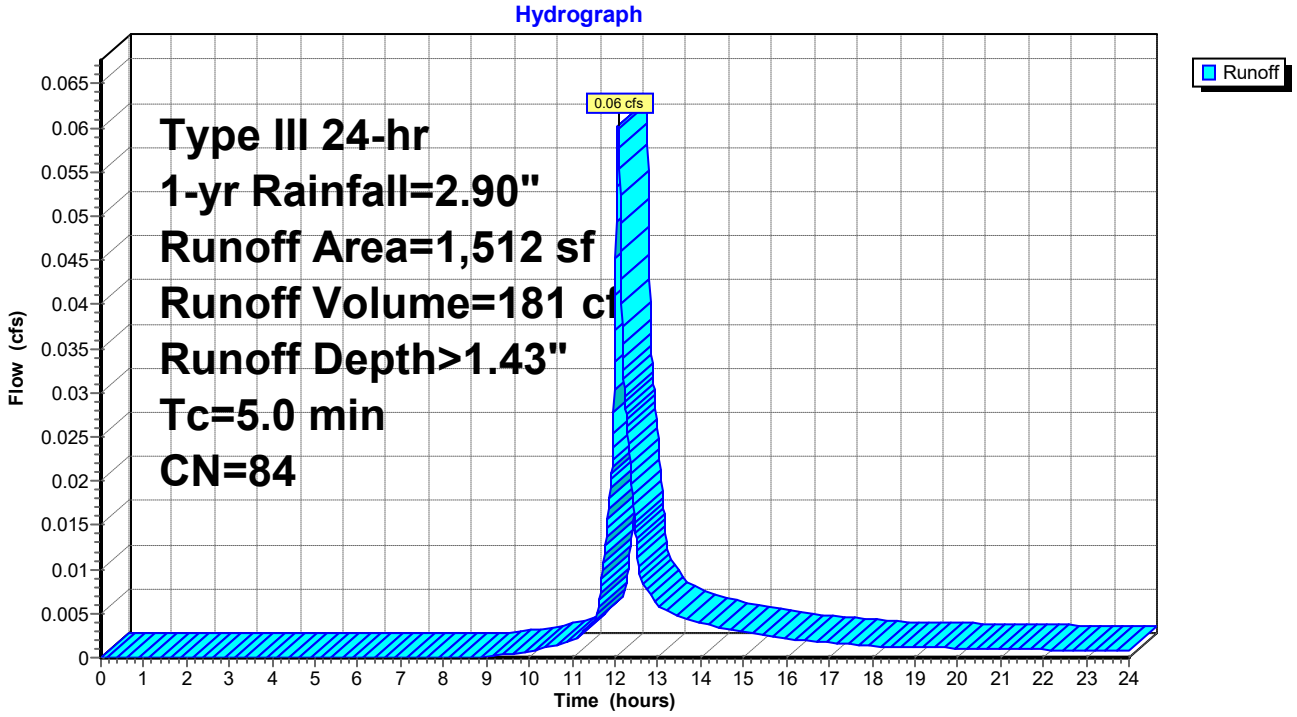
Runoff = 0.06 cfs @ 12.08 hrs, Volume= 181 cf, Depth> 1.43"
Routed to Pond 19P : Por Pvt-D2E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	808	98	Impervious
*	704	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,512	84	Weighted Average
	704		46.56% Pervious Area
	808		53.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2E: WS-D2E



Summary for Subcatchment D2F: WS-D2F

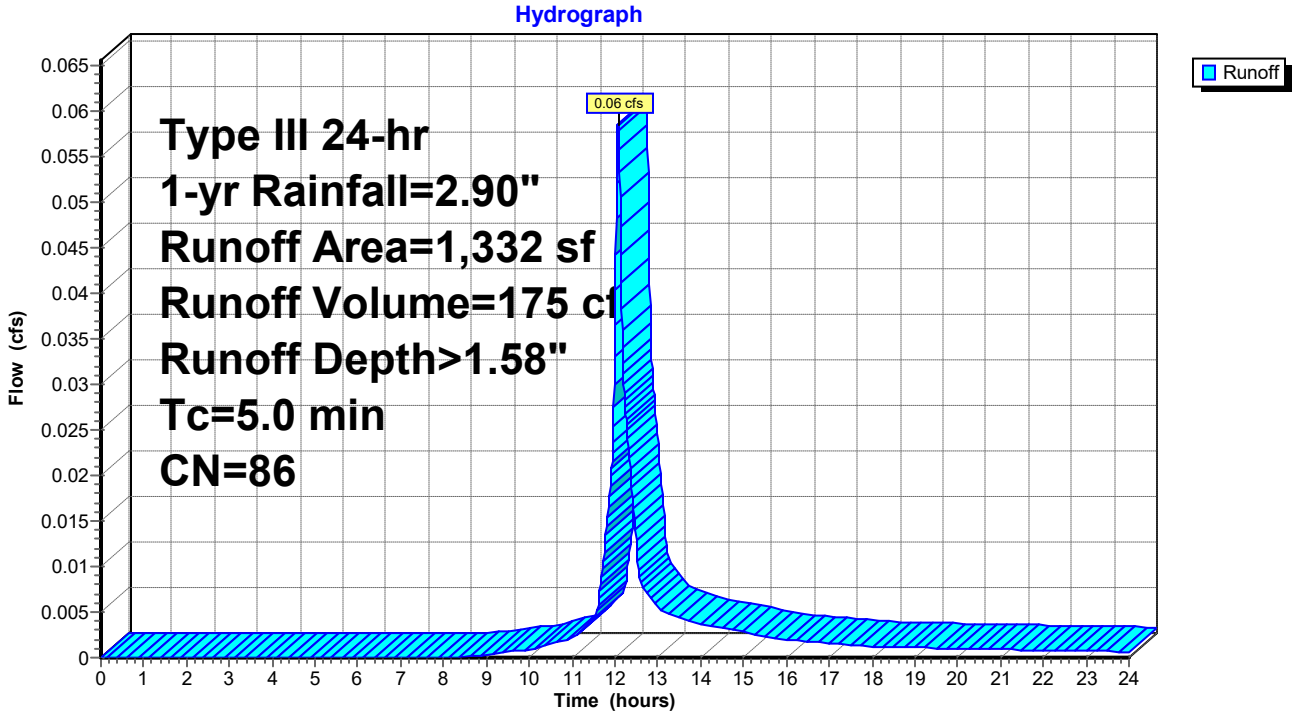
Runoff = 0.06 cfs @ 12.08 hrs, Volume= 175 cf, Depth> 1.58"
Routed to Pond 20P : Por Pvt-D2F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	800	98	Impervious
*	532	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,332	86	Weighted Average
	532		39.94% Pervious Area
	800		60.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2F: WS-D2F



Summary for Subcatchment D2G: WS-D2G

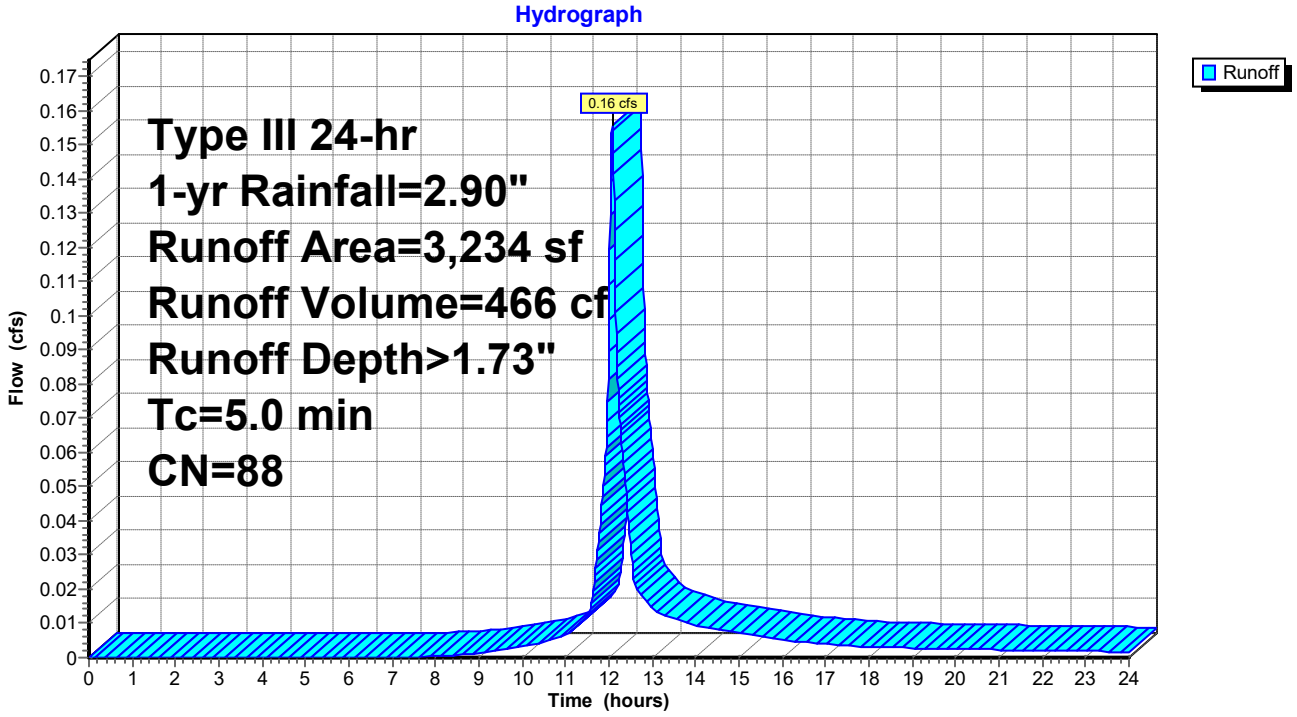
Runoff = 0.16 cfs @ 12.07 hrs, Volume= 466 cf, Depth> 1.73"
Routed to Pond 21P : Por Pvt-D2G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	1,833	98	Impervious
*	555	69	Lawn B
*	846	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	3,234	88	Weighted Average
	1,401		43.32% Pervious Area
	1,833		56.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2G: WS-D2G



Summary for Subcatchment D3: WS-D3

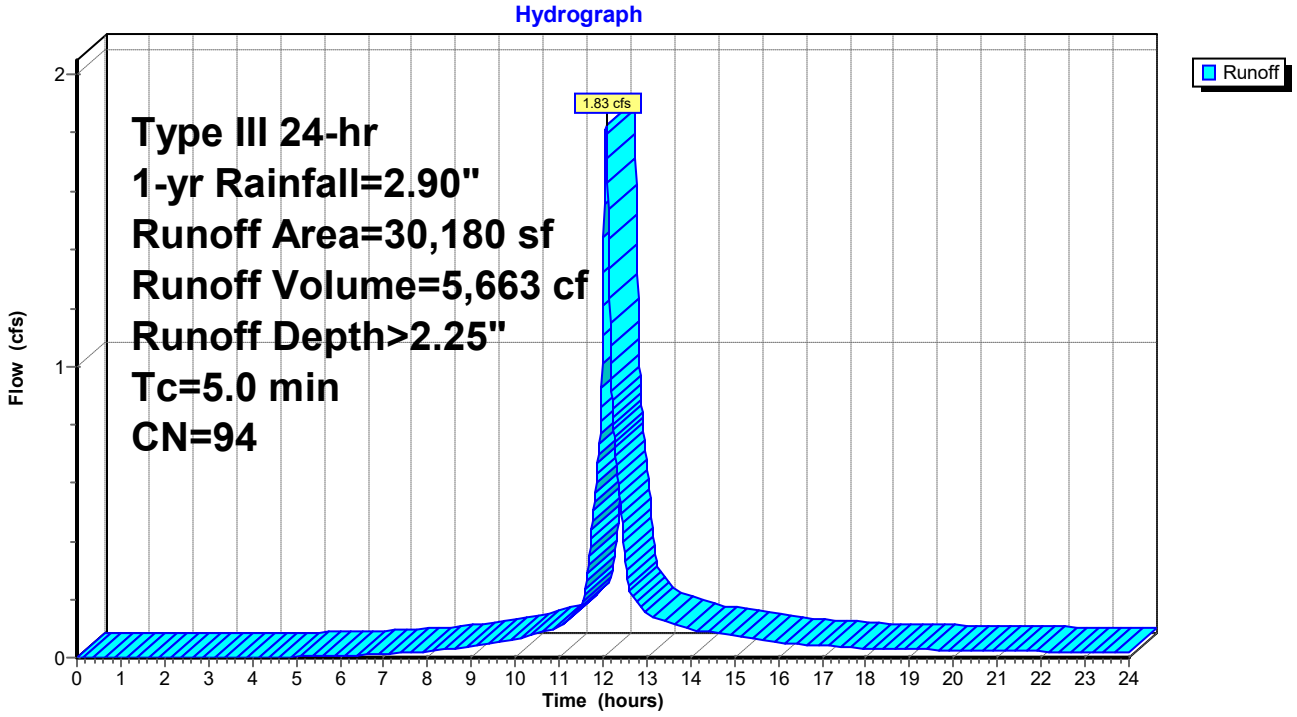
Runoff = 1.83 cfs @ 12.07 hrs, Volume= 5,663 cf, Depth> 2.25"
Routed to Pond PP03 : Por Pvt-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	23,042	98	Impervious
*	0	69	Lawn B
*	7,138	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	30,180	94	Weighted Average
	7,138		23.65% Pervious Area
	23,042		76.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D3: WS-D3



Summary for Subcatchment D4: WS-D4

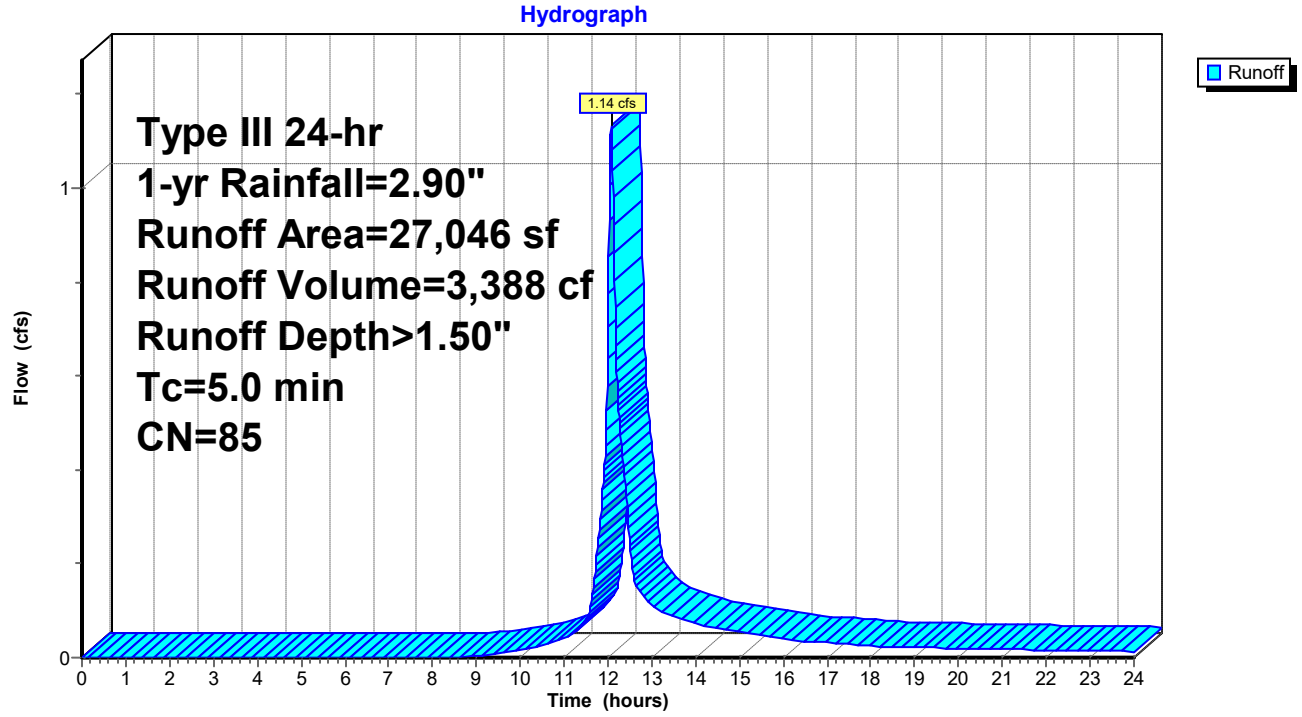
Runoff = 1.14 cfs @ 12.08 hrs, Volume= 3,388 cf, Depth> 1.50"
Routed to Pond PP07 : Por Pvt-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	14,753	98	Impervious
*	12,293	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	27,046	85	Weighted Average
	12,293		45.45% Pervious Area
	14,753		54.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D4: WS-D4



Summary for Subcatchment D5: WS-D5

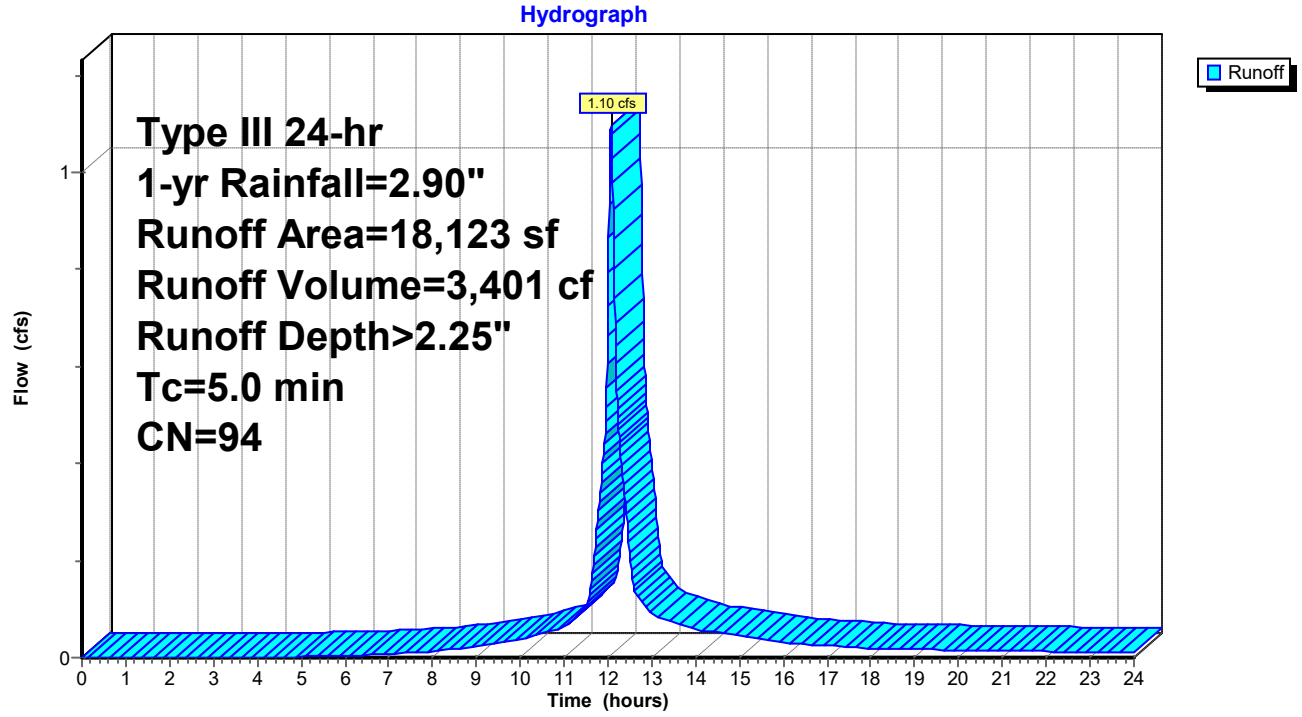
Runoff = 1.10 cfs @ 12.07 hrs, Volume= 3,401 cf, Depth> 2.25"
Routed to Pond PP02 : Por Pvt-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	14,849	98	Impervious
*	0	69	Lawn B
*	720	79	Lawn C
*	0	60	Forest B
*	2,554	73	Forest C
	18,123	94	Weighted Average
	3,274		18.07% Pervious Area
	14,849		81.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D5: WS-D5



Summary for Subcatchment D6: WS-D6

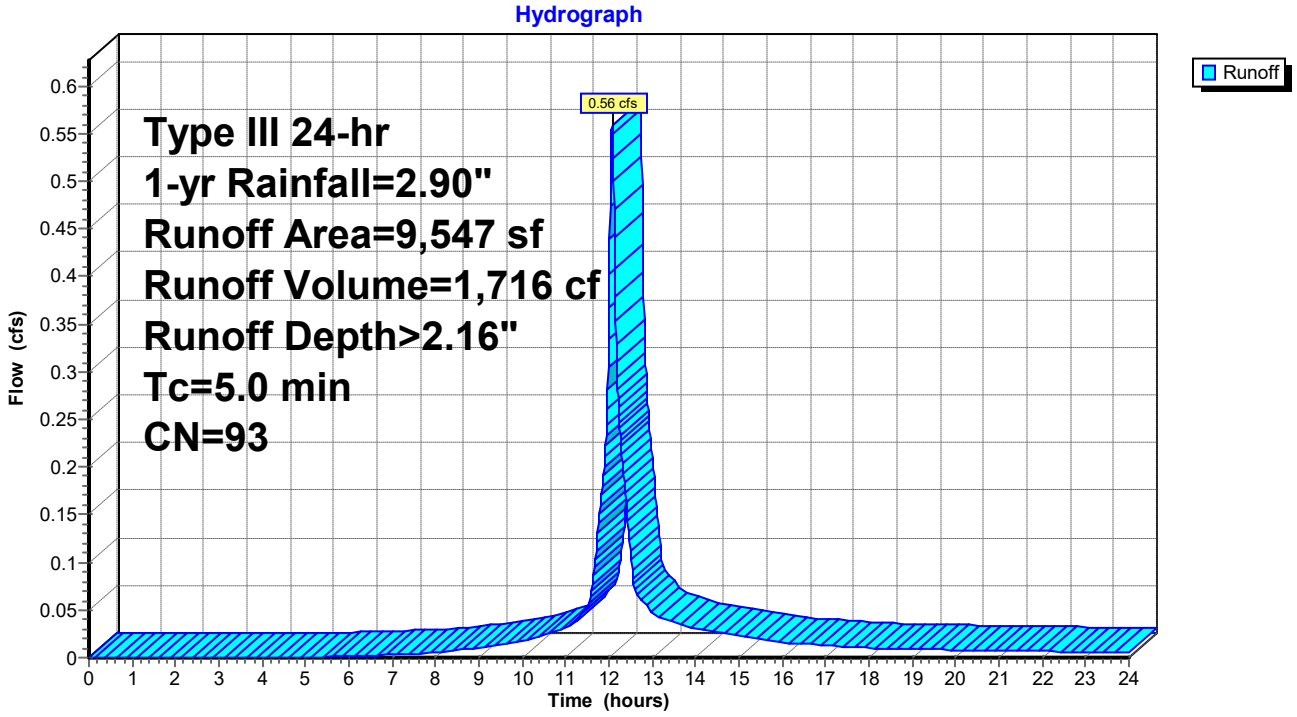
Runoff = 0.56 cfs @ 12.07 hrs, Volume= 1,716 cf, Depth> 2.16"
Routed to Pond PP04 : Por Pvt-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	6,988	98	Impervious
*	0	69	Lawn B
*	2,559	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	9,547	93	Weighted Average
	2,559		26.80% Pervious Area
	6,988		73.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D6: WS-D6



Summary for Subcatchment D7: WS-D7

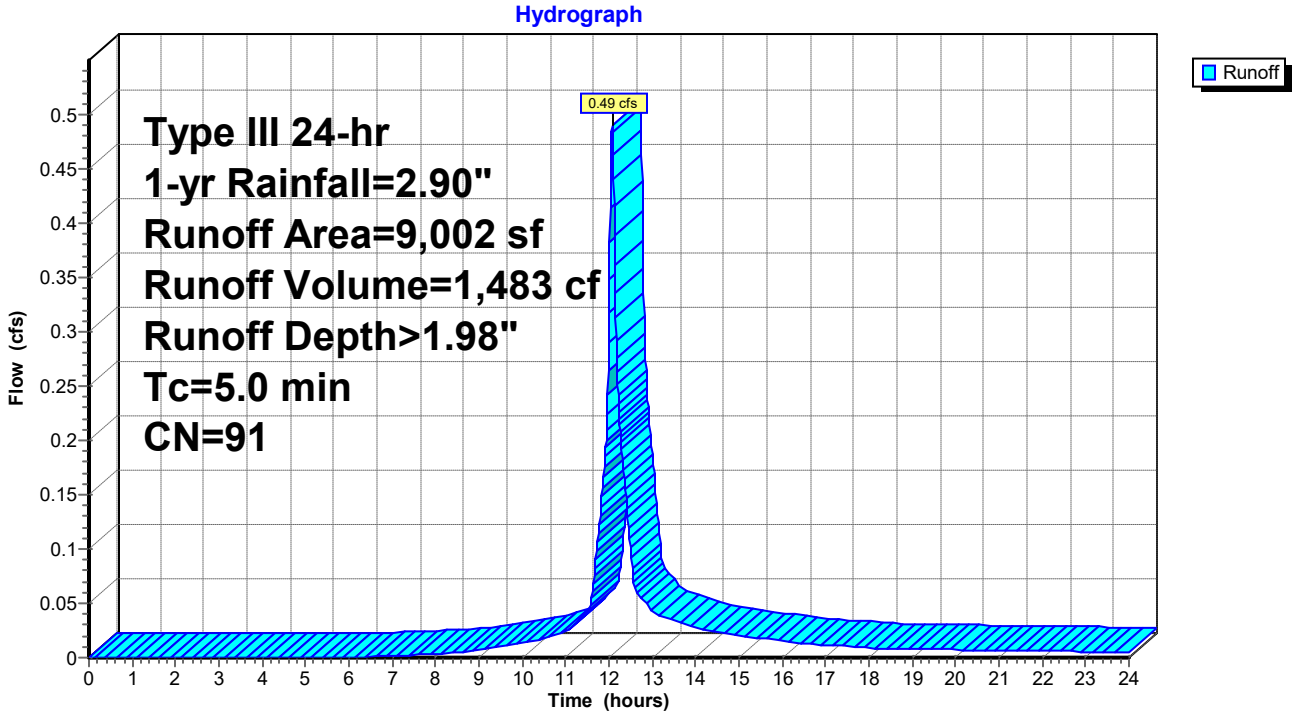
Runoff = 0.49 cfs @ 12.07 hrs, Volume= 1,483 cf, Depth> 1.98"
Routed to Pond PP05 : Por Pvt-05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	6,727	98	Impervious
*	1,674	69	Lawn B
*	601	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	9,002	91	Weighted Average
	2,275		25.27% Pervious Area
	6,727		74.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D7: WS-D7



Summary for Subcatchment D8: WS-D8

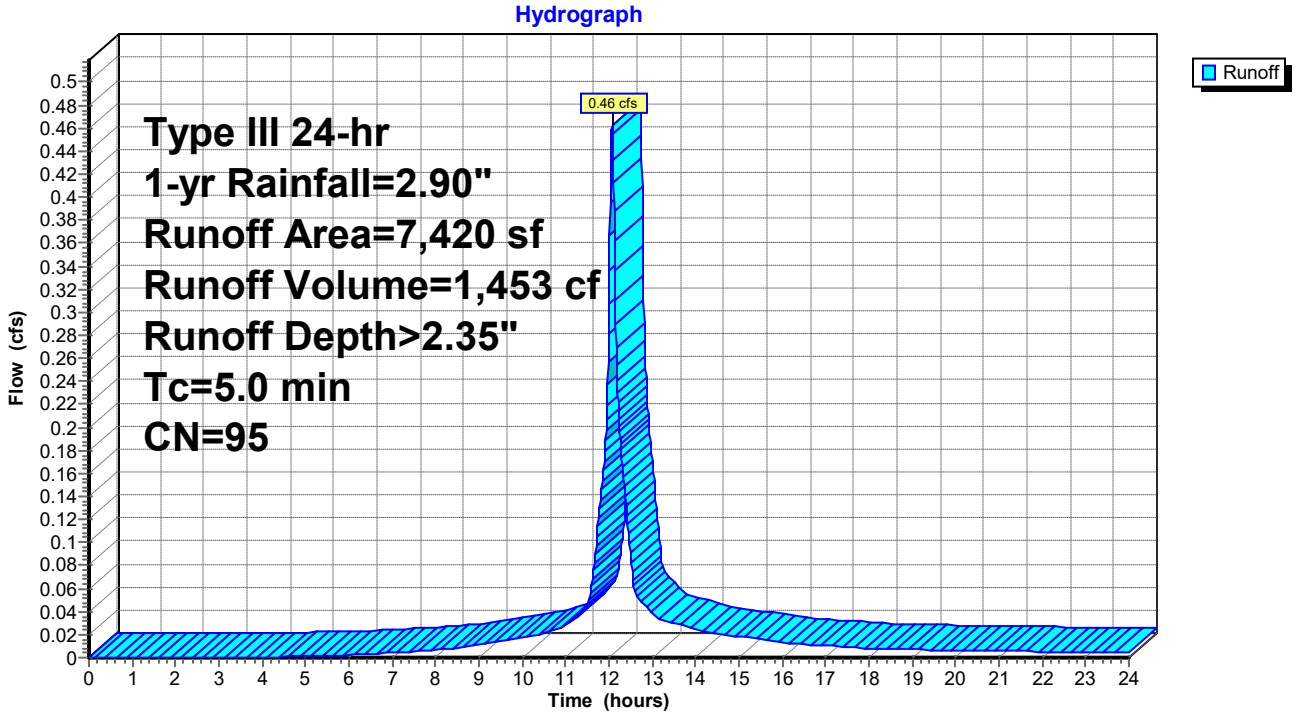
Runoff = 0.46 cfs @ 12.07 hrs, Volume= 1,453 cf, Depth> 2.35"
Routed to Pond PP06 : Por Pvt-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	6,549	98	Impervious
*	871	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	7,420	95	Weighted Average
	871		11.74% Pervious Area
	6,549		88.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D8: WS-D8



Summary for Subcatchment E1: WS-E1

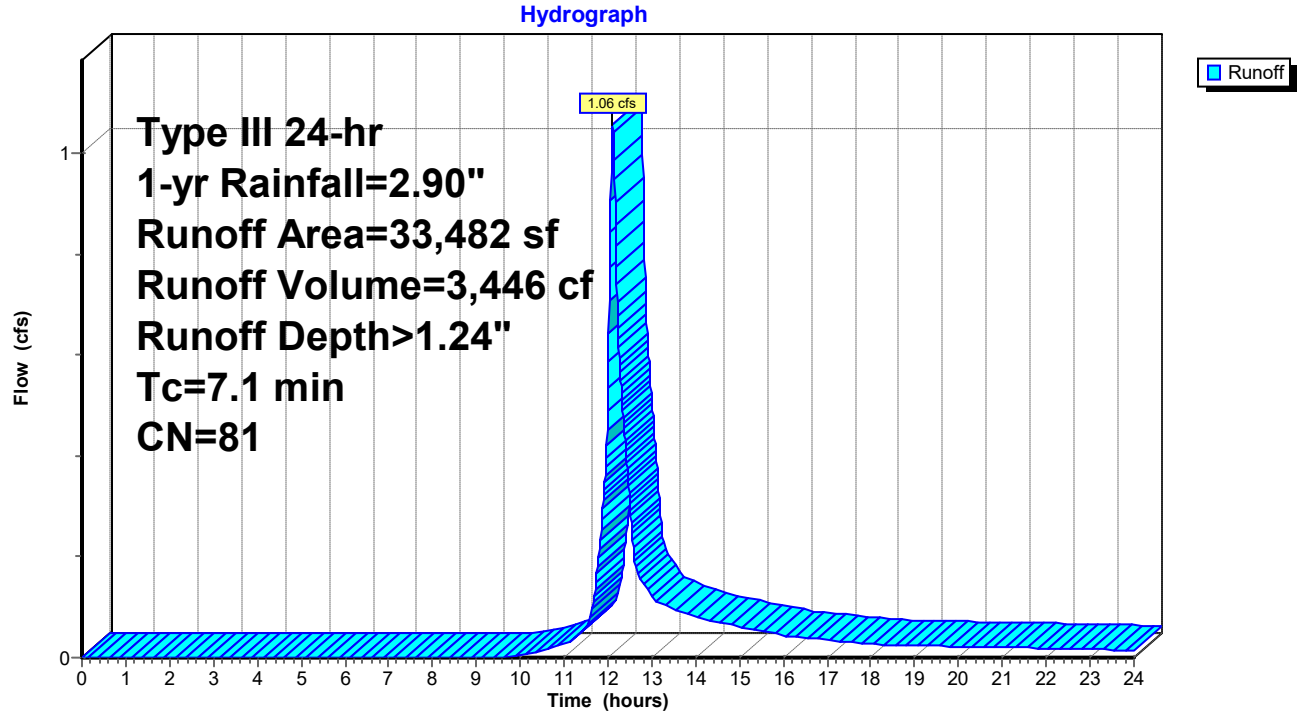
Runoff = 1.06 cfs @ 12.11 hrs, Volume= 3,446 cf, Depth> 1.24"
Routed to Pond UI02 : Und Inf 02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	10,193	98	Impervious
*	1,931	69	Lawn B
*	9,074	79	Lawn C
*	3,193	60	Forest B
*	9,091	73	Forest C
	33,482	81	Weighted Average
	23,289		69.56% Pervious Area
	10,193		30.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1					**Direct Entry,**

Subcatchment E1: WS-E1



Summary for Subcatchment E2: WS-E2

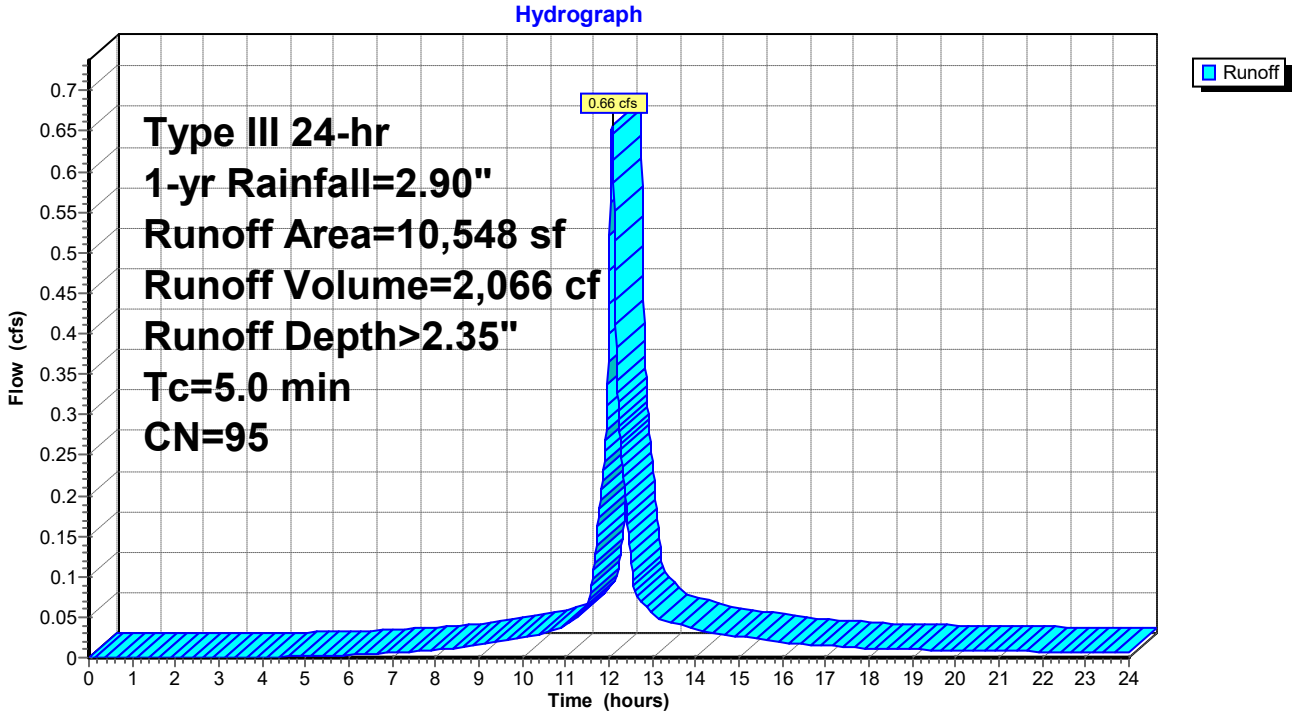
Runoff = 0.66 cfs @ 12.07 hrs, Volume= 2,066 cf, Depth> 2.35"
Routed to Pond RG04 : Rain Garden-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	8,740	98	Impervious
*	0	69	Lawn B
*	1,808	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	10,548	95	Weighted Average
	1,808		17.14% Pervious Area
	8,740		82.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment E2: WS-E2



Summary for Subcatchment R4: Roof-04

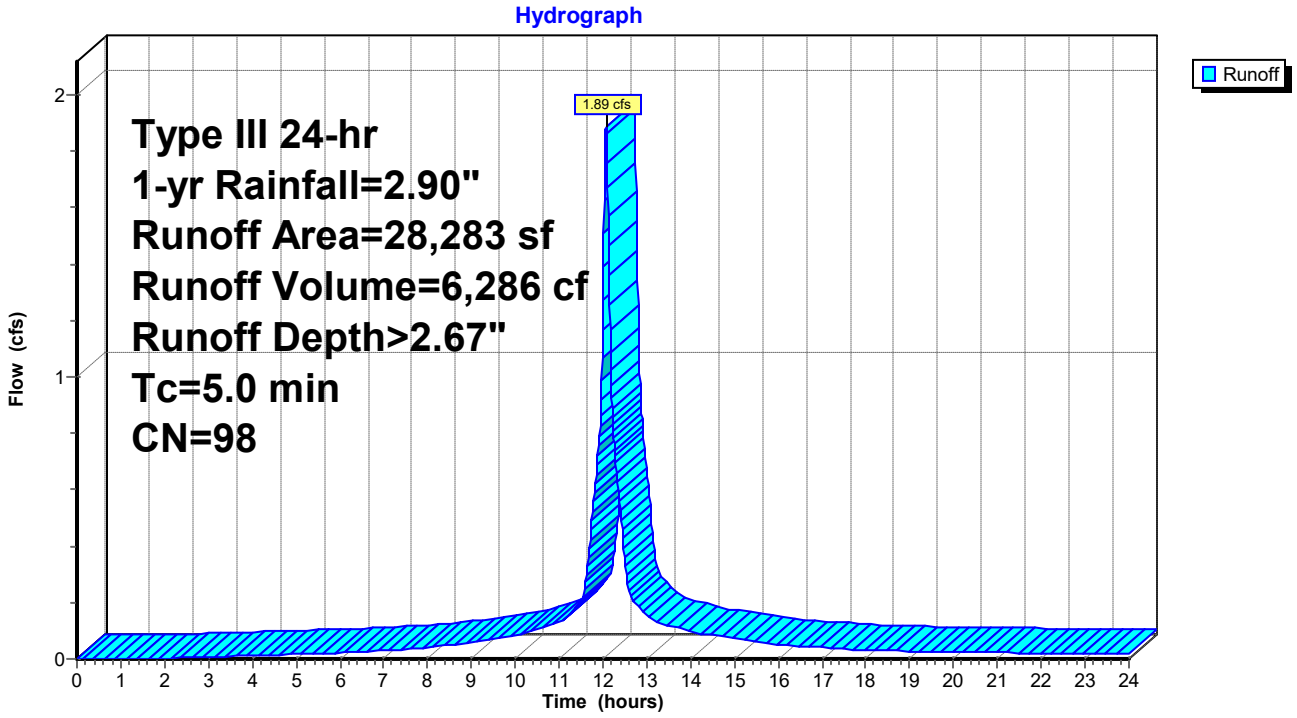
Runoff = 1.89 cfs @ 12.07 hrs, Volume= 6,286 cf, Depth> 2.67"
Routed to Pond UI01 : Und Inf 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	28,283	98	Impervious
	28,283		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment R4: Roof-04



Summary for Subcatchment R5: Roof-05

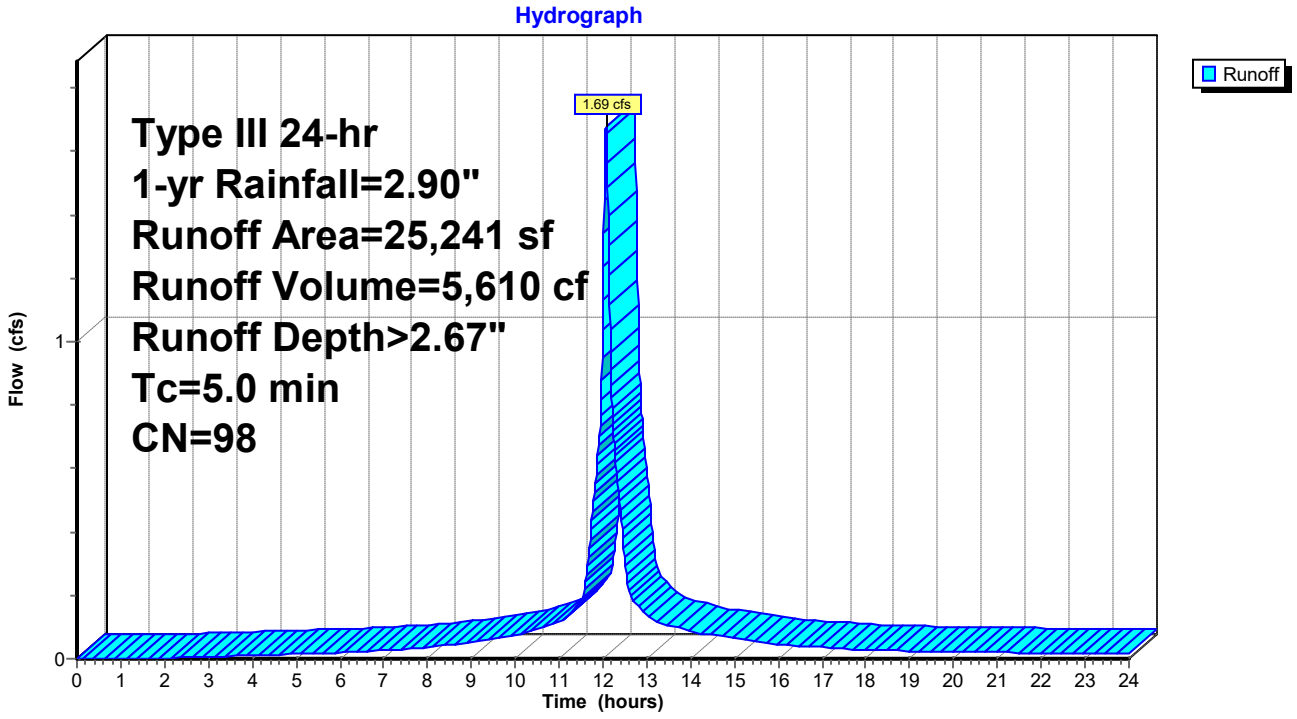
Runoff = 1.69 cfs @ 12.07 hrs, Volume= 5,610 cf, Depth> 2.67"
Routed to Pond UI01 : Und Inf 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-yr Rainfall=2.90"

	Area (sf)	CN	Description
*	25,241	98	Impervious
*	0	79	Lawn C
	25,241	98	Weighted Average
	25,241		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment R5: Roof-05



Summary for Pond 13P: Por Pvt-D2A

Porous Pavement in Parking Spaces Only

Inflow Area = 16,536 sf, 85.26% Impervious, Inflow Depth > 2.28" for 1-yr event
Inflow = 0.98 cfs @ 12.07 hrs, Volume= 3,140 cf
Outflow = 0.05 cfs @ 14.02 hrs, Volume= 968 cf, Atten= 95%, Lag= 117.2 min
Primary = 0.05 cfs @ 14.02 hrs, Volume= 968 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 14P : Por Pvt-D2B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 56.99' @ 14.02 hrs Surf.Area= 2,848 sf Storage= 2,273 cf

Plug-Flow detention time= 404.2 min calculated for 968 cf (31% of inflow)
Center-of-Mass det. time= 241.2 min (1,017.3 - 776.1)

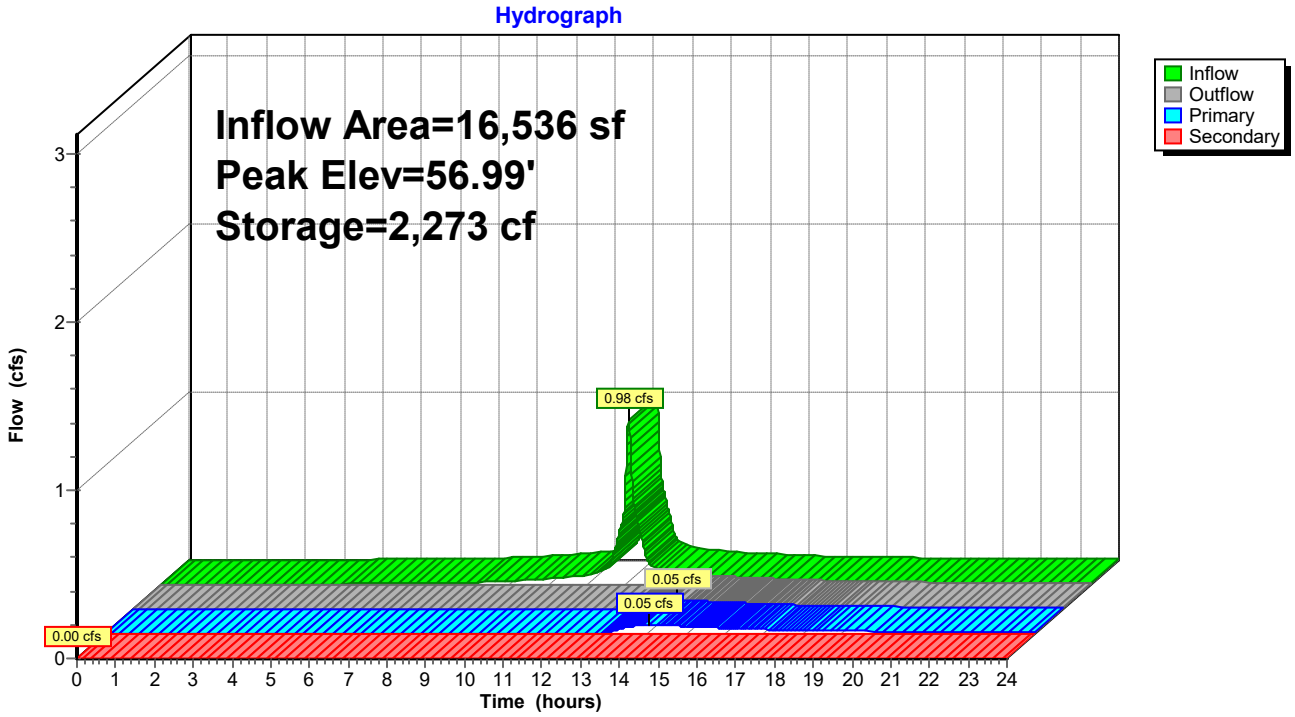
Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	5,683 cf	**20.00'W x 142.40'L x 5.00'H Porous Pavment** 14,240 cf Overall - 32 cf Embedded = 14,208 cf x 40.0% Voids
#2	56.84'	32 cf	**6.0" Round 6" underdrain** Inside #1 L= 162.0'
		5,715 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	56.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.84' / 56.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	59.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.05 cfs @ 14.02 hrs HW=56.99' TW=42.82' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.05 cfs @ 1.04 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=55.00' TW=53.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 13P: Por Pvt-D2A



Summary for Pond 14P: Por Pvt-D2B

Porous Pavement in Parking Spaces Only

Inflow Area = 1,998 sf, 46.45% Impervious, Inflow Depth > 1.30" for 1-yr event
Inflow = 0.07 cfs @ 12.08 hrs, Volume= 216 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 16P : Por Pvt-D2C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 53.68' @ 24.00 hrs Surf.Area= 796 sf Storage= 216 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

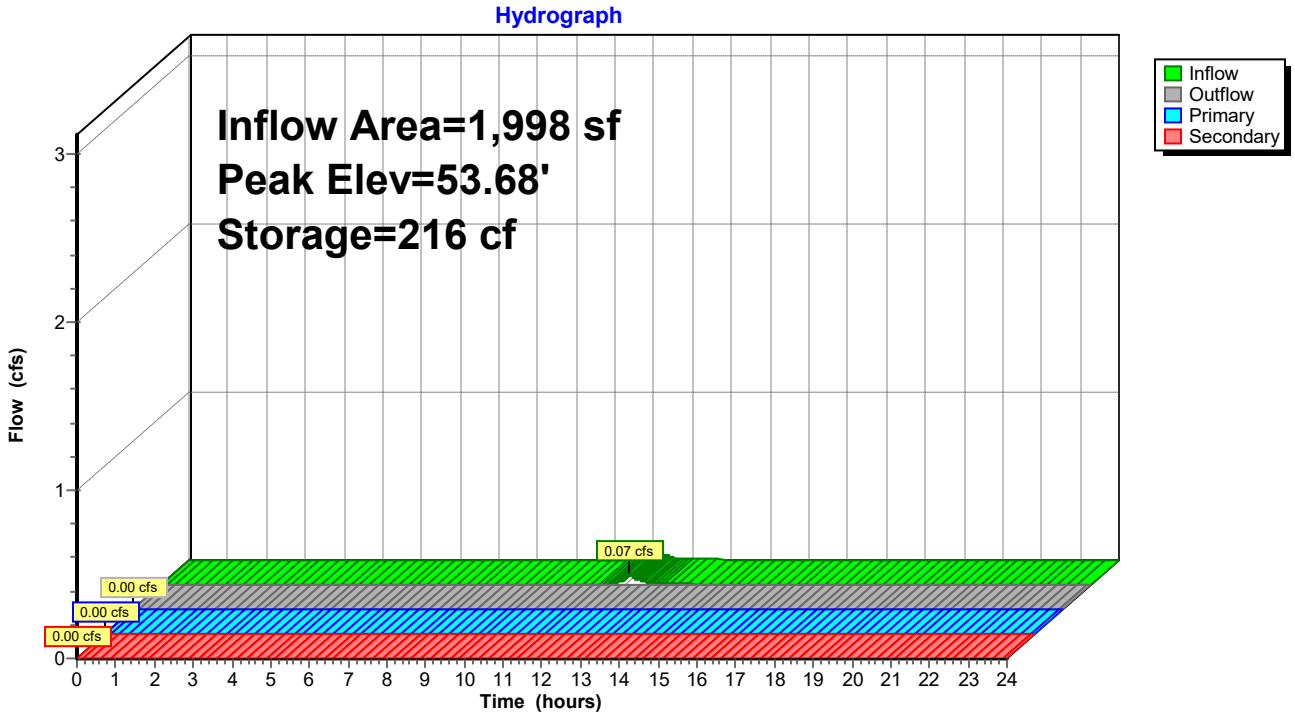
Volume	Invert	Avail.Storage	Storage Description
#1	53.00'	1,588 cf	**20.00'W x 39.80'L x 5.00'H Porous Pavment** 3,980 cf Overall - 11 cf Embedded = 3,969 cf x 40.0% Voids
#2	54.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 55.0'
		1,598 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	54.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 54.84' / 54.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	57.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=53.00' TW=42.54' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=53.00' TW=51.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 14P: Por Pvt-D2B



Summary for Pond 15P: Por Pvt-D1H

Porous Pavement in Parking Spaces Only

Inflow Area = 36,236 sf, 92.20% Impervious, Inflow Depth > 2.47" for 1-yr event
Inflow = 2.28 cfs @ 12.07 hrs, Volume= 7,447 cf
Outflow = 0.59 cfs @ 12.42 hrs, Volume= 4,639 cf, Atten= 74%, Lag= 20.9 min
Primary = 0.59 cfs @ 12.42 hrs, Volume= 4,639 cf
Routed to Pond YD33 : YD-33
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 13P : Por Pvt-D2A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.75' @ 12.42 hrs Surf.Area= 3,618 sf Storage= 3,997 cf

Plug-Flow detention time= 220.4 min calculated for 4,639 cf (62% of inflow)
Center-of-Mass det. time= 116.4 min (883.2 - 766.8)

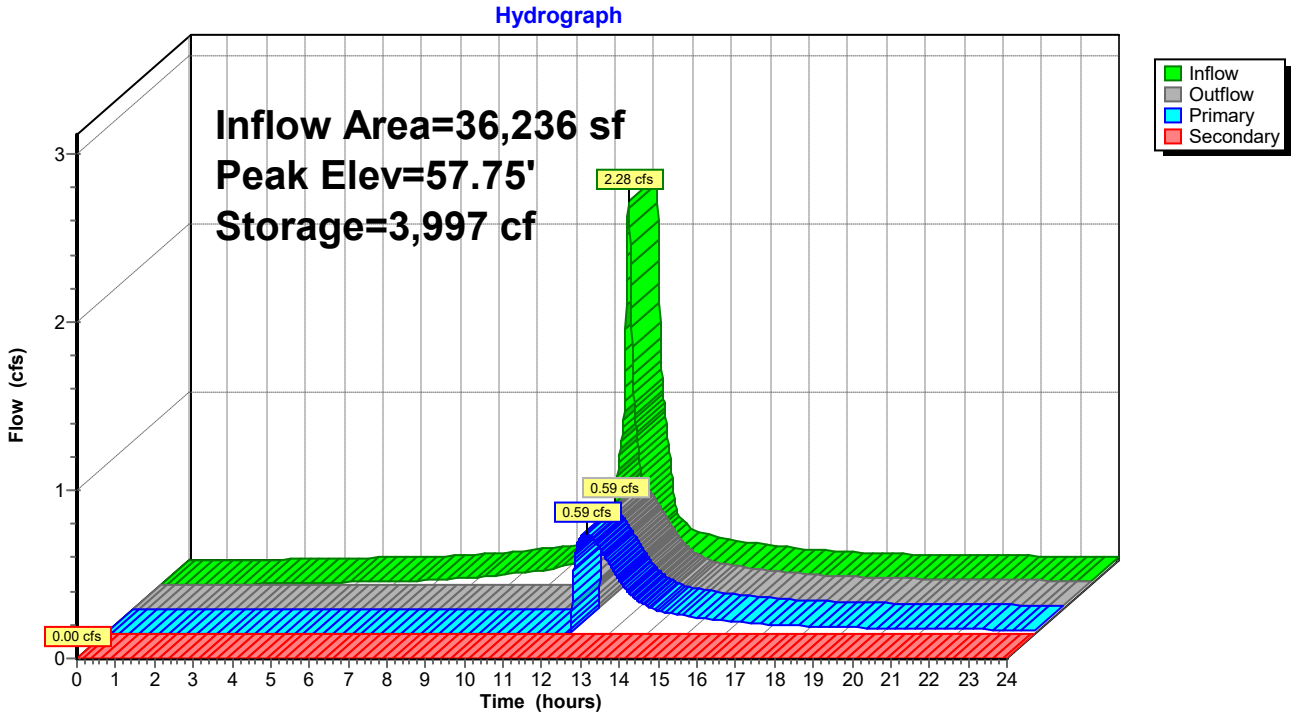
Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	7,220 cf	**20.00'W x 180.90'L x 5.00'H Porous Pavment** 18,090 cf Overall - 40 cf Embedded = 18,050 cf x 40.0% Voids
#2	56.84'	40 cf	**6.0" Round 6" underdrain** Inside #1 L= 204.0'
		7,260 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	56.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.84' / 56.67' S= 0.0567 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	59.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.59 cfs @ 12.42 hrs HW=57.75' TW=57.11' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.59 cfs @ 3.03 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=55.00' TW=55.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 15P: Por Pvt-D1H



Summary for Pond 16P: Por Pvt-D2C

Porous Pavement in Parking Spaces Only

Inflow Area = 6,166 sf, 86.99% Impervious, Inflow Depth > 2.33" for 1-yr event
Inflow = 0.37 cfs @ 12.07 hrs, Volume= 1,199 cf
Outflow = 0.11 cfs @ 12.37 hrs, Volume= 598 cf, Atten= 69%, Lag= 17.9 min
Primary = 0.11 cfs @ 12.37 hrs, Volume= 598 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 18P : Por Pvt-D2D

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 53.07' @ 12.37 hrs Surf.Area= 800 sf Storage= 665 cf

Plug-Flow detention time= 258.0 min calculated for 598 cf (50% of inflow)
Center-of-Mass det. time= 135.2 min (904.8 - 769.6)

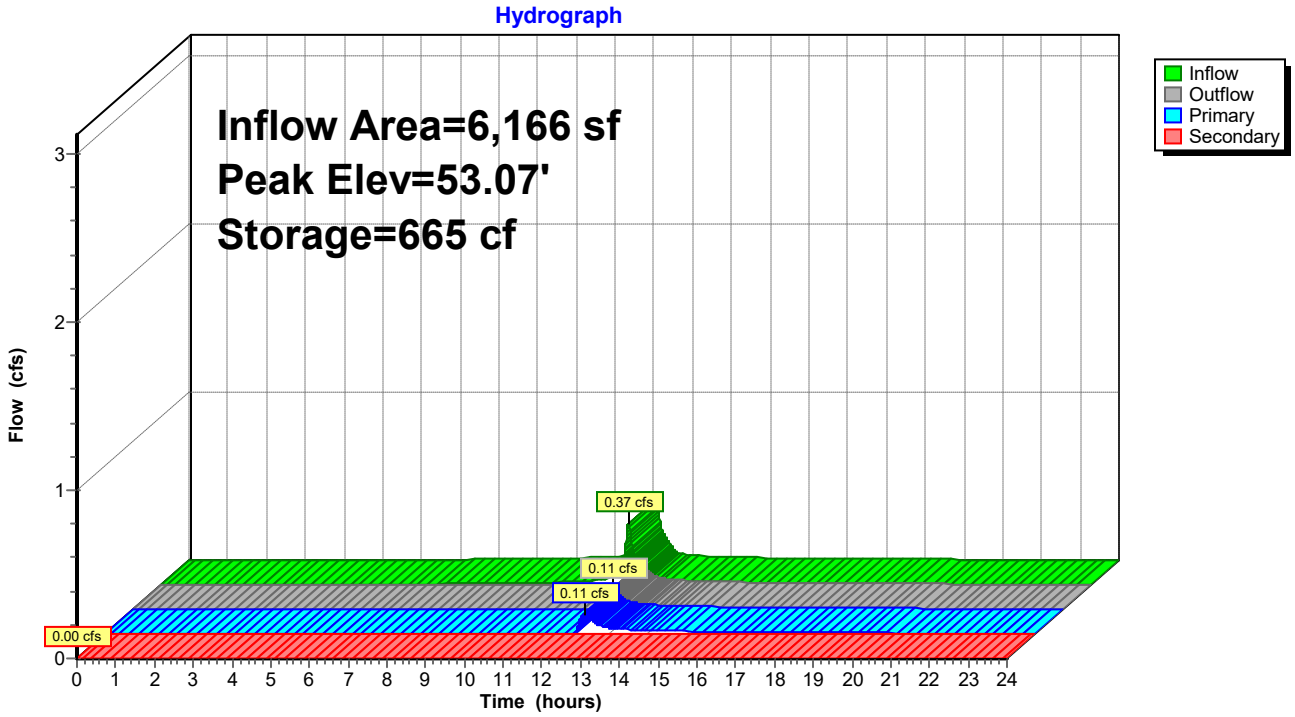
Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	52.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 55.0'
		1,606 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	52.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 52.84' / 52.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	55.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.11 cfs @ 12.37 hrs HW=53.07' TW=43.04' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.11 cfs @ 1.29 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=51.00' TW=49.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 16P: Por Pvt-D2C



Summary for Pond 18P: Por Pvt-D2D

Porous Pavement in Parking Spaces Only

Inflow Area = 6,023 sf, 88.83% Impervious, Inflow Depth > 2.37" for 1-yr event
Inflow = 0.36 cfs @ 12.07 hrs, Volume= 1,191 cf
Outflow = 0.11 cfs @ 12.37 hrs, Volume= 590 cf, Atten= 69%, Lag= 17.9 min
Primary = 0.11 cfs @ 12.37 hrs, Volume= 590 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 19P : Por Pvt-D2E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 51.07' @ 12.37 hrs Surf.Area= 800 sf Storage= 665 cf

Plug-Flow detention time= 259.5 min calculated for 590 cf (50% of inflow)
Center-of-Mass det. time= 136.1 min (904.7 - 768.6)

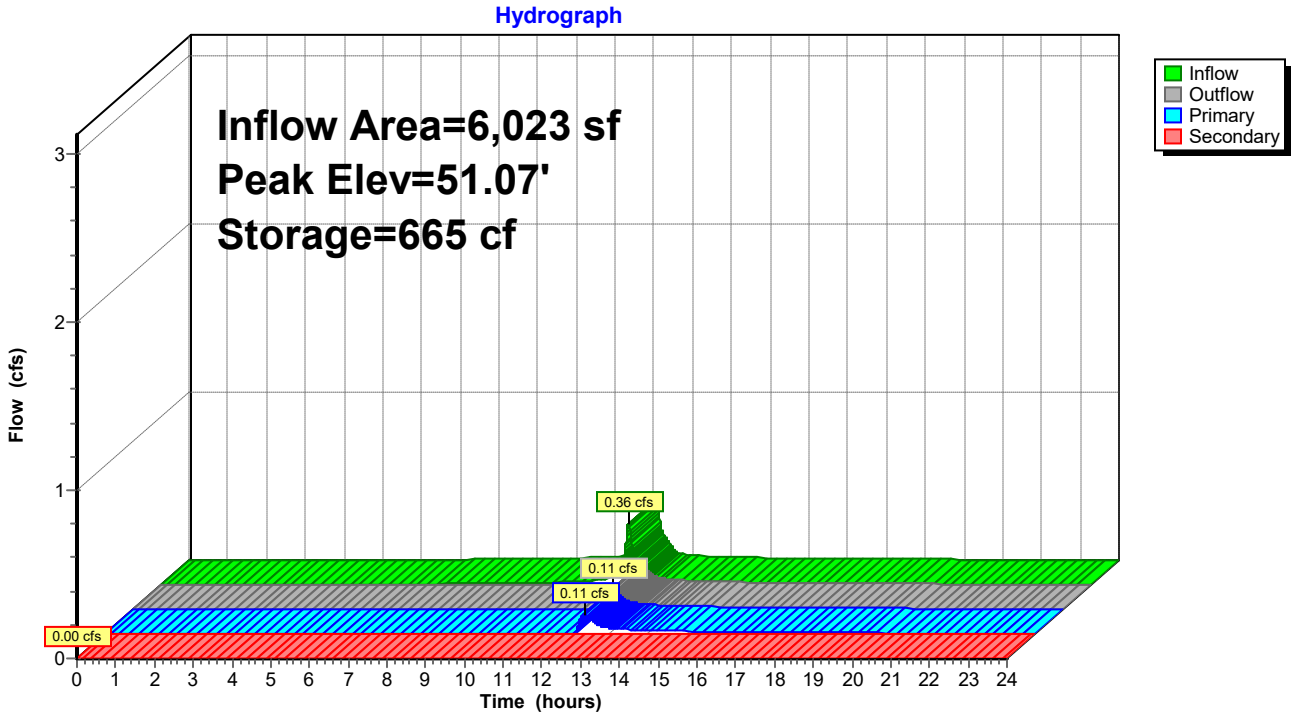
Volume	Invert	Avail.Storage	Storage Description
#1	49.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	50.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 54.0'
		1,606 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	50.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.84' / 50.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	53.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.11 cfs @ 12.37 hrs HW=51.07' TW=43.04' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.11 cfs @ 1.28 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=49.00' TW=47.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 18P: Por Pvt-D2D



Summary for Pond 19P: Por Pvt-D2E

Porous Pavement in Parking Spaces Only

Inflow Area = 6,016 sf, 88.30% Impervious, Inflow Depth > 2.36" for 1-yr event
Inflow = 0.36 cfs @ 12.07 hrs, Volume= 1,182 cf
Outflow = 0.10 cfs @ 12.40 hrs, Volume= 566 cf, Atten= 72%, Lag= 19.9 min
Primary = 0.10 cfs @ 12.40 hrs, Volume= 566 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 20P : Por Pvt-D2F

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 49.06' @ 12.40 hrs Surf.Area= 819 sf Storage= 676 cf

Plug-Flow detention time= 268.6 min calculated for 566 cf (48% of inflow)
Center-of-Mass det. time= 142.3 min (911.0 - 768.7)

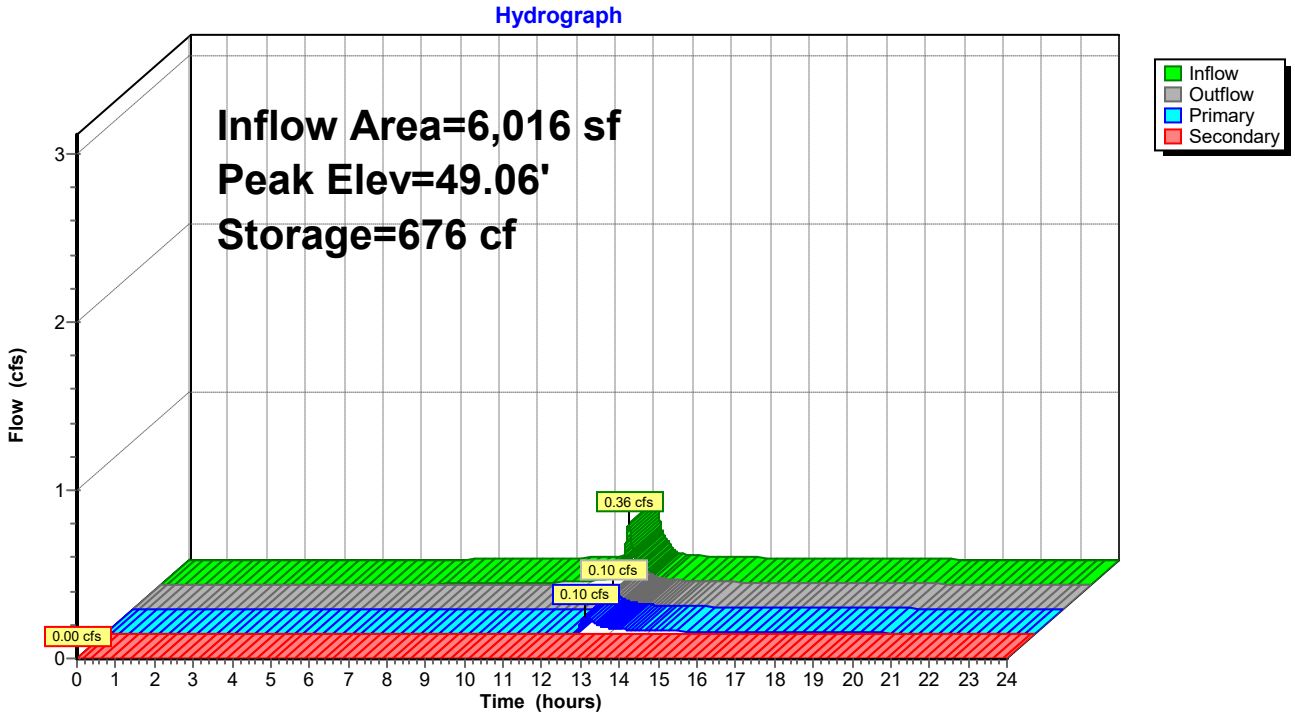
Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	1,634 cf	**20.00'W x 40.95'L x 5.00'H Porous Pavment** 4,095 cf Overall - 11 cf Embedded = 4,084 cf x 40.0% Voids
#2	48.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 54.0'
		1,644 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 48.84' / 48.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	51.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.10 cfs @ 12.40 hrs HW=49.06' TW=43.04' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.10 cfs @ 1.25 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=47.00' TW=45.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 19P: Por Pvt-D2E



Summary for Pond 20P: Por Pvt-D2F

Porous Pavement in Parking Spaces Only

Inflow Area = 5,836 sf, 90.88% Impervious, Inflow Depth > 2.42" for 1-yr event
Inflow = 0.36 cfs @ 12.07 hrs, Volume= 1,176 cf
Outflow = 0.11 cfs @ 12.38 hrs, Volume= 575 cf, Atten= 70%, Lag= 18.3 min
Primary = 0.11 cfs @ 12.38 hrs, Volume= 575 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 21P : Por Pvt-D2G

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 47.06' @ 12.38 hrs Surf.Area= 800 sf Storage= 663 cf

Plug-Flow detention time= 262.6 min calculated for 575 cf (49% of inflow)
Center-of-Mass det. time= 138.3 min (905.5 - 767.3)

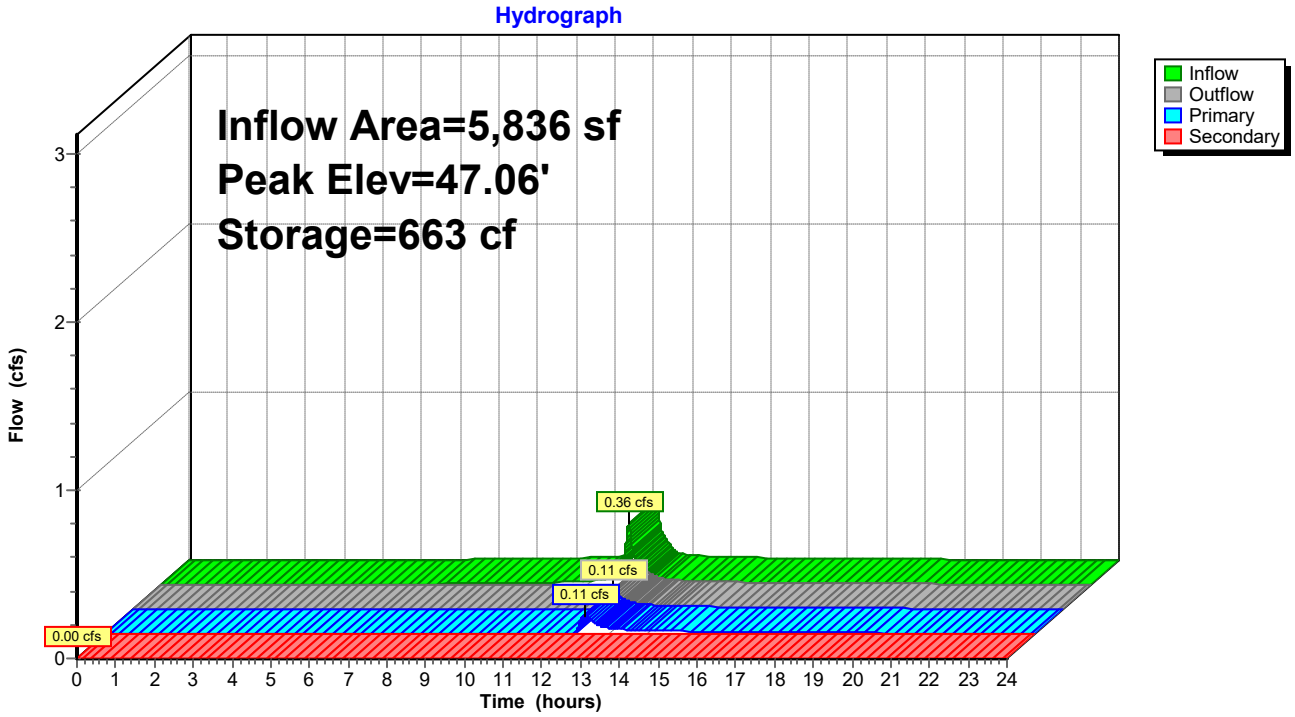
Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	46.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 57.0'
		1,607 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	46.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.84' / 46.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	49.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.11 cfs @ 12.38 hrs HW=47.06' TW=43.04' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.11 cfs @ 1.27 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.00' TW=42.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 20P: Por Pvt-D2F



Summary for Pond 21P: Por Pvt-D2G

Porous Pavement in Parking Spaces Only

Inflow Area = 3,234 sf, 56.68% Impervious, Inflow Depth > 1.73" for 1-yr event
Inflow = 0.16 cfs @ 12.07 hrs, Volume= 466 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link Sub A : SUB A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.15' @ 24.00 hrs Surf.Area= 1,016 sf Storage= 466 cf

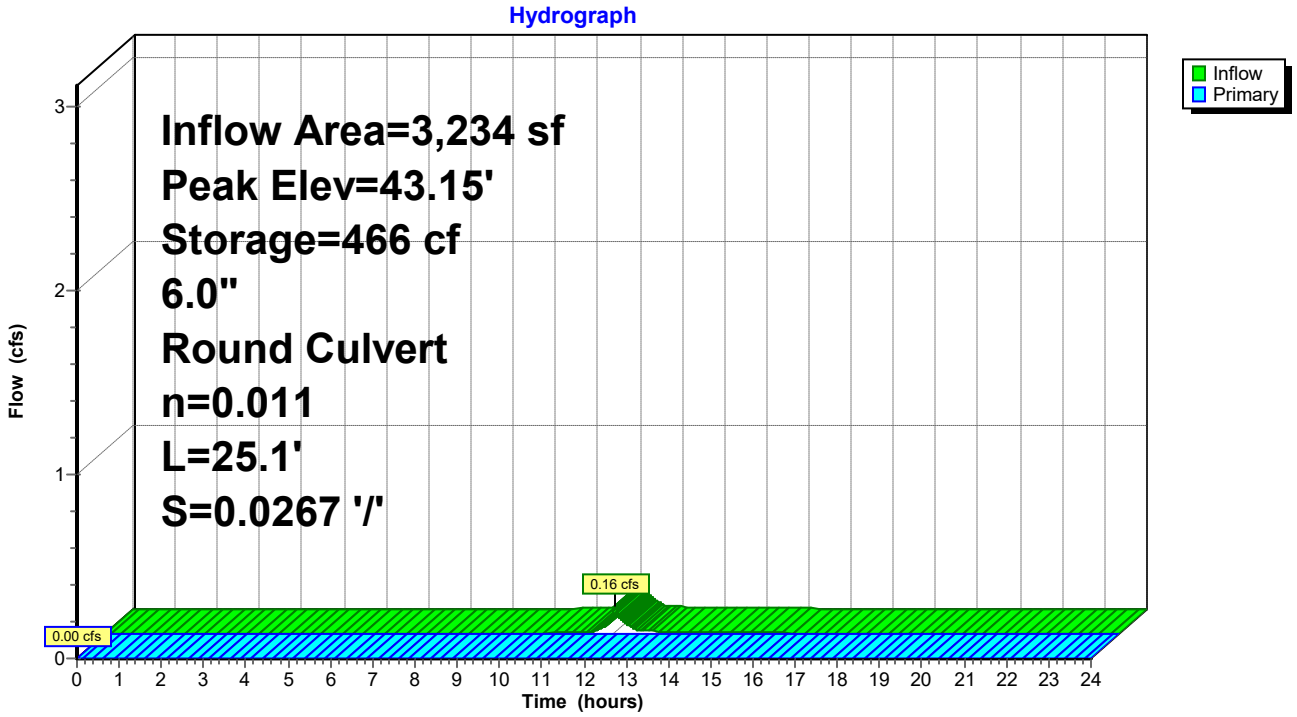
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	2,021 cf	**20.00'W x 50.80'L x 5.00'H Porous Pavment** 5,080 cf Overall - 27 cf Embedded = 5,053 cf x 40.0% Voids
#2	43.84'	27 cf	**6.0" Round 6" underdrain** Inside #1 L= 138.0'
		2,048 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	43.84'	**6.0" Round Culvert** L= 25.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.84' / 43.17' S= 0.0267 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.00' TW=0.00' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond 21P: Por Pvt-D2G



Summary for Pond DB01: Detention-01

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 60,955 sf, 0.00% Impervious, Inflow Depth > 0.34" for 1-yr event
Inflow = 0.23 cfs @ 12.39 hrs, Volume= 1,715 cf
Outflow = 0.22 cfs @ 12.42 hrs, Volume= 1,715 cf, Atten= 1%, Lag= 1.6 min
Primary = 0.22 cfs @ 12.42 hrs, Volume= 1,715 cf
Routed to Pond DMH13 : DMH-13

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 47.06' @ 12.42 hrs Surf.Area= 158 sf Storage= 9 cf

Plug-Flow detention time= 0.1 min calculated for 1,715 cf (100% of inflow)
Center-of-Mass det. time= 0.1 min (932.1 - 932.0)

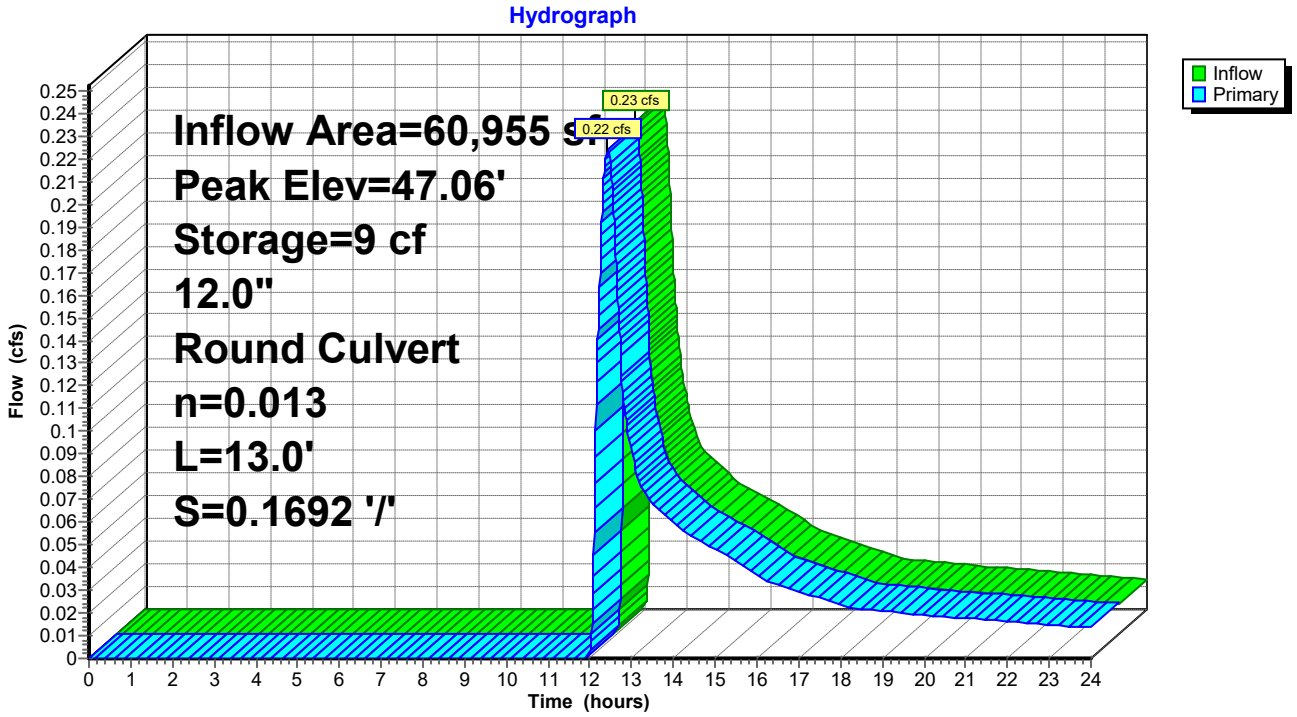
Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	1,719 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
47.00	128	0	0
48.00	614	371	371
49.00	2,082	1,348	1,719

Device	Routing	Invert	Outlet Devices
#1	Primary	46.80'	**12.0" Round Culvert** L= 13.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.80' / 44.60' S= 0.1692 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.22 cfs @ 12.42 hrs HW=47.06' TW=43.04' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.22 cfs @ 1.37 fps)

Pond DB01: Detention-01



Summary for Pond DB02: Detention-02

Inflow Area = 10,676 sf, 0.00% Impervious, Inflow Depth > 0.94" for 1-yr event
Inflow = 0.18 cfs @ 12.26 hrs, Volume= 840 cf
Outflow = 0.01 cfs @ 15.62 hrs, Volume= 309 cf, Atten= 92%, Lag= 201.8 min
Primary = 0.01 cfs @ 15.62 hrs, Volume= 309 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.56' @ 15.62 hrs Surf.Area= 1,318 sf Storage= 563 cf

Plug-Flow detention time= 358.1 min calculated for 309 cf (37% of inflow)
Center-of-Mass det. time= 221.5 min (1,091.2 - 869.7)

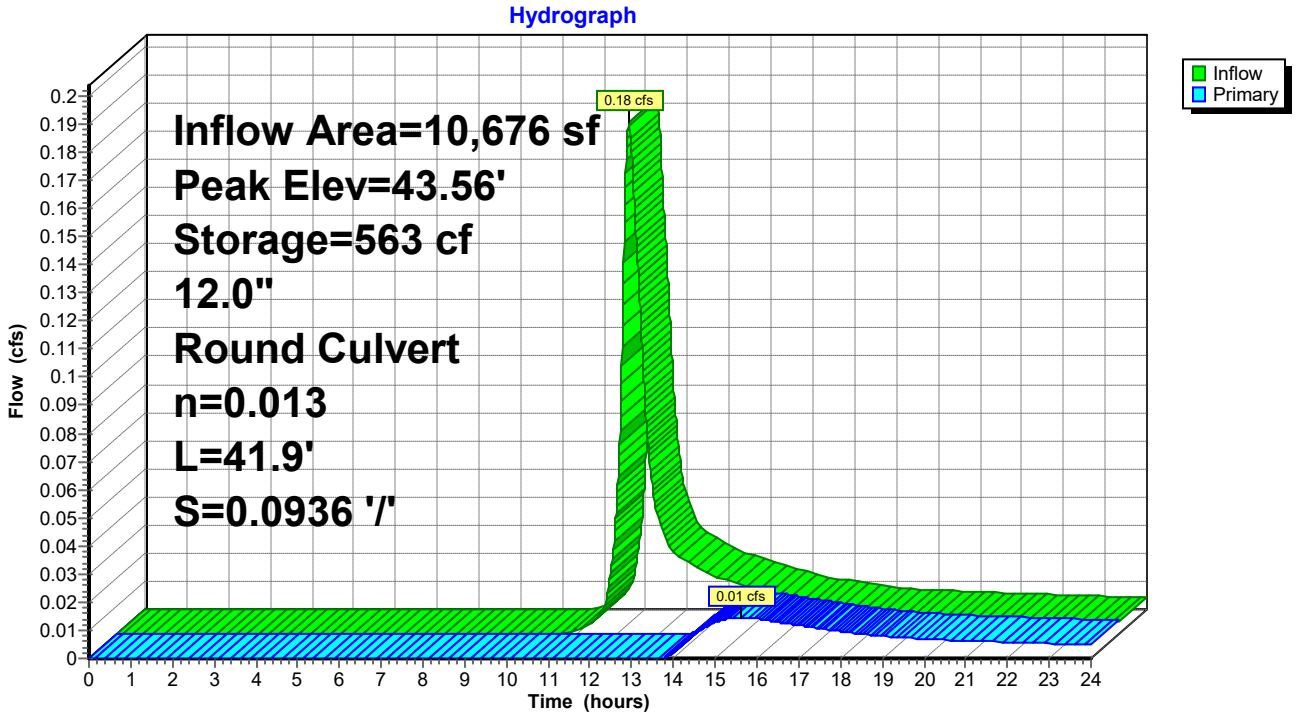
Volume	Invert	Avail.Storage	Storage Description
#1	43.00'	3,637 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.00	703	0	0
44.00	1,807	1,255	1,255
45.00	2,956	2,382	3,637

Device	Routing	Invert	Outlet Devices
#1	Primary	43.50'	**12.0" Round Culvert** L= 41.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.50' / 39.58' S= 0.0936 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.01 cfs @ 15.62 hrs HW=43.56' TW=39.41' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.01 cfs @ 0.81 fps)

Pond DB02: Detention-02



Summary for Pond DB03: Detention-03

Inflow Area = 13,682 sf, 0.00% Impervious, Inflow Depth > 0.84" for 1-yr event
Inflow = 0.23 cfs @ 12.20 hrs, Volume= 960 cf
Outflow = 0.01 cfs @ 16.00 hrs, Volume= 329 cf, Atten= 93%, Lag= 228.5 min
Primary = 0.01 cfs @ 16.00 hrs, Volume= 329 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.56' @ 16.00 hrs Surf.Area= 1,512 sf Storage= 664 cf

Plug-Flow detention time= 382.8 min calculated for 329 cf (34% of inflow)
Center-of-Mass det. time= 240.5 min (1,113.6 - 873.0)

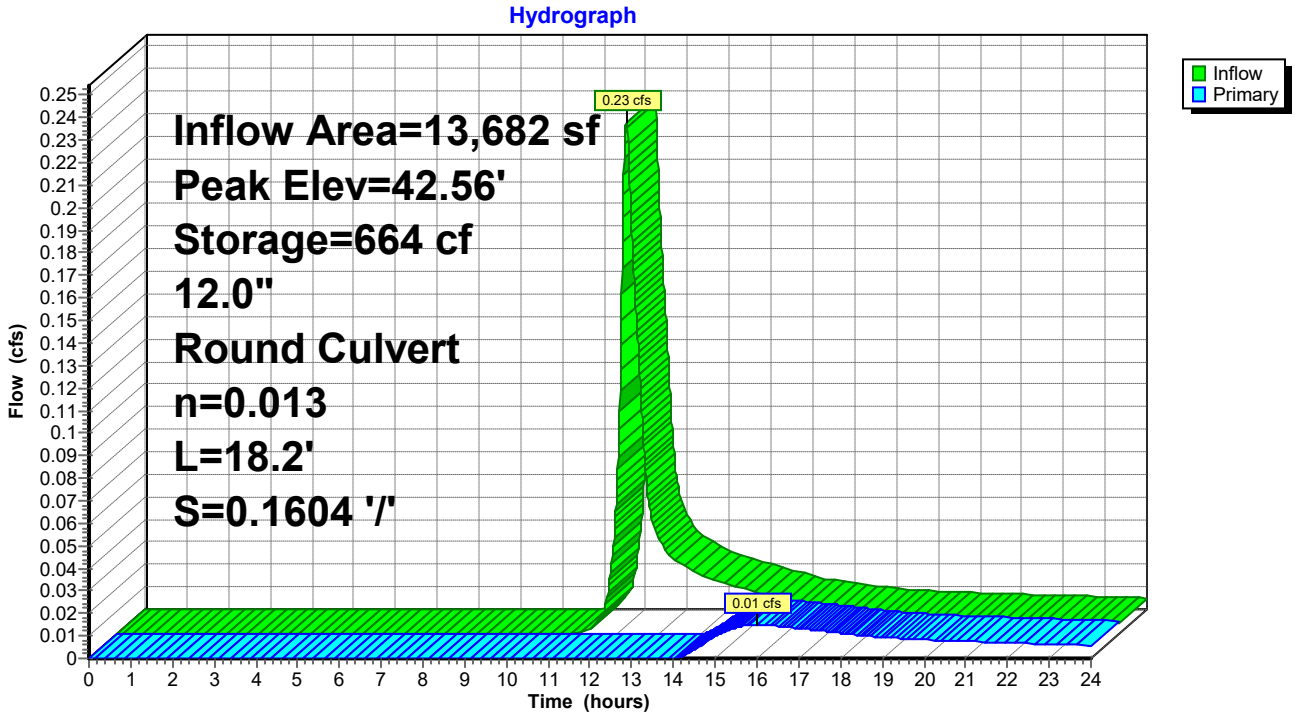
Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	12,357 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	870	0	0
43.00	2,022	1,446	1,446
44.00	3,054	2,538	3,984
45.00	4,148	3,601	7,585
46.00	5,395	4,772	12,357

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	**12.0" Round Culvert** L= 18.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 39.58' S= 0.1604 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.01 cfs @ 16.00 hrs HW=42.56' TW=39.40' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.01 cfs @ 0.82 fps)

Pond DB03: Detention-03



Summary for Pond DMH13: DMH-13

[57] Hint: Peaked at 43.04' (Flood elevation advised)

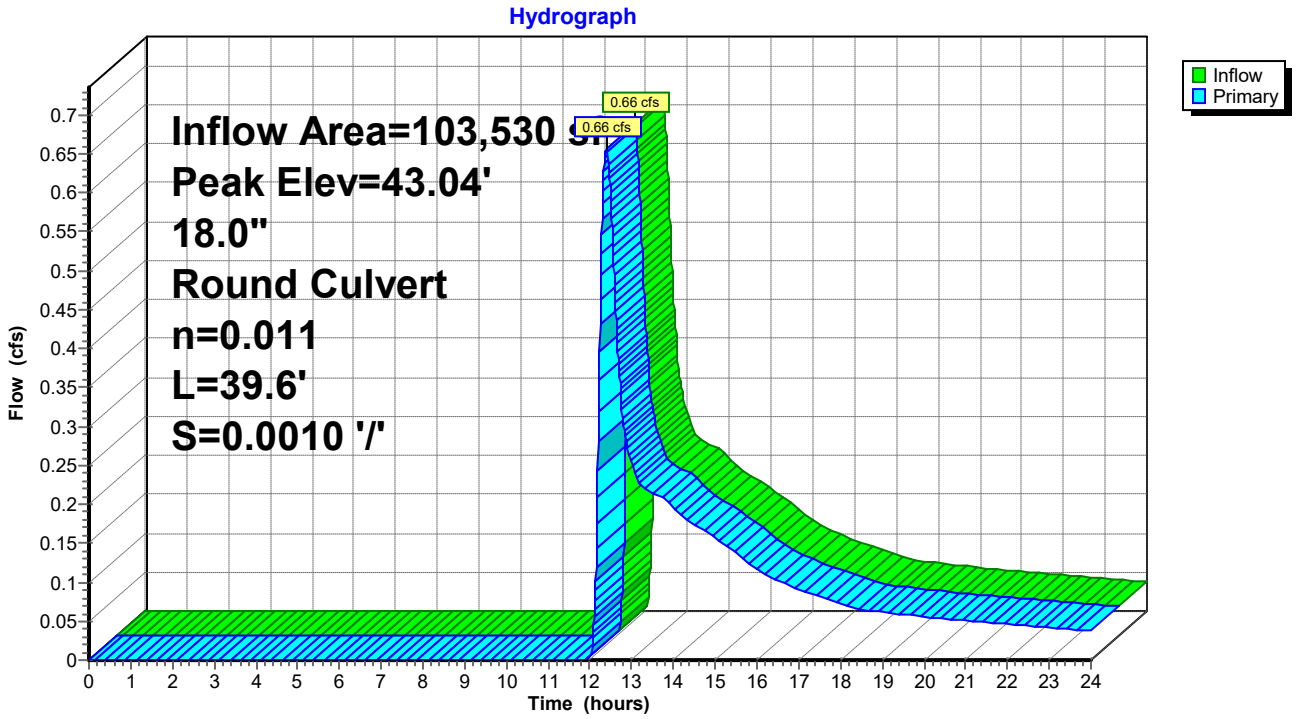
Inflow Area = 103,530 sf, 35.12% Impervious, Inflow Depth > 0.58" for 1-yr event
Inflow = 0.66 cfs @ 12.39 hrs, Volume= 5,013 cf
Outflow = 0.66 cfs @ 12.39 hrs, Volume= 5,013 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.66 cfs @ 12.39 hrs, Volume= 5,013 cf
Routed to Link Sub A : SUB A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.04' @ 12.39 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.54'	**18.0" Round Culvert** L= 39.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.54' / 42.50' S= 0.0010 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf

Primary OutFlow Max=0.66 cfs @ 12.39 hrs HW=43.04' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.66 cfs @ 1.90 fps)

Pond DMH13: DMH-13



Summary for Pond DMH8: DMH-08

[57] Hint: Peaked at 39.86' (Flood elevation advised)

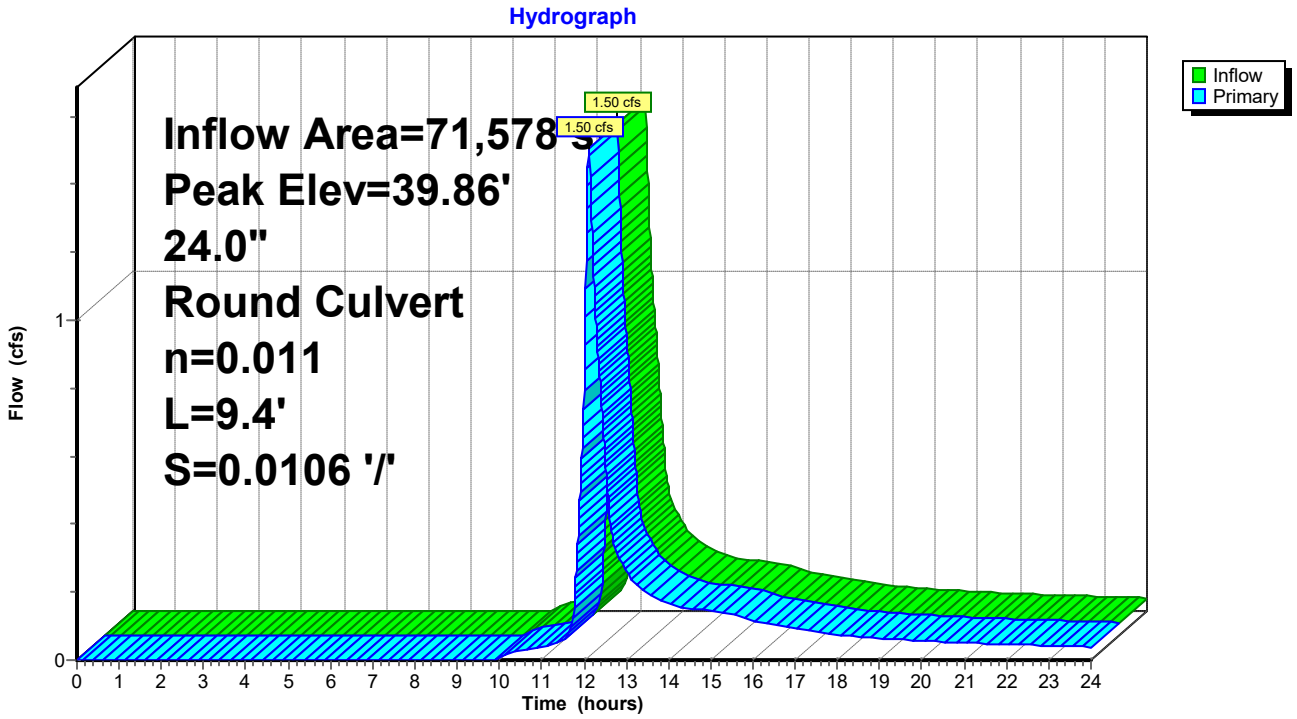
Inflow Area = 71,578 sf, 52.12% Impervious, Inflow Depth > 1.13" for 1-yr event
Inflow = 1.50 cfs @ 12.12 hrs, Volume= 6,724 cf
Outflow = 1.50 cfs @ 12.12 hrs, Volume= 6,724 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.50 cfs @ 12.12 hrs, Volume= 6,724 cf
Routed to Link 2 : Pipe 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 39.86' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.25'	**24.0" Round Culvert** L= 9.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.25' / 39.15' S= 0.0106 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=1.50 cfs @ 12.12 hrs HW=39.86' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.50 cfs @ 2.79 fps)

Pond DMH8: DMH-08



Summary for Pond PP02: Por Pvt-02

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 18,123 sf, 81.93% Impervious, Inflow Depth > 2.25" for 1-yr event
Inflow = 1.10 cfs @ 12.07 hrs, Volume= 3,401 cf
Outflow = 0.96 cfs @ 12.11 hrs, Volume= 2,686 cf, Atten= 12%, Lag= 2.5 min
Primary = 0.96 cfs @ 12.11 hrs, Volume= 2,686 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.46' @ 12.11 hrs Surf.Area= 1,476 sf Storage= 980 cf

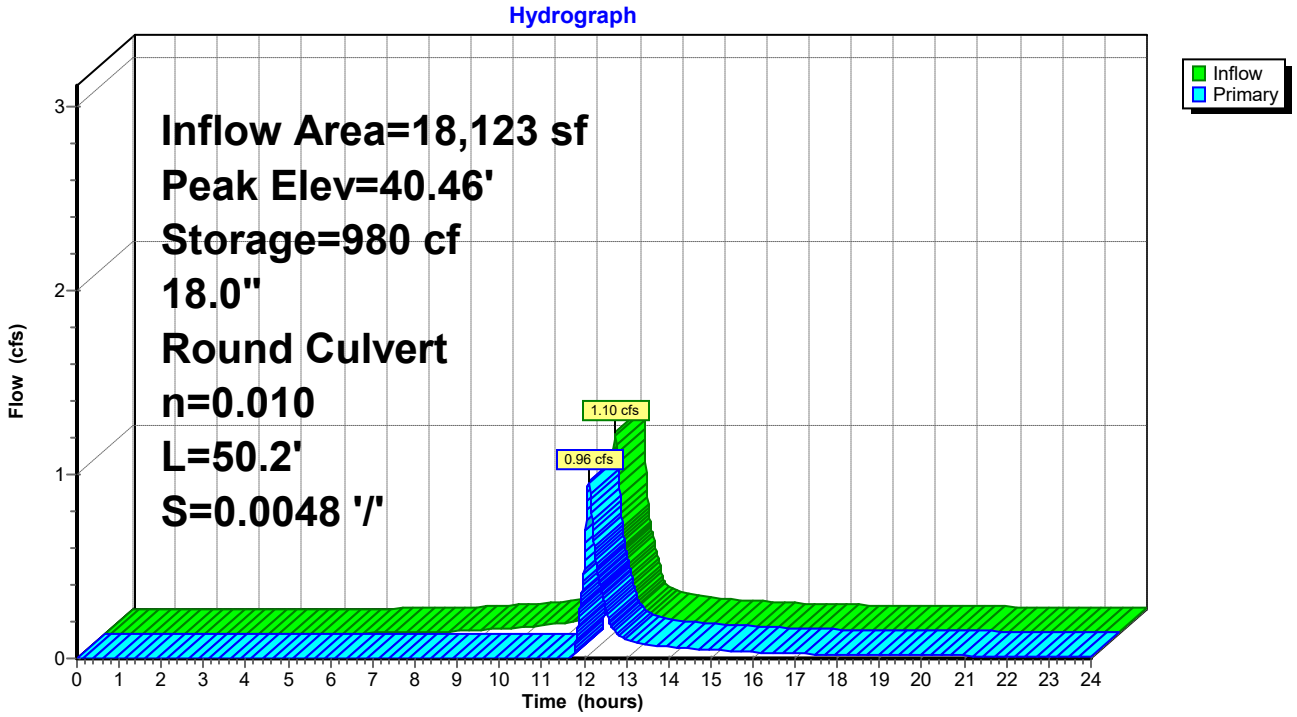
Plug-Flow detention time= 131.2 min calculated for 2,686 cf (79% of inflow)
Center-of-Mass det. time= 54.1 min (843.1 - 789.0)

Volume	Invert	Avail.Storage	Storage Description
#1	38.80'	2,946 cf	**18.00'W x 82.00'L x 5.00'H Porous Pavment** 7,380 cf Overall - 14 cf Embedded = 7,366 cf x 40.0% Voids
#2	40.64'	14 cf	**6.0" Round 6" underdrain** Inside #1 L= 72.0'
		2,960 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	39.96'	**18.0" Round Culvert** L= 50.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.96' / 39.72' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.96 cfs @ 12.11 hrs HW=40.46' TW=39.86' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.96 cfs @ 2.79 fps)

Pond PP02: Por Pvt-02



Summary for Pond PP03: Por Pvt-03

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 30,180 sf, 76.35% Impervious, Inflow Depth > 2.25" for 1-yr event
Inflow = 1.83 cfs @ 12.07 hrs, Volume= 5,663 cf
Outflow = 1.32 cfs @ 12.14 hrs, Volume= 4,259 cf, Atten= 28%, Lag= 4.2 min
Primary = 1.32 cfs @ 12.14 hrs, Volume= 4,259 cf
Routed to Link 3 : Pipe 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.04' @ 12.14 hrs Surf.Area= 2,484 sf Storage= 2,043 cf

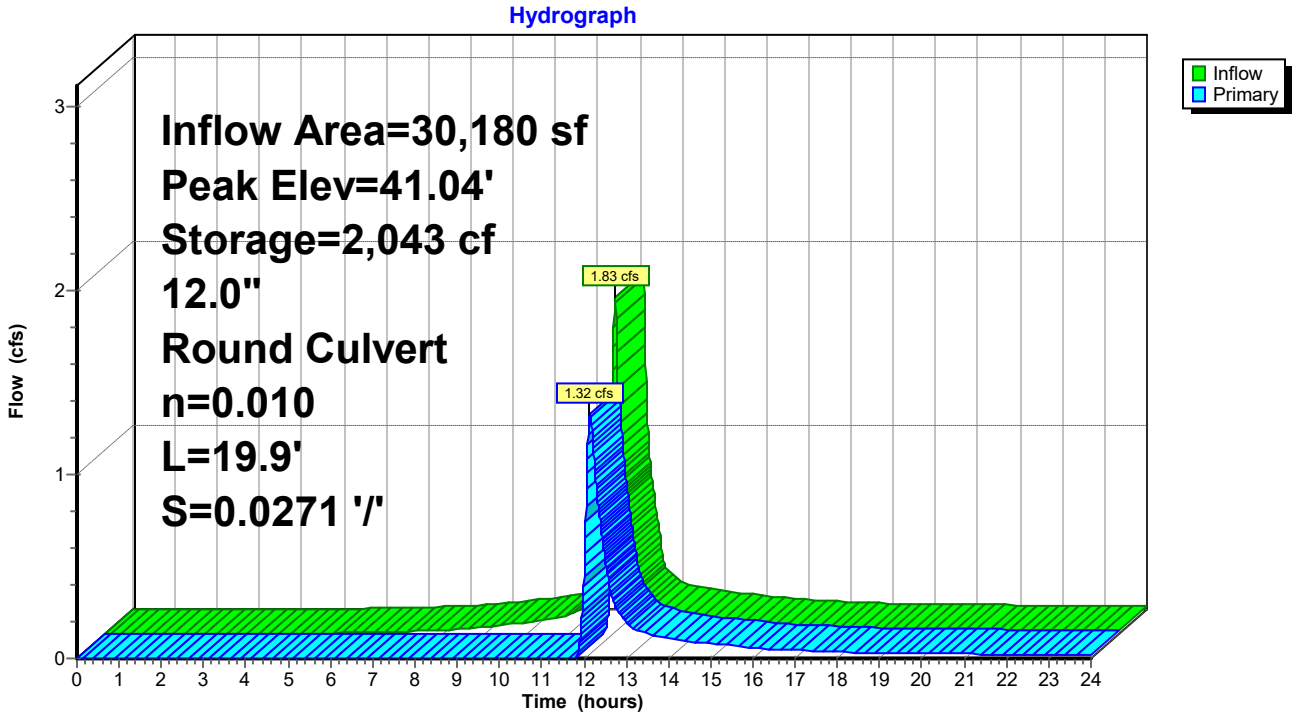
Plug-Flow detention time= 148.9 min calculated for 4,259 cf (75% of inflow)
Center-of-Mass det. time= 65.1 min (854.0 - 789.0)

Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	4,958 cf	**18.00'W x 138.00'L x 5.00'H Porous Pavment** 12,420 cf Overall - 24 cf Embedded = 12,396 cf x 40.0% Voids
#2	40.34'	24 cf	**6.0" Round 6" underdrain** Inside #1 L= 124.0'
		4,983 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.34'	**12.0" Round Culvert** L= 19.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.34' / 39.80' S= 0.0271 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.32 cfs @ 12.14 hrs HW=41.04' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.32 cfs @ 2.25 fps)

Pond PP03: Por Pvt-03



Summary for Pond PP04: Por Pvt-04

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 9,547 sf, 73.20% Impervious, Inflow Depth > 2.16" for 1-yr event
Inflow = 0.56 cfs @ 12.07 hrs, Volume= 1,716 cf
Outflow = 0.17 cfs @ 12.38 hrs, Volume= 917 cf, Atten= 70%, Lag= 18.7 min
Primary = 0.17 cfs @ 12.38 hrs, Volume= 917 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.23' @ 12.38 hrs Surf.Area= 1,296 sf Storage= 898 cf

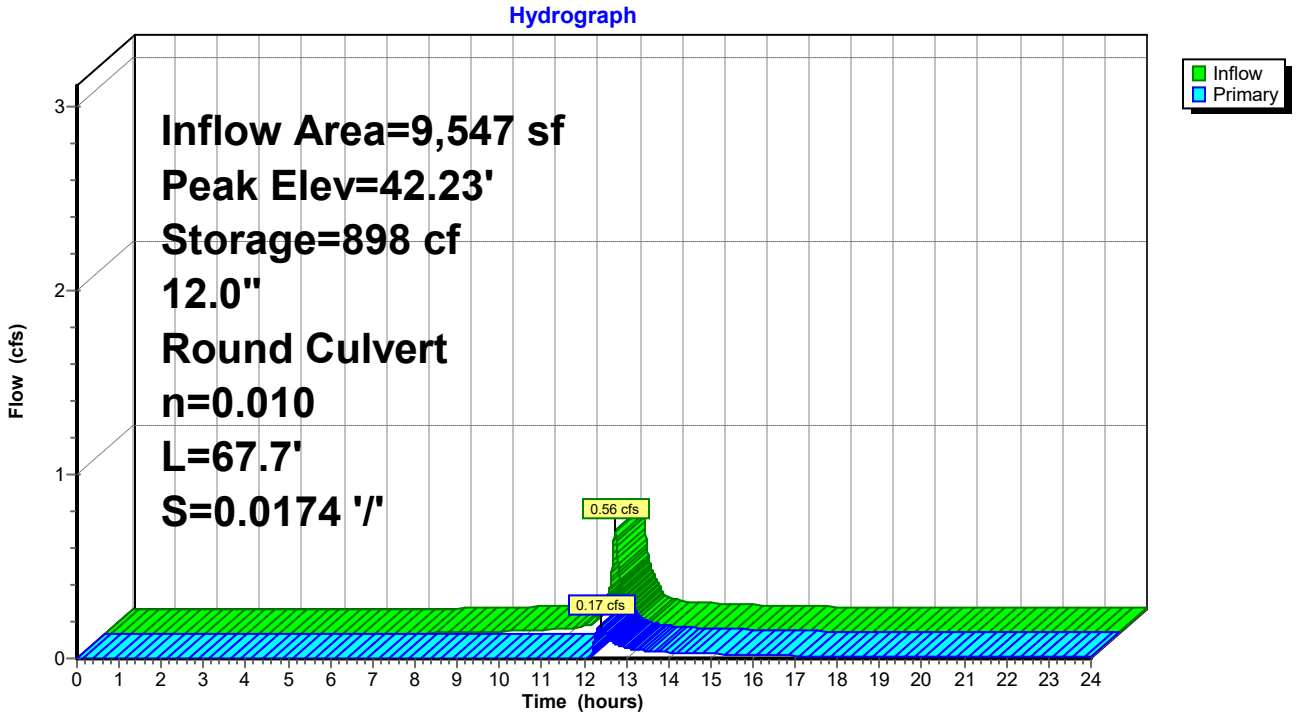
Plug-Flow detention time= 222.3 min calculated for 917 cf (53% of inflow)
Center-of-Mass det. time= 113.5 min (908.2 - 794.7)

Volume	Invert	Avail.Storage	Storage Description
#1	40.50'	2,587 cf	**18.00'W x 72.00'L x 5.00'H Porous Pavment** 6,480 cf Overall - 13 cf Embedded = 6,467 cf x 40.0% Voids
#2	42.00'	13 cf	**6.0" Round 6" underdrain** Inside #1 L= 68.0'
		2,600 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	**12.0" Round Culvert** L= 67.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.00' / 40.82' S= 0.0174 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.17 cfs @ 12.38 hrs HW=42.23' TW=39.68' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.17 cfs @ 1.28 fps)

Pond PP04: Por Pvt-04



Summary for Pond PP05: Por Pvt-05

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 9,002 sf, 74.73% Impervious, Inflow Depth > 1.98" for 1-yr event
Inflow = 0.49 cfs @ 12.07 hrs, Volume= 1,483 cf
Outflow = 0.04 cfs @ 13.08 hrs, Volume= 586 cf, Atten= 92%, Lag= 60.4 min
Primary = 0.04 cfs @ 13.08 hrs, Volume= 586 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.86' @ 13.08 hrs Surf.Area= 1,457 sf Storage= 938 cf

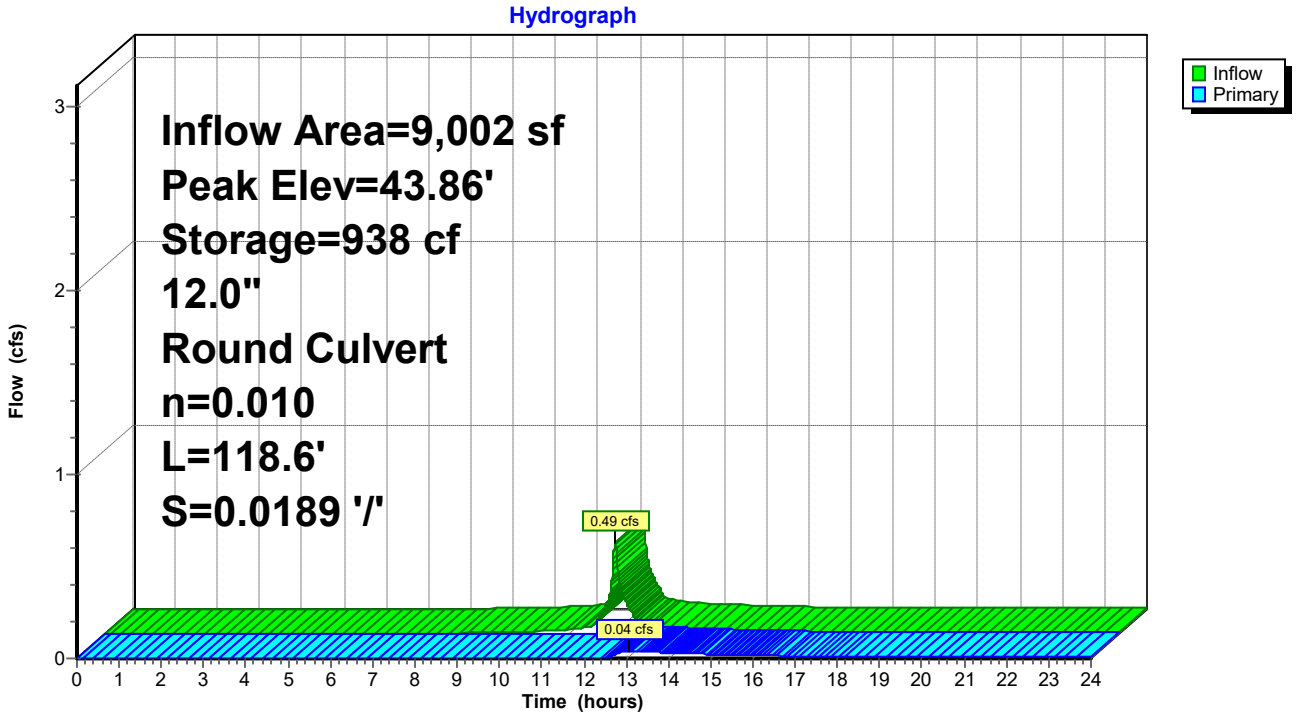
Plug-Flow detention time= 296.1 min calculated for 586 cf (39% of inflow)
Center-of-Mass det. time= 173.8 min (978.6 - 804.7)

Volume	Invert	Avail.Storage	Storage Description
#1	42.25'	2,909 cf	**18.00'W x 80.97'L x 5.00'H Porous Pavment** 7,287 cf Overall - 15 cf Embedded = 7,272 cf x 40.0% Voids
#2	43.75'	15 cf	**6.0" Round 6" underdrain** Inside #1 L= 77.0'
		2,924 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	43.75'	**12.0" Round Culvert** L= 118.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.75' / 41.51' S= 0.0189 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.04 cfs @ 13.08 hrs HW=43.86' TW=39.47' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.04 cfs @ 0.88 fps)

Pond PP05: Por Pvt-05



Summary for Pond PP06: Por Pvt-06

Only Main Driveway and Parking Area to be Porous Pavement

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 7,420 sf, 88.26% Impervious, Inflow Depth > 2.35" for 1-yr event
Inflow = 0.46 cfs @ 12.07 hrs, Volume= 1,453 cf
Outflow = 0.46 cfs @ 12.07 hrs, Volume= 1,453 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.46 cfs @ 12.07 hrs, Volume= 1,453 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.25' @ 0.00 hrs Surf.Area= 1,298 sf Storage= 0 cf

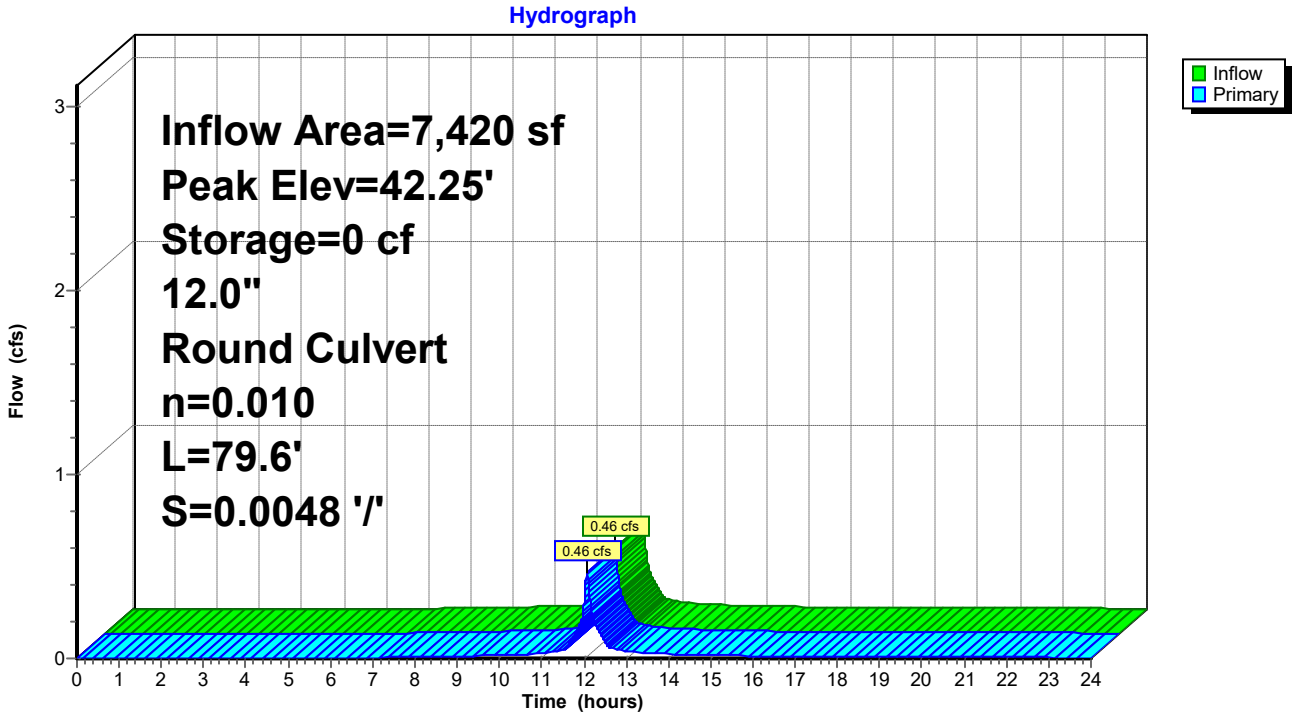
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	42.25'	2,590 cf	**18.00'W x 72.10'L x 5.00'H Porous Pavment** 6,489 cf Overall - 14 cf Embedded = 6,475 cf x 40.0% Voids
#2	43.75'	14 cf	**6.0" Round 6" underdrain** Inside #1 L= 69.0'
		2,604 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.94'	**12.0" Round Culvert** L= 79.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.94' / 40.56' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.07 hrs HW=42.25' TW=0.00' (Dynamic Tailwater)
1=Culvert (Passes 0.00 cfs of 2.69 cfs potential flow)

Pond PP06: Por Pvt-06



Summary for Pond PP07: Por Pvt-07

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 27,046 sf, 54.55% Impervious, Inflow Depth > 1.50" for 1-yr event
Inflow = 1.14 cfs @ 12.08 hrs, Volume= 3,388 cf
Outflow = 0.19 cfs @ 12.56 hrs, Volume= 1,975 cf, Atten= 84%, Lag= 29.0 min
Primary = 0.19 cfs @ 12.56 hrs, Volume= 1,975 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.34' @ 12.56 hrs Surf.Area= 4,085 sf Storage= 1,695 cf

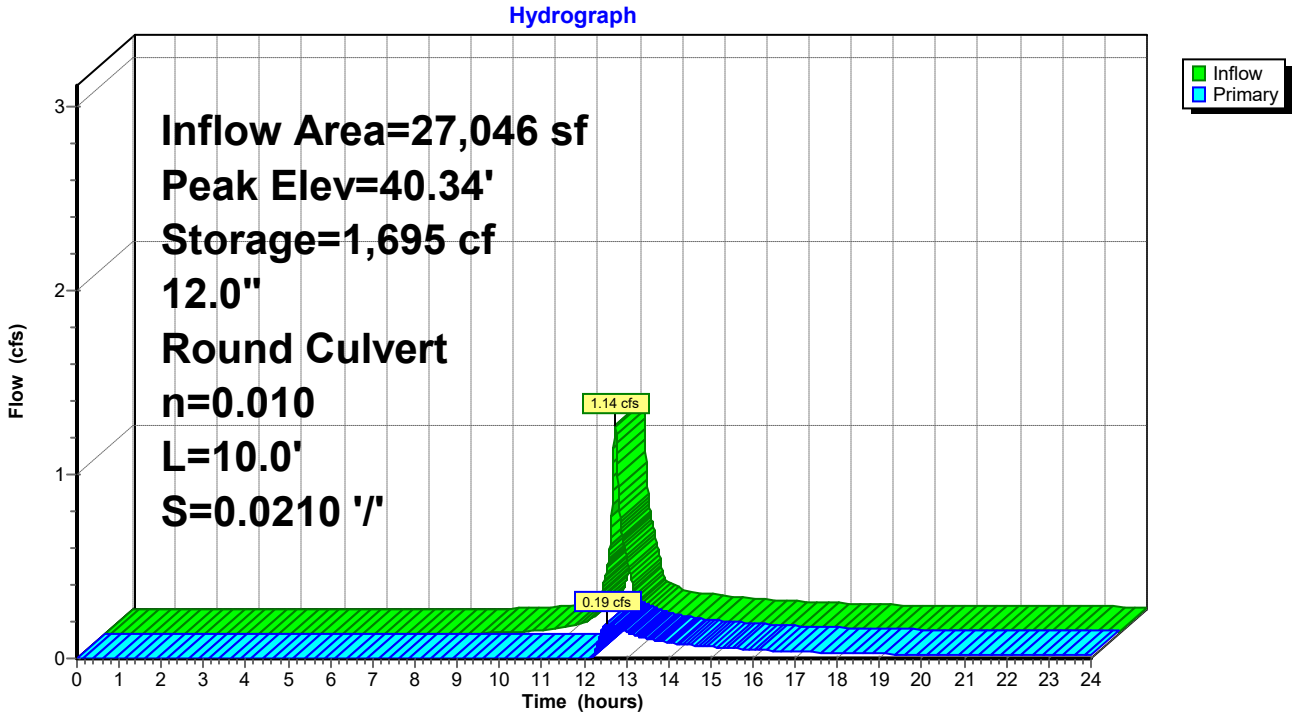
Plug-Flow detention time= 223.3 min calculated for 1,974 cf (58% of inflow)
Center-of-Mass det. time= 112.8 min (941.8 - 829.0)

Volume	Invert	Avail.Storage	Storage Description
#1	39.30'	8,152 cf	**18.00'W x 226.97'L x 5.00'H Porous Pavment** 20,427 cf Overall - 46 cf Embedded = 20,381 cf x 40.0% Voids
#2	41.14'	46 cf	**6.0" Round 6" underdrain** Inside #1 L= 236.0'
		8,199 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.10'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.10' / 39.89' S= 0.0210 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.19 cfs @ 12.56 hrs HW=40.34' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.19 cfs @ 1.31 fps)

Pond PP07: Por Pvt-07



Summary for Pond RG03: Rain Garden-03

Inflow Area = 5,425 sf, 57.01% Impervious, Inflow Depth > 1.89" for 1-yr event
Inflow = 0.26 cfs @ 12.11 hrs, Volume= 854 cf
Outflow = 0.02 cfs @ 13.59 hrs, Volume= 358 cf, Atten= 92%, Lag= 88.8 min
Primary = 0.02 cfs @ 13.59 hrs, Volume= 358 cf
Routed to Link 2 : Pipe 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.75' @ 13.59 hrs Surf.Area= 2,332 sf Storage= 542 cf

Plug-Flow detention time= 299.3 min calculated for 358 cf (42% of inflow)
Center-of-Mass det. time= 179.9 min (991.3 - 811.3)

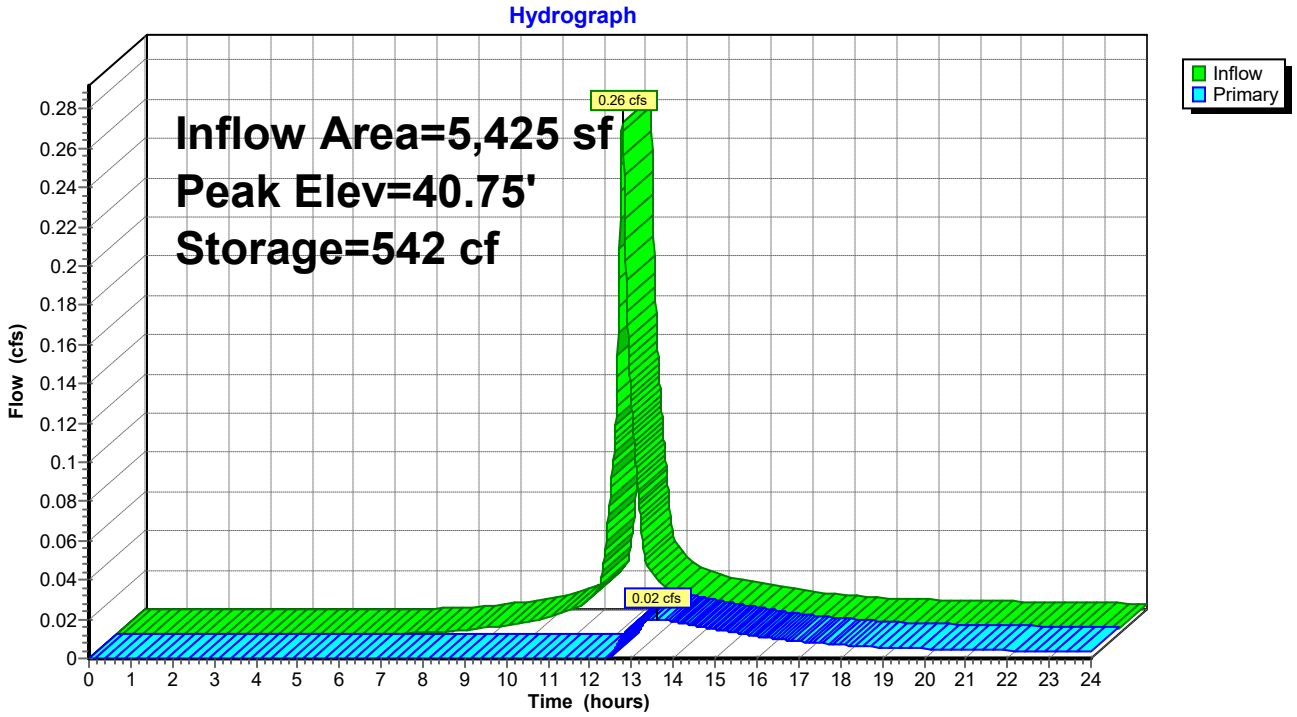
Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	1,867 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	43.67'	115 cf	**18.00'W x 129.55'L x 0.33'H Mulch** 770 cf Overall x 15.0% Voids
#3	41.17'	1,749 cf	**18.00'W x 129.55'L x 2.50'H Greenwich Soil Mix** 5,830 cf Overall x 30.0% Voids
#4	40.17'	928 cf	**18.00'W x 129.55'L x 1.00'H Crushed Stone** 2,332 cf Overall - 12 cf Embedded = 2,320 cf x 40.0% Voids
#5	40.67'	12 cf	**6.0" Round 6" underdrain** Inside #4 L= 62.0'
		4,671 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	1,402	0	0
45.00	2,332	1,867	1,867

Device	Routing	Invert	Outlet Devices
#1	Primary	39.77'	**12.0" Round Culvert** L= 9.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.77' / 39.67' S= 0.0101 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	44.50'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	40.67'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.02 cfs @ 13.59 hrs HW=40.75' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.02 cfs of 1.99 cfs potential flow)
  ├─**2=Orifice/Grate** (Controls 0.00 cfs)
  └─**3=Orifice/Grate** (Orifice Controls 0.02 cfs @ 0.97 fps)

Pond RG03: Rain Garden-03



Summary for Pond RG04: Rain Garden-04

Inflow Area = 10,548 sf, 82.86% Impervious, Inflow Depth > 2.35" for 1-yr event
Inflow = 0.66 cfs @ 12.07 hrs, Volume= 2,066 cf
Outflow = 0.54 cfs @ 12.12 hrs, Volume= 1,897 cf, Atten= 18%, Lag= 3.1 min
Primary = 0.54 cfs @ 12.12 hrs, Volume= 1,897 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.75' @ 12.12 hrs Surf.Area= 1,542 sf Storage= 335 cf

Plug-Flow detention time= 73.9 min calculated for 1,897 cf (92% of inflow)
Center-of-Mass det. time= 32.4 min (815.1 - 782.6)

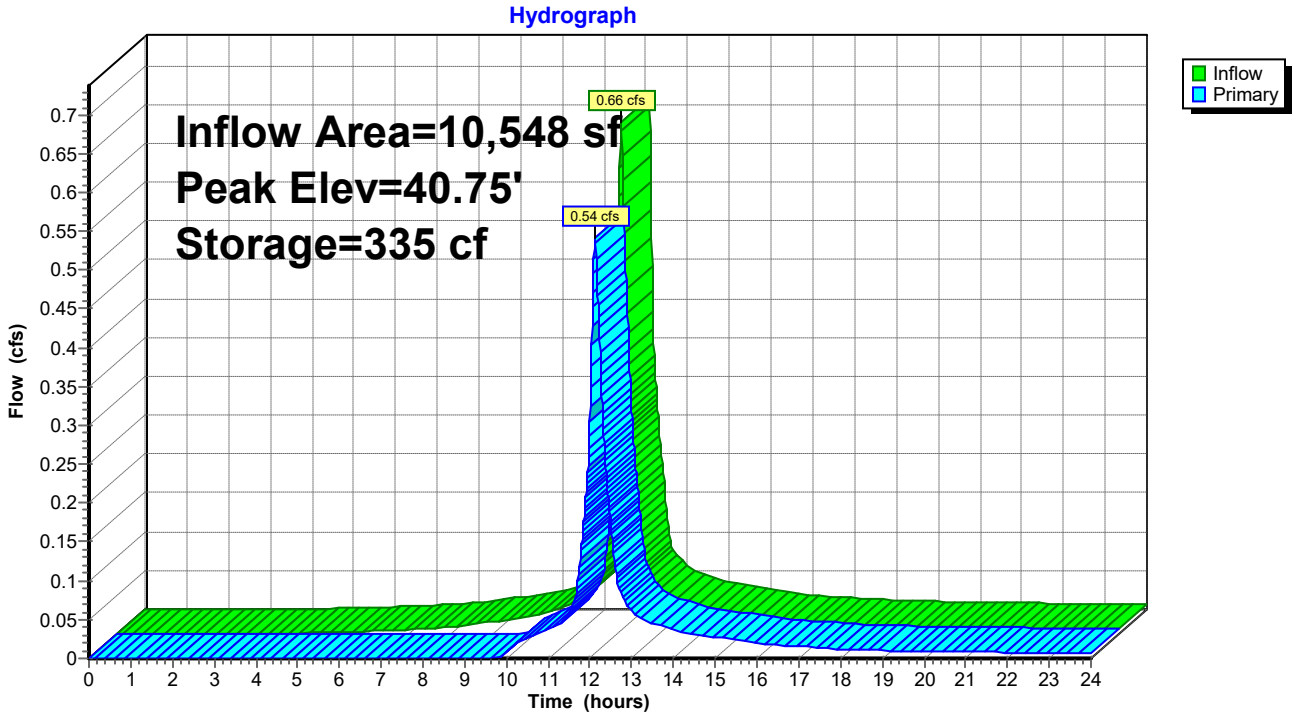
Volume	Invert	Avail.Storage	Storage Description
#1	43.50'	233 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	43.17'	38 cf	**11.00'W x 70.10'L x 0.33'H Mulch** 254 cf Overall x 15.0% Voids
#3	40.67'	578 cf	**11.00'W x 70.10'L x 2.50'H Greenwich Soil Mix** 1,928 cf Overall x 30.0% Voids
#4	39.67'	303 cf	**11.00'W x 70.09'L x 1.00'H Crushed Stone** 771 cf Overall - 14 cf Embedded = 757 cf x 40.0% Voids
#5	40.17'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		1,166 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.50	162	0	0
44.00	771	233	233

Device	Routing	Invert	Outlet Devices
#1	Device 2	43.50'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	40.17'	**12.0" Round Culvert** L= 8.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.17' / 39.96' S= 0.0239 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	40.17'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.54 cfs @ 12.12 hrs HW=40.75' TW=39.86' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.54 cfs of 1.16 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.54 cfs @ 2.76 fps)

Pond RG04: Rain Garden-04



Summary for Pond RG06: Rain Garden-06

Inflow Area = 4,026 sf, 70.89% Impervious, Inflow Depth > 1.89" for 1-yr event
Inflow = 0.21 cfs @ 12.07 hrs, Volume= 634 cf
Outflow = 0.20 cfs @ 12.10 hrs, Volume= 589 cf, Atten= 7%, Lag= 1.9 min
Primary = 0.20 cfs @ 12.10 hrs, Volume= 589 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.27' @ 12.10 hrs Surf.Area= 316 sf Storage= 81 cf

Plug-Flow detention time= 59.3 min calculated for 589 cf (93% of inflow)
Center-of-Mass det. time= 22.3 min (831.5 - 809.3)

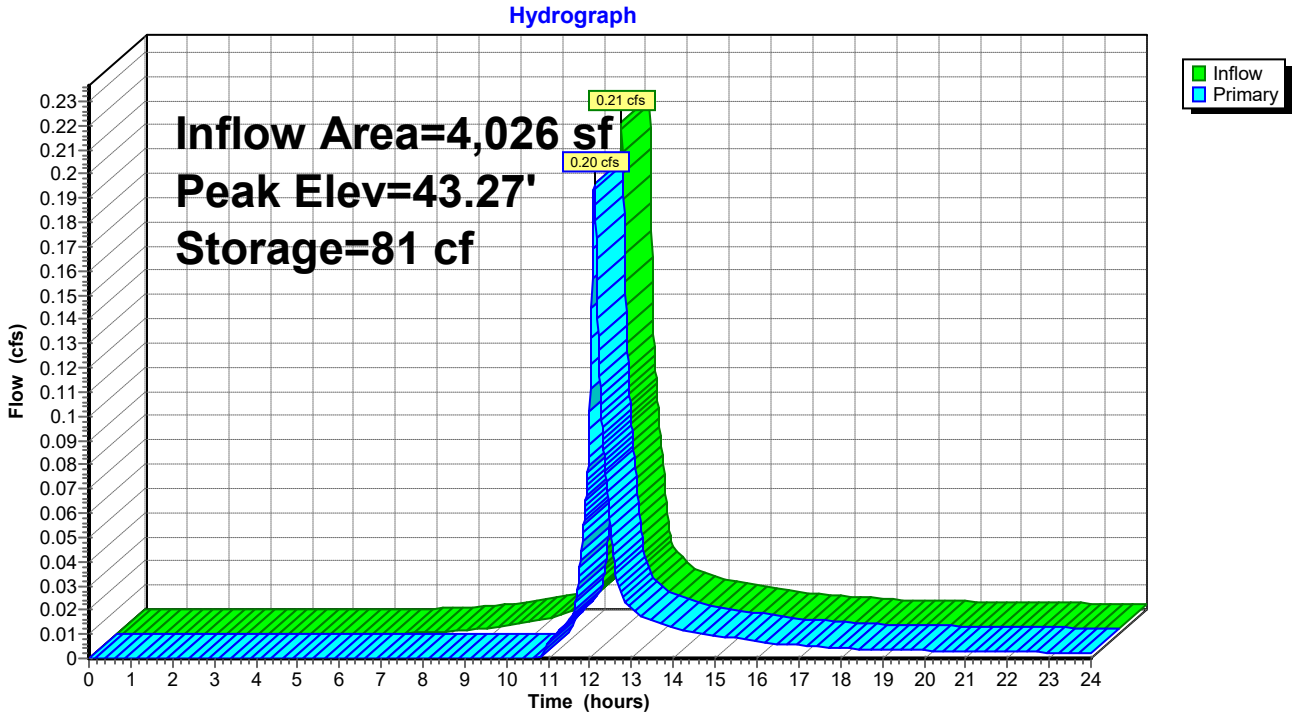
Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	117 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	46.17'	16 cf	**15.00'W x 21.07'L x 0.33'H Mulch** 104 cf Overall x 15.0% Voids
#3	43.67'	237 cf	**15.00'W x 21.07'L x 2.50'H Greenwich Soil Mix** 790 cf Overall x 30.0% Voids
#4	42.67'	121 cf	**15.00'W x 21.07'L x 1.00'H Crushed Stone** 316 cf Overall - 14 cf Embedded = 302 cf x 40.0% Voids
#5	43.00'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		504 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	151	0	0
47.00	316	117	117

Device	Routing	Invert	Outlet Devices
#1	Device 2	46.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	40.18'	**12.0" Round Culvert** L= 91.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.18' / 40.10' S= 0.0009 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	43.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.20 cfs @ 12.10 hrs HW=43.27' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.20 cfs of 4.44 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.20 cfs @ 1.78 fps)

Pond RG06: Rain Garden-06



Summary for Pond RG07: Rain Garden-07

Inflow Area = 4,109 sf, 58.46% Impervious, Inflow Depth > 1.58" for 1-yr event
Inflow = 0.18 cfs @ 12.08 hrs, Volume= 540 cf
Outflow = 0.17 cfs @ 12.11 hrs, Volume= 496 cf, Atten= 8%, Lag= 1.9 min
Primary = 0.17 cfs @ 12.11 hrs, Volume= 496 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.25' @ 12.11 hrs Surf.Area= 305 sf Storage= 75 cf

Plug-Flow detention time= 62.0 min calculated for 496 cf (92% of inflow)
Center-of-Mass det. time= 21.2 min (846.6 - 825.4)

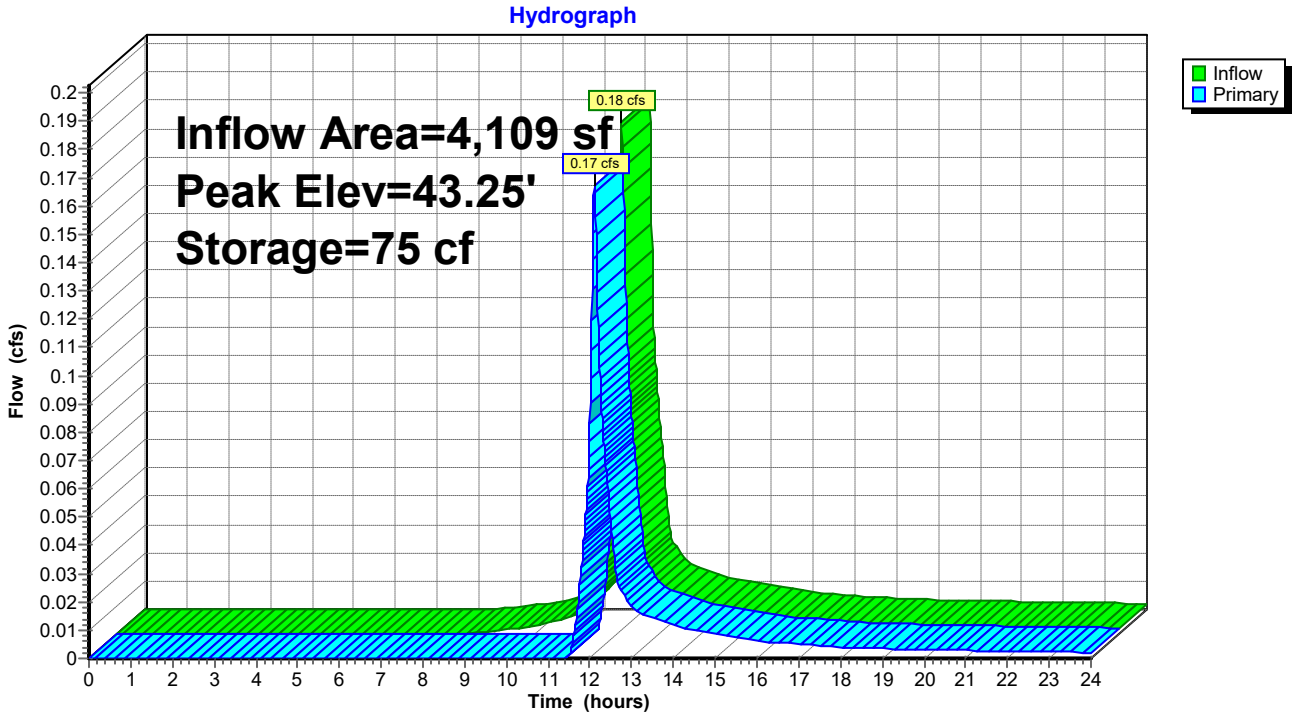
Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	112 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	46.17'	15 cf	**15.00'W x 20.33'L x 0.33'H Mulch** 101 cf Overall x 15.0% Voids
#3	43.67'	229 cf	**15.00'W x 20.33'L x 2.50'H Greenwich Soil Mix** 762 cf Overall x 30.0% Voids
#4	42.67'	116 cf	**15.00'W x 20.33'L x 1.00'H Crushed Stone** 305 cf Overall - 14 cf Embedded = 291 cf x 40.0% Voids
#5	43.00'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		486 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	144	0	0
47.00	305	112	112

Device	Routing	Invert	Outlet Devices
#1	Device 2	46.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	42.00'	**12.0" Round Culvert** L= 85.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.00' / 40.10' S= 0.0222 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	43.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.17 cfs @ 12.11 hrs HW=43.25' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.17 cfs of 3.27 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.17 cfs @ 1.70 fps)

Pond RG07: Rain Garden-07



Summary for Pond UI01: Und Inf 01

Inflow Area = 53,524 sf,100.00% Impervious, Inflow Depth > 2.67" for 1-yr event
Inflow = 3.57 cfs @ 12.07 hrs, Volume= 11,895 cf
Outflow = 0.07 cfs @ 17.28 hrs, Volume= 1,673 cf, Atten= 98%, Lag= 312.7 min
Primary = 0.07 cfs @ 17.28 hrs, Volume= 1,673 cf
Routed to Link 3 : Pipe 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.12' @ 17.28 hrs Surf.Area= 5,205 sf Storage= 10,381 cf

Plug-Flow detention time= 691.5 min calculated for 1,673 cf (14% of inflow)
Center-of-Mass det. time= 401.4 min (1,158.6 - 757.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	39.50'	5,260 cf	**40.50'W x 127.59'L x 4.75'H Field A** 24,545 cf Overall - 11,394 cf Embedded = 13,151 cf x 40.0% Voids
#2A	40.00'	11,394 cf	**ADS_StormTech MC-3500 d +Cap** x 102 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 102 Chambers in 6 Rows Cap Storage= 14.9 cf x 2 x 6 rows = 178.8 cf
#3	41.98'	264 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder** x 3
		16,918 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.98'	**15.0" Round Culvert** L= 36.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.98' / 41.53' S= 0.0123 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.07 cfs @ 17.28 hrs HW=42.12' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.07 cfs @ 0.99 fps)

Pond UI01: Und Inf 01 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= 14.9 cf x 2 x 6 rows = 178.8 cf

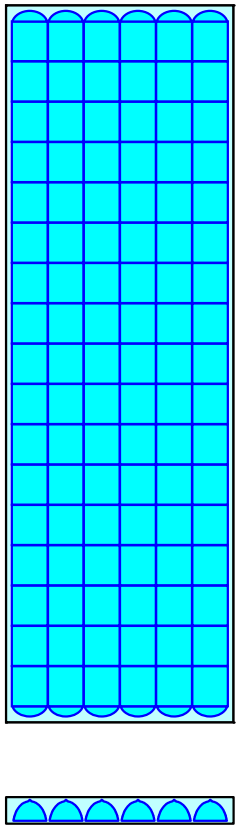
17 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 125.59' Row Length +12.0" End Stone x 2 = 127.59' Base Length
6 Rows x 77.0" Wide + 12.0" Side Stone x 2 = 40.50' Base Width
6.0" Stone Base + 45.0" Chamber Height + 6.0" Stone Cover = 4.75' Field Height

102 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 6 Rows = 11,393.9 cf Chamber Storage

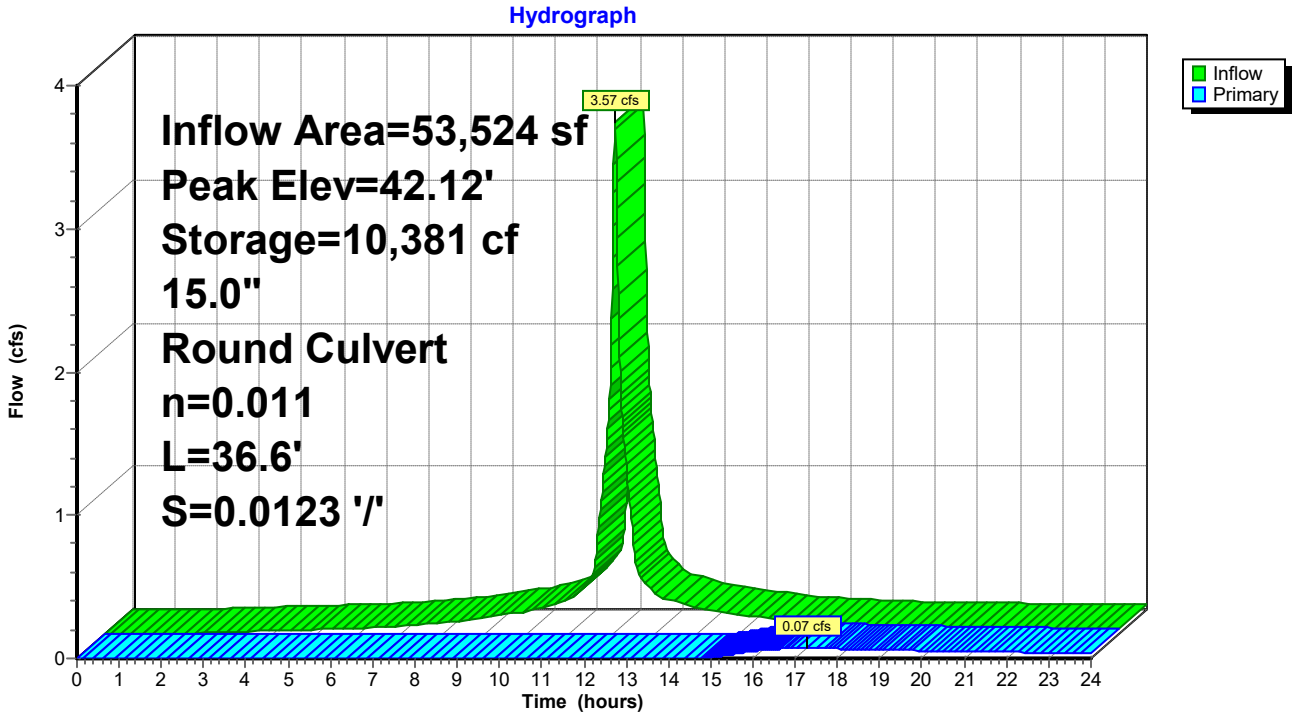
24,545.1 cf Field - 11,393.9 cf Chambers = 13,151.2 cf Stone x 40.0% Voids = 5,260.5 cf Stone Storage

Chamber Storage + Stone Storage = 16,654.4 cf = 0.382 af
Overall Storage Efficiency = 67.9%
Overall System Size = 127.59' x 40.50' x 4.75'

102 Chambers
909.1 cy Field
487.1 cy Stone



Pond UI01: Und Inf 01



Summary for Pond UI02: Und Inf 02

Inflow Area = 33,482 sf, 30.44% Impervious, Inflow Depth > 1.24" for 1-yr event
Inflow = 1.06 cfs @ 12.11 hrs, Volume= 3,446 cf
Outflow = 0.93 cfs @ 12.15 hrs, Volume= 3,002 cf, Atten= 12%, Lag= 2.8 min
Primary = 0.93 cfs @ 12.15 hrs, Volume= 3,002 cf
Routed to Link 1 : Pipe 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.12' @ 12.15 hrs Surf.Area= 558 sf Storage= 664 cf

Plug-Flow detention time= 86.6 min calculated for 3,000 cf (87% of inflow)
Center-of-Mass det. time= 27.9 min (872.6 - 844.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	39.97'	697 cf	**6.50'W x 82.00'L x 5.50'H Field A** 2,932 cf Overall - 1,188 cf Embedded = 1,743 cf x 40.0% Voids
#2A	40.47'	992 cf	**ADS N-12 48"** x 4 Inside #1 Inside= 47.7"W x 47.7"H => 12.40 sf x 20.00'L = 248.0 cf Outside= 54.0"W x 54.0"H => 14.86 sf x 20.00'L = 297.1 cf
#3	39.97'	144 cf	**4.00'D x 5.73'H Vertical Cone/Cylinder** x 2
		1,833 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 22.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 41.38' S= 0.0054 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.93 cfs @ 12.15 hrs HW=42.12' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.93 cfs @ 2.59 fps)

Pond UI02: Und Inf 02 - Chamber Wizard Field A

Chamber Model = ADS N-12 48" (ADS N-12® Pipe)
Inside= 47.7"W x 47.7"H => 12.40 sf x 20.00'L = 248.0 cf
Outside= 54.0"W x 54.0"H => 14.86 sf x 20.00'L = 297.1 cf

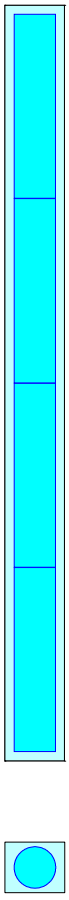
4 Chambers/Row x 20.00' Long = 80.00' Row Length +12.0" End Stone x 2 = 82.00' Base Length
1 Rows x 54.0" Wide + 12.0" Side Stone x 2 = 6.50' Base Width
6.0" Stone Base + 54.0" Chamber Height + 6.0" Stone Cover = 5.50' Field Height

4 Chambers x 248.0 cf = 992.0 cf Chamber Storage
4 Chambers x 297.1 cf = 1,188.4 cf Displacement

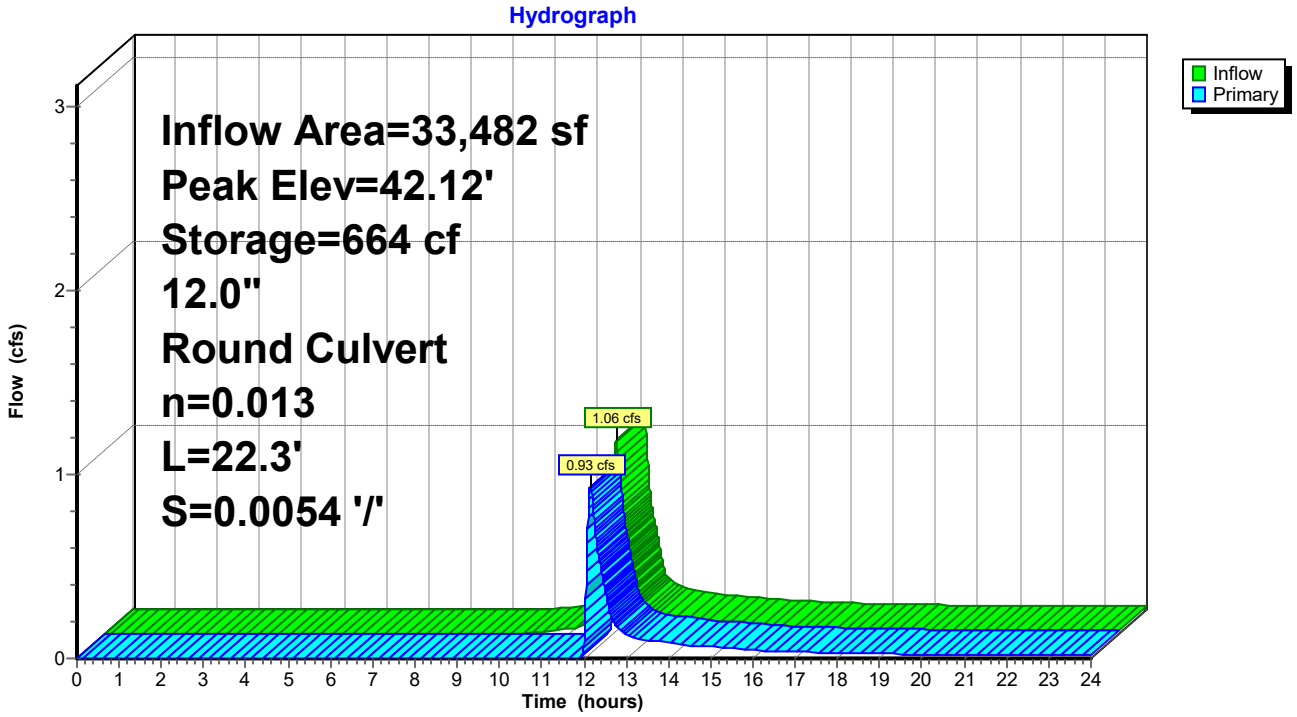
2,931.6 cf Field - 1,188.4 cf Chambers = 1,743.2 cf Stone x 40.0% Voids = 697.3 cf Stone Storage

Chamber Storage + Stone Storage = 1,689.3 cf = 0.039 af
Overall Storage Efficiency = 57.6%
Overall System Size = 82.00' x 6.50' x 5.50'

4 Chambers
108.6 cy Field
64.6 cy Stone



Pond UI02: Und Inf 02



Summary for Pond YD3: YD-03

[57] Hint: Peaked at 41.99' (Flood elevation advised)

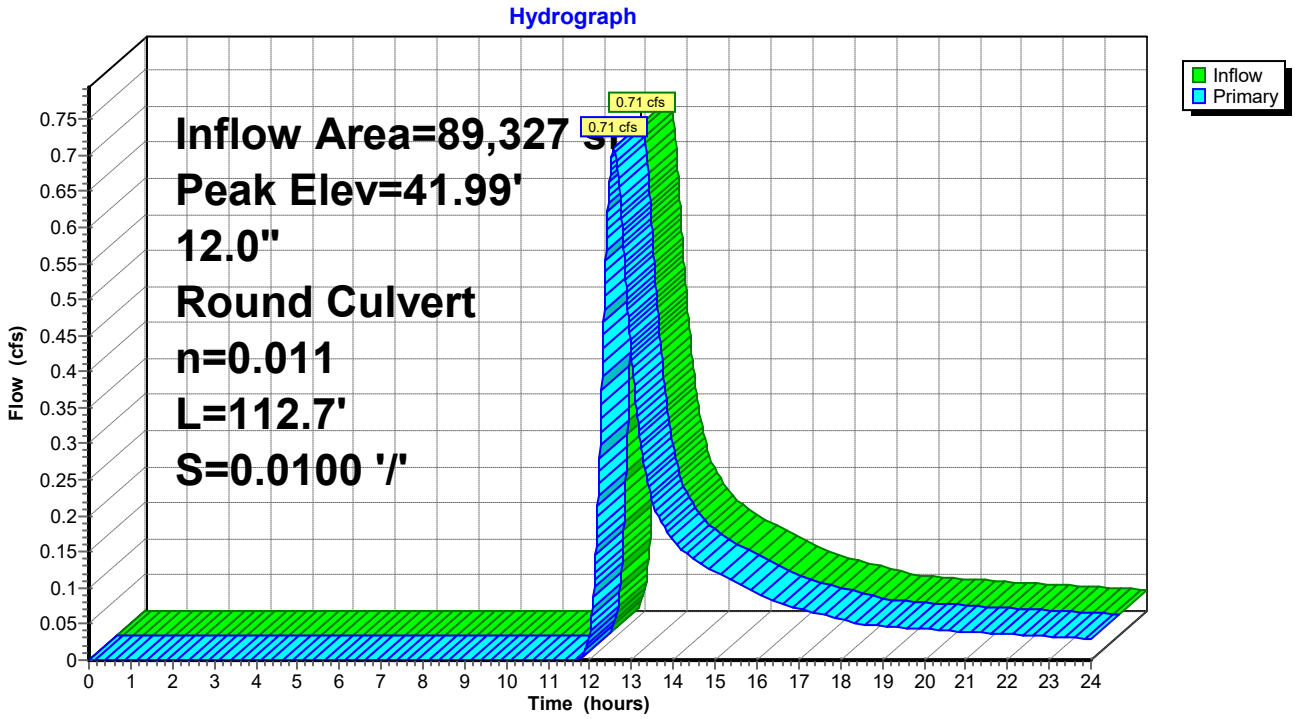
Inflow Area = 89,327 sf, 1.78% Impervious, Inflow Depth > 0.65" for 1-yr event
Inflow = 0.71 cfs @ 12.57 hrs, Volume= 4,852 cf
Outflow = 0.71 cfs @ 12.57 hrs, Volume= 4,852 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.71 cfs @ 12.57 hrs, Volume= 4,852 cf
Routed to Link Sub B : SUB B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.99' @ 12.57 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 112.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 40.37' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.71 cfs @ 12.57 hrs HW=41.99' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.71 cfs @ 1.87 fps)

Pond YD3: YD-03



Summary for Pond YD33: YD-33

[57] Hint: Peaked at 57.11' (Flood elevation advised)

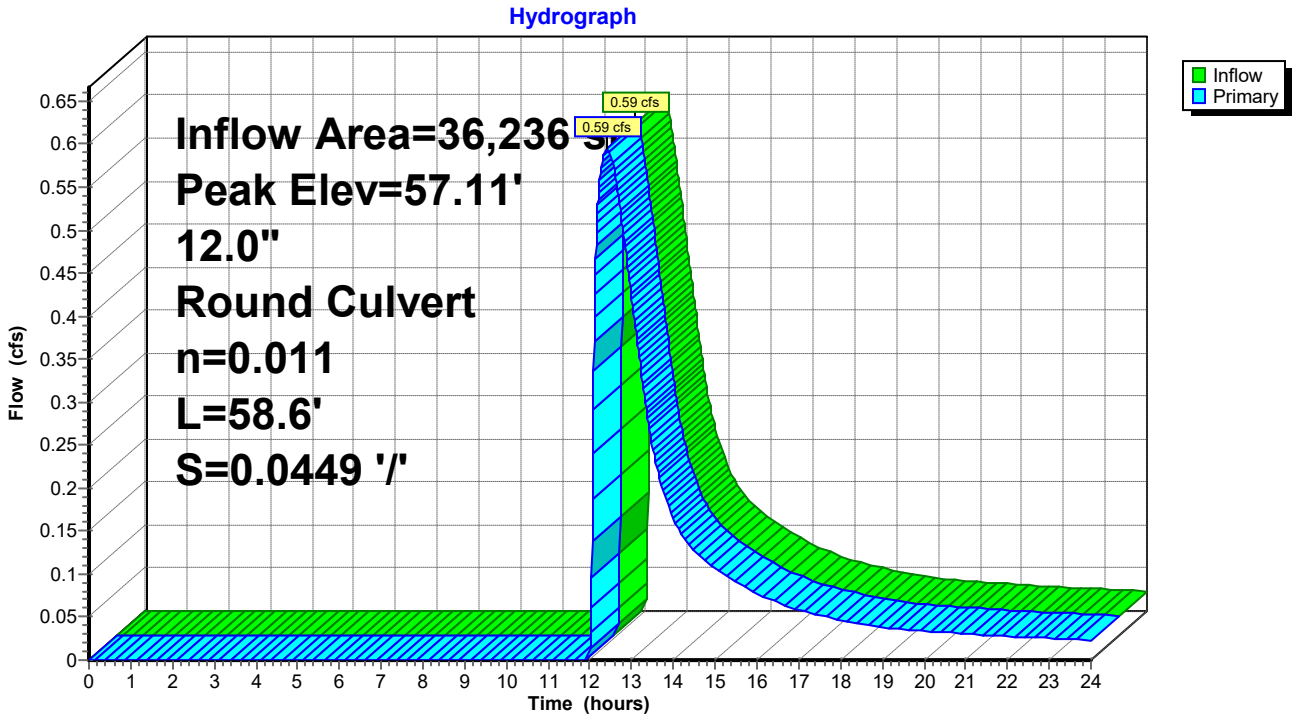
Inflow Area = 36,236 sf, 92.20% Impervious, Inflow Depth > 1.54" for 1-yr event
Inflow = 0.59 cfs @ 12.42 hrs, Volume= 4,639 cf
Outflow = 0.59 cfs @ 12.42 hrs, Volume= 4,639 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.59 cfs @ 12.42 hrs, Volume= 4,639 cf
Routed to Link SUB D1 : D1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.11' @ 12.42 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	56.67'	**12.0" Round Culvert** L= 58.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.67' / 54.04' S= 0.0449 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.59 cfs @ 12.42 hrs HW=57.11' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.59 cfs @ 1.78 fps)

Pond YD33: YD-33



Summary for Pond YD40: YD-40

[57] Hint: Peaked at 41.86' (Flood elevation advised)

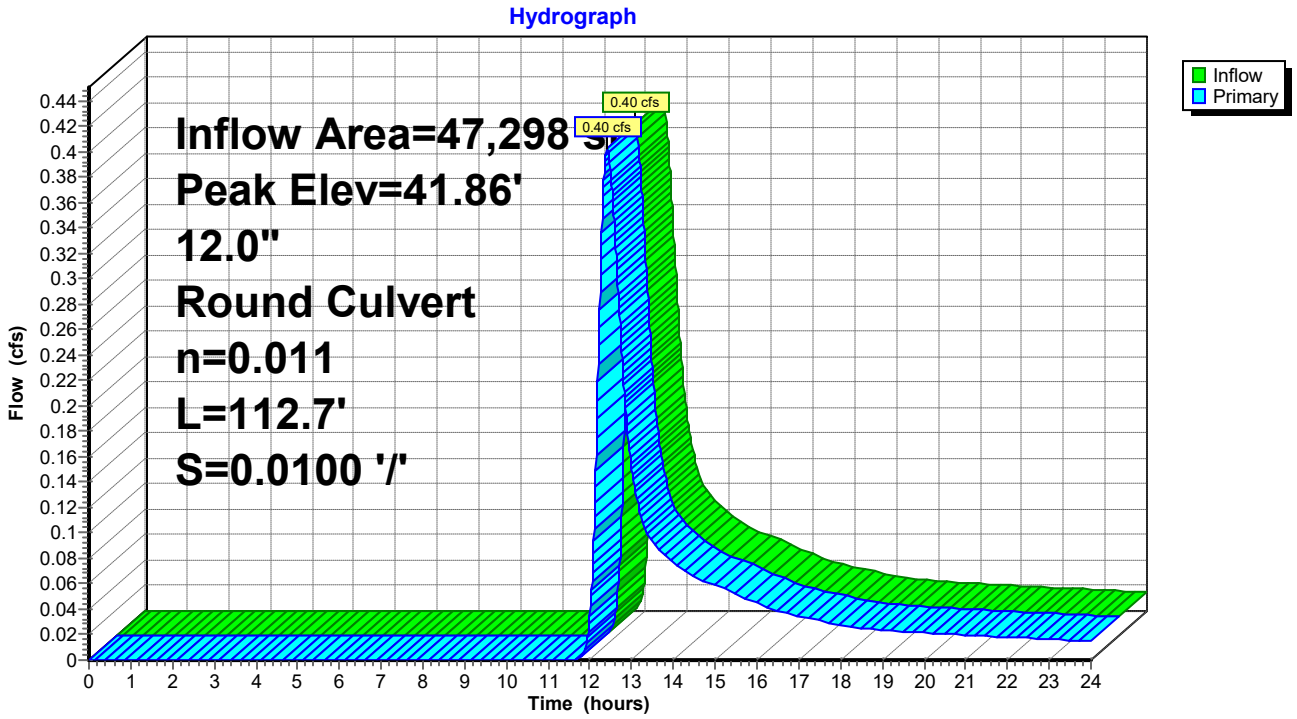
Inflow Area = 47,298 sf, 5.26% Impervious, Inflow Depth > 0.61" for 1-yr event
Inflow = 0.40 cfs @ 12.42 hrs, Volume= 2,412 cf
Outflow = 0.40 cfs @ 12.42 hrs, Volume= 2,412 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.40 cfs @ 12.42 hrs, Volume= 2,412 cf
Routed to Link Sub B : SUB B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.86' @ 12.42 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 112.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 40.37' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.40 cfs @ 12.42 hrs HW=41.86' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.40 cfs @ 1.60 fps)

Pond YD40: YD-40

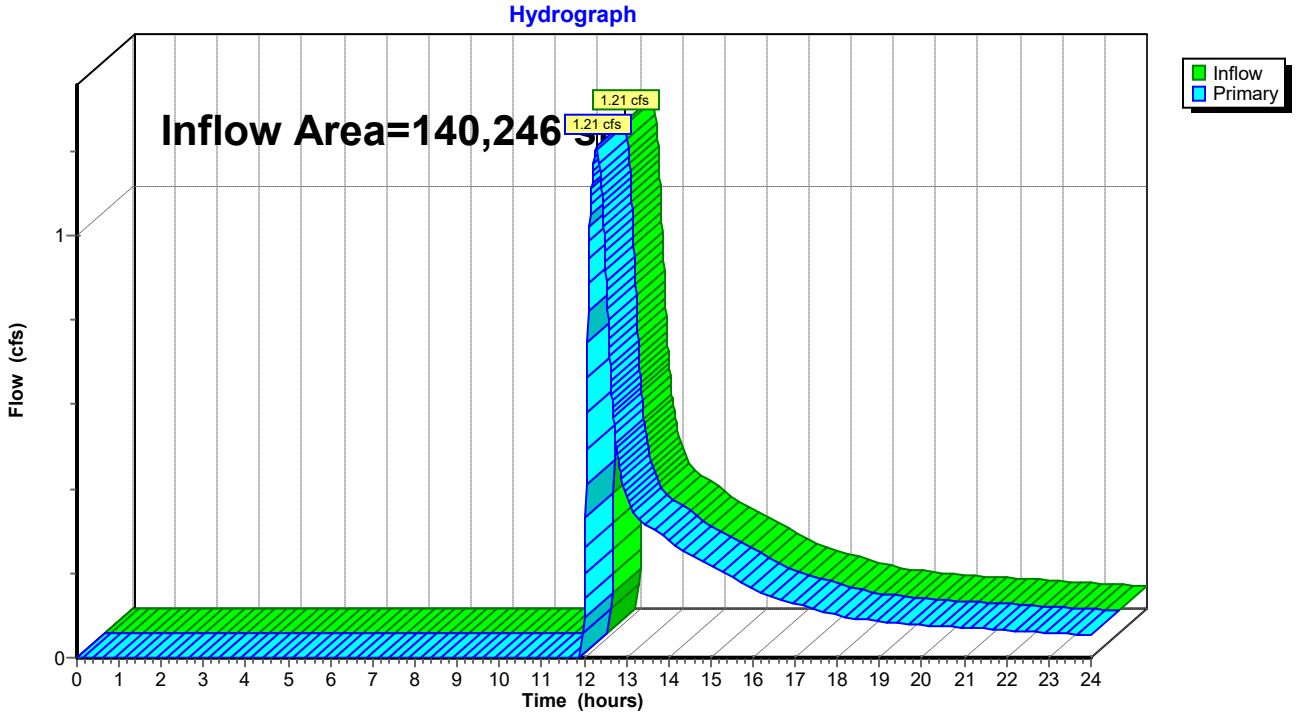


Summary for Link 1: Pipe 1

Inflow Area = 140,246 sf, 34.50% Impervious, Inflow Depth > 0.69" for 1-yr event
Inflow = 1.21 cfs @ 12.30 hrs, Volume= 8,015 cf
Primary = 1.21 cfs @ 12.30 hrs, Volume= 8,015 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 2 : Pipe 2

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1: Pipe 1

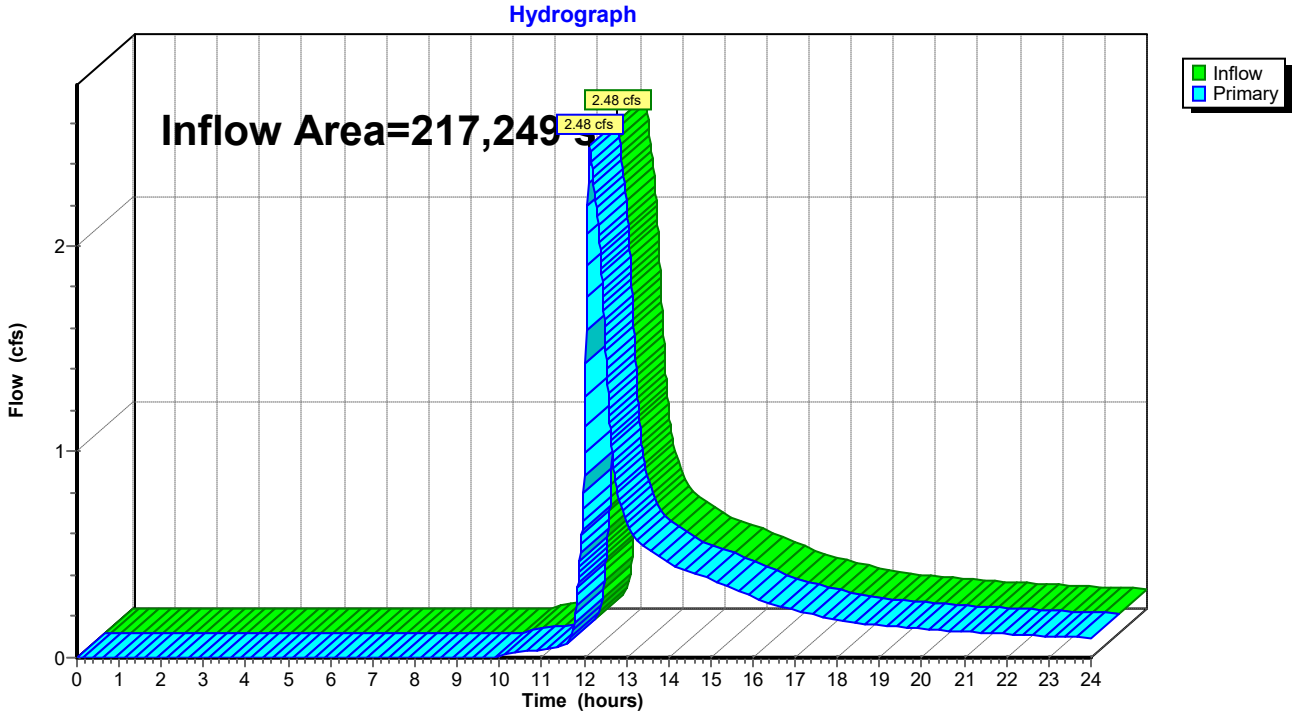


Summary for Link 2: Pipe 2

Inflow Area = 217,249 sf, 40.87% Impervious, Inflow Depth > 0.83" for 1-yr event
Inflow = 2.48 cfs @ 12.14 hrs, Volume= 15,096 cf
Primary = 2.48 cfs @ 12.14 hrs, Volume= 15,096 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3 : Pipe 3

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 2: Pipe 2

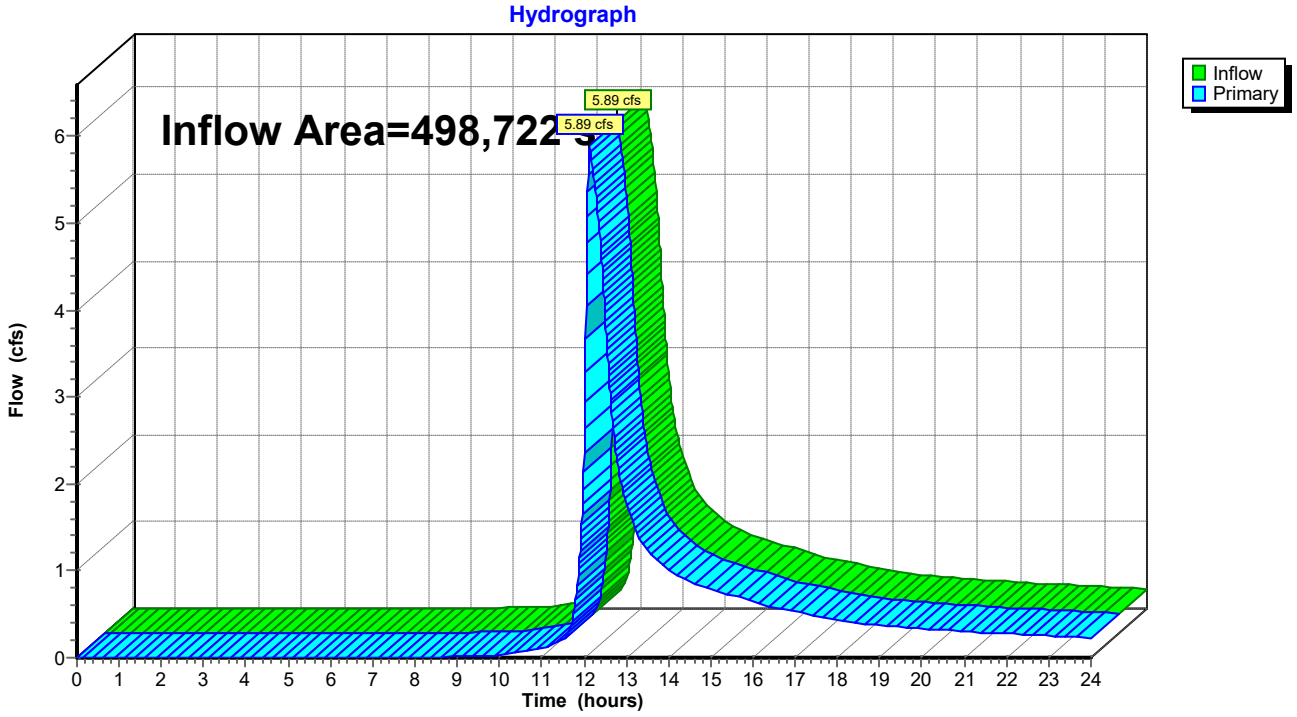


Summary for Link 3: Pipe 3

Inflow Area = 498,722 sf, 46.58% Impervious, Inflow Depth > 0.87" for 1-yr event
Inflow = 5.89 cfs @ 12.14 hrs, Volume= 36,325 cf
Primary = 5.89 cfs @ 12.14 hrs, Volume= 36,325 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4 : Pipe 4

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 3: Pipe 3

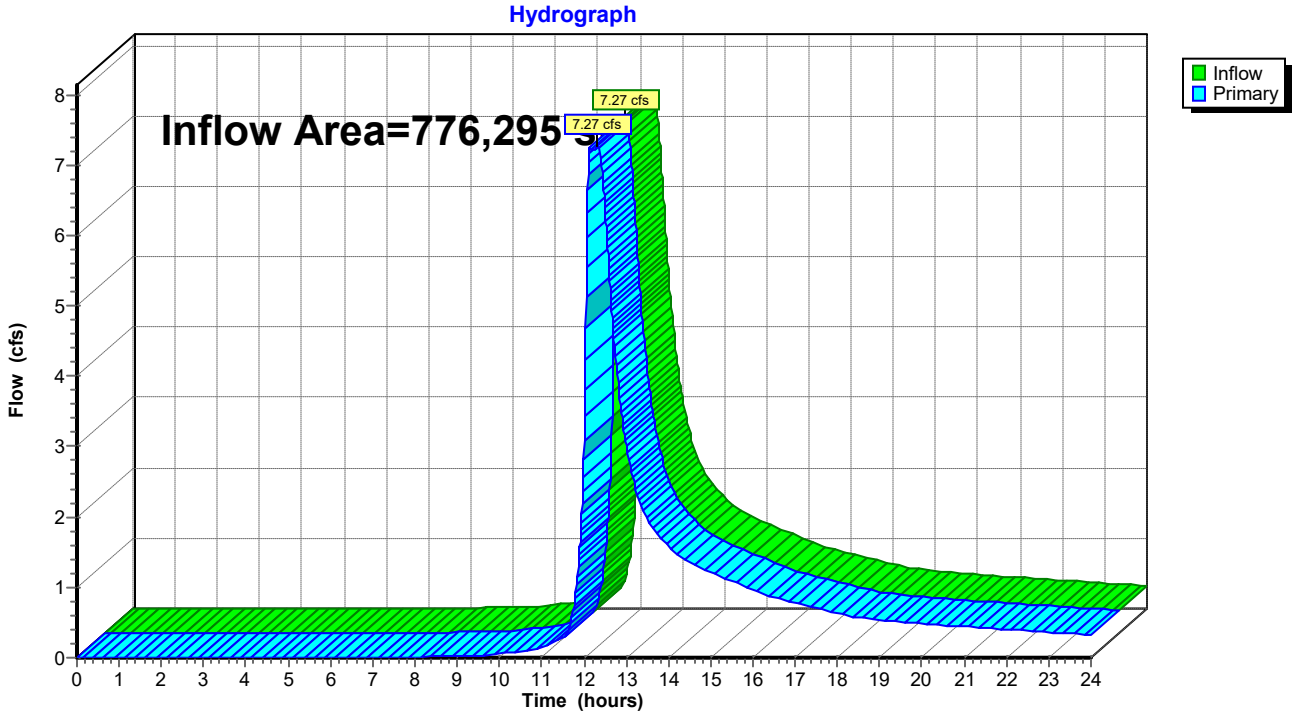


Summary for Link 4: Pipe 4

Inflow Area = 776,295 sf, 34.75% Impervious, Inflow Depth > 0.84" for 1-yr event
Inflow = 7.27 cfs @ 12.32 hrs, Volume= 54,348 cf
Primary = 7.27 cfs @ 12.32 hrs, Volume= 54,348 cf, Atten= 0%, Lag= 0.0 min
Routed to Link A : POC-A

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 4: Pipe 4

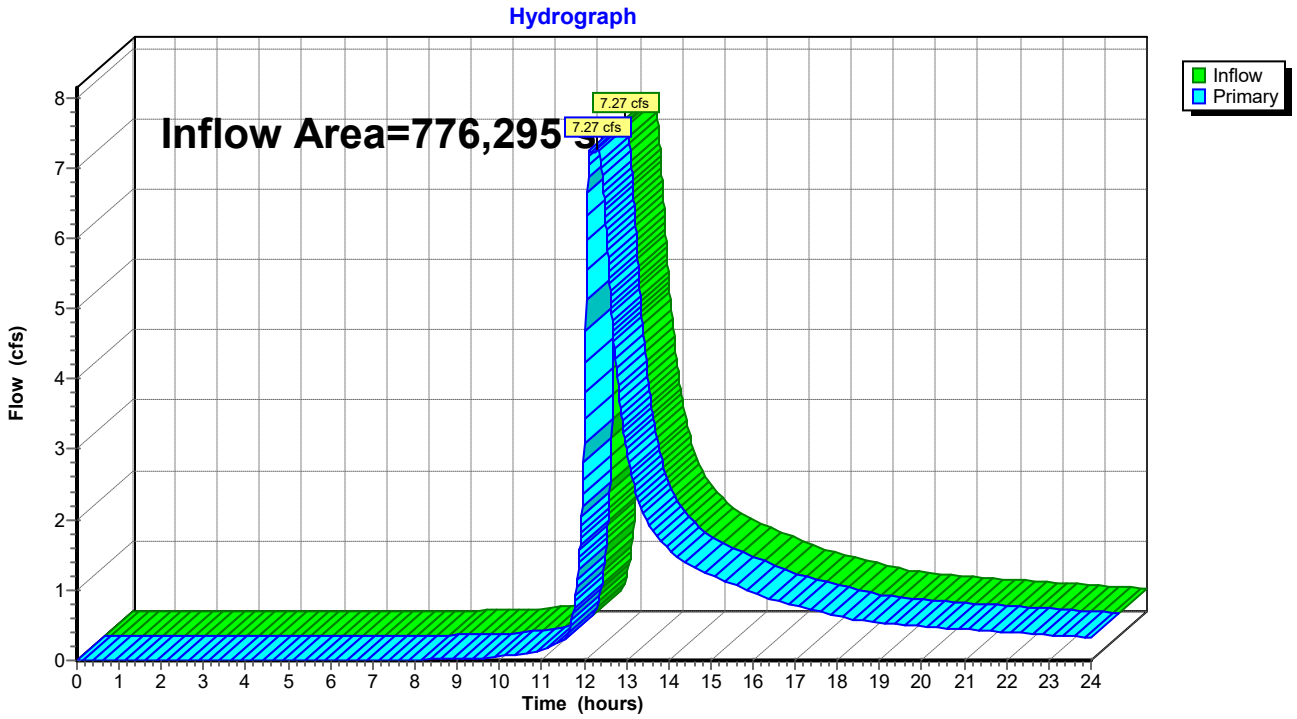


Summary for Link A: POC-A

Inflow Area = 776,295 sf, 34.75% Impervious, Inflow Depth > 0.84" for 1-yr event
Inflow = 7.27 cfs @ 12.32 hrs, Volume= 54,348 cf
Primary = 7.27 cfs @ 12.32 hrs, Volume= 54,348 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link A: POC-A

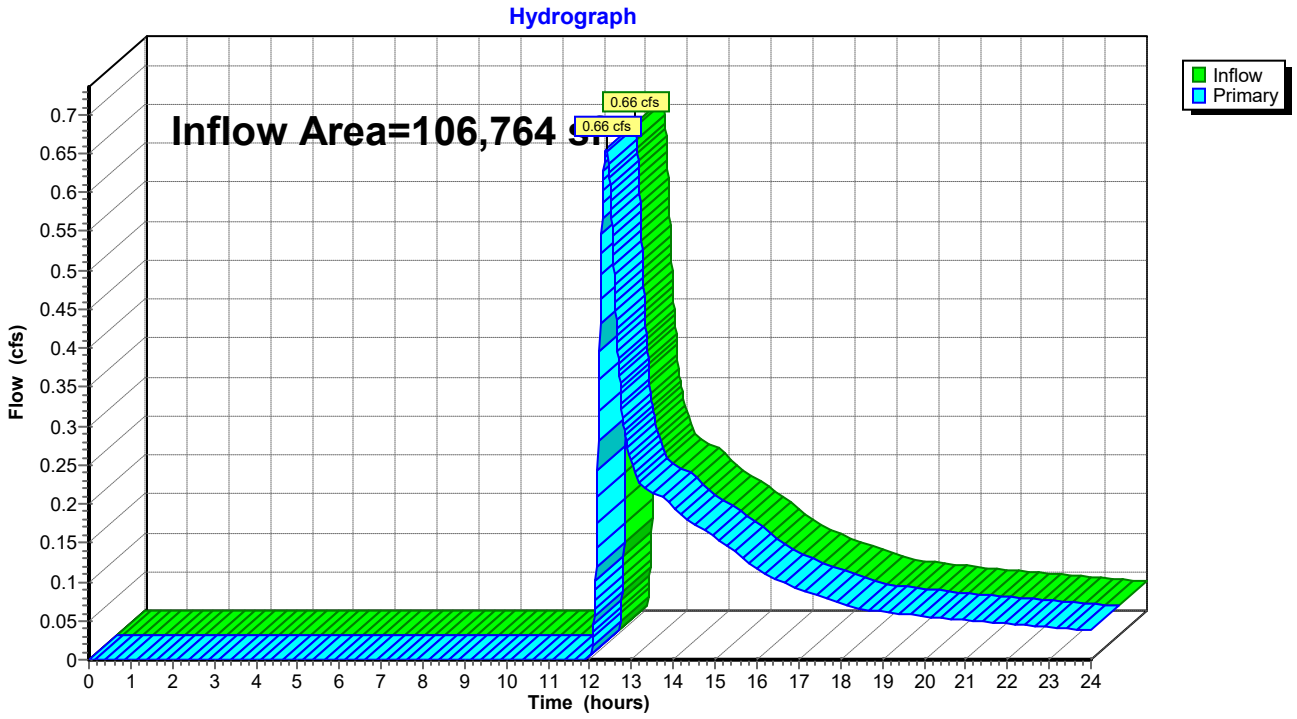


Summary for Link Sub A: SUB A

Inflow Area = 106,764 sf, 35.77% Impervious, Inflow Depth > 0.56" for 1-yr event
Inflow = 0.66 cfs @ 12.39 hrs, Volume= 5,013 cf
Primary = 0.66 cfs @ 12.39 hrs, Volume= 5,013 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 1 : Pipe 1

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Sub A: SUB A

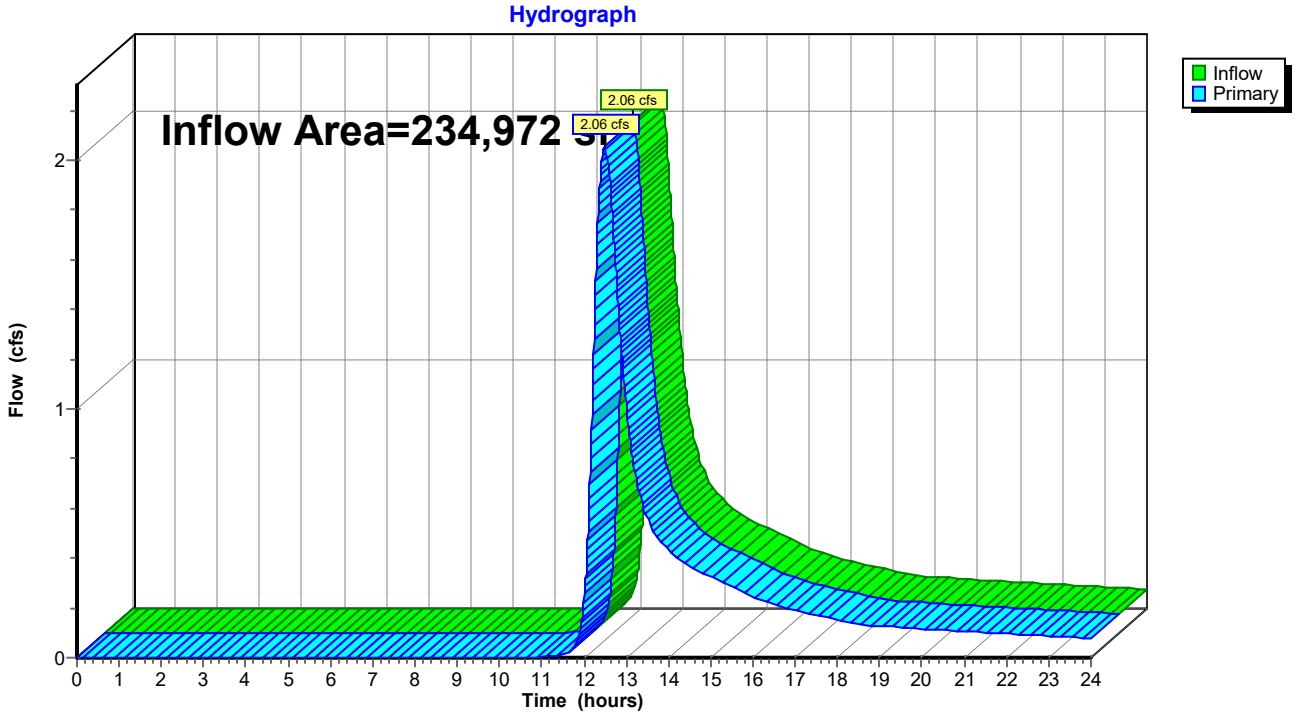


Summary for Link Sub B: SUB B

Inflow Area = 234,972 sf, 4.63% Impervious, Inflow Depth > 0.69" for 1-yr event
Inflow = 2.06 cfs @ 12.49 hrs, Volume= 13,509 cf
Primary = 2.06 cfs @ 12.49 hrs, Volume= 13,509 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4 : Pipe 4

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Sub B: SUB B

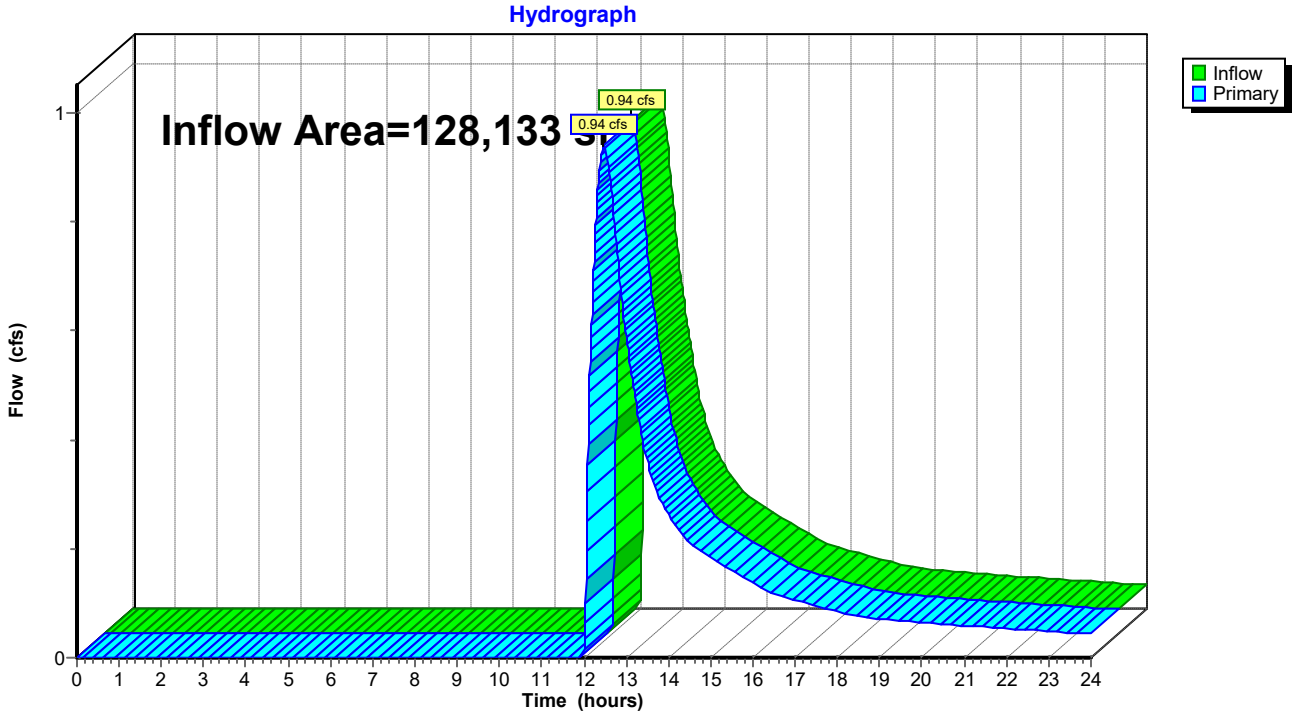


Summary for Link SUB D1: D1

Inflow Area = 128,133 sf, 28.03% Impervious, Inflow Depth > 0.69" for 1-yr event
Inflow = 0.94 cfs @ 12.46 hrs, Volume= 7,363 cf
Primary = 0.94 cfs @ 12.46 hrs, Volume= 7,363 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3 : Pipe 3

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link SUB D1: D1



Summary for Subcatchment 15S: D1H-R

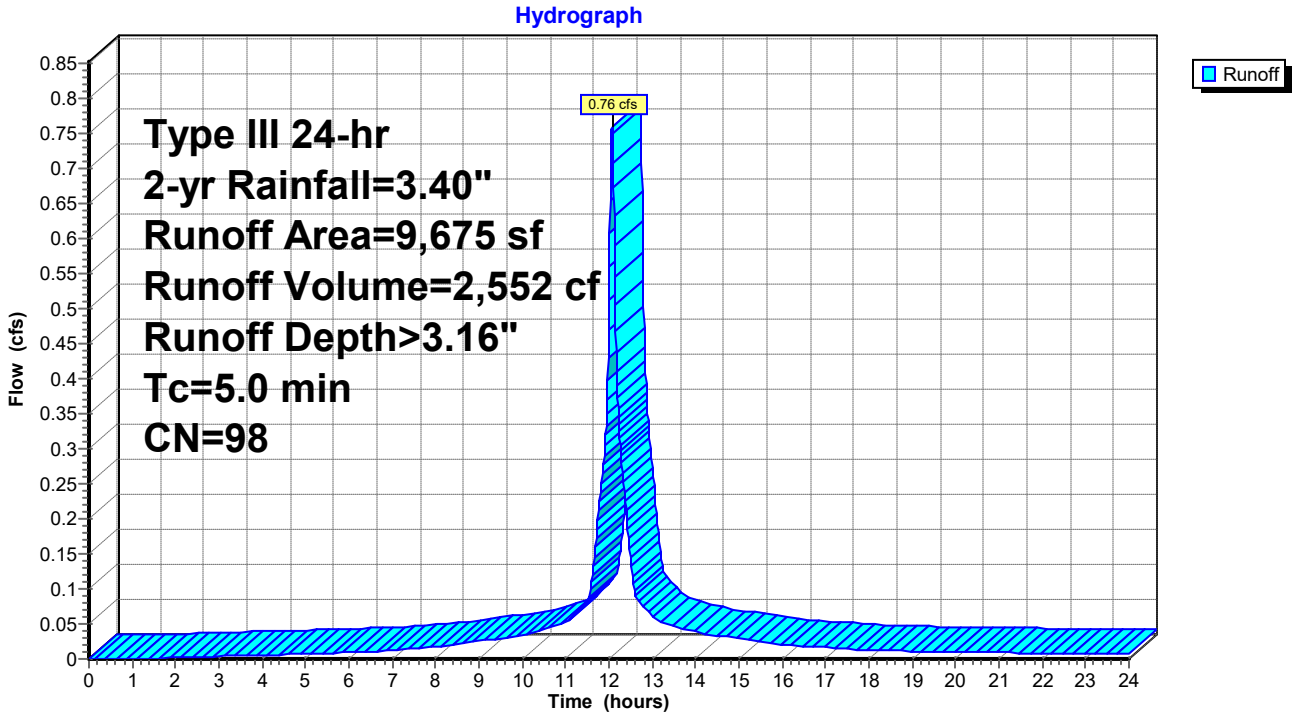
Runoff = 0.76 cfs @ 12.07 hrs, Volume= 2,552 cf, Depth> 3.16"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	9,675	98	Impervious
	9,675		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 15S: D1H-R



Summary for Subcatchment 16S: D1E-R

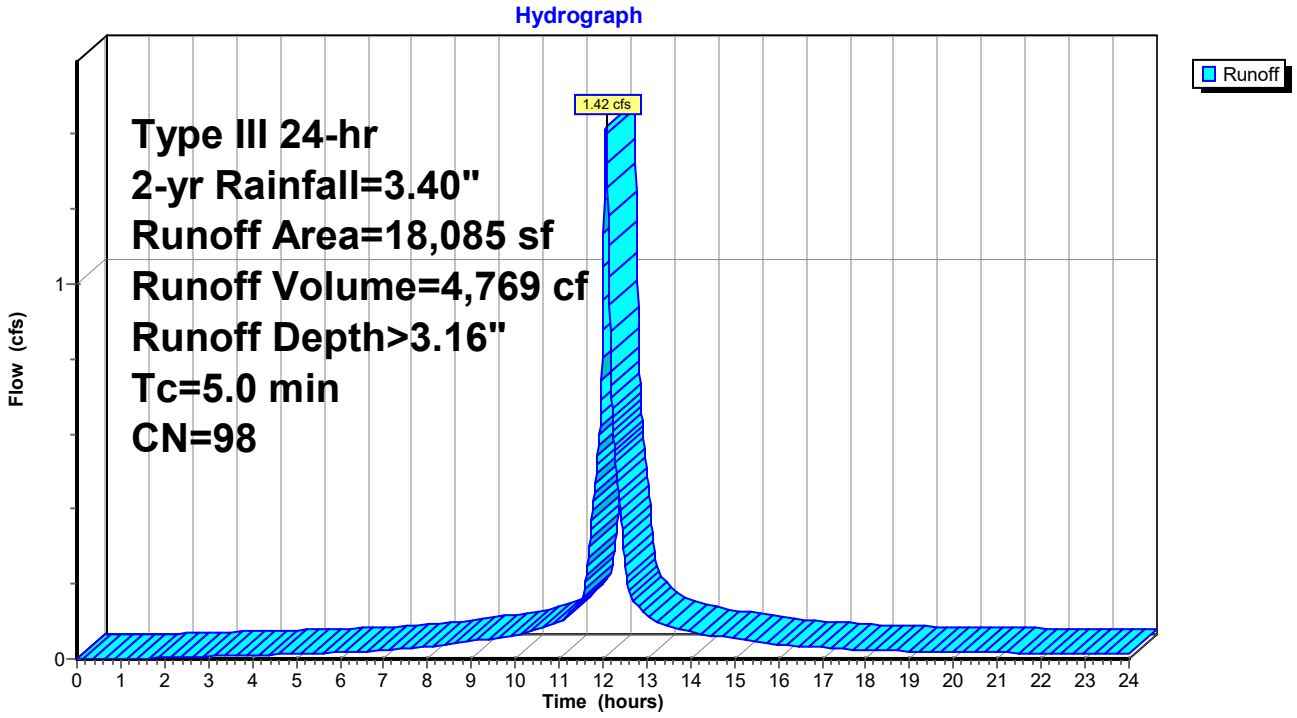
Runoff = 1.42 cfs @ 12.07 hrs, Volume= 4,769 cf, Depth> 3.16"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	18,085	98	Impervious
	18,085		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 16S: D1E-R



Summary for Subcatchment 22S: D2A-R

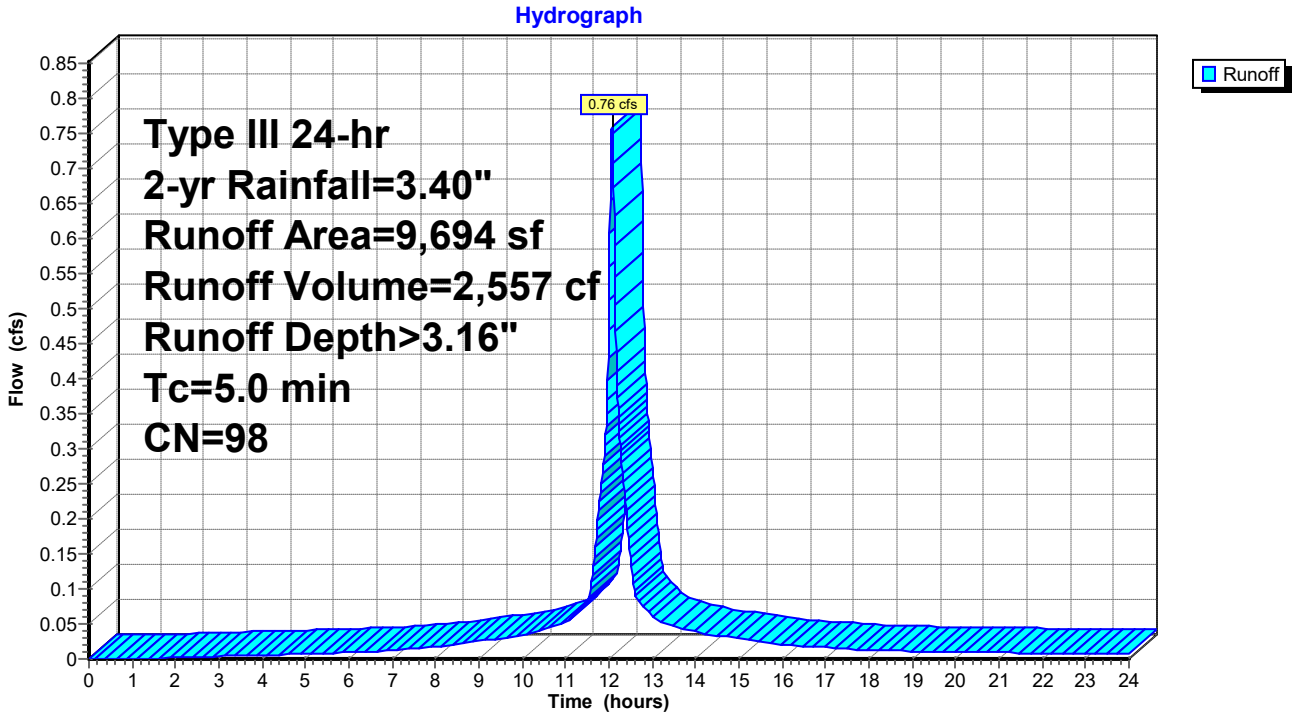
Runoff = 0.76 cfs @ 12.07 hrs, Volume= 2,557 cf, Depth> 3.16"
Routed to Pond 13P : Por Pvt-D2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	9,694	98	Impervious
	9,694		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 22S: D2A-R



Summary for Subcatchment 23S: D2C-R

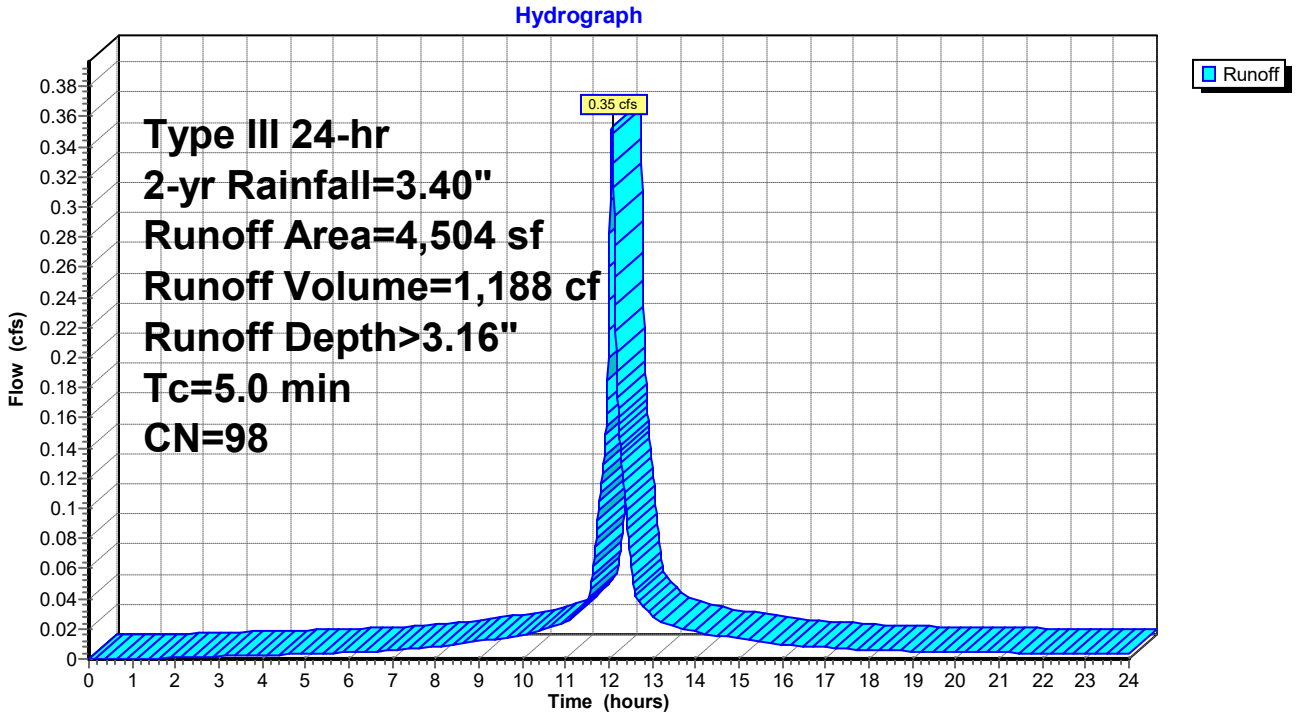
Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,188 cf, Depth> 3.16"
Routed to Pond 16P : Por Pvt-D2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 23S: D2C-R



Summary for Subcatchment 24S: D2D-R

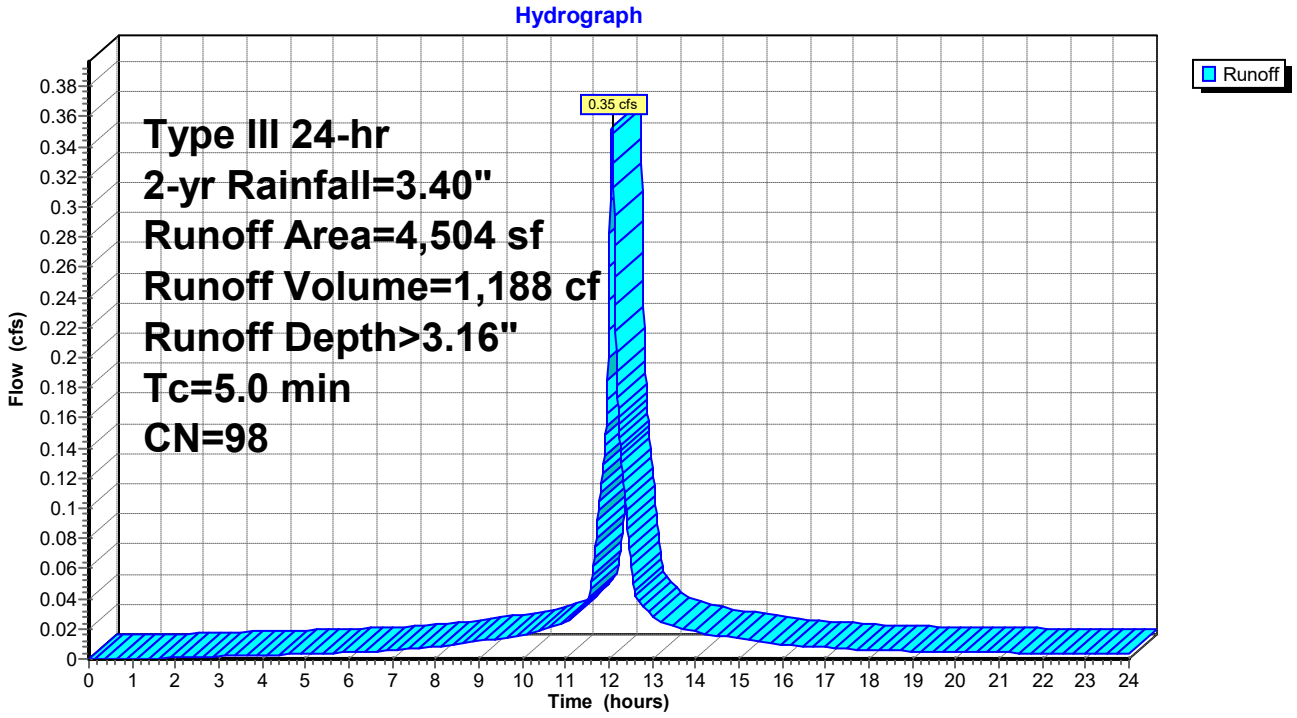
Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,188 cf, Depth> 3.16"
Routed to Pond 18P : Por Pvt-D2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 24S: D2D-R



Summary for Subcatchment 25S: D2E-R

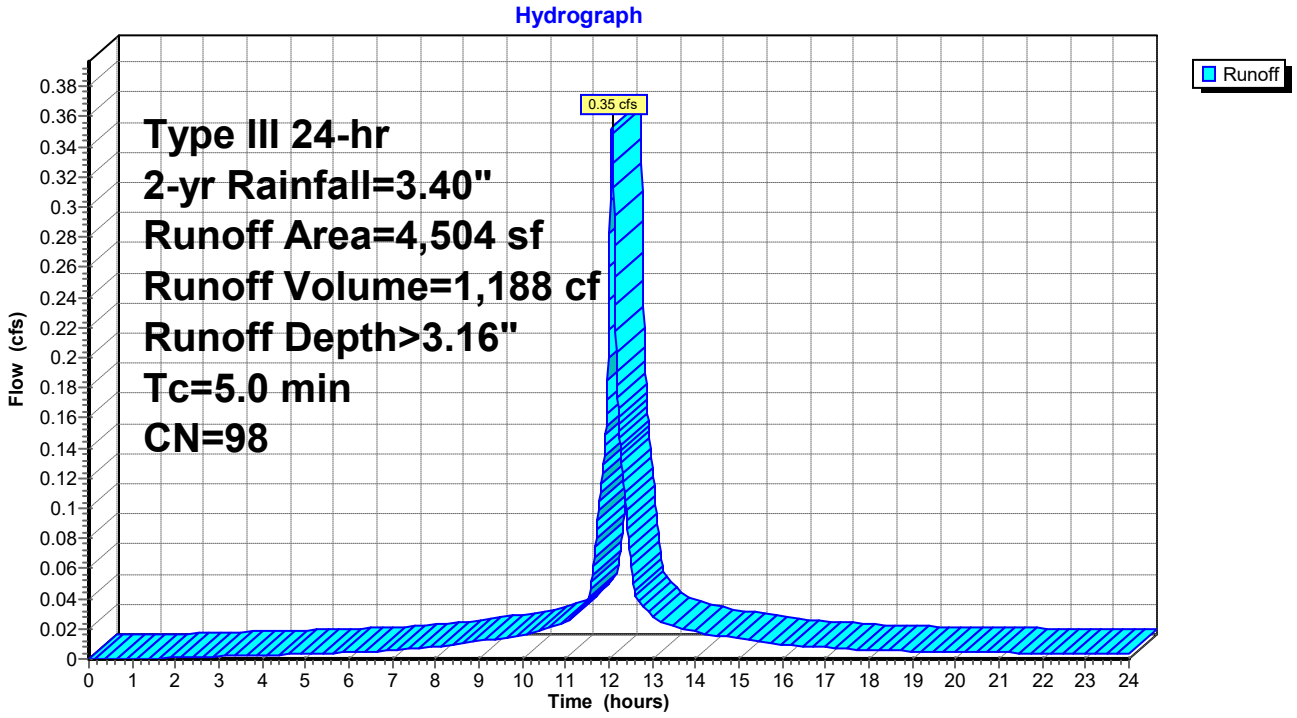
Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,188 cf, Depth> 3.16"
Routed to Pond 19P : Por Pvt-D2E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 25S: D2E-R



Summary for Subcatchment 26S: D2F-R

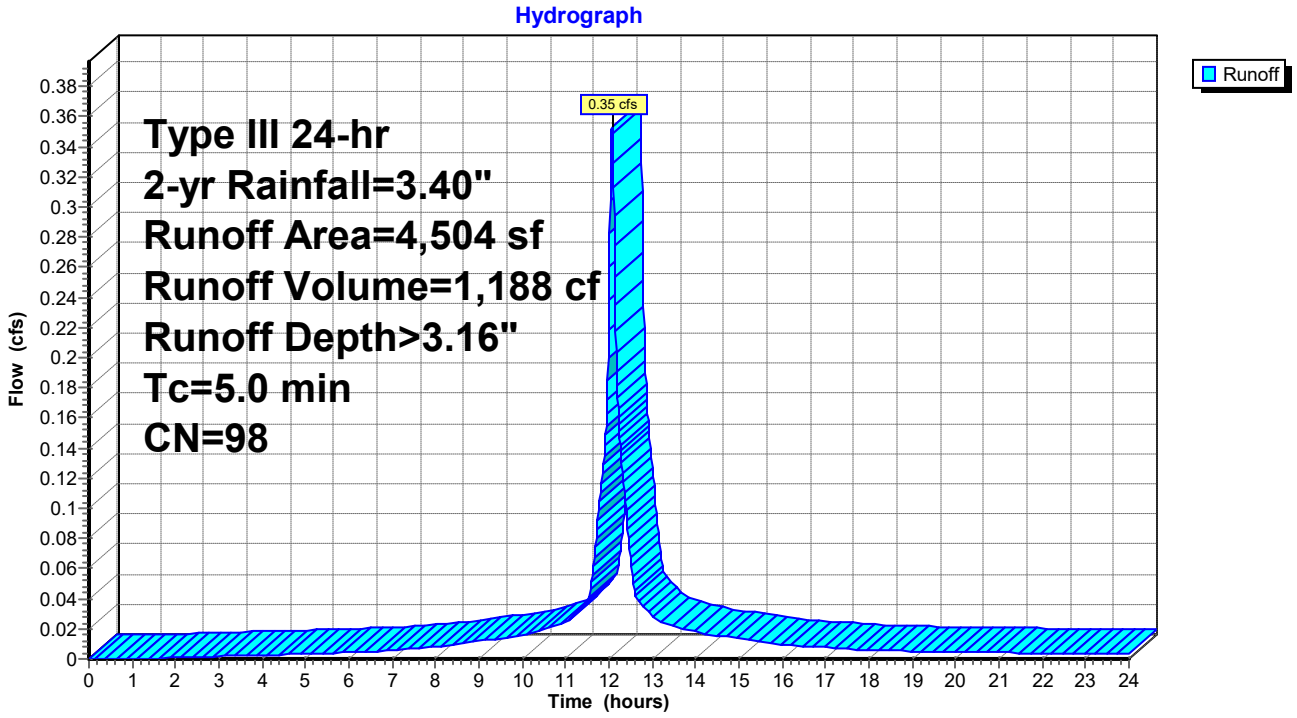
Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,188 cf, Depth> 3.16"
Routed to Pond 20P : Por Pvt-D2F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 26S: D2F-R



Summary for Subcatchment A1: WS-A1

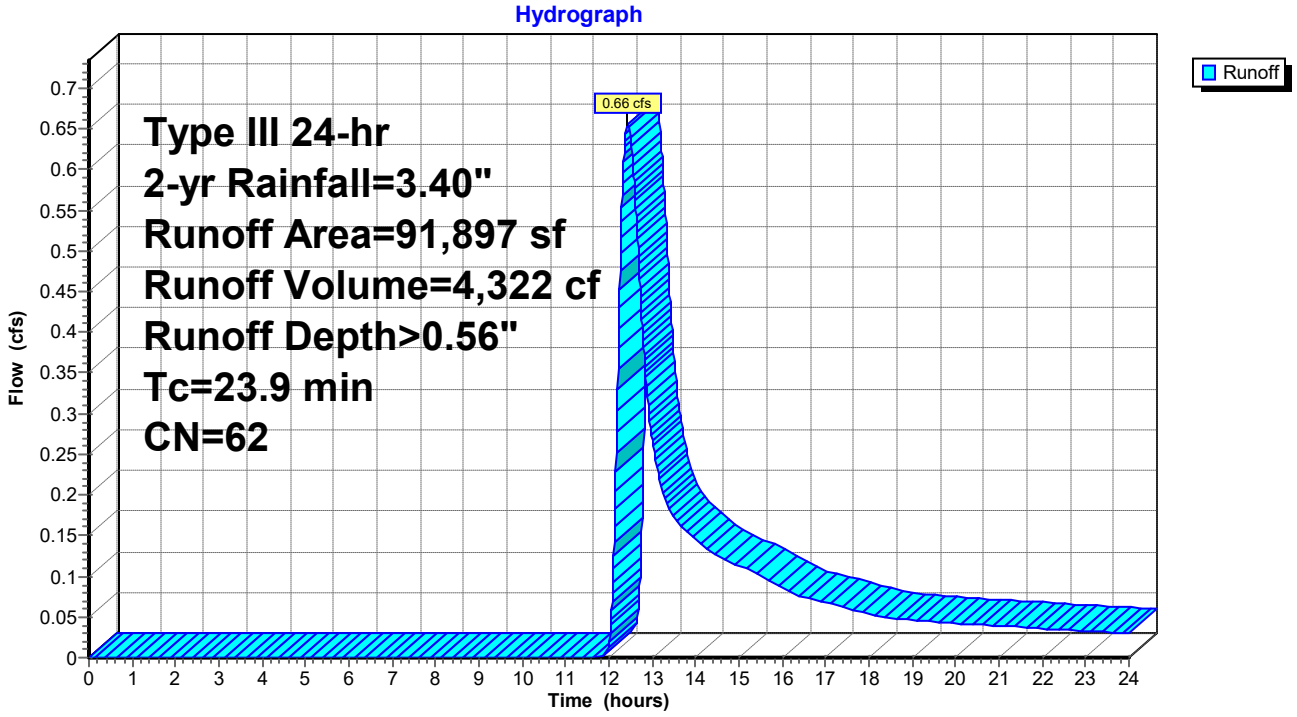
Runoff = 0.66 cfs @ 12.43 hrs, Volume= 4,322 cf, Depth> 0.56"
Routed to Link SUB D1 : D1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	2,508	98	Impervious - Roof
*	9,195	69	Lawn B
*	0	79	Lawn C
*	80,194	60	Forest B
*	0	73	Forest C
	91,897	62	Weighted Average
	89,389		97.27% Pervious Area
	2,508		2.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.9					**Direct Entry,**

Subcatchment A1: WS-A1



Summary for Subcatchment A2: WS-A2

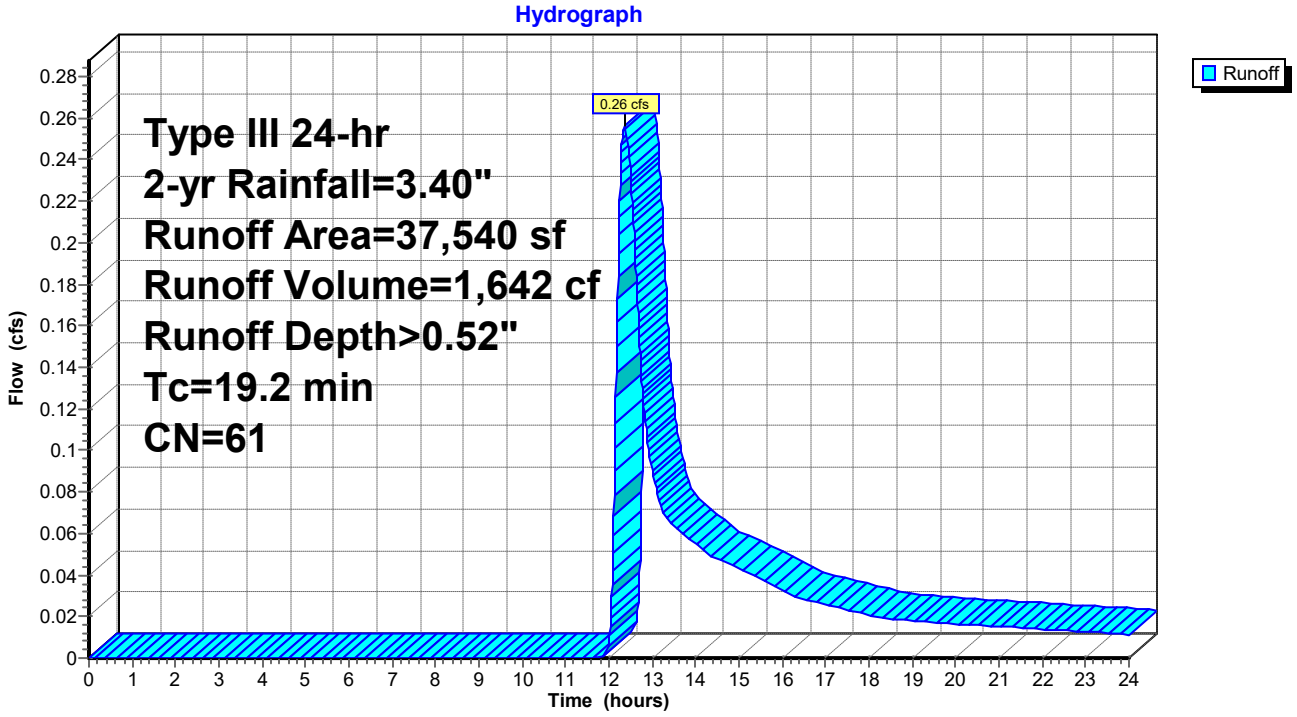
Runoff = 0.26 cfs @ 12.35 hrs, Volume= 1,642 cf, Depth> 0.52"
Routed to Pond DB01 : Detention-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	0	98	Impervious - Roof
*	5,793	69	Lawn B
*	0	79	Lawn C
*	31,747	60	Forest B
*	0	73	Forest C
	37,540	61	Weighted Average
	37,540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2					**Direct Entry,**

Subcatchment A2: WS-A2



Summary for Subcatchment A3: WS-A3

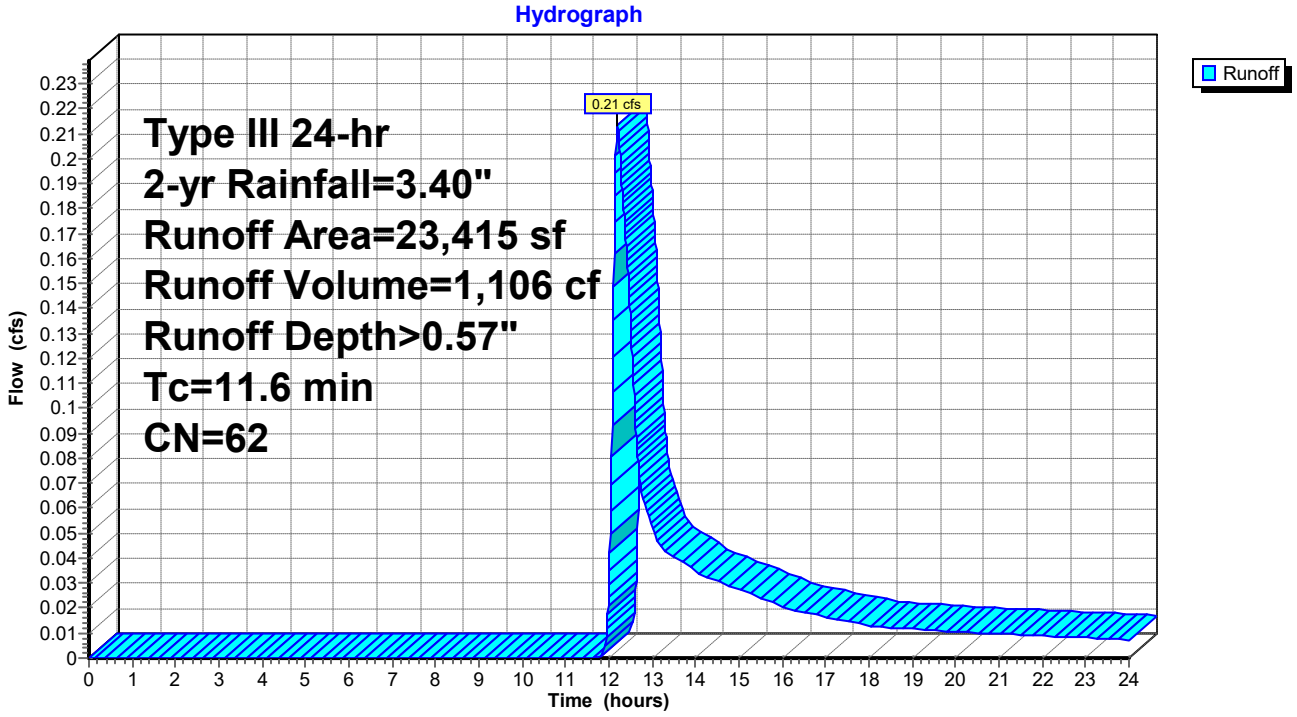
Runoff = 0.21 cfs @ 12.20 hrs, Volume= 1,106 cf, Depth> 0.57"
Routed to Pond DB01 : Detention-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	0	98	Impervious - Roof
*	4,949	69	Lawn B
*	0	79	Lawn C
*	18,466	60	Forest B
*	0	73	Forest C
	23,415	62	Weighted Average
	23,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6					**Direct Entry,**

Subcatchment A3: WS-A3



Summary for Subcatchment B1: WS-B1

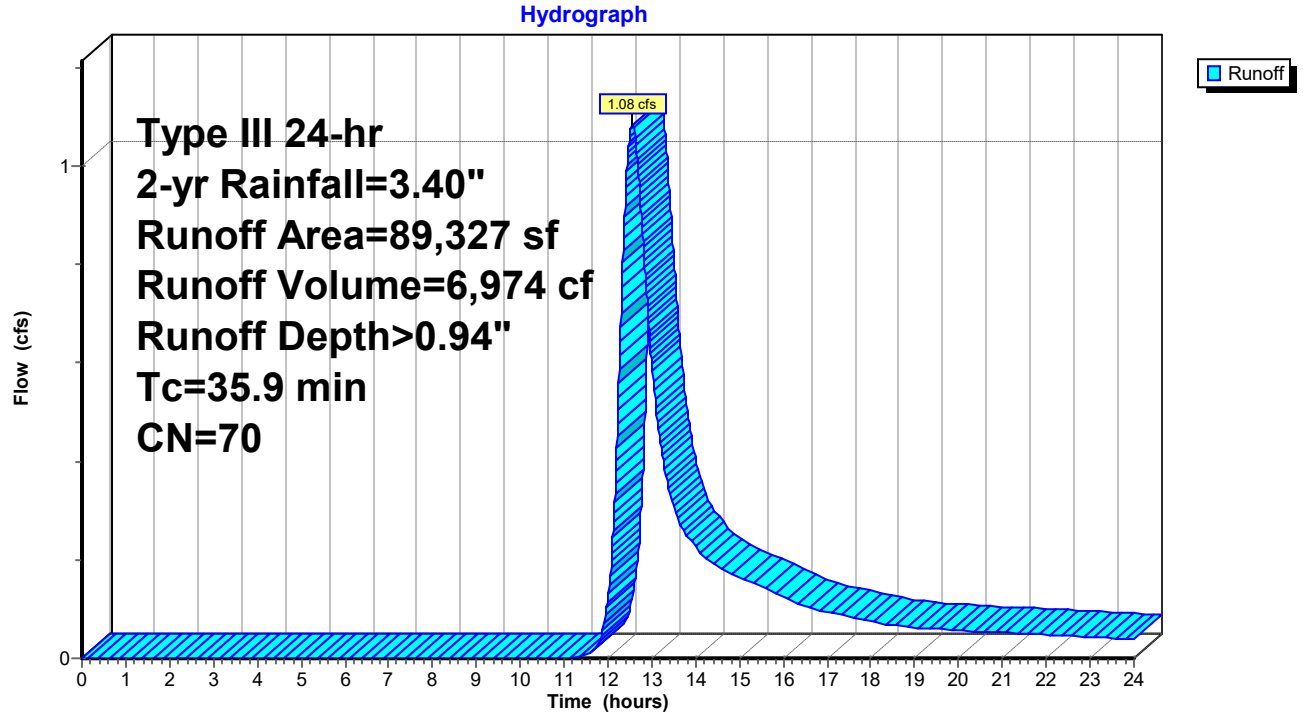
Runoff = 1.08 cfs @ 12.56 hrs, Volume= 6,974 cf, Depth> 0.94"
Routed to Pond YD3 : YD-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	1,588	98	Impervious
*	87,739	69	Lawn B
	89,327	70	Weighted Average
	87,739		98.22% Pervious Area
	1,588		1.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.9					**Direct Entry,**

Subcatchment B1: WS-B1



Summary for Subcatchment B2: WS-B2

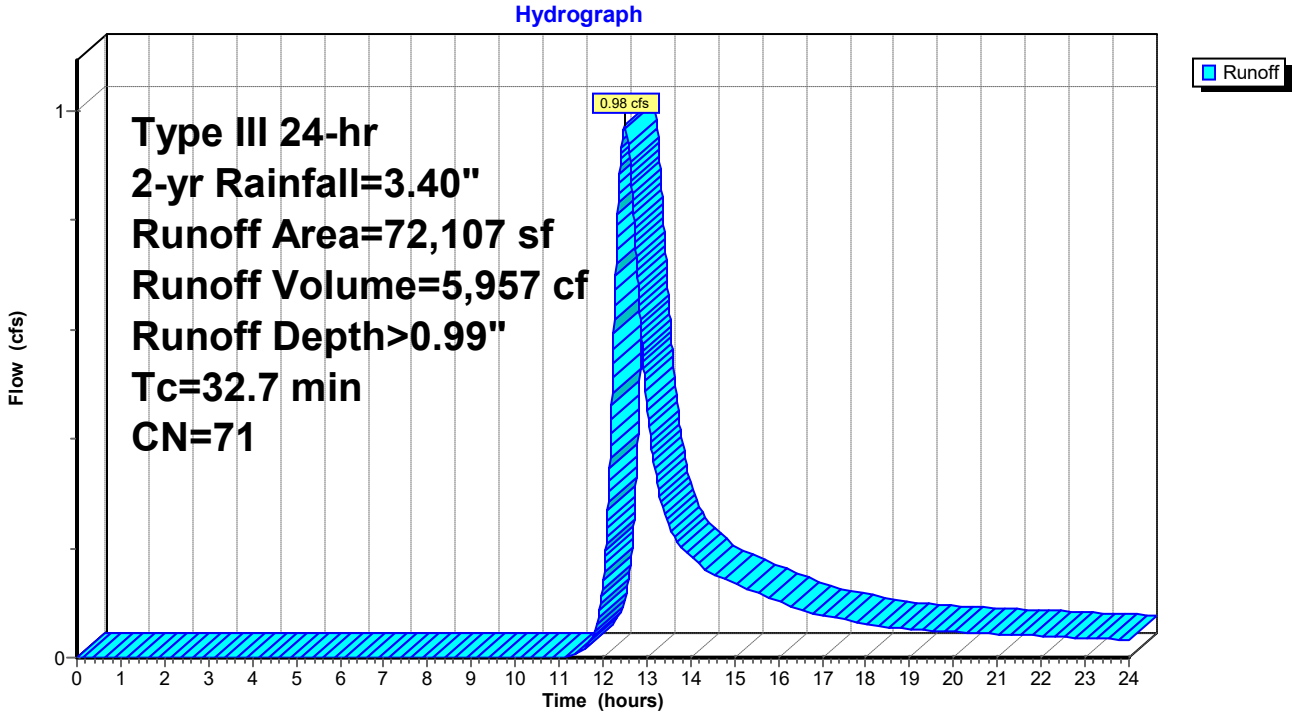
Runoff = 0.98 cfs @ 12.50 hrs, Volume= 5,957 cf, Depth> 0.99"
Routed to Link Sub B : SUB B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	49	98	Impervious
*	55,957	69	Lawn B
*	16,101	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	72,107	71	Weighted Average
	72,058		99.93% Pervious Area
	49		0.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.7					**Direct Entry,**

Subcatchment B2: WS-B2



Summary for Subcatchment B3: WS-B3

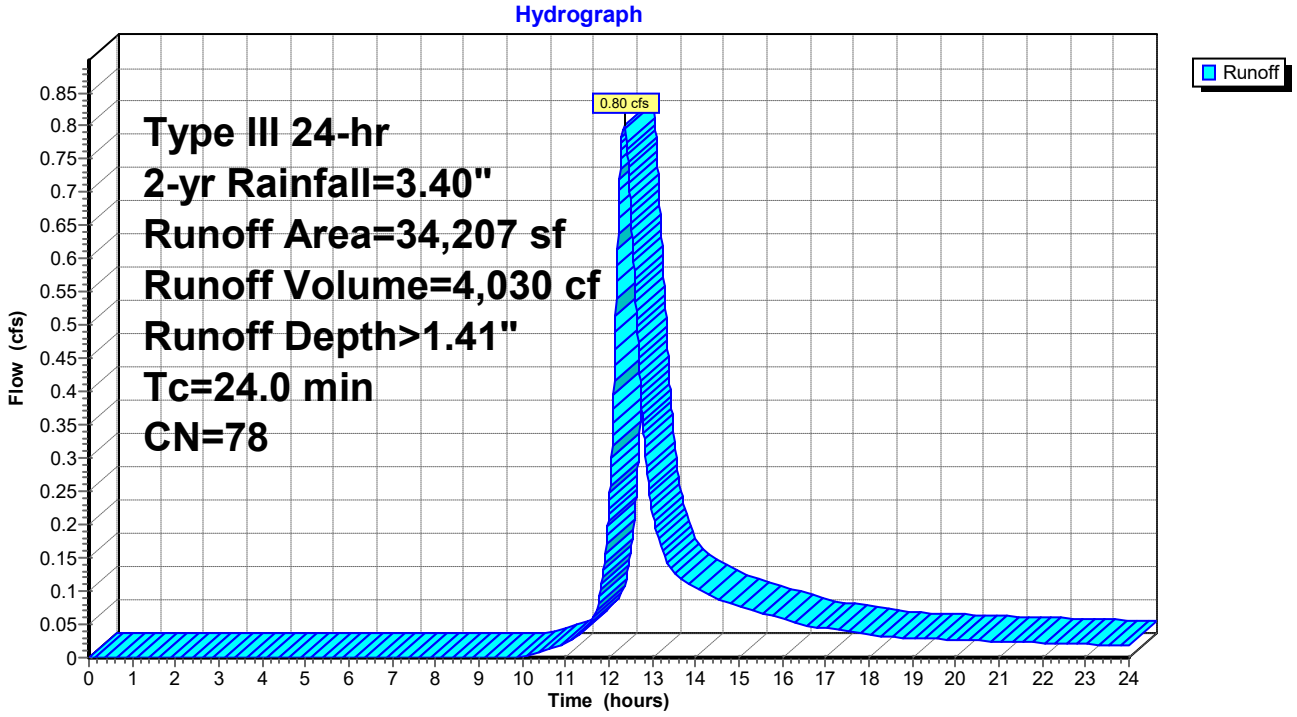
Runoff = 0.80 cfs @ 12.35 hrs, Volume= 4,030 cf, Depth> 1.41"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	12,332	98	Impervious
*	14,526	69	Lawn B
*	1,341	79	Lawn C
*	5,996	60	Forest B
*	12	73	Forest C
	34,207	78	Weighted Average
	21,875		63.95% Pervious Area
	12,332		36.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0					**Direct Entry,**

Subcatchment B3: WS-B3



Summary for Subcatchment B4: WS-B4

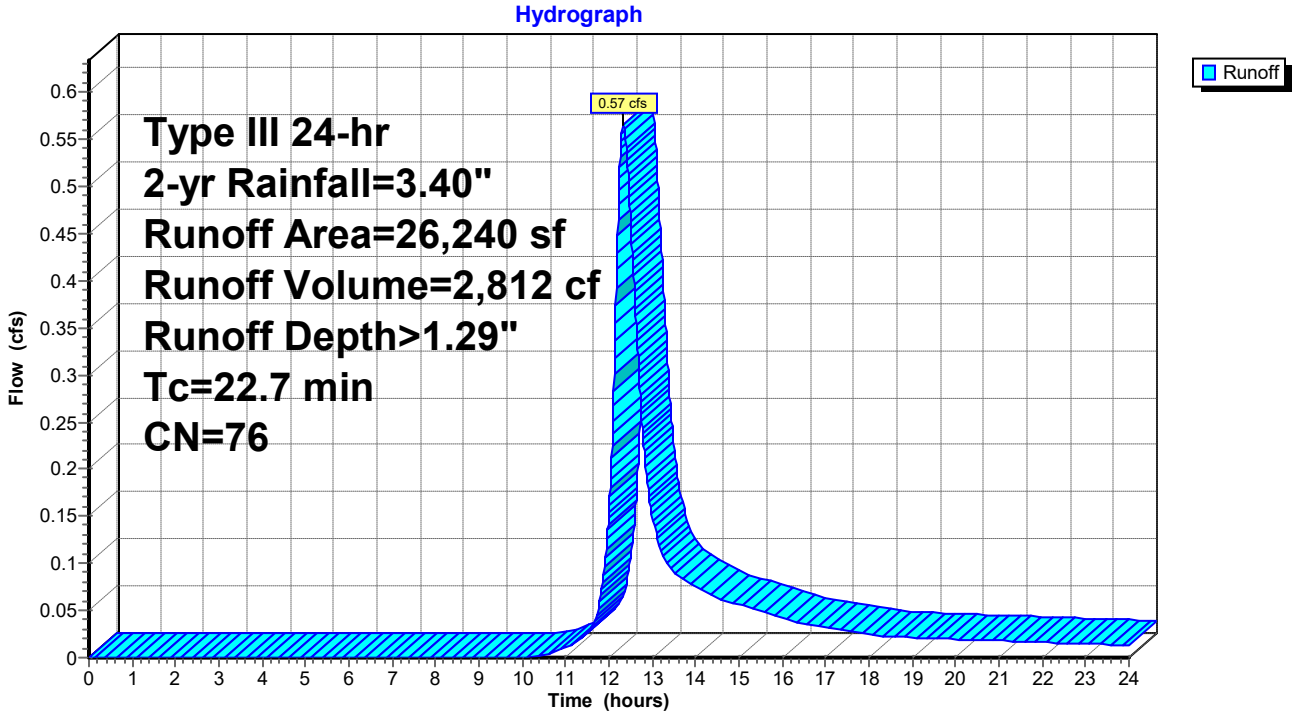
Runoff = 0.57 cfs @ 12.33 hrs, Volume= 2,812 cf, Depth> 1.29"
Routed to Link Sub B : SUB B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	6,749	98	Impervious
*	19,491	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	26,240	76	Weighted Average
	19,491		74.28% Pervious Area
	6,749		25.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.7					**Direct Entry,**

Subcatchment B4: WS-B4



Summary for Subcatchment B5: WS-B5

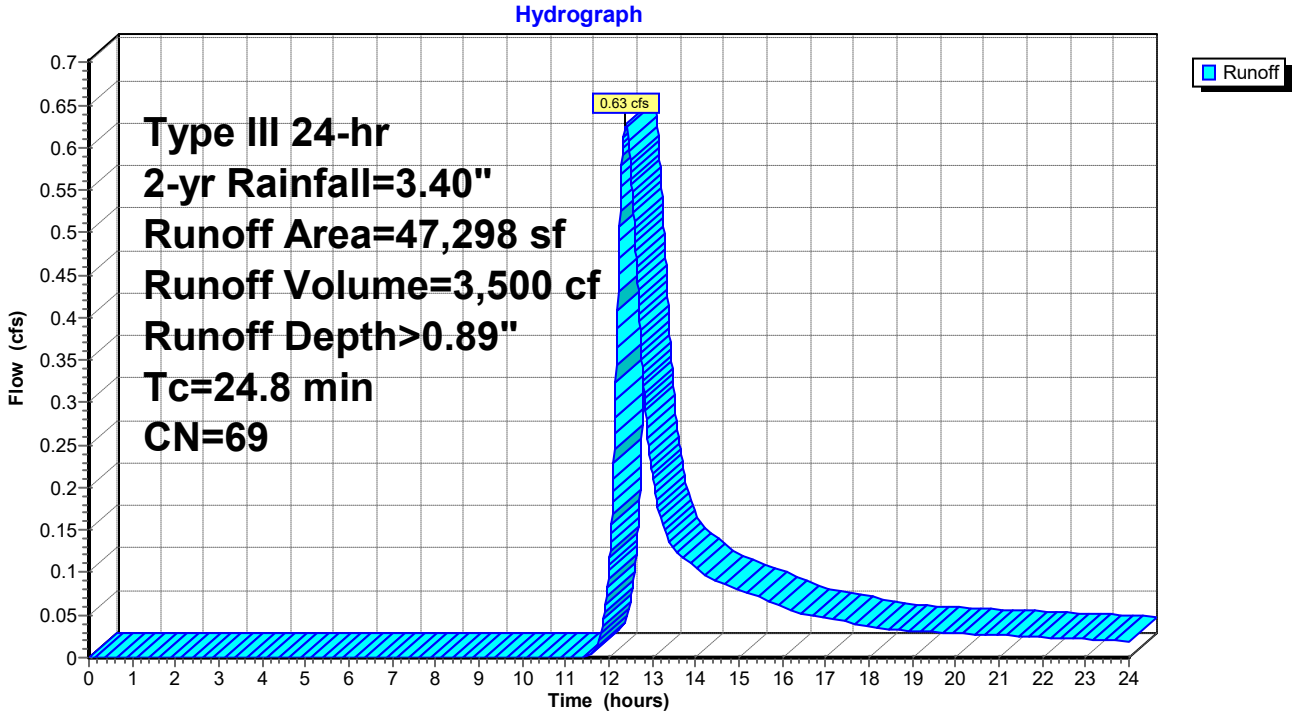
Runoff = 0.63 cfs @ 12.38 hrs, Volume= 3,500 cf, Depth> 0.89"
Routed to Pond YD40 : YD-40

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	2,488	98	Impervious
*	36,610	69	Lawn B
*	0	79	Lawn C
*	8,200	60	Forest B
*	0	73	Forest C
	47,298	69	Weighted Average
	44,810		94.74% Pervious Area
	2,488		5.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8					**Direct Entry,**

Subcatchment B5: WS-B5



Summary for Subcatchment B6: WS-B6

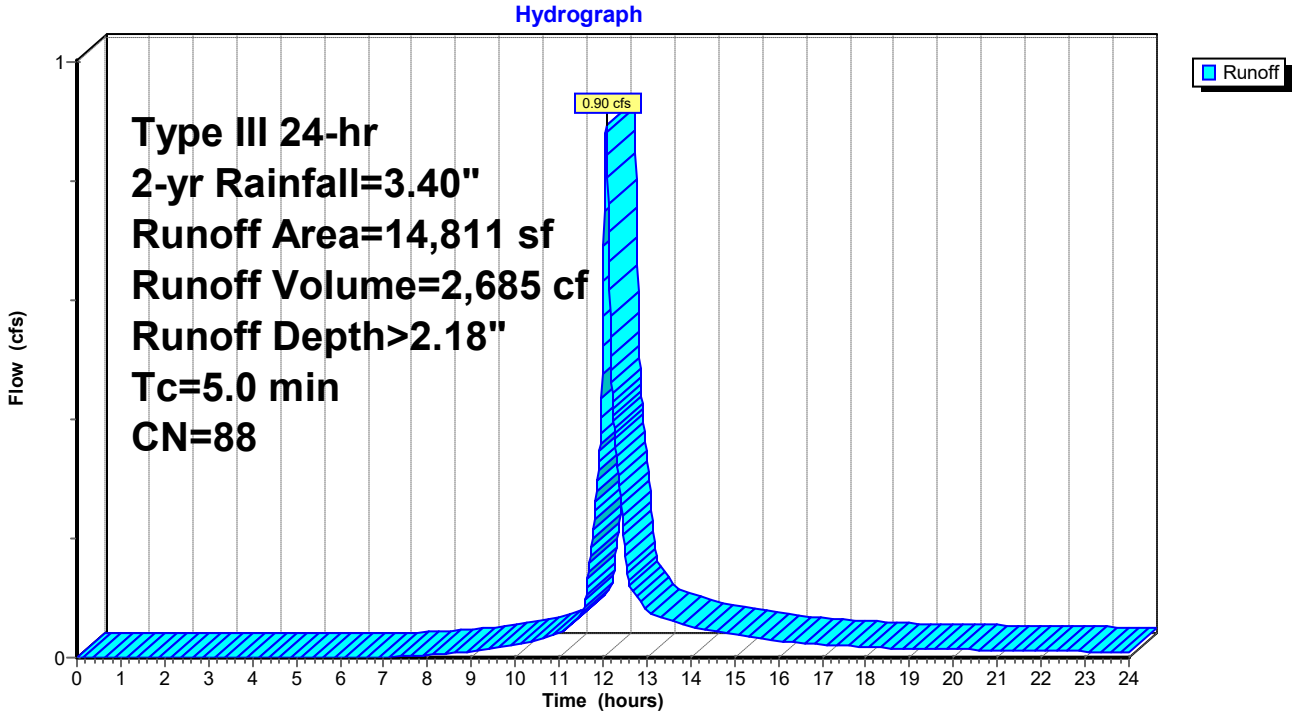
Runoff = 0.90 cfs @ 12.07 hrs, Volume= 2,685 cf, Depth> 2.18"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	9,953	98	Impervious
*	4,858	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	14,811	88	Weighted Average
	4,858		32.80% Pervious Area
	9,953		67.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment B6: WS-B6



Summary for Subcatchment C1: WS-C1

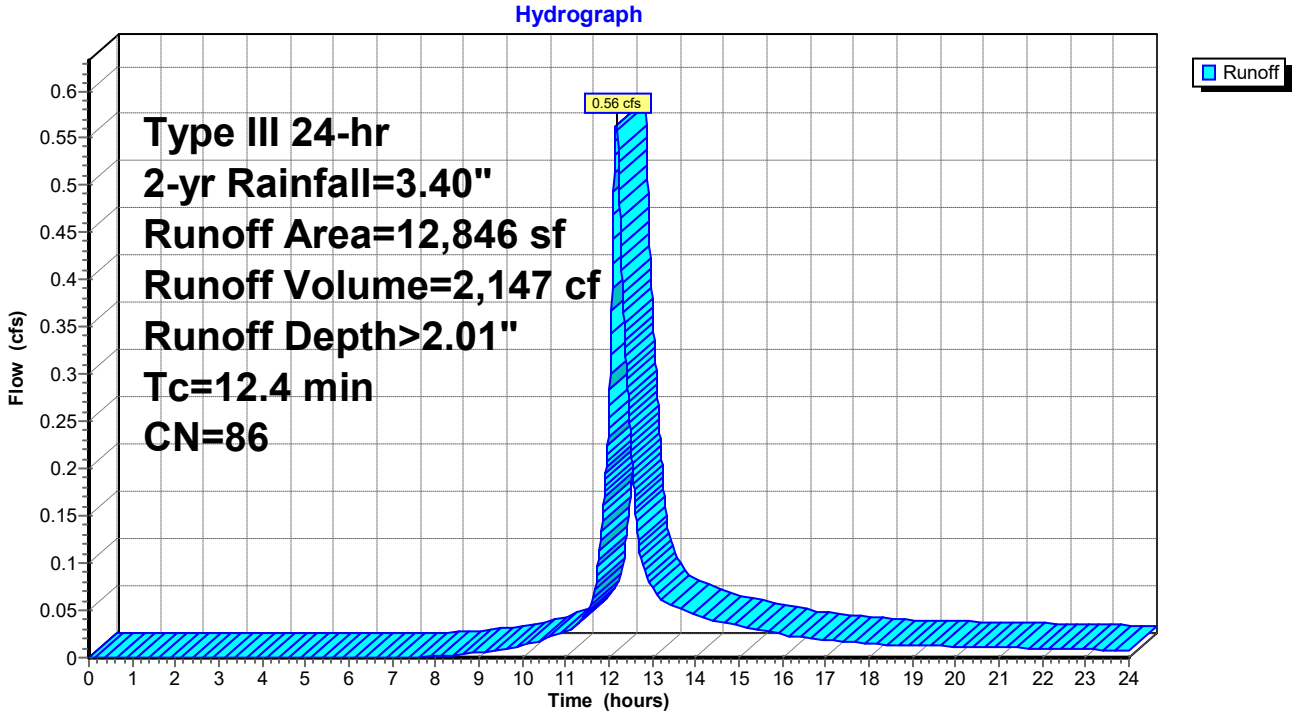
Runoff = 0.56 cfs @ 12.17 hrs, Volume= 2,147 cf, Depth> 2.01"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	5,006	98	Impervious
*	0	69	Lawn B
*	7,840	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	12,846	86	Weighted Average
	7,840		61.03% Pervious Area
	5,006		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4					**Direct Entry,**

Subcatchment C1: WS-C1



Summary for Subcatchment C2: WS-C2

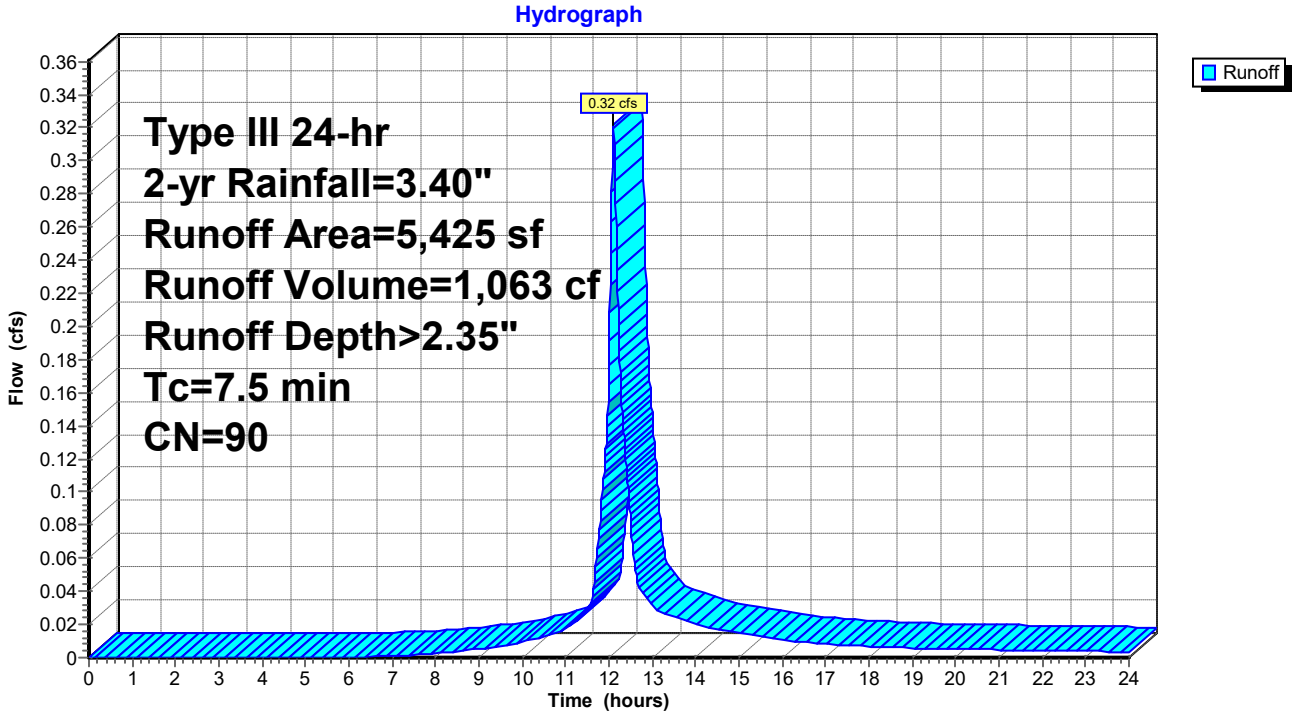
Runoff = 0.32 cfs @ 12.11 hrs, Volume= 1,063 cf, Depth> 2.35"
Routed to Pond RG03 : Rain Garden-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	3,093	98	Impervious
*	0	69	Lawn B
*	2,332	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	5,425	90	Weighted Average
	2,332		42.99% Pervious Area
	3,093		57.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5					**Direct Entry,**

Subcatchment C2: WS-C2



Summary for Subcatchment C3: WS-C3

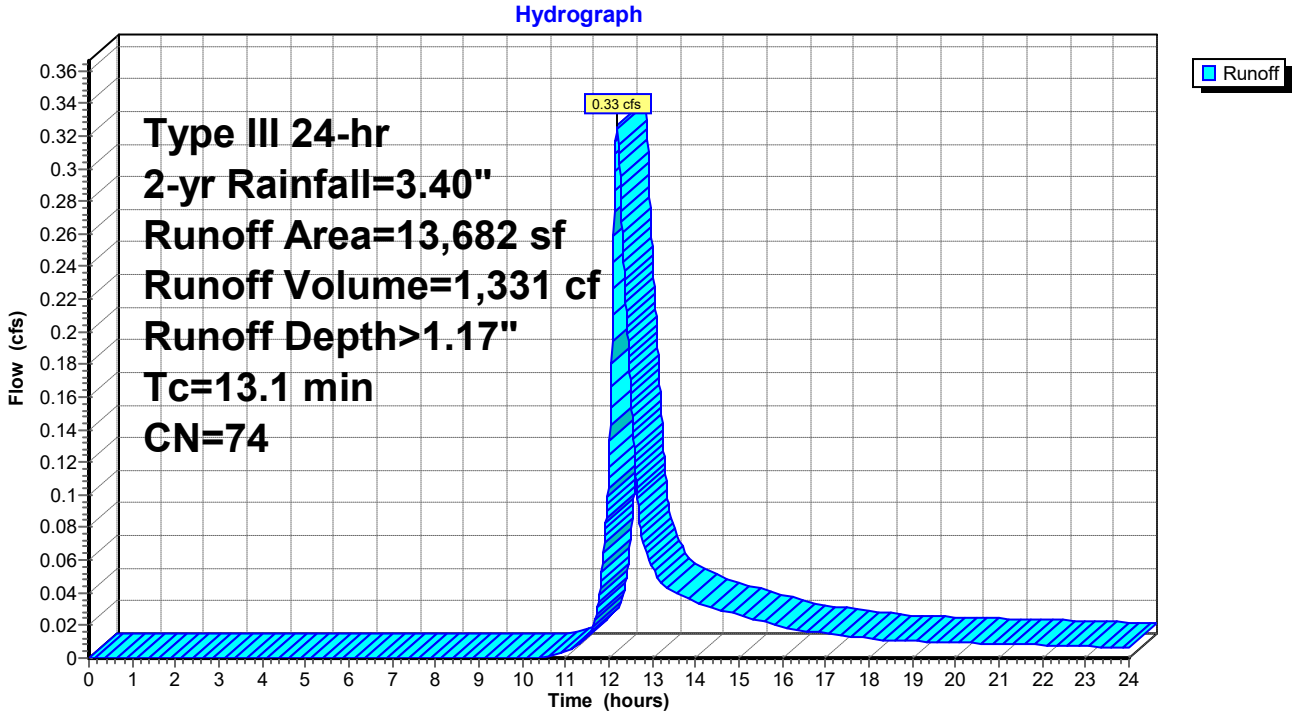
Runoff = 0.33 cfs @ 12.19 hrs, Volume= 1,331 cf, Depth> 1.17"
Routed to Pond DB03 : Detention-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	0	98	Impervious
*	143	69	Lawn B
*	5,032	79	Lawn C
*	1,722	60	Forest B
*	6,785	73	Forest C
	13,682	74	Weighted Average
	13,682		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1					**Direct Entry,**

Subcatchment C3: WS-C3



Summary for Subcatchment C4: WS-C4

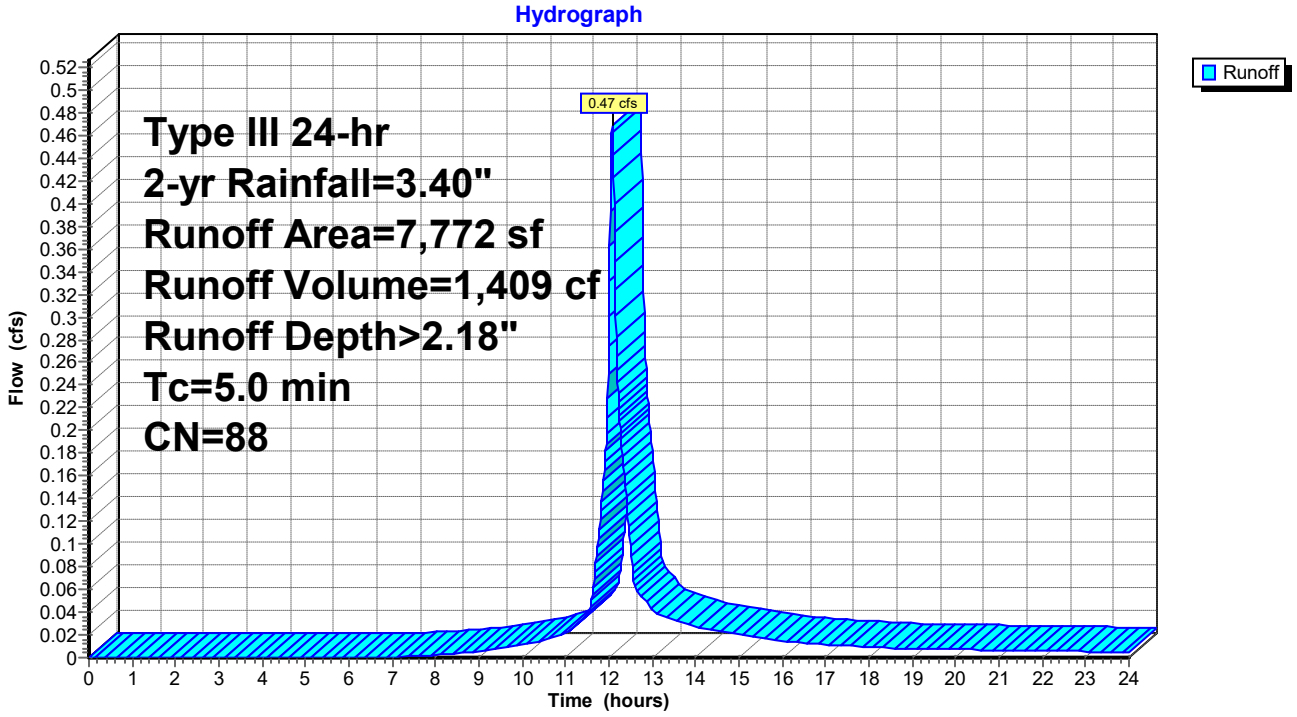
Runoff = 0.47 cfs @ 12.07 hrs, Volume= 1,409 cf, Depth> 2.18"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	3,764	98	Impervious
*	0	69	Lawn B
*	4,008	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	7,772	88	Weighted Average
	4,008		51.57% Pervious Area
	3,764		48.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C4: WS-C4



Summary for Subcatchment C5: WS-C5

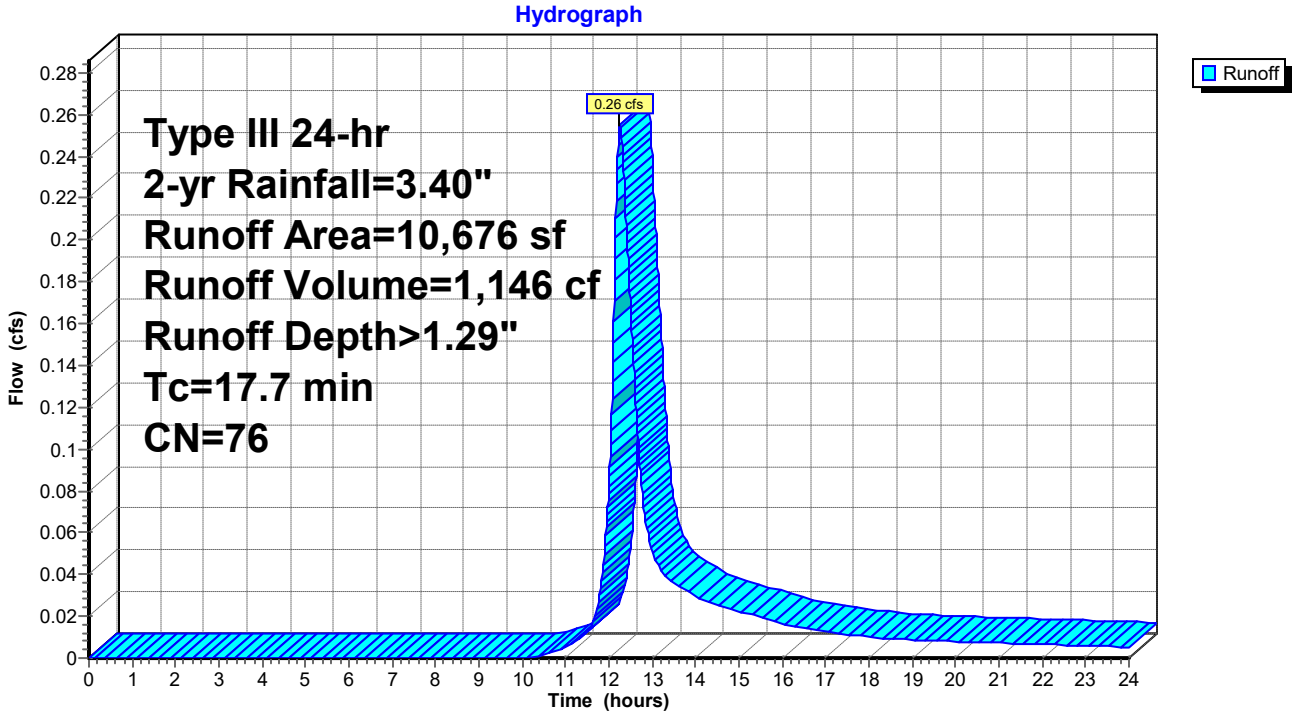
Runoff = 0.26 cfs @ 12.25 hrs, Volume= 1,146 cf, Depth> 1.29"
Routed to Pond DB02 : Detention-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	0	98	Impervious
*	209	69	Lawn B
*	6,162	79	Lawn C
*	569	60	Forest B
*	3,736	73	Forest C
	10,676	76	Weighted Average
	10,676		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7					**Direct Entry,**

Subcatchment C5: WS-C5



Summary for Subcatchment C6: WS-C6

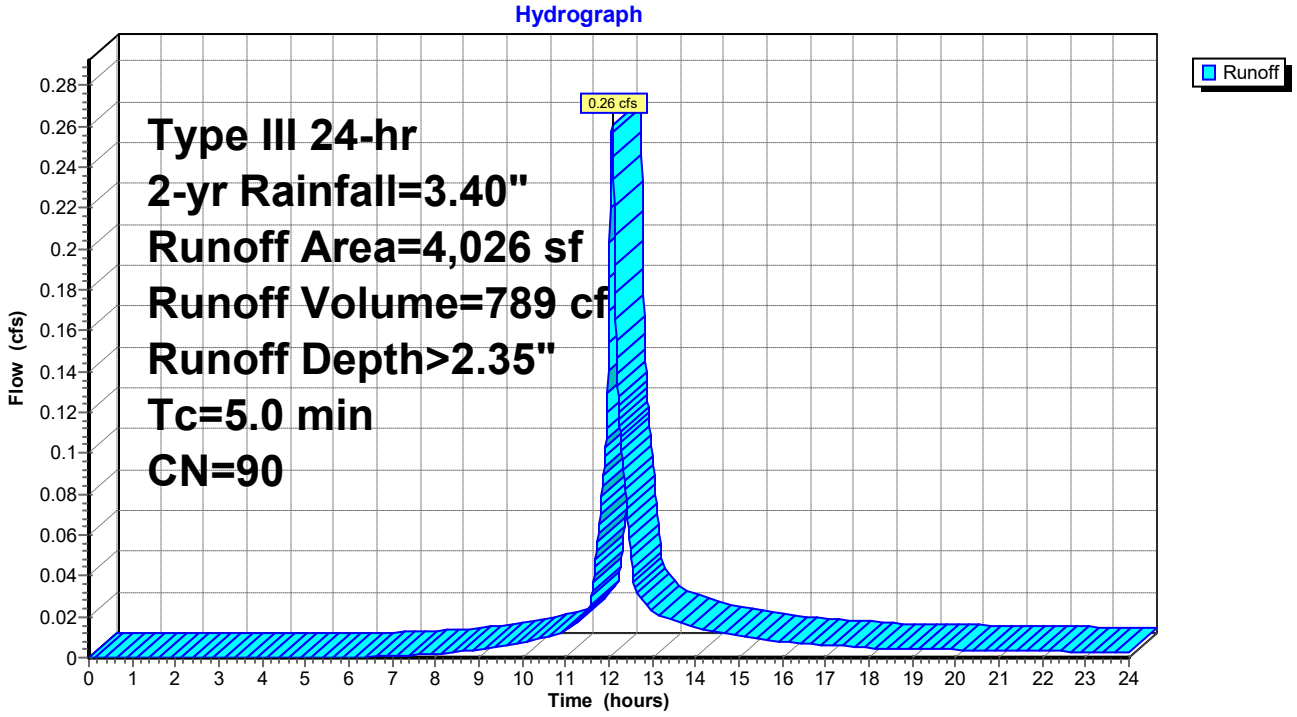
Runoff = 0.26 cfs @ 12.07 hrs, Volume= 789 cf, Depth> 2.35"
Routed to Pond RG06 : Rain Garden-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	2,854	98	Impervious
*	1,172	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	4,026	90	Weighted Average
	1,172		29.11% Pervious Area
	2,854		70.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C6: WS-C6



Summary for Subcatchment C7: WS-C7

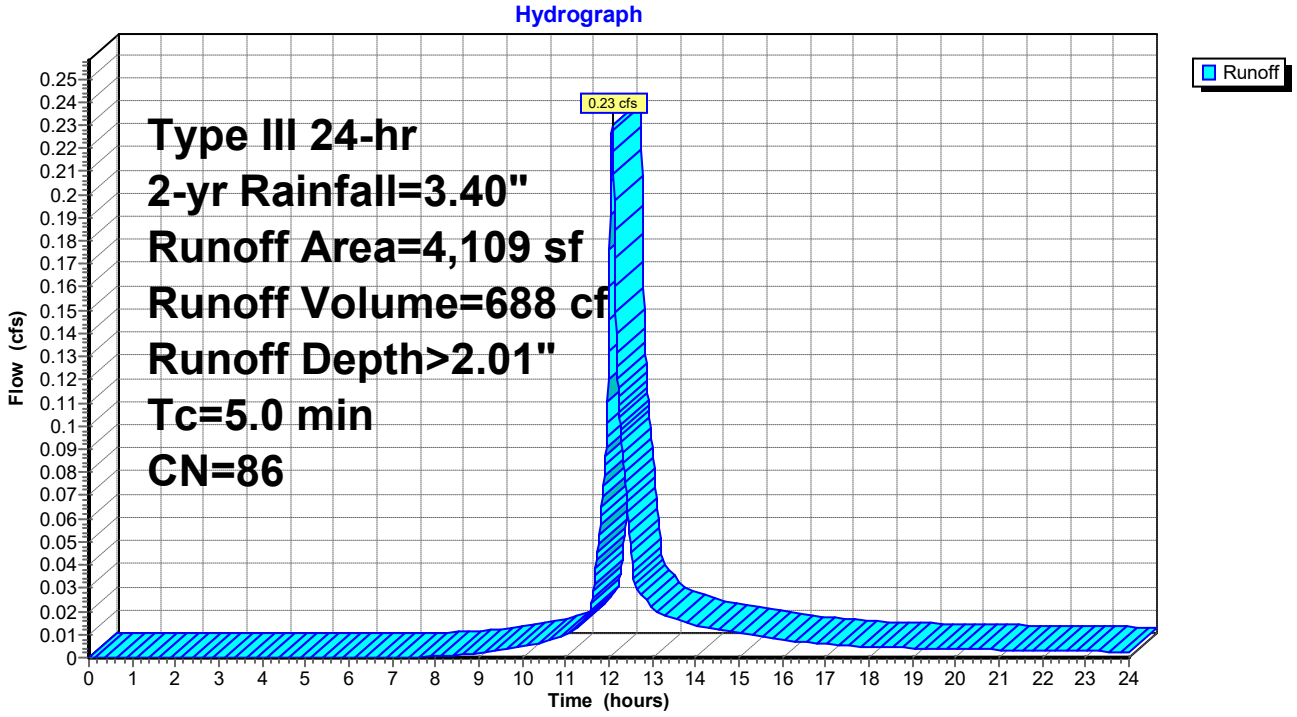
Runoff = 0.23 cfs @ 12.07 hrs, Volume= 688 cf, Depth> 2.01"
Routed to Pond RG07 : Rain Garden-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	2,402	98	Impervious
*	1,707	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	4,109	86	Weighted Average
	1,707		41.54% Pervious Area
	2,402		58.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C7: WS-C7



Summary for Subcatchment D1H: WS-D1H

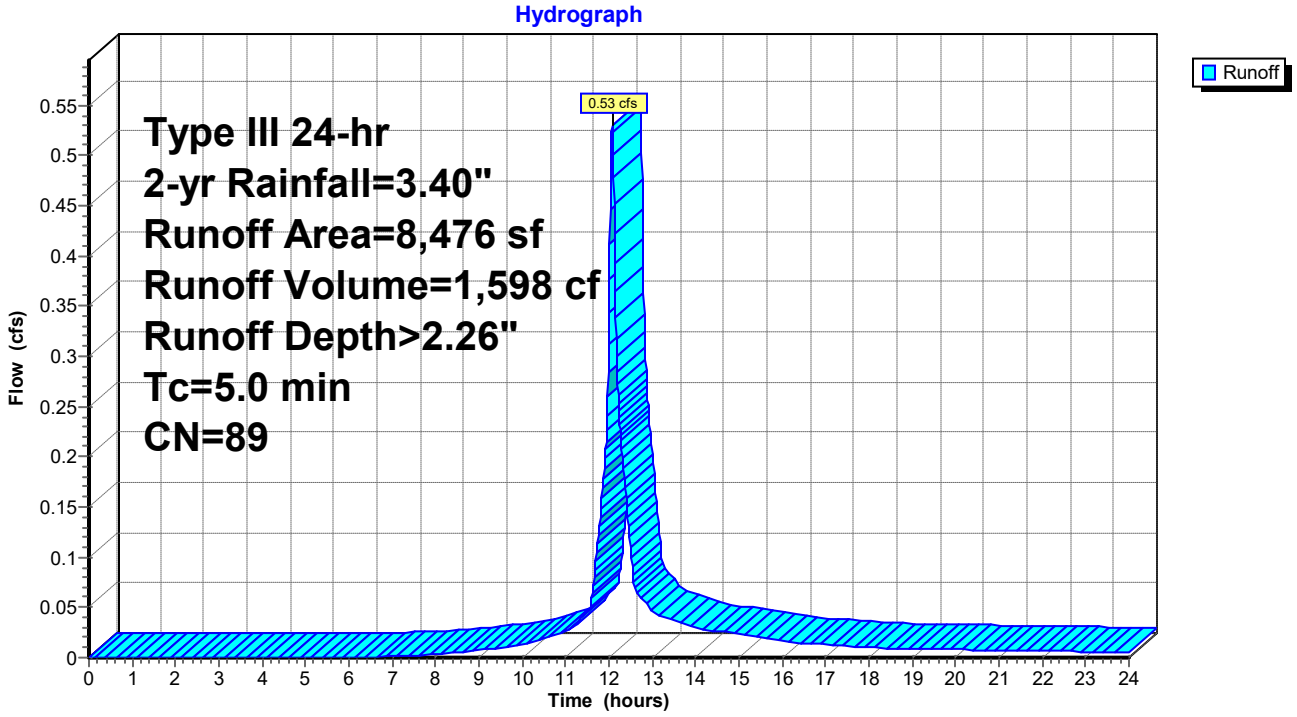
Runoff = 0.53 cfs @ 12.07 hrs, Volume= 1,598 cf, Depth> 2.26"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	5,649	98	Impervious
*	2,426	69	Lawn B
*	401	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	8,476	89	Weighted Average
	2,827		33.35% Pervious Area
	5,649		66.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D1H: WS-D1H



Summary for Subcatchment D2A: WS-D2A

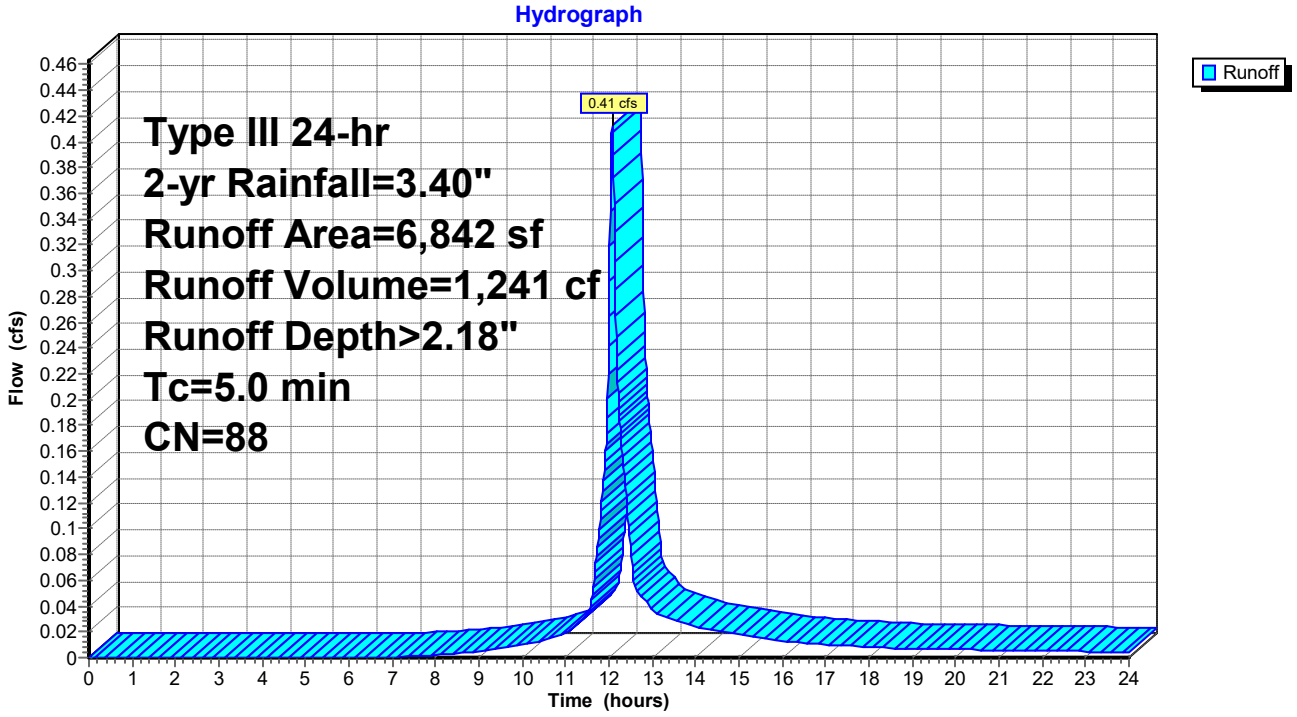
Runoff = 0.41 cfs @ 12.07 hrs, Volume= 1,241 cf, Depth> 2.18"
Routed to Pond 13P : Por Pvt-D2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	4,404	98	Impervious
*	2,438	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	6,842	88	Weighted Average
	2,438		35.63% Pervious Area
	4,404		64.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2A: WS-D2A



Summary for Subcatchment D2B: WS-D2B

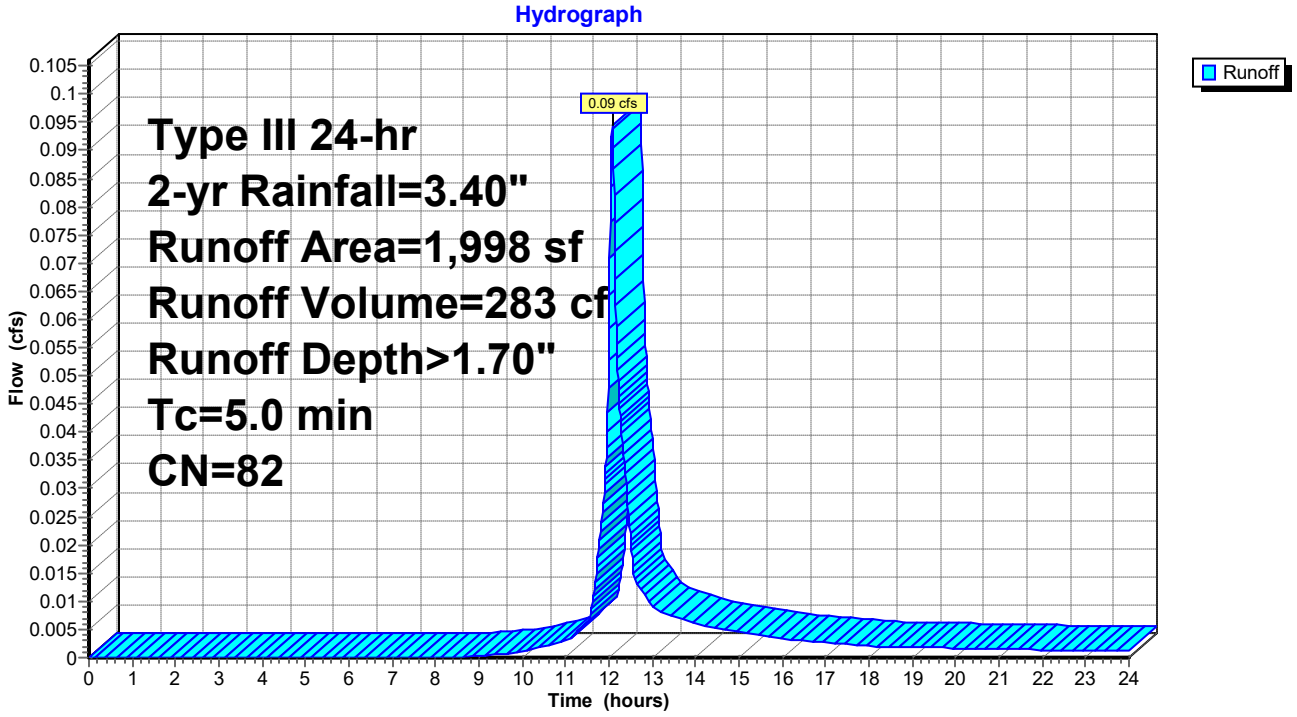
Runoff = 0.09 cfs @ 12.08 hrs, Volume= 283 cf, Depth> 1.70"
Routed to Pond 14P : Por Pvt-D2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	928	98	Impervious
*	1,070	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,998	82	Weighted Average
	1,070		53.55% Pervious Area
	928		46.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2B: WS-D2B



Summary for Subcatchment D2C: WS-D2C

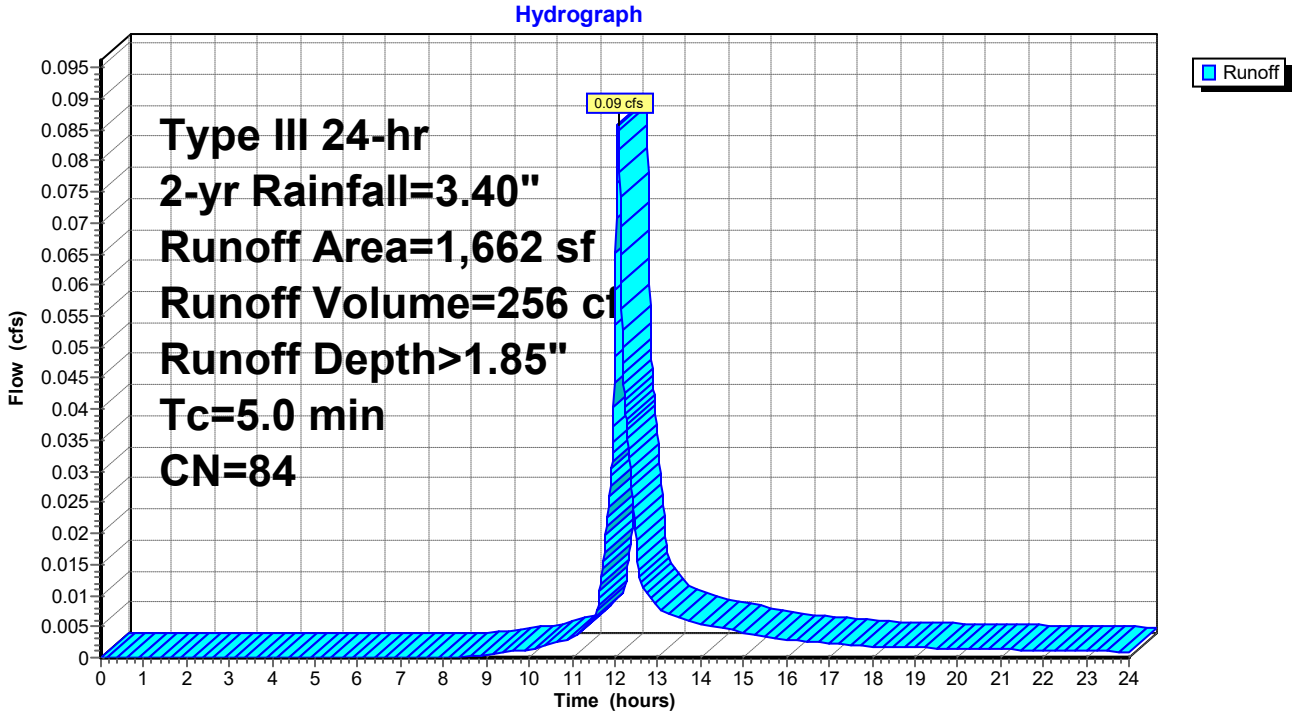
Runoff = 0.09 cfs @ 12.08 hrs, Volume= 256 cf, Depth> 1.85"
Routed to Pond 16P : Por Pvt-D2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	860	98	Impervious
*	802	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,662	84	Weighted Average
	802		48.26% Pervious Area
	860		51.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2C: WS-D2C



Summary for Subcatchment D2D: WS-D2D

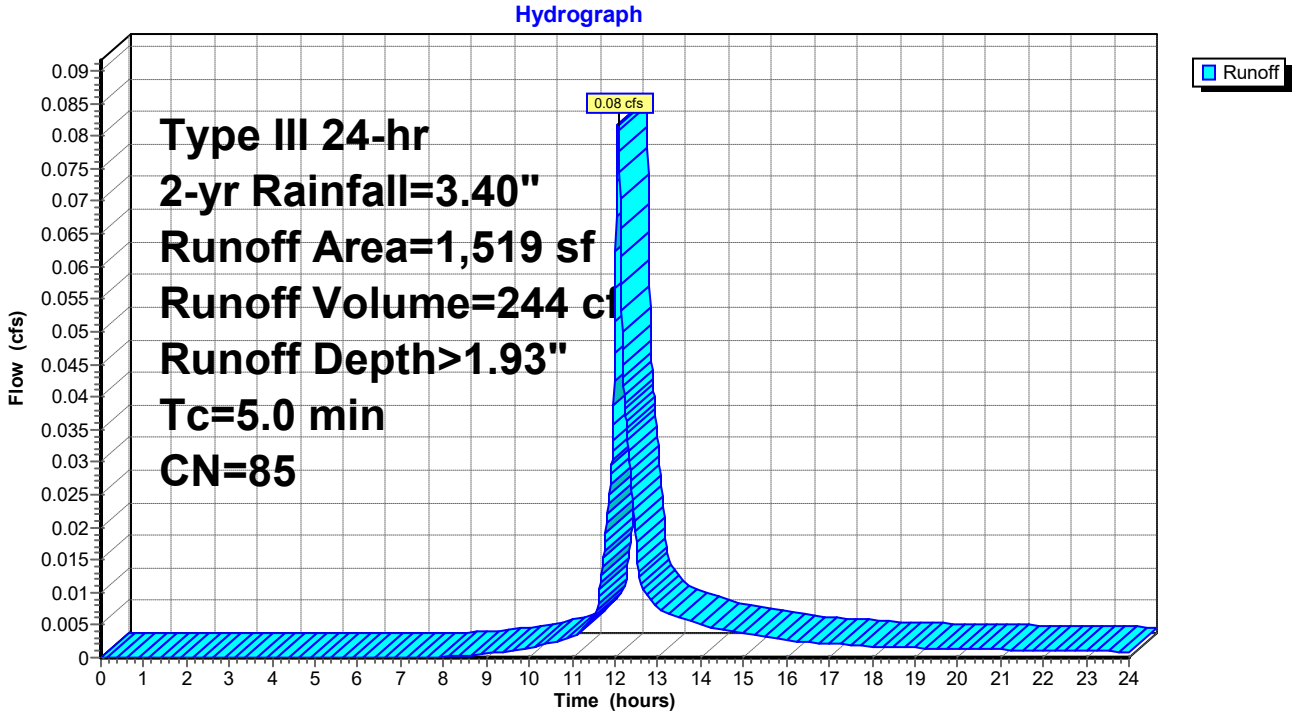
Runoff = 0.08 cfs @ 12.07 hrs, Volume= 244 cf, Depth> 1.93"
Routed to Pond 18P : Por Pvt-D2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	846	98	Impervious
*	673	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,519	85	Weighted Average
	673		44.31% Pervious Area
	846		55.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2D: WS-D2D



Summary for Subcatchment D2E: WS-D2E

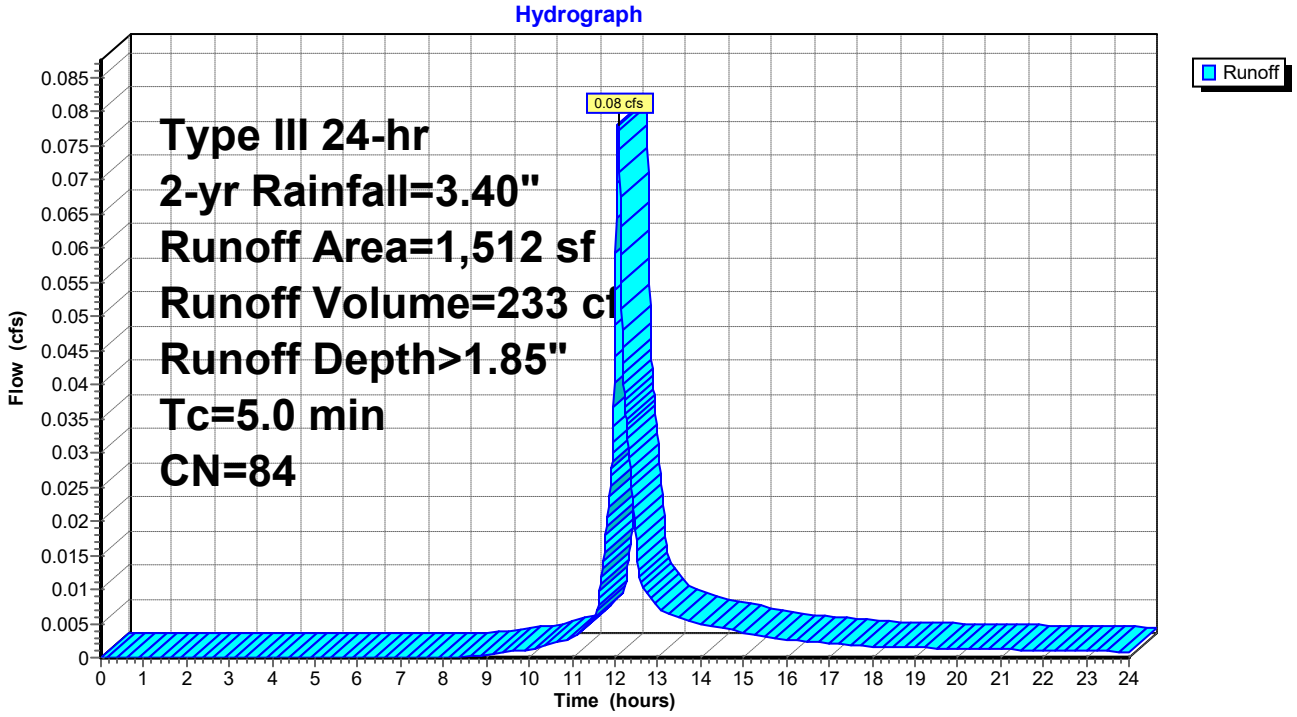
Runoff = 0.08 cfs @ 12.08 hrs, Volume= 233 cf, Depth> 1.85"
Routed to Pond 19P : Por Pvt-D2E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	808	98	Impervious
*	704	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,512	84	Weighted Average
	704		46.56% Pervious Area
	808		53.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2E: WS-D2E



Summary for Subcatchment D2F: WS-D2F

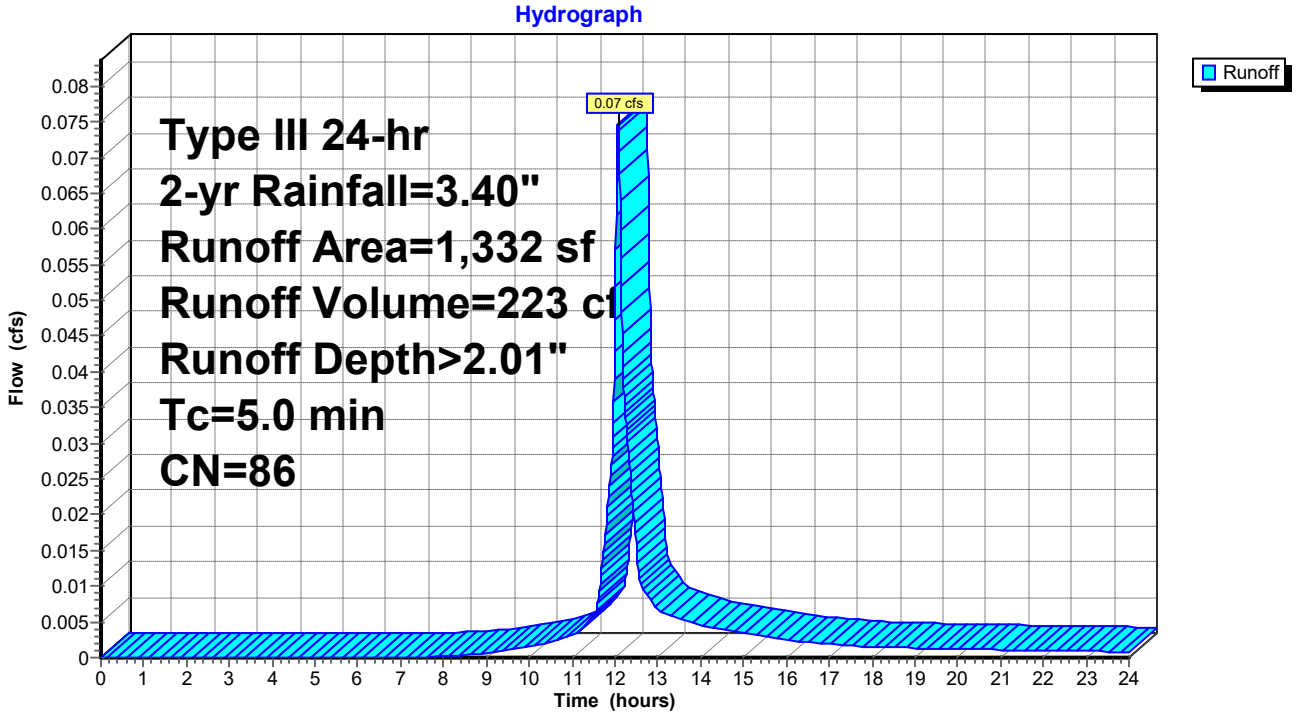
Runoff = 0.07 cfs @ 12.07 hrs, Volume= 223 cf, Depth> 2.01"
Routed to Pond 20P : Por Pvt-D2F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	800	98	Impervious
*	532	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,332	86	Weighted Average
	532		39.94% Pervious Area
	800		60.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2F: WS-D2F



Summary for Subcatchment D2G: WS-D2G

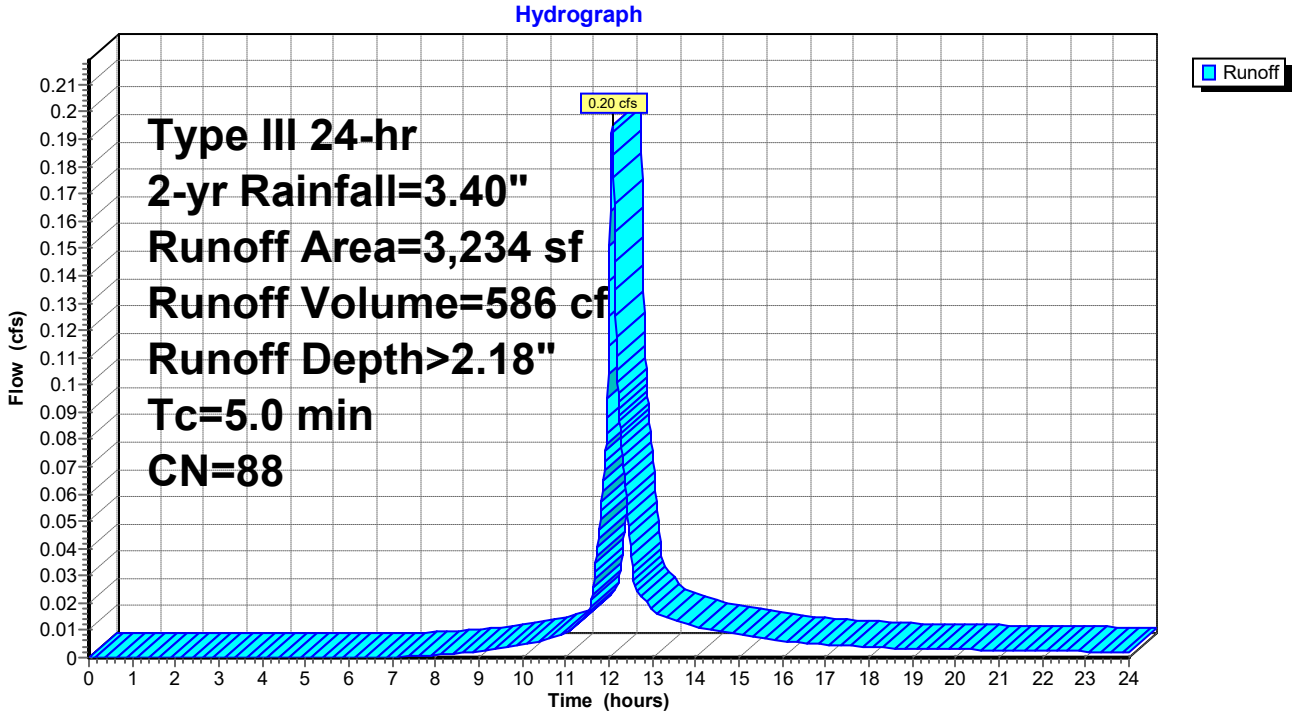
Runoff = 0.20 cfs @ 12.07 hrs, Volume= 586 cf, Depth> 2.18"
Routed to Pond 21P : Por Pvt-D2G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	1,833	98	Impervious
*	555	69	Lawn B
*	846	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	3,234	88	Weighted Average
	1,401		43.32% Pervious Area
	1,833		56.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2G: WS-D2G



Summary for Subcatchment D3: WS-D3

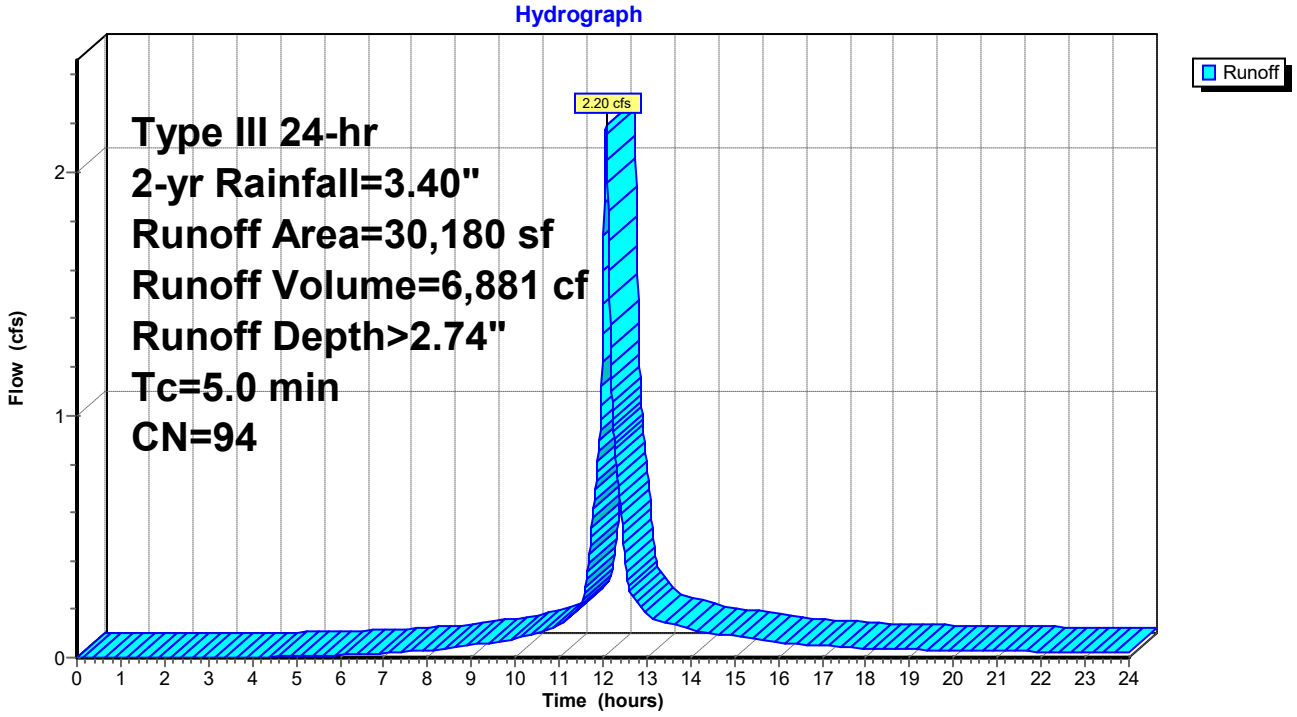
Runoff = 2.20 cfs @ 12.07 hrs, Volume= 6,881 cf, Depth> 2.74"
Routed to Pond PP03 : Por Pvt-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	23,042	98	Impervious
*	0	69	Lawn B
*	7,138	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	30,180	94	Weighted Average
	7,138		23.65% Pervious Area
	23,042		76.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D3: WS-D3



Summary for Subcatchment D4: WS-D4

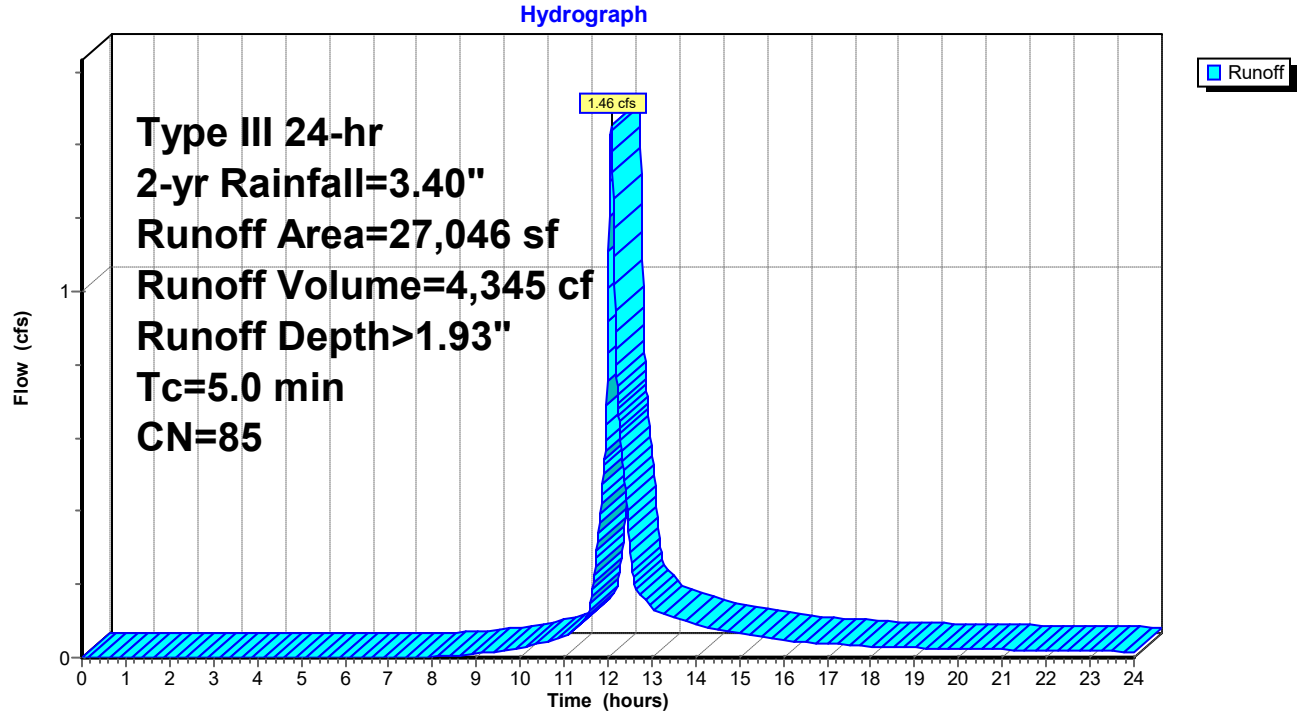
Runoff = 1.46 cfs @ 12.07 hrs, Volume= 4,345 cf, Depth> 1.93"
Routed to Pond PP07 : Por Pvt-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	14,753	98	Impervious
*	12,293	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	27,046	85	Weighted Average
	12,293		45.45% Pervious Area
	14,753		54.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D4: WS-D4



Summary for Subcatchment D5: WS-D5

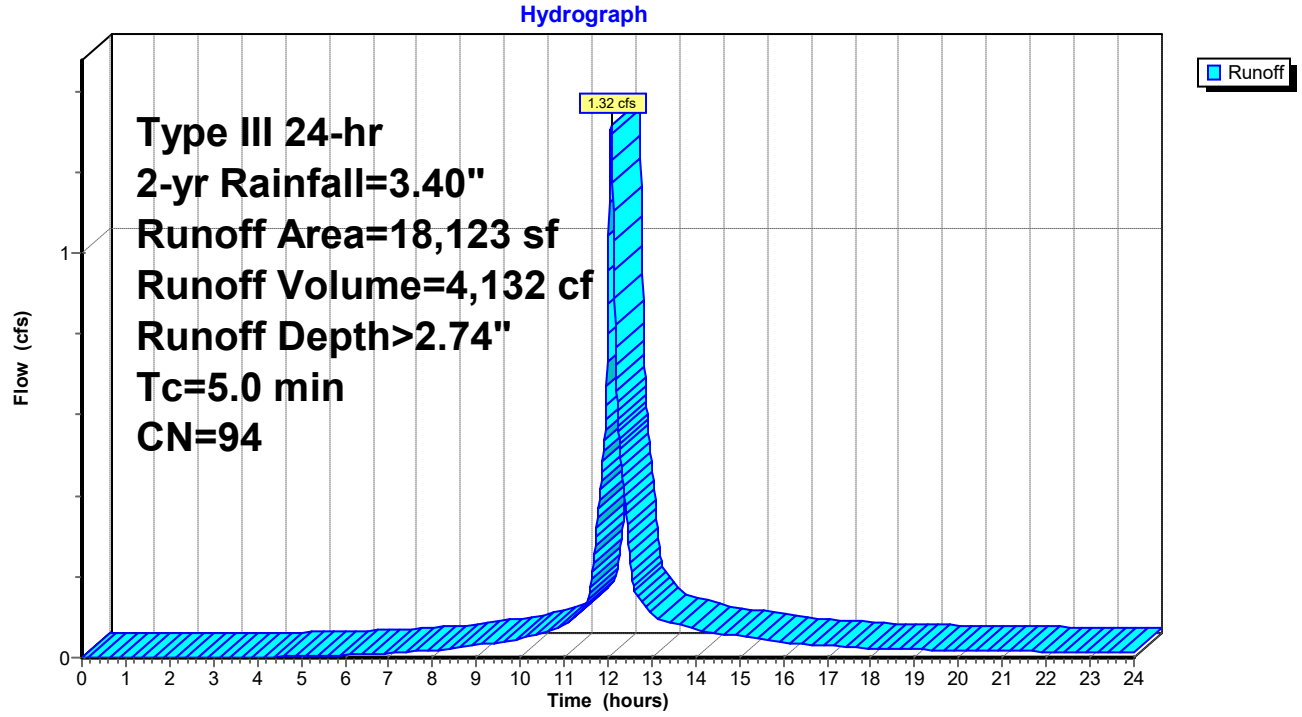
Runoff = 1.32 cfs @ 12.07 hrs, Volume= 4,132 cf, Depth> 2.74"
Routed to Pond PP02 : Por Pvt-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	14,849	98	Impervious
*	0	69	Lawn B
*	720	79	Lawn C
*	0	60	Forest B
*	2,554	73	Forest C
	18,123	94	Weighted Average
	3,274		18.07% Pervious Area
	14,849		81.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D5: WS-D5



Summary for Subcatchment D6: WS-D6

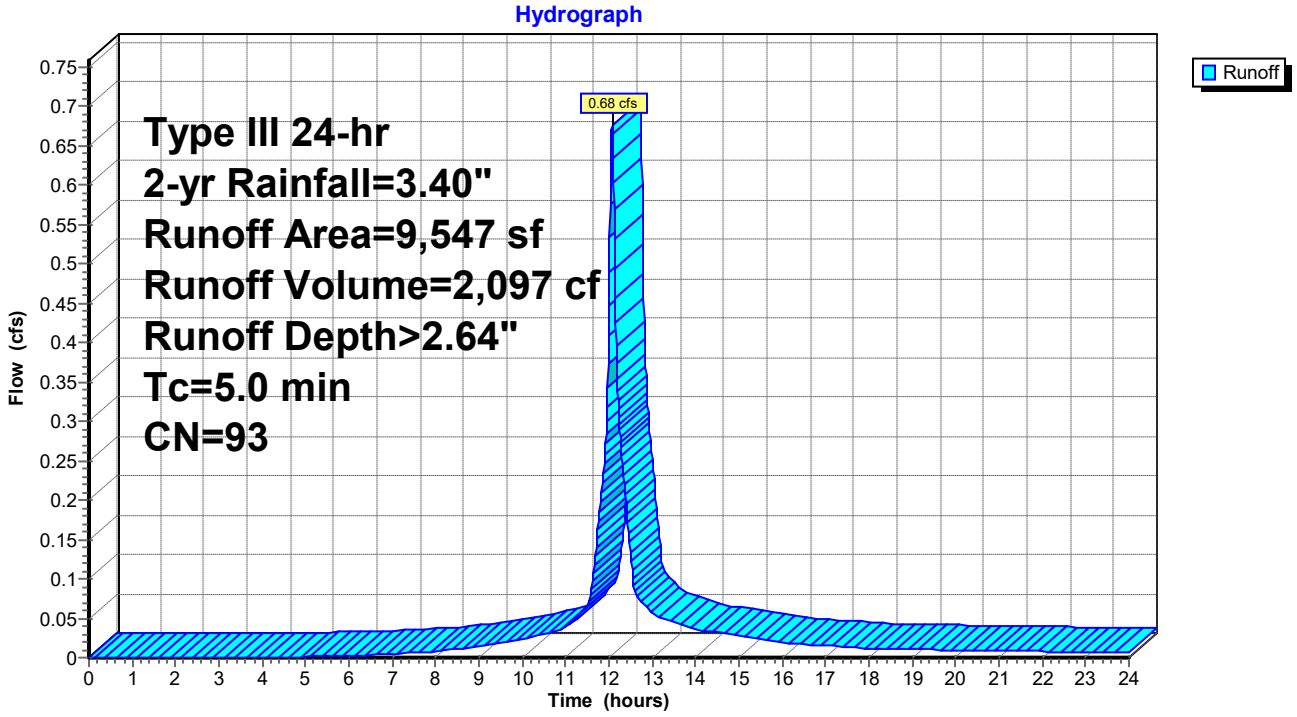
Runoff = 0.68 cfs @ 12.07 hrs, Volume= 2,097 cf, Depth> 2.64"
Routed to Pond PP04 : Por Pvt-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	6,988	98	Impervious
*	0	69	Lawn B
*	2,559	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	9,547	93	Weighted Average
	2,559		26.80% Pervious Area
	6,988		73.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D6: WS-D6



Summary for Subcatchment D7: WS-D7

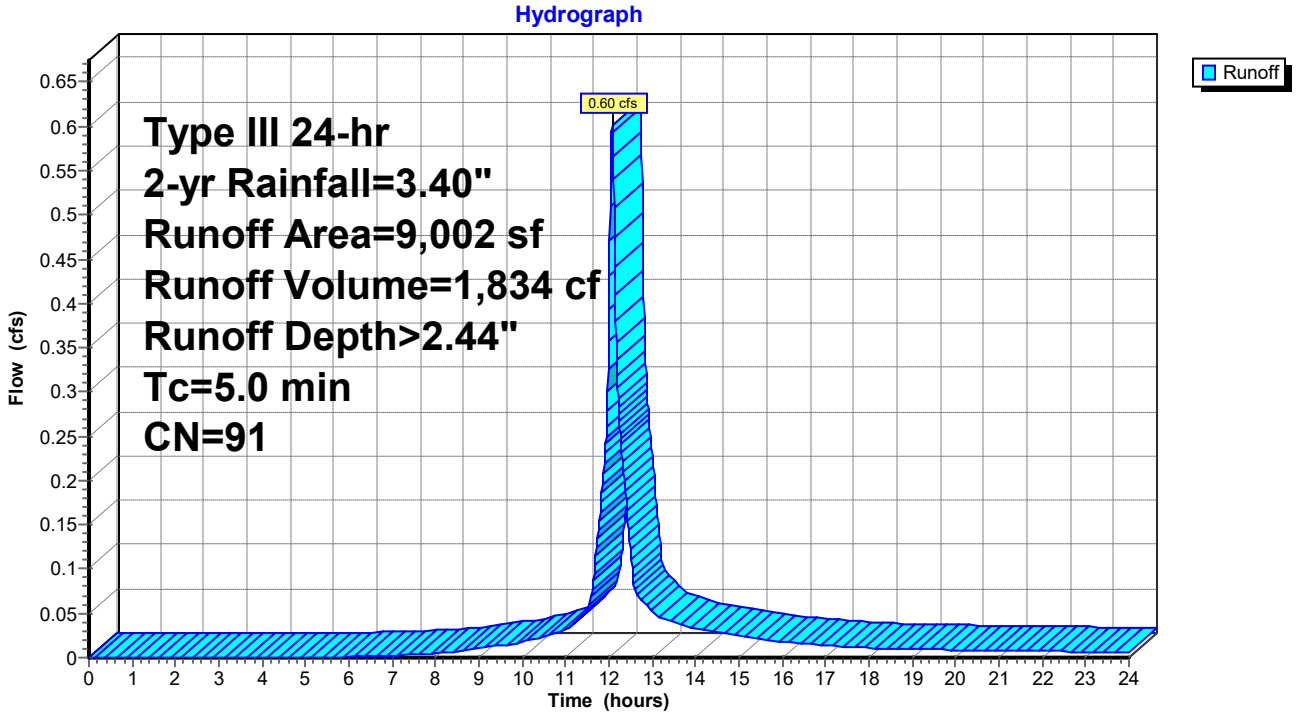
Runoff = 0.60 cfs @ 12.07 hrs, Volume= 1,834 cf, Depth> 2.44"
Routed to Pond PP05 : Por Pvt-05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	6,727	98	Impervious
*	1,674	69	Lawn B
*	601	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	9,002	91	Weighted Average
	2,275		25.27% Pervious Area
	6,727		74.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D7: WS-D7



Summary for Subcatchment D8: WS-D8

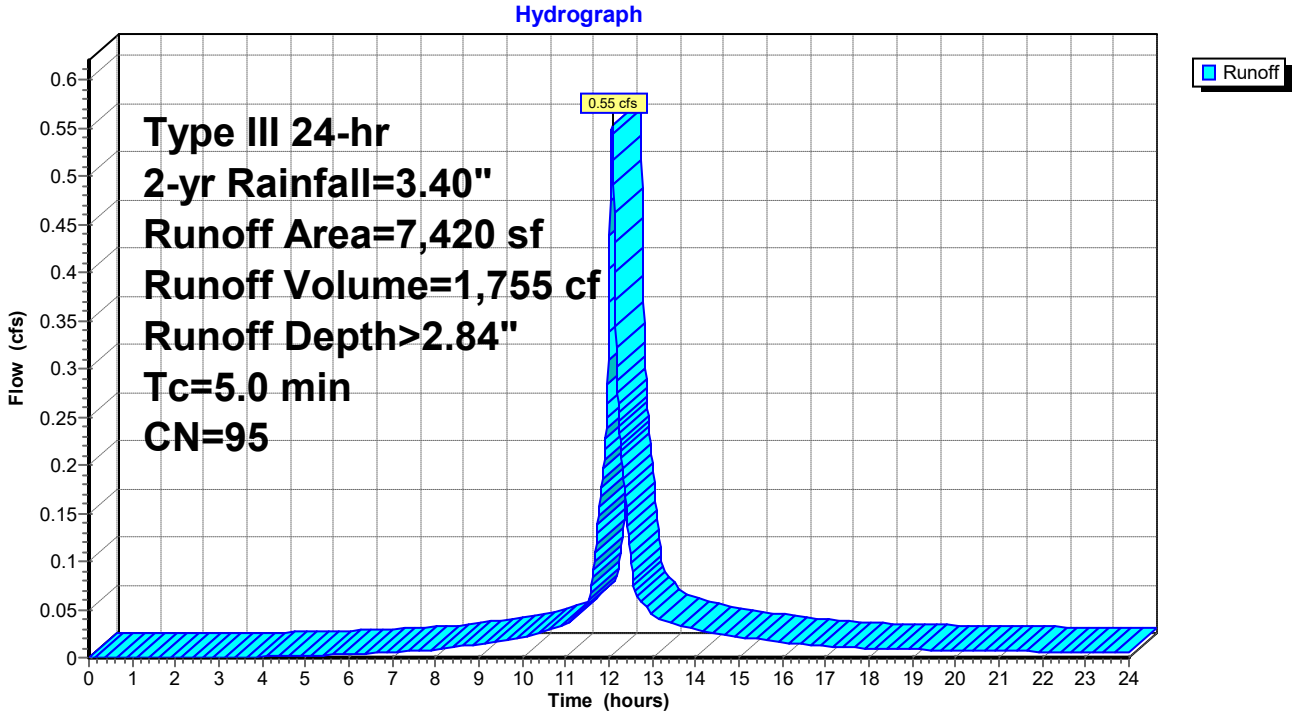
Runoff = 0.55 cfs @ 12.07 hrs, Volume= 1,755 cf, Depth> 2.84"
Routed to Pond PP06 : Por Pvt-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	6,549	98	Impervious
*	871	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	7,420	95	Weighted Average
	871		11.74% Pervious Area
	6,549		88.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D8: WS-D8



Summary for Subcatchment E1: WS-E1

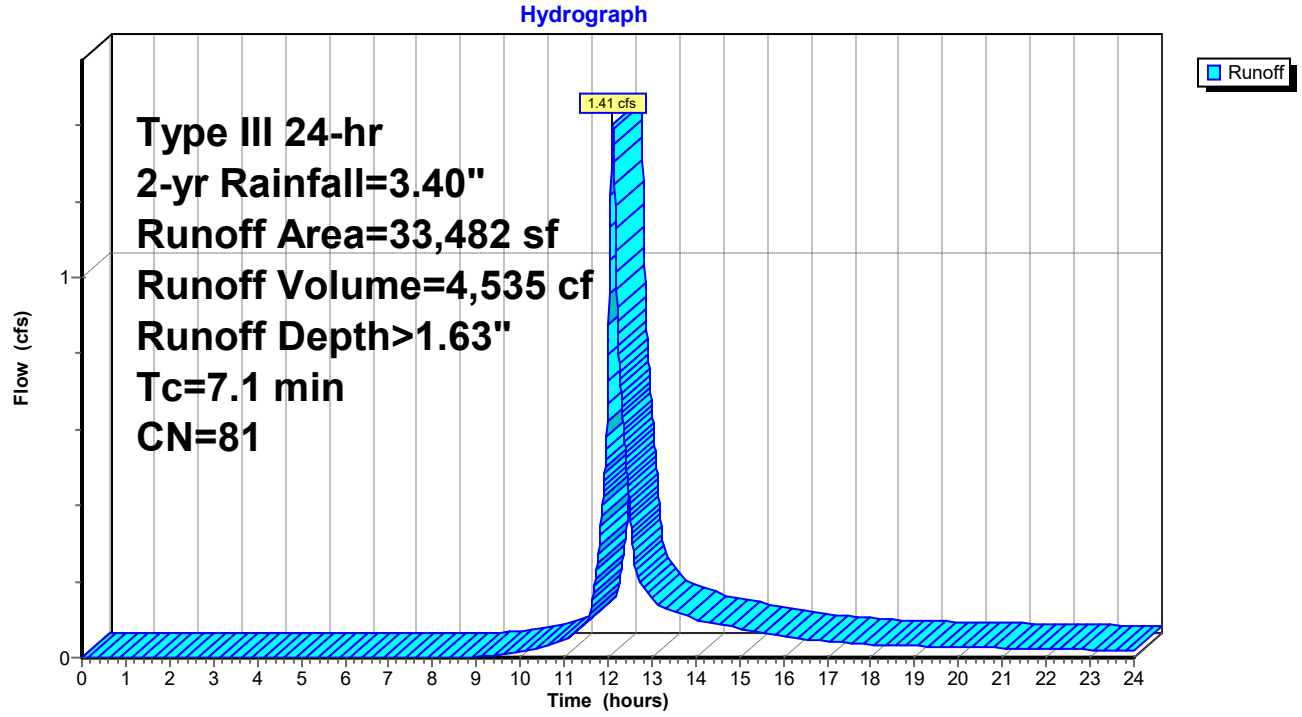
Runoff = 1.41 cfs @ 12.11 hrs, Volume= 4,535 cf, Depth> 1.63"
Routed to Pond UI02 : Und Inf 02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	10,193	98	Impervious
*	1,931	69	Lawn B
*	9,074	79	Lawn C
*	3,193	60	Forest B
*	9,091	73	Forest C
	33,482	81	Weighted Average
	23,289		69.56% Pervious Area
	10,193		30.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1					**Direct Entry,**

Subcatchment E1: WS-E1



Summary for Subcatchment E2: WS-E2

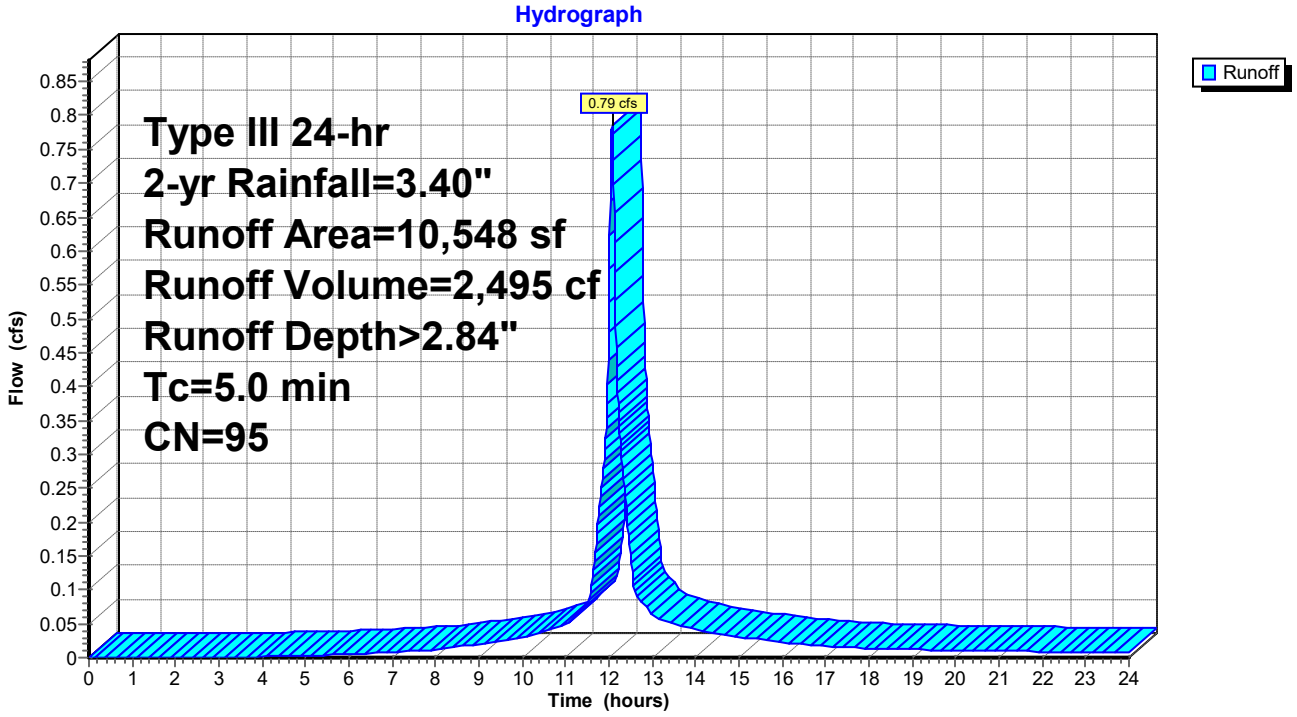
Runoff = 0.79 cfs @ 12.07 hrs, Volume= 2,495 cf, Depth> 2.84"
Routed to Pond RG04 : Rain Garden-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	8,740	98	Impervious
*	0	69	Lawn B
*	1,808	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	10,548	95	Weighted Average
	1,808		17.14% Pervious Area
	8,740		82.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment E2: WS-E2



Summary for Subcatchment R4: Roof-04

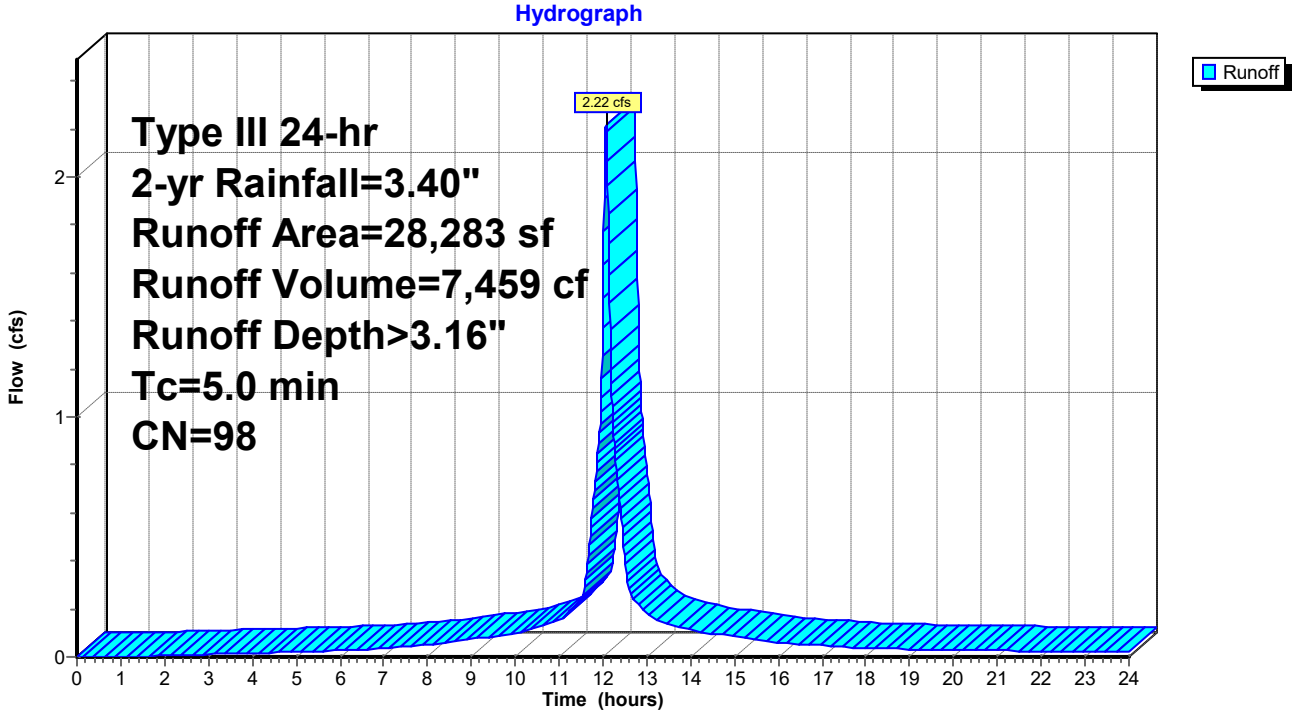
Runoff = 2.22 cfs @ 12.07 hrs, Volume= 7,459 cf, Depth> 3.16"
Routed to Pond UI01 : Und Inf 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	28,283	98	Impervious
	28,283		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment R4: Roof-04



Summary for Subcatchment R5: Roof-05

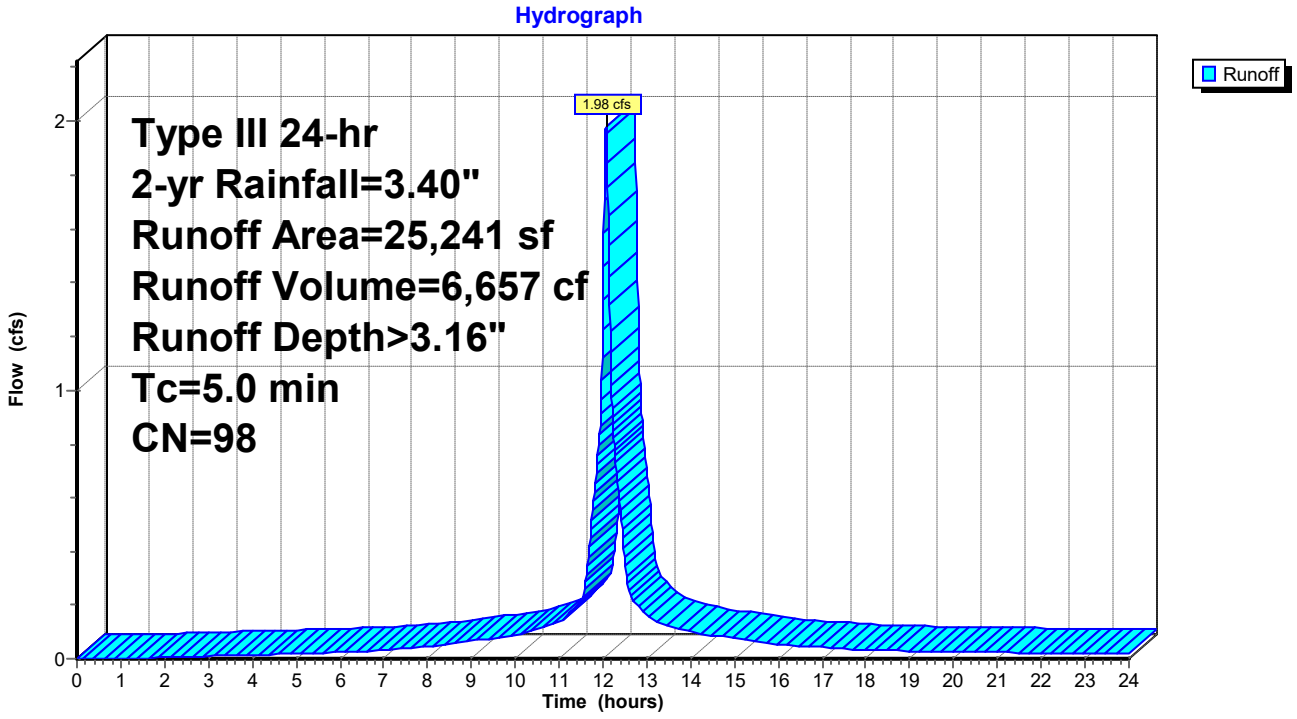
Runoff = 1.98 cfs @ 12.07 hrs, Volume= 6,657 cf, Depth> 3.16"
Routed to Pond UI01 : Und Inf 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

	Area (sf)	CN	Description
*	25,241	98	Impervious
*	0	79	Lawn C
	25,241	98	Weighted Average
	25,241		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment R5: Roof-05



Summary for Pond 13P: Por Pvt-D2A

Porous Pavement in Parking Spaces Only

Inflow Area = 16,536 sf, 85.26% Impervious, Inflow Depth > 2.76" for 2-yr event
Inflow = 1.18 cfs @ 12.07 hrs, Volume= 3,797 cf
Outflow = 0.13 cfs @ 12.68 hrs, Volume= 1,619 cf, Atten= 89%, Lag= 36.5 min
Primary = 0.13 cfs @ 12.68 hrs, Volume= 1,619 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 14P : Por Pvt-D2B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.09' @ 12.68 hrs Surf.Area= 2,848 sf Storage= 2,393 cf

Plug-Flow detention time= 309.0 min calculated for 1,619 cf (43% of inflow)
Center-of-Mass det. time= 174.7 min (947.2 - 772.5)

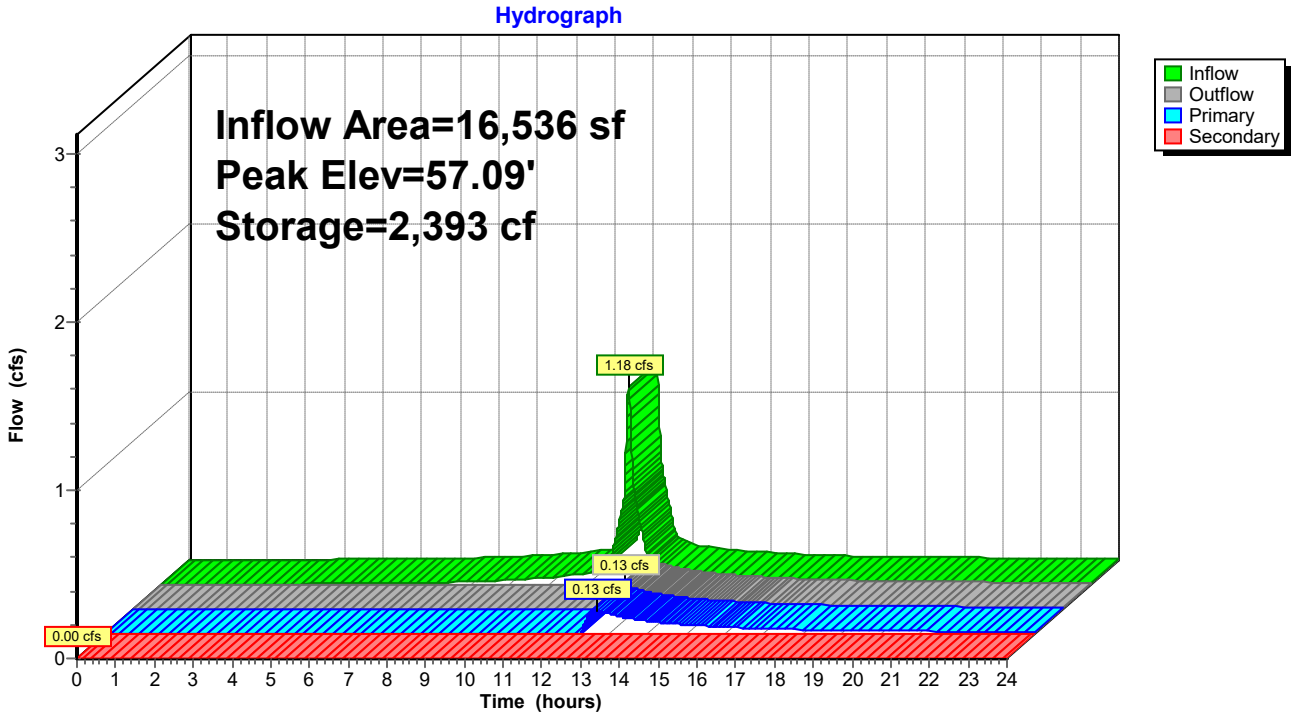
Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	5,683 cf	**20.00'W x 142.40'L x 5.00'H Porous Pavment** 14,240 cf Overall - 32 cf Embedded = 14,208 cf x 40.0% Voids
#2	56.84'	32 cf	**6.0" Round 6" underdrain** Inside #1 L= 162.0'
		5,715 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	56.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.84' / 56.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	59.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.13 cfs @ 12.68 hrs HW=57.09' TW=43.04' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.13 cfs @ 1.35 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=55.00' TW=53.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 13P: Por Pvt-D2A



Summary for Pond 14P: Por Pvt-D2B

Porous Pavement in Parking Spaces Only

Inflow Area = 1,998 sf, 46.45% Impervious, Inflow Depth > 1.70" for 2-yr event
Inflow = 0.09 cfs @ 12.08 hrs, Volume= 283 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 16P : Por Pvt-D2C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 53.89' @ 24.00 hrs Surf.Area= 796 sf Storage= 283 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

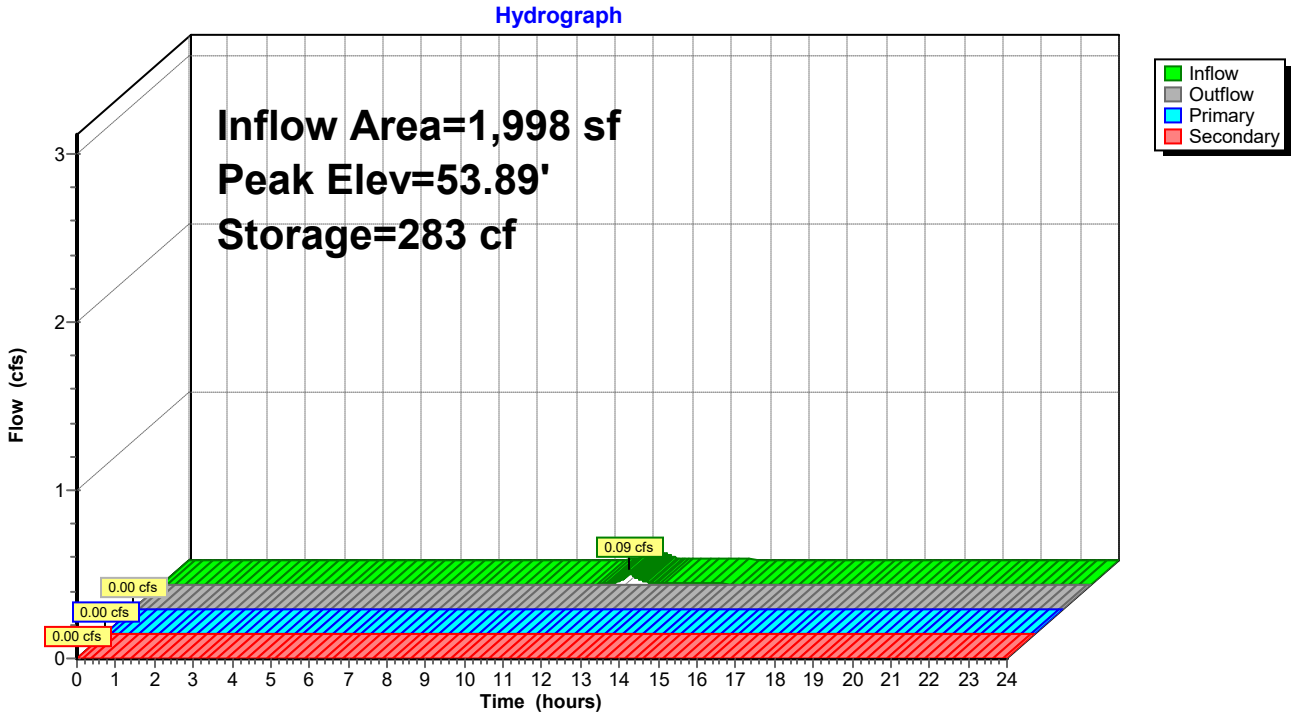
Volume	Invert	Avail.Storage	Storage Description
#1	53.00'	1,588 cf	**20.00'W x 39.80'L x 5.00'H Porous Pavment** 3,980 cf Overall - 11 cf Embedded = 3,969 cf x 40.0% Voids
#2	54.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 55.0'
		1,598 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	54.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 54.84' / 54.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	57.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=53.00' TW=42.54' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=53.00' TW=51.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 14P: Por Pvt-D2B



Summary for Pond 15P: Por Pvt-D1H

Porous Pavement in Parking Spaces Only

Inflow Area = 36,236 sf, 92.20% Impervious, Inflow Depth > 2.95" for 2-yr event
Inflow = 2.71 cfs @ 12.07 hrs, Volume= 8,919 cf
Outflow = 0.75 cfs @ 12.40 hrs, Volume= 6,100 cf, Atten= 72%, Lag= 19.8 min
Primary = 0.75 cfs @ 12.40 hrs, Volume= 6,100 cf
Routed to Pond YD33 : YD-33
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 13P : Por Pvt-D2A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 58.17' @ 12.40 hrs Surf.Area= 3,618 sf Storage= 4,616 cf

Plug-Flow detention time= 204.0 min calculated for 6,100 cf (68% of inflow)
Center-of-Mass det. time= 107.9 min (871.2 - 763.3)

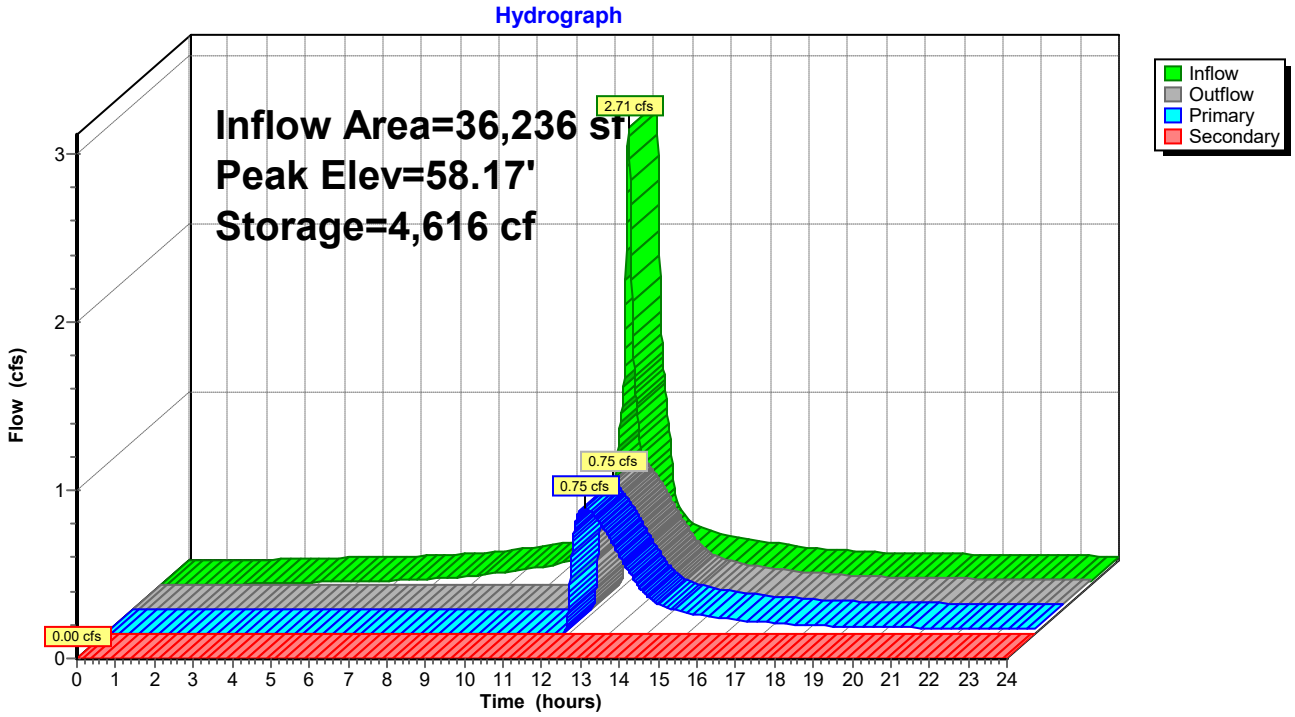
Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	7,220 cf	**20.00'W x 180.90'L x 5.00'H Porous Pavment** 18,090 cf Overall - 40 cf Embedded = 18,050 cf x 40.0% Voids
#2	56.84'	40 cf	**6.0" Round 6" underdrain** Inside #1 L= 204.0'
		7,260 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	56.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.84' / 56.67' S= 0.0567 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	59.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.75 cfs @ 12.40 hrs HW=58.17' TW=57.17' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.75 cfs @ 3.81 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=55.00' TW=55.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 15P: Por Pvt-D1H



Summary for Pond 16P: Por Pvt-D2C

Porous Pavement in Parking Spaces Only

Inflow Area = 6,166 sf, 86.99% Impervious, Inflow Depth > 2.81" for 2-yr event
Inflow = 0.44 cfs @ 12.07 hrs, Volume= 1,444 cf
Outflow = 0.22 cfs @ 12.20 hrs, Volume= 842 cf, Atten= 50%, Lag= 7.6 min
Primary = 0.22 cfs @ 12.20 hrs, Volume= 842 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 18P : Por Pvt-D2D

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 53.18' @ 12.20 hrs Surf.Area= 800 sf Storage= 702 cf

Plug-Flow detention time= 221.4 min calculated for 841 cf (58% of inflow)
Center-of-Mass det. time= 110.7 min (877.2 - 766.4)

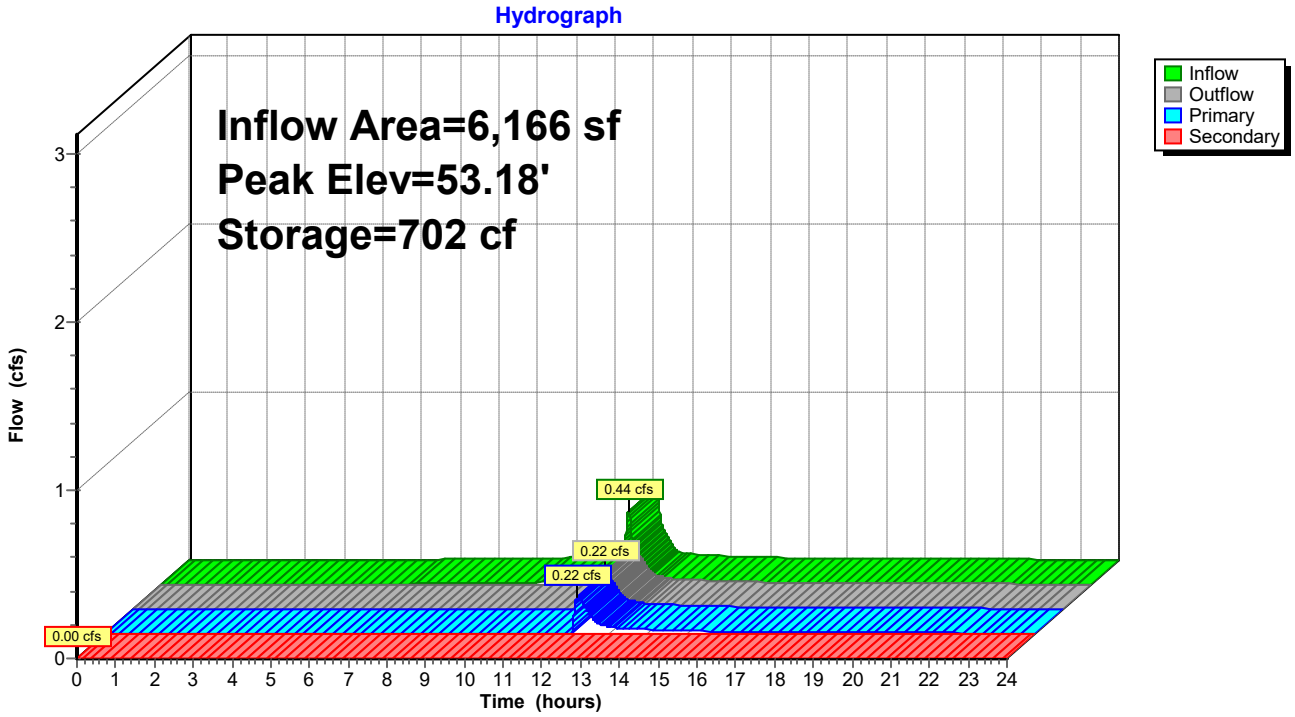
Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	52.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 55.0'
		1,606 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	52.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 52.84' / 52.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	55.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.22 cfs @ 12.20 hrs HW=53.18' TW=43.22' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.22 cfs @ 1.56 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=51.00' TW=49.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 16P: Por Pvt-D2C



Summary for Pond 18P: Por Pvt-D2D

Porous Pavement in Parking Spaces Only

Inflow Area = 6,023 sf, 88.83% Impervious, Inflow Depth > 2.85" for 2-yr event
Inflow = 0.44 cfs @ 12.07 hrs, Volume= 1,432 cf
Outflow = 0.22 cfs @ 12.20 hrs, Volume= 830 cf, Atten= 50%, Lag= 7.7 min
Primary = 0.22 cfs @ 12.20 hrs, Volume= 830 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 19P : Por Pvt-D2E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 51.18' @ 12.20 hrs Surf.Area= 800 sf Storage= 701 cf

Plug-Flow detention time= 222.6 min calculated for 829 cf (58% of inflow)
Center-of-Mass det. time= 111.7 min (877.0 - 765.4)

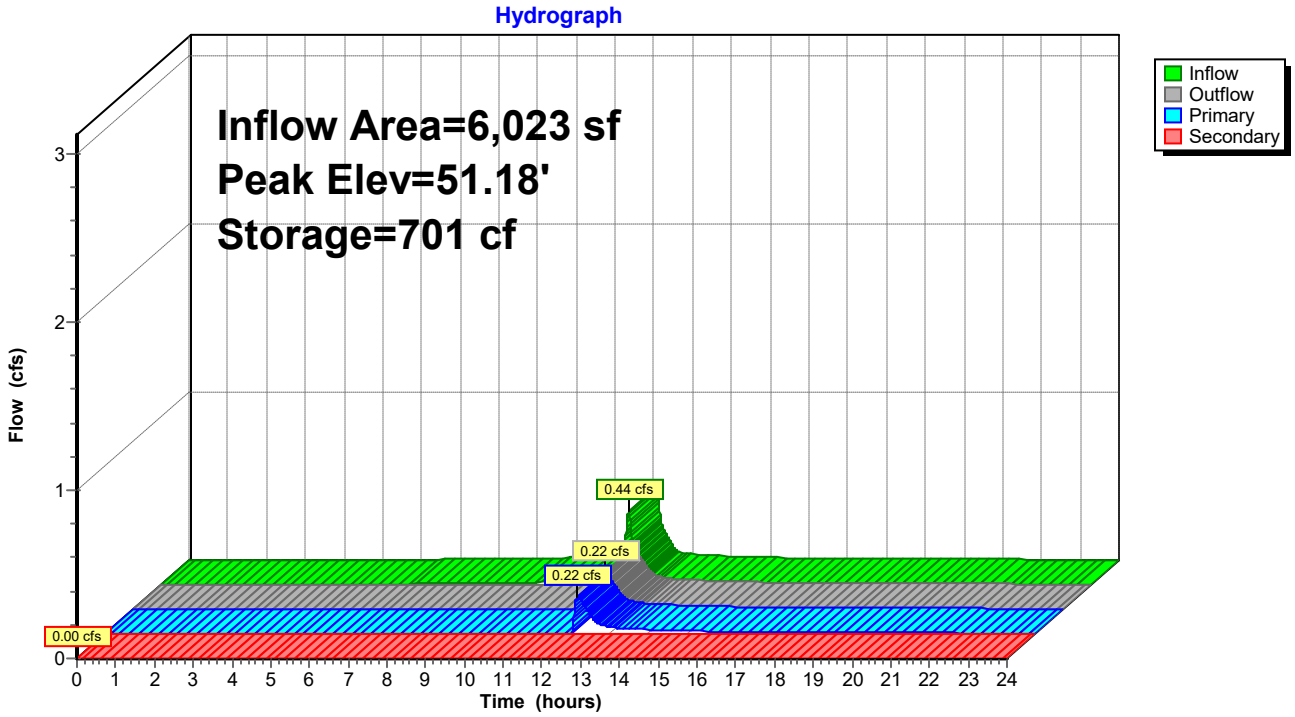
Volume	Invert	Avail.Storage	Storage Description
#1	49.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	50.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 54.0'
		1,606 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	50.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.84' / 50.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	53.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.22 cfs @ 12.20 hrs HW=51.18' TW=43.22' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.22 cfs @ 1.56 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=49.00' TW=47.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 18P: Por Pvt-D2D



Summary for Pond 19P: Por Pvt-D2E

Porous Pavement in Parking Spaces Only

Inflow Area = 6,016 sf, 88.30% Impervious, Inflow Depth > 2.83" for 2-yr event
Inflow = 0.43 cfs @ 12.07 hrs, Volume= 1,421 cf
Outflow = 0.20 cfs @ 12.22 hrs, Volume= 804 cf, Atten= 54%, Lag= 9.1 min
Primary = 0.20 cfs @ 12.22 hrs, Volume= 804 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 20P : Por Pvt-D2F

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 49.16' @ 12.22 hrs Surf.Area= 819 sf Storage= 711 cf

Plug-Flow detention time= 228.7 min calculated for 804 cf (57% of inflow)
Center-of-Mass det. time= 115.6 min (881.1 - 765.5)

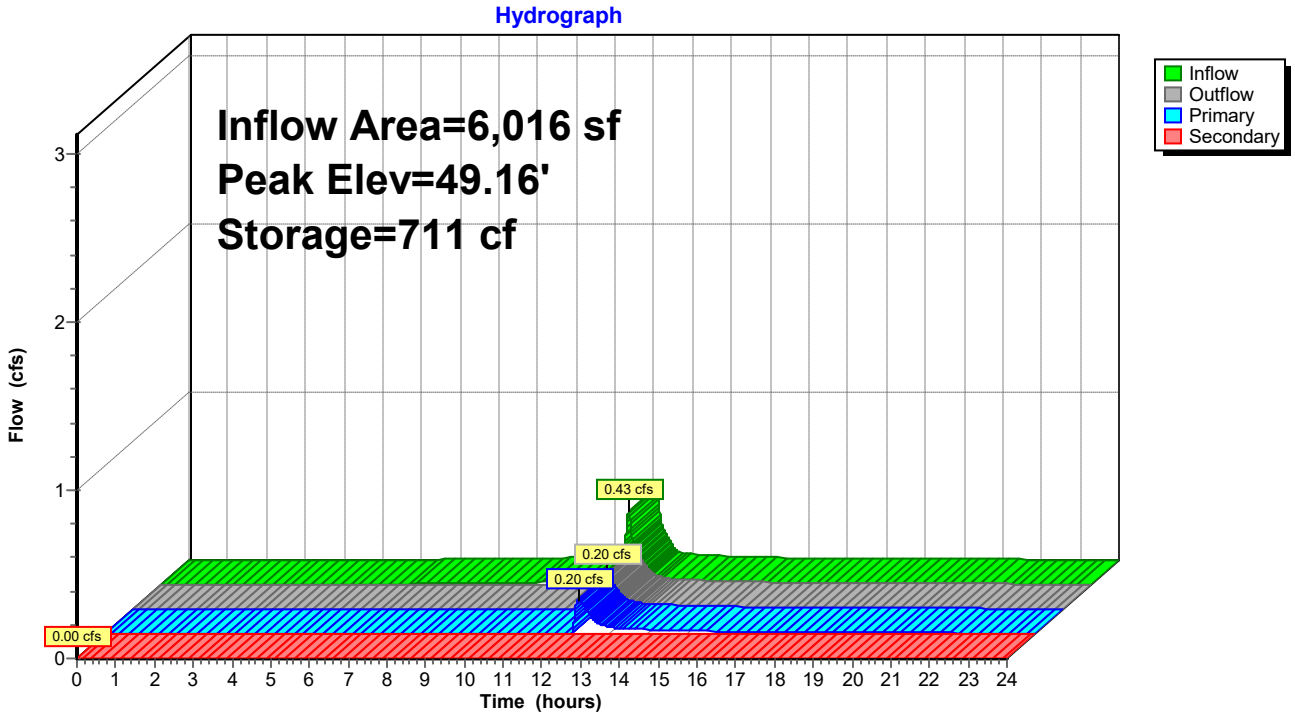
Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	1,634 cf	**20.00'W x 40.95'L x 5.00'H Porous Pavment** 4,095 cf Overall - 11 cf Embedded = 4,084 cf x 40.0% Voids
#2	48.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 54.0'
		1,644 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 48.84' / 48.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	51.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.20 cfs @ 12.22 hrs HW=49.16' TW=43.23' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.20 cfs @ 1.51 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=47.00' TW=45.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 19P: Por Pvt-D2E



Summary for Pond 20P: Por Pvt-D2F

Porous Pavement in Parking Spaces Only

Inflow Area = 5,836 sf, 90.88% Impervious, Inflow Depth > 2.90" for 2-yr event
Inflow = 0.43 cfs @ 12.07 hrs, Volume= 1,411 cf
Outflow = 0.21 cfs @ 12.20 hrs, Volume= 809 cf, Atten= 51%, Lag= 7.9 min
Primary = 0.21 cfs @ 12.20 hrs, Volume= 809 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 21P : Por Pvt-D2G

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 47.17' @ 12.20 hrs Surf.Area= 800 sf Storage= 699 cf

Plug-Flow detention time= 225.1 min calculated for 808 cf (57% of inflow)
Center-of-Mass det. time= 113.5 min (877.4 - 764.0)

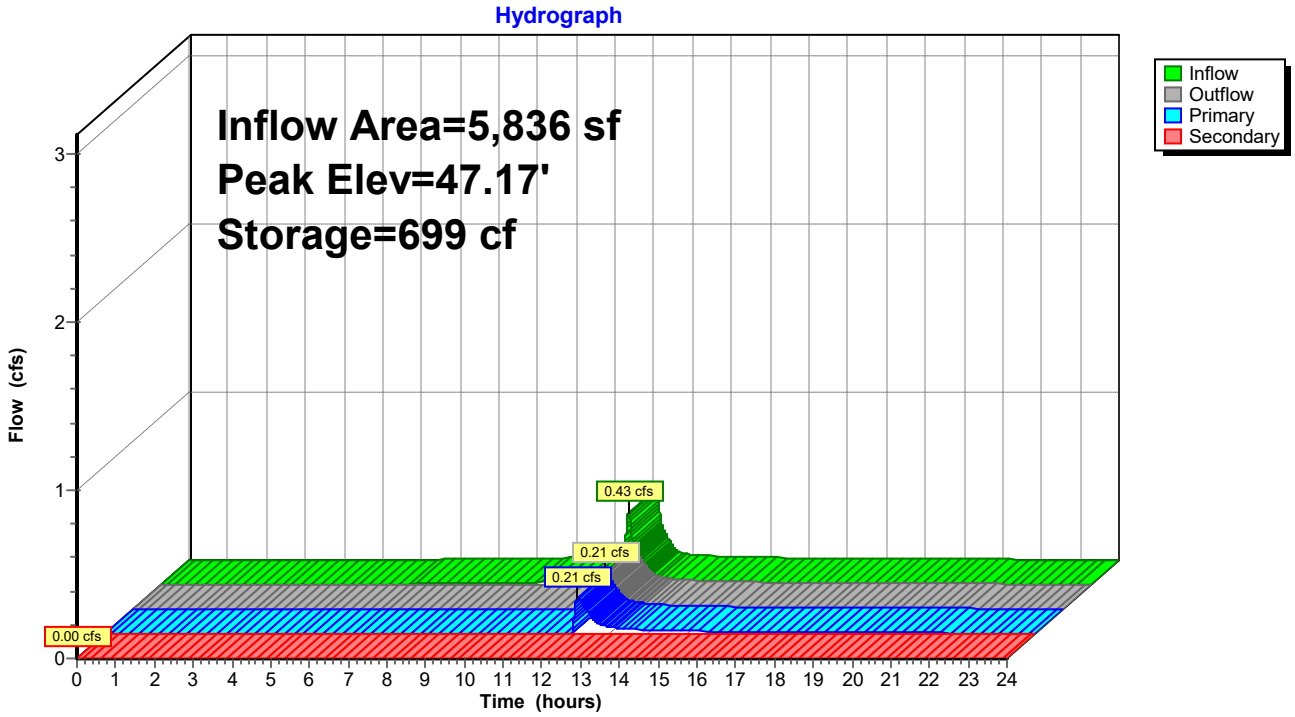
Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	46.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 57.0'
		1,607 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	46.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.84' / 46.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	49.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.21 cfs @ 12.20 hrs HW=47.17' TW=43.22' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.21 cfs @ 1.54 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.00' TW=42.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 20P: Por Pvt-D2F



Summary for Pond 21P: Por Pvt-D2G

Porous Pavement in Parking Spaces Only

Inflow Area = 3,234 sf, 56.68% Impervious, Inflow Depth > 2.18" for 2-yr event
Inflow = 0.20 cfs @ 12.07 hrs, Volume= 586 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link Sub A : SUB A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.44' @ 24.00 hrs Surf.Area= 1,016 sf Storage= 586 cf

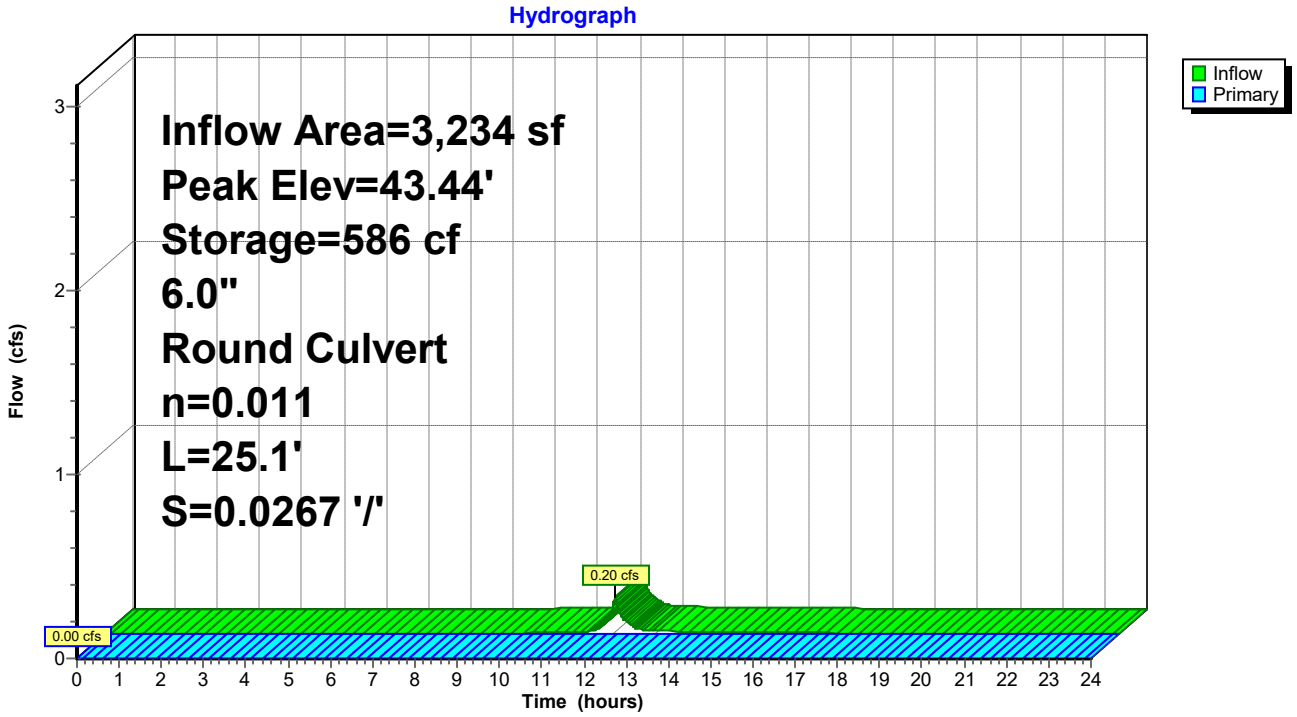
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	2,021 cf	**20.00'W x 50.80'L x 5.00'H Porous Pavment** 5,080 cf Overall - 27 cf Embedded = 5,053 cf x 40.0% Voids
#2	43.84'	27 cf	**6.0" Round 6" underdrain** Inside #1 L= 138.0'
		2,048 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	43.84'	**6.0" Round Culvert** L= 25.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.84' / 43.17' S= 0.0267 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.00' TW=0.00' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond 21P: Por Pvt-D2G



Summary for Pond DB01: Detention-01

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 60,955 sf, 0.00% Impervious, Inflow Depth > 0.54" for 2-yr event
Inflow = 0.44 cfs @ 12.31 hrs, Volume= 2,748 cf
Outflow = 0.44 cfs @ 12.34 hrs, Volume= 2,748 cf, Atten= 1%, Lag= 1.9 min
Primary = 0.44 cfs @ 12.34 hrs, Volume= 2,748 cf
Routed to Pond DMH13 : DMH-13

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 47.17' @ 12.34 hrs Surf.Area= 211 sf Storage= 29 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (911.9 - 911.6)

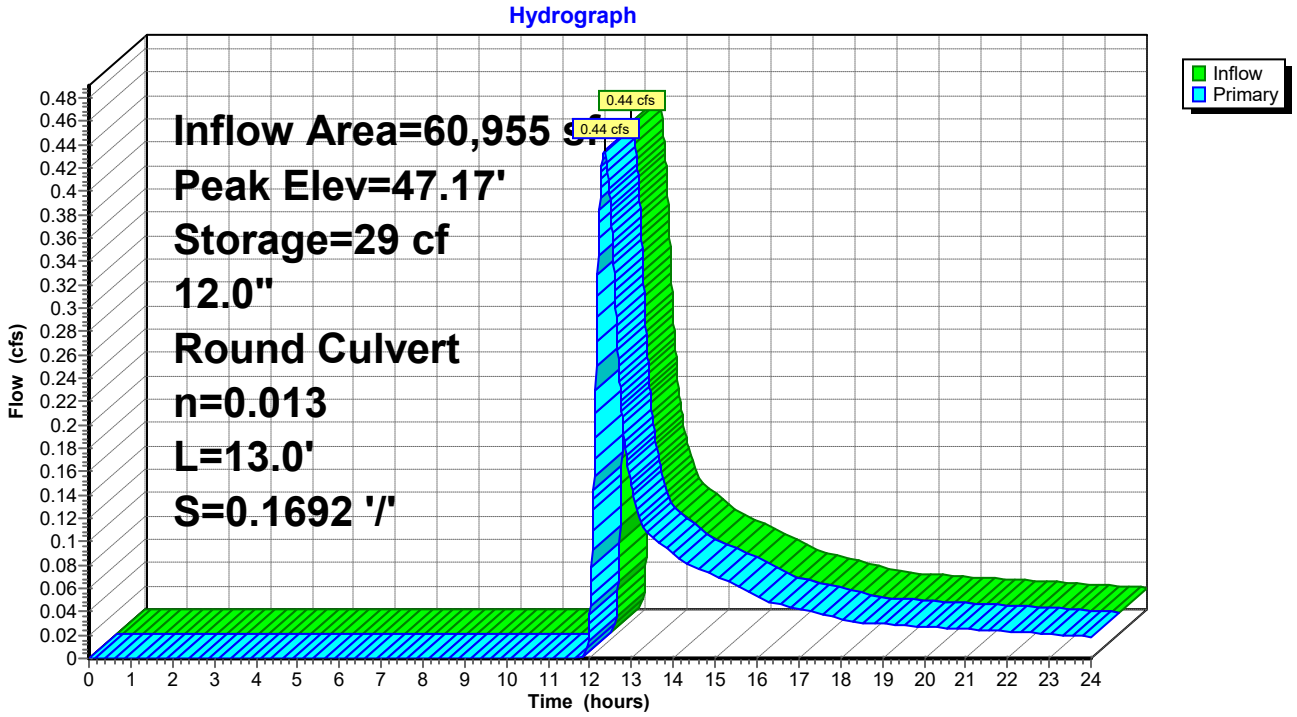
Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	1,719 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
47.00	128	0	0
48.00	614	371	371
49.00	2,082	1,348	1,719

Device	Routing	Invert	Outlet Devices
#1	Primary	46.80'	**12.0" Round Culvert** L= 13.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.80' / 44.60' S= 0.1692 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.44 cfs @ 12.34 hrs HW=47.17' TW=43.21' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.44 cfs @ 1.64 fps)

Pond DB01: Detention-01



Summary for Pond DB02: Detention-02

Inflow Area = 10,676 sf, 0.00% Impervious, Inflow Depth > 1.29" for 2-yr event
Inflow = 0.26 cfs @ 12.25 hrs, Volume= 1,146 cf
Outflow = 0.03 cfs @ 13.63 hrs, Volume= 609 cf, Atten= 87%, Lag= 82.3 min
Primary = 0.03 cfs @ 13.63 hrs, Volume= 609 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.59' @ 13.63 hrs Surf.Area= 1,352 sf Storage= 604 cf

Plug-Flow detention time= 260.1 min calculated for 609 cf (53% of inflow)
Center-of-Mass det. time= 138.9 min (999.2 - 860.4)

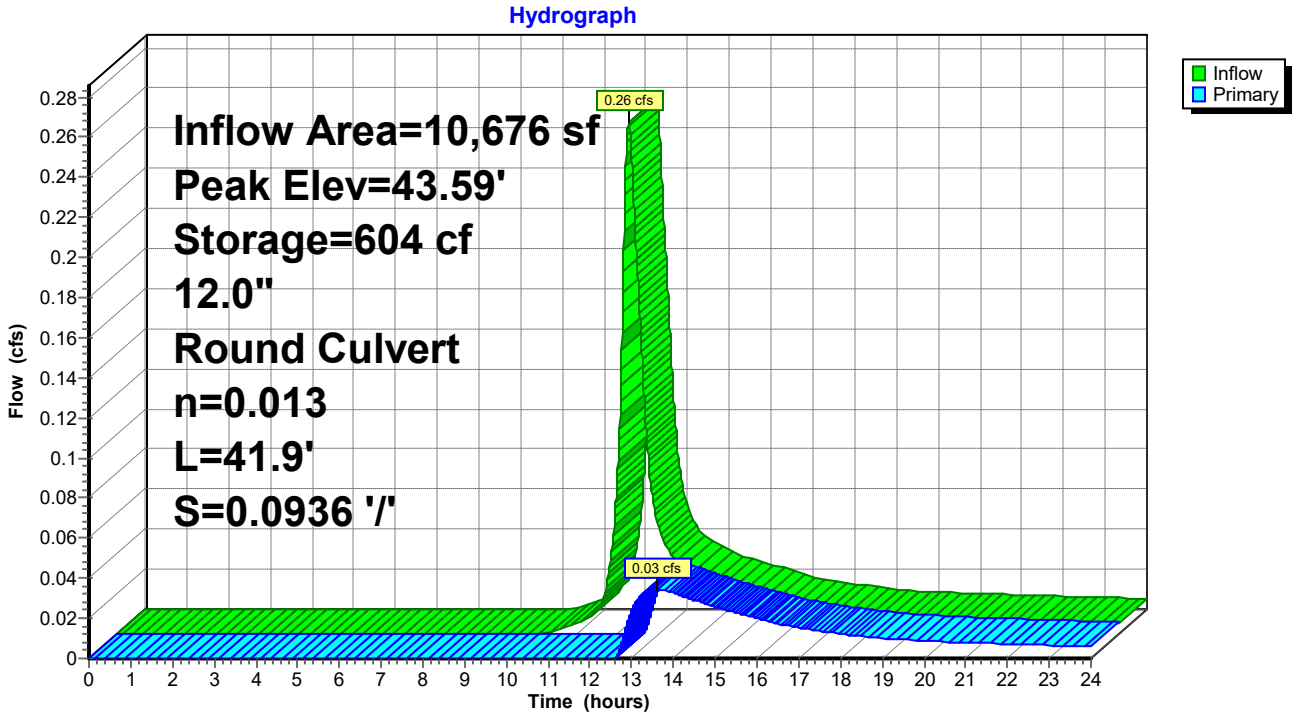
Volume	Invert	Avail.Storage	Storage Description
#1	43.00'	3,637 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.00	703	0	0
44.00	1,807	1,255	1,255
45.00	2,956	2,382	3,637

Device	Routing	Invert	Outlet Devices
#1	Primary	43.50'	**12.0" Round Culvert** L= 41.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.50' / 39.58' S= 0.0936 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.03 cfs @ 13.63 hrs HW=43.59' TW=39.50' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.03 cfs @ 1.01 fps)

Pond DB02: Detention-02



Summary for Pond DB03: Detention-03

Inflow Area = 13,682 sf, 0.00% Impervious, Inflow Depth > 1.17" for 2-yr event
Inflow = 0.33 cfs @ 12.19 hrs, Volume= 1,331 cf
Outflow = 0.04 cfs @ 13.90 hrs, Volume= 693 cf, Atten= 89%, Lag= 102.4 min
Primary = 0.04 cfs @ 13.90 hrs, Volume= 693 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.59' @ 13.90 hrs Surf.Area= 1,550 sf Storage= 714 cf

Plug-Flow detention time= 273.3 min calculated for 693 cf (52% of inflow)
Center-of-Mass det. time= 147.6 min (1,010.5 - 862.9)

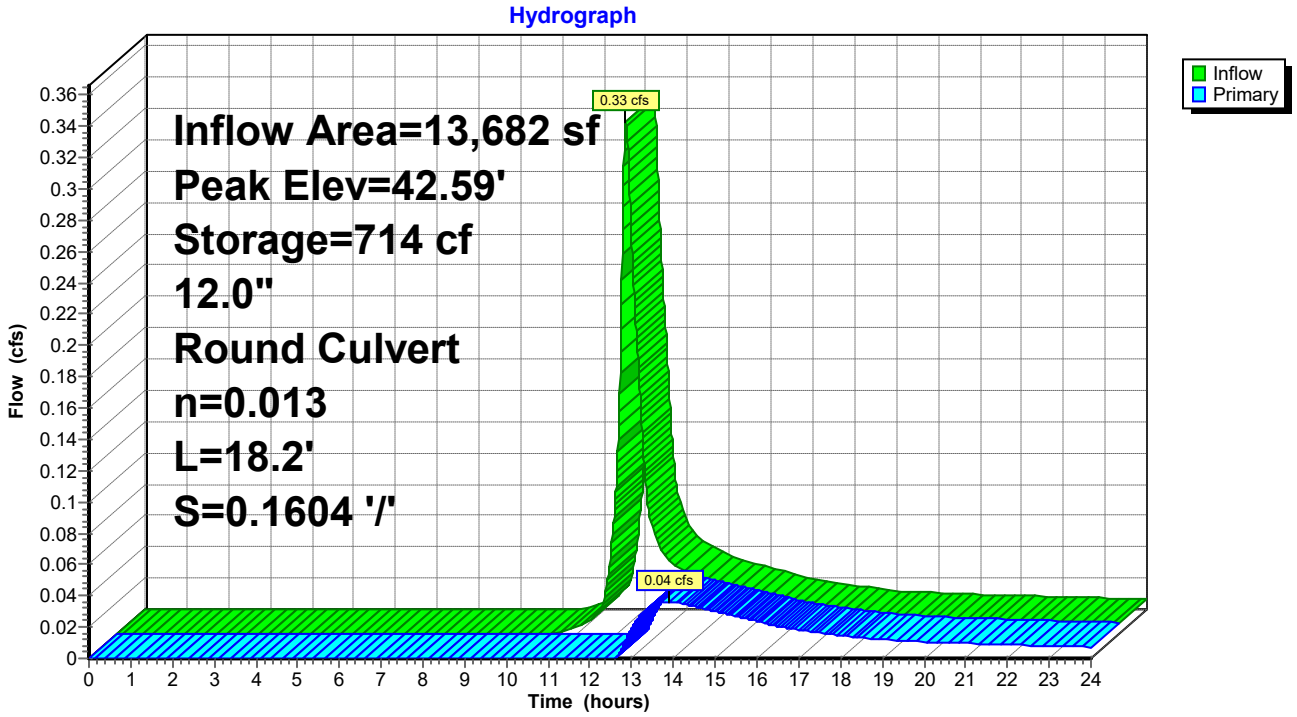
Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	12,357 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	870	0	0
43.00	2,022	1,446	1,446
44.00	3,054	2,538	3,984
45.00	4,148	3,601	7,585
46.00	5,395	4,772	12,357

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	**12.0" Round Culvert** L= 18.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 39.58' S= 0.1604 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.04 cfs @ 13.90 hrs HW=42.59' TW=39.49' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.04 cfs @ 1.02 fps)

Pond DB03: Detention-03



Summary for Pond DMH13: DMH-13

[57] Hint: Peaked at 43.23' (Flood elevation advised)

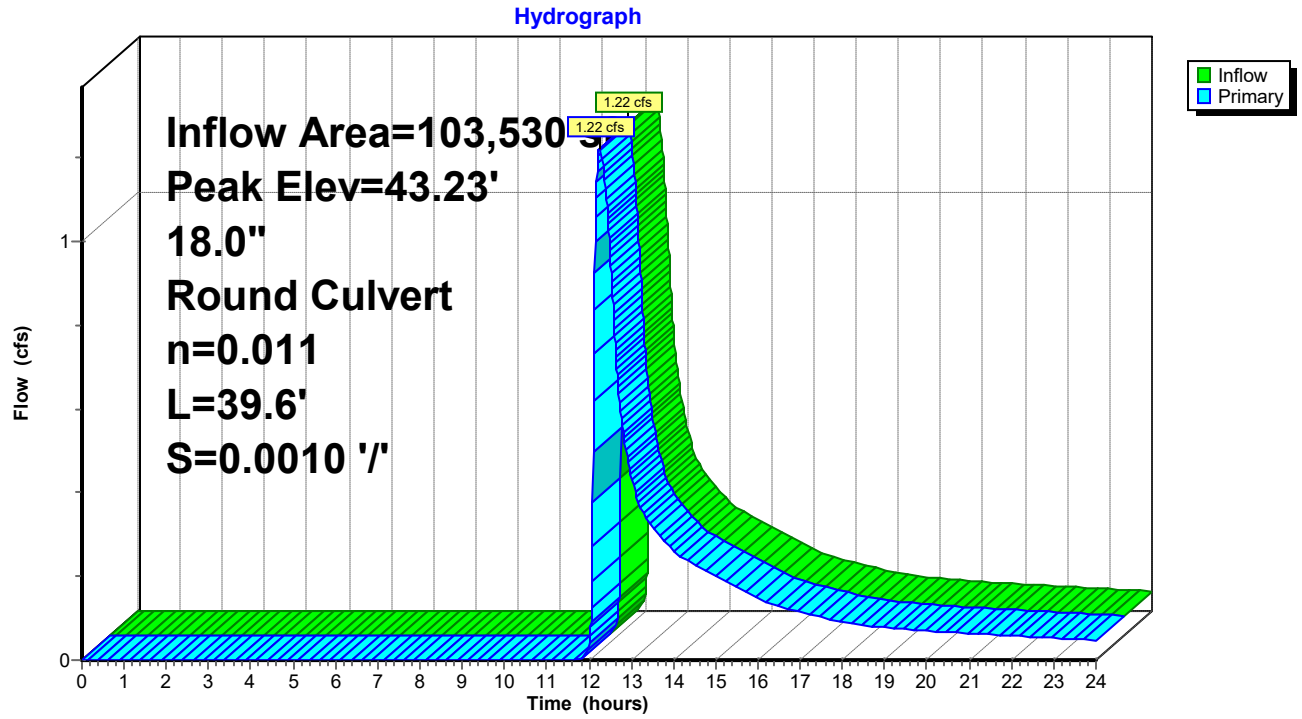
Inflow Area = 103,530 sf, 35.12% Impervious, Inflow Depth > 0.89" for 2-yr event
Inflow = 1.22 cfs @ 12.24 hrs, Volume= 7,651 cf
Outflow = 1.22 cfs @ 12.24 hrs, Volume= 7,651 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.22 cfs @ 12.24 hrs, Volume= 7,651 cf
Routed to Link Sub A : SUB A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.23' @ 12.24 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.54'	**18.0" Round Culvert** L= 39.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.54' / 42.50' S= 0.0010 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf

Primary OutFlow Max=1.22 cfs @ 12.24 hrs HW=43.23' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 1.22 cfs @ 2.27 fps)

Pond DMH13: DMH-13



Summary for Pond DMH8: DMH-08

[57] Hint: Peaked at 39.97' (Flood elevation advised)

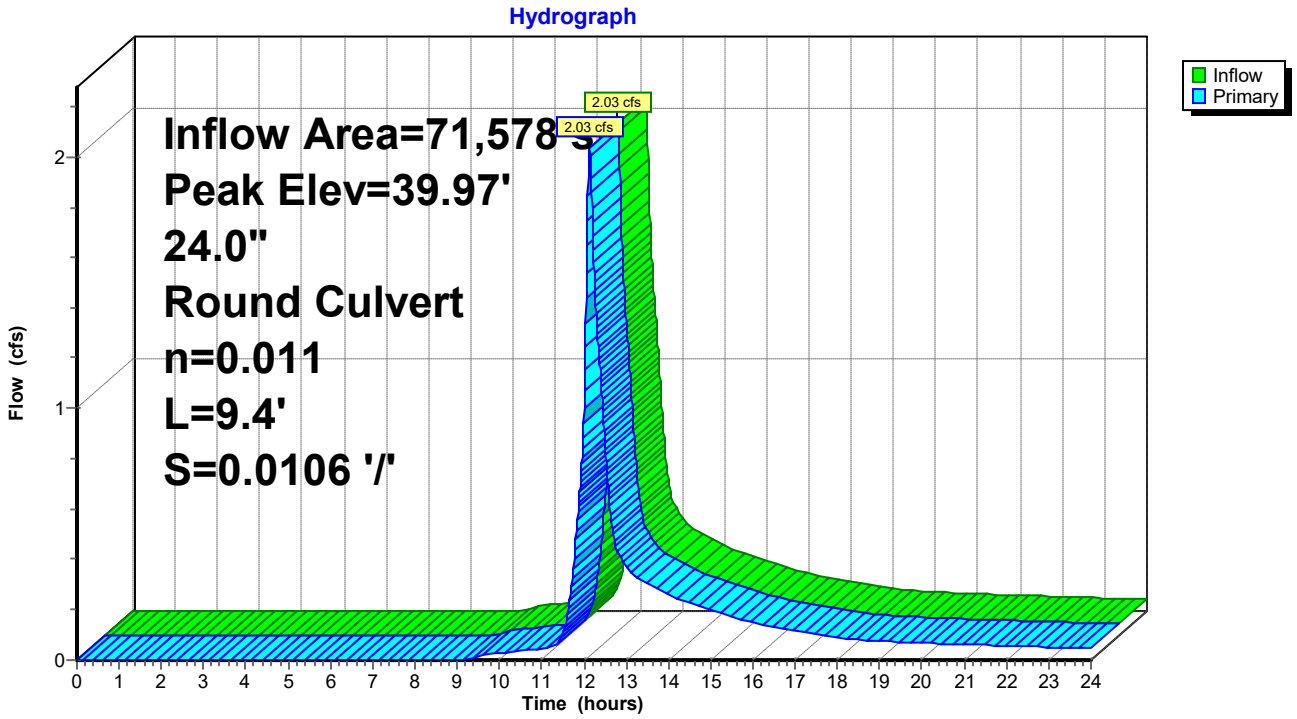
Inflow Area = 71,578 sf, 52.12% Impervious, Inflow Depth > 1.55" for 2-yr event
Inflow = 2.03 cfs @ 12.13 hrs, Volume= 9,275 cf
Outflow = 2.03 cfs @ 12.13 hrs, Volume= 9,275 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.03 cfs @ 12.13 hrs, Volume= 9,275 cf
Routed to Link 2 : Pipe 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 39.97' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.25'	**24.0" Round Culvert** L= 9.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.25' / 39.15' S= 0.0106 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=2.03 cfs @ 12.13 hrs HW=39.97' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.03 cfs @ 2.96 fps)

Pond DMH8: DMH-08



Summary for Pond PP02: Por Pvt-02

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 18,123 sf, 81.93% Impervious, Inflow Depth > 2.74" for 2-yr event
Inflow = 1.32 cfs @ 12.07 hrs, Volume= 4,132 cf
Outflow = 1.18 cfs @ 12.11 hrs, Volume= 3,415 cf, Atten= 11%, Lag= 2.3 min
Primary = 1.18 cfs @ 12.11 hrs, Volume= 3,415 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.52' @ 12.11 hrs Surf.Area= 1,476 sf Storage= 1,015 cf

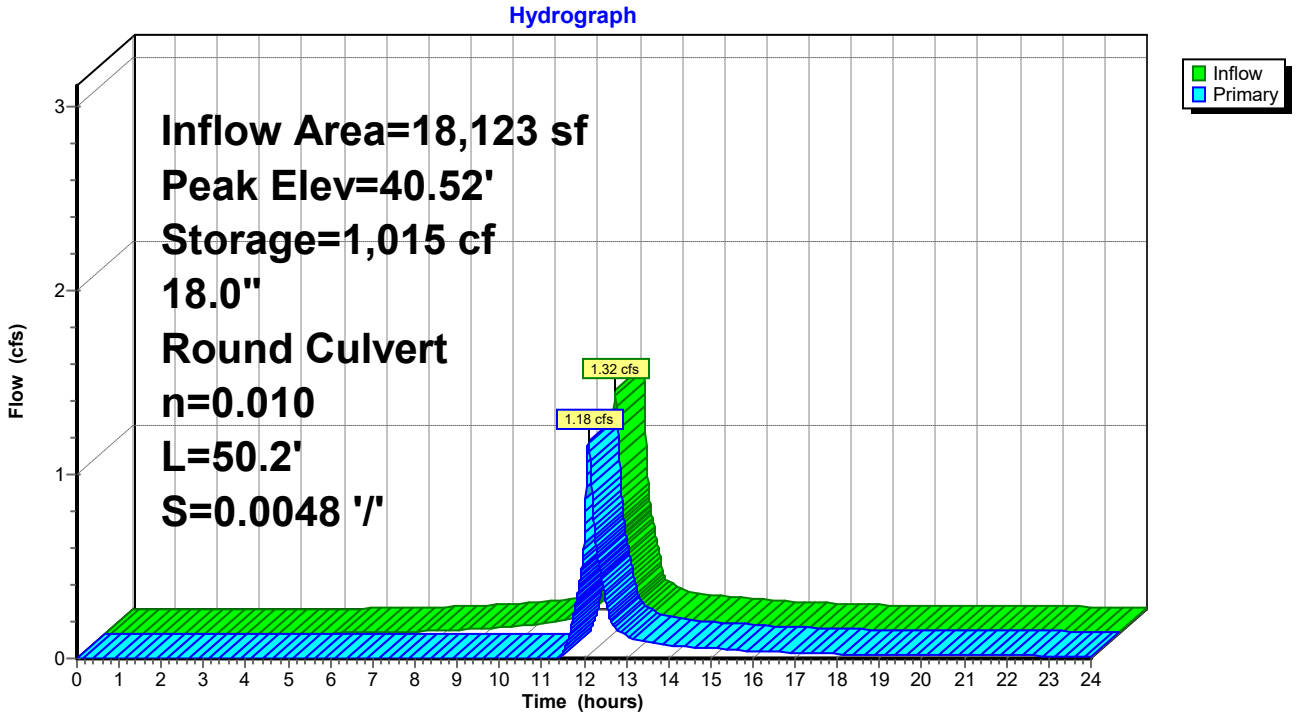
Plug-Flow detention time= 118.7 min calculated for 3,415 cf (83% of inflow)
Center-of-Mass det. time= 49.5 min (833.3 - 783.7)

Volume	Invert	Avail.Storage	Storage Description
#1	38.80'	2,946 cf	**18.00'W x 82.00'L x 5.00'H Porous Pavment** 7,380 cf Overall - 14 cf Embedded = 7,366 cf x 40.0% Voids
#2	40.64'	14 cf	**6.0" Round 6" underdrain** Inside #1 L= 72.0'
		2,960 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	39.96'	**18.0" Round Culvert** L= 50.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.96' / 39.72' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.18 cfs @ 12.11 hrs HW=40.52' TW=39.96' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 1.18 cfs @ 2.92 fps)

Pond PP02: Por Pvt-02



Summary for Pond PP03: Por Pvt-03

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 30,180 sf, 76.35% Impervious, Inflow Depth > 2.74" for 2-yr event
Inflow = 2.20 cfs @ 12.07 hrs, Volume= 6,881 cf
Outflow = 1.70 cfs @ 12.13 hrs, Volume= 5,471 cf, Atten= 23%, Lag= 3.6 min
Primary = 1.70 cfs @ 12.13 hrs, Volume= 5,471 cf
Routed to Link 3 : Pipe 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.17' @ 12.13 hrs Surf.Area= 2,484 sf Storage= 2,168 cf

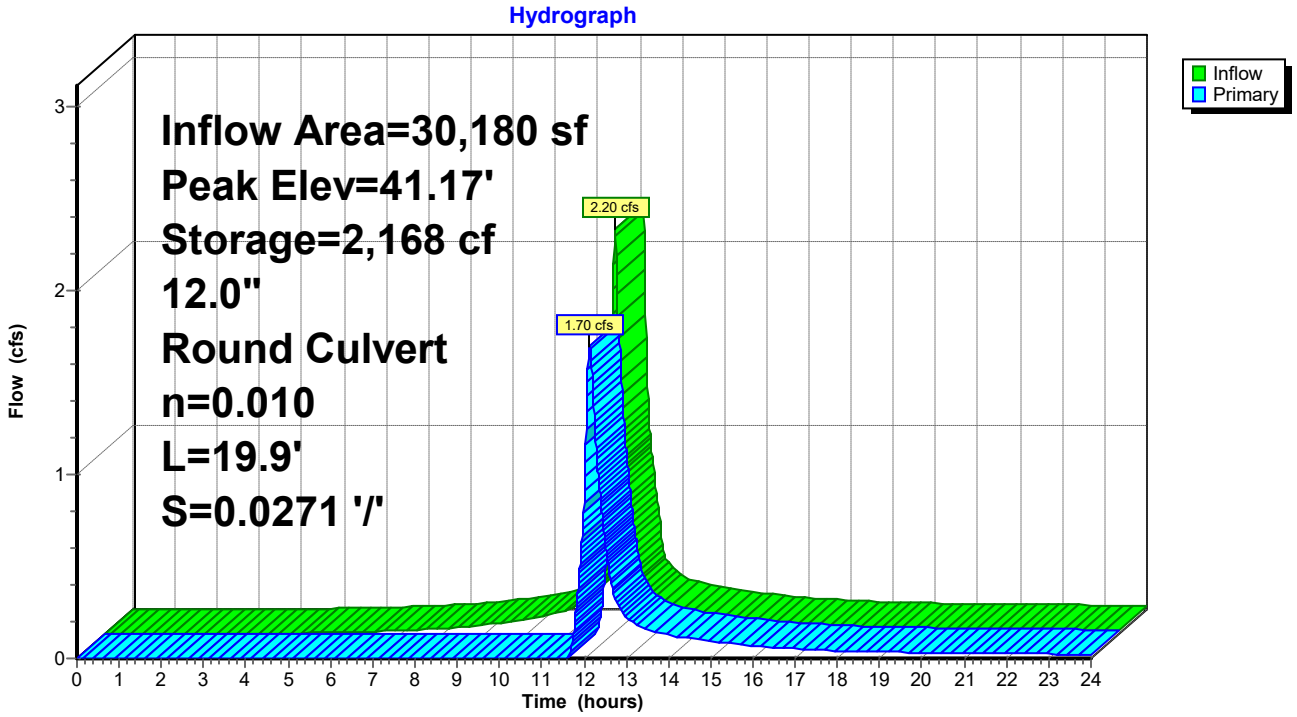
Plug-Flow detention time= 134.7 min calculated for 5,471 cf (80% of inflow)
Center-of-Mass det. time= 58.8 min (842.5 - 783.7)

Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	4,958 cf	**18.00'W x 138.00'L x 5.00'H Porous Pavment** 12,420 cf Overall - 24 cf Embedded = 12,396 cf x 40.0% Voids
#2	40.34'	24 cf	**6.0" Round 6" underdrain** Inside #1 L= 124.0'
		4,983 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.34'	**12.0" Round Culvert** L= 19.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.34' / 39.80' S= 0.0271 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.70 cfs @ 12.13 hrs HW=41.17' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.70 cfs @ 2.44 fps)

Pond PP03: Por Pvt-03



Summary for Pond PP04: Por Pvt-04

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 9,547 sf, 73.20% Impervious, Inflow Depth > 2.64" for 2-yr event
Inflow = 0.68 cfs @ 12.07 hrs, Volume= 2,097 cf
Outflow = 0.34 cfs @ 12.20 hrs, Volume= 1,297 cf, Atten= 50%, Lag= 7.8 min
Primary = 0.34 cfs @ 12.20 hrs, Volume= 1,297 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.32' @ 12.20 hrs Surf.Area= 1,296 sf Storage= 951 cf

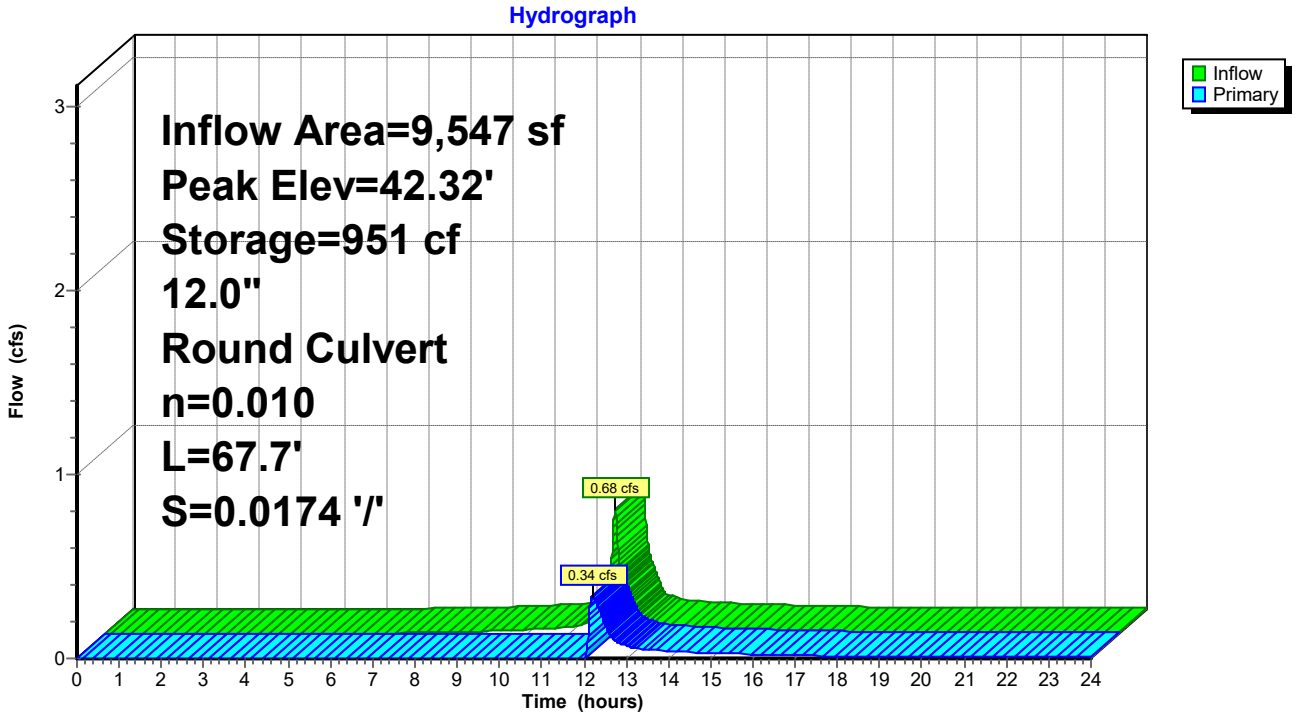
Plug-Flow detention time= 190.8 min calculated for 1,297 cf (62% of inflow)
Center-of-Mass det. time= 90.3 min (879.4 - 789.2)

Volume	Invert	Avail.Storage	Storage Description
#1	40.50'	2,587 cf	**18.00'W x 72.00'L x 5.00'H Porous Pavment** 6,480 cf Overall - 13 cf Embedded = 6,467 cf x 40.0% Voids
#2	42.00'	13 cf	**6.0" Round 6" underdrain** Inside #1 L= 68.0'
		2,600 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	**12.0" Round Culvert** L= 67.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.00' / 40.82' S= 0.0174 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.34 cfs @ 12.20 hrs HW=42.32' TW=39.91' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.34 cfs @ 1.53 fps)

Pond PP04: Por Pvt-04



Summary for Pond PP05: Por Pvt-05

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 9,002 sf, 74.73% Impervious, Inflow Depth > 2.44" for 2-yr event
Inflow = 0.60 cfs @ 12.07 hrs, Volume= 1,834 cf
Outflow = 0.15 cfs @ 12.45 hrs, Volume= 935 cf, Atten= 76%, Lag= 22.8 min
Primary = 0.15 cfs @ 12.45 hrs, Volume= 935 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.96' @ 12.45 hrs Surf.Area= 1,457 sf Storage= 1,000 cf

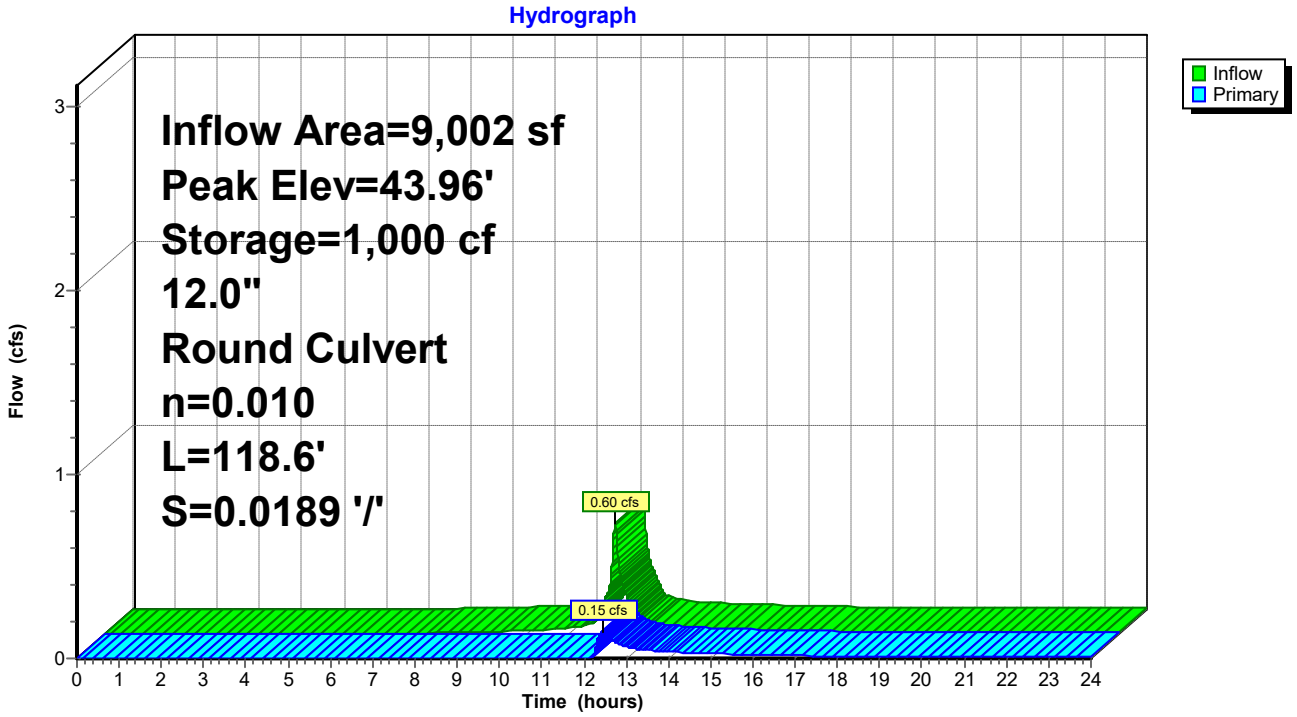
Plug-Flow detention time= 233.5 min calculated for 934 cf (51% of inflow)
Center-of-Mass det. time= 122.5 min (921.3 - 798.8)

Volume	Invert	Avail.Storage	Storage Description
#1	42.25'	2,909 cf	**18.00'W x 80.97'L x 5.00'H Porous Pavment** 7,287 cf Overall - 15 cf Embedded = 7,272 cf x 40.0% Voids
#2	43.75'	15 cf	**6.0" Round 6" underdrain** Inside #1 L= 77.0'
		2,924 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	43.75'	**12.0" Round Culvert** L= 118.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.75' / 41.51' S= 0.0189 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.15 cfs @ 12.45 hrs HW=43.96' TW=39.73' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.15 cfs @ 1.23 fps)

Pond PP05: Por Pvt-05



Summary for Pond PP06: Por Pvt-06

Only Main Driveway and Parking Area to be Porous Pavement

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 7,420 sf, 88.26% Impervious, Inflow Depth > 2.84" for 2-yr event
Inflow = 0.55 cfs @ 12.07 hrs, Volume= 1,755 cf
Outflow = 0.55 cfs @ 12.07 hrs, Volume= 1,755 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.55 cfs @ 12.07 hrs, Volume= 1,755 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.25' @ 0.00 hrs Surf.Area= 1,298 sf Storage= 0 cf

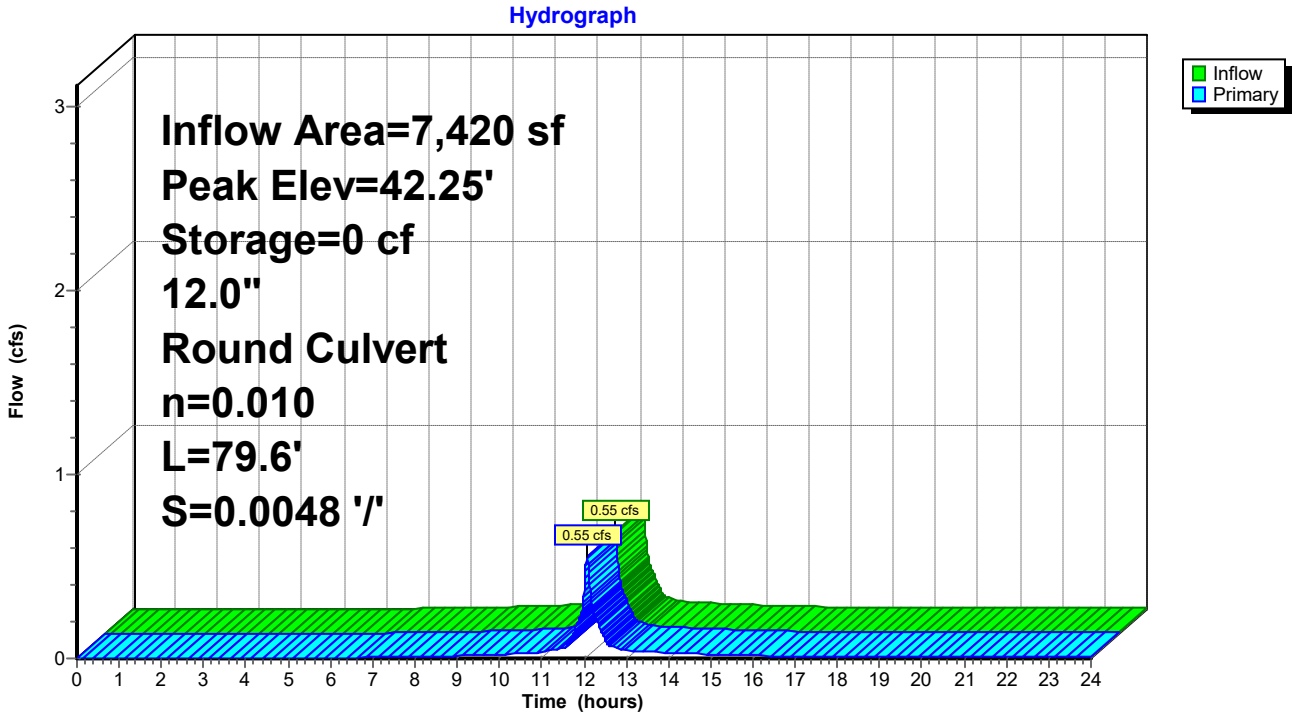
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	42.25'	2,590 cf	**18.00'W x 72.10'L x 5.00'H Porous Pavment** 6,489 cf Overall - 14 cf Embedded = 6,475 cf x 40.0% Voids
#2	43.75'	14 cf	**6.0" Round 6" underdrain** Inside #1 L= 69.0'
		2,604 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.94'	**12.0" Round Culvert** L= 79.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.94' / 40.56' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.07 hrs HW=42.25' TW=0.00' (Dynamic Tailwater)
1=Culvert (Passes 0.00 cfs of 2.69 cfs potential flow)

Pond PP06: Por Pvt-06



Summary for Pond PP07: Por Pvt-07

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 27,046 sf, 54.55% Impervious, Inflow Depth > 1.93" for 2-yr event
Inflow = 1.46 cfs @ 12.07 hrs, Volume= 4,345 cf
Outflow = 0.44 cfs @ 12.41 hrs, Volume= 2,922 cf, Atten= 70%, Lag= 20.0 min
Primary = 0.44 cfs @ 12.41 hrs, Volume= 2,922 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.47' @ 12.41 hrs Surf.Area= 4,085 sf Storage= 1,918 cf

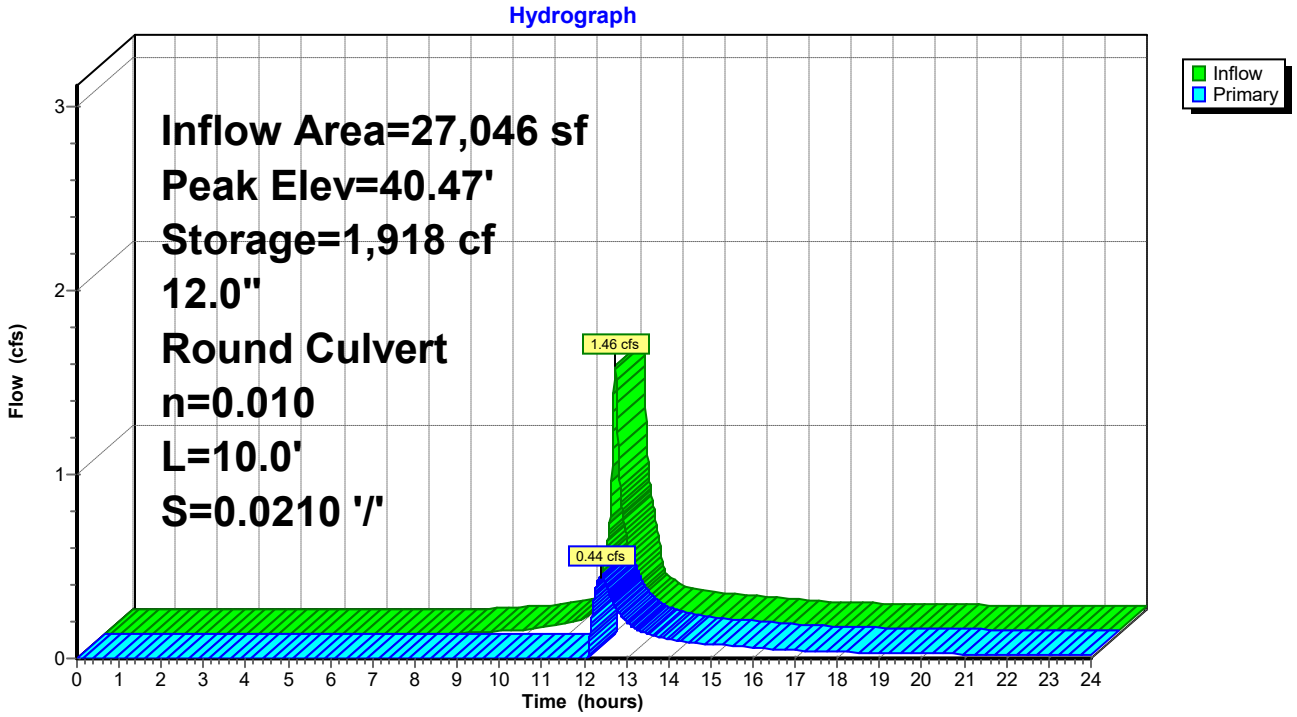
Plug-Flow detention time= 183.9 min calculated for 2,922 cf (67% of inflow)
Center-of-Mass det. time= 84.6 min (906.5 - 821.9)

Volume	Invert	Avail.Storage	Storage Description
#1	39.30'	8,152 cf	**18.00'W x 226.97'L x 5.00'H Porous Pavment** 20,427 cf Overall - 46 cf Embedded = 20,381 cf x 40.0% Voids
#2	41.14'	46 cf	**6.0" Round 6" underdrain** Inside #1 L= 236.0'
		8,199 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.10'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.10' / 39.89' S= 0.0210 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.44 cfs @ 12.41 hrs HW=40.47' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.44 cfs @ 1.64 fps)

Pond PP07: Por Pvt-07



Summary for Pond RG03: Rain Garden-03

Inflow Area = 5,425 sf, 57.01% Impervious, Inflow Depth > 2.35" for 2-yr event
Inflow = 0.32 cfs @ 12.11 hrs, Volume= 1,063 cf
Outflow = 0.05 cfs @ 12.60 hrs, Volume= 563 cf, Atten= 83%, Lag= 29.4 min
Primary = 0.05 cfs @ 12.60 hrs, Volume= 563 cf
Routed to Link 2 : Pipe 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.81' @ 12.60 hrs Surf.Area= 2,332 sf Storage= 596 cf

Plug-Flow detention time= 240.8 min calculated for 563 cf (53% of inflow)
Center-of-Mass det. time= 131.8 min (936.9 - 805.1)

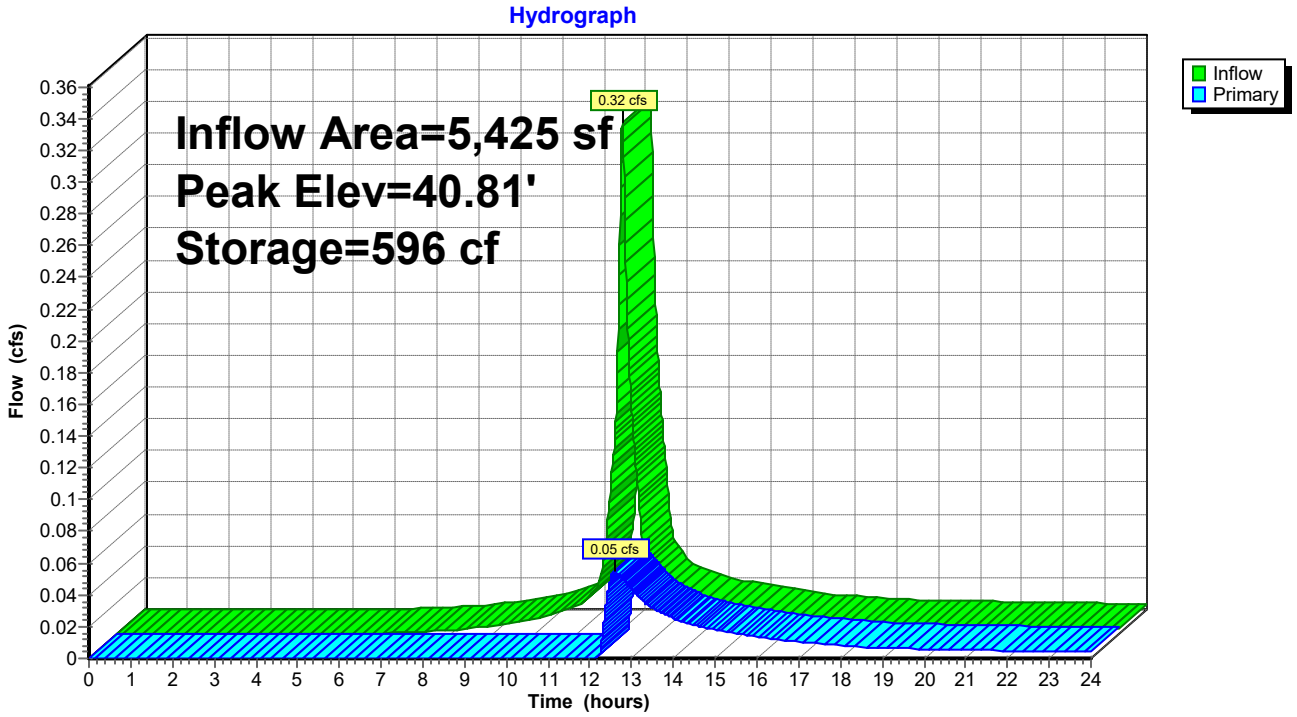
Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	1,867 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	43.67'	115 cf	**18.00'W x 129.55'L x 0.33'H Mulch** 770 cf Overall x 15.0% Voids
#3	41.17'	1,749 cf	**18.00'W x 129.55'L x 2.50'H Greenwich Soil Mix** 5,830 cf Overall x 30.0% Voids
#4	40.17'	928 cf	**18.00'W x 129.55'L x 1.00'H Crushed Stone** 2,332 cf Overall - 12 cf Embedded = 2,320 cf x 40.0% Voids
#5	40.67'	12 cf	**6.0" Round 6" underdrain** Inside #4 L= 62.0'
		4,671 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	1,402	0	0
45.00	2,332	1,867	1,867

Device	Routing	Invert	Outlet Devices
#1	Primary	39.77'	**12.0" Round Culvert** L= 9.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.77' / 39.67' S= 0.0101 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	44.50'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	40.67'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.05 cfs @ 12.60 hrs HW=40.81' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.05 cfs of 2.15 cfs potential flow)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.05 cfs @ 1.26 fps)

Pond RG03: Rain Garden-03



Summary for Pond RG04: Rain Garden-04

Inflow Area = 10,548 sf, 82.86% Impervious, Inflow Depth > 2.84" for 2-yr event
Inflow = 0.79 cfs @ 12.07 hrs, Volume= 2,495 cf
Outflow = 0.64 cfs @ 12.12 hrs, Volume= 2,326 cf, Atten= 19%, Lag= 3.2 min
Primary = 0.64 cfs @ 12.12 hrs, Volume= 2,326 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.88' @ 12.12 hrs Surf.Area= 1,542 sf Storage= 365 cf

Plug-Flow detention time= 66.2 min calculated for 2,326 cf (93% of inflow)
Center-of-Mass det. time= 29.9 min (807.7 - 777.7)

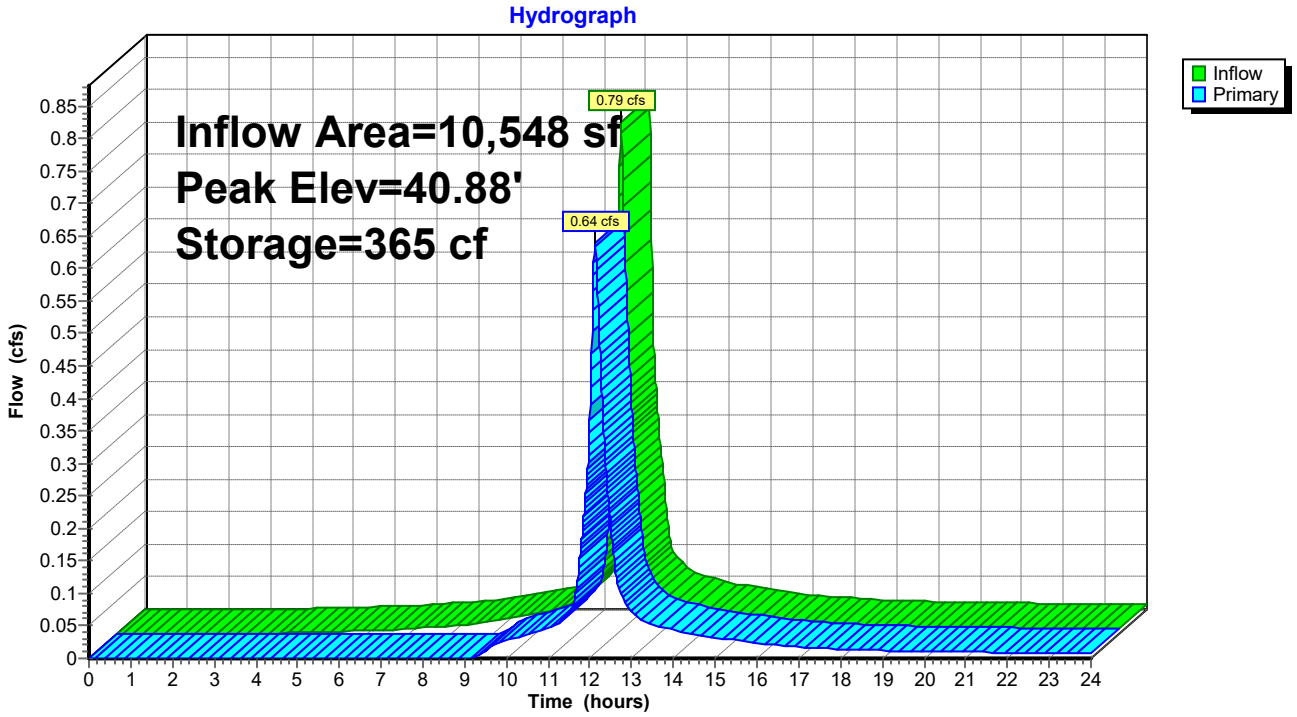
Volume	Invert	Avail.Storage	Storage Description
#1	43.50'	233 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	43.17'	38 cf	**11.00'W x 70.10'L x 0.33'H Mulch** 254 cf Overall x 15.0% Voids
#3	40.67'	578 cf	**11.00'W x 70.10'L x 2.50'H Greenwich Soil Mix** 1,928 cf Overall x 30.0% Voids
#4	39.67'	303 cf	**11.00'W x 70.09'L x 1.00'H Crushed Stone** 771 cf Overall - 14 cf Embedded = 757 cf x 40.0% Voids
#5	40.17'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		1,166 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.50	162	0	0
44.00	771	233	233

Device	Routing	Invert	Outlet Devices
#1	Device 2	43.50'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	40.17'	**12.0" Round Culvert** L= 8.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.17' / 39.96' S= 0.0239 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	40.17'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.64 cfs @ 12.12 hrs HW=40.88' TW=39.97' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.64 cfs of 1.59 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.64 cfs @ 3.25 fps)

Pond RG04: Rain Garden-04



Summary for Pond RG06: Rain Garden-06

Inflow Area = 4,026 sf, 70.89% Impervious, Inflow Depth > 2.35" for 2-yr event
Inflow = 0.26 cfs @ 12.07 hrs, Volume= 789 cf
Outflow = 0.24 cfs @ 12.10 hrs, Volume= 744 cf, Atten= 7%, Lag= 1.8 min
Primary = 0.24 cfs @ 12.10 hrs, Volume= 744 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.31' @ 12.10 hrs Surf.Area= 316 sf Storage= 86 cf

Plug-Flow detention time= 51.4 min calculated for 744 cf (94% of inflow)
Center-of-Mass det. time= 20.3 min (823.4 - 803.1)

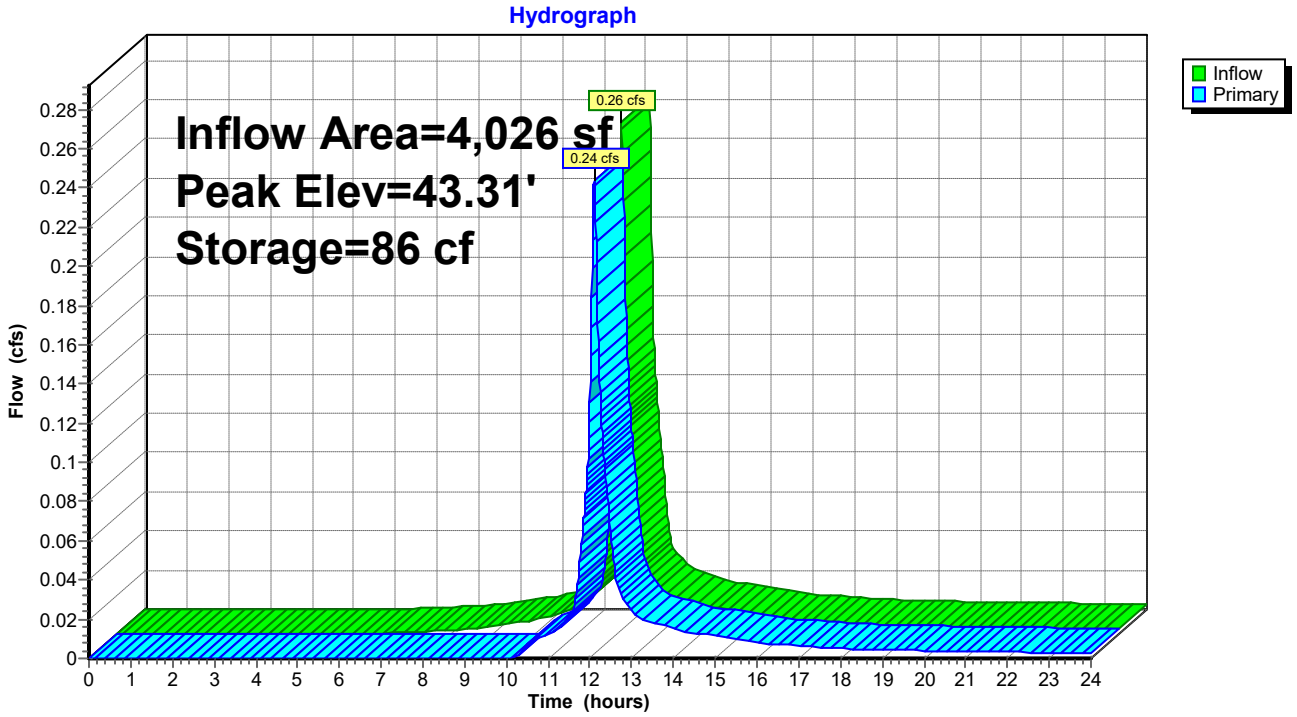
Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	117 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	46.17'	16 cf	**15.00'W x 21.07'L x 0.33'H Mulch** 104 cf Overall x 15.0% Voids
#3	43.67'	237 cf	**15.00'W x 21.07'L x 2.50'H Greenwich Soil Mix** 790 cf Overall x 30.0% Voids
#4	42.67'	121 cf	**15.00'W x 21.07'L x 1.00'H Crushed Stone** 316 cf Overall - 14 cf Embedded = 302 cf x 40.0% Voids
#5	43.00'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		504 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	151	0	0
47.00	316	117	117

Device	Routing	Invert	Outlet Devices
#1	Device 2	46.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	40.18'	**12.0" Round Culvert** L= 91.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.18' / 40.10' S= 0.0009 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	43.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.24 cfs @ 12.10 hrs HW=43.31' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.24 cfs of 4.48 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.24 cfs @ 1.90 fps)

Pond RG06: Rain Garden-06



Summary for Pond RG07: Rain Garden-07

Inflow Area = 4,109 sf, 58.46% Impervious, Inflow Depth > 2.01" for 2-yr event
Inflow = 0.23 cfs @ 12.07 hrs, Volume= 688 cf
Outflow = 0.21 cfs @ 12.10 hrs, Volume= 644 cf, Atten= 7%, Lag= 1.8 min
Primary = 0.21 cfs @ 12.10 hrs, Volume= 644 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.29' @ 12.10 hrs Surf.Area= 305 sf Storage= 80 cf

Plug-Flow detention time= 52.6 min calculated for 644 cf (94% of inflow)
Center-of-Mass det. time= 19.0 min (837.4 - 818.4)

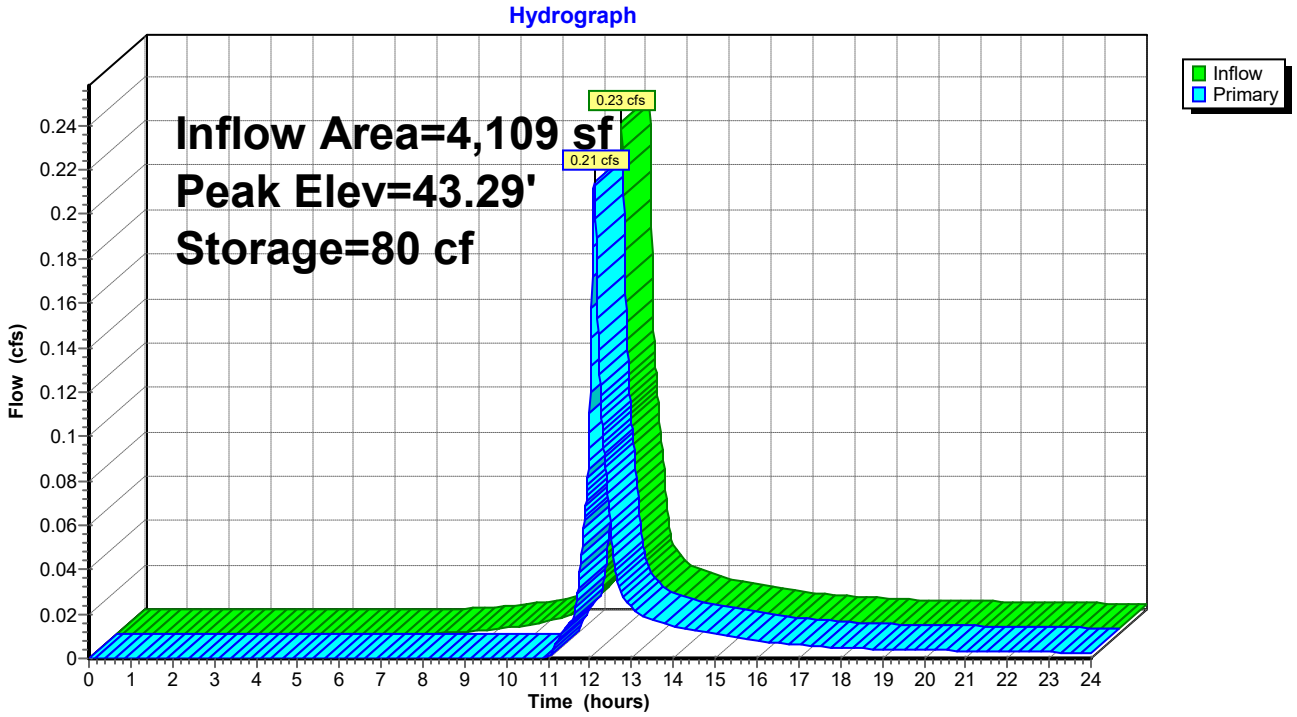
Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	112 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	46.17'	15 cf	**15.00'W x 20.33'L x 0.33'H Mulch** 101 cf Overall x 15.0% Voids
#3	43.67'	229 cf	**15.00'W x 20.33'L x 2.50'H Greenwich Soil Mix** 762 cf Overall x 30.0% Voids
#4	42.67'	116 cf	**15.00'W x 20.33'L x 1.00'H Crushed Stone** 305 cf Overall - 14 cf Embedded = 291 cf x 40.0% Voids
#5	43.00'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		486 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	144	0	0
47.00	305	112	112

Device	Routing	Invert	Outlet Devices
#1	Device 2	46.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	42.00'	**12.0" Round Culvert** L= 85.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.00' / 40.10' S= 0.0222 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	43.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.21 cfs @ 12.10 hrs HW=43.29' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.21 cfs of 3.36 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.21 cfs @ 1.83 fps)

Pond RG07: Rain Garden-07



Summary for Pond UI01: Und Inf 01

Inflow Area = 53,524 sf,100.00% Impervious, Inflow Depth > 3.16" for 2-yr event
Inflow = 4.21 cfs @ 12.07 hrs, Volume= 14,116 cf
Outflow = 0.19 cfs @ 14.35 hrs, Volume= 3,863 cf, Atten= 95%, Lag= 136.7 min
Primary = 0.19 cfs @ 14.35 hrs, Volume= 3,863 cf
Routed to Link 3 : Pipe 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.21' @ 14.35 hrs Surf.Area= 5,205 sf Storage= 10,742 cf

Plug-Flow detention time= 470.8 min calculated for 3,861 cf (27% of inflow)
Center-of-Mass det. time= 272.4 min (1,026.2 - 753.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	39.50'	5,260 cf	**40.50'W x 127.59'L x 4.75'H Field A** 24,545 cf Overall - 11,394 cf Embedded = 13,151 cf x 40.0% Voids
#2A	40.00'	11,394 cf	**ADS_StormTech MC-3500 d +Cap** x 102 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 102 Chambers in 6 Rows Cap Storage= 14.9 cf x 2 x 6 rows = 178.8 cf
#3	41.98'	264 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder** x 3
		16,918 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.98'	**15.0" Round Culvert** L= 36.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.98' / 41.53' S= 0.0123 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.19 cfs @ 14.35 hrs HW=42.21' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.19 cfs @ 1.28 fps)

Pond UI01: Und Inf 01 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= 14.9 cf x 2 x 6 rows = 178.8 cf

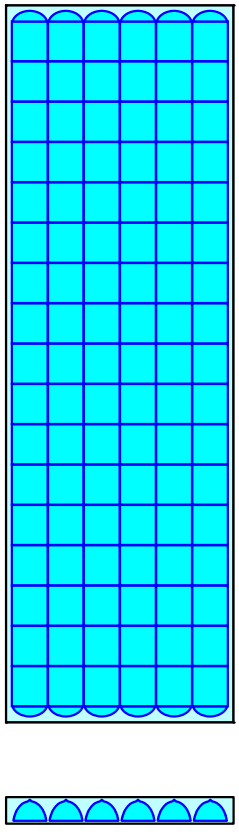
17 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 125.59' Row Length +12.0" End Stone x 2 = 127.59' Base Length
6 Rows x 77.0" Wide + 12.0" Side Stone x 2 = 40.50' Base Width
6.0" Stone Base + 45.0" Chamber Height + 6.0" Stone Cover = 4.75' Field Height

102 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 6 Rows = 11,393.9 cf Chamber Storage

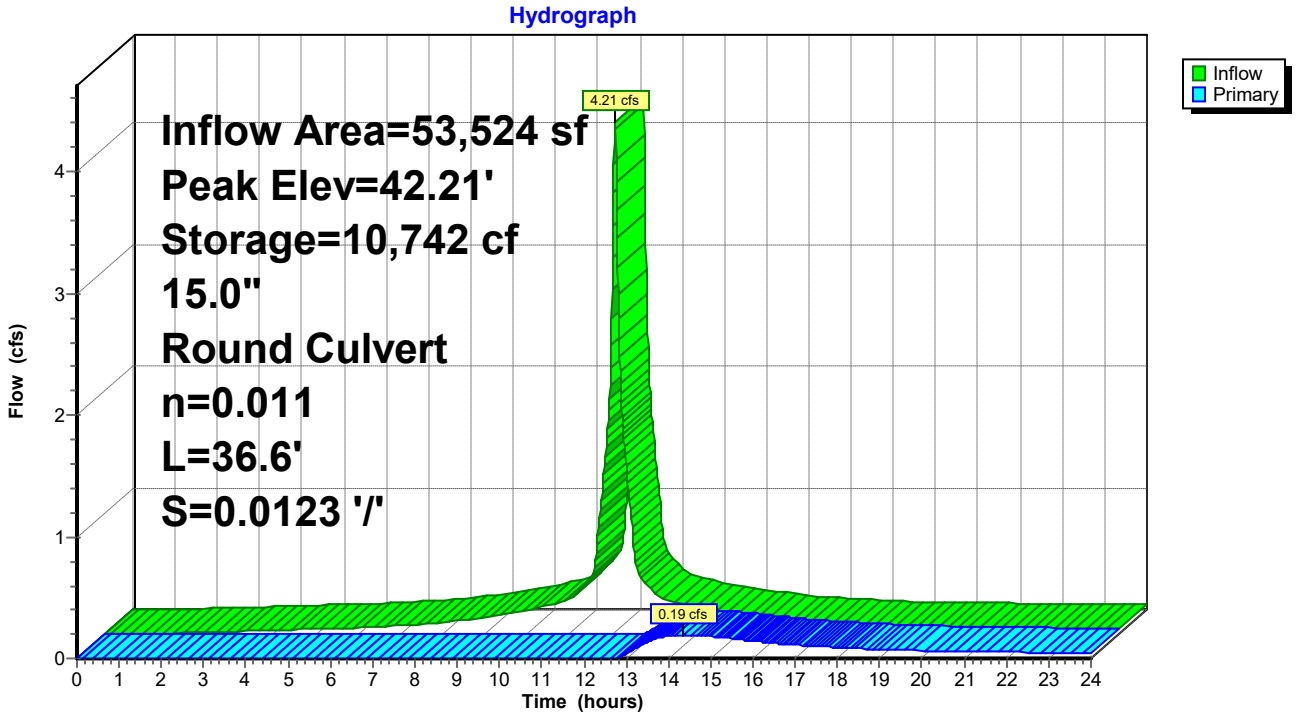
24,545.1 cf Field - 11,393.9 cf Chambers = 13,151.2 cf Stone x 40.0% Voids = 5,260.5 cf Stone Storage

Chamber Storage + Stone Storage = 16,654.4 cf = 0.382 af
Overall Storage Efficiency = 67.9%
Overall System Size = 127.59' x 40.50' x 4.75'

102 Chambers
909.1 cy Field
487.1 cy Stone



Pond UI01: Und Inf 01



Summary for Pond UI02: Und Inf 02

Inflow Area = 33,482 sf, 30.44% Impervious, Inflow Depth > 1.63" for 2-yr event
Inflow = 1.41 cfs @ 12.11 hrs, Volume= 4,535 cf
Outflow = 1.29 cfs @ 12.14 hrs, Volume= 4,088 cf, Atten= 9%, Lag= 2.3 min
Primary = 1.29 cfs @ 12.14 hrs, Volume= 4,088 cf
Routed to Link 1 : Pipe 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.26' @ 12.14 hrs Surf.Area= 558 sf Storage= 719 cf

Plug-Flow detention time= 70.7 min calculated for 4,088 cf (90% of inflow)
Center-of-Mass det. time= 22.9 min (859.6 - 836.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	39.97'	697 cf	**6.50'W x 82.00'L x 5.50'H Field A** 2,932 cf Overall - 1,188 cf Embedded = 1,743 cf x 40.0% Voids
#2A	40.47'	992 cf	**ADS N-12 48"** x 4 Inside #1 Inside= 47.7"W x 47.7"H => 12.40 sf x 20.00'L = 248.0 cf Outside= 54.0"W x 54.0"H => 14.86 sf x 20.00'L = 297.1 cf
#3	39.97'	144 cf	**4.00'D x 5.73'H Vertical Cone/Cylinder** x 2
		1,833 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 22.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 41.38' S= 0.0054 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.28 cfs @ 12.14 hrs HW=42.25' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 1.28 cfs @ 2.80 fps)

Pond UI02: Und Inf 02 - Chamber Wizard Field A

Chamber Model = ADS N-12 48" (ADS N-12® Pipe)
Inside= 47.7"W x 47.7"H => 12.40 sf x 20.00'L = 248.0 cf
Outside= 54.0"W x 54.0"H => 14.86 sf x 20.00'L = 297.1 cf

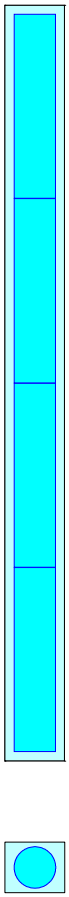
4 Chambers/Row x 20.00' Long = 80.00' Row Length +12.0" End Stone x 2 = 82.00' Base Length
1 Rows x 54.0" Wide + 12.0" Side Stone x 2 = 6.50' Base Width
6.0" Stone Base + 54.0" Chamber Height + 6.0" Stone Cover = 5.50' Field Height

4 Chambers x 248.0 cf = 992.0 cf Chamber Storage
4 Chambers x 297.1 cf = 1,188.4 cf Displacement

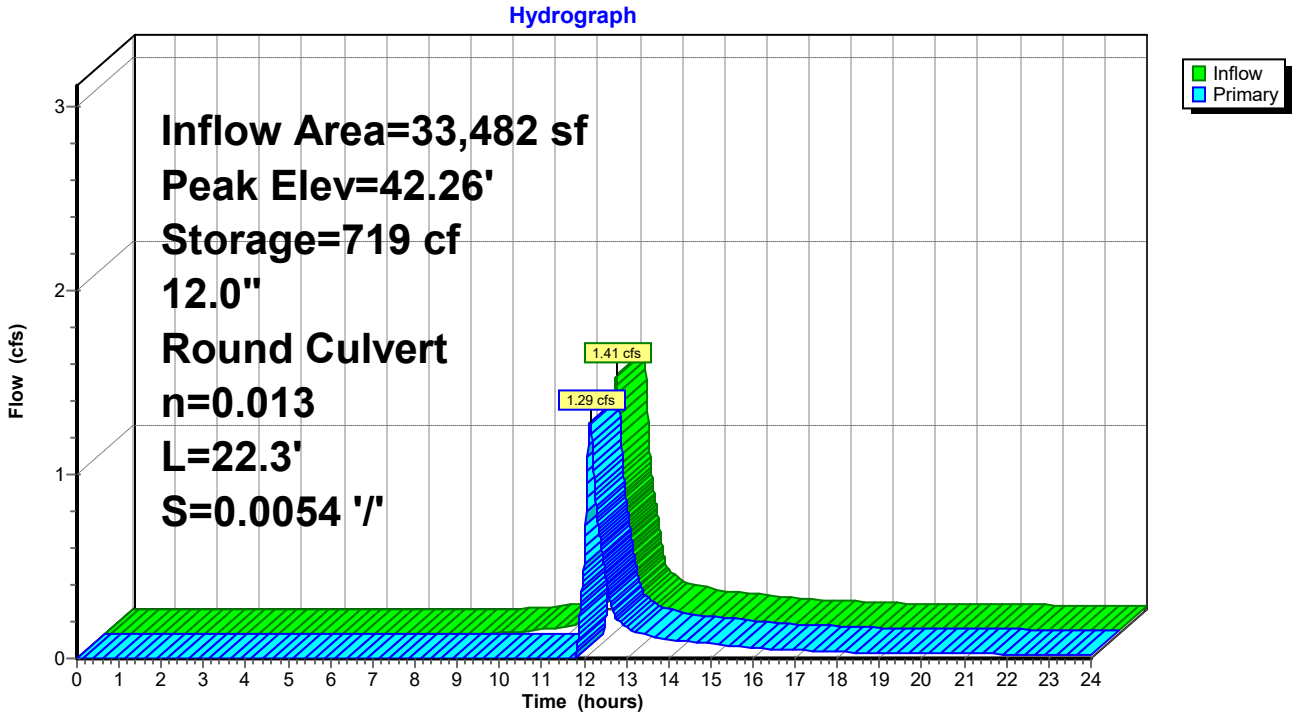
2,931.6 cf Field - 1,188.4 cf Chambers = 1,743.2 cf Stone x 40.0% Voids = 697.3 cf Stone Storage

Chamber Storage + Stone Storage = 1,689.3 cf = 0.039 af
Overall Storage Efficiency = 57.6%
Overall System Size = 82.00' x 6.50' x 5.50'

4 Chambers
108.6 cy Field
64.6 cy Stone



Pond UI02: Und Inf 02



Summary for Pond YD3: YD-03

[57] Hint: Peaked at 42.12' (Flood elevation advised)

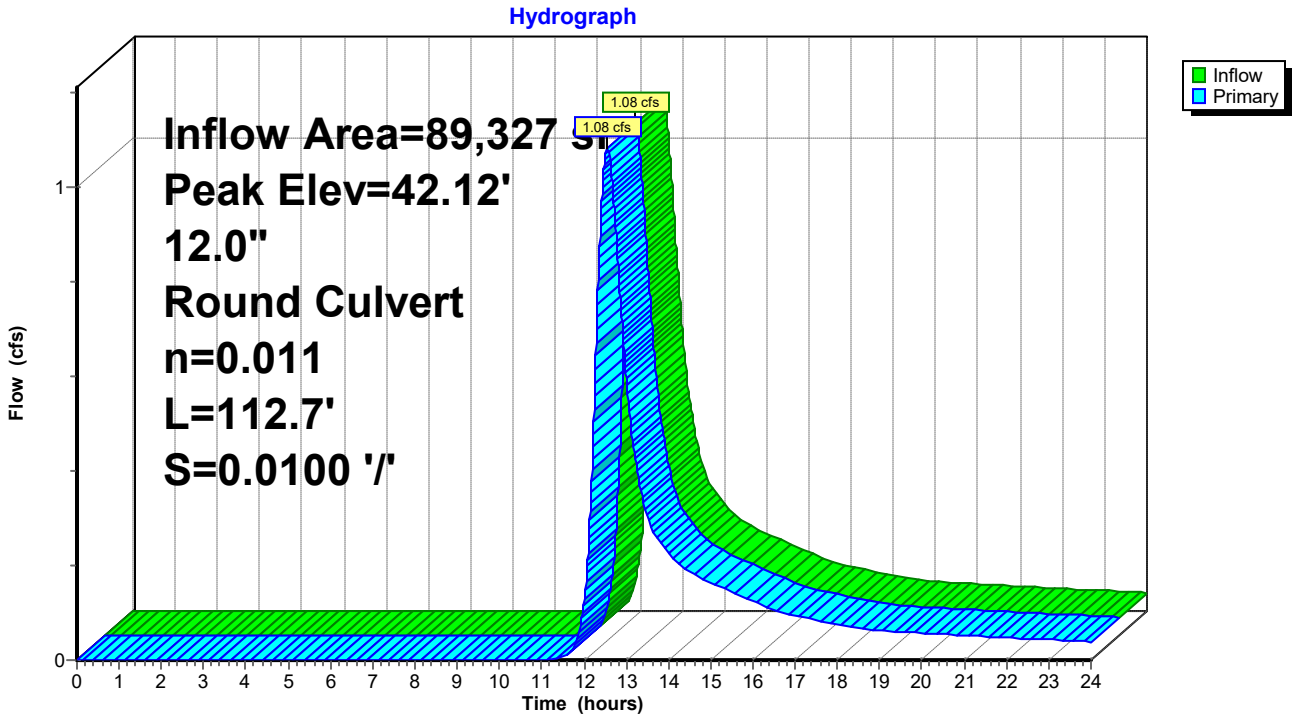
Inflow Area = 89,327 sf, 1.78% Impervious, Inflow Depth > 0.94" for 2-yr event
Inflow = 1.08 cfs @ 12.56 hrs, Volume= 6,974 cf
Outflow = 1.08 cfs @ 12.56 hrs, Volume= 6,974 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.08 cfs @ 12.56 hrs, Volume= 6,974 cf
Routed to Link Sub B : SUB B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.12' @ 12.56 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 112.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 40.37' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.08 cfs @ 12.56 hrs HW=42.12' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.08 cfs @ 2.12 fps)

Pond YD3: YD-03



Summary for Pond YD33: YD-33

[57] Hint: Peaked at 57.17' (Flood elevation advised)

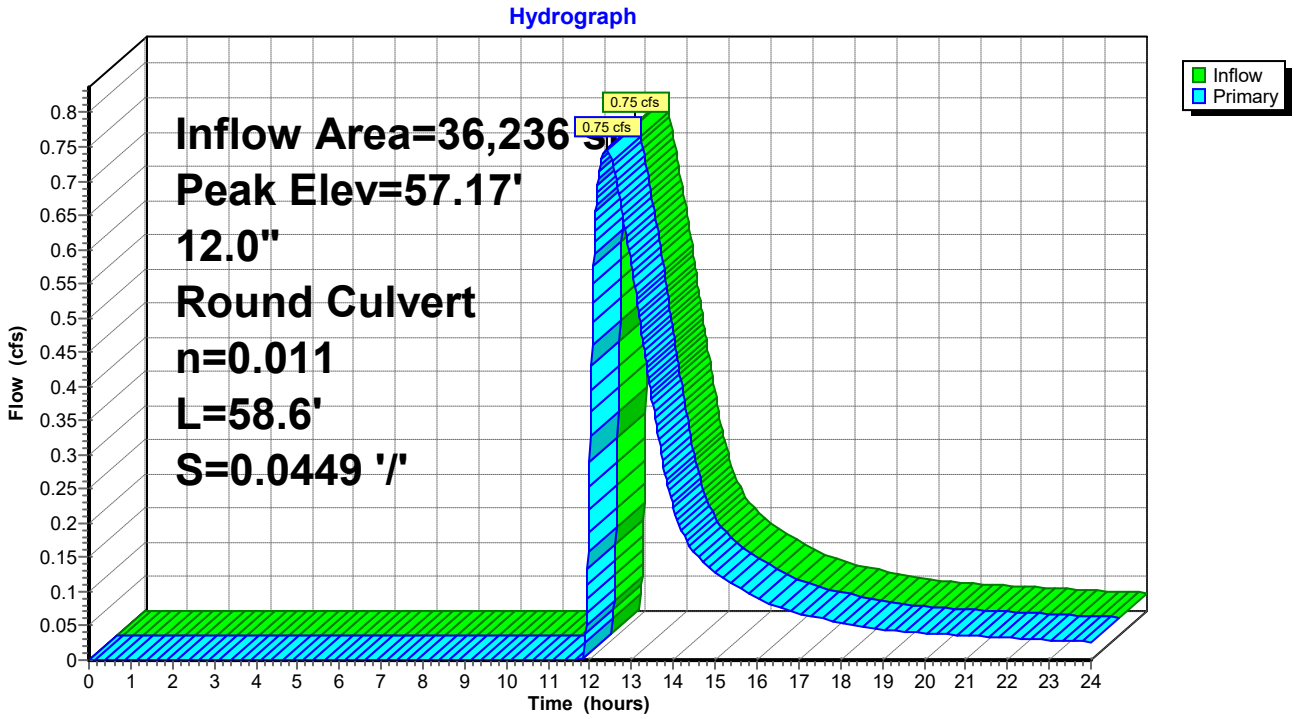
Inflow Area = 36,236 sf, 92.20% Impervious, Inflow Depth > 2.02" for 2-yr event
Inflow = 0.75 cfs @ 12.40 hrs, Volume= 6,100 cf
Outflow = 0.75 cfs @ 12.40 hrs, Volume= 6,100 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.75 cfs @ 12.40 hrs, Volume= 6,100 cf
Routed to Link SUB D1 : D1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.17' @ 12.40 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	56.67'	**12.0" Round Culvert** L= 58.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.67' / 54.04' S= 0.0449 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.75 cfs @ 12.40 hrs HW=57.17' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.75 cfs @ 1.90 fps)

Pond YD33: YD-33



Summary for Pond YD40: YD-40

[57] Hint: Peaked at 41.95' (Flood elevation advised)

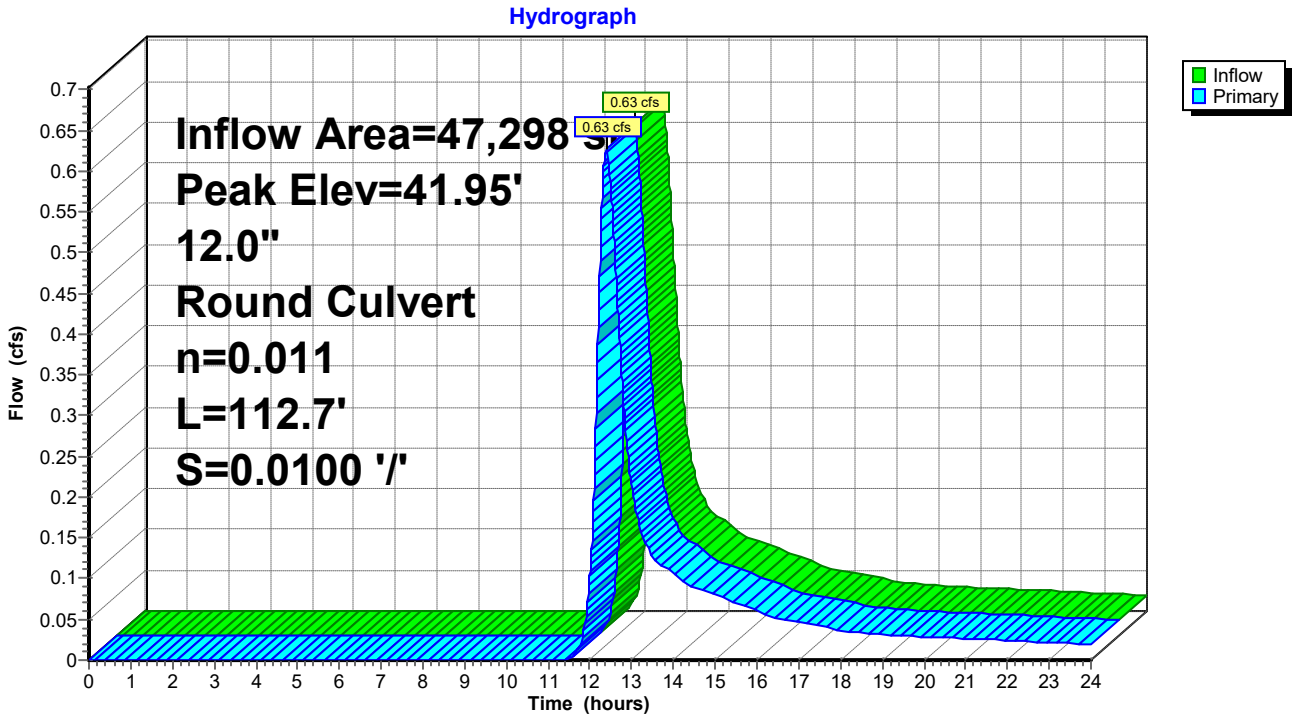
Inflow Area = 47,298 sf, 5.26% Impervious, Inflow Depth > 0.89" for 2-yr event
Inflow = 0.63 cfs @ 12.38 hrs, Volume= 3,500 cf
Outflow = 0.63 cfs @ 12.38 hrs, Volume= 3,500 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.63 cfs @ 12.38 hrs, Volume= 3,500 cf
Routed to Link Sub B : SUB B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.95' @ 12.38 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 112.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 40.37' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.63 cfs @ 12.38 hrs HW=41.95' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.63 cfs @ 1.81 fps)

Pond YD40: YD-40

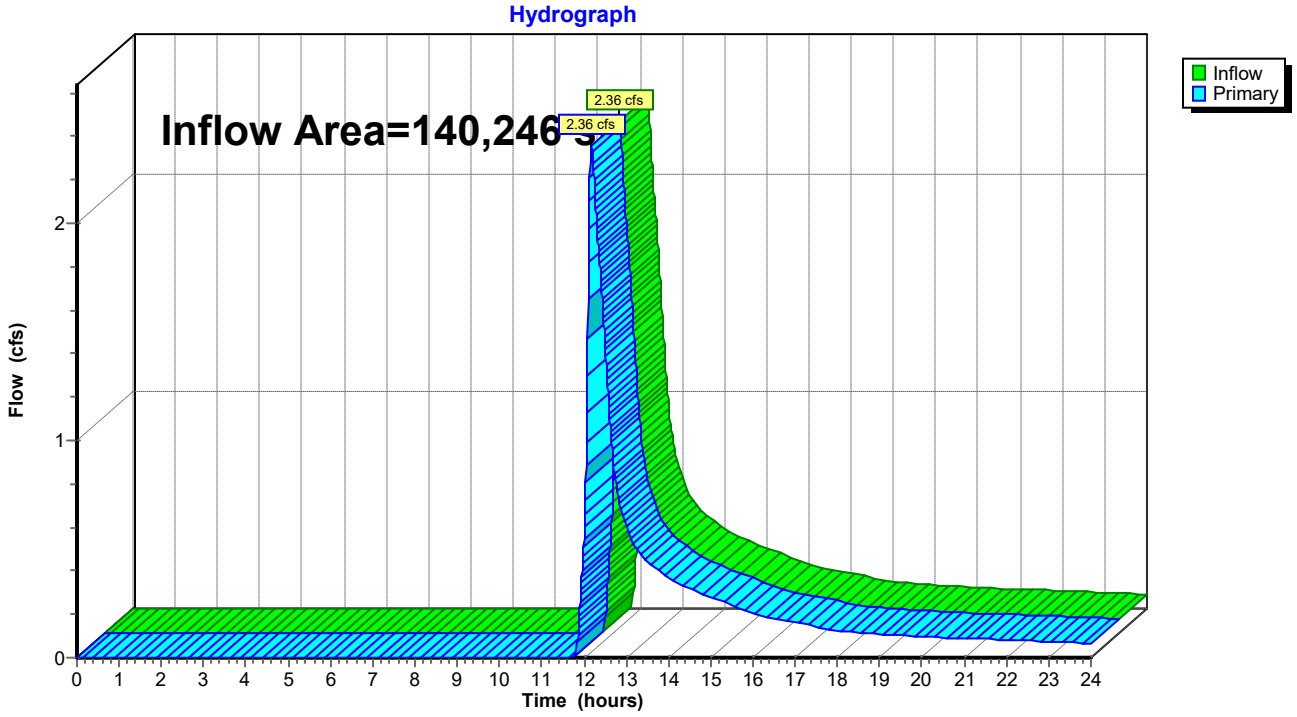


Summary for Link 1: Pipe 1

Inflow Area = 140,246 sf, 34.50% Impervious, Inflow Depth > 1.00" for 2-yr event
Inflow = 2.36 cfs @ 12.18 hrs, Volume= 11,739 cf
Primary = 2.36 cfs @ 12.18 hrs, Volume= 11,739 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 2 : Pipe 2

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1: Pipe 1

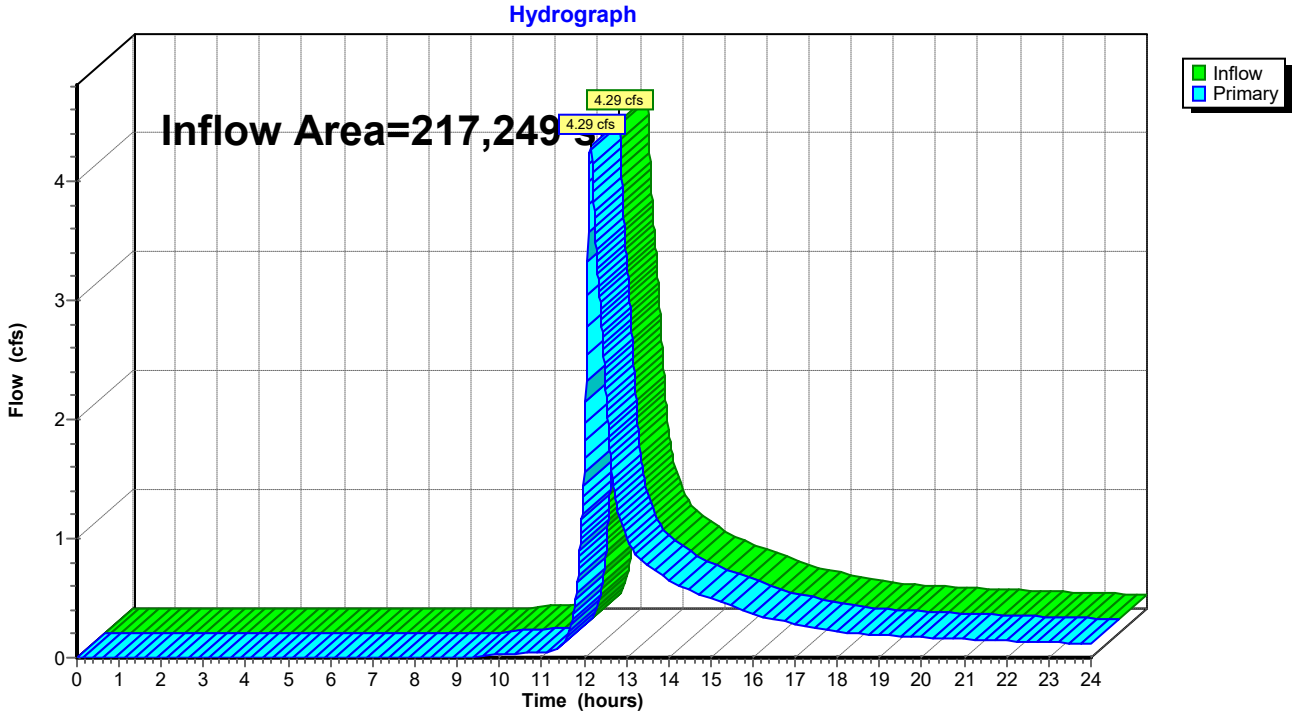


Summary for Link 2: Pipe 2

Inflow Area = 217,249 sf, 40.87% Impervious, Inflow Depth > 1.19" for 2-yr event
Inflow = 4.29 cfs @ 12.16 hrs, Volume= 21,578 cf
Primary = 4.29 cfs @ 12.16 hrs, Volume= 21,578 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3 : Pipe 3

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 2: Pipe 2

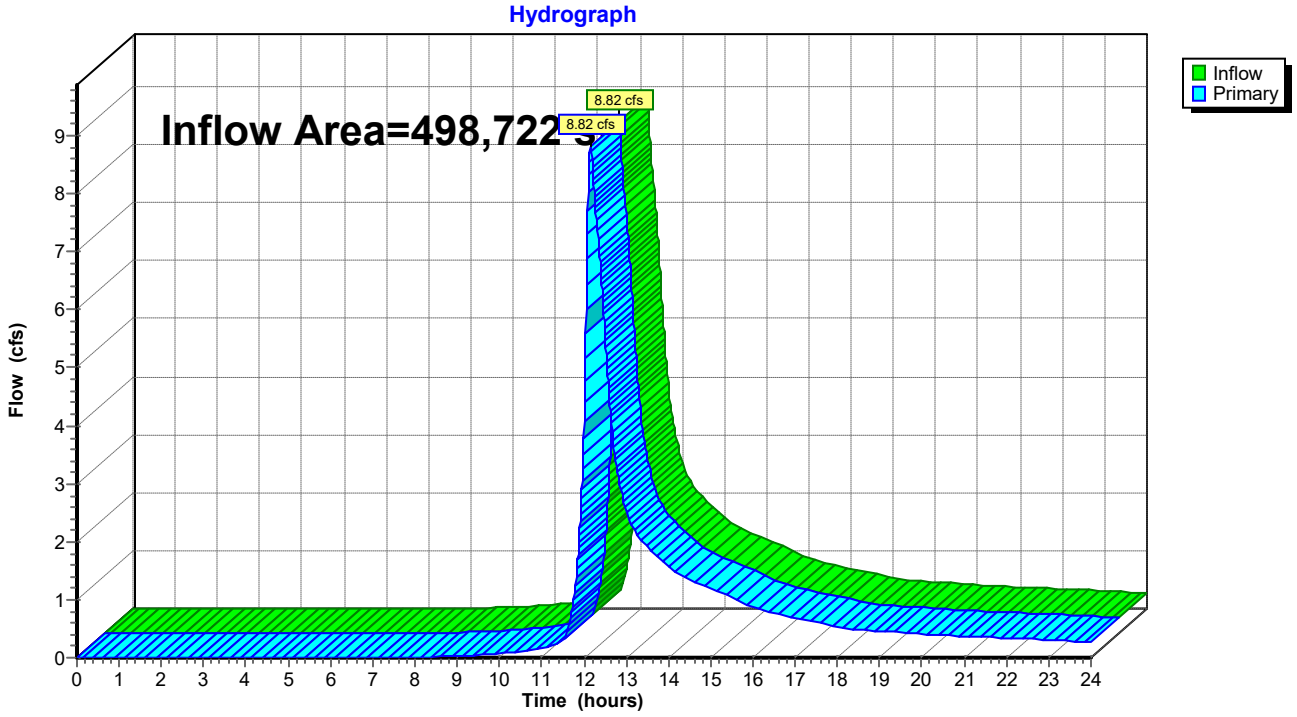


Summary for Link 3: Pipe 3

Inflow Area = 498,722 sf, 46.58% Impervious, Inflow Depth > 1.24" for 2-yr event
Inflow = 8.82 cfs @ 12.15 hrs, Volume= 51,604 cf
Primary = 8.82 cfs @ 12.15 hrs, Volume= 51,604 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4 : Pipe 4

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 3: Pipe 3

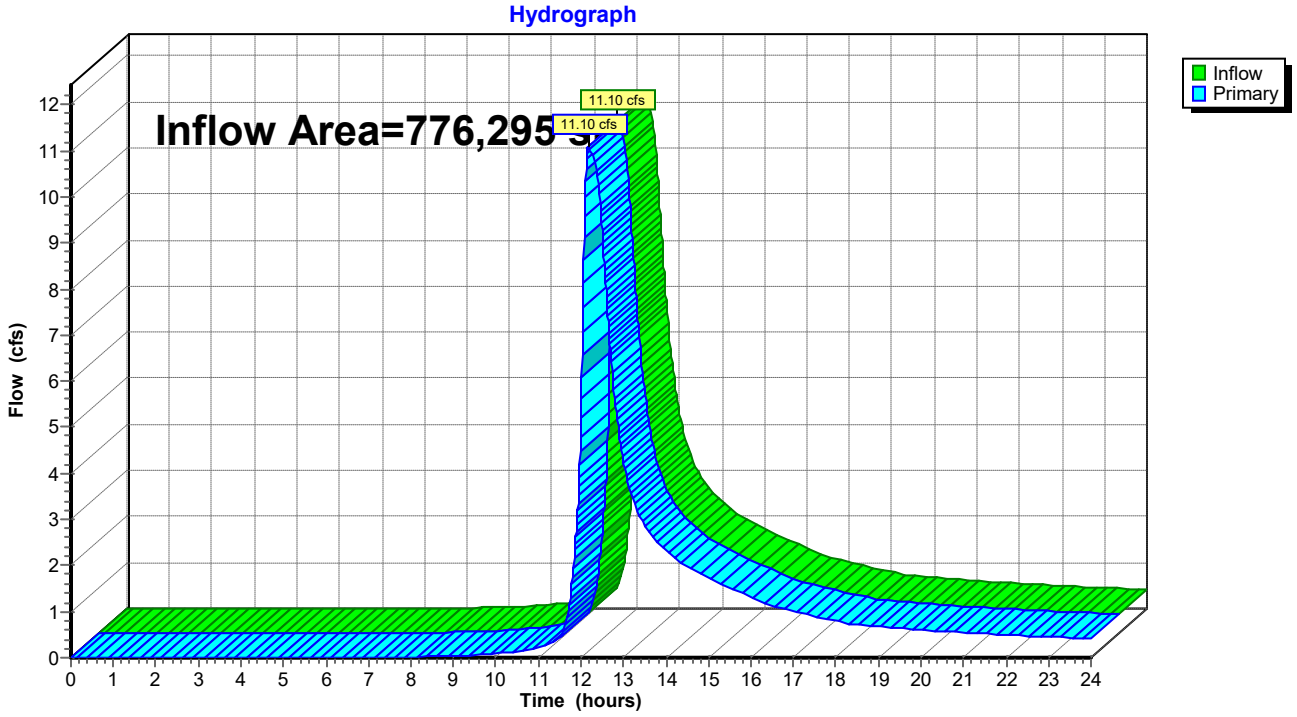


Summary for Link 4: Pipe 4

Inflow Area = 776,295 sf, 34.75% Impervious, Inflow Depth > 1.19" for 2-yr event
Inflow = 11.10 cfs @ 12.17 hrs, Volume= 76,911 cf
Primary = 11.10 cfs @ 12.17 hrs, Volume= 76,911 cf, Atten= 0%, Lag= 0.0 min
Routed to Link A : POC-A

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 4: Pipe 4

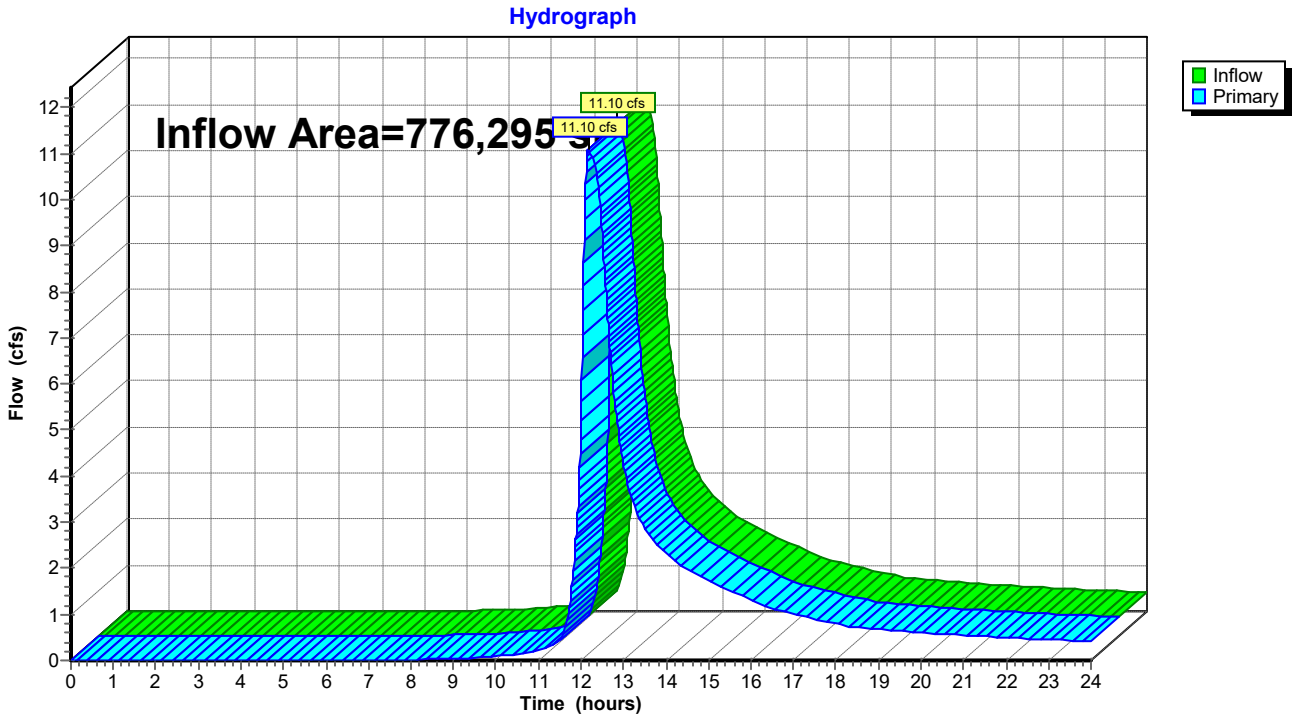


Summary for Link A: POC-A

Inflow Area = 776,295 sf, 34.75% Impervious, Inflow Depth > 1.19" for 2-yr event
Inflow = 11.10 cfs @ 12.17 hrs, Volume= 76,911 cf
Primary = 11.10 cfs @ 12.17 hrs, Volume= 76,911 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link A: POC-A

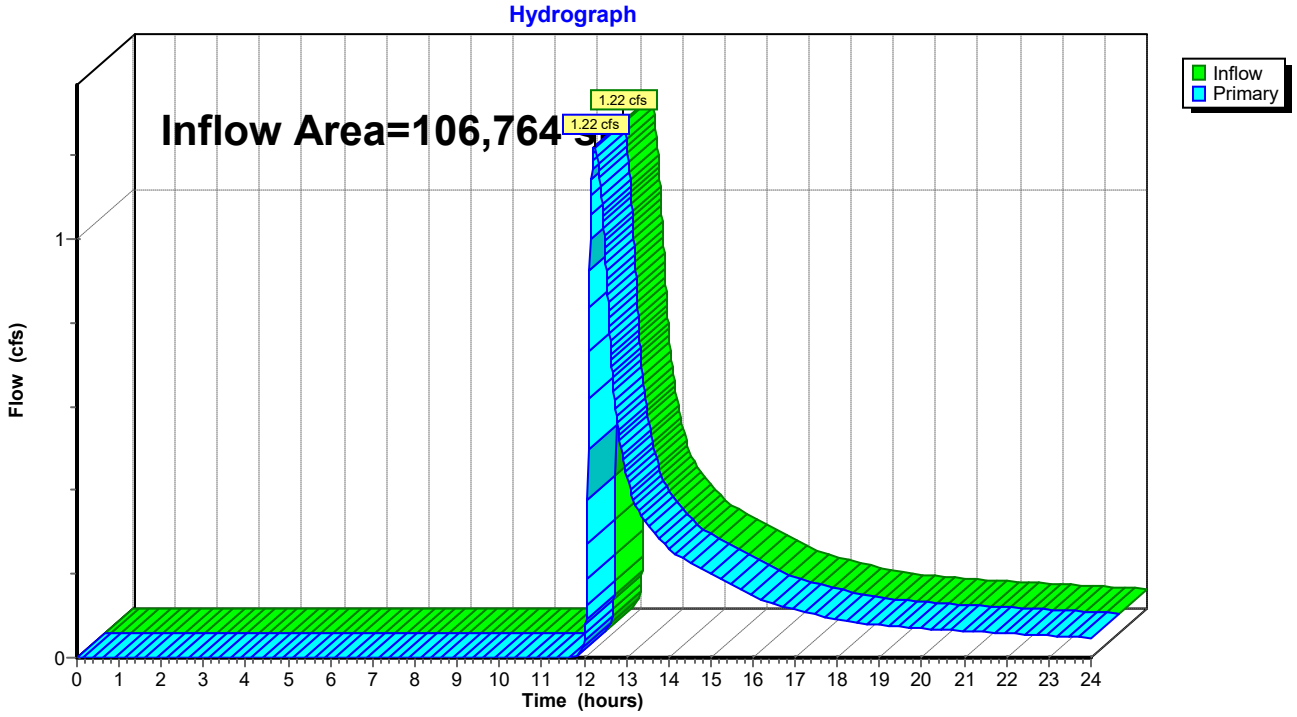


Summary for Link Sub A: SUB A

Inflow Area = 106,764 sf, 35.77% Impervious, Inflow Depth > 0.86" for 2-yr event
Inflow = 1.22 cfs @ 12.24 hrs, Volume= 7,651 cf
Primary = 1.22 cfs @ 12.24 hrs, Volume= 7,651 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 1 : Pipe 1

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Sub A: SUB A

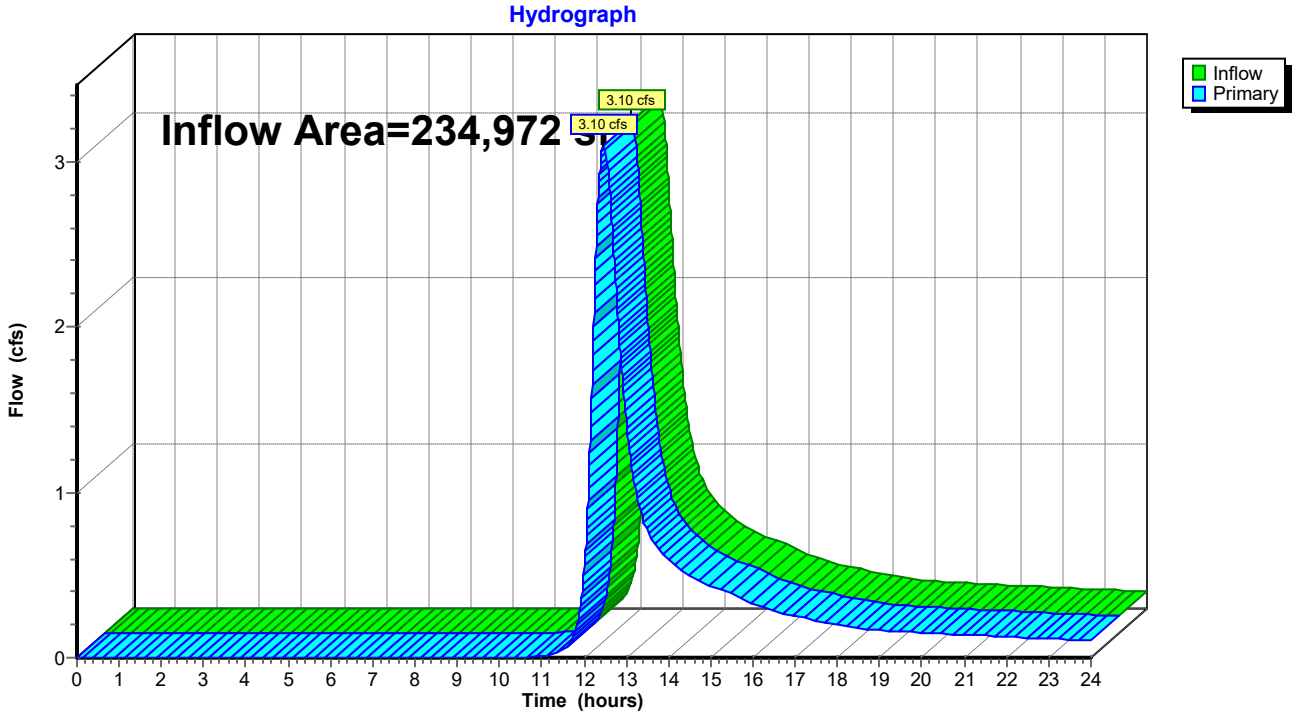


Summary for Link Sub B: SUB B

Inflow Area = 234,972 sf, 4.63% Impervious, Inflow Depth > 0.98" for 2-yr event
Inflow = 3.10 cfs @ 12.47 hrs, Volume= 19,243 cf
Primary = 3.10 cfs @ 12.47 hrs, Volume= 19,243 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4 : Pipe 4

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Sub B: SUB B

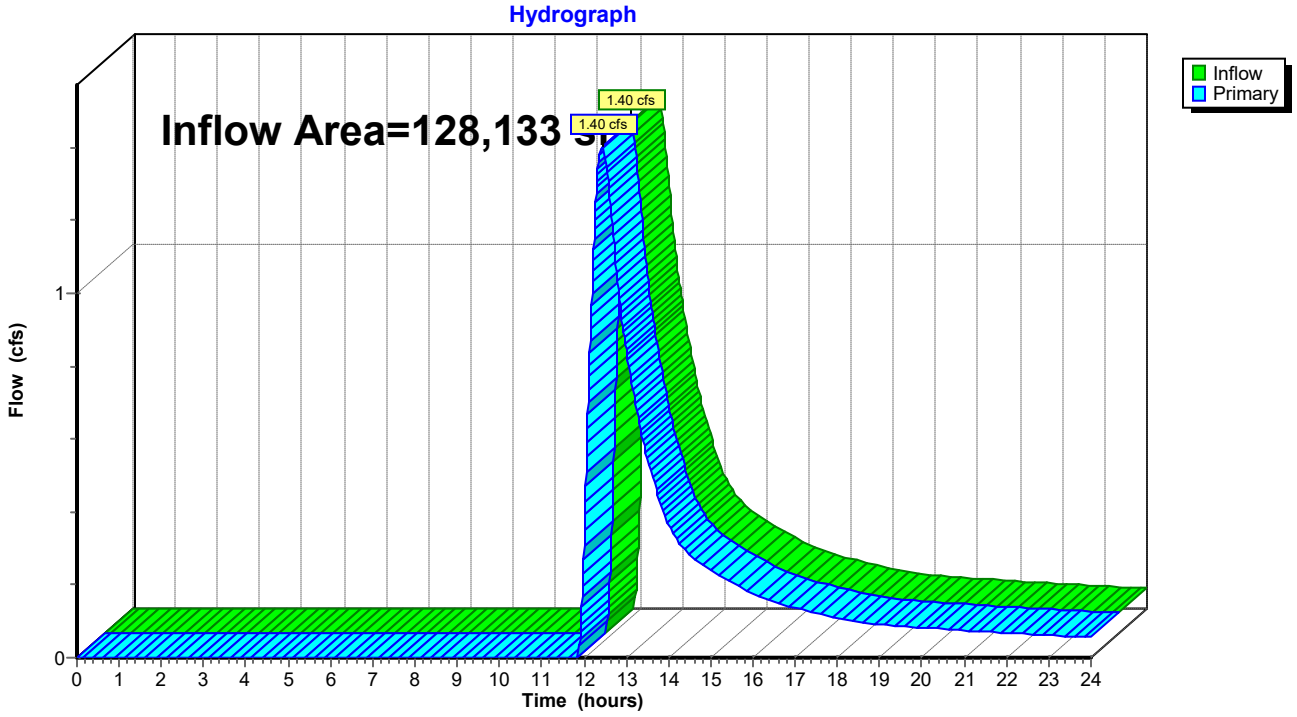


Summary for Link SUB D1: D1

Inflow Area = 128,133 sf, 28.03% Impervious, Inflow Depth > 0.98" for 2-yr event
Inflow = 1.40 cfs @ 12.43 hrs, Volume= 10,422 cf
Primary = 1.40 cfs @ 12.43 hrs, Volume= 10,422 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3 : Pipe 3

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link SUB D1: D1



Summary for Subcatchment 15S: D1H-R

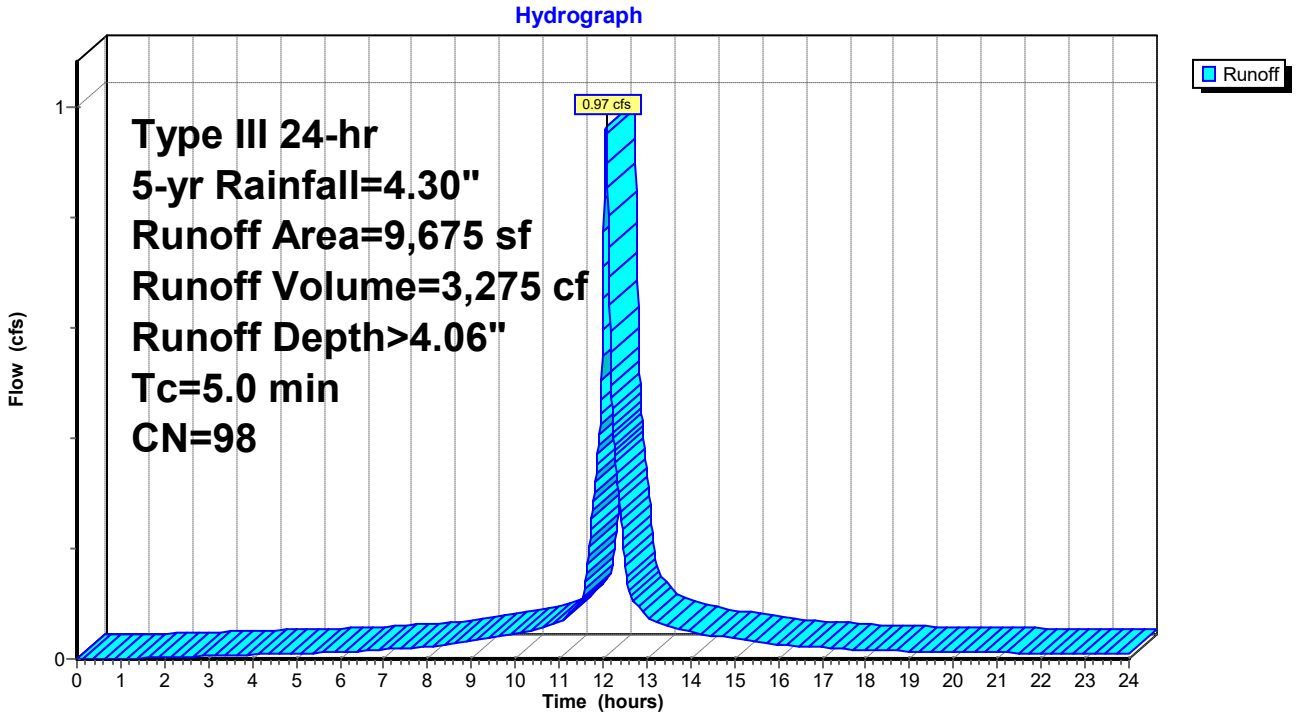
Runoff = 0.97 cfs @ 12.07 hrs, Volume= 3,275 cf, Depth> 4.06"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	9,675	98	Impervious
	9,675		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 15S: D1H-R



Summary for Subcatchment 16S: D1E-R

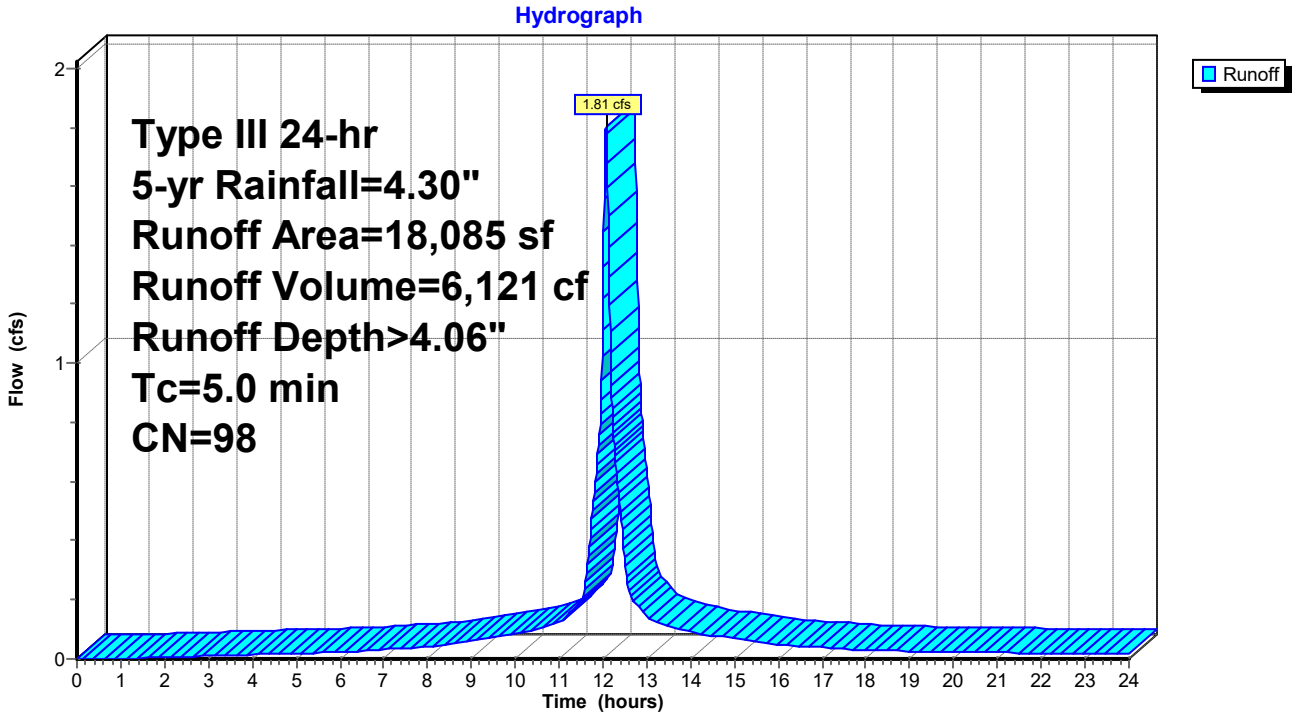
Runoff = 1.81 cfs @ 12.07 hrs, Volume= 6,121 cf, Depth> 4.06"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	18,085	98	Impervious
	18,085		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 16S: D1E-R



Summary for Subcatchment 22S: D2A-R

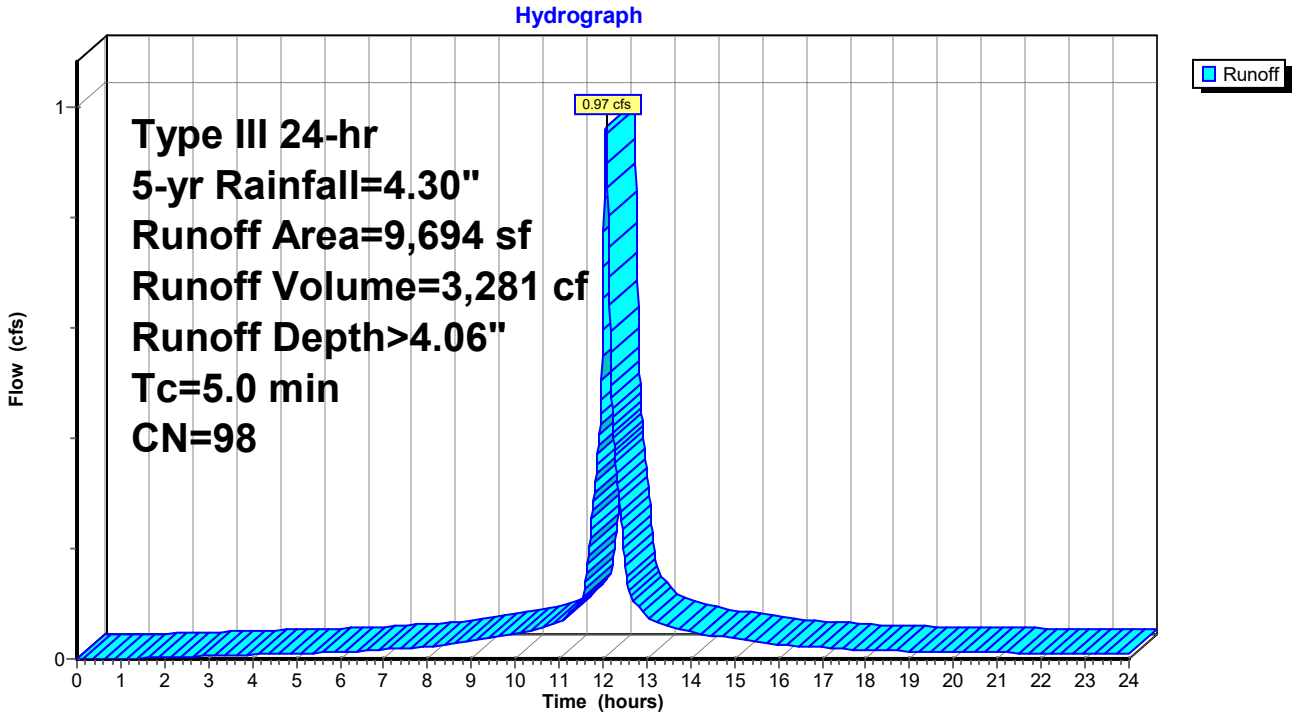
Runoff = 0.97 cfs @ 12.07 hrs, Volume= 3,281 cf, Depth> 4.06"
Routed to Pond 13P : Por Pvt-D2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	9,694	98	Impervious
	9,694		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 22S: D2A-R



Summary for Subcatchment 23S: D2C-R

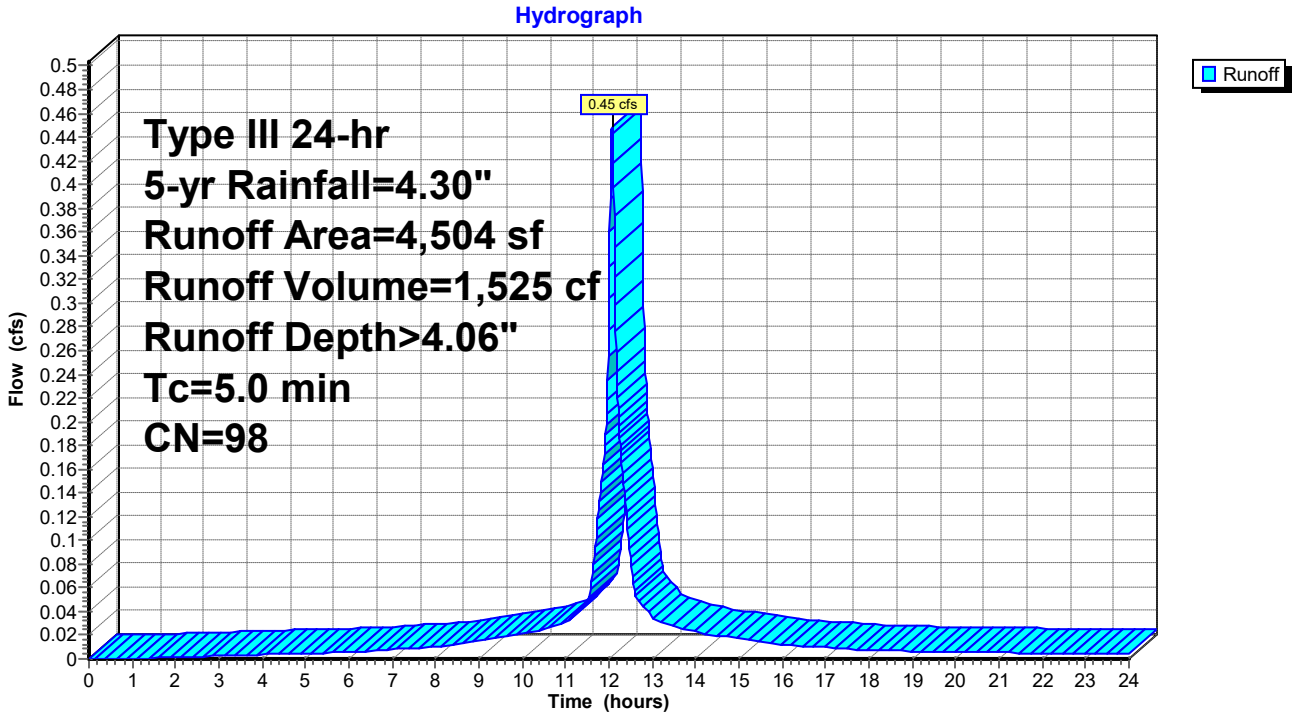
Runoff = 0.45 cfs @ 12.07 hrs, Volume= 1,525 cf, Depth> 4.06"
Routed to Pond 16P : Por Pvt-D2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 23S: D2C-R



Summary for Subcatchment 24S: D2D-R

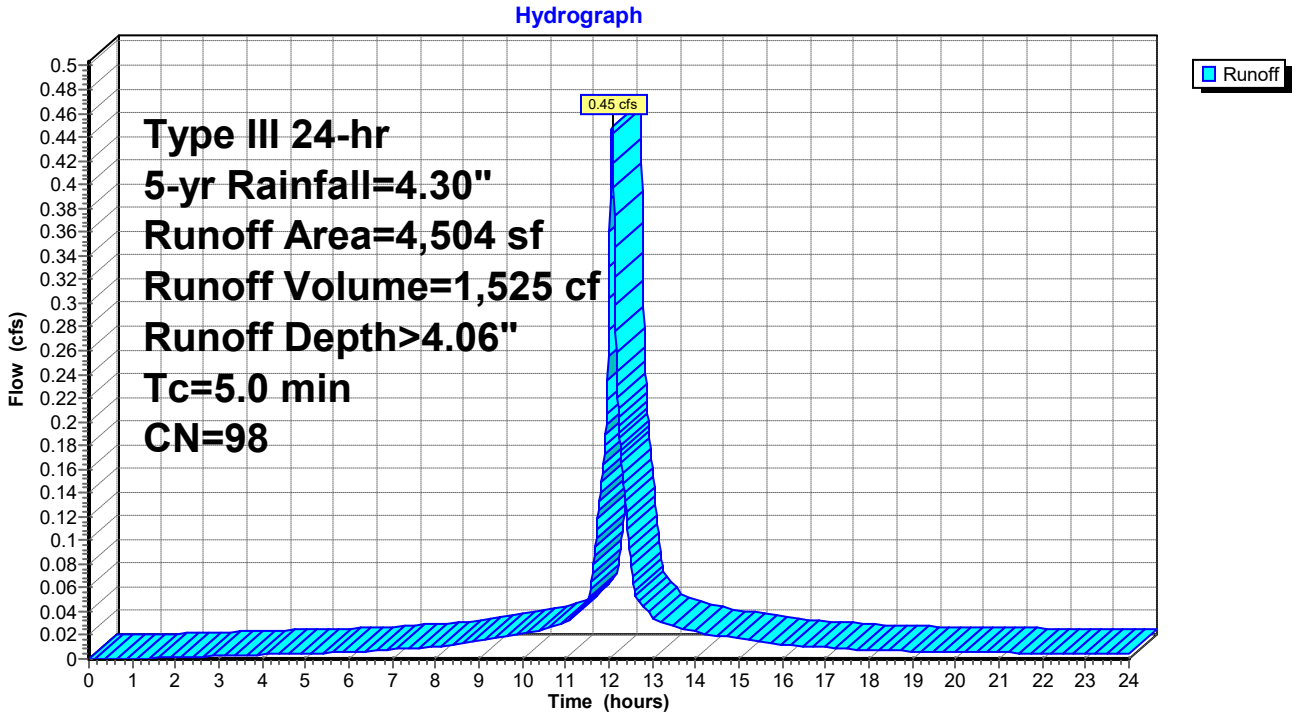
Runoff = 0.45 cfs @ 12.07 hrs, Volume= 1,525 cf, Depth> 4.06"
Routed to Pond 18P : Por Pvt-D2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 24S: D2D-R



Summary for Subcatchment 25S: D2E-R

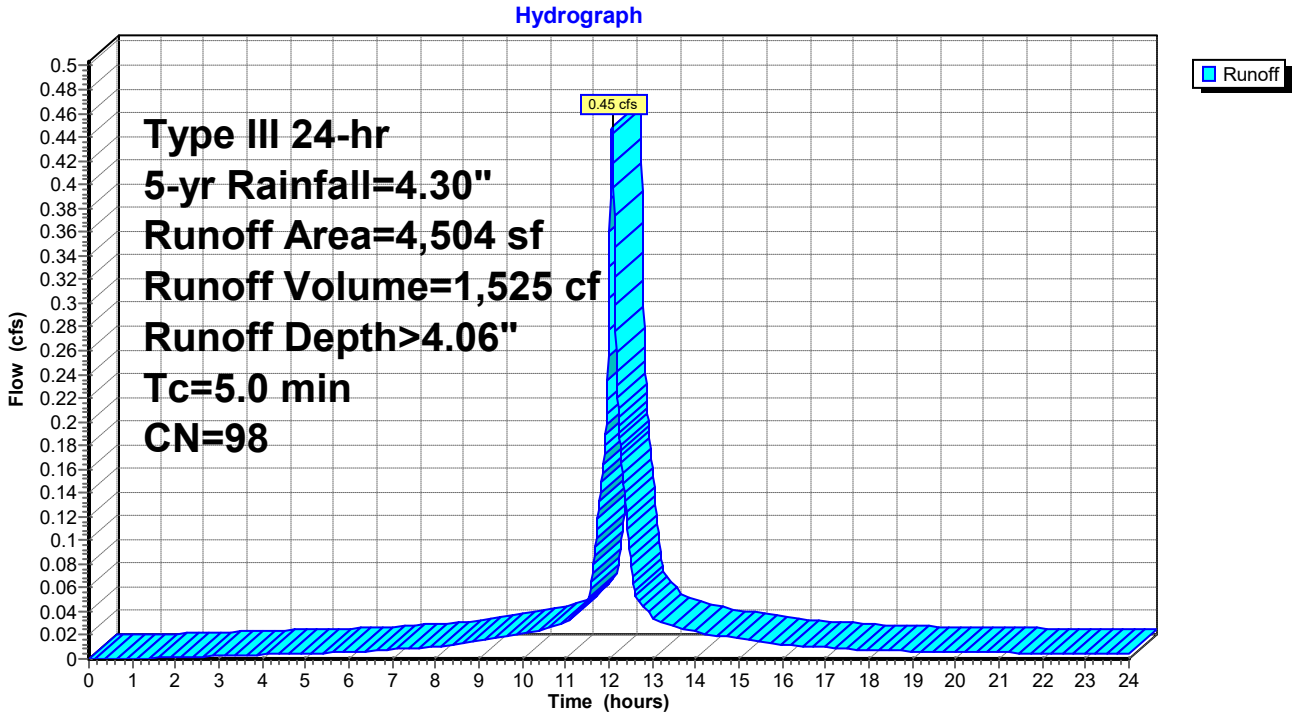
Runoff = 0.45 cfs @ 12.07 hrs, Volume= 1,525 cf, Depth> 4.06"
Routed to Pond 19P : Por Pvt-D2E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 25S: D2E-R



Summary for Subcatchment 26S: D2F-R

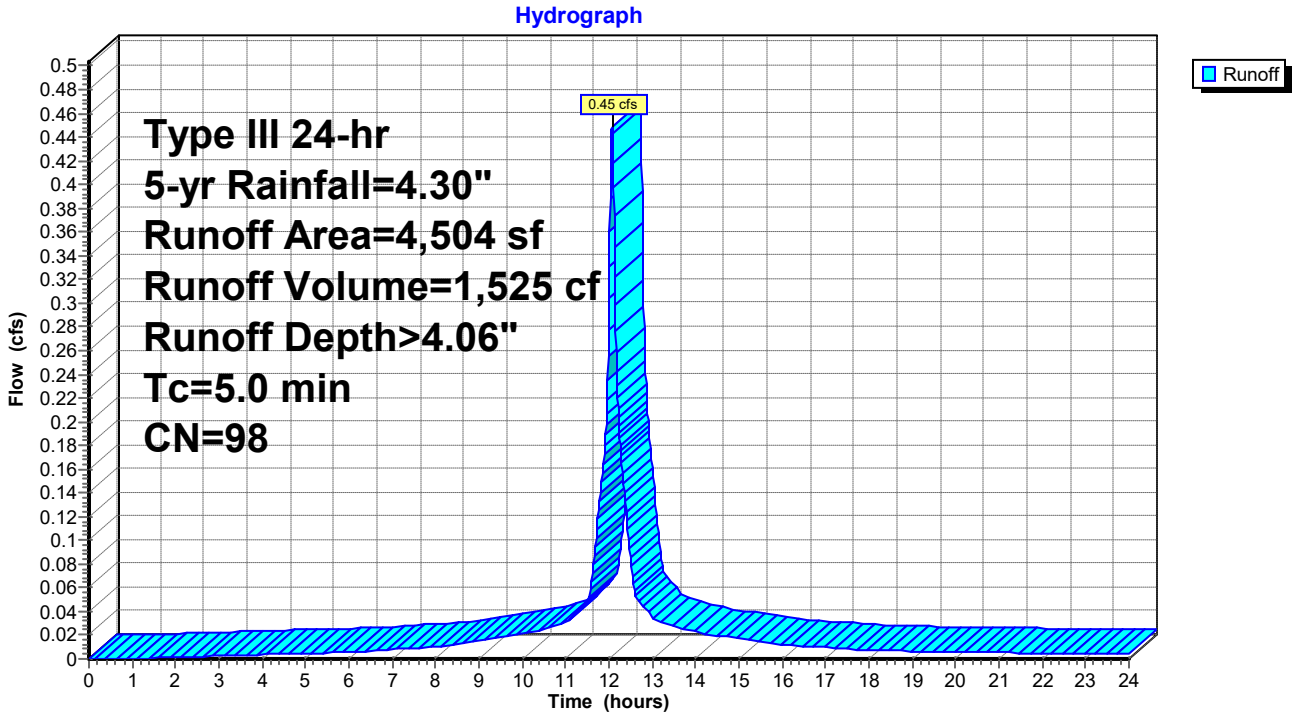
Runoff = 0.45 cfs @ 12.07 hrs, Volume= 1,525 cf, Depth> 4.06"
Routed to Pond 20P : Por Pvt-D2F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 26S: D2F-R



Summary for Subcatchment A1: WS-A1

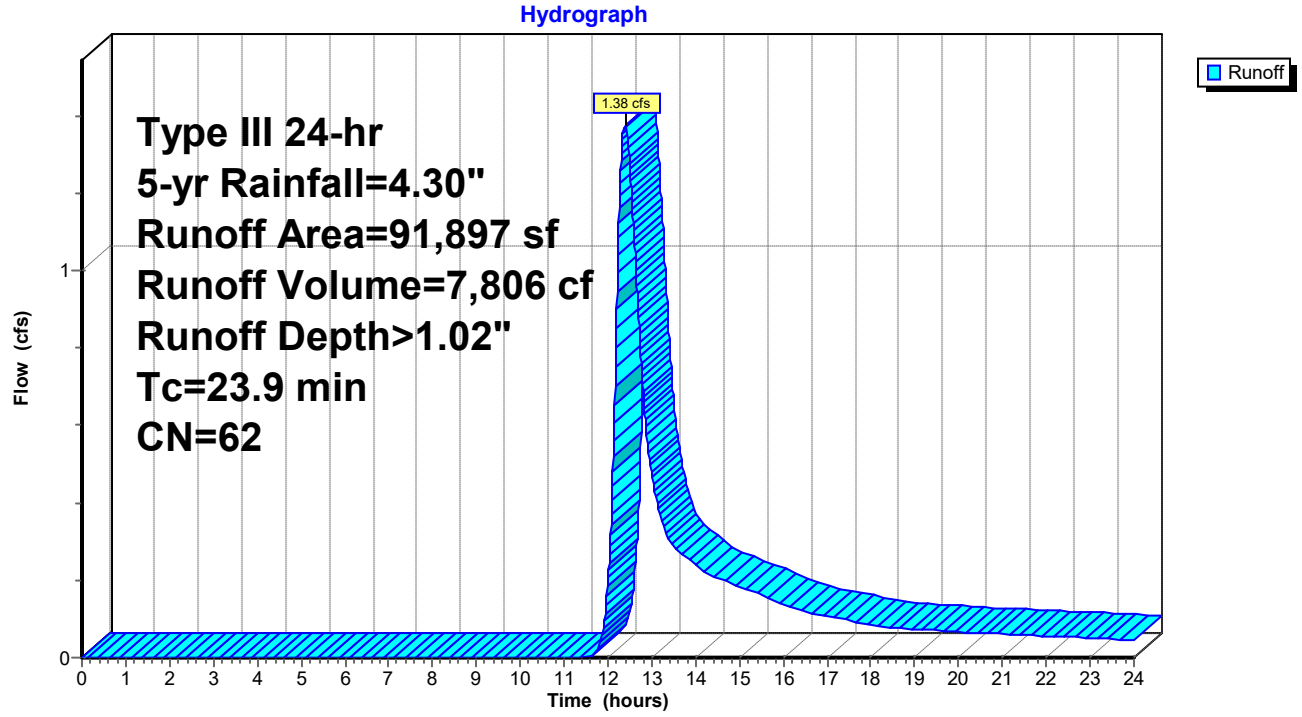
Runoff = 1.38 cfs @ 12.39 hrs, Volume= 7,806 cf, Depth> 1.02"
Routed to Link SUB D1 : D1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	2,508	98	Impervious - Roof
*	9,195	69	Lawn B
*	0	79	Lawn C
*	80,194	60	Forest B
*	0	73	Forest C
	91,897	62	Weighted Average
	89,389		97.27% Pervious Area
	2,508		2.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.9					**Direct Entry,**

Subcatchment A1: WS-A1



Summary for Subcatchment A2: WS-A2

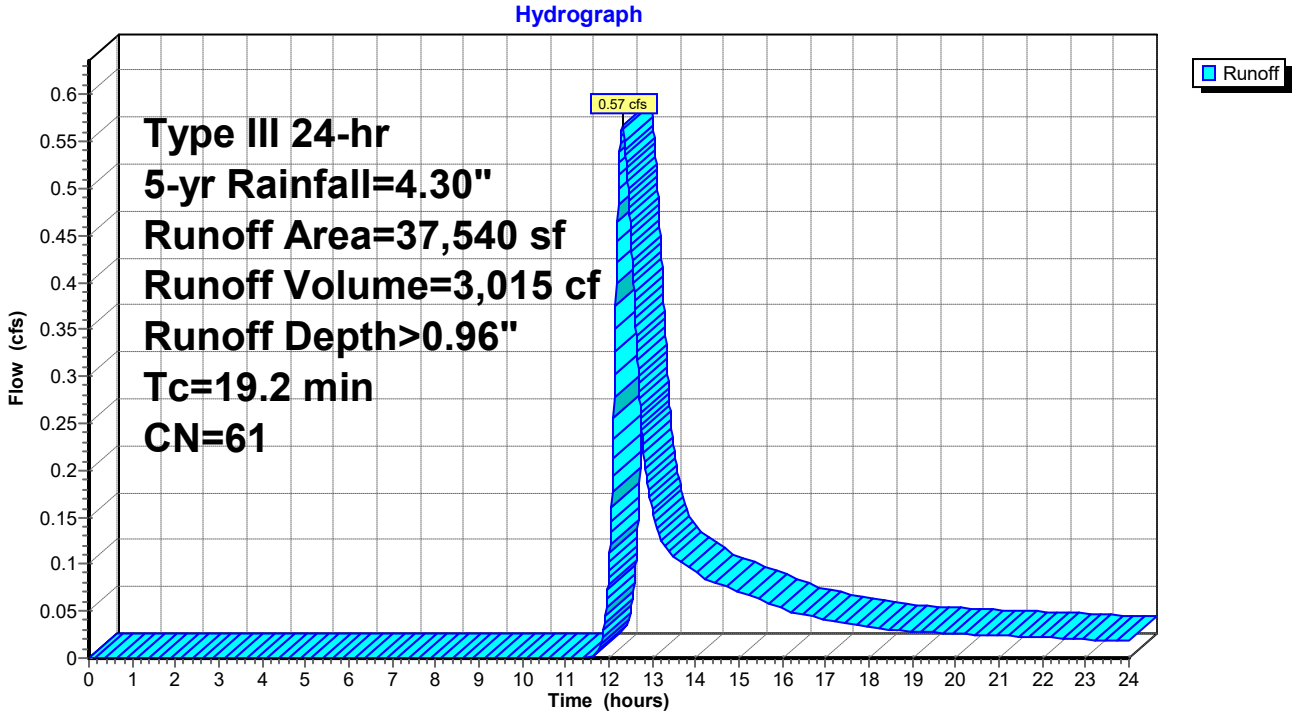
Runoff = 0.57 cfs @ 12.31 hrs, Volume= 3,015 cf, Depth> 0.96"
Routed to Pond DB01 : Detention-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	0	98	Impervious - Roof
*	5,793	69	Lawn B
*	0	79	Lawn C
*	31,747	60	Forest B
*	0	73	Forest C
	37,540	61	Weighted Average
	37,540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2					**Direct Entry,**

Subcatchment A2: WS-A2



Summary for Subcatchment A3: WS-A3

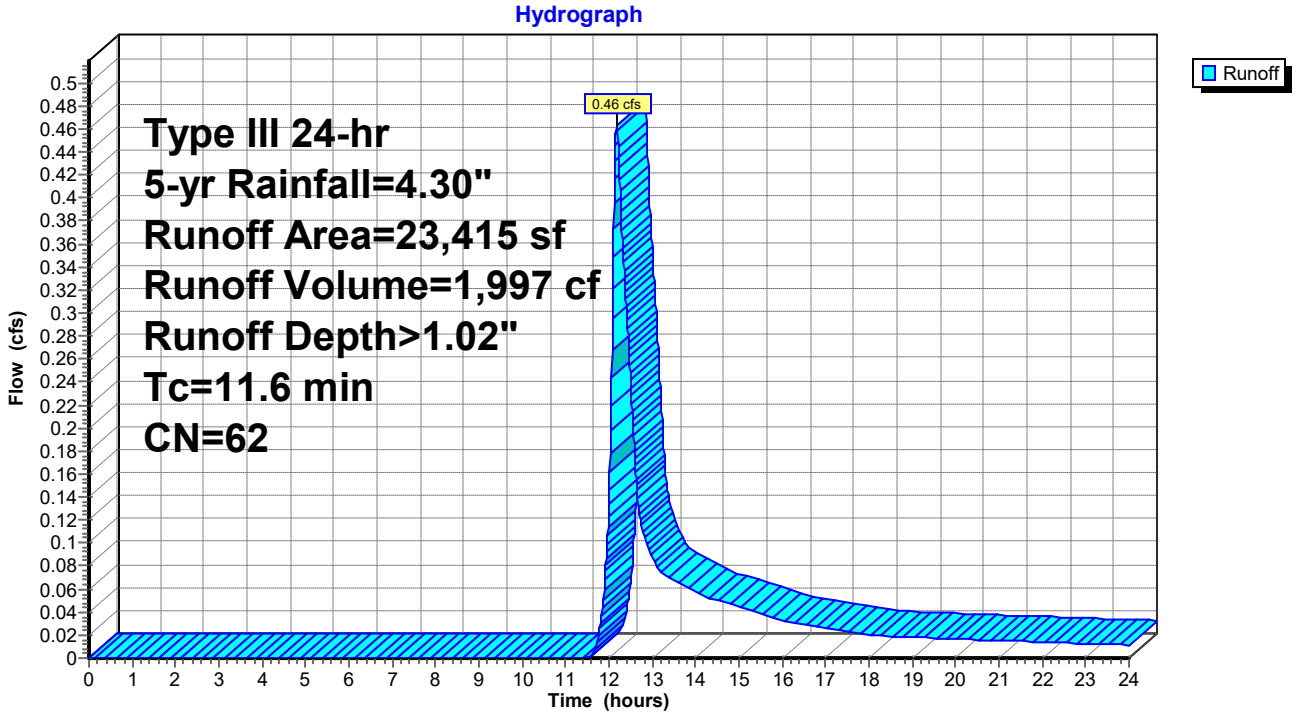
Runoff = 0.46 cfs @ 12.18 hrs, Volume= 1,997 cf, Depth> 1.02"
Routed to Pond DB01 : Detention-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	0	98	Impervious - Roof
*	4,949	69	Lawn B
*	0	79	Lawn C
*	18,466	60	Forest B
*	0	73	Forest C
	23,415	62	Weighted Average
	23,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6					**Direct Entry,**

Subcatchment A3: WS-A3



Summary for Subcatchment B1: WS-B1

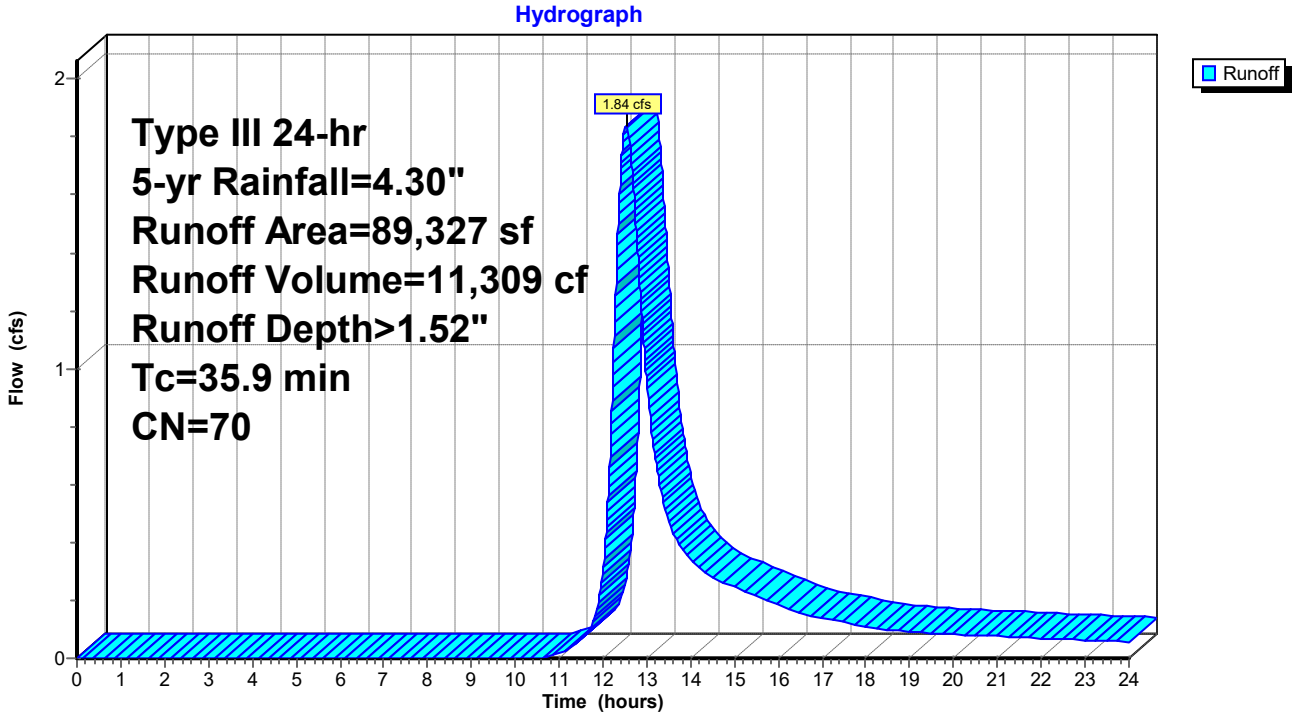
Runoff = 1.84 cfs @ 12.53 hrs, Volume= 11,309 cf, Depth> 1.52"
Routed to Pond YD3 : YD-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	1,588	98	Impervious
*	87,739	69	Lawn B
	89,327	70	Weighted Average
	87,739		98.22% Pervious Area
	1,588		1.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.9					**Direct Entry,**

Subcatchment B1: WS-B1



Summary for Subcatchment B2: WS-B2

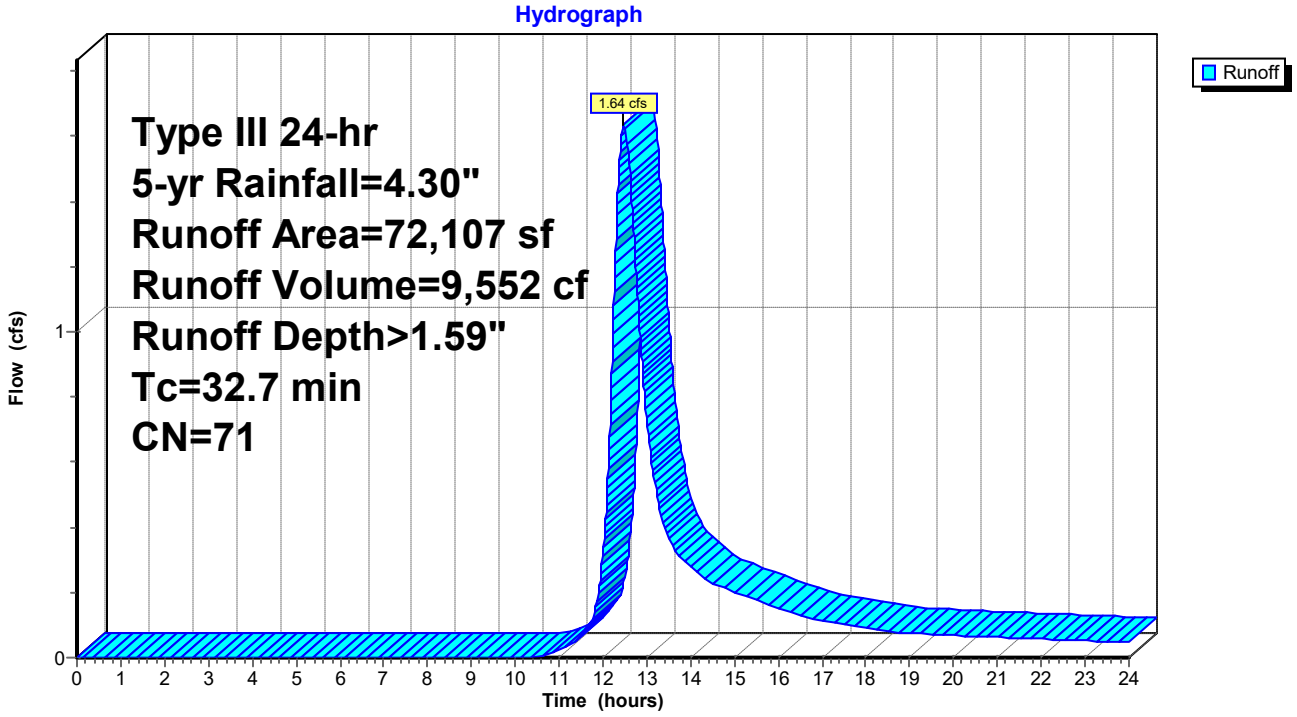
Runoff = 1.64 cfs @ 12.47 hrs, Volume= 9,552 cf, Depth> 1.59"
Routed to Link Sub B : SUB B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	49	98	Impervious
*	55,957	69	Lawn B
*	16,101	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	72,107	71	Weighted Average
	72,058		99.93% Pervious Area
	49		0.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.7					**Direct Entry,**

Subcatchment B2: WS-B2



Summary for Subcatchment B3: WS-B3

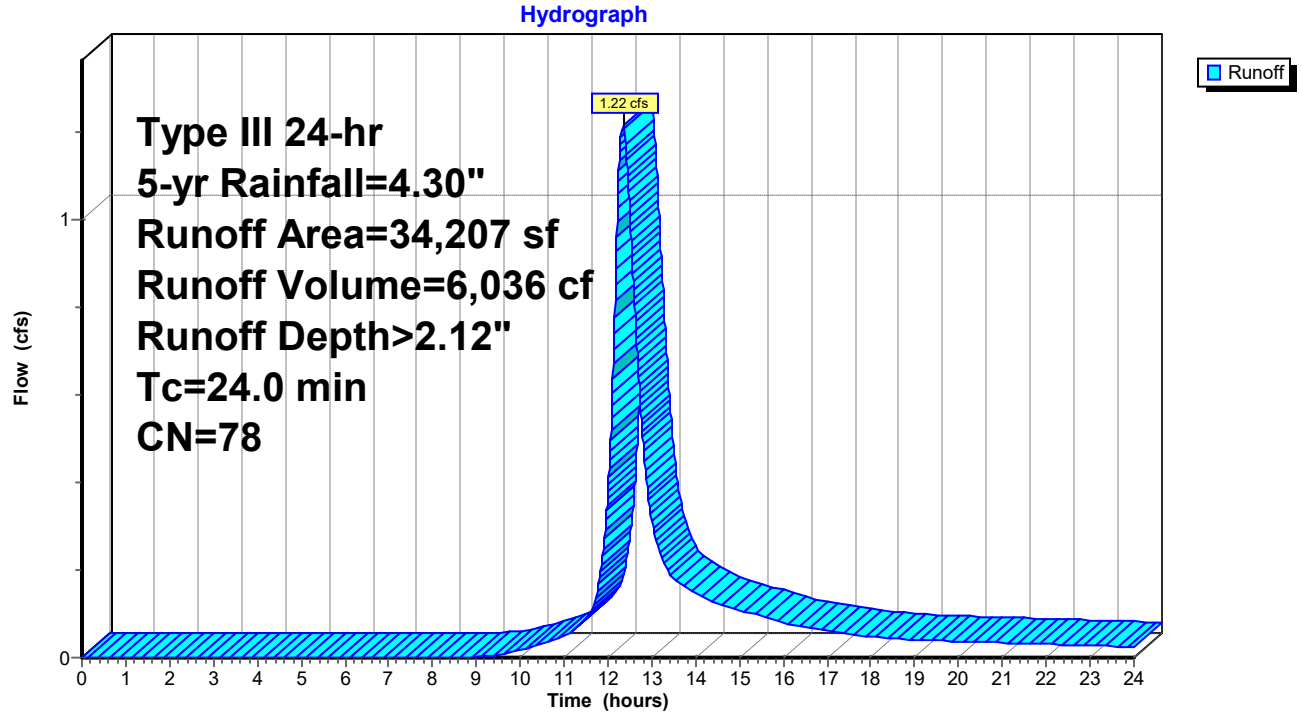
Runoff = 1.22 cfs @ 12.34 hrs, Volume= 6,036 cf, Depth> 2.12"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	12,332	98	Impervious
*	14,526	69	Lawn B
*	1,341	79	Lawn C
*	5,996	60	Forest B
*	12	73	Forest C
	34,207	78	Weighted Average
	21,875		63.95% Pervious Area
	12,332		36.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0					**Direct Entry,**

Subcatchment B3: WS-B3



Summary for Subcatchment B4: WS-B4

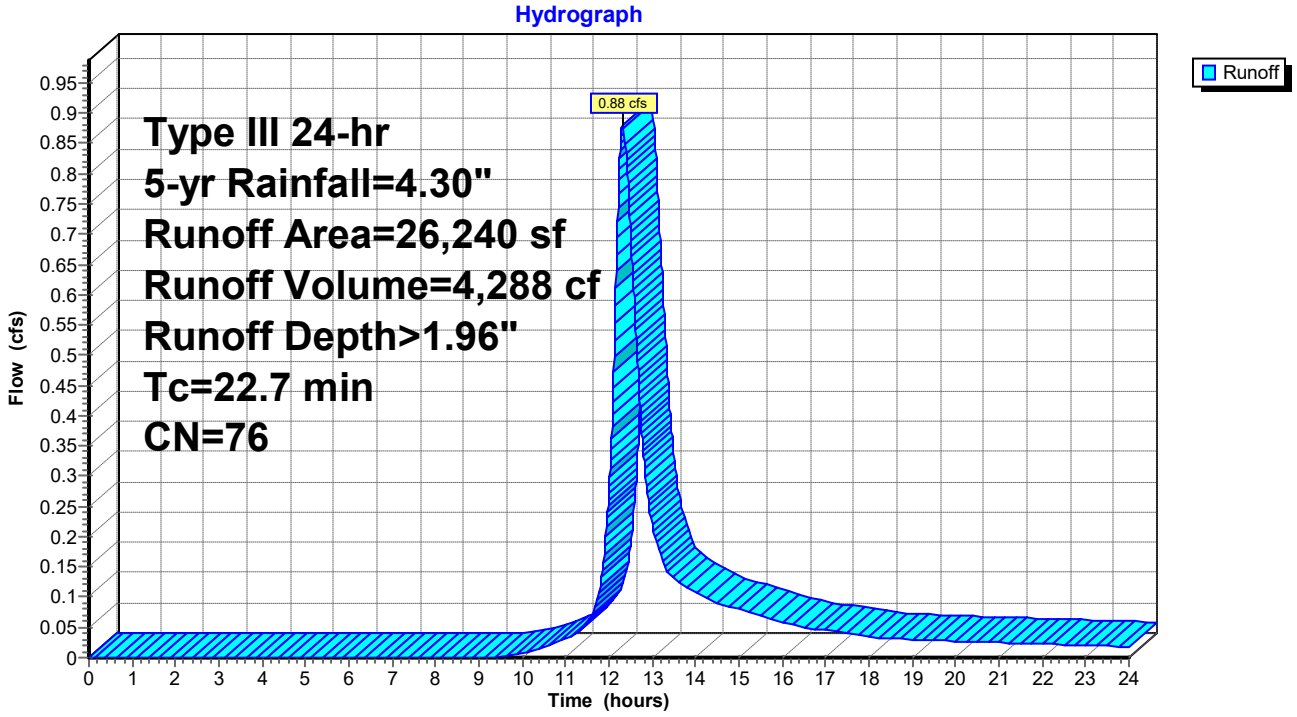
Runoff = 0.88 cfs @ 12.33 hrs, Volume= 4,288 cf, Depth> 1.96"
Routed to Link Sub B : SUB B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	6,749	98	Impervious
*	19,491	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	26,240	76	Weighted Average
	19,491		74.28% Pervious Area
	6,749		25.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.7					**Direct Entry,**

Subcatchment B4: WS-B4



Summary for Subcatchment B5: WS-B5

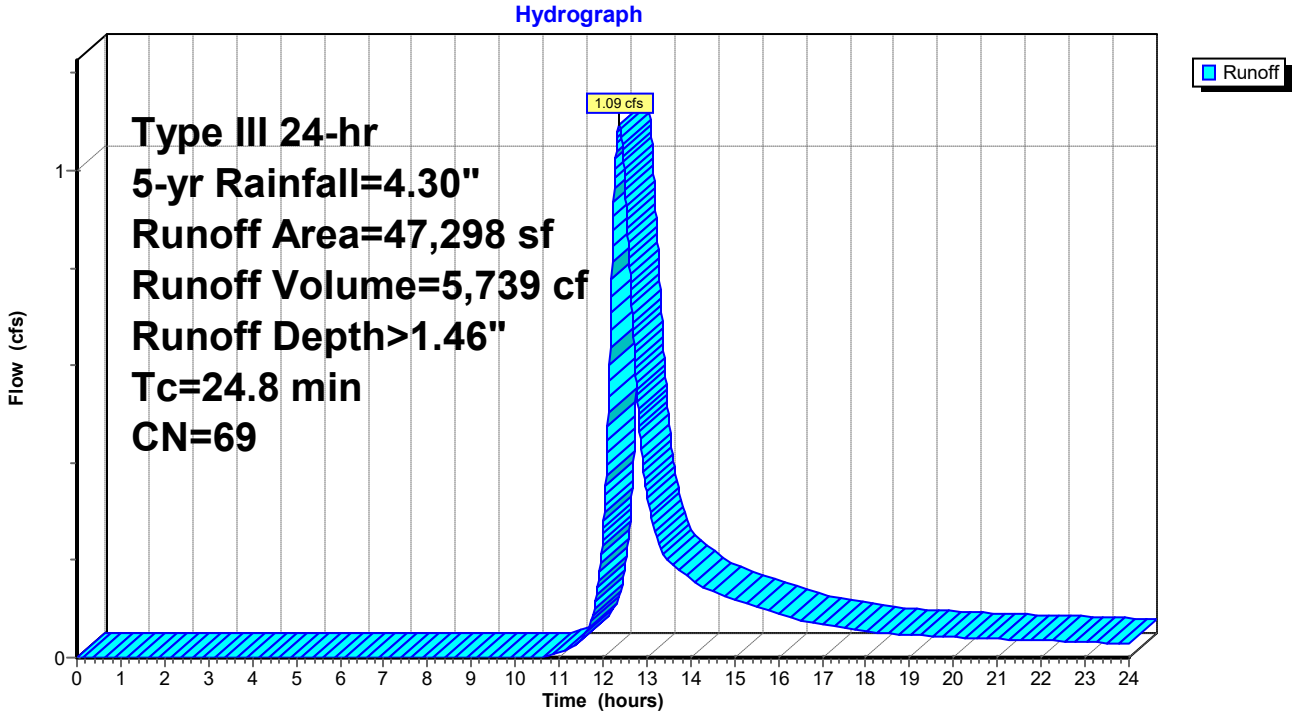
Runoff = 1.09 cfs @ 12.37 hrs, Volume= 5,739 cf, Depth> 1.46"
Routed to Pond YD40 : YD-40

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	2,488	98	Impervious
*	36,610	69	Lawn B
*	0	79	Lawn C
*	8,200	60	Forest B
*	0	73	Forest C
	47,298	69	Weighted Average
	44,810		94.74% Pervious Area
	2,488		5.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8					**Direct Entry,**

Subcatchment B5: WS-B5



Summary for Subcatchment B6: WS-B6

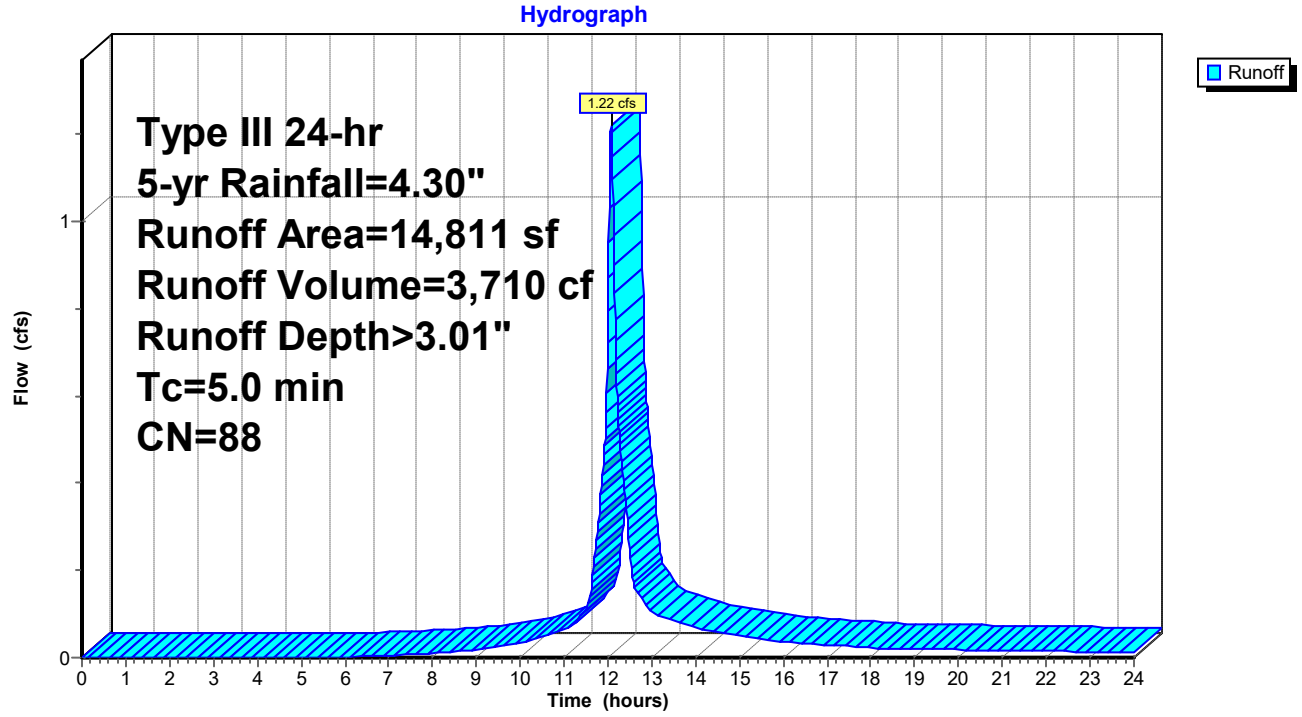
Runoff = 1.22 cfs @ 12.07 hrs, Volume= 3,710 cf, Depth> 3.01"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	9,953	98	Impervious
*	4,858	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	14,811	88	Weighted Average
	4,858		32.80% Pervious Area
	9,953		67.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment B6: WS-B6



Summary for Subcatchment C1: WS-C1

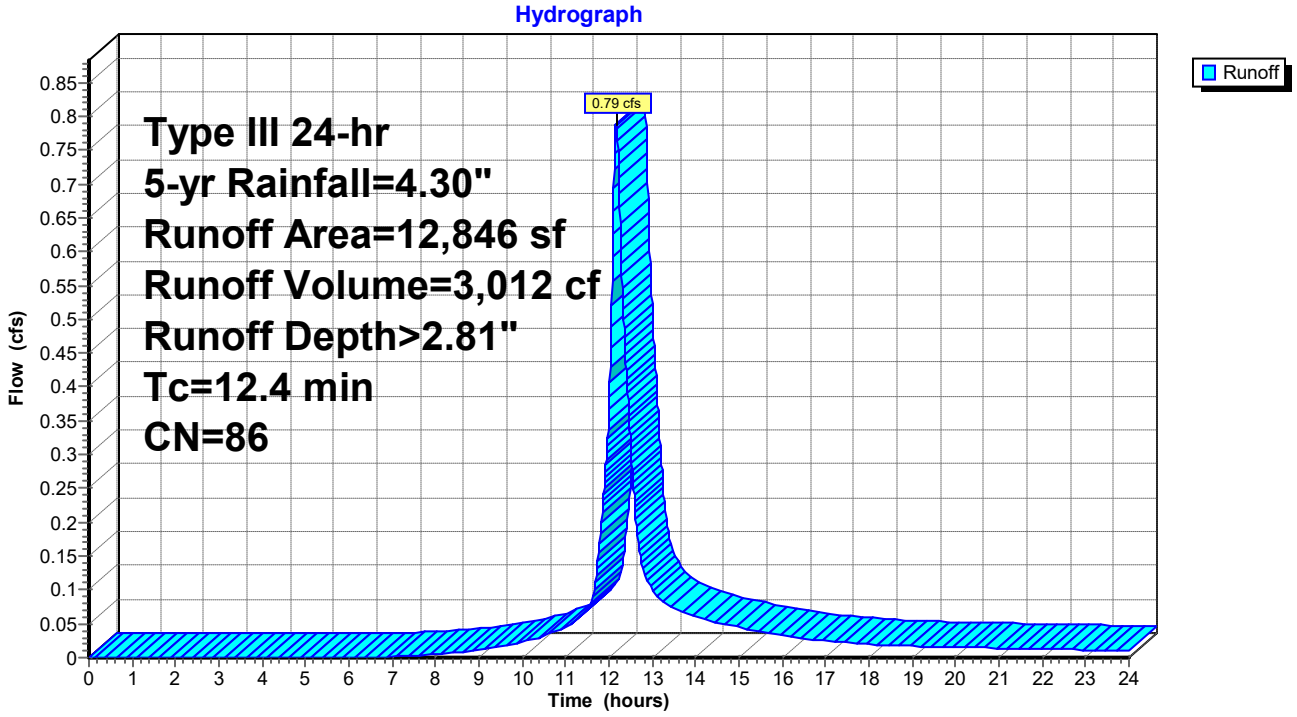
Runoff = 0.79 cfs @ 12.17 hrs, Volume= 3,012 cf, Depth> 2.81"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	5,006	98	Impervious
*	0	69	Lawn B
*	7,840	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	12,846	86	Weighted Average
	7,840		61.03% Pervious Area
	5,006		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4					**Direct Entry,**

Subcatchment C1: WS-C1



Summary for Subcatchment C2: WS-C2

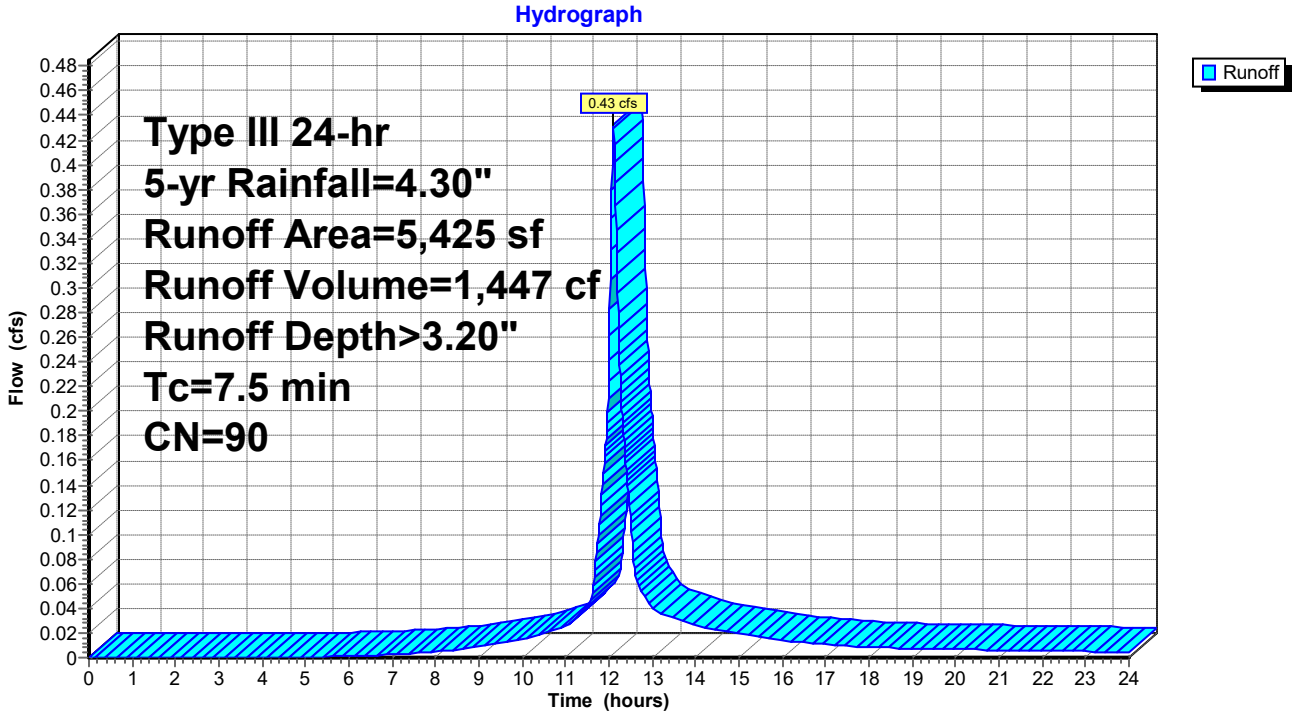
Runoff = 0.43 cfs @ 12.11 hrs, Volume= 1,447 cf, Depth> 3.20"
Routed to Pond RG03 : Rain Garden-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	3,093	98	Impervious
*	0	69	Lawn B
*	2,332	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	5,425	90	Weighted Average
	2,332		42.99% Pervious Area
	3,093		57.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5					**Direct Entry,**

Subcatchment C2: WS-C2



Summary for Subcatchment C3: WS-C3

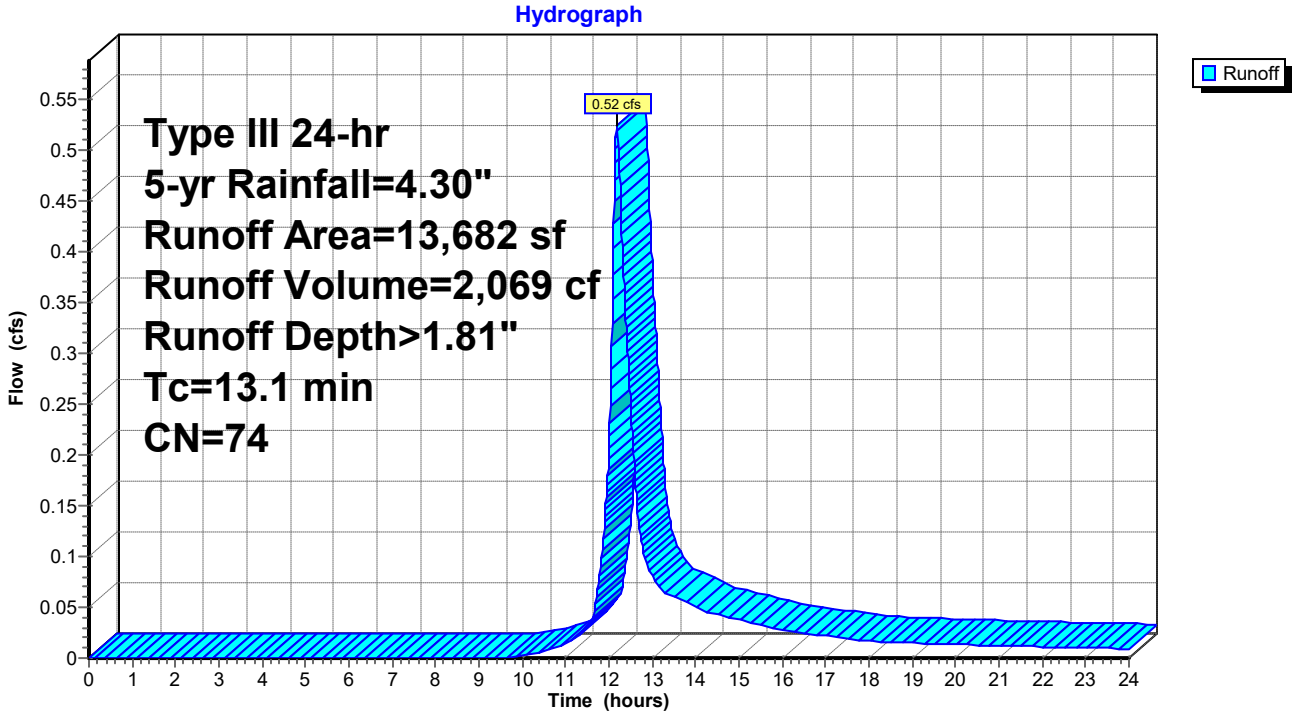
Runoff = 0.52 cfs @ 12.18 hrs, Volume= 2,069 cf, Depth> 1.81"
Routed to Pond DB03 : Detention-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	0	98	Impervious
*	143	69	Lawn B
*	5,032	79	Lawn C
*	1,722	60	Forest B
*	6,785	73	Forest C
	13,682	74	Weighted Average
	13,682		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1					**Direct Entry,**

Subcatchment C3: WS-C3



Summary for Subcatchment C4: WS-C4

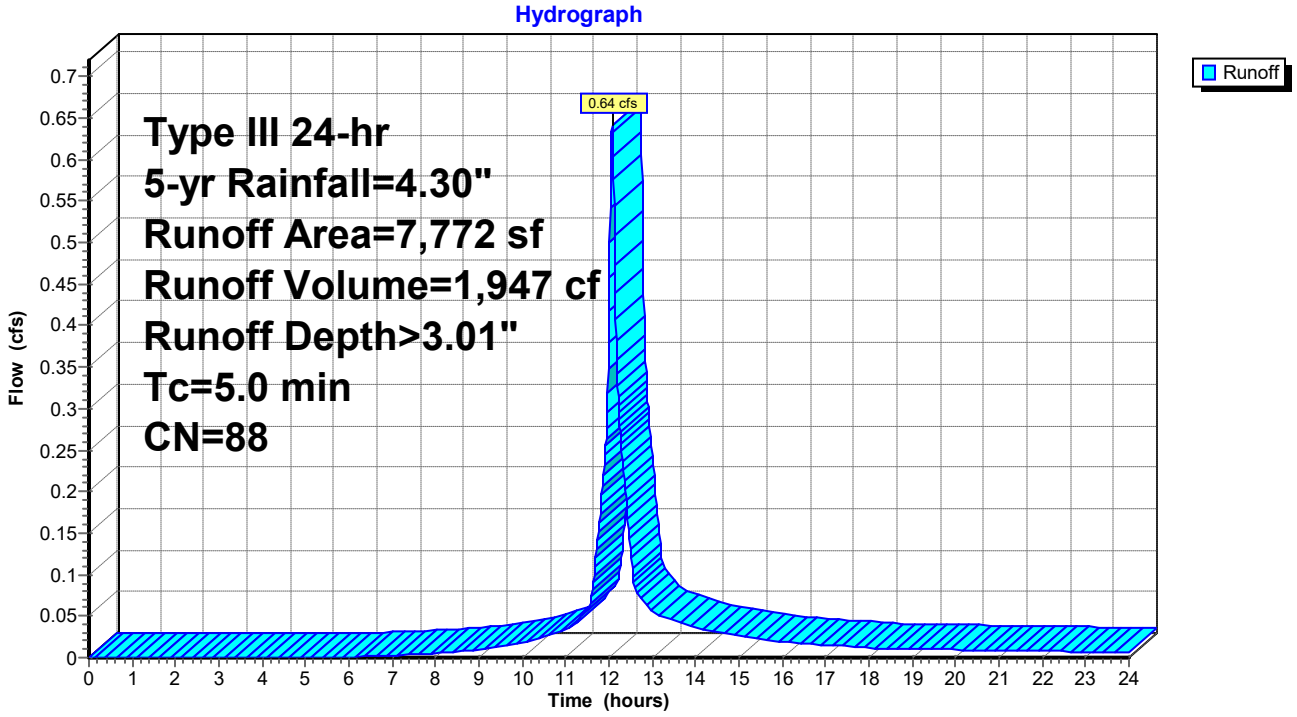
Runoff = 0.64 cfs @ 12.07 hrs, Volume= 1,947 cf, Depth> 3.01"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	3,764	98	Impervious
*	0	69	Lawn B
*	4,008	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	7,772	88	Weighted Average
	4,008		51.57% Pervious Area
	3,764		48.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C4: WS-C4



Summary for Subcatchment C5: WS-C5

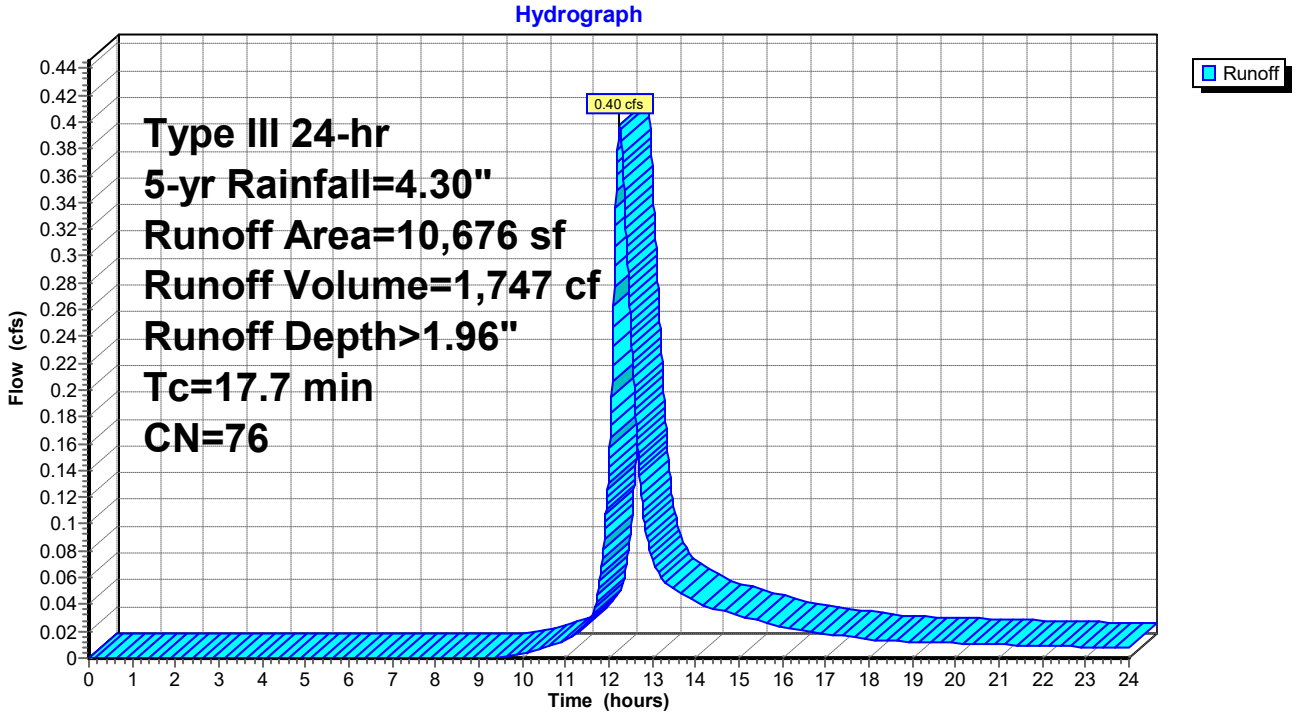
Runoff = 0.40 cfs @ 12.25 hrs, Volume= 1,747 cf, Depth> 1.96"
Routed to Pond DB02 : Detention-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	0	98	Impervious
*	209	69	Lawn B
*	6,162	79	Lawn C
*	569	60	Forest B
*	3,736	73	Forest C
	10,676	76	Weighted Average
	10,676		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7					**Direct Entry,**

Subcatchment C5: WS-C5



Summary for Subcatchment C6: WS-C6

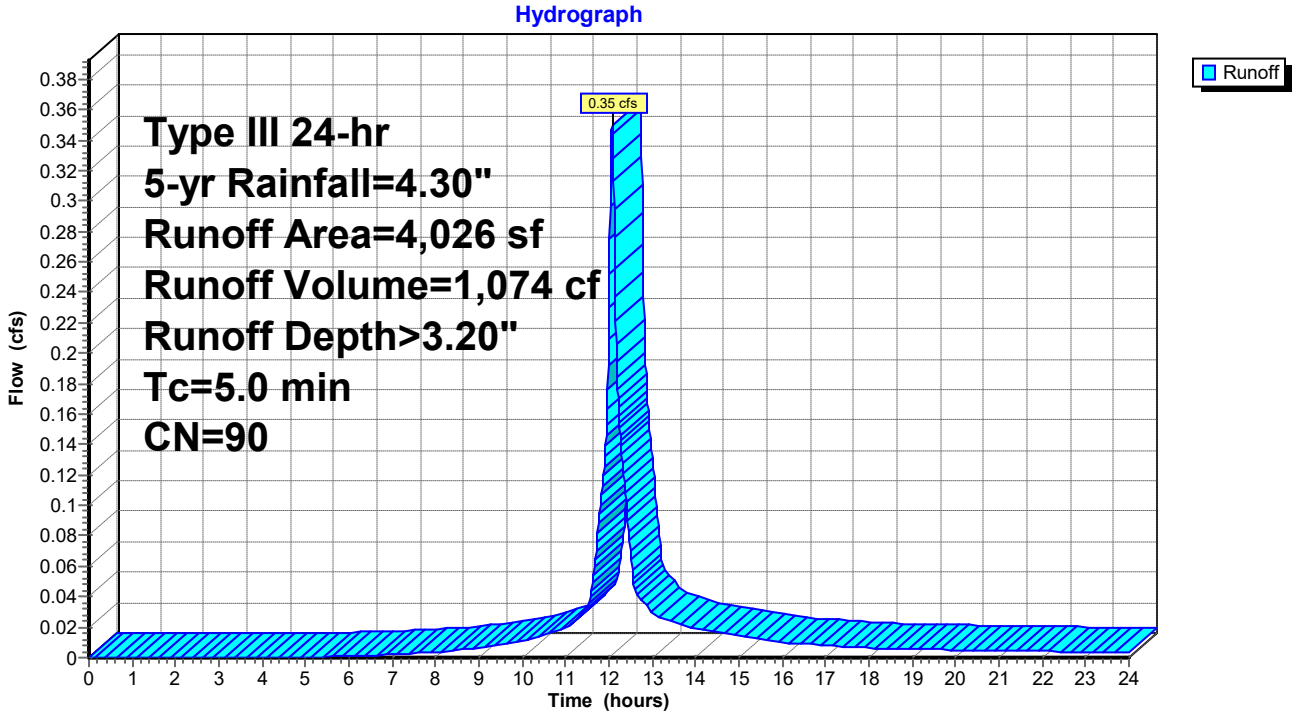
Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,074 cf, Depth> 3.20"
Routed to Pond RG06 : Rain Garden-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	2,854	98	Impervious
*	1,172	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	4,026	90	Weighted Average
	1,172		29.11% Pervious Area
	2,854		70.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C6: WS-C6



Summary for Subcatchment C7: WS-C7

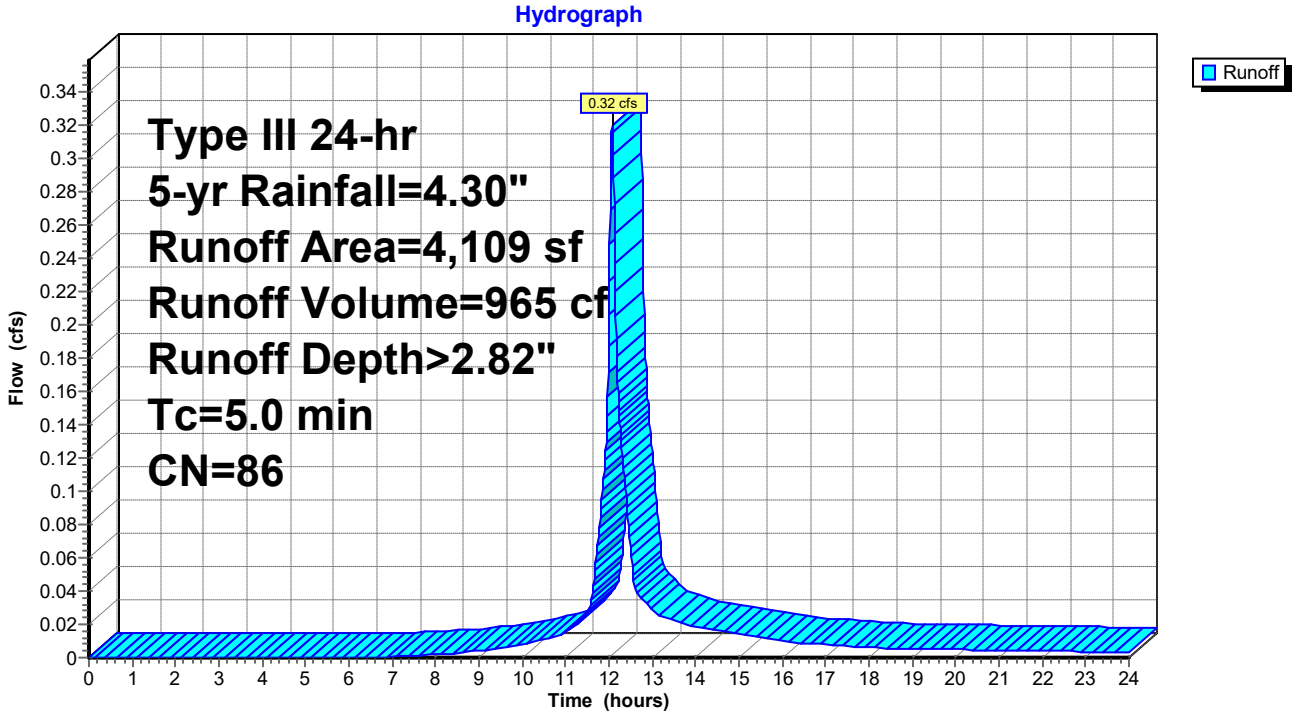
Runoff = 0.32 cfs @ 12.07 hrs, Volume= 965 cf, Depth> 2.82"
Routed to Pond RG07 : Rain Garden-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	2,402	98	Impervious
*	1,707	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	4,109	86	Weighted Average
	1,707		41.54% Pervious Area
	2,402		58.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C7: WS-C7



Summary for Subcatchment D1H: WS-D1H

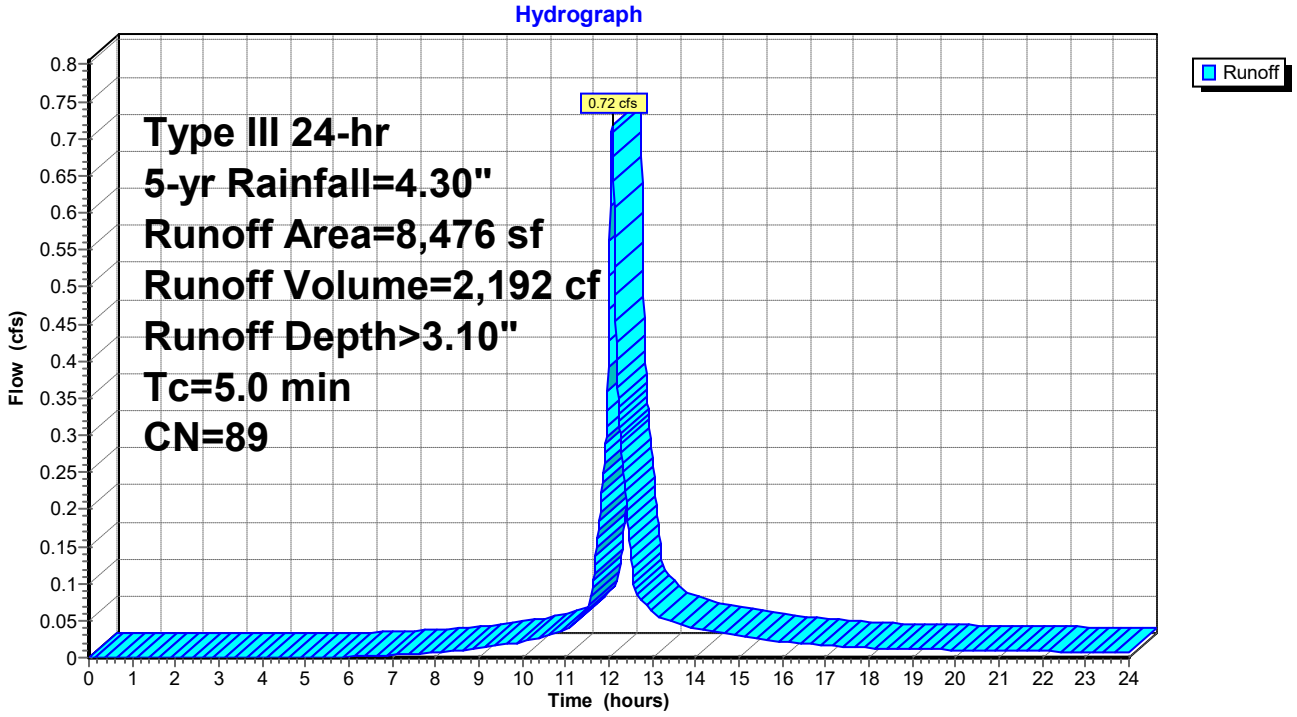
Runoff = 0.72 cfs @ 12.07 hrs, Volume= 2,192 cf, Depth> 3.10"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	5,649	98	Impervious
*	2,426	69	Lawn B
*	401	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	8,476	89	Weighted Average
	2,827		33.35% Pervious Area
	5,649		66.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D1H: WS-D1H



Summary for Subcatchment D2A: WS-D2A

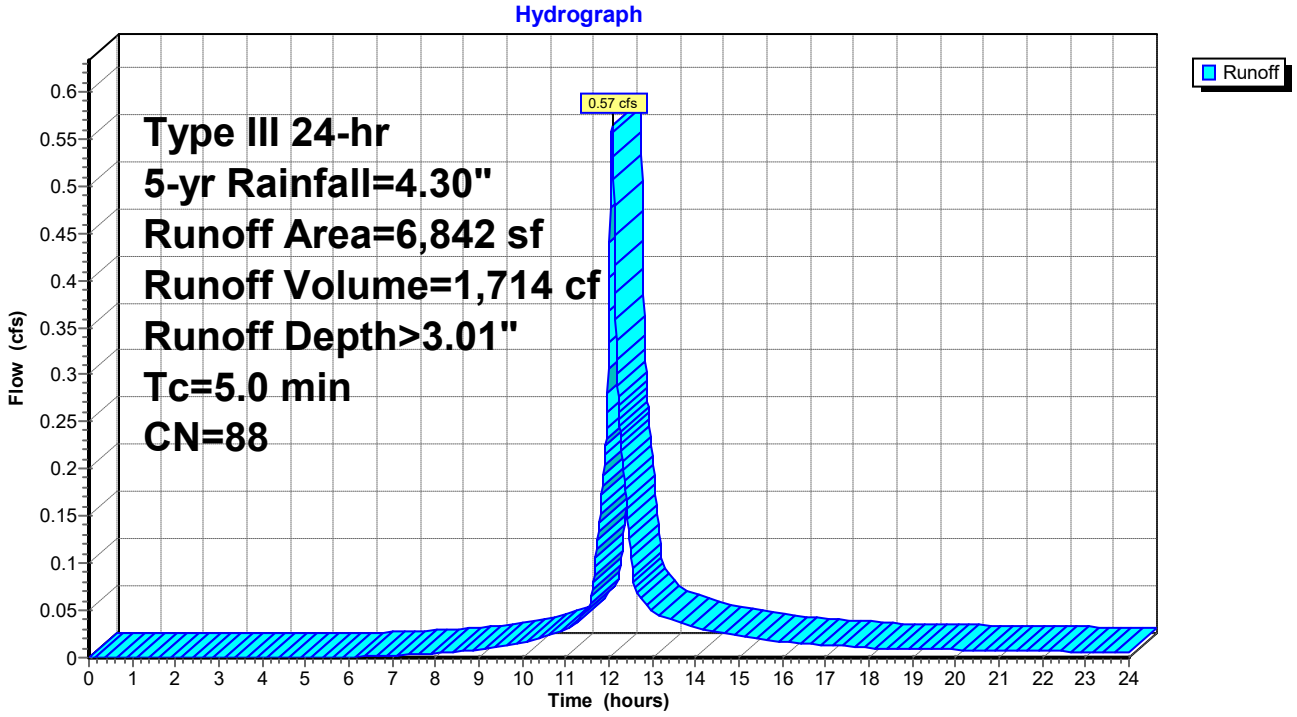
Runoff = 0.57 cfs @ 12.07 hrs, Volume= 1,714 cf, Depth> 3.01"
Routed to Pond 13P : Por Pvt-D2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	4,404	98	Impervious
*	2,438	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	6,842	88	Weighted Average
	2,438		35.63% Pervious Area
	4,404		64.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2A: WS-D2A



Summary for Subcatchment D2B: WS-D2B

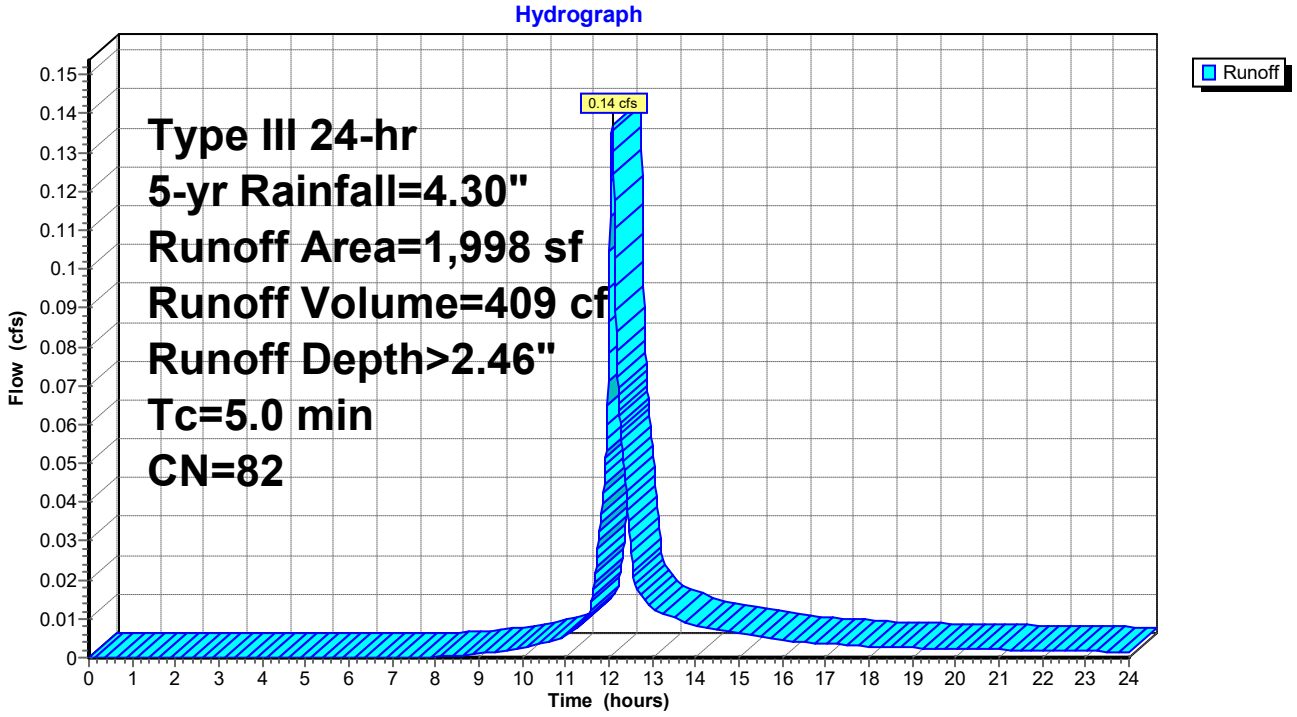
Runoff = 0.14 cfs @ 12.07 hrs, Volume= 409 cf, Depth> 2.46"
Routed to Pond 14P : Por Pvt-D2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	928	98	Impervious
*	1,070	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,998	82	Weighted Average
	1,070		53.55% Pervious Area
	928		46.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2B: WS-D2B



Summary for Subcatchment D2C: WS-D2C

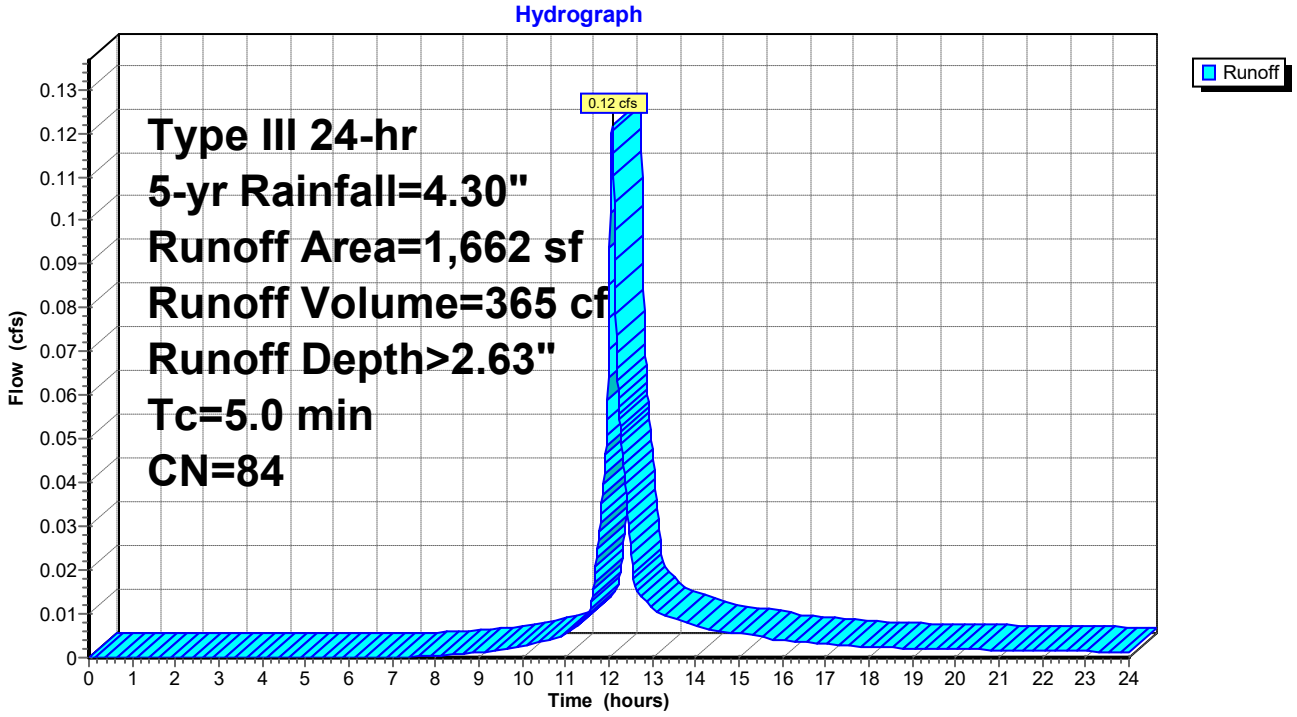
Runoff = 0.12 cfs @ 12.07 hrs, Volume= 365 cf, Depth> 2.63"
Routed to Pond 16P : Por Pvt-D2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	860	98	Impervious
*	802	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,662	84	Weighted Average
	802		48.26% Pervious Area
	860		51.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2C: WS-D2C



Summary for Subcatchment D2D: WS-D2D

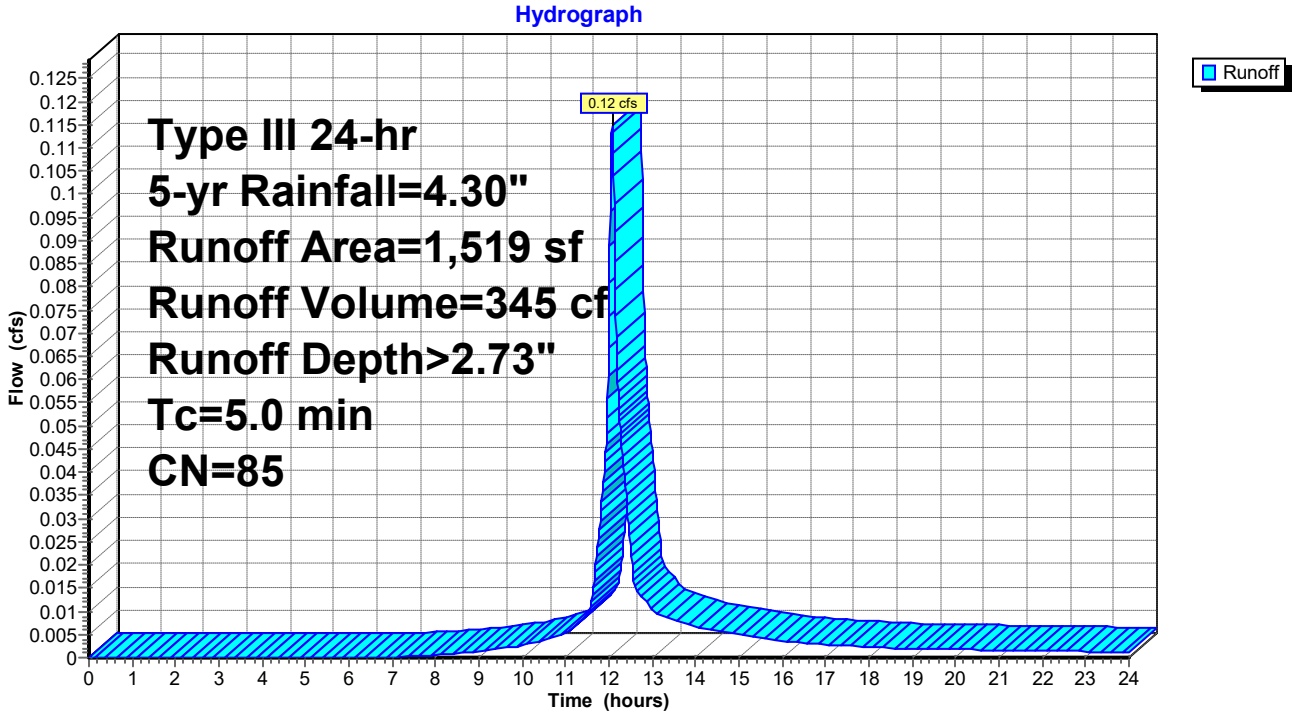
Runoff = 0.12 cfs @ 12.07 hrs, Volume= 345 cf, Depth> 2.73"
Routed to Pond 18P : Por Pvt-D2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	846	98	Impervious
*	673	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,519	85	Weighted Average
	673		44.31% Pervious Area
	846		55.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2D: WS-D2D



Summary for Subcatchment D2E: WS-D2E

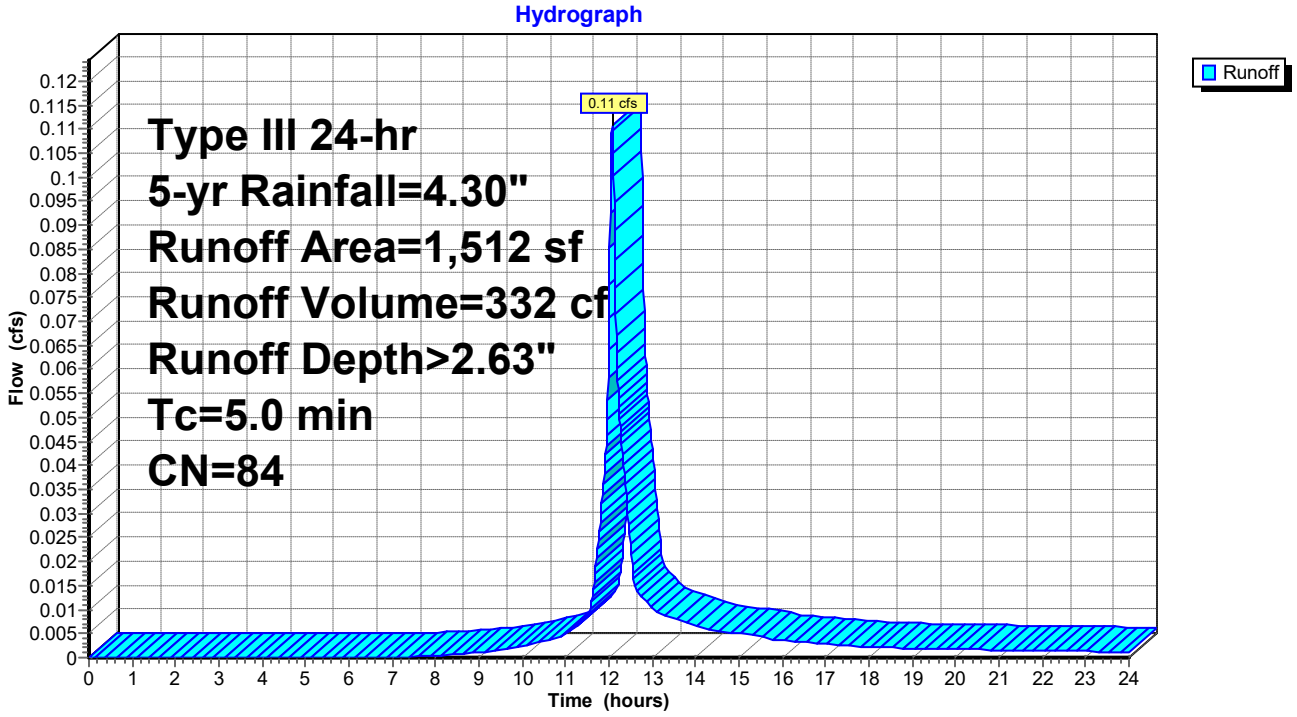
Runoff = 0.11 cfs @ 12.07 hrs, Volume= 332 cf, Depth> 2.63"
Routed to Pond 19P : Por Pvt-D2E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	808	98	Impervious
*	704	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,512	84	Weighted Average
	704		46.56% Pervious Area
	808		53.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2E: WS-D2E



Summary for Subcatchment D2F: WS-D2F

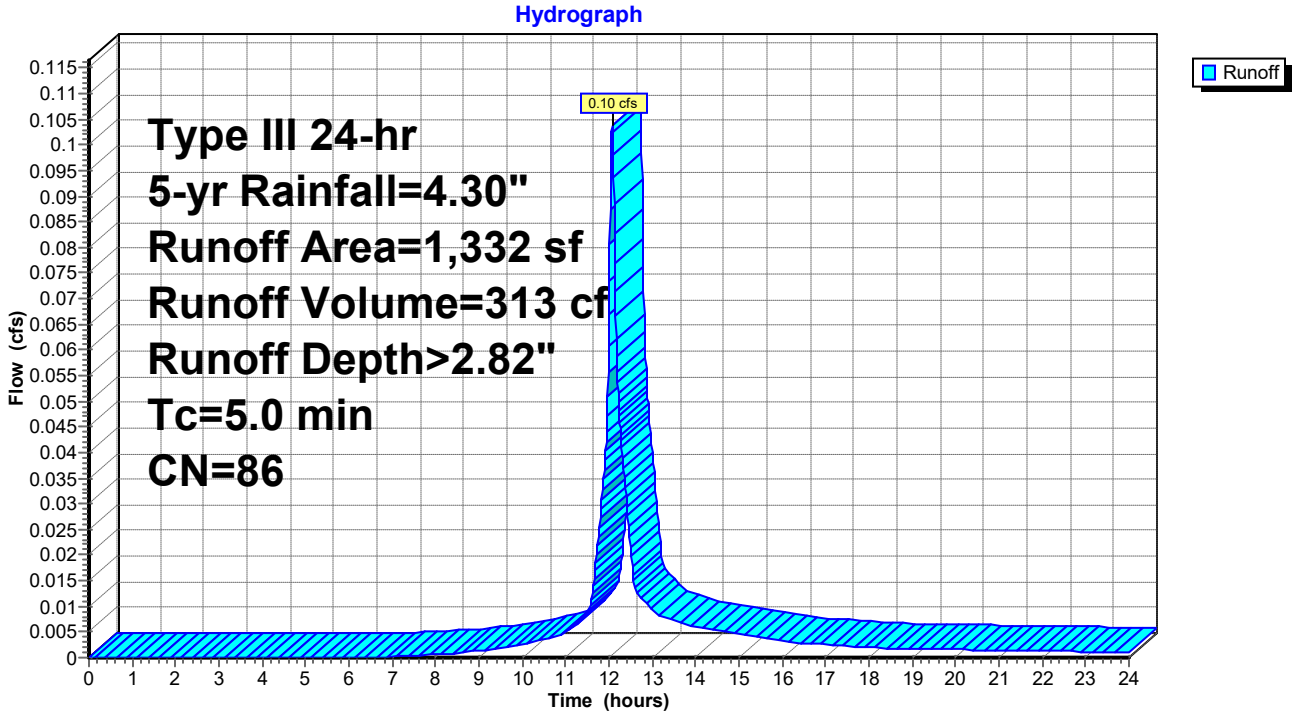
Runoff = 0.10 cfs @ 12.07 hrs, Volume= 313 cf, Depth> 2.82"
Routed to Pond 20P : Por Pvt-D2F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	800	98	Impervious
*	532	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,332	86	Weighted Average
	532		39.94% Pervious Area
	800		60.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2F: WS-D2F



Summary for Subcatchment D2G: WS-D2G

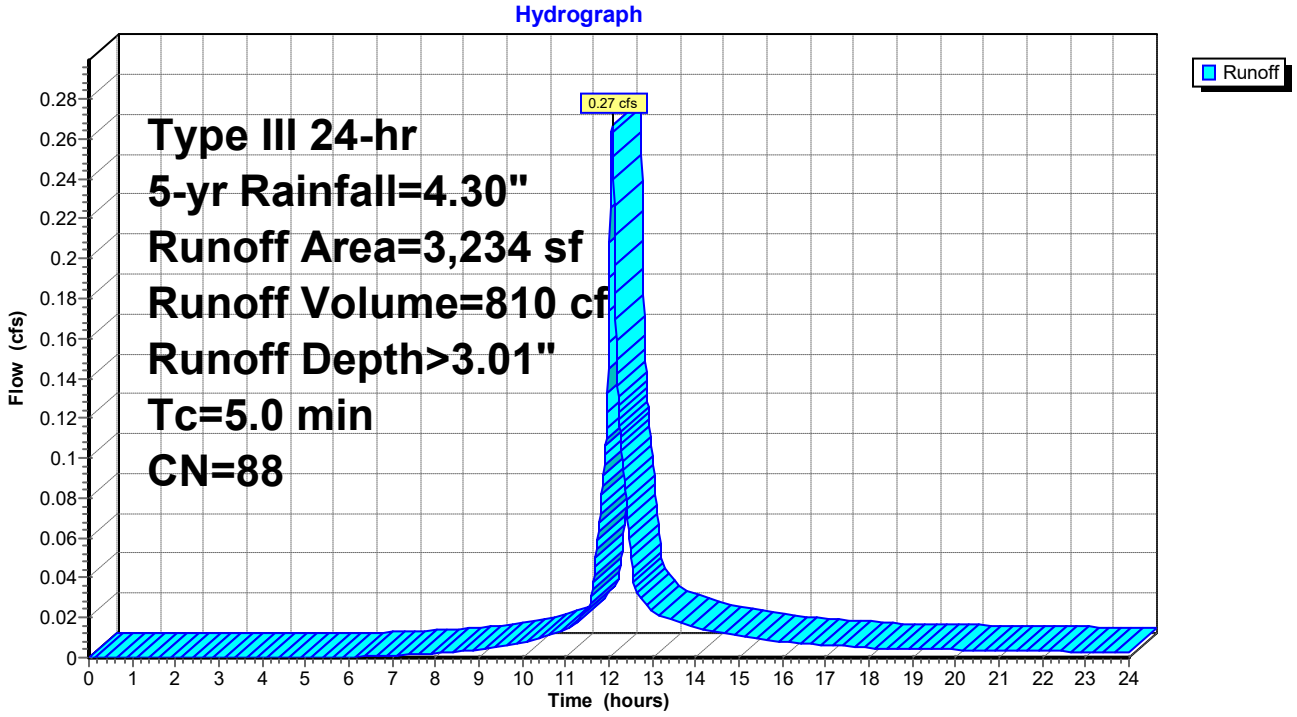
Runoff = 0.27 cfs @ 12.07 hrs, Volume= 810 cf, Depth> 3.01"
Routed to Pond 21P : Por Pvt-D2G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	1,833	98	Impervious
*	555	69	Lawn B
*	846	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	3,234	88	Weighted Average
	1,401		43.32% Pervious Area
	1,833		56.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2G: WS-D2G



Summary for Subcatchment D3: WS-D3

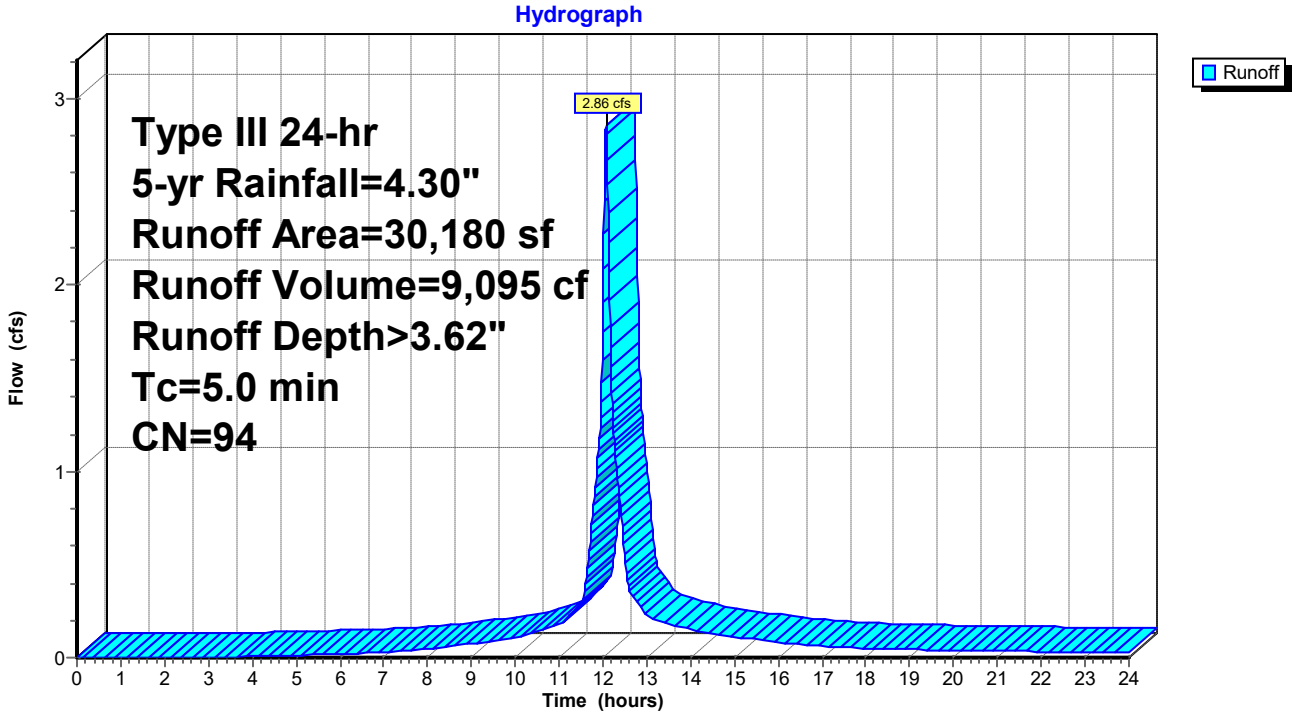
Runoff = 2.86 cfs @ 12.07 hrs, Volume= 9,095 cf, Depth> 3.62"
Routed to Pond PP03 : Por Pvt-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	23,042	98	Impervious
*	0	69	Lawn B
*	7,138	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	30,180	94	Weighted Average
	7,138		23.65% Pervious Area
	23,042		76.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D3: WS-D3



Summary for Subcatchment D4: WS-D4

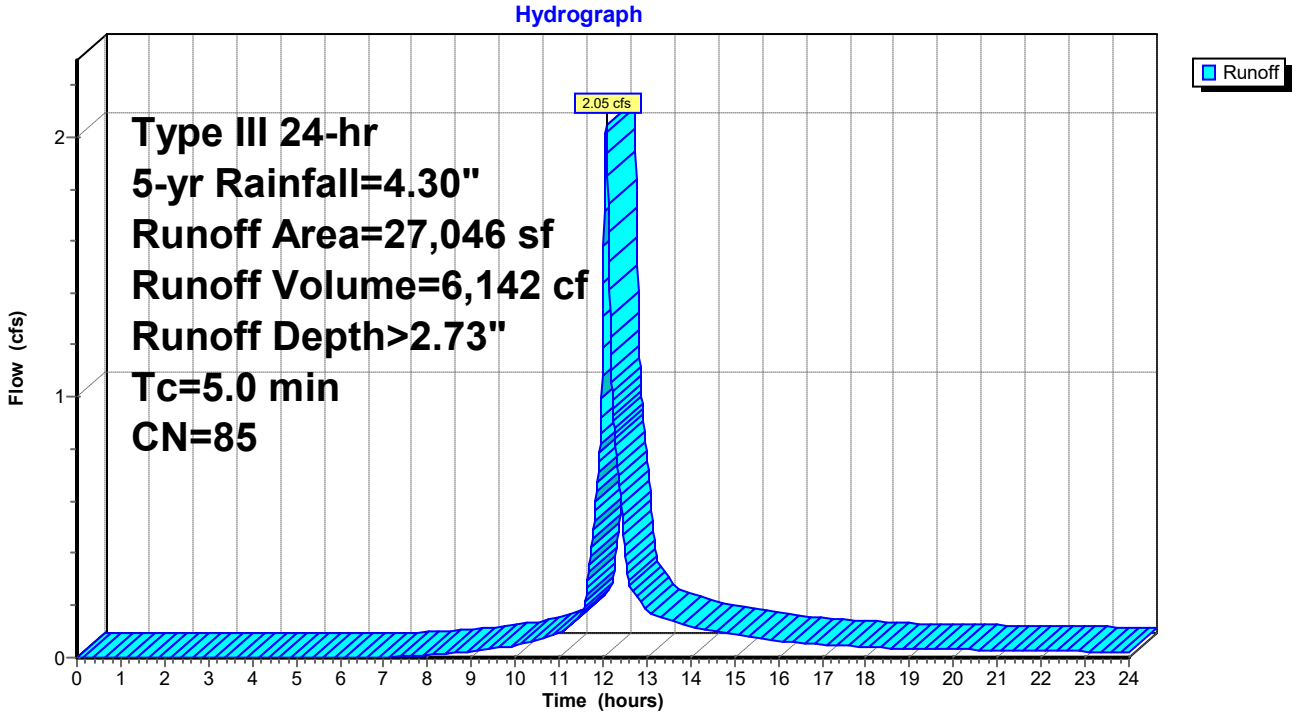
Runoff = 2.05 cfs @ 12.07 hrs, Volume= 6,142 cf, Depth> 2.73"
Routed to Pond PP07 : Por Pvt-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	14,753	98	Impervious
*	12,293	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	27,046	85	Weighted Average
	12,293		45.45% Pervious Area
	14,753		54.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D4: WS-D4



Summary for Subcatchment D5: WS-D5

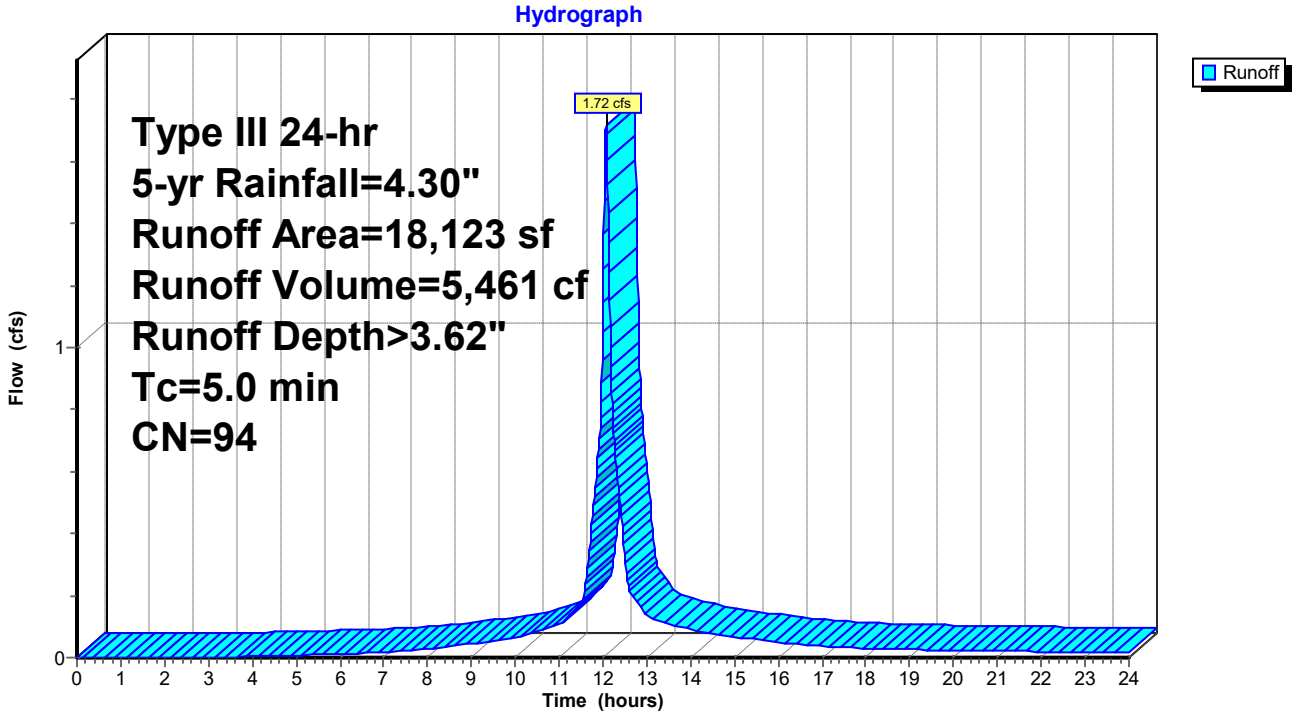
Runoff = 1.72 cfs @ 12.07 hrs, Volume= 5,461 cf, Depth> 3.62"
Routed to Pond PP02 : Por Pvt-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	14,849	98	Impervious
*	0	69	Lawn B
*	720	79	Lawn C
*	0	60	Forest B
*	2,554	73	Forest C
	18,123	94	Weighted Average
	3,274		18.07% Pervious Area
	14,849		81.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D5: WS-D5



Summary for Subcatchment D6: WS-D6

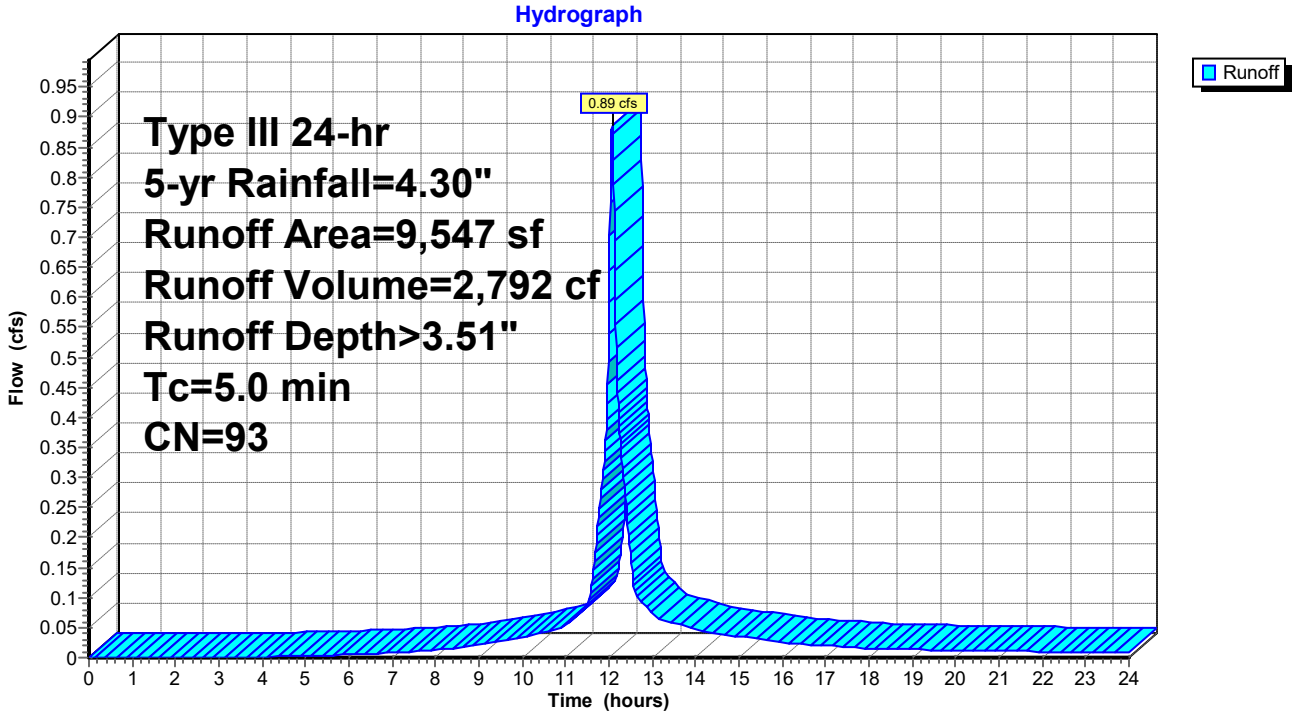
Runoff = 0.89 cfs @ 12.07 hrs, Volume= 2,792 cf, Depth> 3.51"
Routed to Pond PP04 : Por Pvt-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	6,988	98	Impervious
*	0	69	Lawn B
*	2,559	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	9,547	93	Weighted Average
	2,559		26.80% Pervious Area
	6,988		73.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D6: WS-D6



Summary for Subcatchment D7: WS-D7

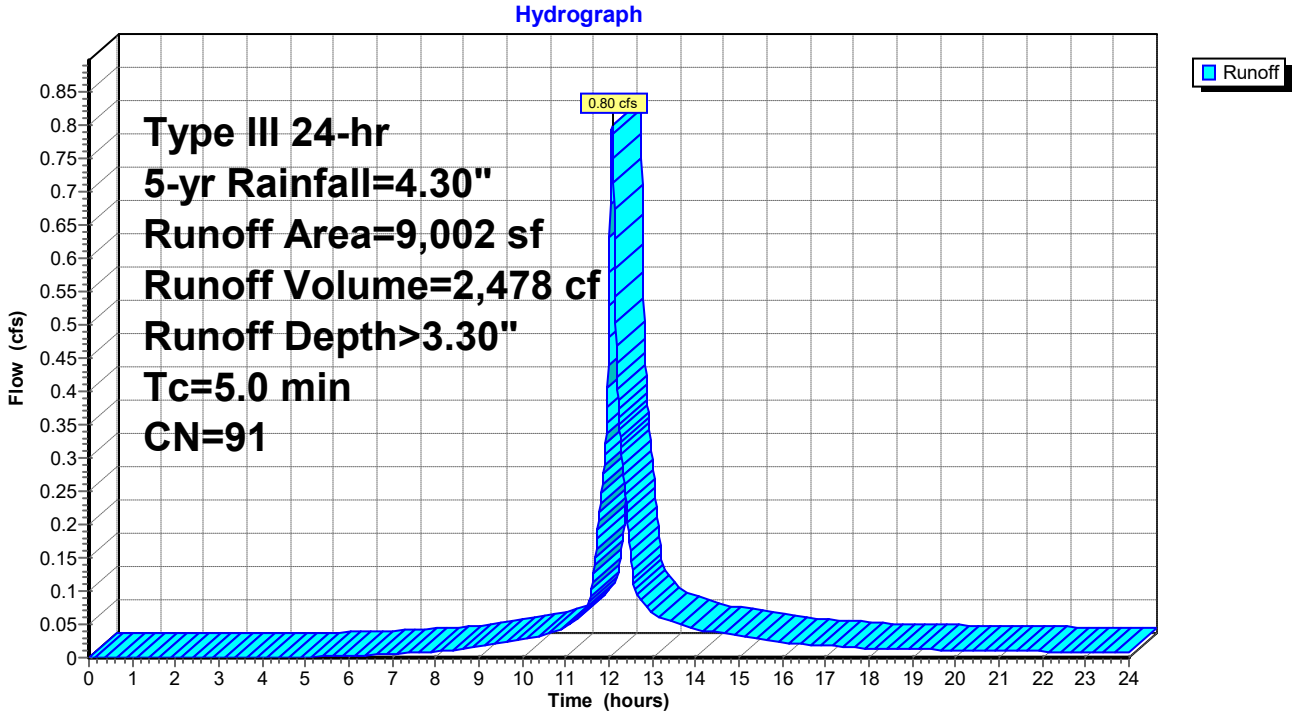
Runoff = 0.80 cfs @ 12.07 hrs, Volume= 2,478 cf, Depth> 3.30"
Routed to Pond PP05 : Por Pvt-05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	6,727	98	Impervious
*	1,674	69	Lawn B
*	601	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	9,002	91	Weighted Average
	2,275		25.27% Pervious Area
	6,727		74.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D7: WS-D7



Summary for Subcatchment D8: WS-D8

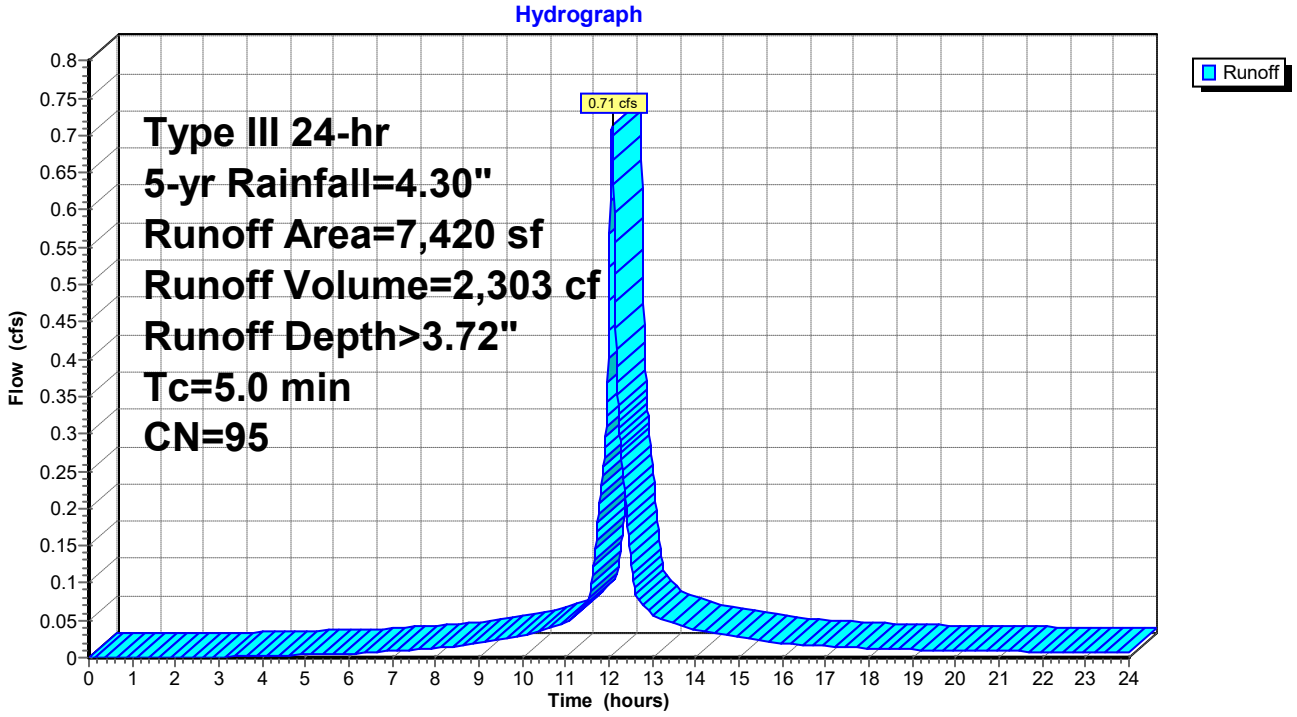
Runoff = 0.71 cfs @ 12.07 hrs, Volume= 2,303 cf, Depth> 3.72"
Routed to Pond PP06 : Por Pvt-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	6,549	98	Impervious
*	871	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	7,420	95	Weighted Average
	871		11.74% Pervious Area
	6,549		88.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D8: WS-D8



Summary for Subcatchment E1: WS-E1

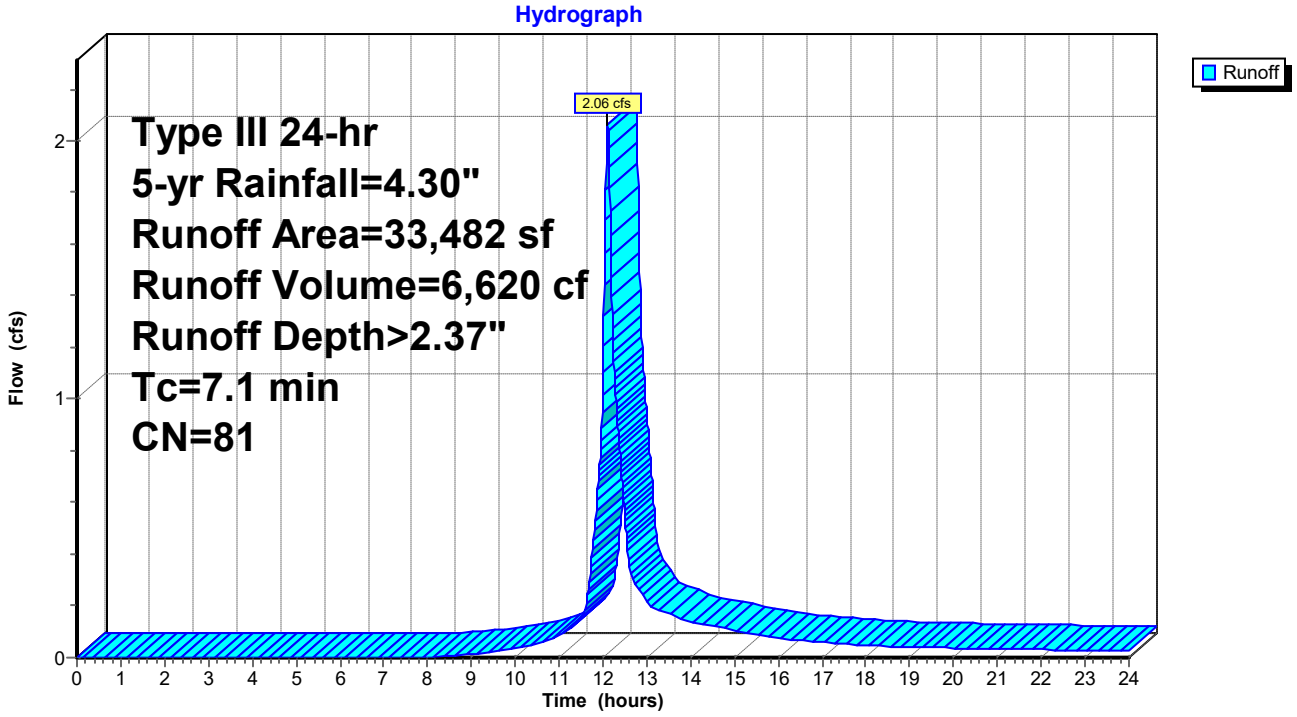
Runoff = 2.06 cfs @ 12.10 hrs, Volume= 6,620 cf, Depth> 2.37"
Routed to Pond UI02 : Und Inf 02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	10,193	98	Impervious
*	1,931	69	Lawn B
*	9,074	79	Lawn C
*	3,193	60	Forest B
*	9,091	73	Forest C
	33,482	81	Weighted Average
	23,289		69.56% Pervious Area
	10,193		30.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1					**Direct Entry,**

Subcatchment E1: WS-E1



Summary for Subcatchment E2: WS-E2

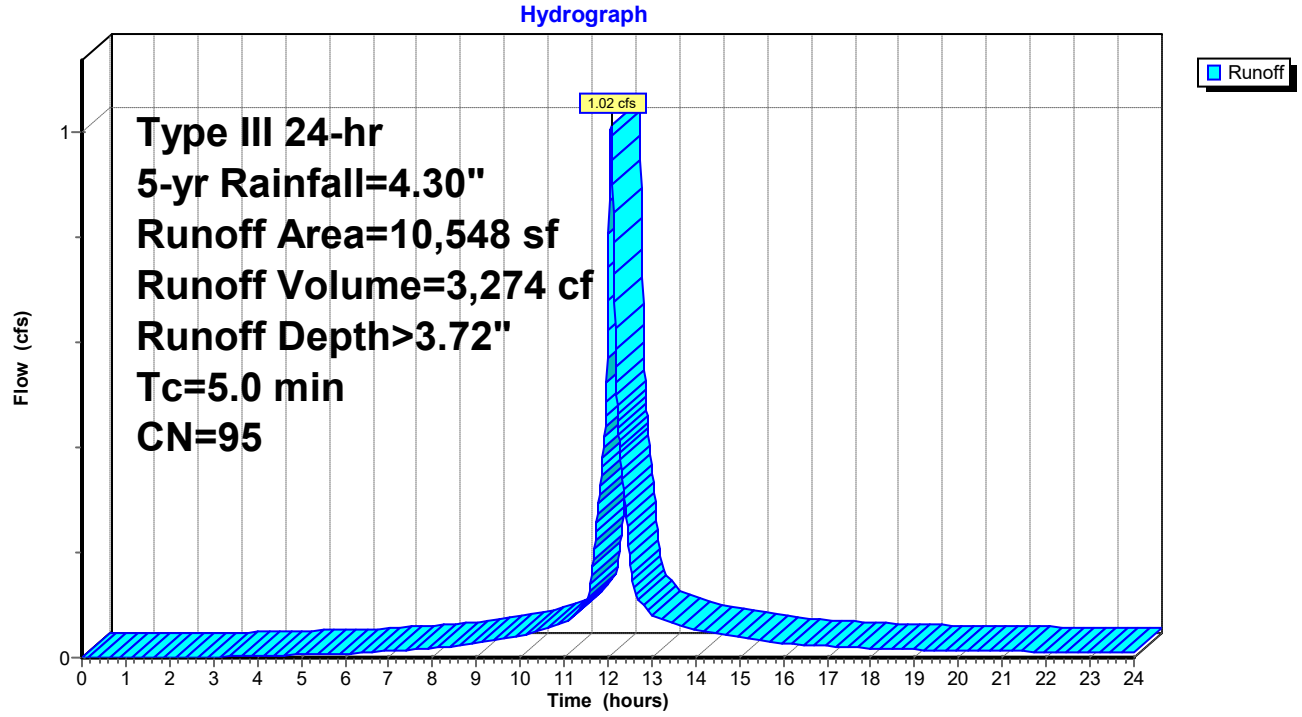
Runoff = 1.02 cfs @ 12.07 hrs, Volume= 3,274 cf, Depth> 3.72"
Routed to Pond RG04 : Rain Garden-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	8,740	98	Impervious
*	0	69	Lawn B
*	1,808	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	10,548	95	Weighted Average
	1,808		17.14% Pervious Area
	8,740		82.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment E2: WS-E2



Summary for Subcatchment R4: Roof-04

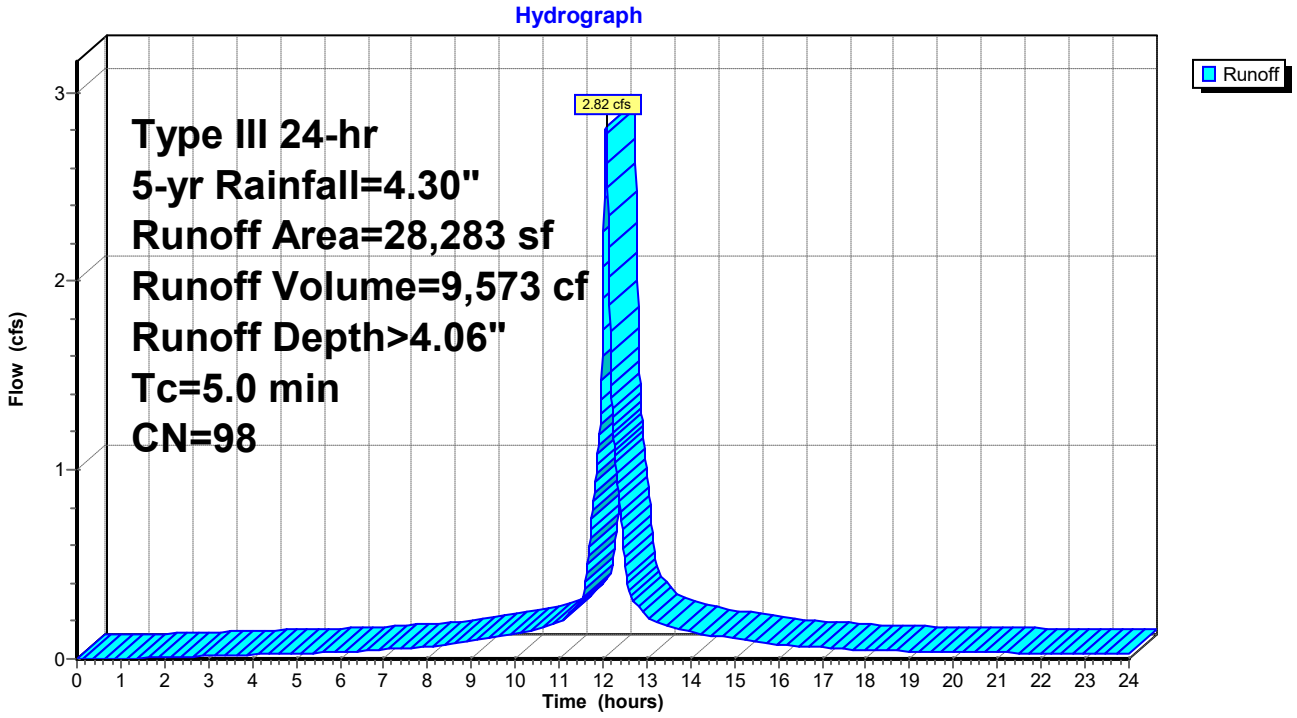
Runoff = 2.82 cfs @ 12.07 hrs, Volume= 9,573 cf, Depth> 4.06"
Routed to Pond UI01 : Und Inf 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	28,283	98	Impervious
	28,283		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment R4: Roof-04



Summary for Subcatchment R5: Roof-05

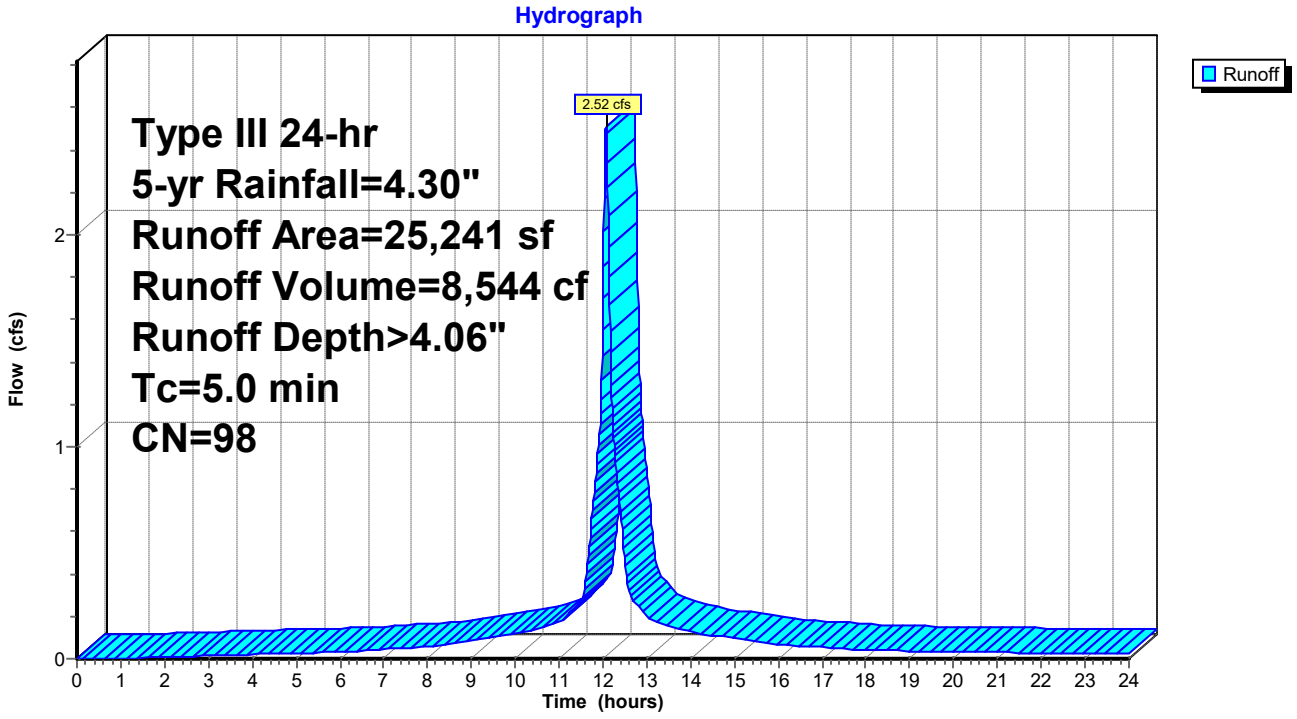
Runoff = 2.52 cfs @ 12.07 hrs, Volume= 8,544 cf, Depth> 4.06"
Routed to Pond UI01 : Und Inf 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-yr Rainfall=4.30"

	Area (sf)	CN	Description
*	25,241	98	Impervious
*	0	79	Lawn C
	25,241	98	Weighted Average
	25,241		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment R5: Roof-05



Summary for Pond 13P: Por Pvt-D2A

Porous Pavement in Parking Spaces Only

Inflow Area = 16,536 sf, 85.26% Impervious, Inflow Depth > 3.62" for 5-yr event
Inflow = 1.53 cfs @ 12.07 hrs, Volume= 4,995 cf
Outflow = 0.41 cfs @ 12.41 hrs, Volume= 2,807 cf, Atten= 73%, Lag= 20.6 min
Primary = 0.41 cfs @ 12.41 hrs, Volume= 2,807 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 14P : Por Pvt-D2B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.39' @ 12.41 hrs Surf.Area= 2,848 sf Storage= 2,744 cf

Plug-Flow detention time= 239.7 min calculated for 2,805 cf (56% of inflow)
Center-of-Mass det. time= 127.1 min (894.4 - 767.3)

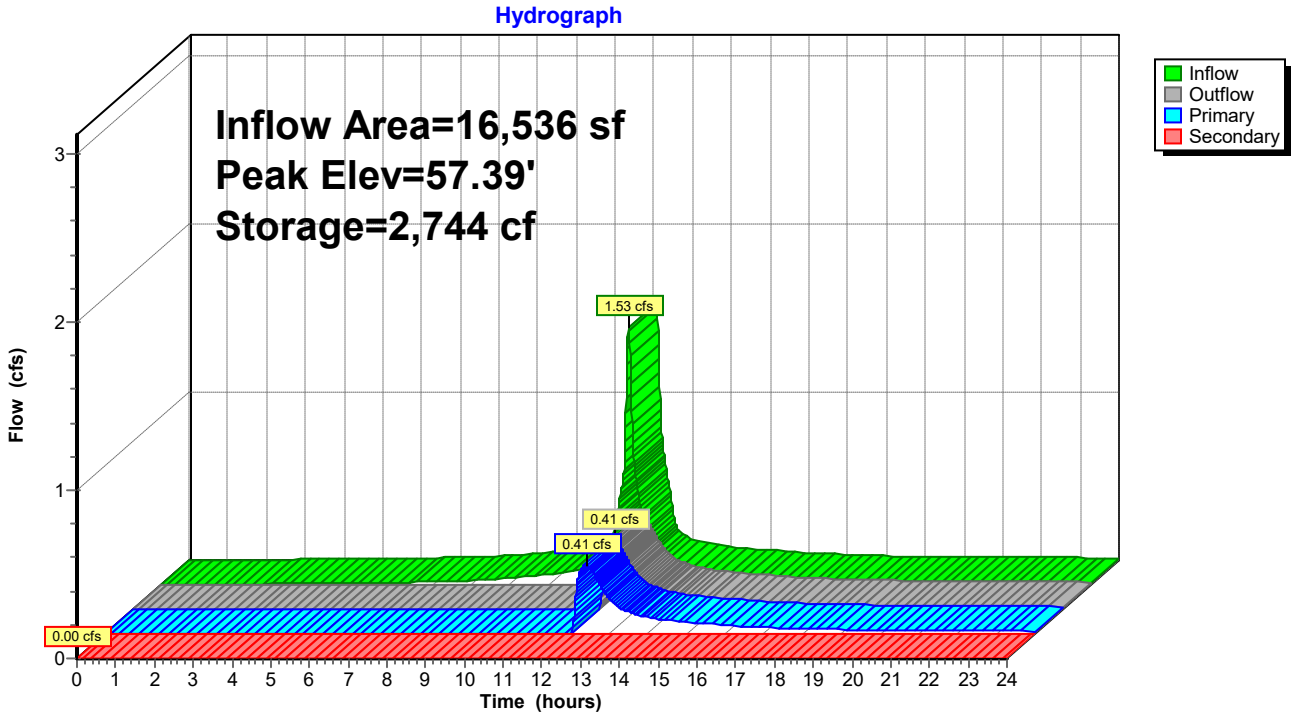
Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	5,683 cf	**20.00'W x 142.40'L x 5.00'H Porous Pavment** 14,240 cf Overall - 32 cf Embedded = 14,208 cf x 40.0% Voids
#2	56.84'	32 cf	**6.0" Round 6" underdrain** Inside #1 L= 162.0'
		5,715 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	56.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.84' / 56.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	59.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.41 cfs @ 12.41 hrs HW=57.39' TW=43.45' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.41 cfs @ 2.09 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=55.00' TW=53.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 13P: Por Pvt-D2A



Summary for Pond 14P: Por Pvt-D2B

Porous Pavement in Parking Spaces Only

Inflow Area = 1,998 sf, 46.45% Impervious, Inflow Depth > 2.46" for 5-yr event
Inflow = 0.14 cfs @ 12.07 hrs, Volume= 409 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 16P : Por Pvt-D2C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 54.29' @ 24.00 hrs Surf.Area= 796 sf Storage= 409 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

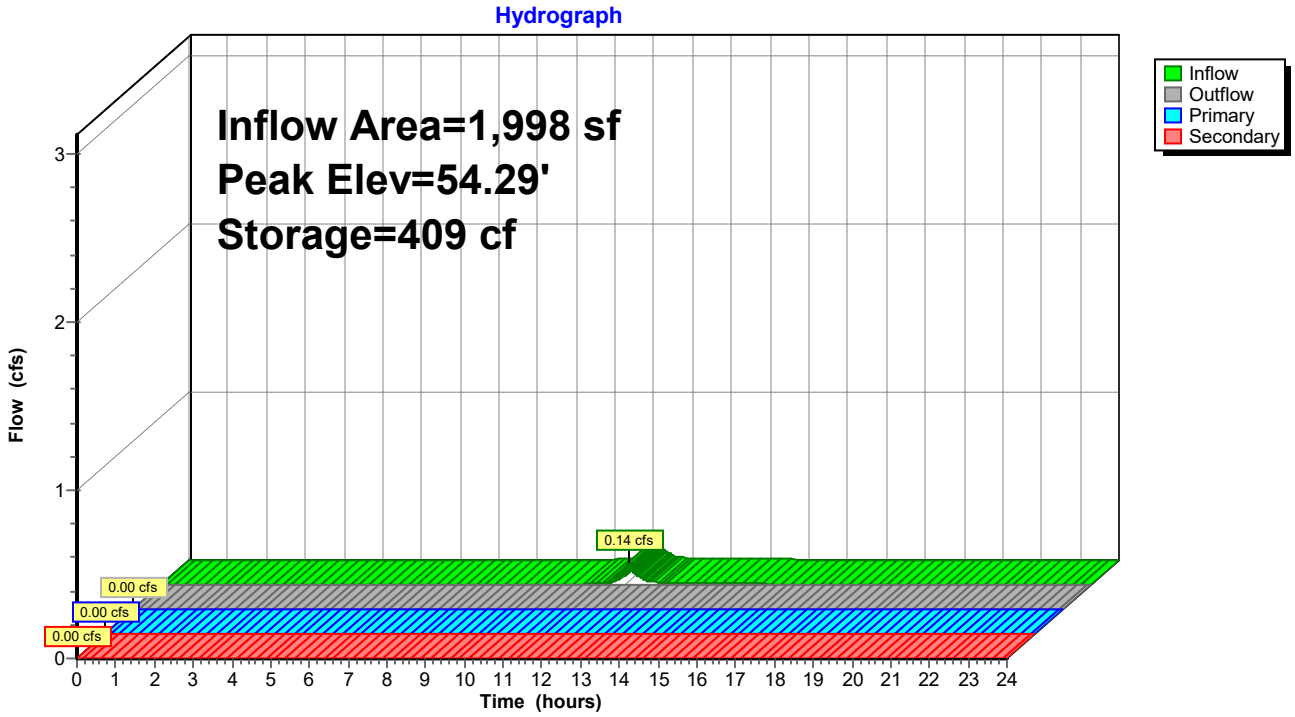
Volume	Invert	Avail.Storage	Storage Description
#1	53.00'	1,588 cf	**20.00'W x 39.80'L x 5.00'H Porous Pavment** 3,980 cf Overall - 11 cf Embedded = 3,969 cf x 40.0% Voids
#2	54.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 55.0'
		1,598 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	54.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 54.84' / 54.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	57.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=53.00' TW=42.54' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=53.00' TW=51.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 14P: Por Pvt-D2B



Summary for Pond 15P: Por Pvt-D1H

Porous Pavement in Parking Spaces Only

Inflow Area = 36,236 sf, 92.20% Impervious, Inflow Depth > 3.84" for 5-yr event
Inflow = 3.49 cfs @ 12.07 hrs, Volume= 11,588 cf
Outflow = 0.96 cfs @ 12.40 hrs, Volume= 8,748 cf, Atten= 72%, Lag= 19.8 min
Primary = 0.96 cfs @ 12.40 hrs, Volume= 8,748 cf
Routed to Pond YD33 : YD-33
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 13P : Por Pvt-D2A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 58.90' @ 12.40 hrs Surf.Area= 3,618 sf Storage= 5,675 cf

Plug-Flow detention time= 186.5 min calculated for 8,744 cf (75% of inflow)
Center-of-Mass det. time= 101.4 min (860.0 - 758.5)

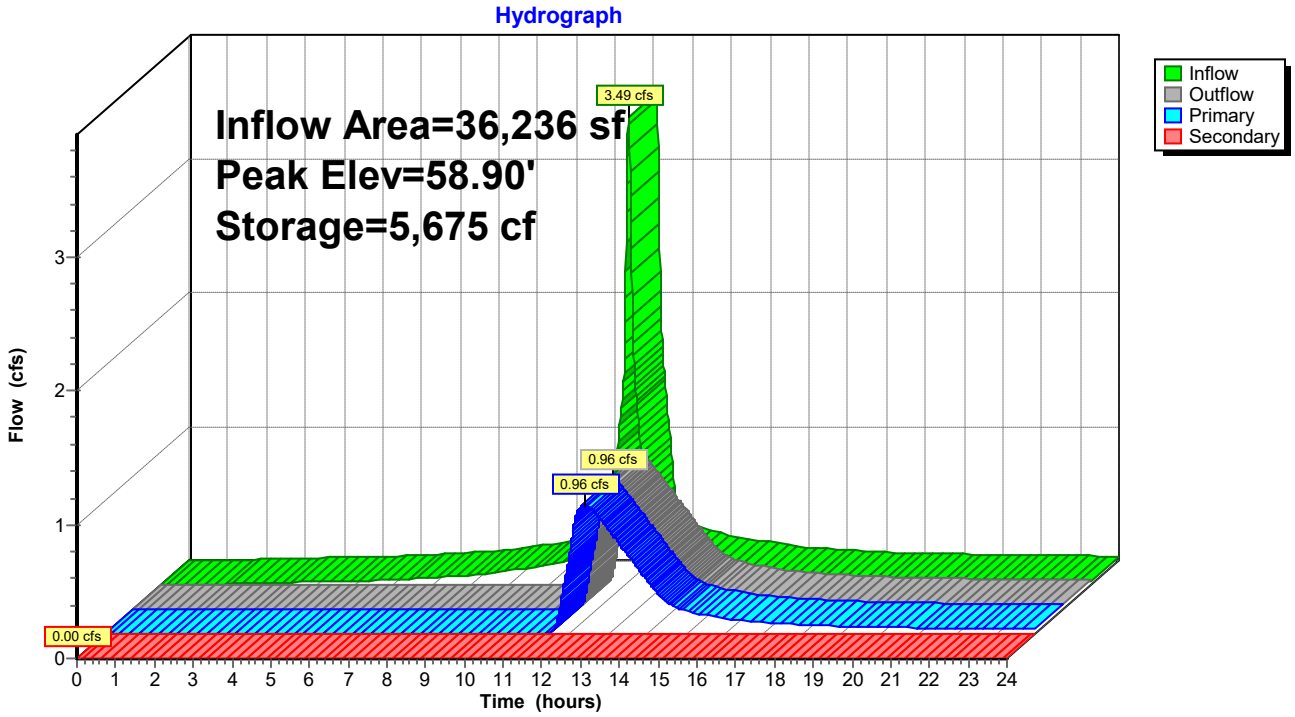
Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	7,220 cf	**20.00'W x 180.90'L x 5.00'H Porous Pavment** 18,090 cf Overall - 40 cf Embedded = 18,050 cf x 40.0% Voids
#2	56.84'	40 cf	**6.0" Round 6" underdrain** Inside #1 L= 204.0'
		7,260 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	56.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.84' / 56.67' S= 0.0567 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	59.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.96 cfs @ 12.40 hrs HW=58.90' TW=57.25' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.96 cfs @ 4.89 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=55.00' TW=55.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 15P: Por Pvt-D1H



Summary for Pond 16P: Por Pvt-D2C

Porous Pavement in Parking Spaces Only

Inflow Area = 6,166 sf, 86.99% Impervious, Inflow Depth > 3.68" for 5-yr event
Inflow = 0.57 cfs @ 12.07 hrs, Volume= 1,889 cf
Outflow = 0.41 cfs @ 12.14 hrs, Volume= 1,285 cf, Atten= 28%, Lag= 4.2 min
Primary = 0.41 cfs @ 12.14 hrs, Volume= 1,285 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 18P : Por Pvt-D2D

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 53.39' @ 12.14 hrs Surf.Area= 800 sf Storage= 773 cf

Plug-Flow detention time= 188.0 min calculated for 1,285 cf (68% of inflow)
Center-of-Mass det. time= 90.2 min (852.2 - 762.0)

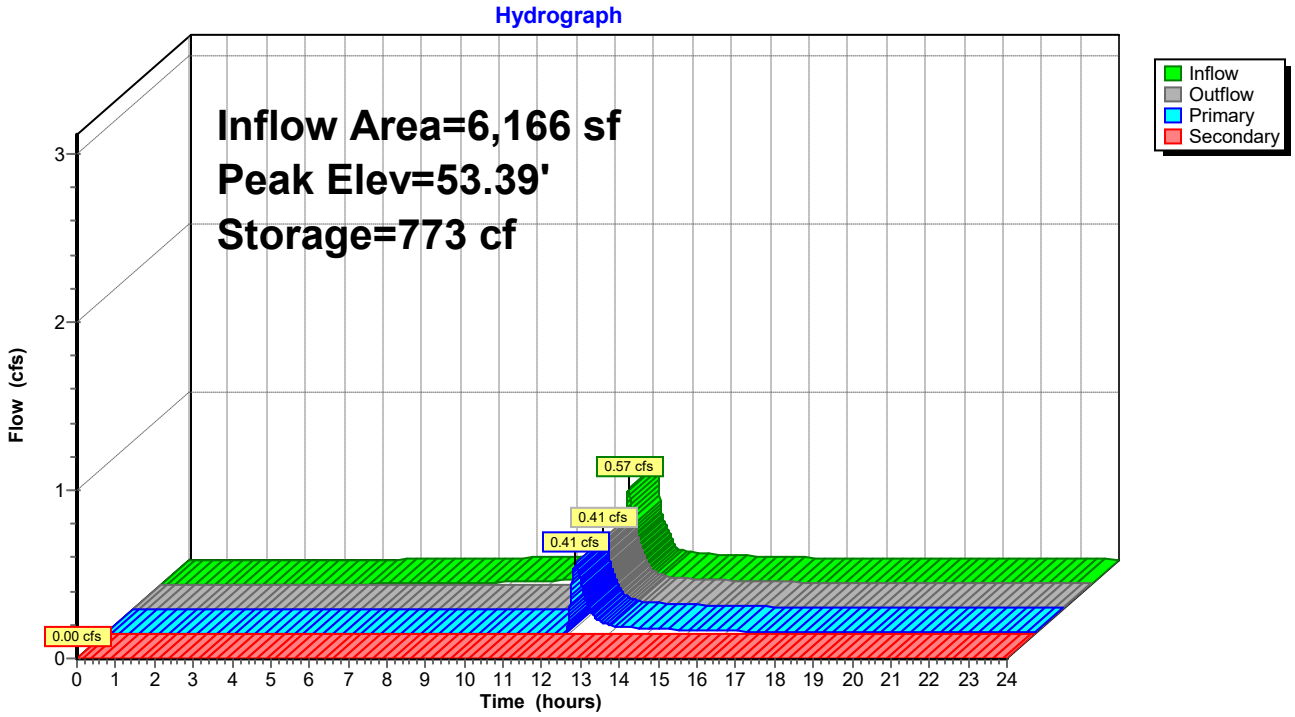
Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	52.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 55.0'
		1,606 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	52.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 52.84' / 52.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	55.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.41 cfs @ 12.14 hrs HW=53.39' TW=43.54' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.41 cfs @ 2.10 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=51.00' TW=49.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 16P: Por Pvt-D2C



Summary for Pond 18P: Por Pvt-D2D

Porous Pavement in Parking Spaces Only

Inflow Area = 6,023 sf, 88.83% Impervious, Inflow Depth > 3.72" for 5-yr event
Inflow = 0.56 cfs @ 12.07 hrs, Volume= 1,869 cf
Outflow = 0.41 cfs @ 12.14 hrs, Volume= 1,266 cf, Atten= 28%, Lag= 4.2 min
Primary = 0.41 cfs @ 12.14 hrs, Volume= 1,266 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 19P : Por Pvt-D2E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 51.39' @ 12.14 hrs Surf.Area= 800 sf Storage= 770 cf

Plug-Flow detention time= 189.2 min calculated for 1,266 cf (68% of inflow)
Center-of-Mass det. time= 91.2 min (852.0 - 760.8)

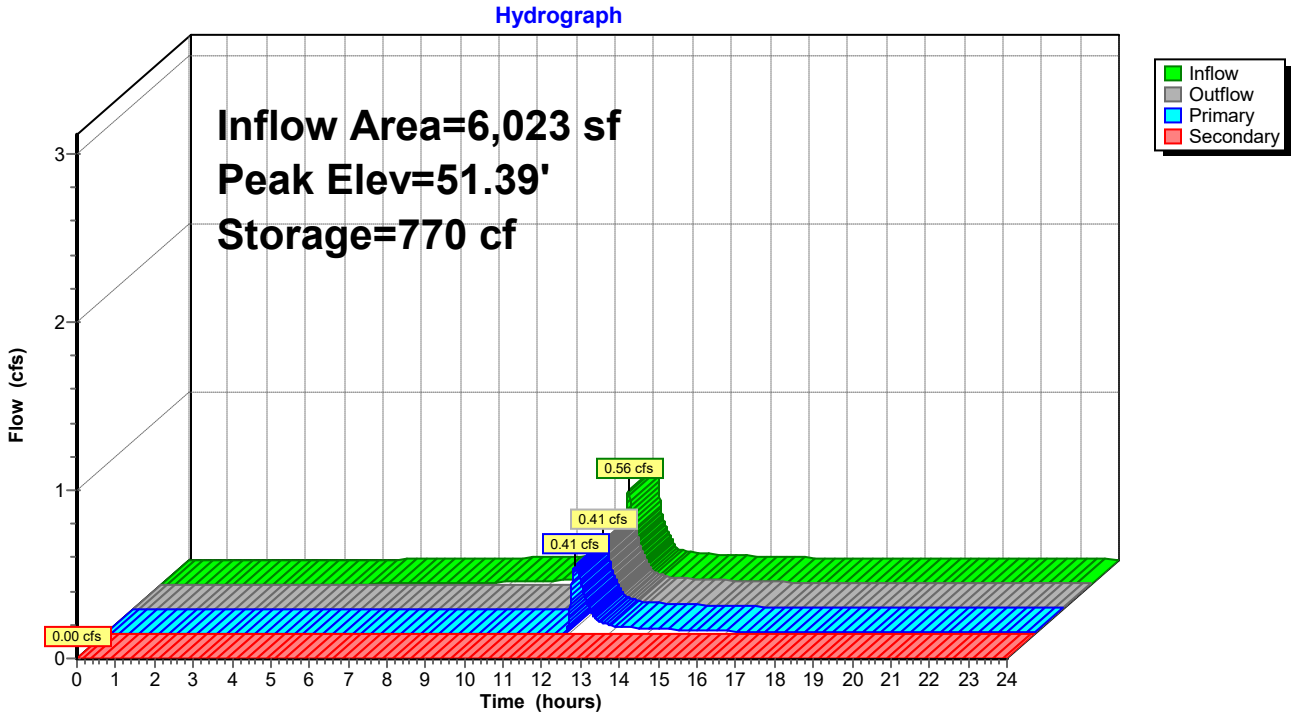
Volume	Invert	Avail.Storage	Storage Description
#1	49.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	50.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 54.0'
		1,606 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	50.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.84' / 50.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	53.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.41 cfs @ 12.14 hrs HW=51.39' TW=43.54' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.41 cfs @ 2.07 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=49.00' TW=47.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 18P: Por Pvt-D2D



Summary for Pond 19P: Por Pvt-D2E

Porous Pavement in Parking Spaces Only

Inflow Area = 6,016 sf, 88.30% Impervious, Inflow Depth > 3.70" for 5-yr event
Inflow = 0.56 cfs @ 12.07 hrs, Volume= 1,857 cf
Outflow = 0.40 cfs @ 12.14 hrs, Volume= 1,238 cf, Atten= 29%, Lag= 4.4 min
Primary = 0.40 cfs @ 12.14 hrs, Volume= 1,238 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 20P : Por Pvt-D2F

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 49.37' @ 12.14 hrs Surf.Area= 819 sf Storage= 783 cf

Plug-Flow detention time= 192.9 min calculated for 1,238 cf (67% of inflow)
Center-of-Mass det. time= 93.4 min (854.5 - 761.0)

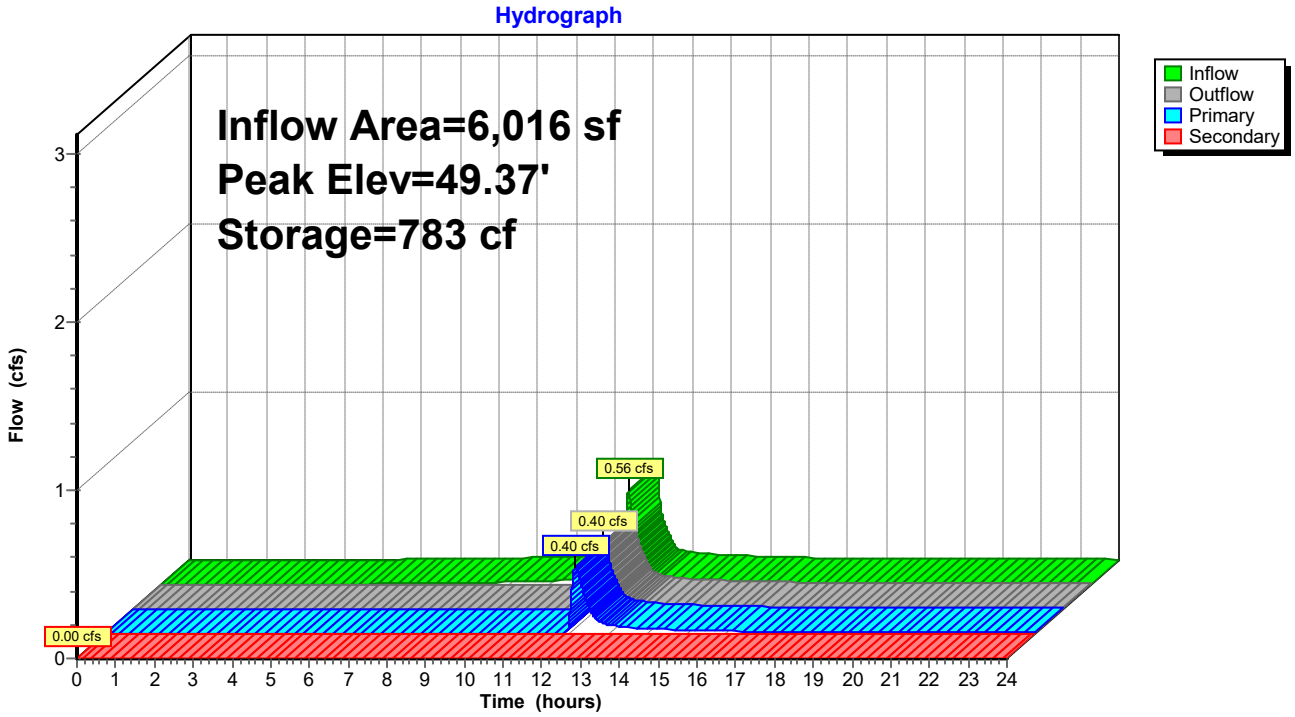
Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	1,634 cf	**20.00'W x 40.95'L x 5.00'H Porous Pavment** 4,095 cf Overall - 11 cf Embedded = 4,084 cf x 40.0% Voids
#2	48.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 54.0'
		1,644 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 48.84' / 48.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	51.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.40 cfs @ 12.14 hrs HW=49.37' TW=43.54' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.40 cfs @ 2.01 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=47.00' TW=45.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 19P: Por Pvt-D2E



Summary for Pond 20P: Por Pvt-D2F

Porous Pavement in Parking Spaces Only

Inflow Area = 5,836 sf, 90.88% Impervious, Inflow Depth > 3.78" for 5-yr event
Inflow = 0.55 cfs @ 12.07 hrs, Volume= 1,837 cf
Outflow = 0.40 cfs @ 12.14 hrs, Volume= 1,234 cf, Atten= 28%, Lag= 4.2 min
Primary = 0.40 cfs @ 12.14 hrs, Volume= 1,234 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 21P : Por Pvt-D2G

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 47.38' @ 12.14 hrs Surf.Area= 800 sf Storage= 767 cf

Plug-Flow detention time= 191.2 min calculated for 1,233 cf (67% of inflow)
Center-of-Mass det. time= 92.7 min (852.1 - 759.4)

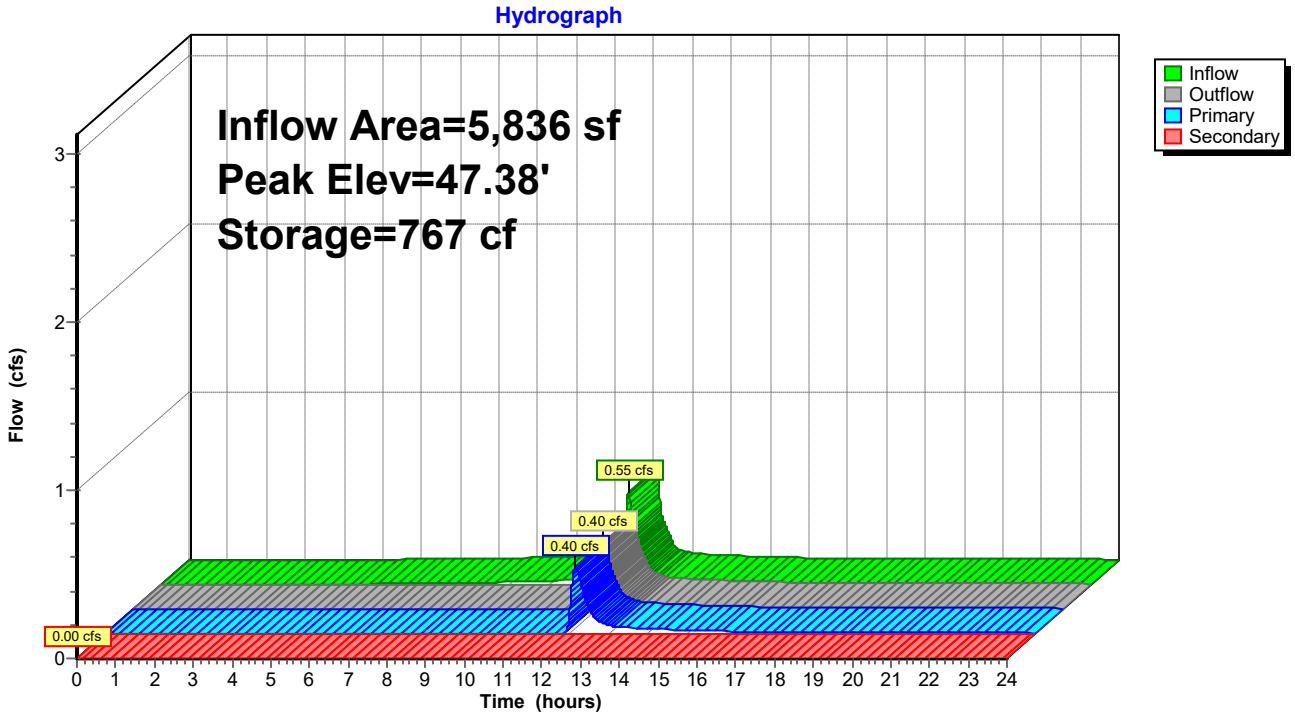
Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	46.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 57.0'
		1,607 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	46.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.84' / 46.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	49.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.40 cfs @ 12.14 hrs HW=47.38' TW=43.54' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.40 cfs @ 2.03 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.00' TW=42.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 20P: Por Pvt-D2F



Summary for Pond 21P: Por Pvt-D2G

Porous Pavement in Parking Spaces Only

Inflow Area = 3,234 sf, 56.68% Impervious, Inflow Depth > 3.01" for 5-yr event
Inflow = 0.27 cfs @ 12.07 hrs, Volume= 810 cf
Outflow = 0.00 cfs @ 21.53 hrs, Volume= 48 cf, Atten= 99%, Lag= 567.7 min
Primary = 0.00 cfs @ 21.53 hrs, Volume= 48 cf
Routed to Link Sub A : SUB A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.88' @ 21.53 hrs Surf.Area= 1,016 sf Storage= 763 cf

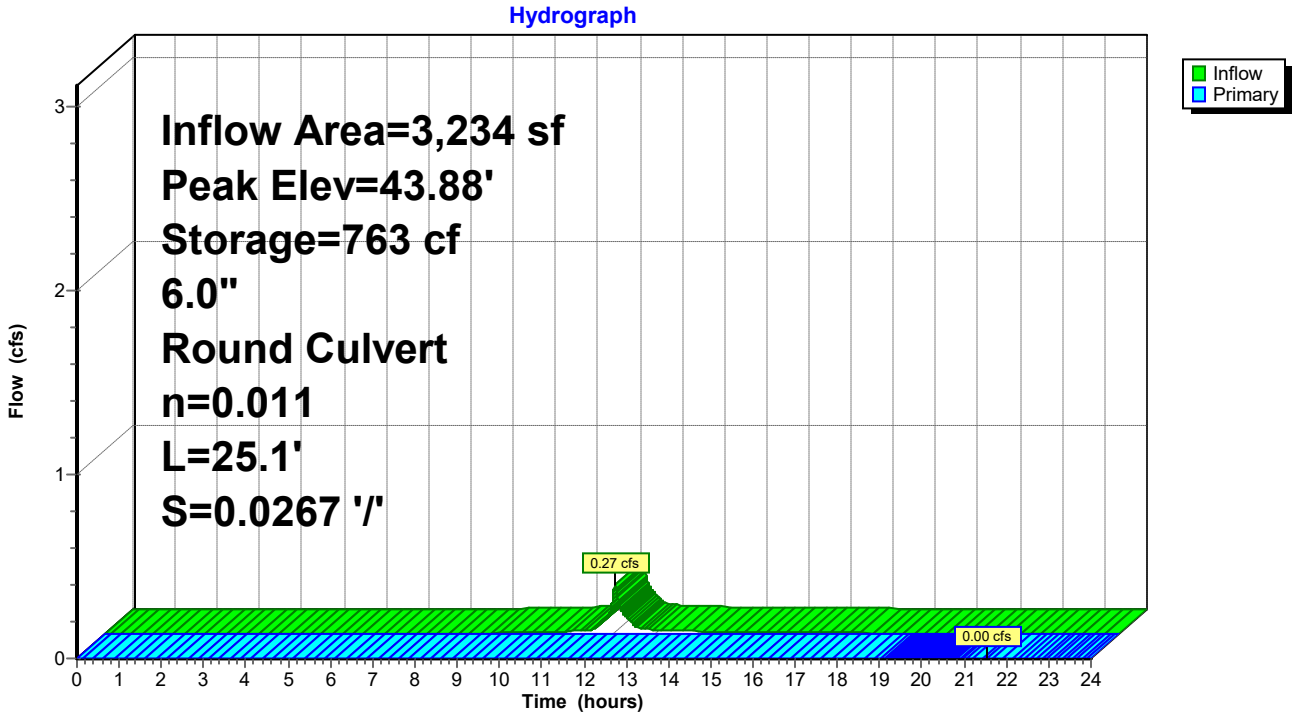
Plug-Flow detention time= 766.5 min calculated for 48 cf (6% of inflow)
Center-of-Mass det. time= 509.6 min (1,311.6 - 802.0)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	2,021 cf	**20.00'W x 50.80'L x 5.00'H Porous Pavment** 5,080 cf Overall - 27 cf Embedded = 5,053 cf x 40.0% Voids
#2	43.84'	27 cf	**6.0" Round 6" underdrain** Inside #1 L= 138.0'
		2,048 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	43.84'	**6.0" Round Culvert** L= 25.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.84' / 43.17' S= 0.0267 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf

Primary OutFlow Max=0.00 cfs @ 21.53 hrs HW=43.88' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.00 cfs @ 0.52 fps)

Pond 21P: Por Pvt-D2G



Summary for Pond DB01: Detention-01

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 60,955 sf, 0.00% Impervious, Inflow Depth > 0.99" for 5-yr event
Inflow = 0.96 cfs @ 12.26 hrs, Volume= 5,011 cf
Outflow = 0.95 cfs @ 12.29 hrs, Volume= 5,011 cf, Atten= 1%, Lag= 1.9 min
Primary = 0.95 cfs @ 12.29 hrs, Volume= 5,011 cf
Routed to Pond DMH13 : DMH-13

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 47.37' @ 12.29 hrs Surf.Area= 309 sf Storage= 81 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.6 min (889.9 - 889.3)

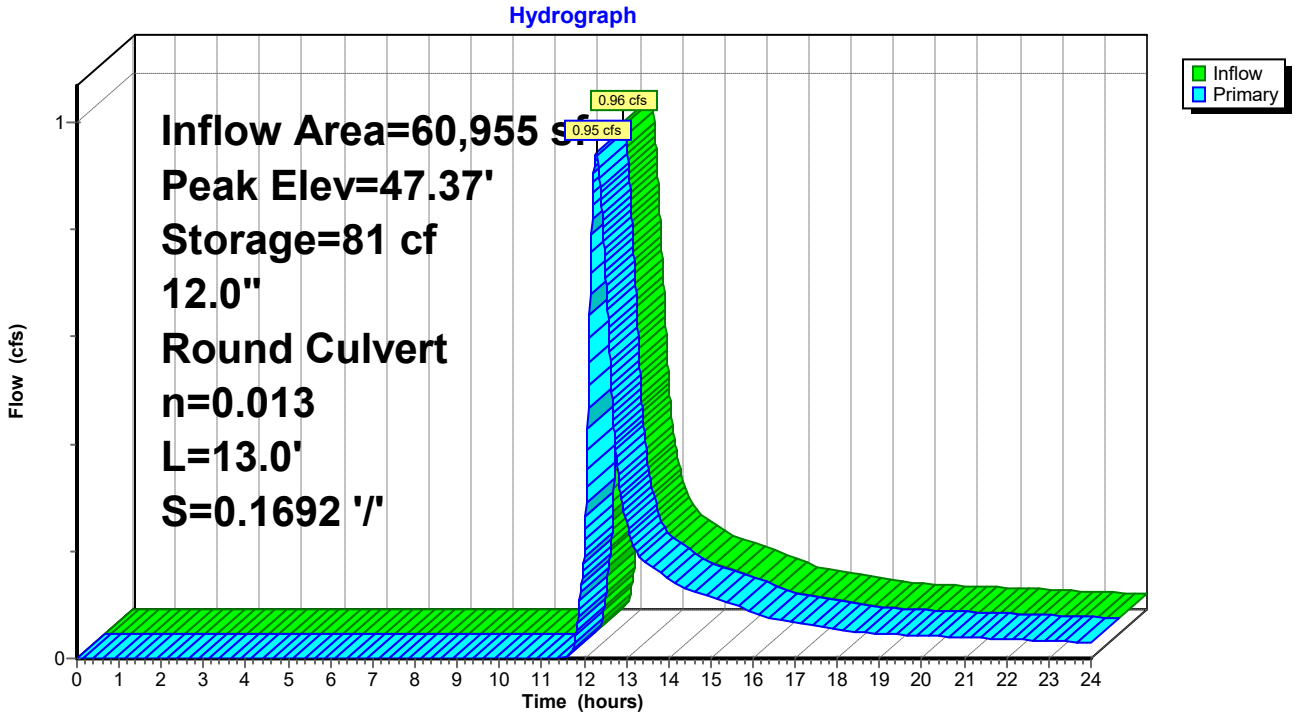
Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	1,719 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
47.00	128	0	0
48.00	614	371	371
49.00	2,082	1,348	1,719

Device	Routing	Invert	Outlet Devices
#1	Primary	46.80'	**12.0" Round Culvert** L= 13.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.80' / 44.60' S= 0.1692 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.94 cfs @ 12.29 hrs HW=47.37' TW=43.55' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.94 cfs @ 2.03 fps)

Pond DB01: Detention-01



Summary for Pond DB02: Detention-02

Inflow Area = 10,676 sf, 0.00% Impervious, Inflow Depth > 1.96" for 5-yr event
Inflow = 0.40 cfs @ 12.25 hrs, Volume= 1,747 cf
Outflow = 0.15 cfs @ 12.69 hrs, Volume= 1,203 cf, Atten= 64%, Lag= 26.3 min
Primary = 0.15 cfs @ 12.69 hrs, Volume= 1,203 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.68' @ 12.69 hrs Surf.Area= 1,458 sf Storage= 739 cf

Plug-Flow detention time= 182.1 min calculated for 1,202 cf (69% of inflow)
Center-of-Mass det. time= 83.1 min (931.2 - 848.1)

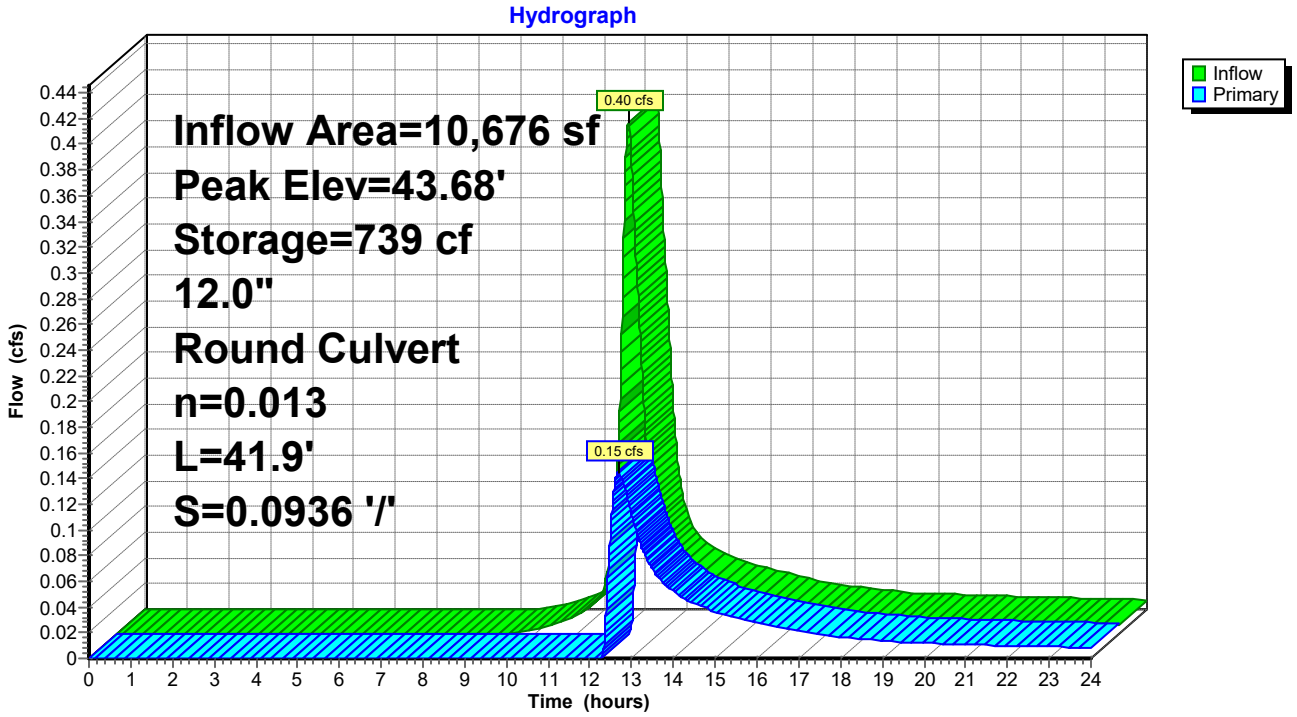
Volume	Invert	Avail.Storage	Storage Description
#1	43.00'	3,637 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.00	703	0	0
44.00	1,807	1,255	1,255
45.00	2,956	2,382	3,637

Device	Routing	Invert	Outlet Devices
#1	Primary	43.50'	**12.0" Round Culvert** L= 41.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.50' / 39.58' S= 0.0936 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.15 cfs @ 12.69 hrs HW=43.68' TW=39.71' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.15 cfs @ 1.46 fps)

Pond DB02: Detention-02



Summary for Pond DB03: Detention-03

Inflow Area = 13,682 sf, 0.00% Impervious, Inflow Depth > 1.81" for 5-yr event
Inflow = 0.52 cfs @ 12.18 hrs, Volume= 2,069 cf
Outflow = 0.16 cfs @ 12.64 hrs, Volume= 1,420 cf, Atten= 70%, Lag= 27.3 min
Primary = 0.16 cfs @ 12.64 hrs, Volume= 1,420 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.69' @ 12.64 hrs Surf.Area= 1,666 sf Storage= 877 cf

Plug-Flow detention time= 186.9 min calculated for 1,420 cf (69% of inflow)
Center-of-Mass det. time= 85.6 min (935.5 - 849.9)

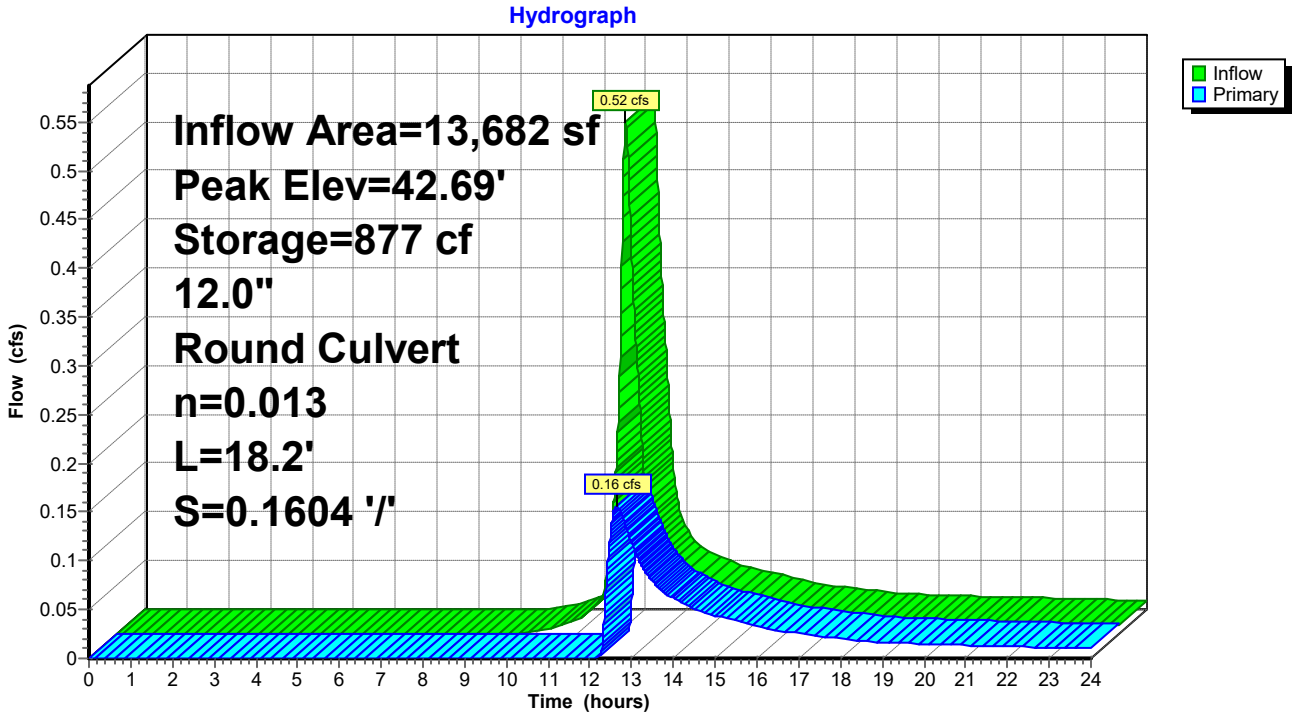
Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	12,357 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	870	0	0
43.00	2,022	1,446	1,446
44.00	3,054	2,538	3,984
45.00	4,148	3,601	7,585
46.00	5,395	4,772	12,357

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	**12.0" Round Culvert** L= 18.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 39.58' S= 0.1604 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.16 cfs @ 12.64 hrs HW=42.69' TW=39.73' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.16 cfs @ 1.49 fps)

Pond DB03: Detention-03



Summary for Pond DMH13: DMH-13

[57] Hint: Peaked at 43.59' (Flood elevation advised)

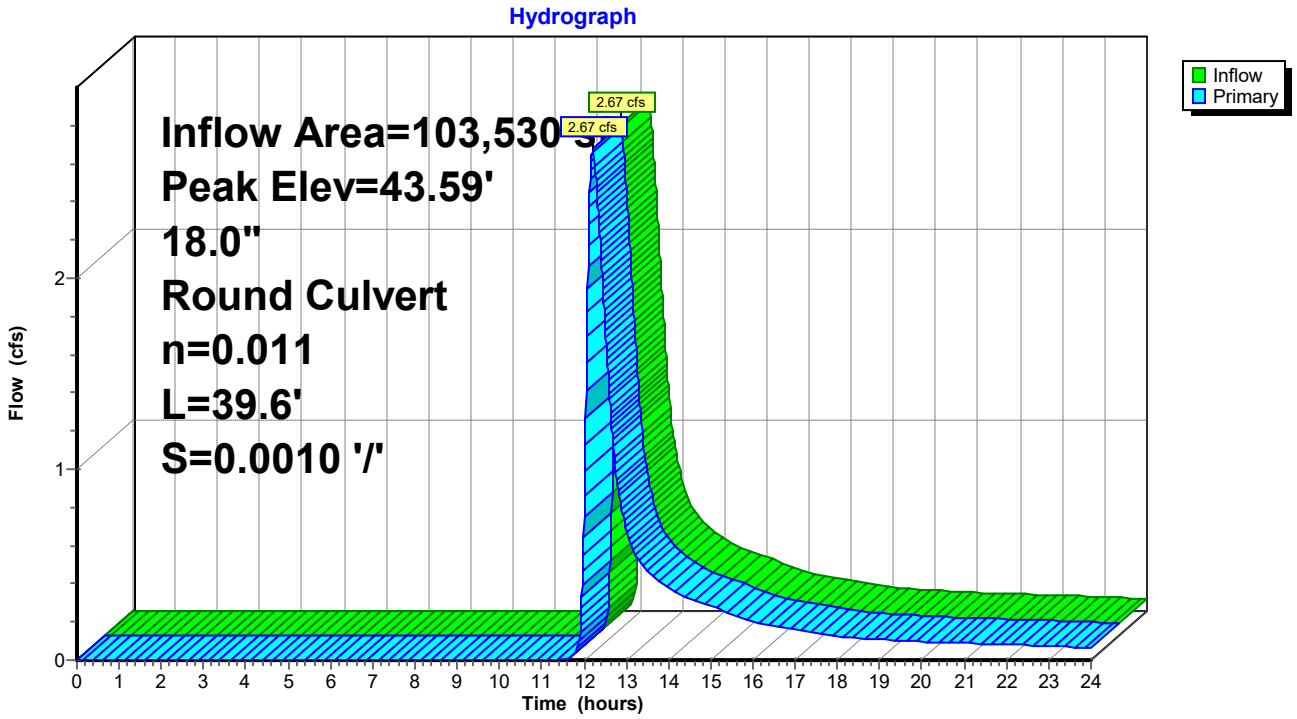
Inflow Area = 103,530 sf, 35.12% Impervious, Inflow Depth > 1.49" for 5-yr event
Inflow = 2.67 cfs @ 12.22 hrs, Volume= 12,841 cf
Outflow = 2.67 cfs @ 12.22 hrs, Volume= 12,841 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.67 cfs @ 12.22 hrs, Volume= 12,841 cf
Routed to Link Sub A : SUB A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.59' @ 12.22 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.54'	**18.0" Round Culvert** L= 39.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.54' / 42.50' S= 0.0010 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf

Primary OutFlow Max=2.67 cfs @ 12.22 hrs HW=43.59' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.67 cfs @ 2.85 fps)

Pond DMH13: DMH-13



Summary for Pond DMH8: DMH-08

[57] Hint: Peaked at 40.21' (Flood elevation advised)

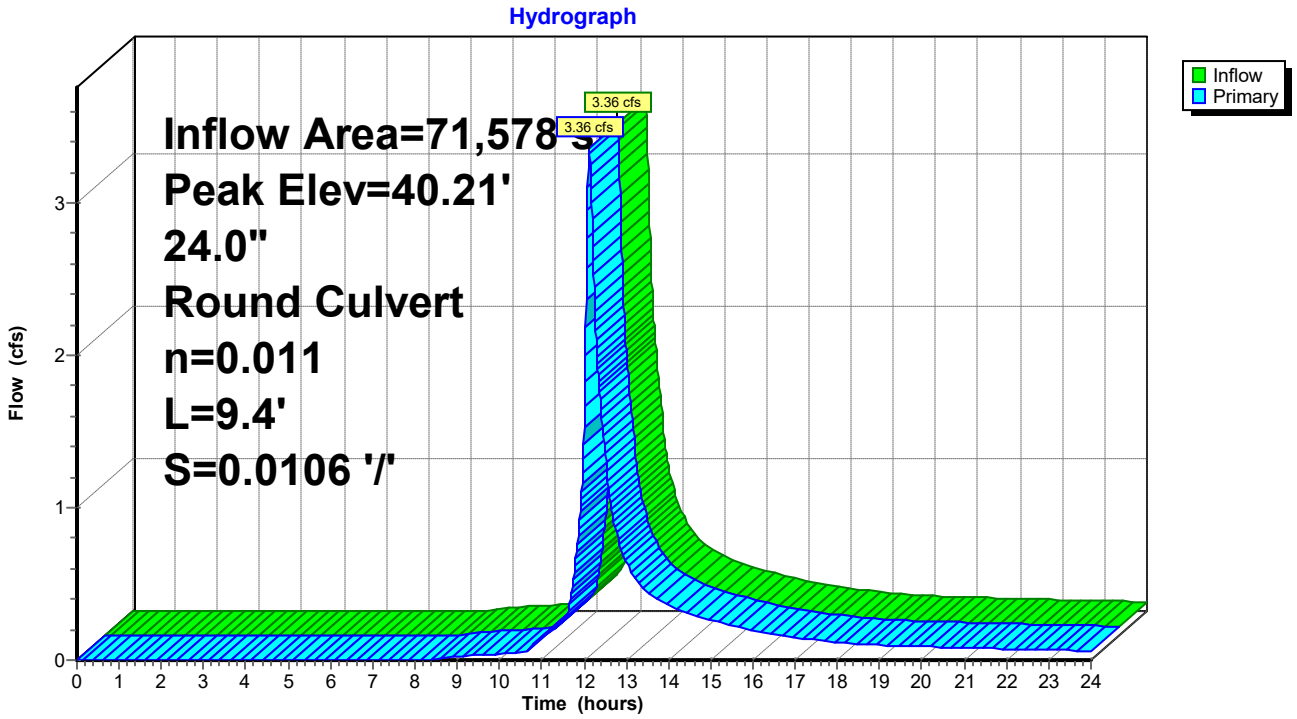
Inflow Area = 71,578 sf, 52.12% Impervious, Inflow Depth > 2.35" for 5-yr event
Inflow = 3.36 cfs @ 12.12 hrs, Volume= 14,029 cf
Outflow = 3.36 cfs @ 12.12 hrs, Volume= 14,029 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.36 cfs @ 12.12 hrs, Volume= 14,029 cf
Routed to Link 2 : Pipe 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.21' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.25'	**24.0" Round Culvert** L= 9.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.25' / 39.15' S= 0.0106 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=3.35 cfs @ 12.12 hrs HW=40.21' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.35 cfs @ 3.30 fps)

Pond DMH8: DMH-08



Summary for Pond PP02: Por Pvt-02

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 18,123 sf, 81.93% Impervious, Inflow Depth > 3.62" for 5-yr event
Inflow = 1.72 cfs @ 12.07 hrs, Volume= 5,461 cf
Outflow = 1.56 cfs @ 12.11 hrs, Volume= 4,740 cf, Atten= 9%, Lag= 2.1 min
Primary = 1.56 cfs @ 12.11 hrs, Volume= 4,740 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.61' @ 12.11 hrs Surf.Area= 1,476 sf Storage= 1,072 cf

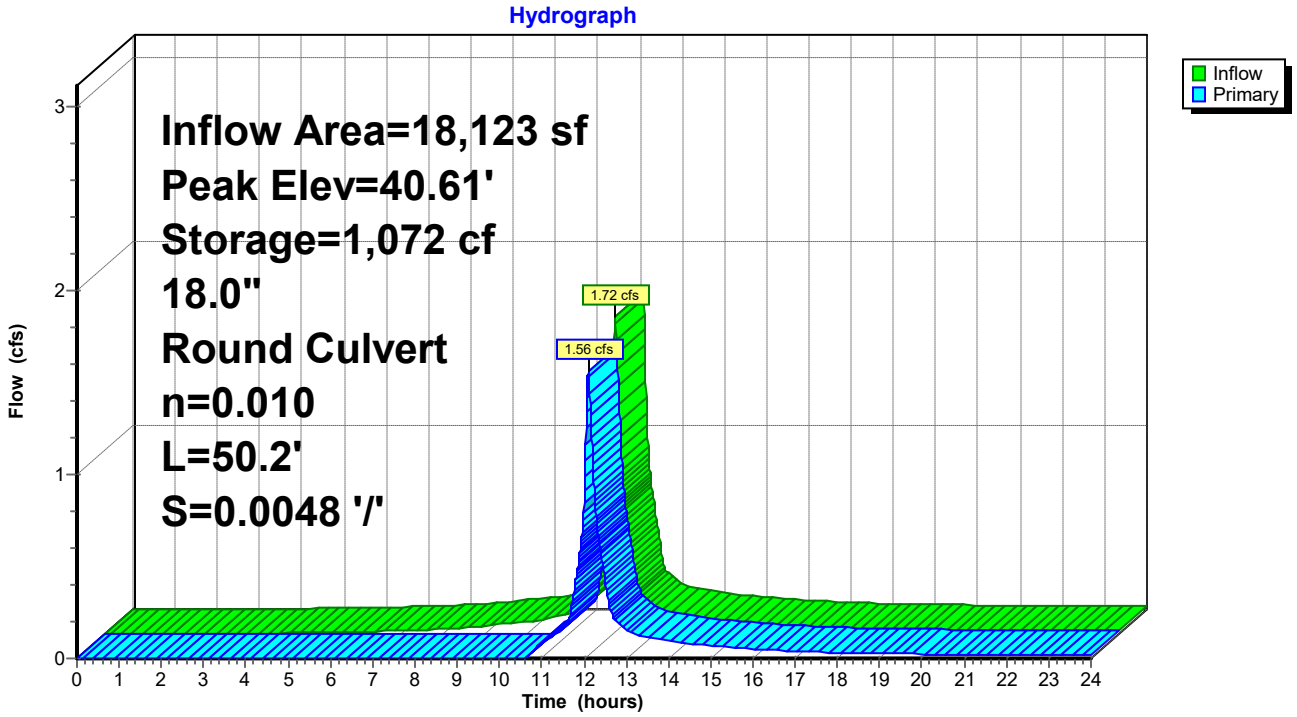
Plug-Flow detention time= 102.7 min calculated for 4,740 cf (87% of inflow)
Center-of-Mass det. time= 44.2 min (820.6 - 776.5)

Volume	Invert	Avail.Storage	Storage Description
#1	38.80'	2,946 cf	**18.00'W x 82.00'L x 5.00'H Porous Pavment** 7,380 cf Overall - 14 cf Embedded = 7,366 cf x 40.0% Voids
#2	40.64'	14 cf	**6.0" Round 6" underdrain** Inside #1 L= 72.0'
		2,960 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	39.96'	**18.0" Round Culvert** L= 50.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.96' / 39.72' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.55 cfs @ 12.11 hrs HW=40.61' TW=40.20' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 1.55 cfs @ 3.09 fps)

Pond PP02: Por Pvt-02



Summary for Pond PP03: Por Pvt-03

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 30,180 sf, 76.35% Impervious, Inflow Depth > 3.62" for 5-yr event
Inflow = 2.86 cfs @ 12.07 hrs, Volume= 9,095 cf
Outflow = 2.16 cfs @ 12.13 hrs, Volume= 7,674 cf, Atten= 24%, Lag= 3.8 min
Primary = 2.16 cfs @ 12.13 hrs, Volume= 7,674 cf
Routed to Link 3 : Pipe 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.36' @ 12.13 hrs Surf.Area= 2,484 sf Storage= 2,363 cf

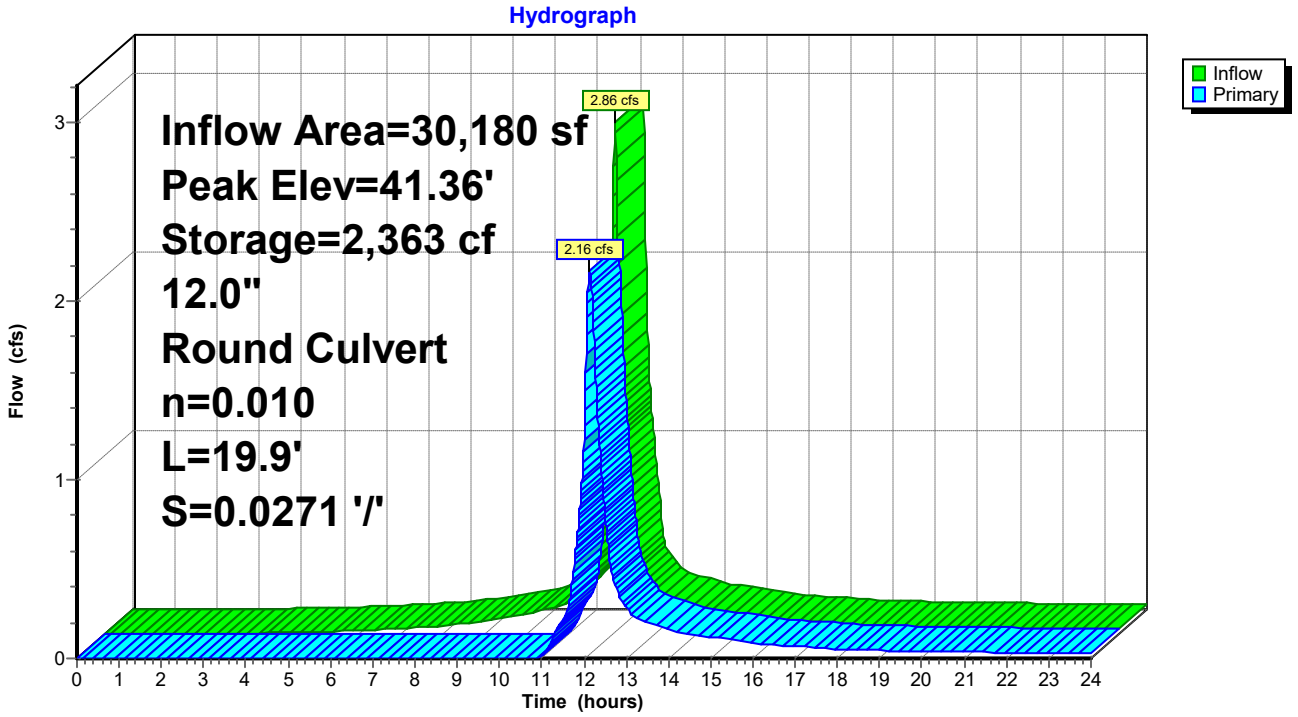
Plug-Flow detention time= 117.3 min calculated for 7,671 cf (84% of inflow)
Center-of-Mass det. time= 52.5 min (828.9 - 776.5)

Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	4,958 cf	**18.00'W x 138.00'L x 5.00'H Porous Pavment** 12,420 cf Overall - 24 cf Embedded = 12,396 cf x 40.0% Voids
#2	40.34'	24 cf	**6.0" Round 6" underdrain** Inside #1 L= 124.0'
		4,983 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.34'	**12.0" Round Culvert** L= 19.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.34' / 39.80' S= 0.0271 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.16 cfs @ 12.13 hrs HW=41.36' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.16 cfs @ 2.75 fps)

Pond PP03: Por Pvt-03



Summary for Pond PP04: Por Pvt-04

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 9,547 sf, 73.20% Impervious, Inflow Depth > 3.51" for 5-yr event
Inflow = 0.89 cfs @ 12.07 hrs, Volume= 2,792 cf
Outflow = 0.72 cfs @ 12.12 hrs, Volume= 1,989 cf, Atten= 19%, Lag= 3.2 min
Primary = 0.72 cfs @ 12.12 hrs, Volume= 1,989 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.49' @ 12.12 hrs Surf.Area= 1,296 sf Storage= 1,040 cf

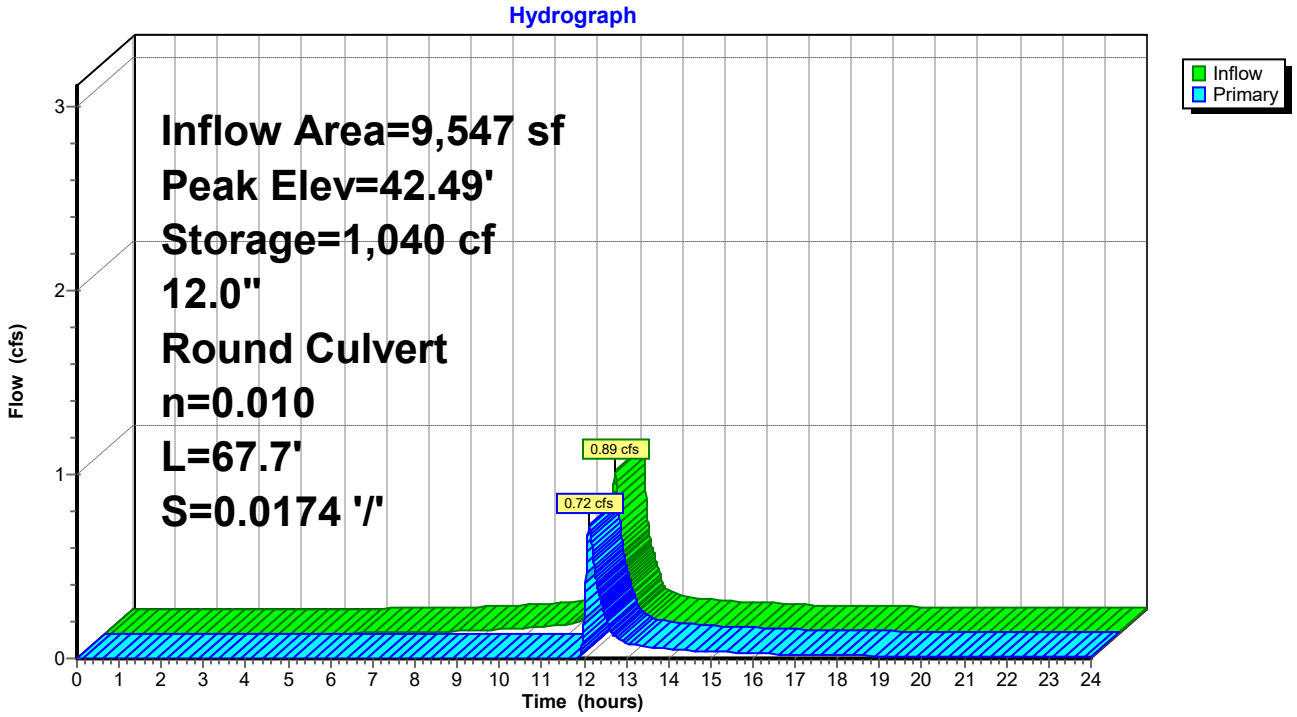
Plug-Flow detention time= 161.4 min calculated for 1,988 cf (71% of inflow)
Center-of-Mass det. time= 71.8 min (853.3 - 781.5)

Volume	Invert	Avail.Storage	Storage Description
#1	40.50'	2,587 cf	**18.00'W x 72.00'L x 5.00'H Porous Pavment** 6,480 cf Overall - 13 cf Embedded = 6,467 cf x 40.0% Voids
#2	42.00'	13 cf	**6.0" Round 6" underdrain** Inside #1 L= 68.0'
		2,600 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	**12.0" Round Culvert** L= 67.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.00' / 40.82' S= 0.0174 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.72 cfs @ 12.12 hrs HW=42.49' TW=40.21' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.72 cfs @ 1.88 fps)

Pond PP04: Por Pvt-04



Summary for Pond PP05: Por Pvt-05

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 9,002 sf, 74.73% Impervious, Inflow Depth > 3.30" for 5-yr event
Inflow = 0.80 cfs @ 12.07 hrs, Volume= 2,478 cf
Outflow = 0.42 cfs @ 12.19 hrs, Volume= 1,575 cf, Atten= 47%, Lag= 7.1 min
Primary = 0.42 cfs @ 12.19 hrs, Volume= 1,575 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 44.12' @ 12.19 hrs Surf.Area= 1,457 sf Storage= 1,094 cf

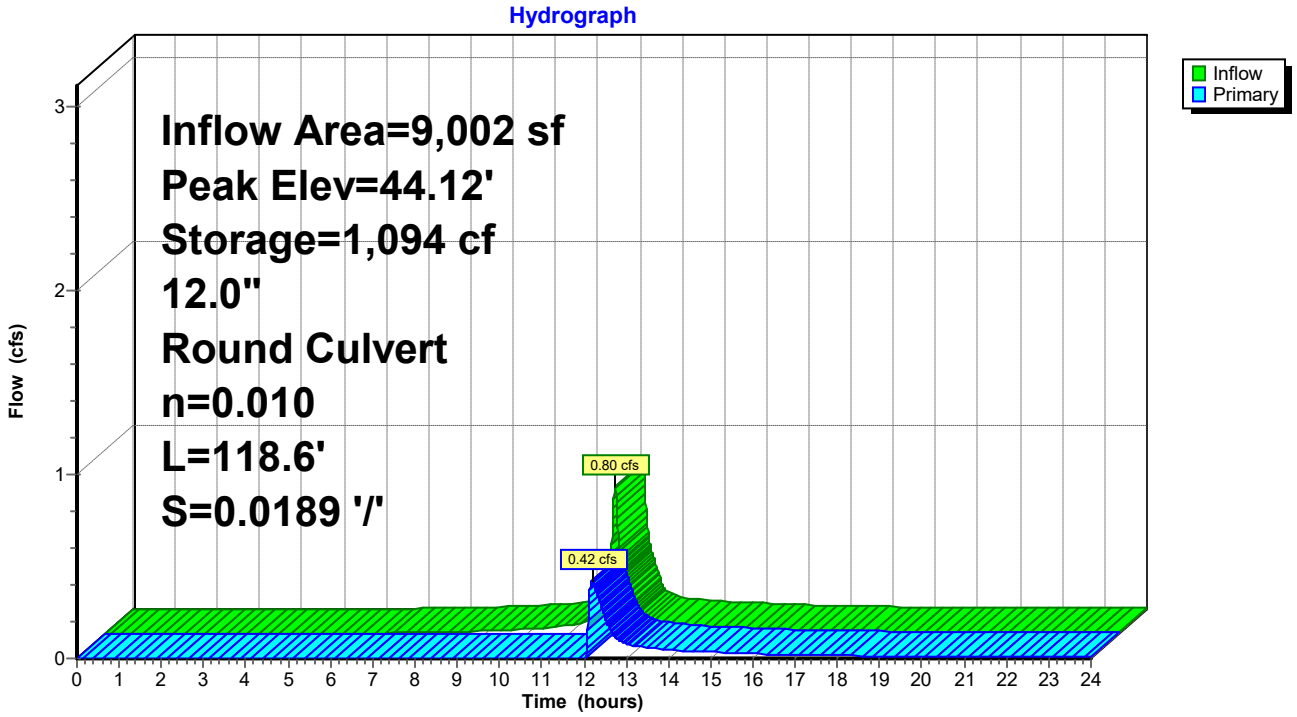
Plug-Flow detention time= 185.3 min calculated for 1,575 cf (64% of inflow)
Center-of-Mass det. time= 86.2 min (876.7 - 790.5)

Volume	Invert	Avail.Storage	Storage Description
#1	42.25'	2,909 cf	**18.00'W x 80.97'L x 5.00'H Porous Pavment** 7,287 cf Overall - 15 cf Embedded = 7,272 cf x 40.0% Voids
#2	43.75'	15 cf	**6.0" Round 6" underdrain** Inside #1 L= 77.0'
		2,924 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	43.75'	**12.0" Round Culvert** L= 118.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.75' / 41.51' S= 0.0189 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.42 cfs @ 12.19 hrs HW=44.12' TW=40.13' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.42 cfs @ 1.62 fps)

Pond PP05: Por Pvt-05



Summary for Pond PP06: Por Pvt-06

Only Main Driveway and Parking Area to be Porous Pavement

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 7,420 sf, 88.26% Impervious, Inflow Depth > 3.72" for 5-yr event
Inflow = 0.71 cfs @ 12.07 hrs, Volume= 2,303 cf
Outflow = 0.71 cfs @ 12.07 hrs, Volume= 2,303 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.71 cfs @ 12.07 hrs, Volume= 2,303 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.25' @ 0.00 hrs Surf.Area= 1,298 sf Storage= 0 cf

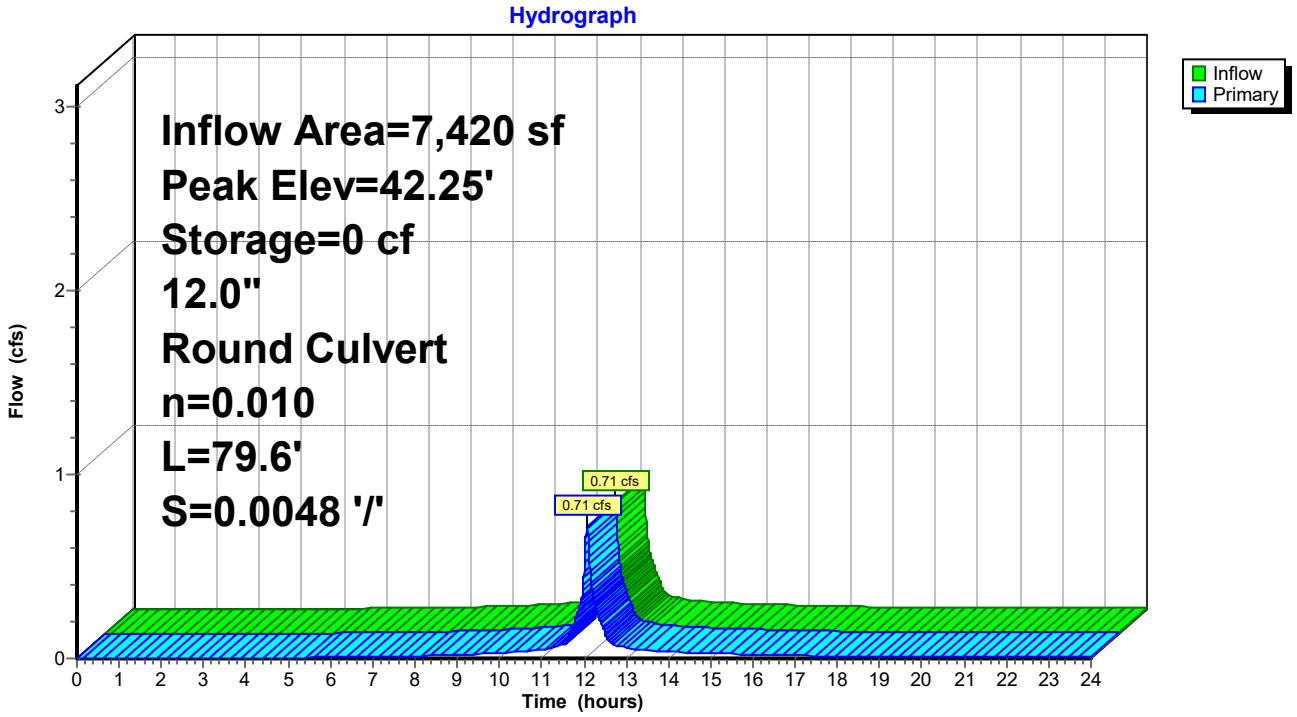
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	42.25'	2,590 cf	**18.00'W x 72.10'L x 5.00'H Porous Pavment** 6,489 cf Overall - 14 cf Embedded = 6,475 cf x 40.0% Voids
#2	43.75'	14 cf	**6.0" Round 6" underdrain** Inside #1 L= 69.0'
		2,604 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.94'	**12.0" Round Culvert** L= 79.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.94' / 40.56' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.07 hrs HW=42.25' TW=0.00' (Dynamic Tailwater)
1=Culvert (Passes 0.00 cfs of 2.69 cfs potential flow)

Pond PP06: Por Pvt-06



Summary for Pond PP07: Por Pvt-07

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 27,046 sf, 54.55% Impervious, Inflow Depth > 2.73" for 5-yr event
Inflow = 2.05 cfs @ 12.07 hrs, Volume= 6,142 cf
Outflow = 1.02 cfs @ 12.21 hrs, Volume= 4,702 cf, Atten= 50%, Lag= 8.3 min
Primary = 1.02 cfs @ 12.21 hrs, Volume= 4,702 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.70' @ 12.21 hrs Surf.Area= 4,085 sf Storage= 2,284 cf

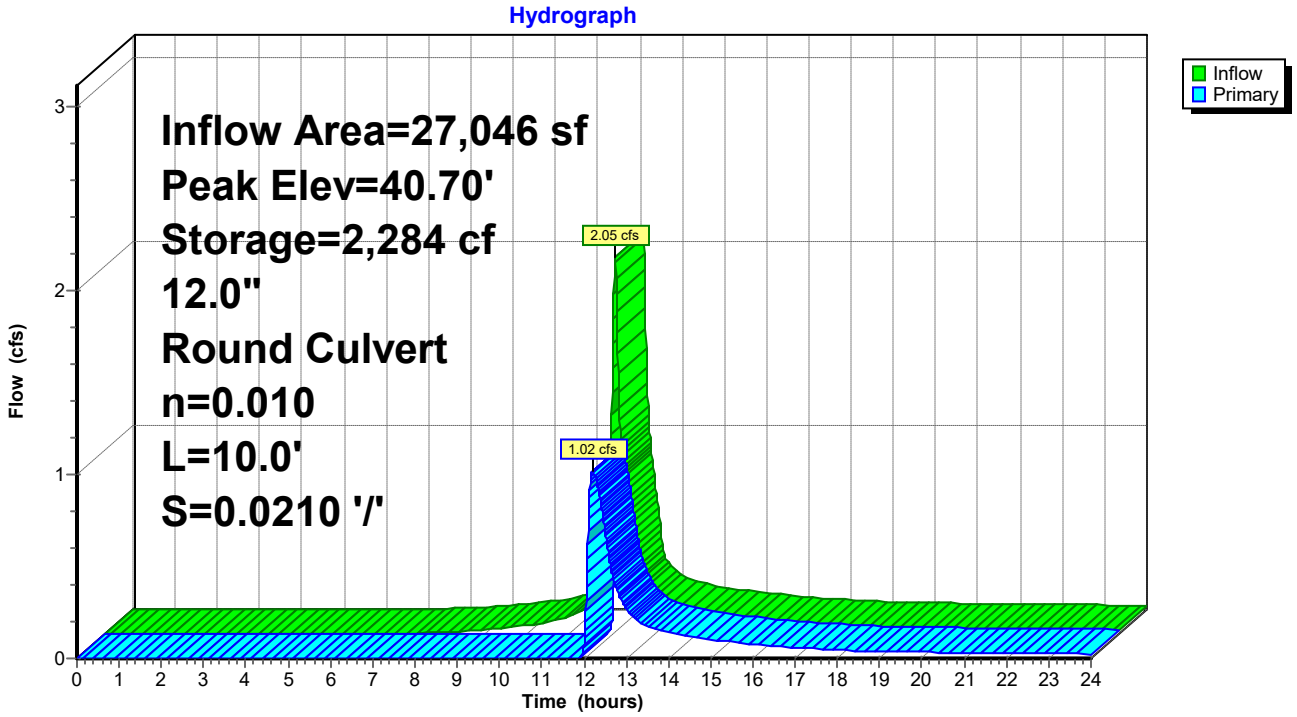
Plug-Flow detention time= 145.5 min calculated for 4,700 cf (77% of inflow)
Center-of-Mass det. time= 62.5 min (874.6 - 812.0)

Volume	Invert	Avail.Storage	Storage Description
#1	39.30'	8,152 cf	**18.00'W x 226.97'L x 5.00'H Porous Pavment** 20,427 cf Overall - 46 cf Embedded = 20,381 cf x 40.0% Voids
#2	41.14'	46 cf	**6.0" Round 6" underdrain** Inside #1 L= 236.0'
		8,199 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.10'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.10' / 39.89' S= 0.0210 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.02 cfs @ 12.21 hrs HW=40.70' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.02 cfs @ 2.08 fps)

Pond PP07: Por Pvt-07



Summary for Pond RG03: Rain Garden-03

Inflow Area = 5,425 sf, 57.01% Impervious, Inflow Depth > 3.20" for 5-yr event
Inflow = 0.43 cfs @ 12.11 hrs, Volume= 1,447 cf
Outflow = 0.16 cfs @ 12.39 hrs, Volume= 943 cf, Atten= 64%, Lag= 17.1 min
Primary = 0.16 cfs @ 12.39 hrs, Volume= 943 cf
Routed to Link 2 : Pipe 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.91' @ 12.39 hrs Surf.Area= 2,332 sf Storage= 696 cf

Plug-Flow detention time= 192.8 min calculated for 943 cf (65% of inflow)
Center-of-Mass det. time= 95.4 min (892.0 - 796.6)

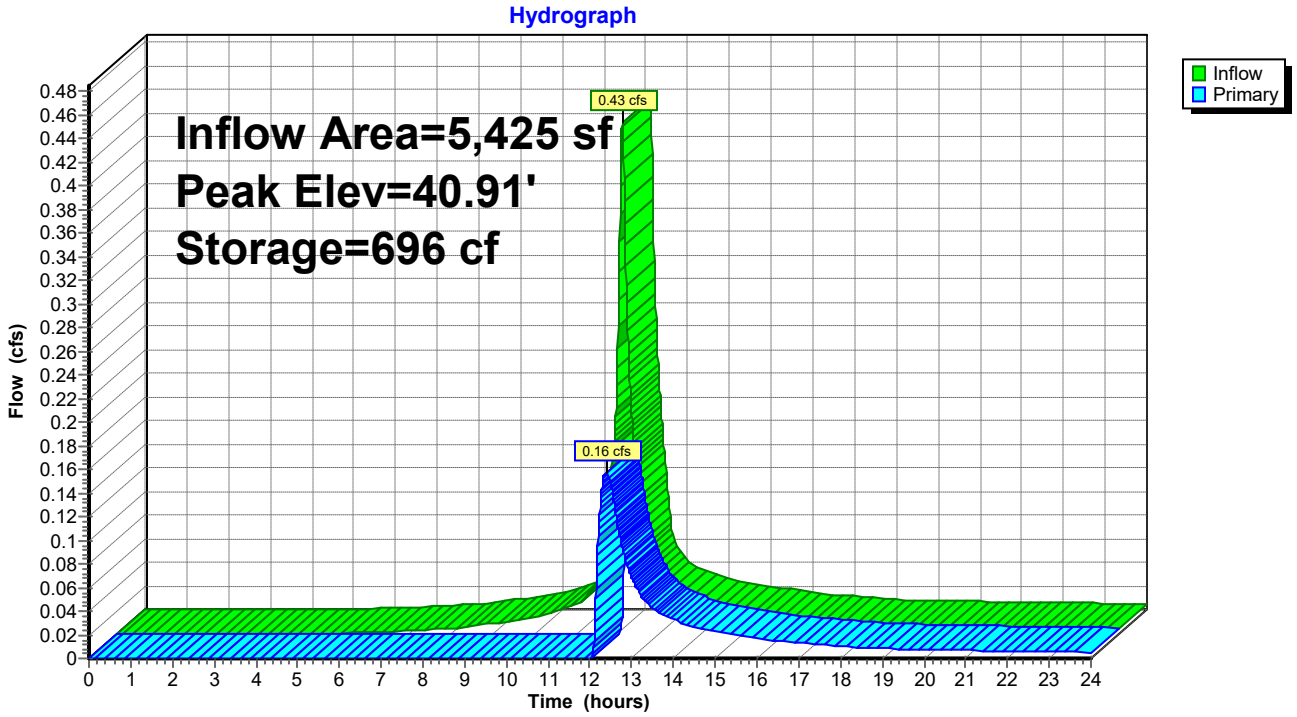
Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	1,867 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	43.67'	115 cf	**18.00'W x 129.55'L x 0.33'H Mulch** 770 cf Overall x 15.0% Voids
#3	41.17'	1,749 cf	**18.00'W x 129.55'L x 2.50'H Greenwich Soil Mix** 5,830 cf Overall x 30.0% Voids
#4	40.17'	928 cf	**18.00'W x 129.55'L x 1.00'H Crushed Stone** 2,332 cf Overall - 12 cf Embedded = 2,320 cf x 40.0% Voids
#5	40.67'	12 cf	**6.0" Round 6" underdrain** Inside #4 L= 62.0'
		4,671 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	1,402	0	0
45.00	2,332	1,867	1,867

Device	Routing	Invert	Outlet Devices
#1	Primary	39.77'	**12.0" Round Culvert** L= 9.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.77' / 39.67' S= 0.0101 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	44.50'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	40.67'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.16 cfs @ 12.39 hrs HW=40.91' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.16 cfs of 2.39 cfs potential flow)
  ├─**2=Orifice/Grate** (Controls 0.00 cfs)
  └─**3=Orifice/Grate** (Orifice Controls 0.16 cfs @ 1.67 fps)

Pond RG03: Rain Garden-03



Summary for Pond RG04: Rain Garden-04

Inflow Area = 10,548 sf, 82.86% Impervious, Inflow Depth > 3.72" for 5-yr event
Inflow = 1.02 cfs @ 12.07 hrs, Volume= 3,274 cf
Outflow = 0.80 cfs @ 12.13 hrs, Volume= 3,102 cf, Atten= 21%, Lag= 3.5 min
Primary = 0.80 cfs @ 12.13 hrs, Volume= 3,102 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.13' @ 12.13 hrs Surf.Area= 1,542 sf Storage= 424 cf

Plug-Flow detention time= 56.1 min calculated for 3,102 cf (95% of inflow)
Center-of-Mass det. time= 26.7 min (797.6 - 770.9)

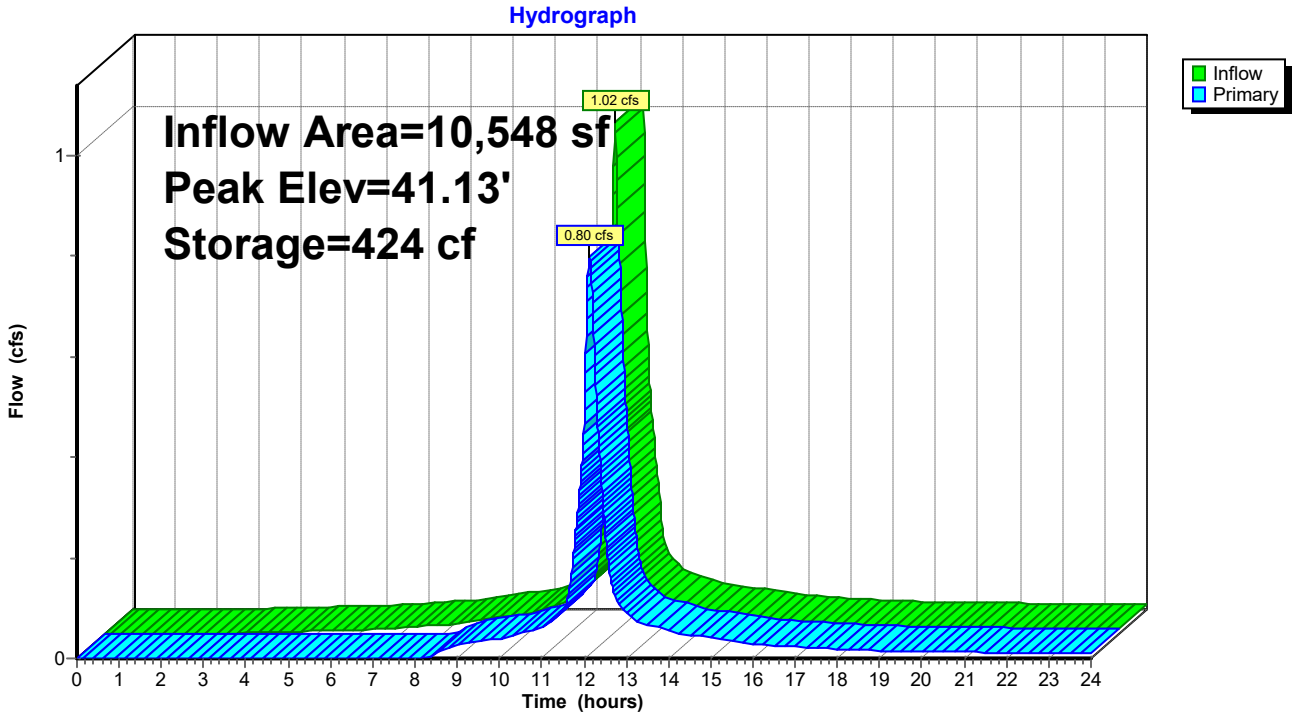
Volume	Invert	Avail.Storage	Storage Description
#1	43.50'	233 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	43.17'	38 cf	**11.00'W x 70.10'L x 0.33'H Mulch** 254 cf Overall x 15.0% Voids
#3	40.67'	578 cf	**11.00'W x 70.10'L x 2.50'H Greenwich Soil Mix** 1,928 cf Overall x 30.0% Voids
#4	39.67'	303 cf	**11.00'W x 70.09'L x 1.00'H Crushed Stone** 771 cf Overall - 14 cf Embedded = 757 cf x 40.0% Voids
#5	40.17'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		1,166 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.50	162	0	0
44.00	771	233	233

Device	Routing	Invert	Outlet Devices
#1	Device 2	43.50'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	40.17'	**12.0" Round Culvert** L= 8.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.17' / 39.96' S= 0.0239 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	40.17'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.80 cfs @ 12.13 hrs HW=41.13' TW=40.21' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.80 cfs of 2.50 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.80 cfs @ 4.07 fps)

Pond RG04: Rain Garden-04



Summary for Pond RG06: Rain Garden-06

Inflow Area = 4,026 sf, 70.89% Impervious, Inflow Depth > 3.20" for 5-yr event
Inflow = 0.35 cfs @ 12.07 hrs, Volume= 1,074 cf
Outflow = 0.33 cfs @ 12.10 hrs, Volume= 1,028 cf, Atten= 6%, Lag= 1.7 min
Primary = 0.33 cfs @ 12.10 hrs, Volume= 1,028 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.38' @ 12.10 hrs Surf.Area= 316 sf Storage= 96 cf

Plug-Flow detention time= 42.0 min calculated for 1,028 cf (96% of inflow)
Center-of-Mass det. time= 17.7 min (812.2 - 794.5)

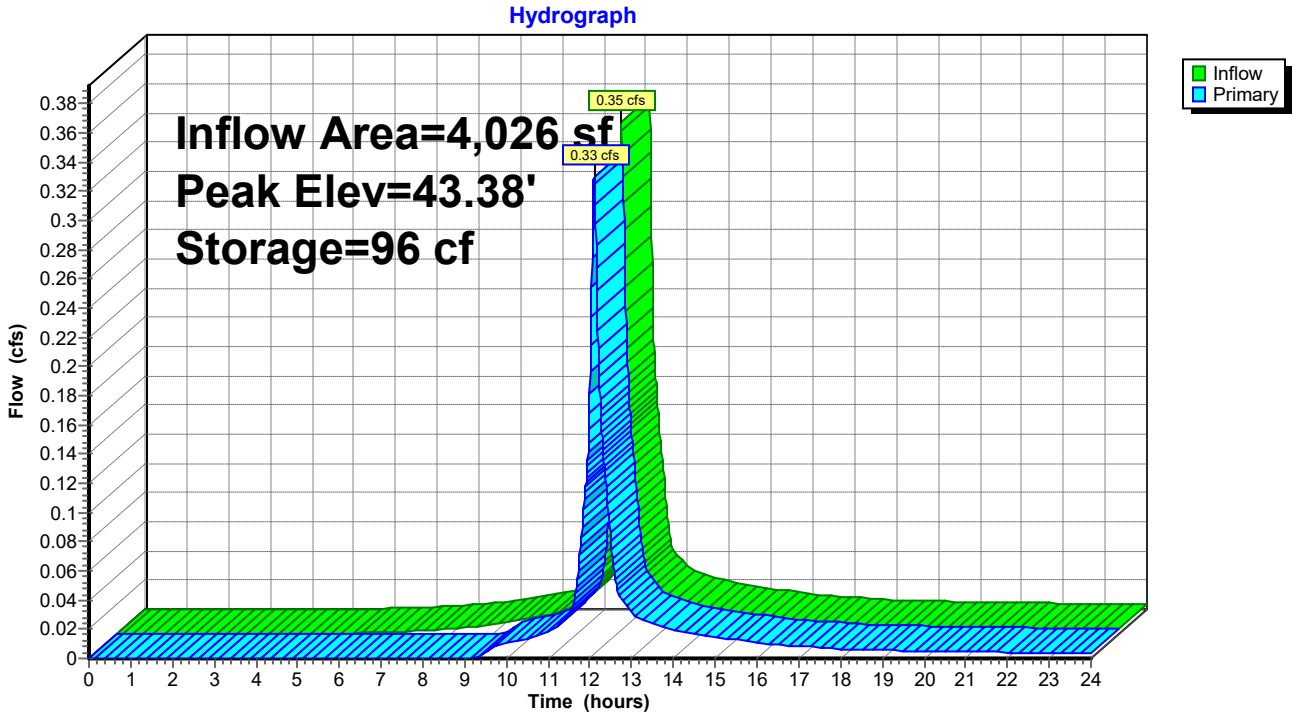
Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	117 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	46.17'	16 cf	**15.00'W x 21.07'L x 0.33'H Mulch** 104 cf Overall x 15.0% Voids
#3	43.67'	237 cf	**15.00'W x 21.07'L x 2.50'H Greenwich Soil Mix** 790 cf Overall x 30.0% Voids
#4	42.67'	121 cf	**15.00'W x 21.07'L x 1.00'H Crushed Stone** 316 cf Overall - 14 cf Embedded = 302 cf x 40.0% Voids
#5	43.00'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		504 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	151	0	0
47.00	316	117	117

Device	Routing	Invert	Outlet Devices
#1	Device 2	46.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	40.18'	**12.0" Round Culvert** L= 91.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.18' / 40.10' S= 0.0009 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	43.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.33 cfs @ 12.10 hrs HW=43.38' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.33 cfs of 4.54 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.33 cfs @ 2.09 fps)

Pond RG06: Rain Garden-06



Summary for Pond RG07: Rain Garden-07

Inflow Area = 4,109 sf, 58.46% Impervious, Inflow Depth > 2.82" for 5-yr event
Inflow = 0.32 cfs @ 12.07 hrs, Volume= 965 cf
Outflow = 0.30 cfs @ 12.10 hrs, Volume= 920 cf, Atten= 6%, Lag= 1.6 min
Primary = 0.30 cfs @ 12.10 hrs, Volume= 920 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.35' @ 12.10 hrs Surf.Area= 305 sf Storage= 90 cf

Plug-Flow detention time= 41.9 min calculated for 920 cf (95% of inflow)
Center-of-Mass det. time= 16.4 min (825.2 - 808.8)

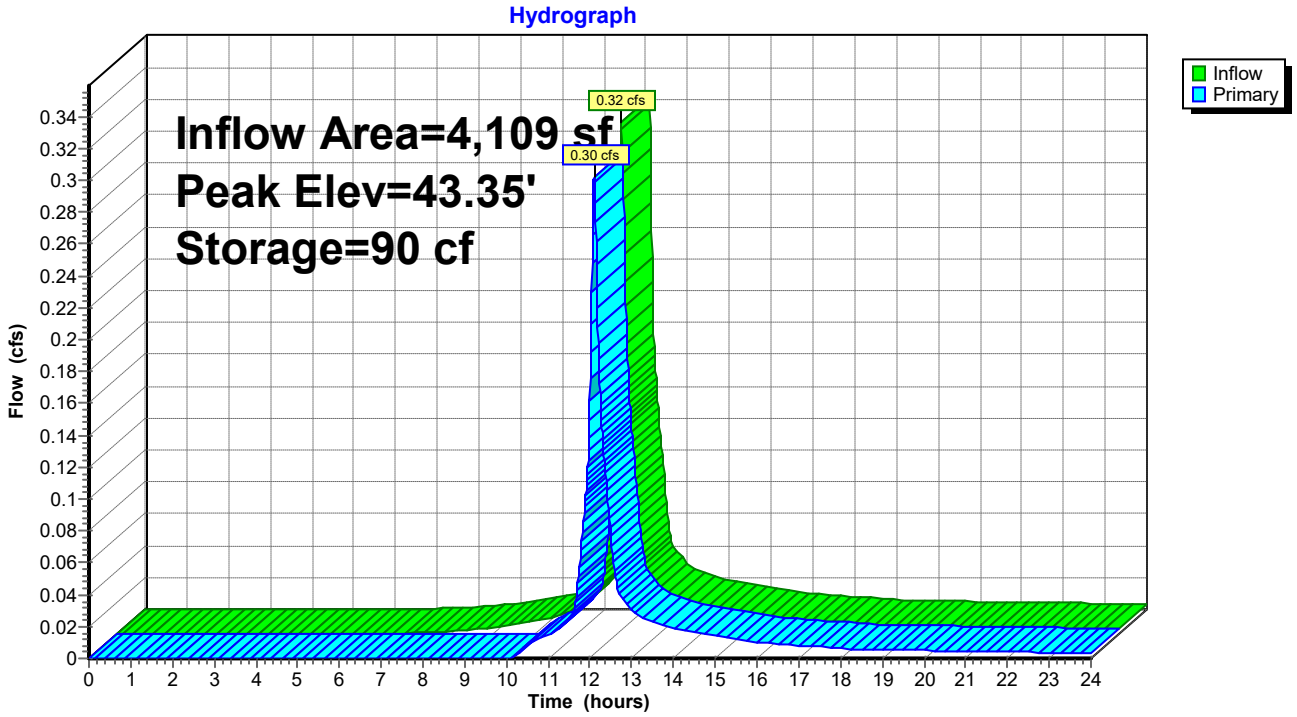
Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	112 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	46.17'	15 cf	**15.00'W x 20.33'L x 0.33'H Mulch** 101 cf Overall x 15.0% Voids
#3	43.67'	229 cf	**15.00'W x 20.33'L x 2.50'H Greenwich Soil Mix** 762 cf Overall x 30.0% Voids
#4	42.67'	116 cf	**15.00'W x 20.33'L x 1.00'H Crushed Stone** 305 cf Overall - 14 cf Embedded = 291 cf x 40.0% Voids
#5	43.00'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		486 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	144	0	0
47.00	305	112	112

Device	Routing	Invert	Outlet Devices
#1	Device 2	46.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	42.00'	**12.0" Round Culvert** L= 85.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.00' / 40.10' S= 0.0222 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	43.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.30 cfs @ 12.10 hrs HW=43.35' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.30 cfs of 3.50 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.30 cfs @ 2.03 fps)

Pond RG07: Rain Garden-07



Summary for Pond UI01: Und Inf 01

Inflow Area = 53,524 sf,100.00% Impervious, Inflow Depth > 4.06" for 5-yr event
Inflow = 5.34 cfs @ 12.07 hrs, Volume= 18,117 cf
Outflow = 0.78 cfs @ 12.55 hrs, Volume= 7,814 cf, Atten= 85%, Lag= 28.7 min
Primary = 0.78 cfs @ 12.55 hrs, Volume= 7,814 cf
Routed to Link 3 : Pipe 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.45' @ 12.55 hrs Surf.Area= 5,205 sf Storage= 11,703 cf

Plug-Flow detention time= 326.7 min calculated for 7,814 cf (43% of inflow)
Center-of-Mass det. time= 182.9 min (932.1 - 749.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	39.50'	5,260 cf	**40.50'W x 127.59'L x 4.75'H Field A** 24,545 cf Overall - 11,394 cf Embedded = 13,151 cf x 40.0% Voids
#2A	40.00'	11,394 cf	**ADS_StormTech MC-3500 d +Cap** x 102 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 102 Chambers in 6 Rows Cap Storage= 14.9 cf x 2 x 6 rows = 178.8 cf
#3	41.98'	264 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder** x 3
		16,918 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.98'	**15.0" Round Culvert** L= 36.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.98' / 41.53' S= 0.0123 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.78 cfs @ 12.55 hrs HW=42.45' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.78 cfs @ 1.84 fps)

Pond UI01: Und Inf 01 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= 14.9 cf x 2 x 6 rows = 178.8 cf

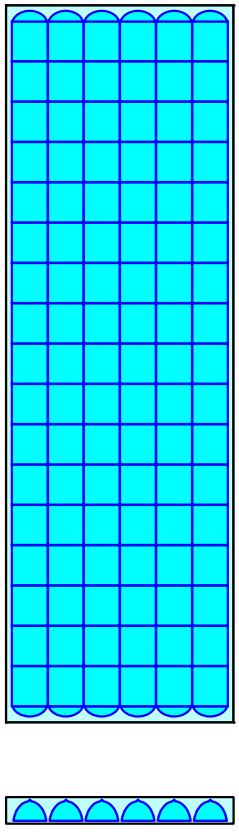
17 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 125.59' Row Length +12.0" End Stone x 2 = 127.59' Base Length
6 Rows x 77.0" Wide + 12.0" Side Stone x 2 = 40.50' Base Width
6.0" Stone Base + 45.0" Chamber Height + 6.0" Stone Cover = 4.75' Field Height

102 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 6 Rows = 11,393.9 cf Chamber Storage

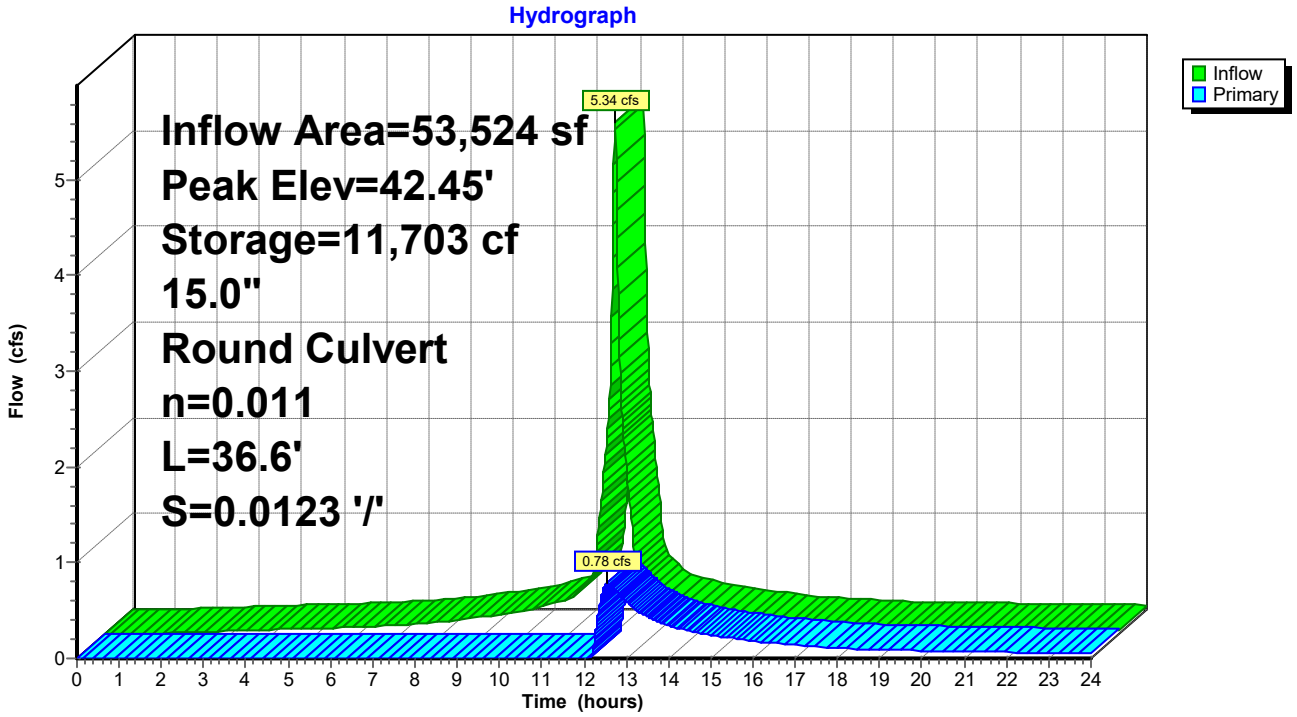
24,545.1 cf Field - 11,393.9 cf Chambers = 13,151.2 cf Stone x 40.0% Voids = 5,260.5 cf Stone Storage

Chamber Storage + Stone Storage = 16,654.4 cf = 0.382 af
Overall Storage Efficiency = 67.9%
Overall System Size = 127.59' x 40.50' x 4.75'

102 Chambers
909.1 cy Field
487.1 cy Stone



Pond UI01: Und Inf 01



Summary for Pond UI02: Und Inf 02

Inflow Area = 33,482 sf, 30.44% Impervious, Inflow Depth > 2.37" for 5-yr event
Inflow = 2.06 cfs @ 12.10 hrs, Volume= 6,620 cf
Outflow = 1.90 cfs @ 12.14 hrs, Volume= 6,168 cf, Atten= 8%, Lag= 2.2 min
Primary = 1.90 cfs @ 12.14 hrs, Volume= 6,168 cf
Routed to Link 1 : Pipe 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.47' @ 12.14 hrs Surf.Area= 558 sf Storage= 810 cf

Plug-Flow detention time= 54.2 min calculated for 6,165 cf (93% of inflow)
Center-of-Mass det. time= 18.8 min (844.6 - 825.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	39.97'	697 cf	**6.50'W x 82.00'L x 5.50'H Field A** 2,932 cf Overall - 1,188 cf Embedded = 1,743 cf x 40.0% Voids
#2A	40.47'	992 cf	**ADS N-12 48"** x 4 Inside #1 Inside= 47.7"W x 47.7"H => 12.40 sf x 20.00'L = 248.0 cf Outside= 54.0"W x 54.0"H => 14.86 sf x 20.00'L = 297.1 cf
#3	39.97'	144 cf	**4.00'D x 5.73'H Vertical Cone/Cylinder** x 2
		1,833 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 22.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 41.38' S= 0.0054 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.90 cfs @ 12.14 hrs HW=42.47' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 1.90 cfs @ 3.09 fps)

Pond UI02: Und Inf 02 - Chamber Wizard Field A

Chamber Model = ADS N-12 48" (ADS N-12® Pipe)
Inside= 47.7"W x 47.7"H => 12.40 sf x 20.00'L = 248.0 cf
Outside= 54.0"W x 54.0"H => 14.86 sf x 20.00'L = 297.1 cf

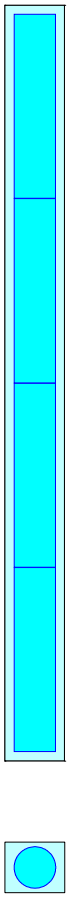
4 Chambers/Row x 20.00' Long = 80.00' Row Length +12.0" End Stone x 2 = 82.00' Base Length
1 Rows x 54.0" Wide + 12.0" Side Stone x 2 = 6.50' Base Width
6.0" Stone Base + 54.0" Chamber Height + 6.0" Stone Cover = 5.50' Field Height

4 Chambers x 248.0 cf = 992.0 cf Chamber Storage
4 Chambers x 297.1 cf = 1,188.4 cf Displacement

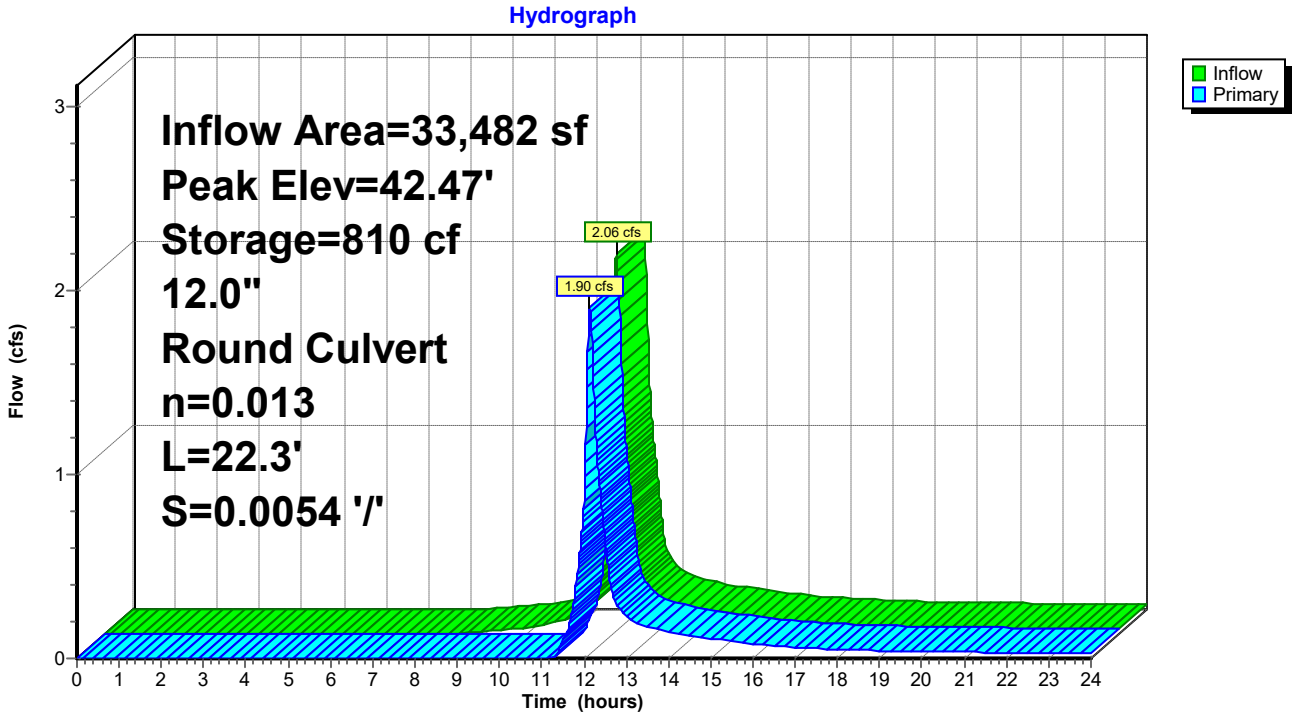
2,931.6 cf Field - 1,188.4 cf Chambers = 1,743.2 cf Stone x 40.0% Voids = 697.3 cf Stone Storage

Chamber Storage + Stone Storage = 1,689.3 cf = 0.039 af
Overall Storage Efficiency = 57.6%
Overall System Size = 82.00' x 6.50' x 5.50'

4 Chambers
108.6 cy Field
64.6 cy Stone



Pond UI02: Und Inf 02



Summary for Pond YD3: YD-03

[57] Hint: Peaked at 42.38' (Flood elevation advised)

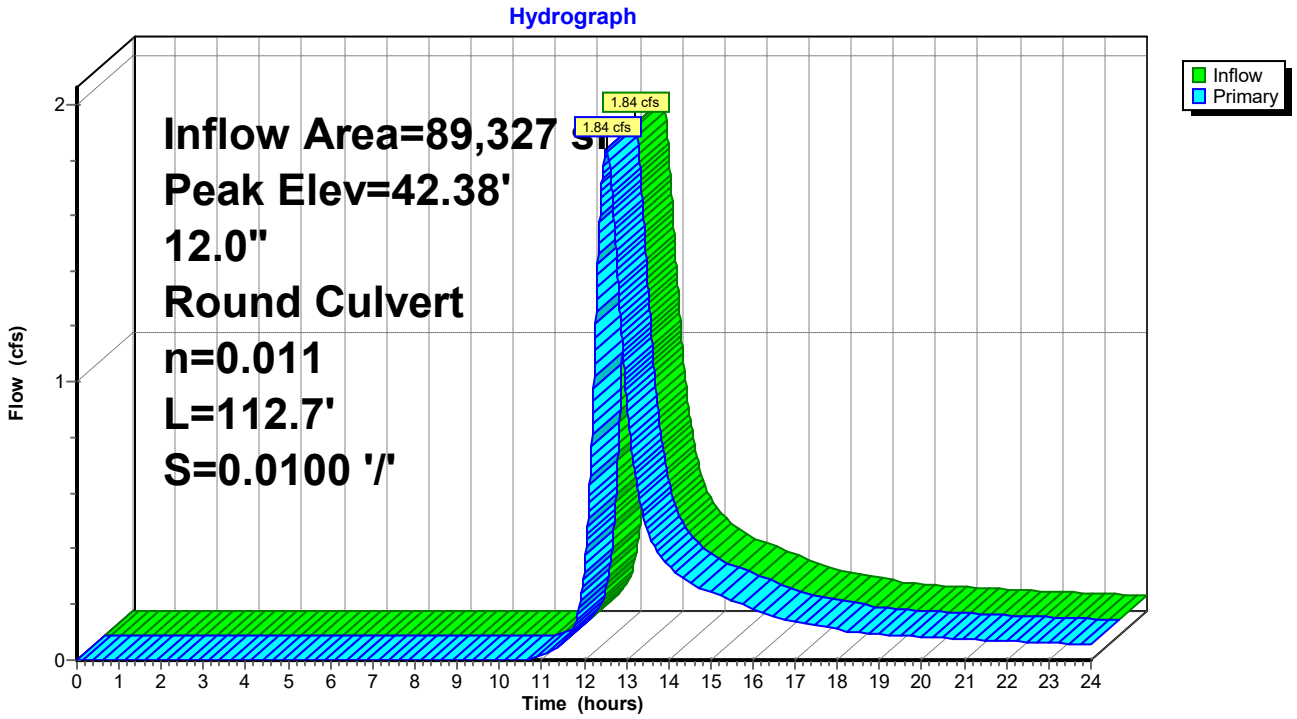
Inflow Area = 89,327 sf, 1.78% Impervious, Inflow Depth > 1.52" for 5-yr event
Inflow = 1.84 cfs @ 12.53 hrs, Volume= 11,309 cf
Outflow = 1.84 cfs @ 12.53 hrs, Volume= 11,309 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.84 cfs @ 12.53 hrs, Volume= 11,309 cf
Routed to Link Sub B : SUB B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.38' @ 12.53 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 112.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 40.37' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.84 cfs @ 12.53 hrs HW=42.38' TW=0.00' (Dynamic Tailwater)
↳**1=Culvert** (Inlet Controls 1.84 cfs @ 2.52 fps)

Pond YD3: YD-03



Summary for Pond YD33: YD-33

[57] Hint: Peaked at 57.25' (Flood elevation advised)

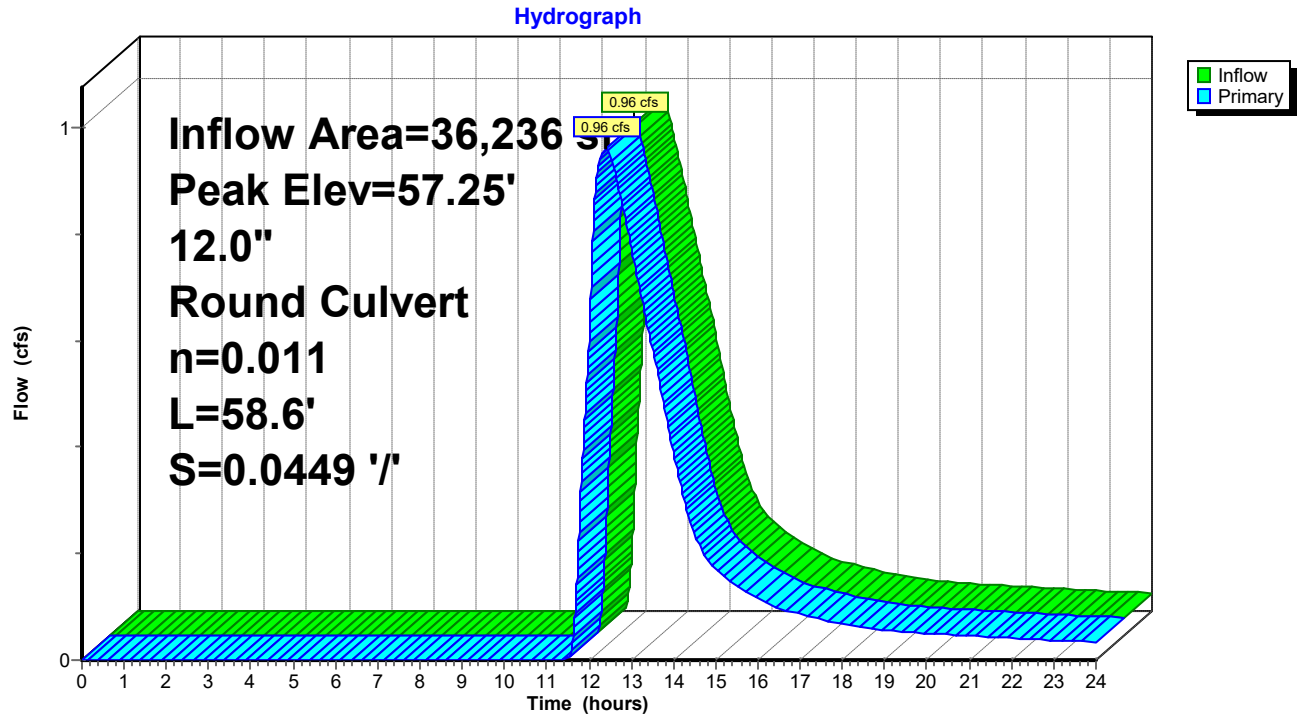
Inflow Area = 36,236 sf, 92.20% Impervious, Inflow Depth > 2.90" for 5-yr event
Inflow = 0.96 cfs @ 12.40 hrs, Volume= 8,748 cf
Outflow = 0.96 cfs @ 12.40 hrs, Volume= 8,748 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.96 cfs @ 12.40 hrs, Volume= 8,748 cf
Routed to Link SUB D1 : D1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.25' @ 12.40 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	56.67'	**12.0" Round Culvert** L= 58.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.67' / 54.04' S= 0.0449 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.96 cfs @ 12.40 hrs HW=57.25' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.96 cfs @ 2.04 fps)

Pond YD33: YD-33



Summary for Pond YD40: YD-40

[57] Hint: Peaked at 42.12' (Flood elevation advised)

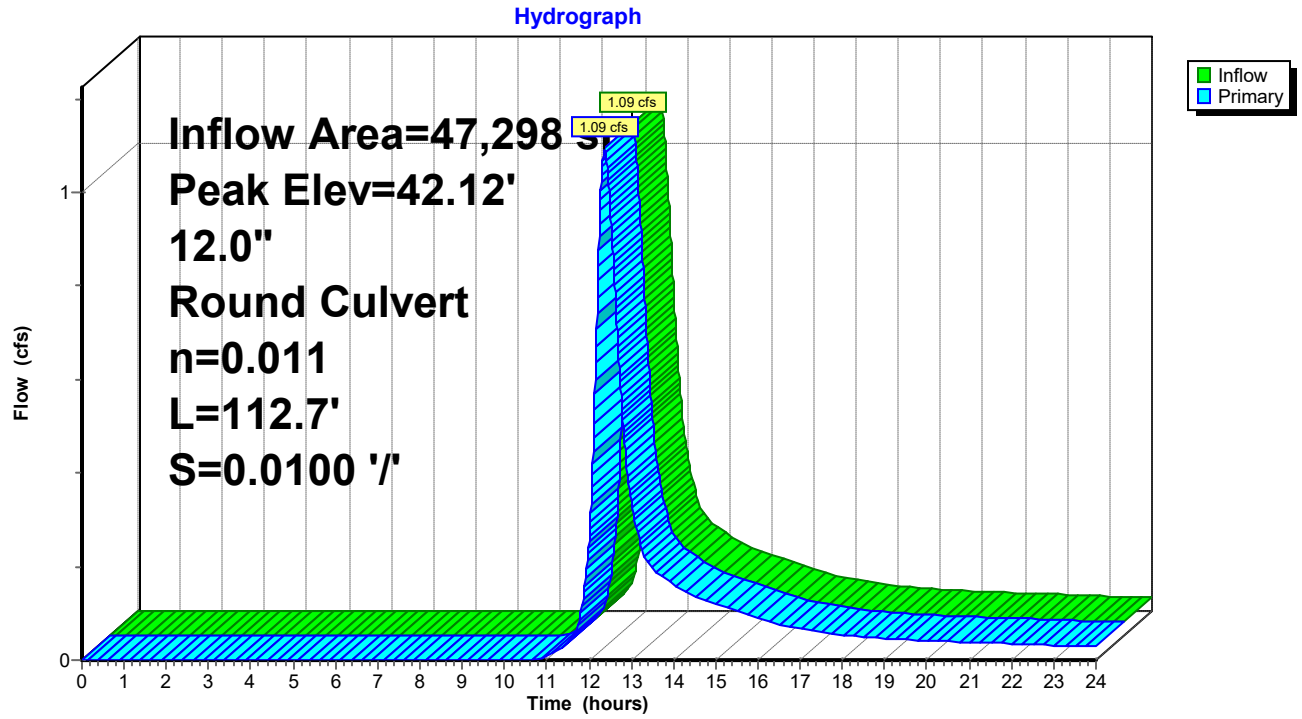
Inflow Area = 47,298 sf, 5.26% Impervious, Inflow Depth > 1.46" for 5-yr event
Inflow = 1.09 cfs @ 12.37 hrs, Volume= 5,739 cf
Outflow = 1.09 cfs @ 12.37 hrs, Volume= 5,739 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.09 cfs @ 12.37 hrs, Volume= 5,739 cf
Routed to Link Sub B : SUB B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.12' @ 12.37 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 112.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 40.37' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.09 cfs @ 12.37 hrs HW=42.12' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.09 cfs @ 2.12 fps)

Pond YD40: YD-40

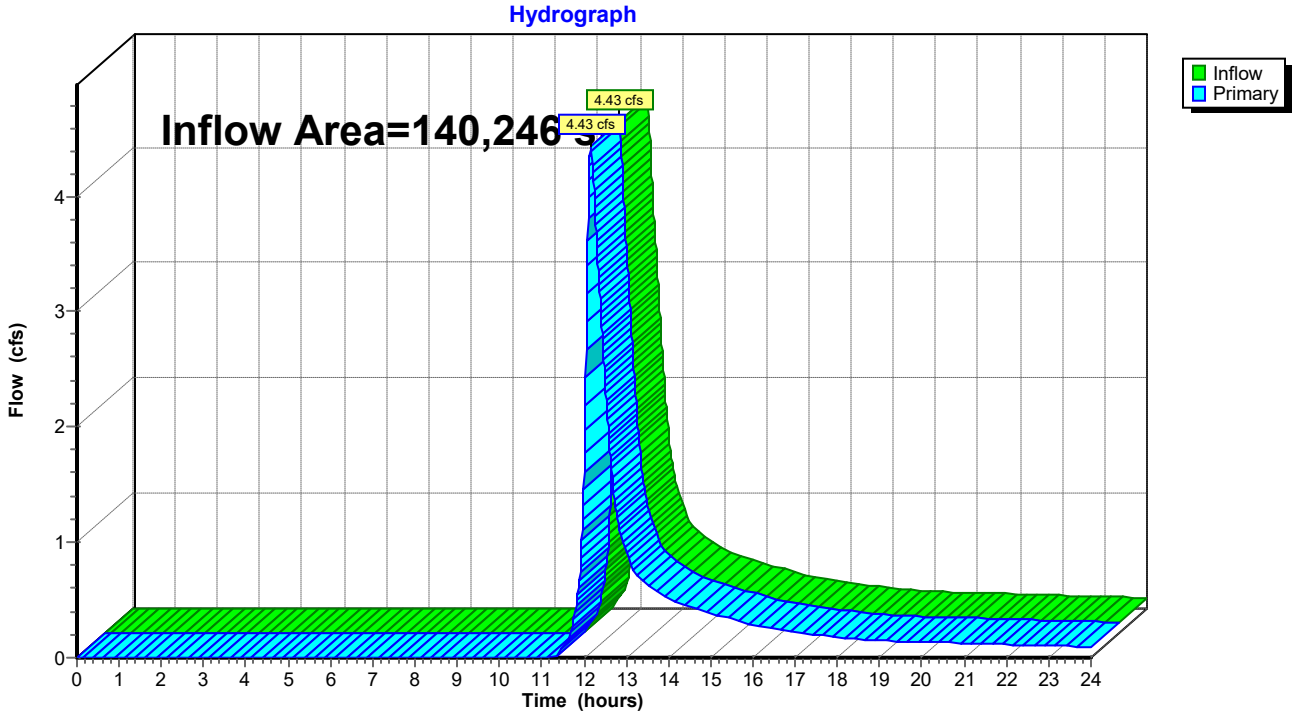


Summary for Link 1: Pipe 1

Inflow Area = 140,246 sf, 34.50% Impervious, Inflow Depth > 1.63" for 5-yr event
Inflow = 4.43 cfs @ 12.16 hrs, Volume= 19,057 cf
Primary = 4.43 cfs @ 12.16 hrs, Volume= 19,057 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 2 : Pipe 2

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1: Pipe 1

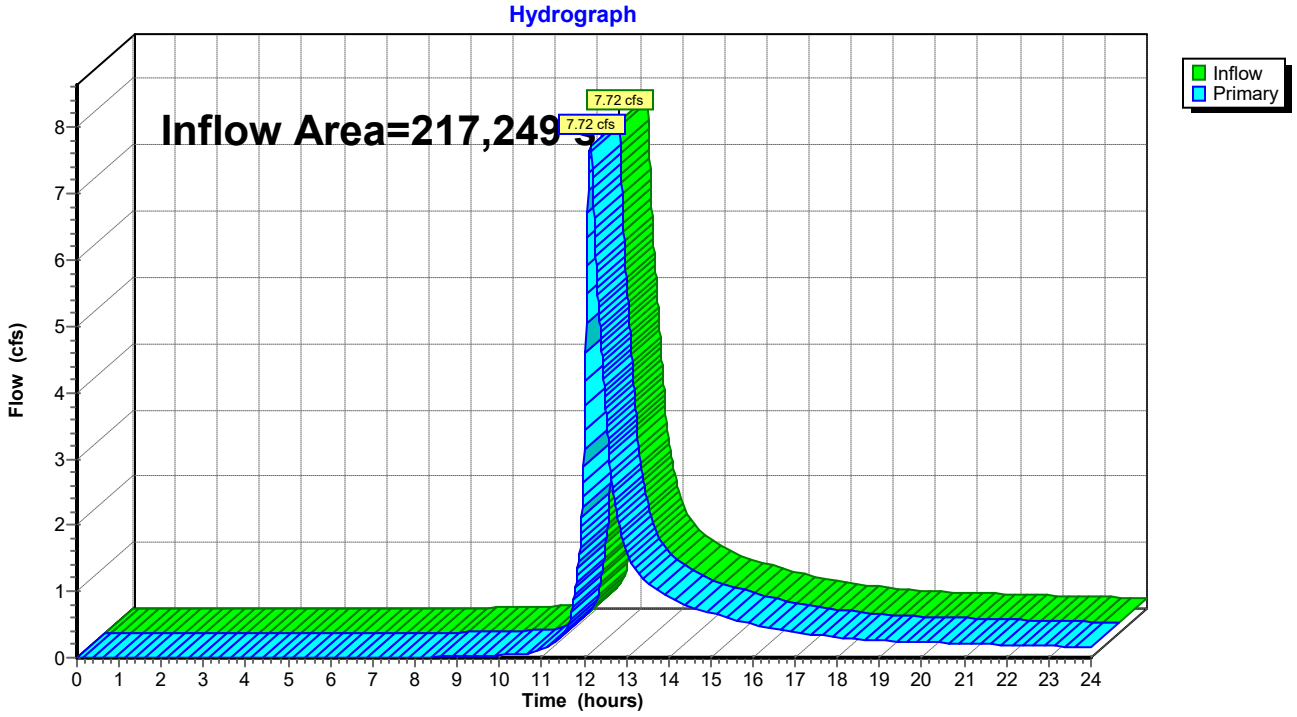


Summary for Link 2: Pipe 2

Inflow Area = 217,249 sf, 40.87% Impervious, Inflow Depth > 1.88" for 5-yr event
Inflow = 7.72 cfs @ 12.15 hrs, Volume= 34,028 cf
Primary = 7.72 cfs @ 12.15 hrs, Volume= 34,028 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3 : Pipe 3

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 2: Pipe 2

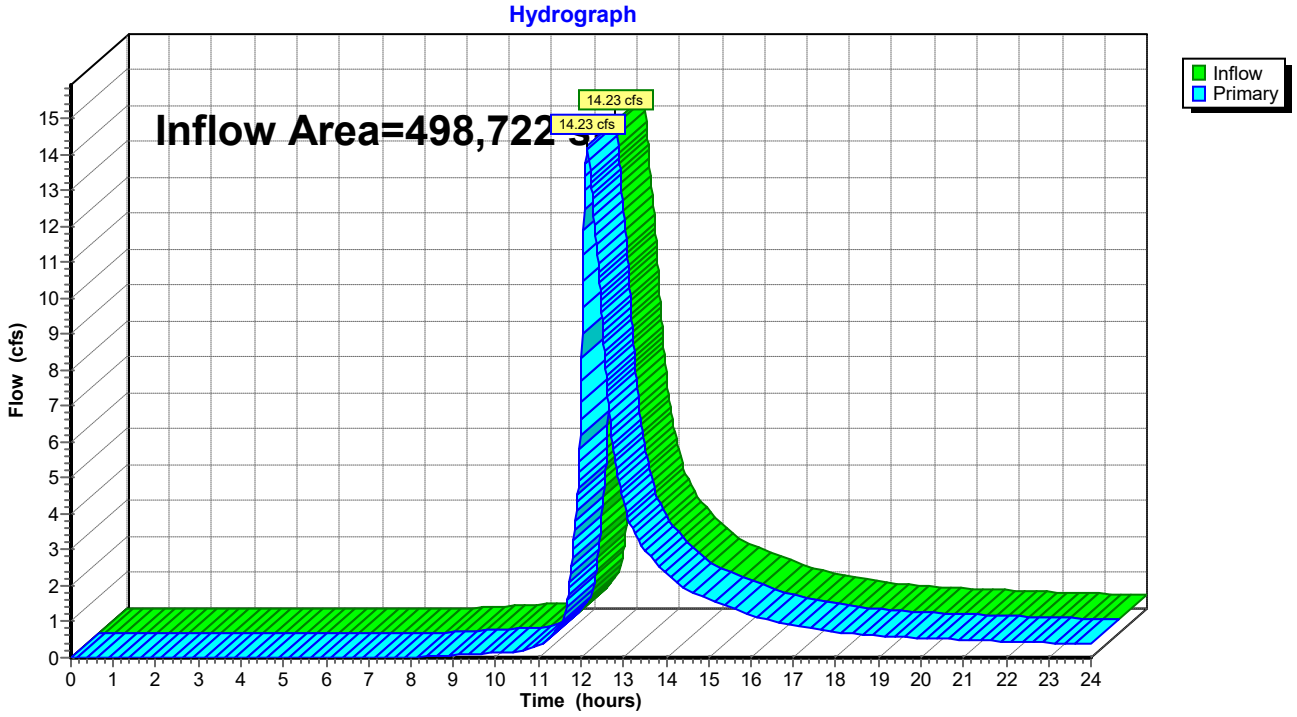


Summary for Link 3: Pipe 3

Inflow Area = 498,722 sf, 46.58% Impervious, Inflow Depth > 1.94" for 5-yr event
Inflow = 14.23 cfs @ 12.15 hrs, Volume= 80,775 cf
Primary = 14.23 cfs @ 12.15 hrs, Volume= 80,775 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4 : Pipe 4

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 3: Pipe 3

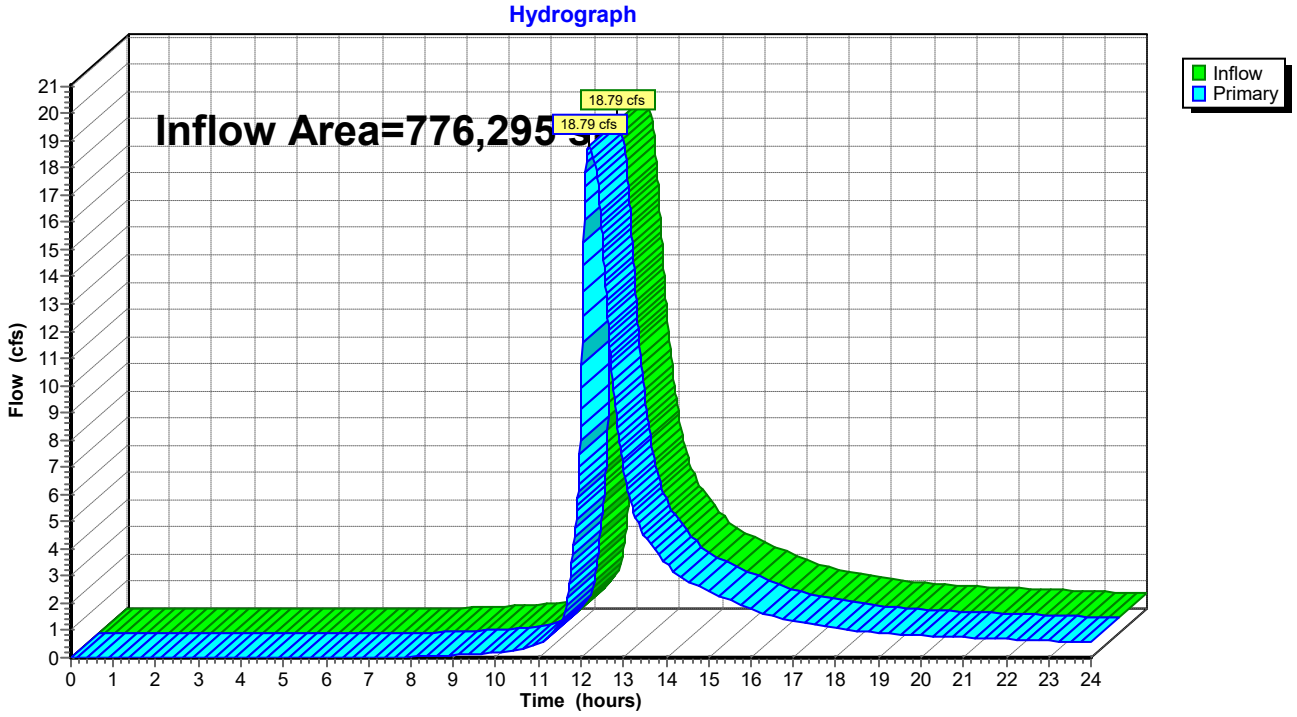


Summary for Link 4: Pipe 4

Inflow Area = 776,295 sf, 34.75% Impervious, Inflow Depth > 1.86" for 5-yr event
Inflow = 18.79 cfs @ 12.18 hrs, Volume= 120,617 cf
Primary = 18.79 cfs @ 12.18 hrs, Volume= 120,617 cf, Atten= 0%, Lag= 0.0 min
Routed to Link A : POC-A

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 4: Pipe 4

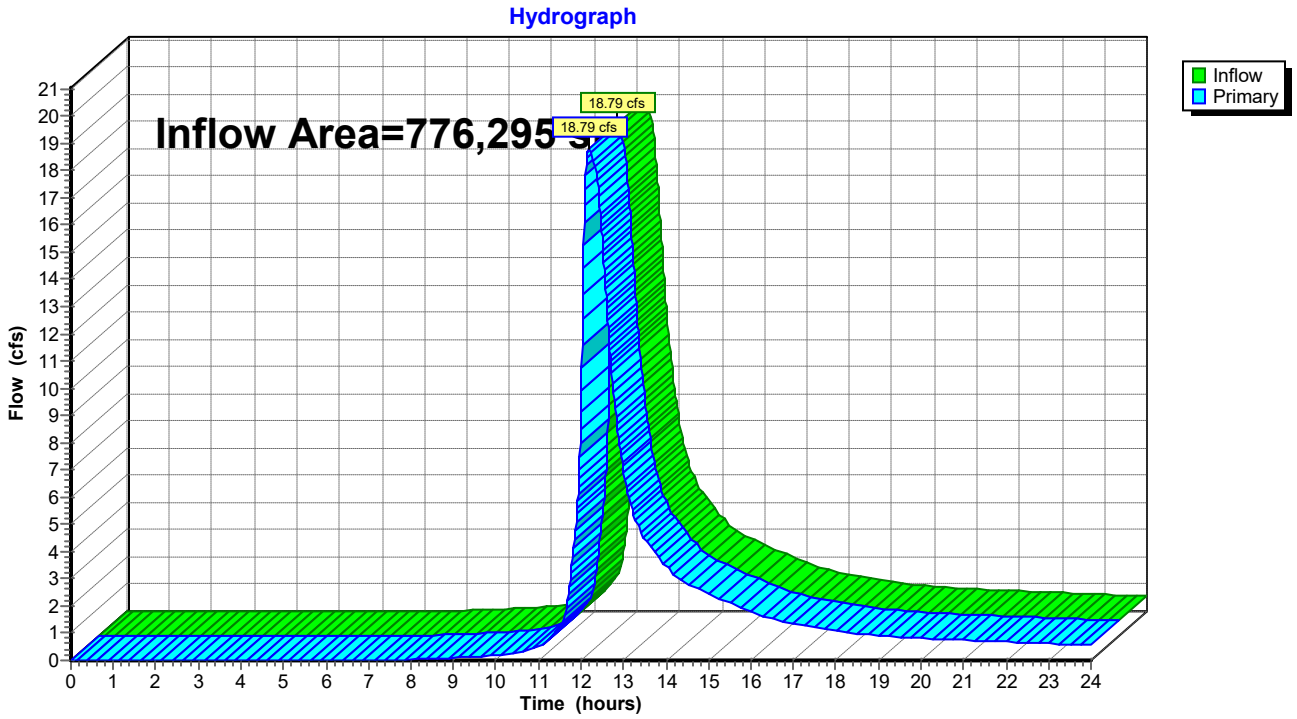


Summary for Link A: POC-A

Inflow Area = 776,295 sf, 34.75% Impervious, Inflow Depth > 1.86" for 5-yr event
Inflow = 18.79 cfs @ 12.18 hrs, Volume= 120,617 cf
Primary = 18.79 cfs @ 12.18 hrs, Volume= 120,617 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link A: POC-A

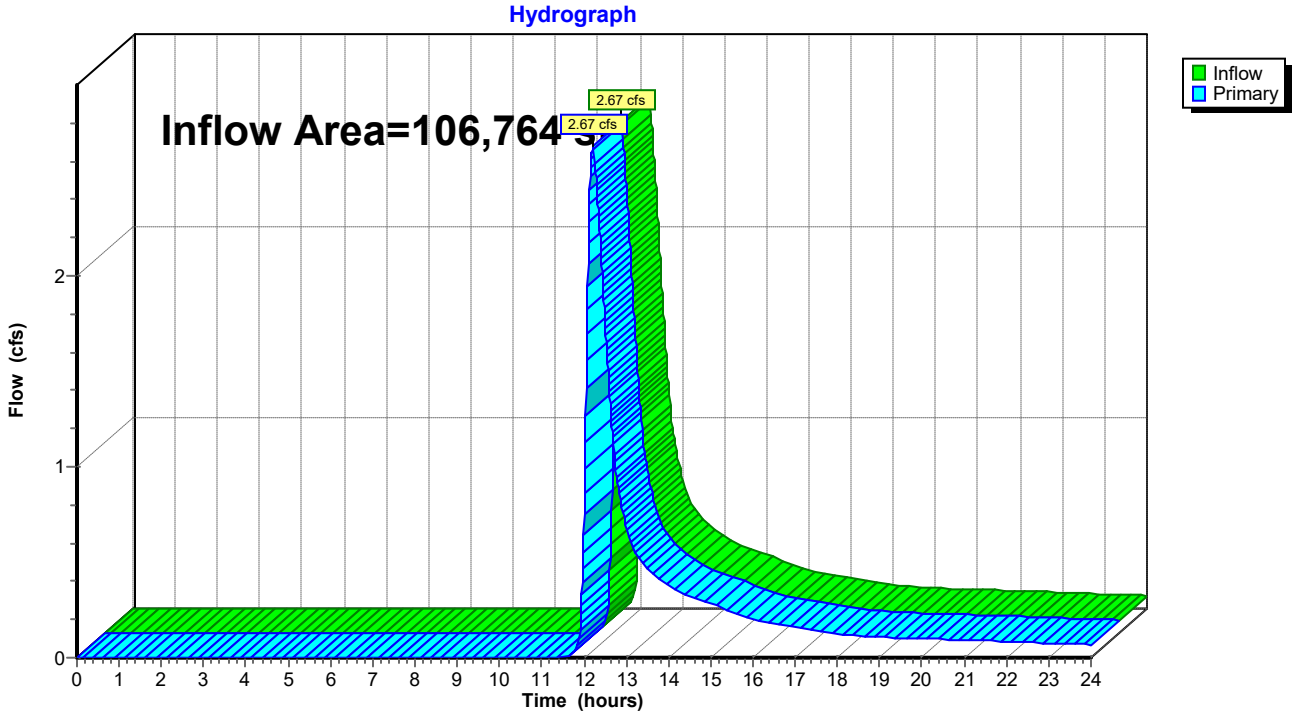


Summary for Link Sub A: SUB A

Inflow Area = 106,764 sf, 35.77% Impervious, Inflow Depth > 1.45" for 5-yr event
Inflow = 2.67 cfs @ 12.22 hrs, Volume= 12,889 cf
Primary = 2.67 cfs @ 12.22 hrs, Volume= 12,889 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 1 : Pipe 1

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Sub A: SUB A

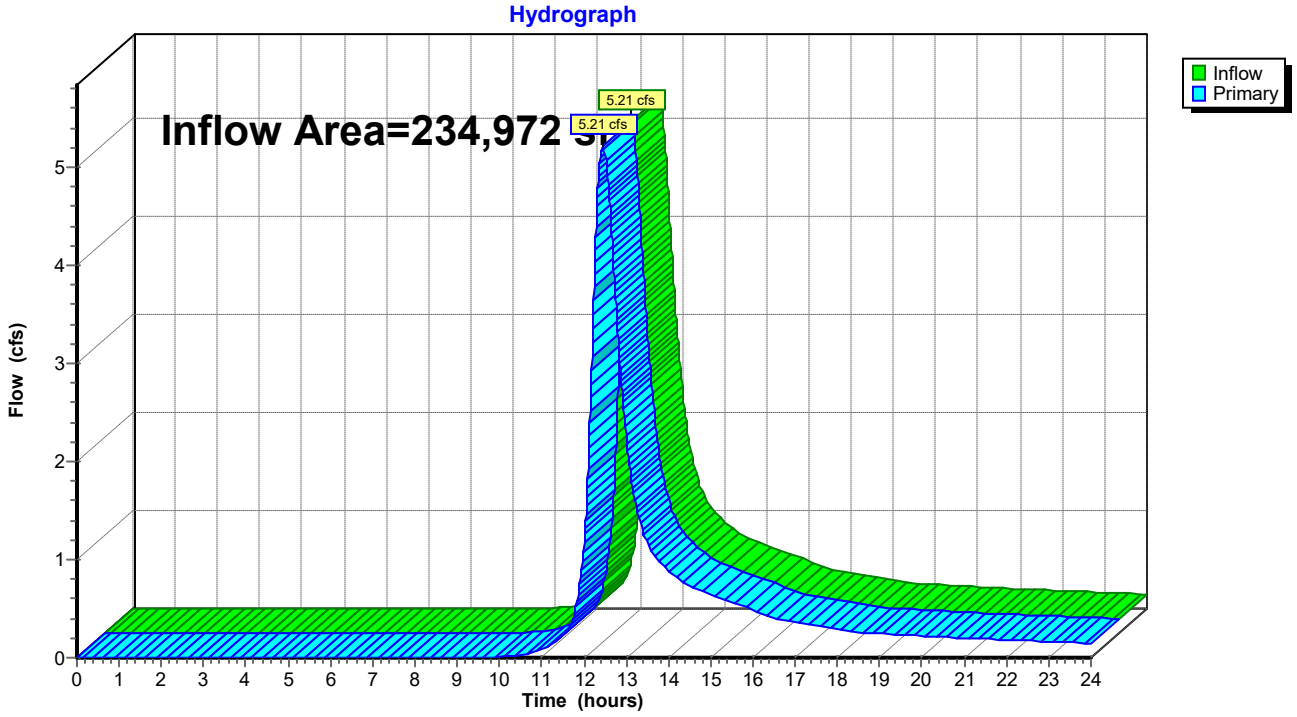


Summary for Link Sub B: SUB B

Inflow Area = 234,972 sf, 4.63% Impervious, Inflow Depth > 1.58" for 5-yr event
Inflow = 5.21 cfs @ 12.45 hrs, Volume= 30,888 cf
Primary = 5.21 cfs @ 12.45 hrs, Volume= 30,888 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4 : Pipe 4

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Sub B: SUB B

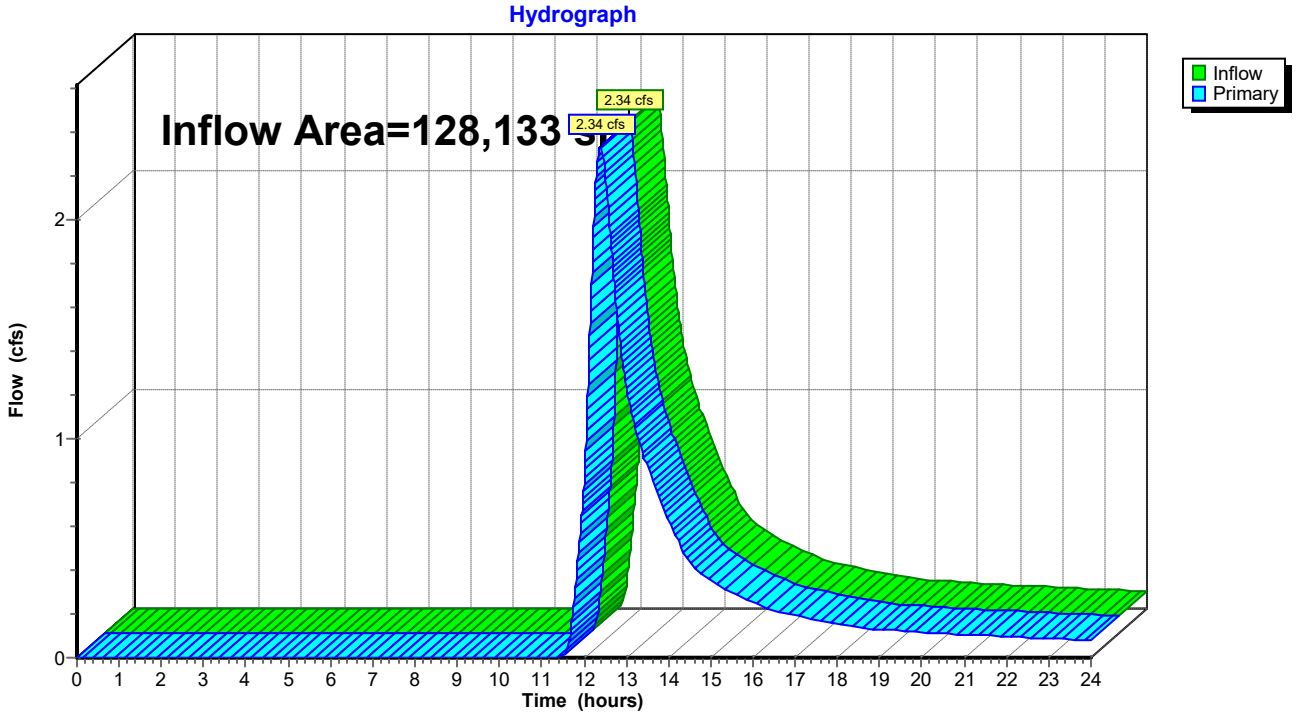


Summary for Link SUB D1: D1

Inflow Area = 128,133 sf, 28.03% Impervious, Inflow Depth > 1.55" for 5-yr event
Inflow = 2.34 cfs @ 12.39 hrs, Volume= 16,553 cf
Primary = 2.34 cfs @ 12.39 hrs, Volume= 16,553 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3 : Pipe 3

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link SUB D1: D1



Summary for Subcatchment 15S: D1H-R

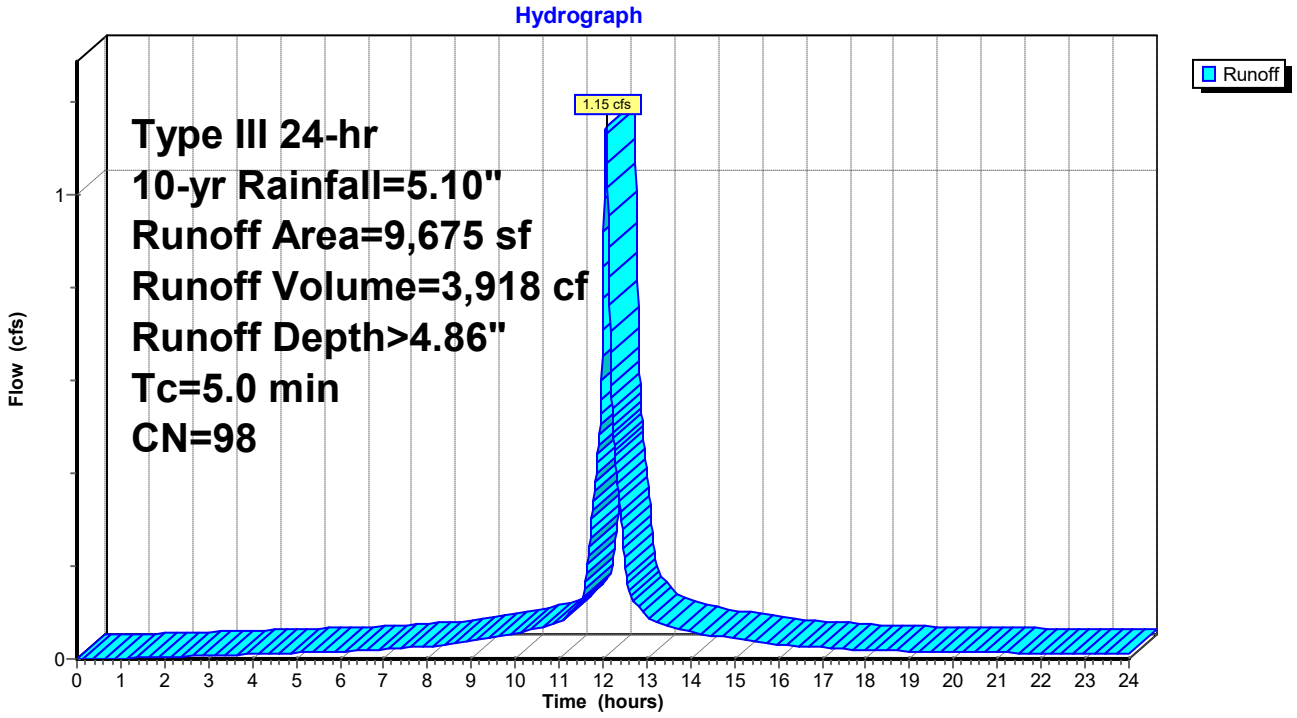
Runoff = 1.15 cfs @ 12.07 hrs, Volume= 3,918 cf, Depth> 4.86"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	9,675	98	Impervious
	9,675		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 15S: D1H-R



Summary for Subcatchment 16S: D1E-R

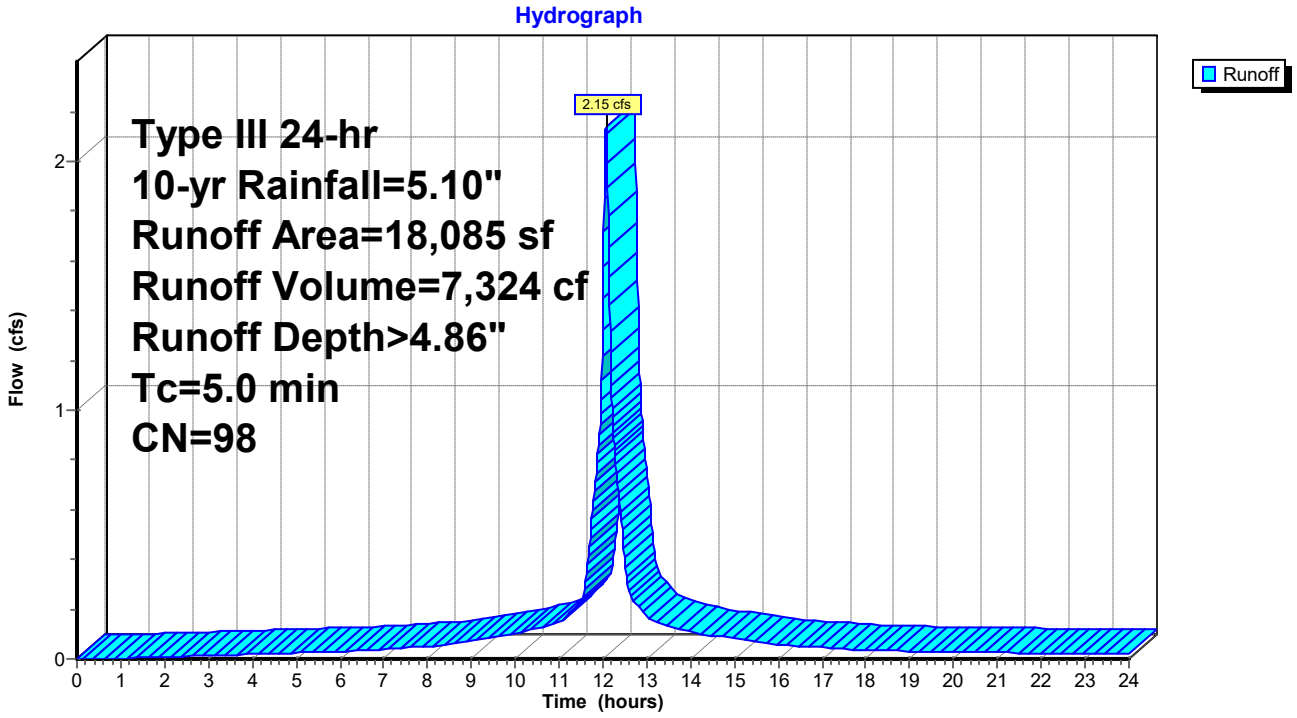
Runoff = 2.15 cfs @ 12.07 hrs, Volume= 7,324 cf, Depth> 4.86"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	18,085	98	Impervious
	18,085		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 16S: D1E-R



Summary for Subcatchment 22S: D2A-R

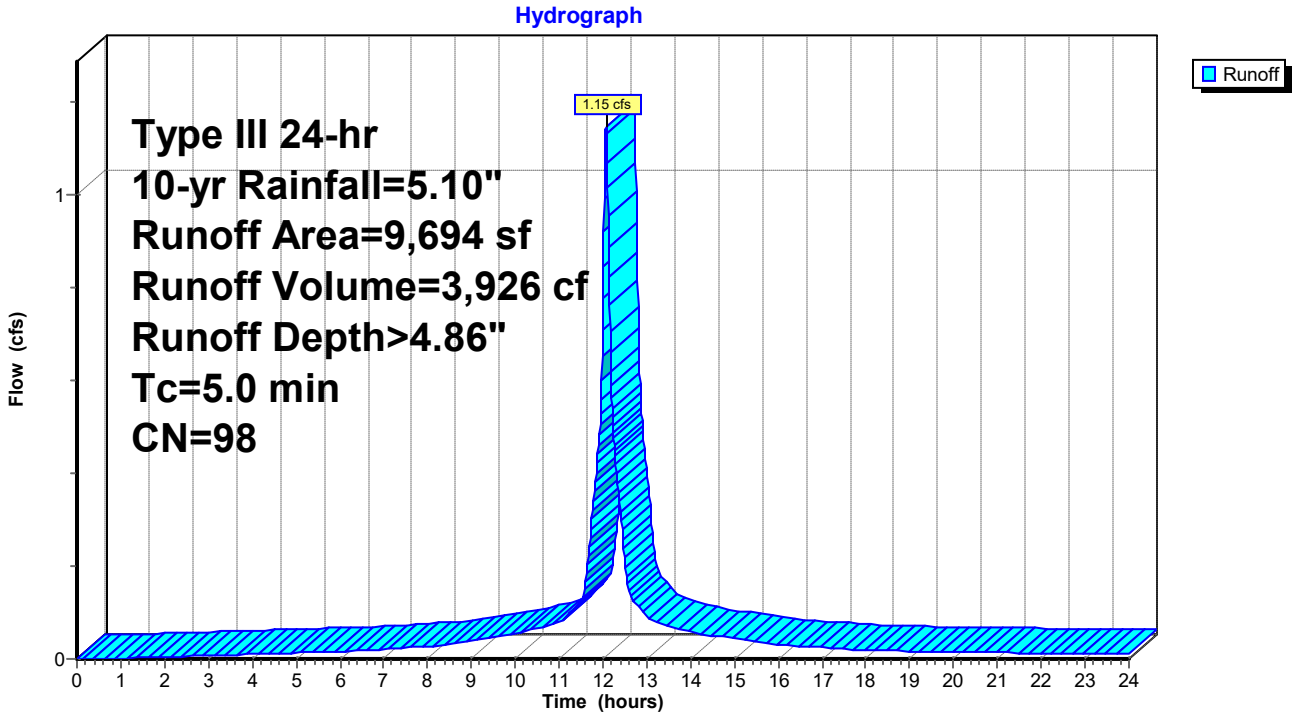
Runoff = 1.15 cfs @ 12.07 hrs, Volume= 3,926 cf, Depth> 4.86"
Routed to Pond 13P : Por Pvt-D2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	9,694	98	Impervious
	9,694		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 22S: D2A-R



Summary for Subcatchment 23S: D2C-R

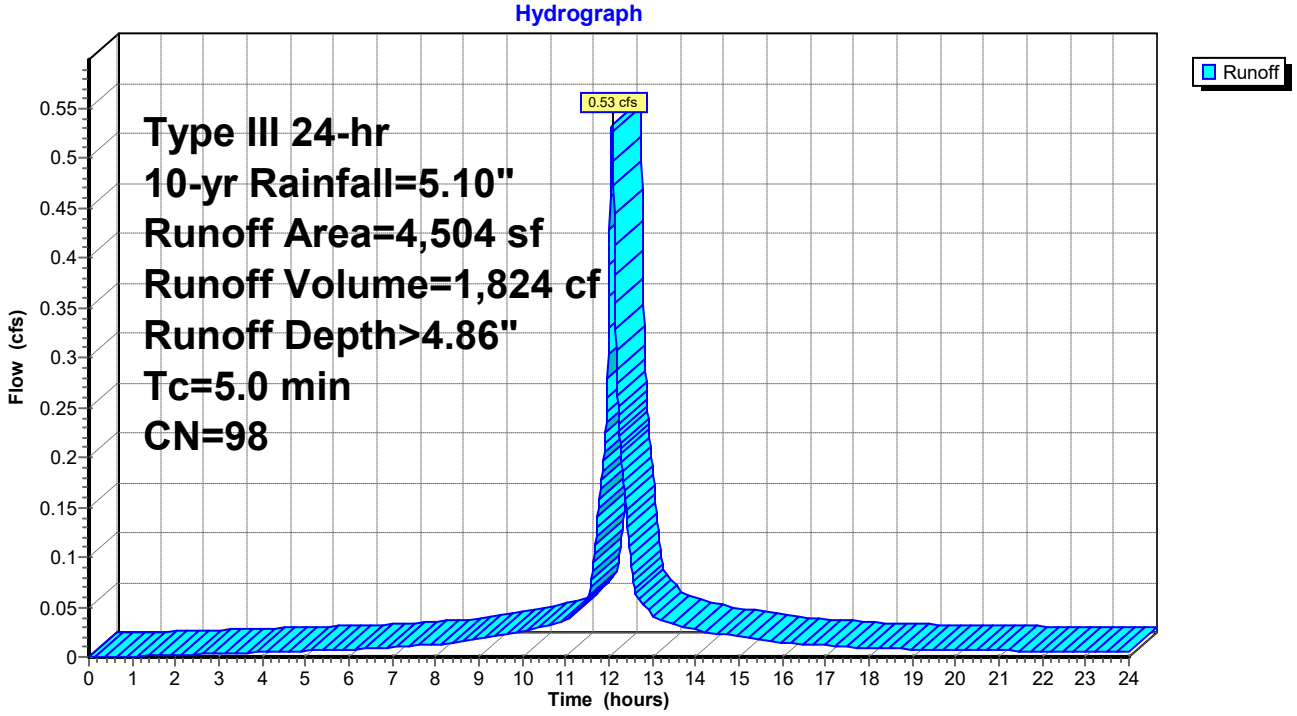
Runoff = 0.53 cfs @ 12.07 hrs, Volume= 1,824 cf, Depth> 4.86"
Routed to Pond 16P : Por Pvt-D2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 23S: D2C-R



Summary for Subcatchment 24S: D2D-R

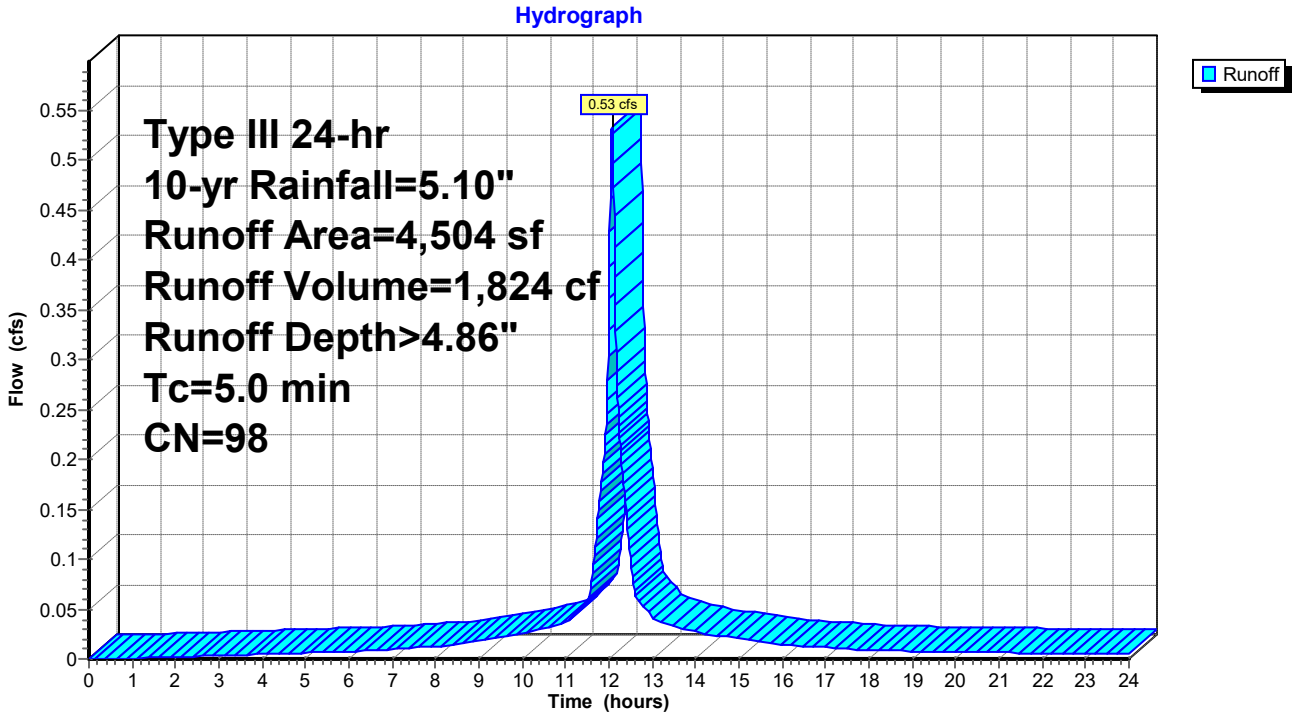
Runoff = 0.53 cfs @ 12.07 hrs, Volume= 1,824 cf, Depth> 4.86"
Routed to Pond 18P : Por Pvt-D2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 24S: D2D-R



Summary for Subcatchment 25S: D2E-R

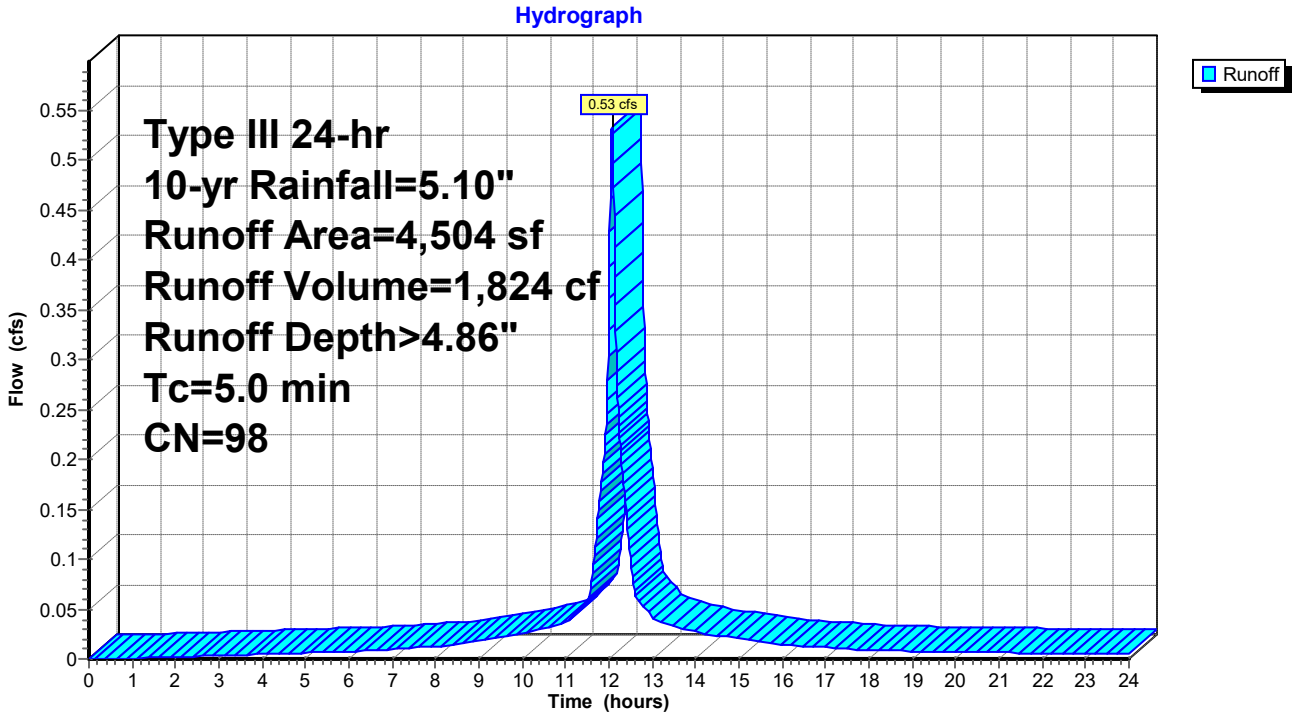
Runoff = 0.53 cfs @ 12.07 hrs, Volume= 1,824 cf, Depth> 4.86"
Routed to Pond 19P : Por Pvt-D2E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 25S: D2E-R



Summary for Subcatchment 26S: D2F-R

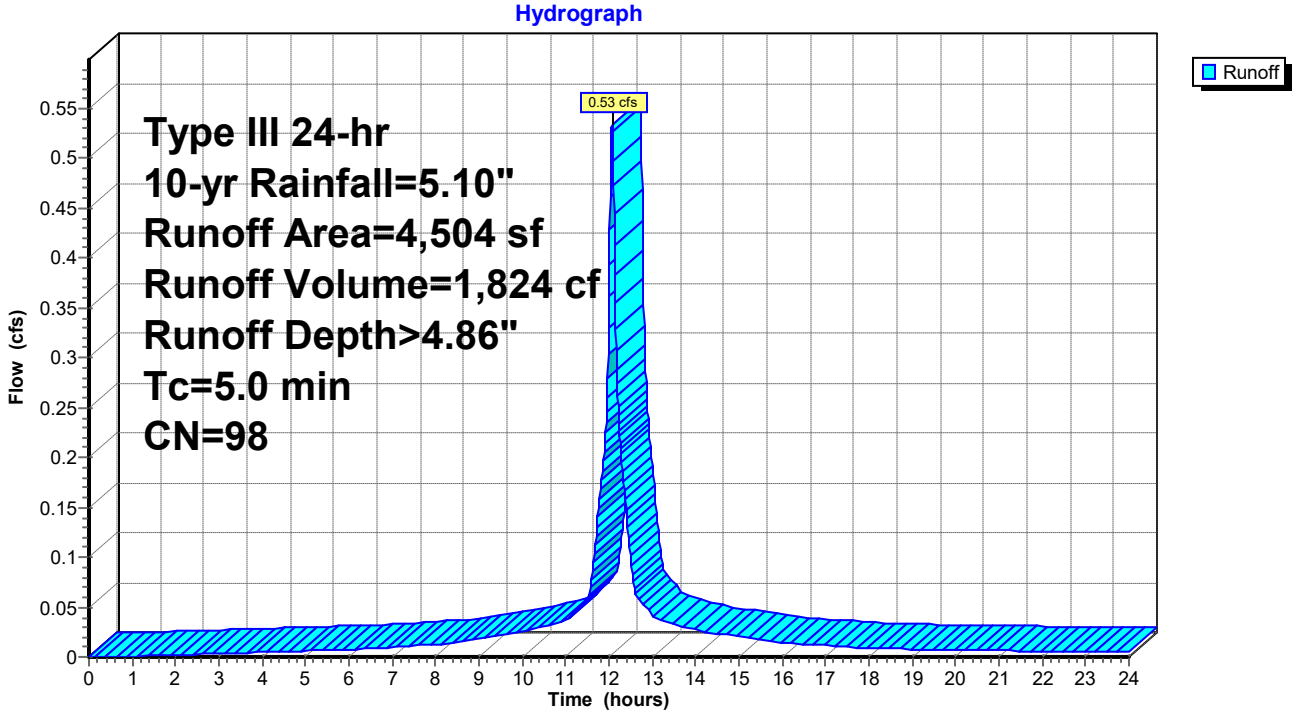
Runoff = 0.53 cfs @ 12.07 hrs, Volume= 1,824 cf, Depth> 4.86"
Routed to Pond 20P : Por Pvt-D2F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 26S: D2F-R



Summary for Subcatchment A1: WS-A1

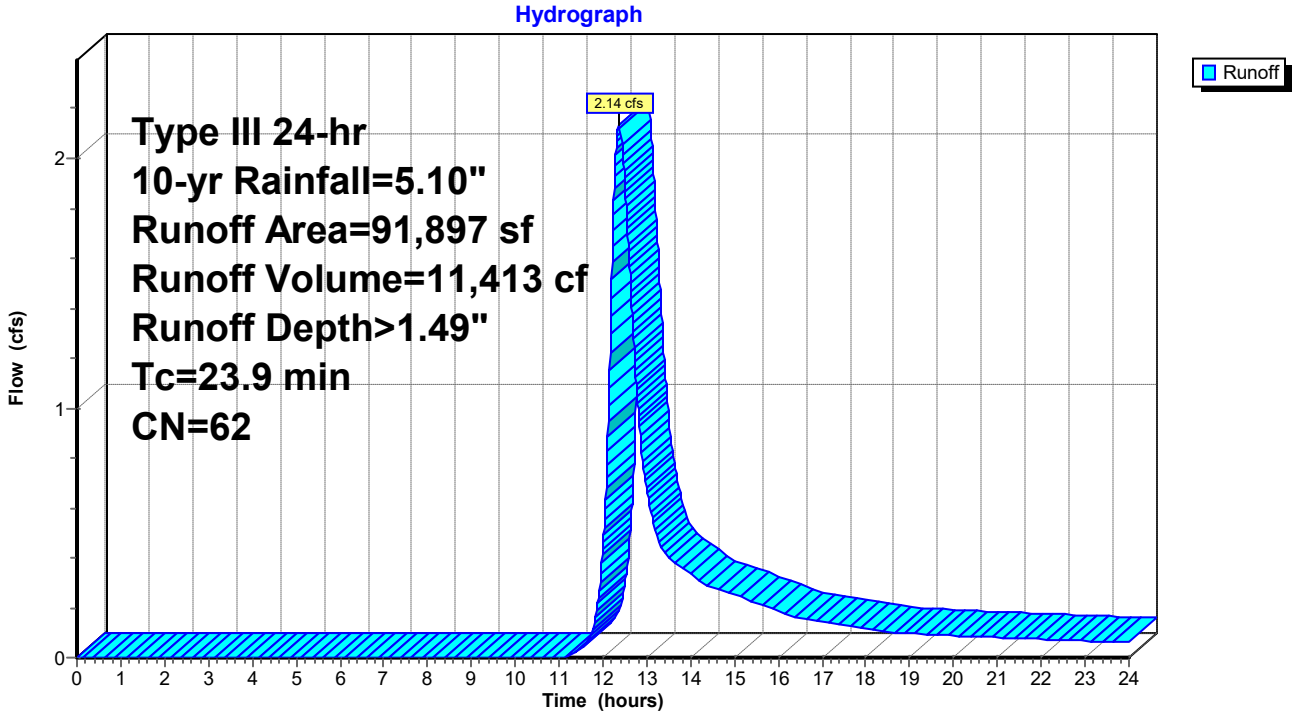
Runoff = 2.14 cfs @ 12.37 hrs, Volume= 11,413 cf, Depth> 1.49"
Routed to Link SUB D1 : D1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	2,508	98	Impervious - Roof
*	9,195	69	Lawn B
*	0	79	Lawn C
*	80,194	60	Forest B
*	0	73	Forest C
	91,897	62	Weighted Average
	89,389		97.27% Pervious Area
	2,508		2.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.9					**Direct Entry,**

Subcatchment A1: WS-A1



Summary for Subcatchment A2: WS-A2

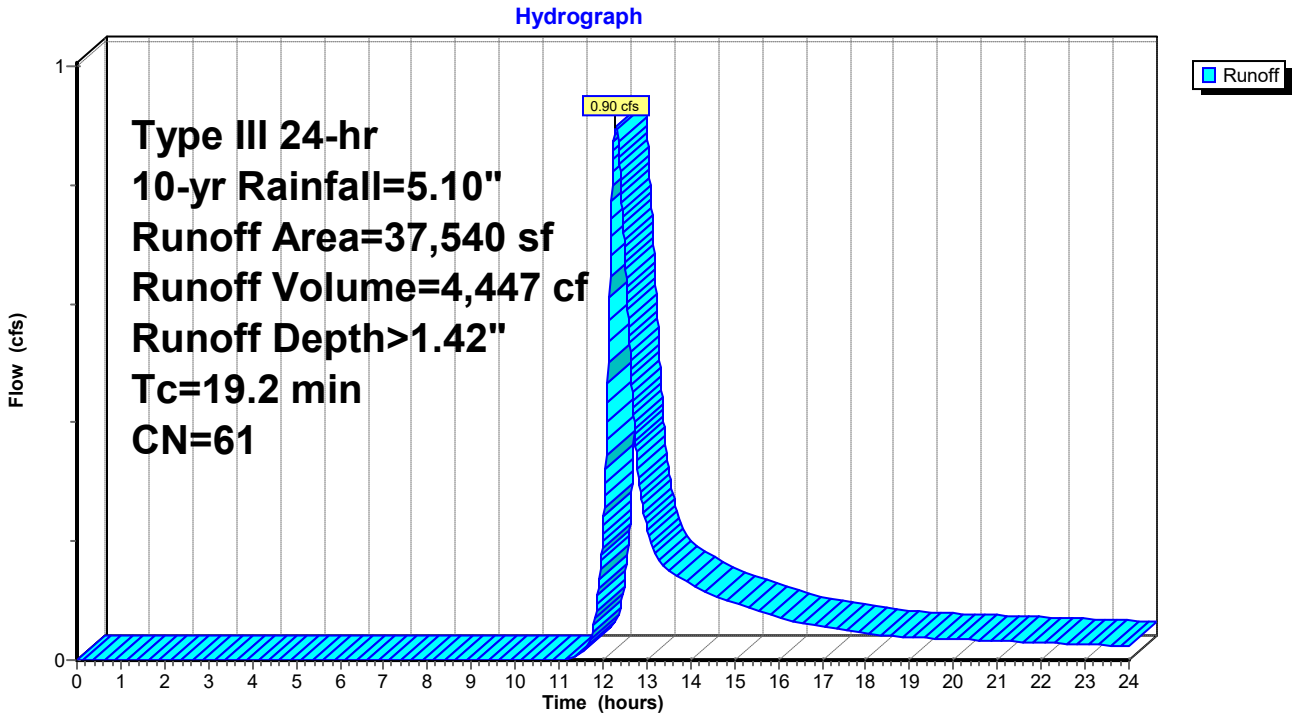
Runoff = 0.90 cfs @ 12.29 hrs, Volume= 4,447 cf, Depth> 1.42"
Routed to Pond DB01 : Detention-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	0	98	Impervious - Roof
*	5,793	69	Lawn B
*	0	79	Lawn C
*	31,747	60	Forest B
*	0	73	Forest C
	37,540	61	Weighted Average
	37,540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2					**Direct Entry,**

Subcatchment A2: WS-A2



Summary for Subcatchment A3: WS-A3

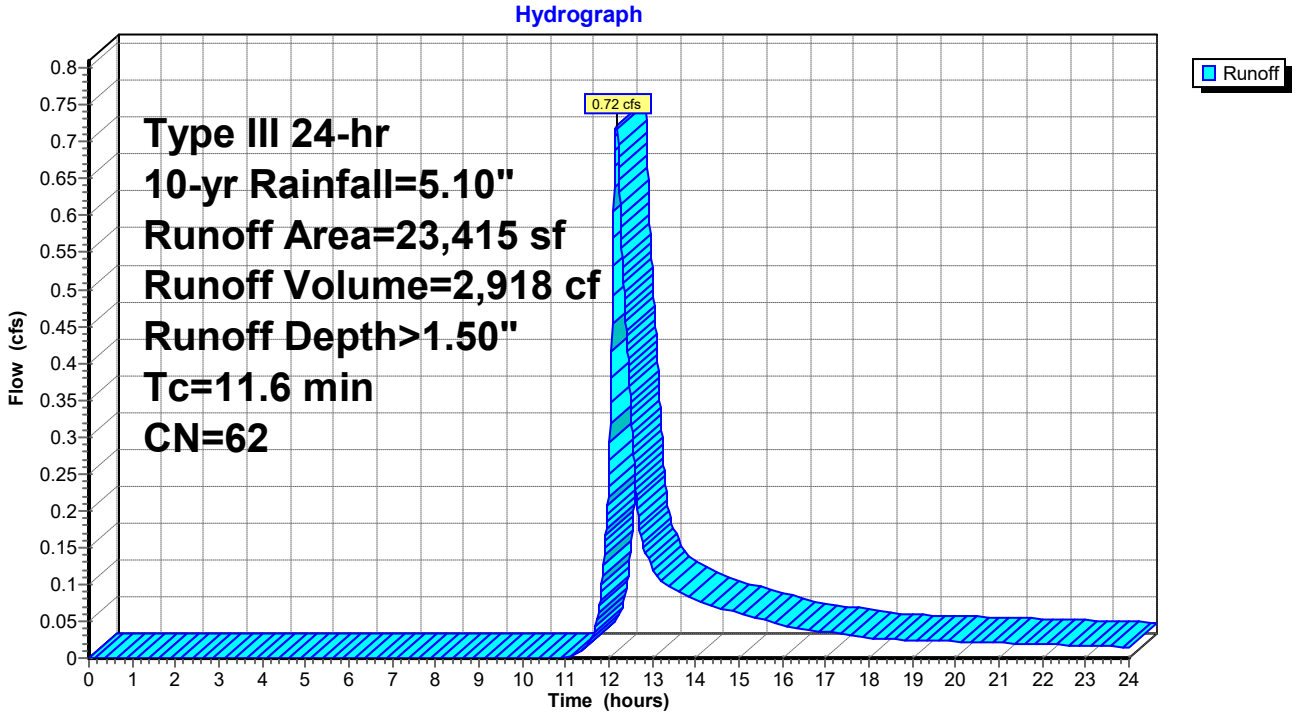
Runoff = 0.72 cfs @ 12.18 hrs, Volume= 2,918 cf, Depth> 1.50"
Routed to Pond DB01 : Detention-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	0	98	Impervious - Roof
*	4,949	69	Lawn B
*	0	79	Lawn C
*	18,466	60	Forest B
*	0	73	Forest C
	23,415	62	Weighted Average
	23,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6					**Direct Entry,**

Subcatchment A3: WS-A3



Summary for Subcatchment B1: WS-B1

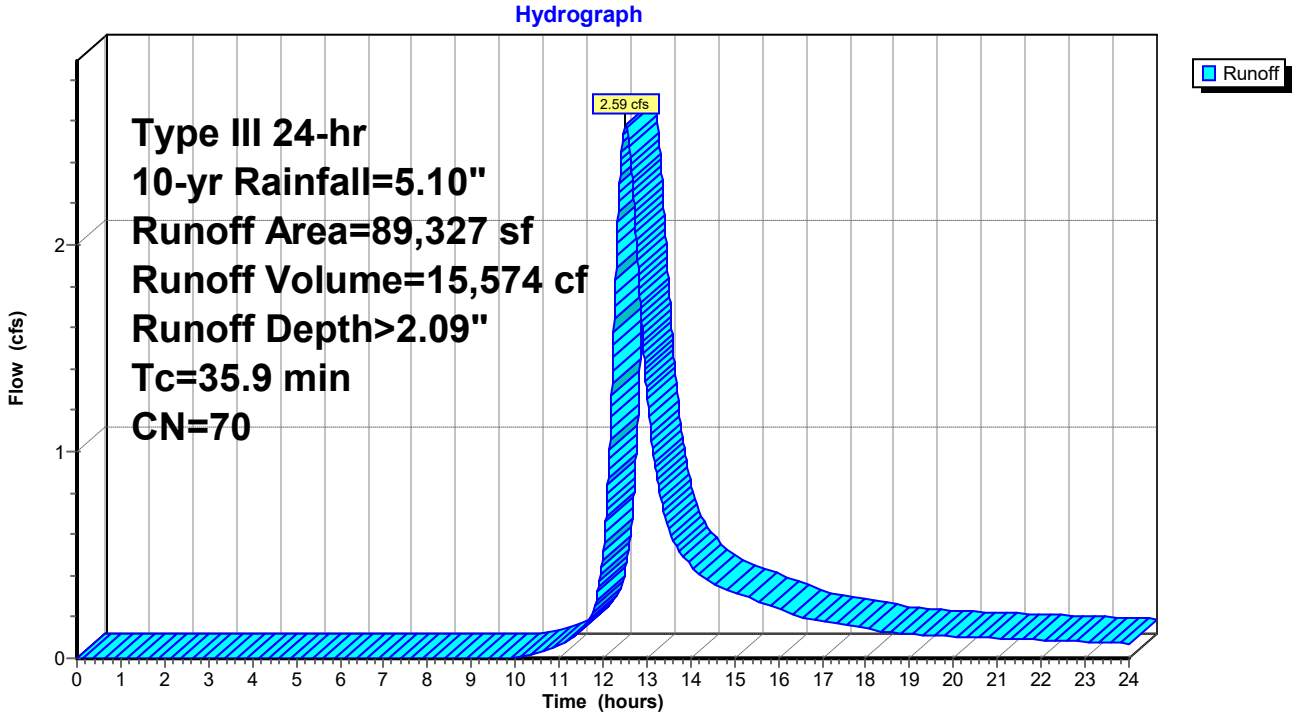
Runoff = 2.59 cfs @ 12.52 hrs, Volume= 15,574 cf, Depth> 2.09"
Routed to Pond YD3 : YD-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	1,588	98	Impervious
*	87,739	69	Lawn B
	89,327	70	Weighted Average
	87,739		98.22% Pervious Area
	1,588		1.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.9					**Direct Entry,**

Subcatchment B1: WS-B1



Summary for Subcatchment B2: WS-B2

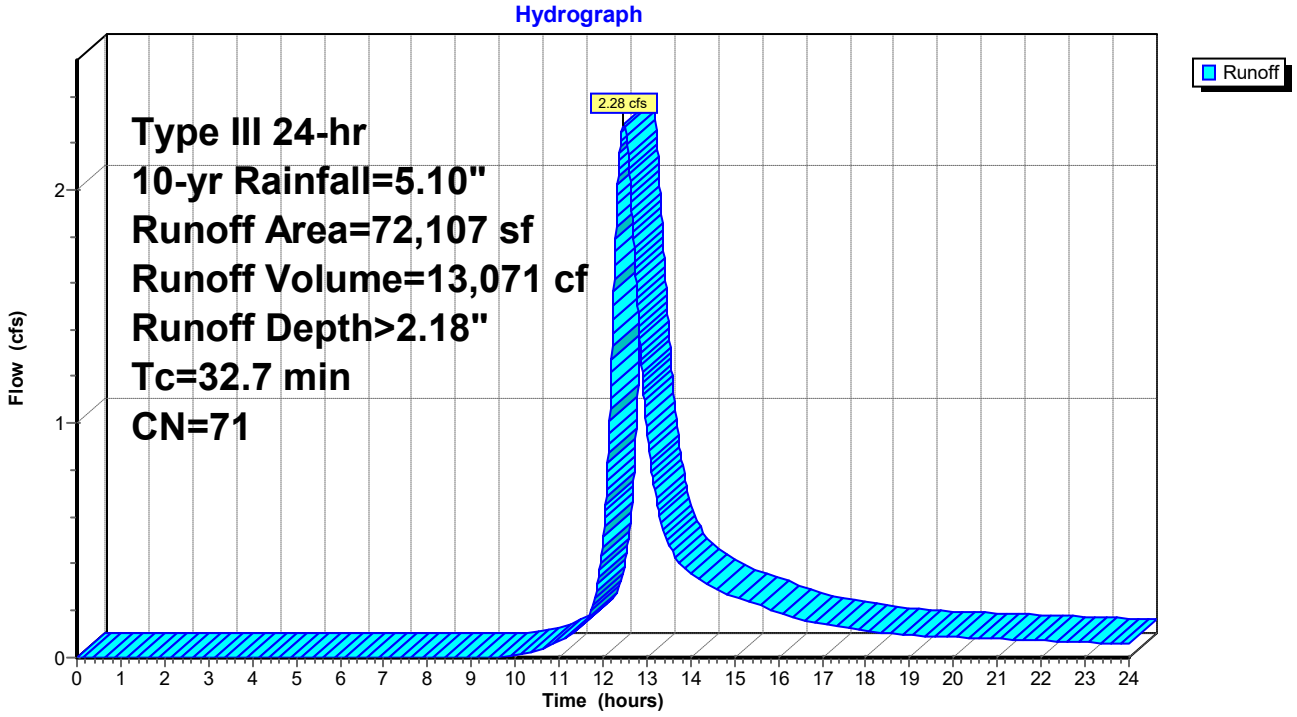
Runoff = 2.28 cfs @ 12.47 hrs, Volume= 13,071 cf, Depth> 2.18"
Routed to Link Sub B : SUB B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	49	98	Impervious
*	55,957	69	Lawn B
*	16,101	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	72,107	71	Weighted Average
	72,058		99.93% Pervious Area
	49		0.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.7					**Direct Entry,**

Subcatchment B2: WS-B2



Summary for Subcatchment B3: WS-B3

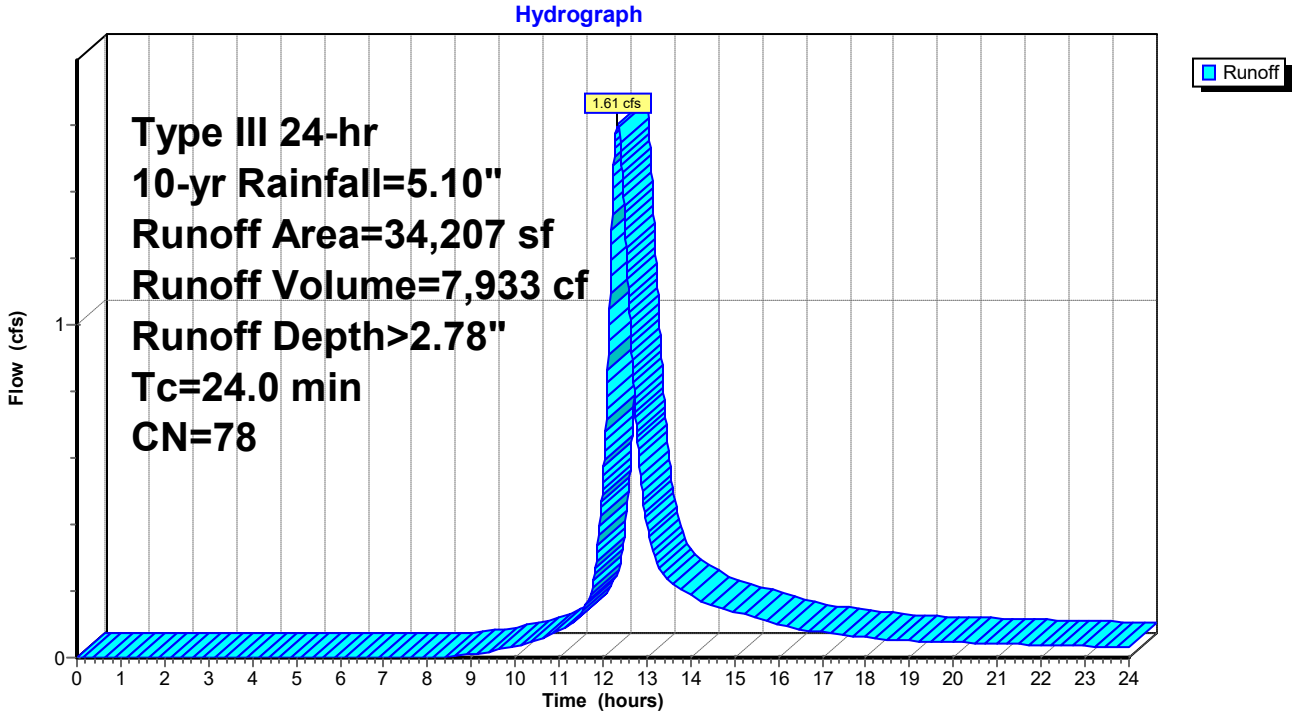
Runoff = 1.61 cfs @ 12.34 hrs, Volume= 7,933 cf, Depth> 2.78"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	12,332	98	Impervious
*	14,526	69	Lawn B
*	1,341	79	Lawn C
*	5,996	60	Forest B
*	12	73	Forest C
	34,207	78	Weighted Average
	21,875		63.95% Pervious Area
	12,332		36.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0					**Direct Entry,**

Subcatchment B3: WS-B3



Summary for Subcatchment B4: WS-B4

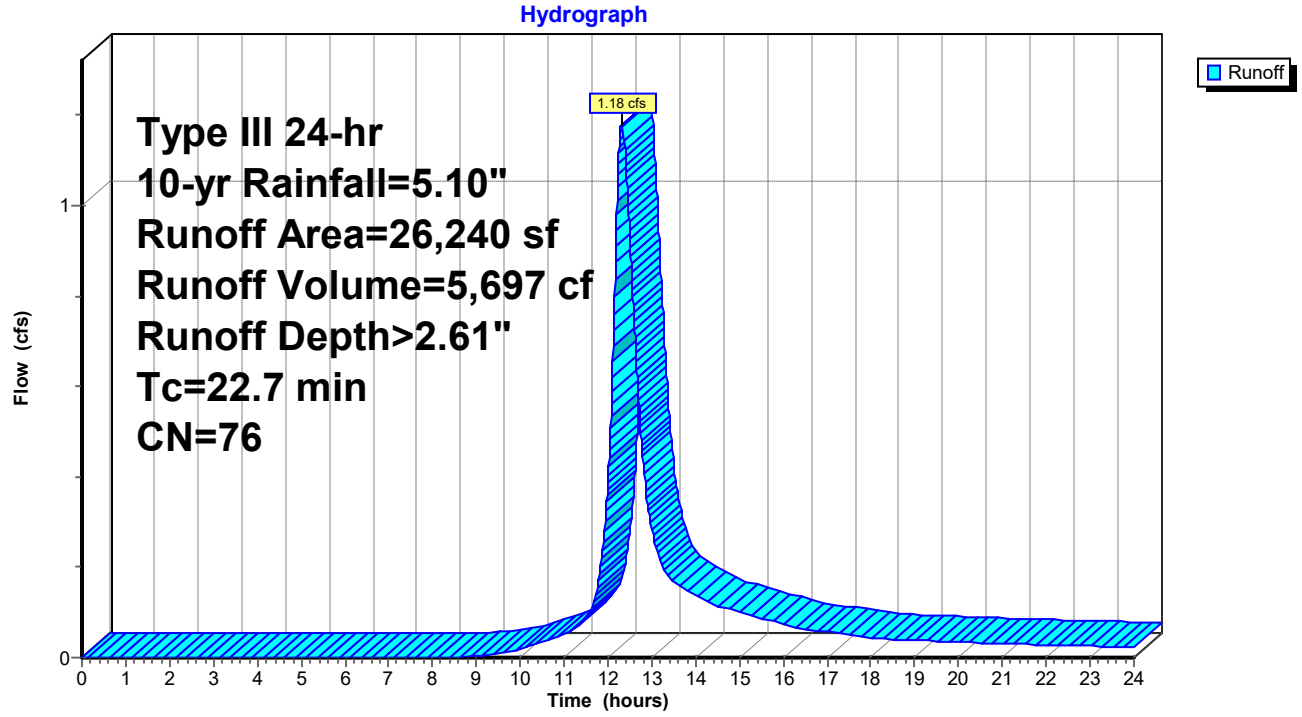
Runoff = 1.18 cfs @ 12.33 hrs, Volume= 5,697 cf, Depth> 2.61"
Routed to Link Sub B : SUB B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	6,749	98	Impervious
*	19,491	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	26,240	76	Weighted Average
	19,491		74.28% Pervious Area
	6,749		25.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.7					**Direct Entry,**

Subcatchment B4: WS-B4



Summary for Subcatchment B5: WS-B5

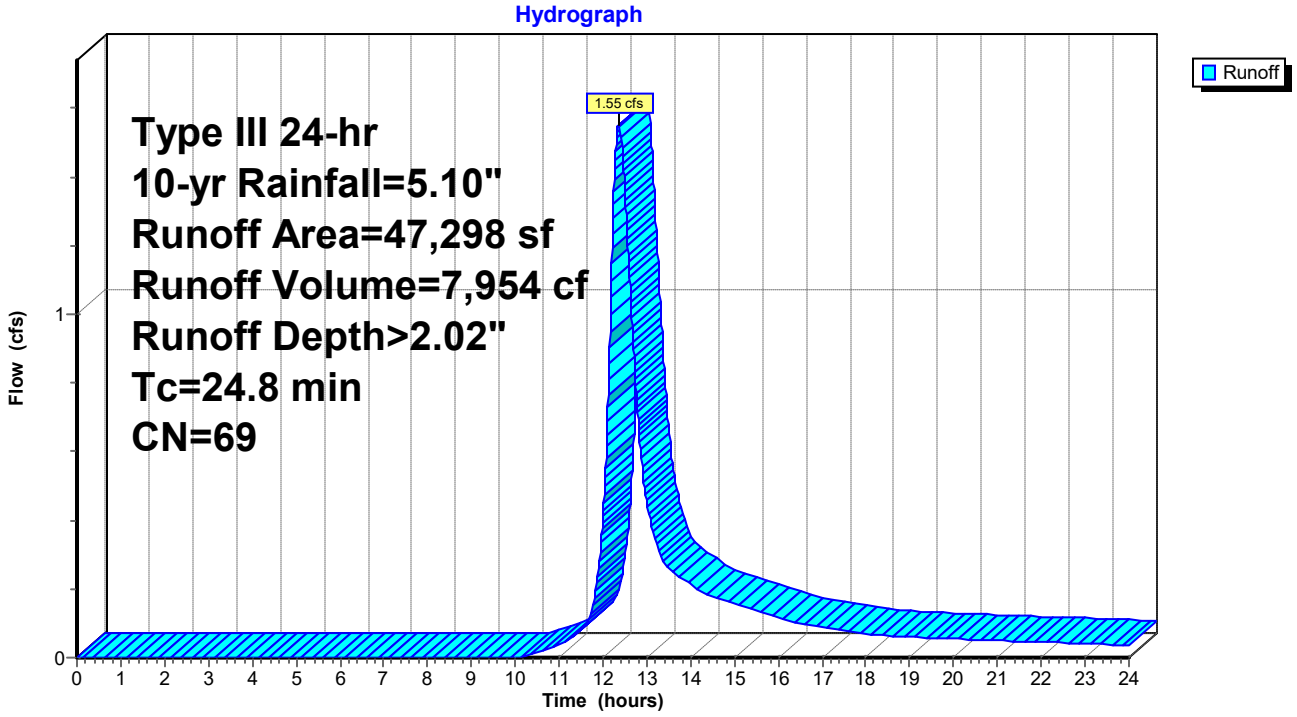
Runoff = 1.55 cfs @ 12.37 hrs, Volume= 7,954 cf, Depth> 2.02"
Routed to Pond YD40 : YD-40

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	2,488	98	Impervious
*	36,610	69	Lawn B
*	0	79	Lawn C
*	8,200	60	Forest B
*	0	73	Forest C
	47,298	69	Weighted Average
	44,810		94.74% Pervious Area
	2,488		5.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8					**Direct Entry,**

Subcatchment B5: WS-B5



Summary for Subcatchment B6: WS-B6

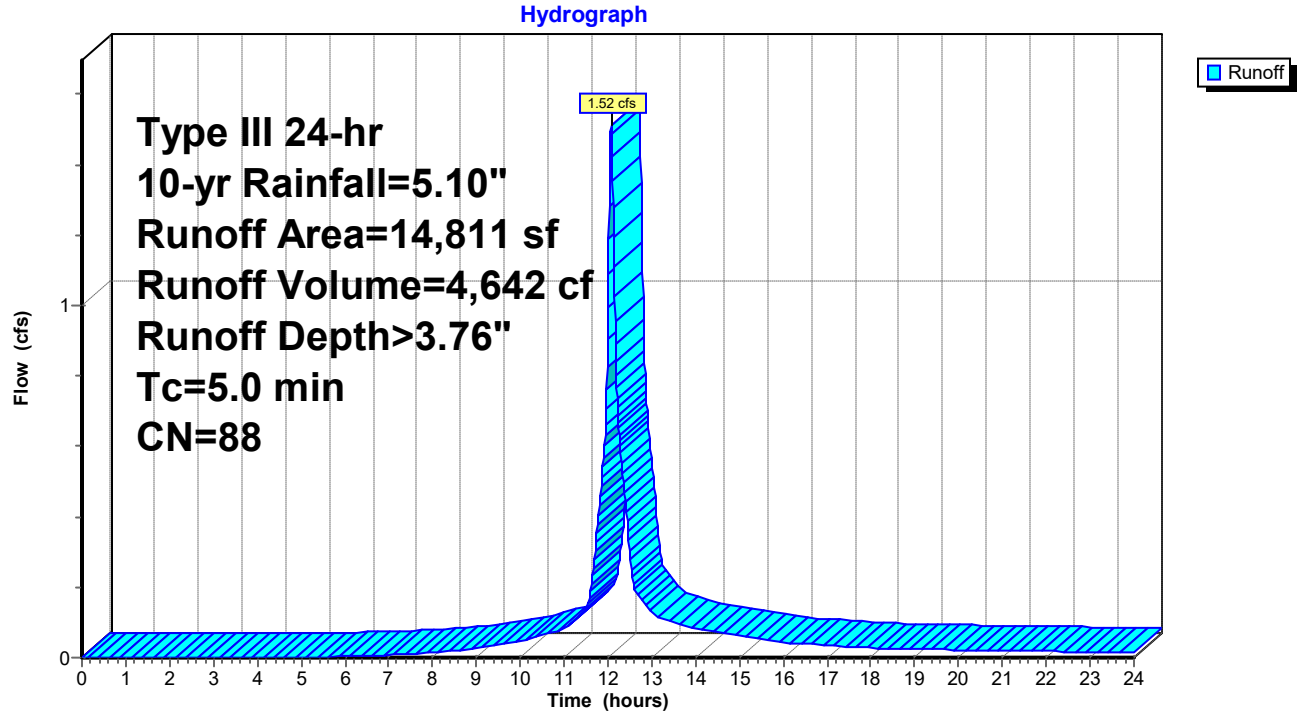
Runoff = 1.52 cfs @ 12.07 hrs, Volume= 4,642 cf, Depth> 3.76"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	9,953	98	Impervious
*	4,858	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	14,811	88	Weighted Average
	4,858		32.80% Pervious Area
	9,953		67.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment B6: WS-B6



Summary for Subcatchment C1: WS-C1

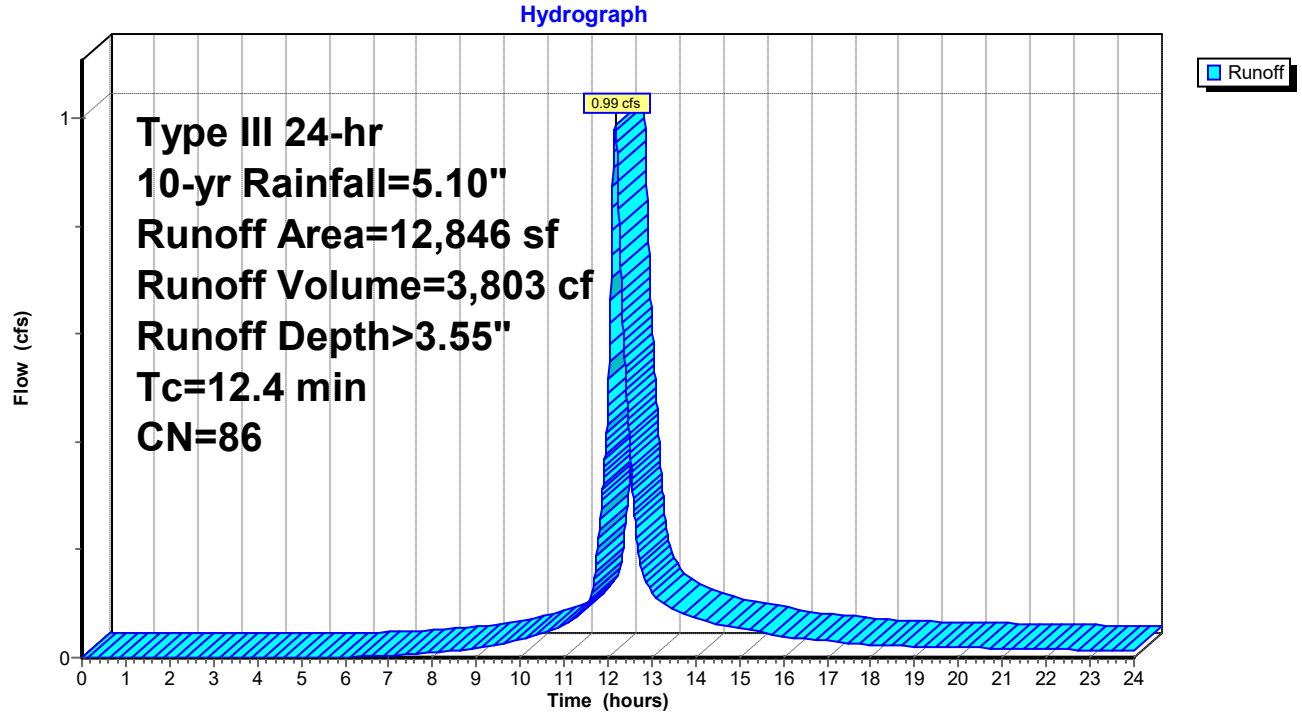
Runoff = 0.99 cfs @ 12.17 hrs, Volume= 3,803 cf, Depth> 3.55"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	5,006	98	Impervious
*	0	69	Lawn B
*	7,840	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	12,846	86	Weighted Average
	7,840		61.03% Pervious Area
	5,006		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4					**Direct Entry,**

Subcatchment C1: WS-C1



Summary for Subcatchment C2: WS-C2

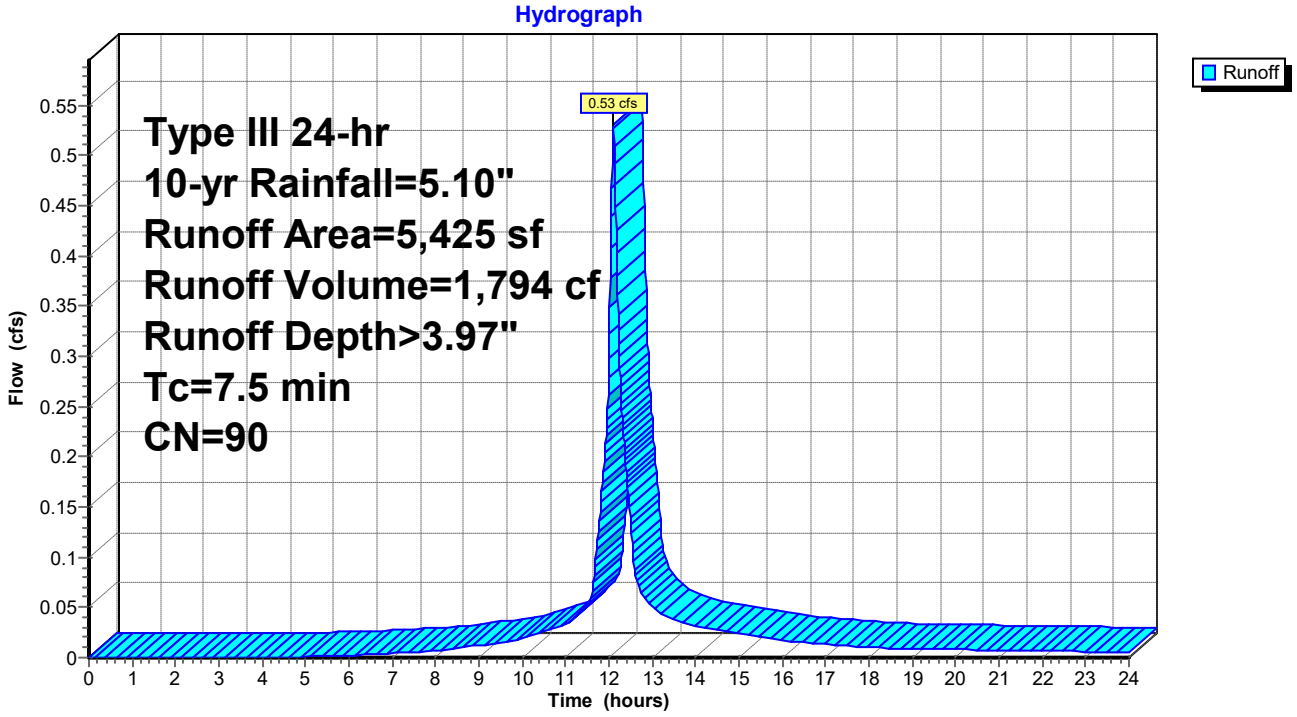
Runoff = 0.53 cfs @ 12.10 hrs, Volume= 1,794 cf, Depth> 3.97"
Routed to Pond RG03 : Rain Garden-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	3,093	98	Impervious
*	0	69	Lawn B
*	2,332	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	5,425	90	Weighted Average
	2,332		42.99% Pervious Area
	3,093		57.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5					**Direct Entry,**

Subcatchment C2: WS-C2



Summary for Subcatchment C3: WS-C3

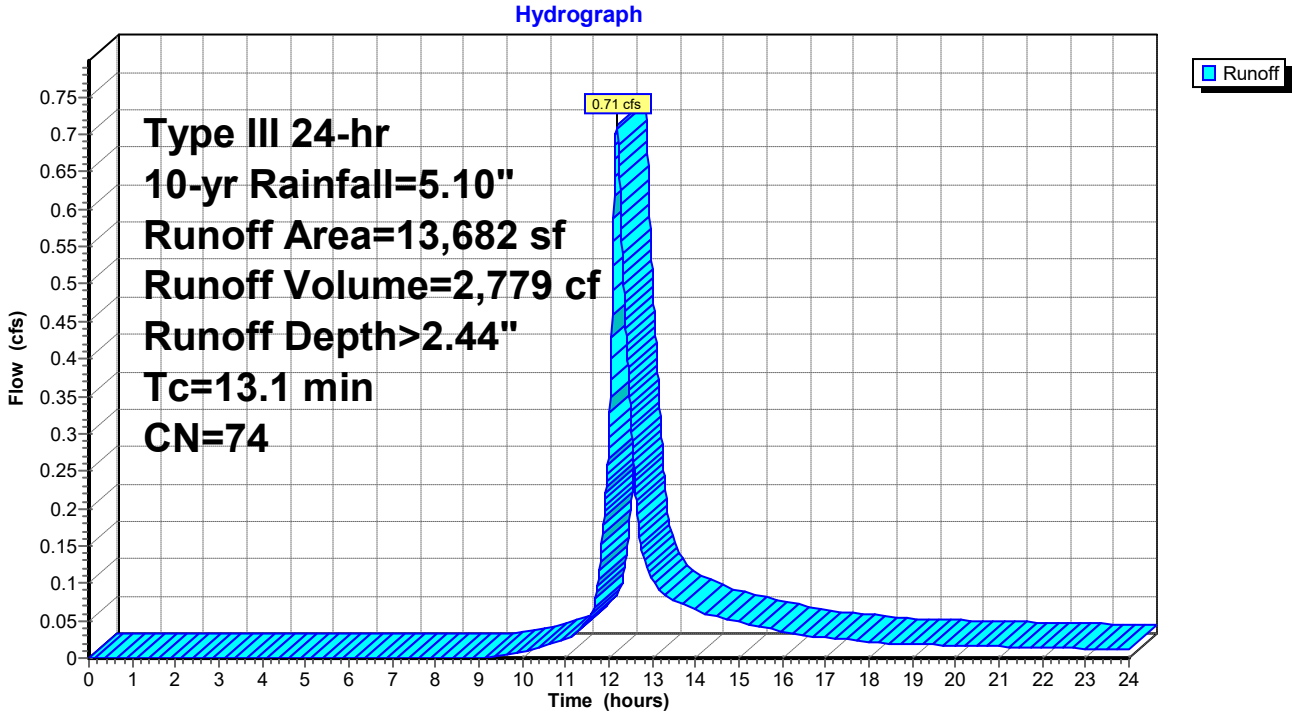
Runoff = 0.71 cfs @ 12.18 hrs, Volume= 2,779 cf, Depth> 2.44"
Routed to Pond DB03 : Detention-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	0	98	Impervious
*	143	69	Lawn B
*	5,032	79	Lawn C
*	1,722	60	Forest B
*	6,785	73	Forest C
	13,682	74	Weighted Average
	13,682		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1					**Direct Entry,**

Subcatchment C3: WS-C3



Summary for Subcatchment C4: WS-C4

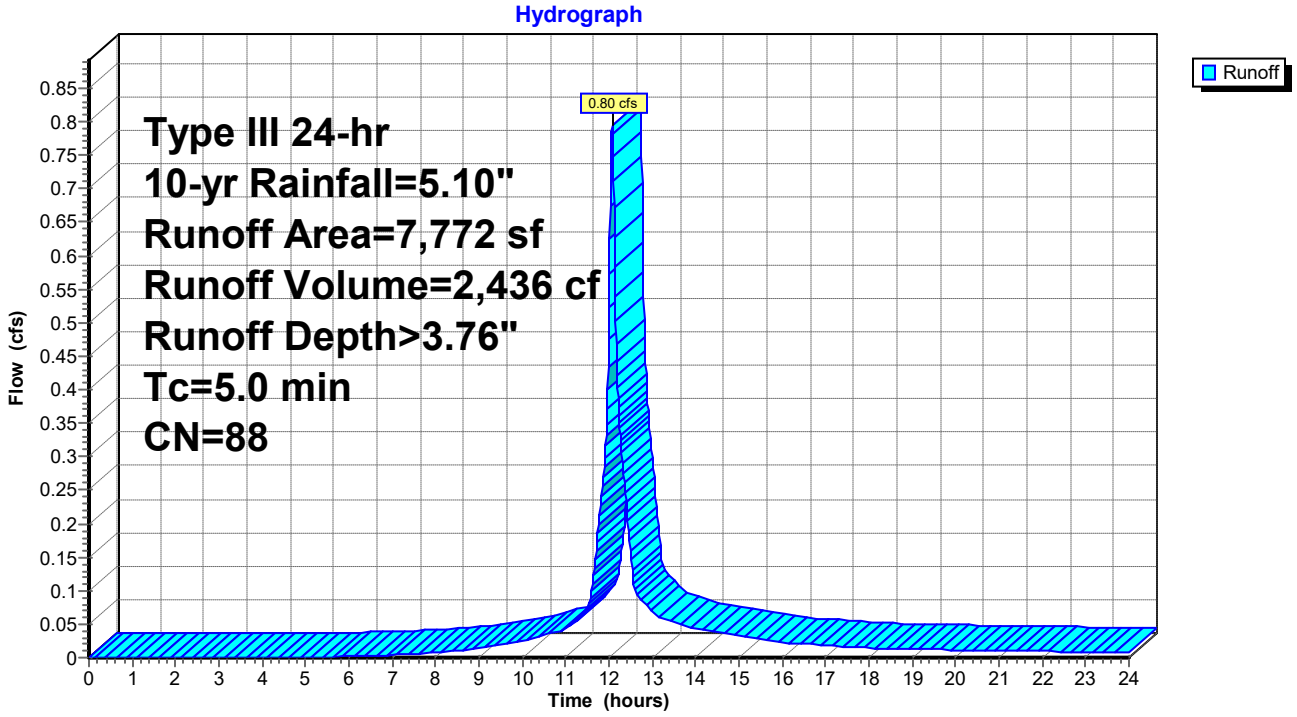
Runoff = 0.80 cfs @ 12.07 hrs, Volume= 2,436 cf, Depth> 3.76"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	3,764	98	Impervious
*	0	69	Lawn B
*	4,008	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	7,772	88	Weighted Average
	4,008		51.57% Pervious Area
	3,764		48.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C4: WS-C4



Summary for Subcatchment C5: WS-C5

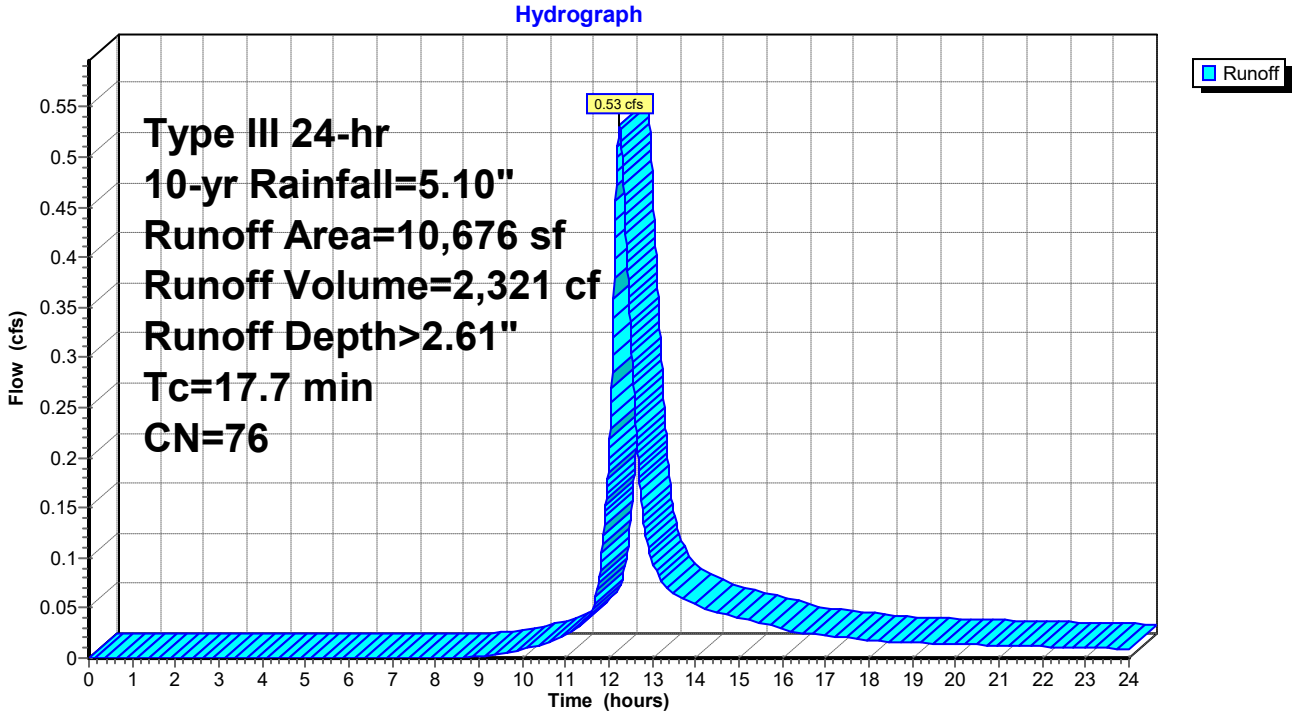
Runoff = 0.53 cfs @ 12.25 hrs, Volume= 2,321 cf, Depth> 2.61"
Routed to Pond DB02 : Detention-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	0	98	Impervious
*	209	69	Lawn B
*	6,162	79	Lawn C
*	569	60	Forest B
*	3,736	73	Forest C
	10,676	76	Weighted Average
	10,676		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7					**Direct Entry,**

Subcatchment C5: WS-C5



Summary for Subcatchment C6: WS-C6

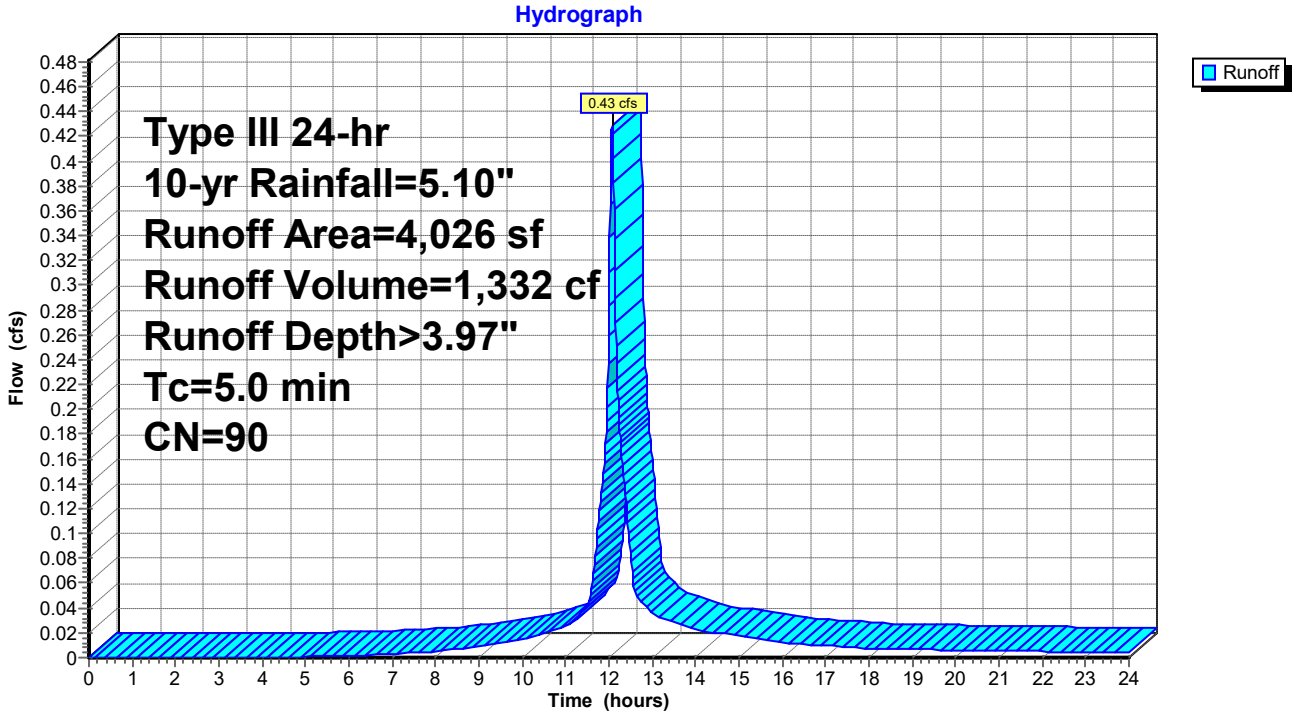
Runoff = 0.43 cfs @ 12.07 hrs, Volume= 1,332 cf, Depth> 3.97"
Routed to Pond RG06 : Rain Garden-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	2,854	98	Impervious
*	1,172	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	4,026	90	Weighted Average
	1,172		29.11% Pervious Area
	2,854		70.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C6: WS-C6



Summary for Subcatchment C7: WS-C7

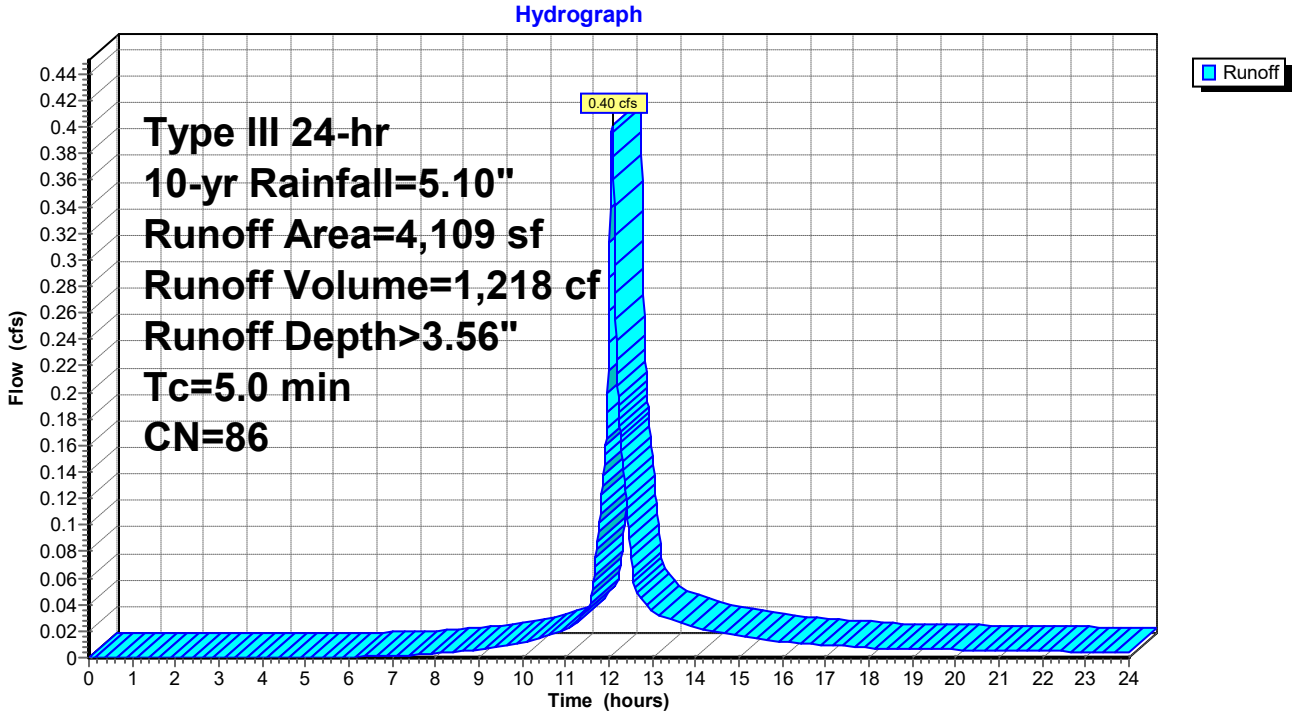
Runoff = 0.40 cfs @ 12.07 hrs, Volume= 1,218 cf, Depth> 3.56"
Routed to Pond RG07 : Rain Garden-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	2,402	98	Impervious
*	1,707	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	4,109	86	Weighted Average
	1,707		41.54% Pervious Area
	2,402		58.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C7: WS-C7



Summary for Subcatchment D1H: WS-D1H

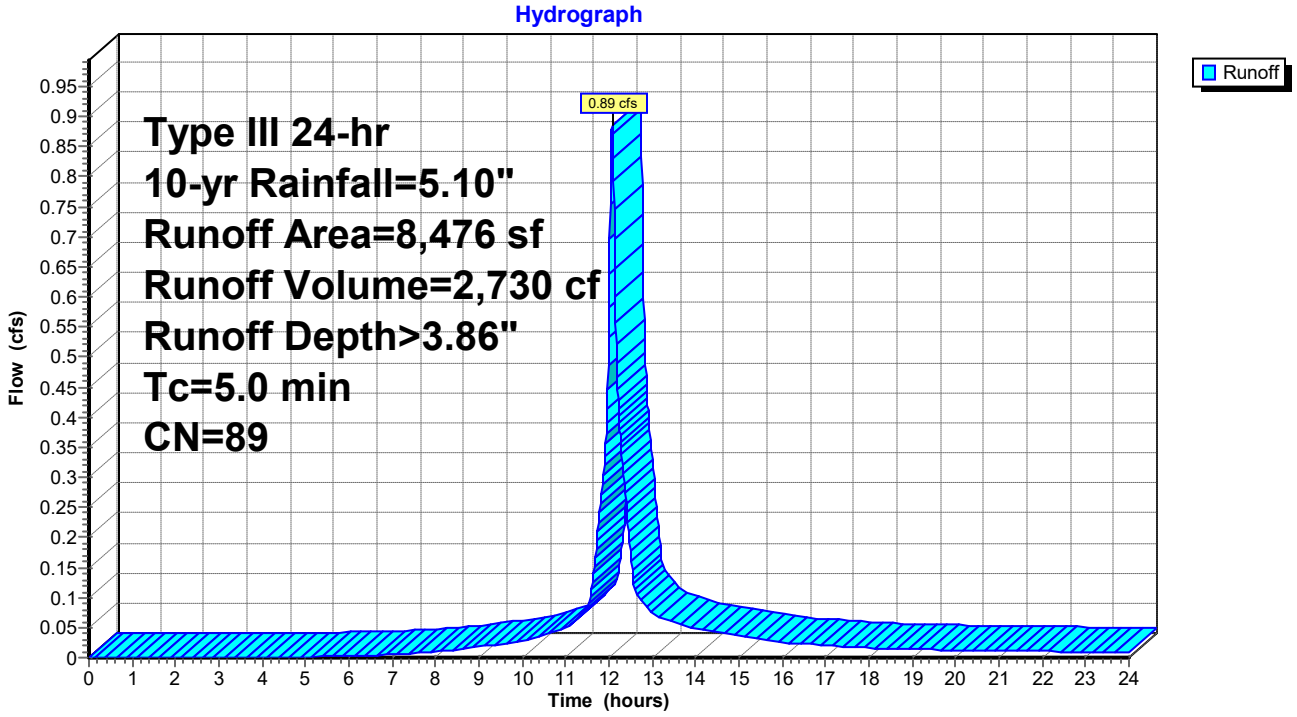
Runoff = 0.89 cfs @ 12.07 hrs, Volume= 2,730 cf, Depth> 3.86"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	5,649	98	Impervious
*	2,426	69	Lawn B
*	401	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	8,476	89	Weighted Average
	2,827		33.35% Pervious Area
	5,649		66.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D1H: WS-D1H



Summary for Subcatchment D2A: WS-D2A

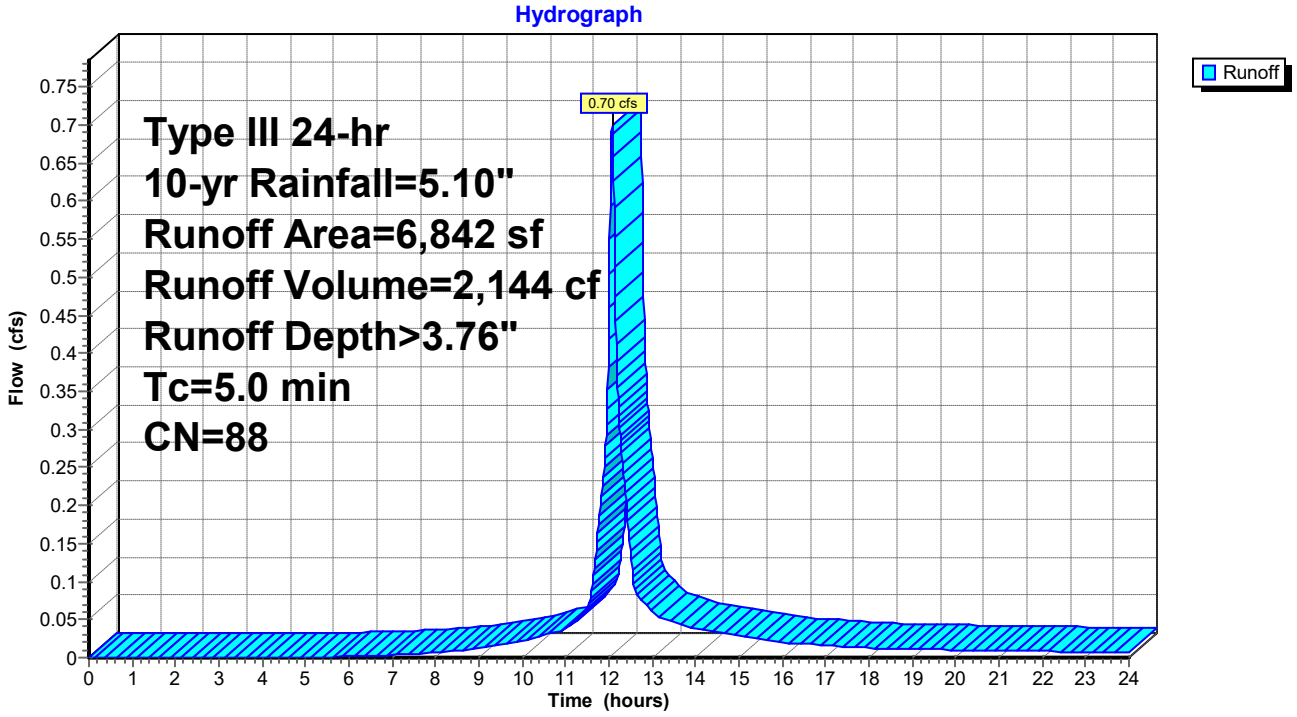
Runoff = 0.70 cfs @ 12.07 hrs, Volume= 2,144 cf, Depth> 3.76"
Routed to Pond 13P : Por Pvt-D2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	4,404	98	Impervious
*	2,438	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	6,842	88	Weighted Average
	2,438		35.63% Pervious Area
	4,404		64.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2A: WS-D2A



Summary for Subcatchment D2B: WS-D2B

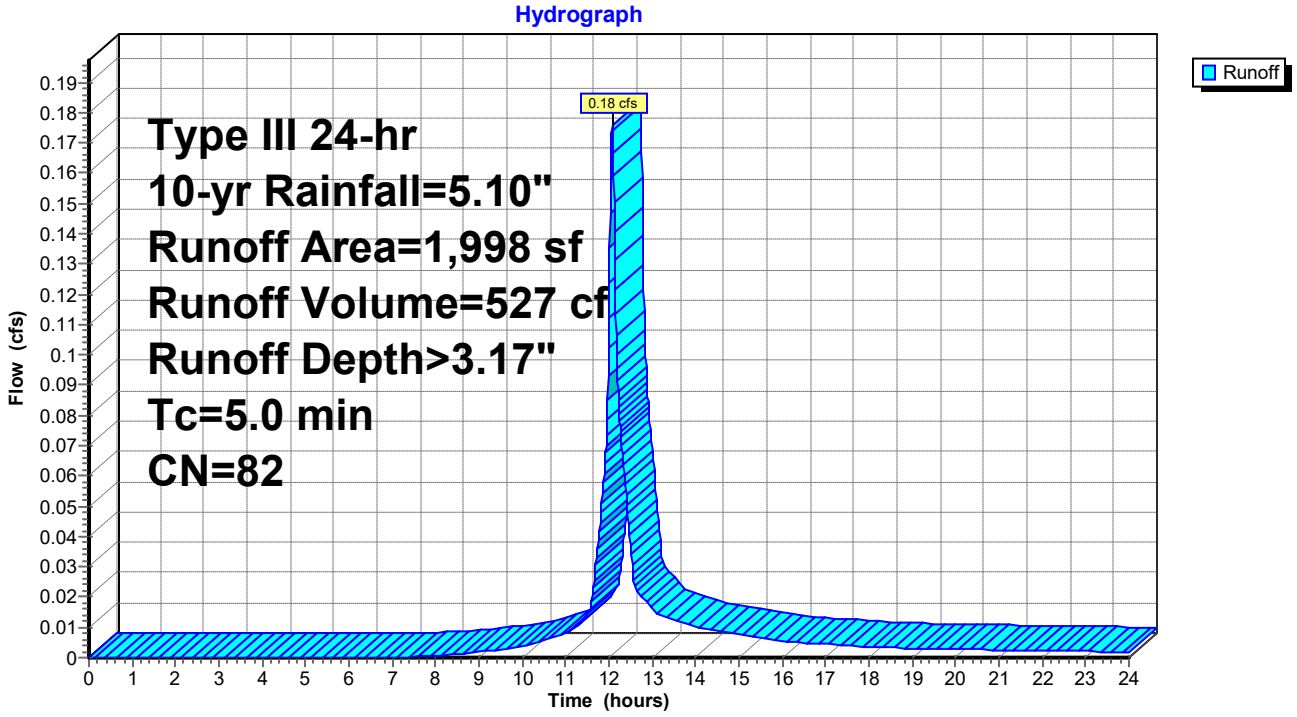
Runoff = 0.18 cfs @ 12.07 hrs, Volume= 527 cf, Depth> 3.17"
Routed to Pond 14P : Por Pvt-D2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	928	98	Impervious
*	1,070	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,998	82	Weighted Average
	1,070		53.55% Pervious Area
	928		46.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2B: WS-D2B



Summary for Subcatchment D2C: WS-D2C

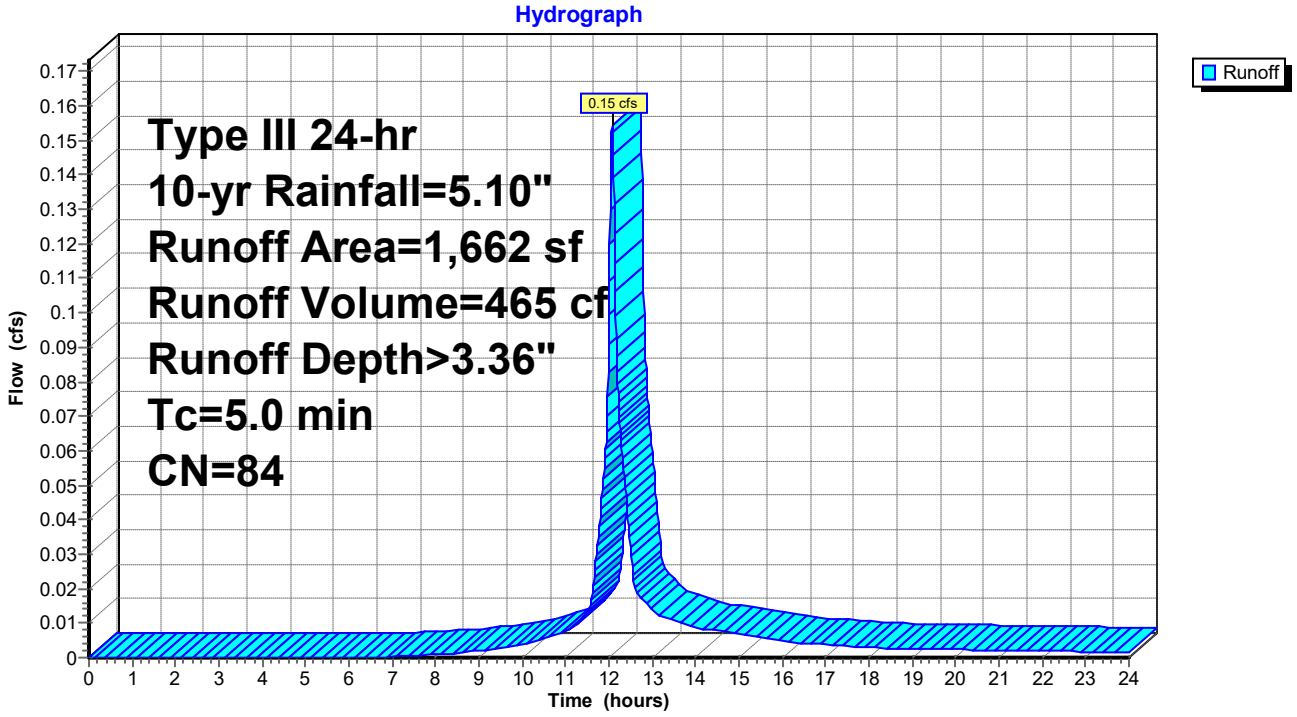
Runoff = 0.15 cfs @ 12.07 hrs, Volume= 465 cf, Depth> 3.36"
Routed to Pond 16P : Por Pvt-D2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	860	98	Impervious
*	802	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,662	84	Weighted Average
	802		48.26% Pervious Area
	860		51.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2C: WS-D2C



Summary for Subcatchment D2D: WS-D2D

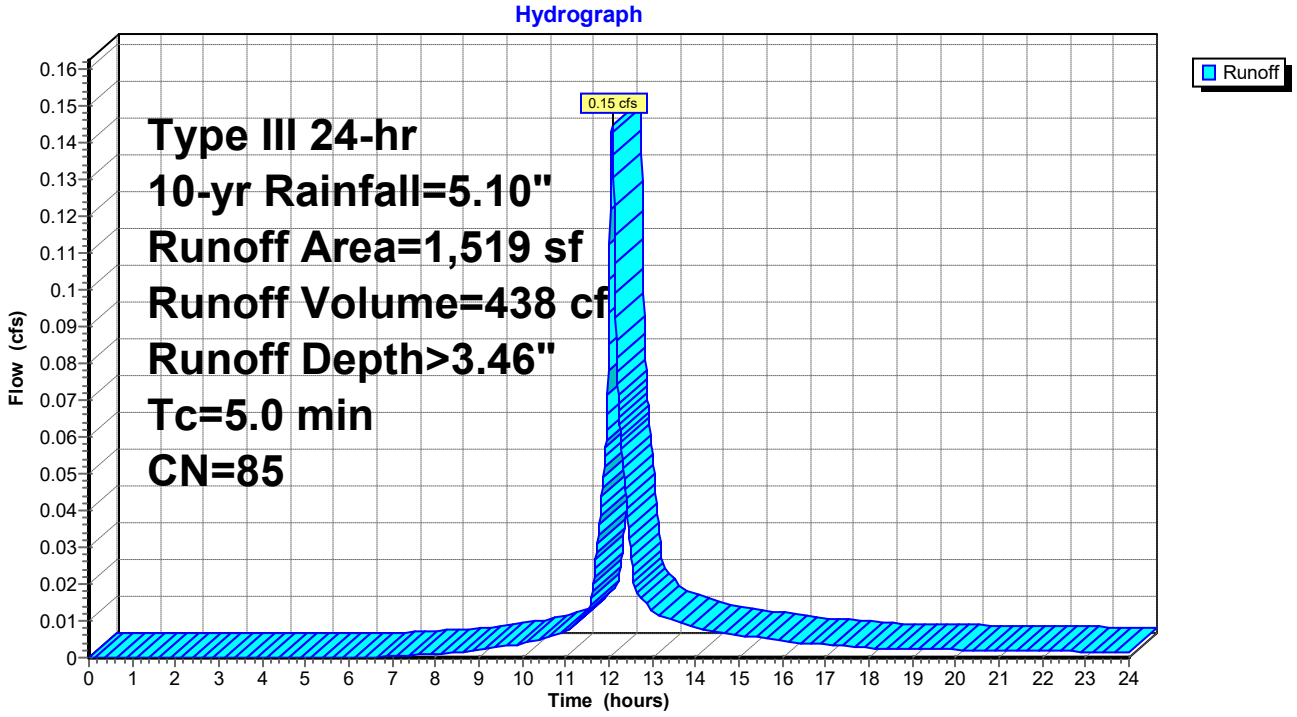
Runoff = 0.15 cfs @ 12.07 hrs, Volume= 438 cf, Depth> 3.46"
Routed to Pond 18P : Por Pvt-D2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	846	98	Impervious
*	673	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,519	85	Weighted Average
	673		44.31% Pervious Area
	846		55.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2D: WS-D2D



Summary for Subcatchment D2E: WS-D2E

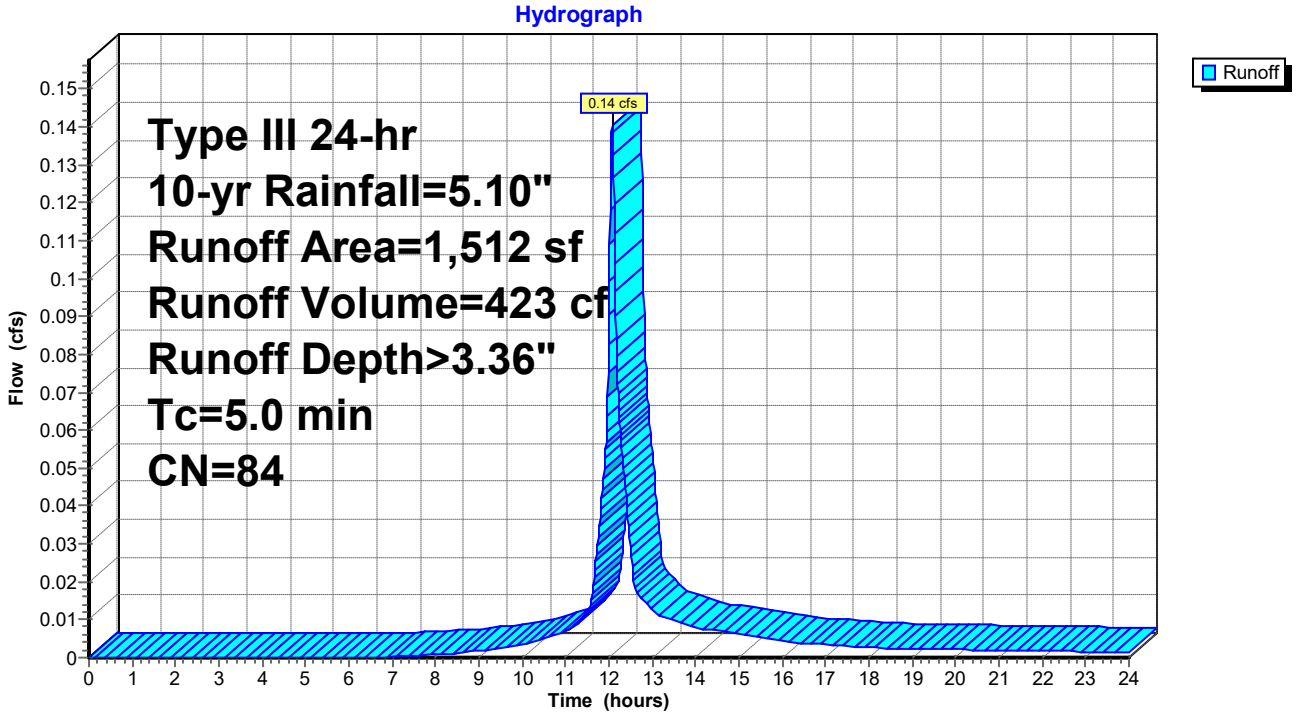
Runoff = 0.14 cfs @ 12.07 hrs, Volume= 423 cf, Depth> 3.36"
Routed to Pond 19P : Por Pvt-D2E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	808	98	Impervious
*	704	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,512	84	Weighted Average
	704		46.56% Pervious Area
	808		53.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2E: WS-D2E



Summary for Subcatchment D2F: WS-D2F

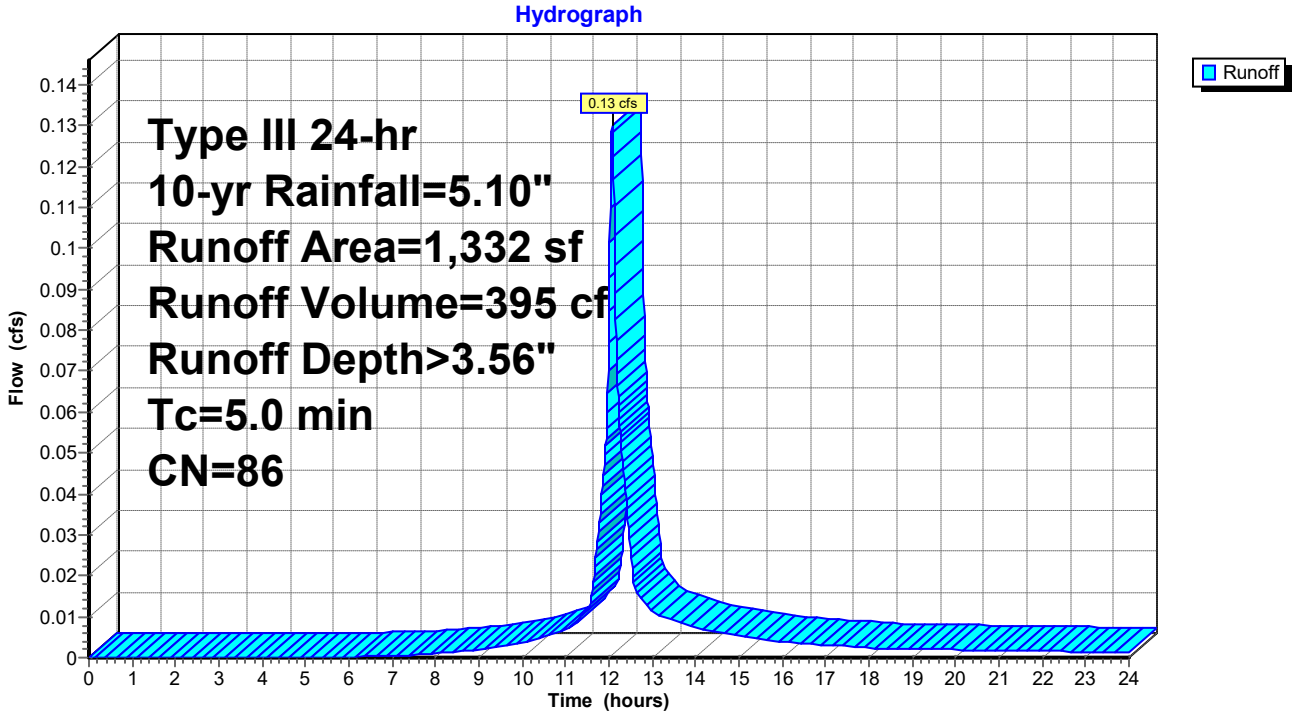
Runoff = 0.13 cfs @ 12.07 hrs, Volume= 395 cf, Depth> 3.56"
Routed to Pond 20P : Por Pvt-D2F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	800	98	Impervious
*	532	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,332	86	Weighted Average
	532		39.94% Pervious Area
	800		60.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2F: WS-D2F



Summary for Subcatchment D2G: WS-D2G

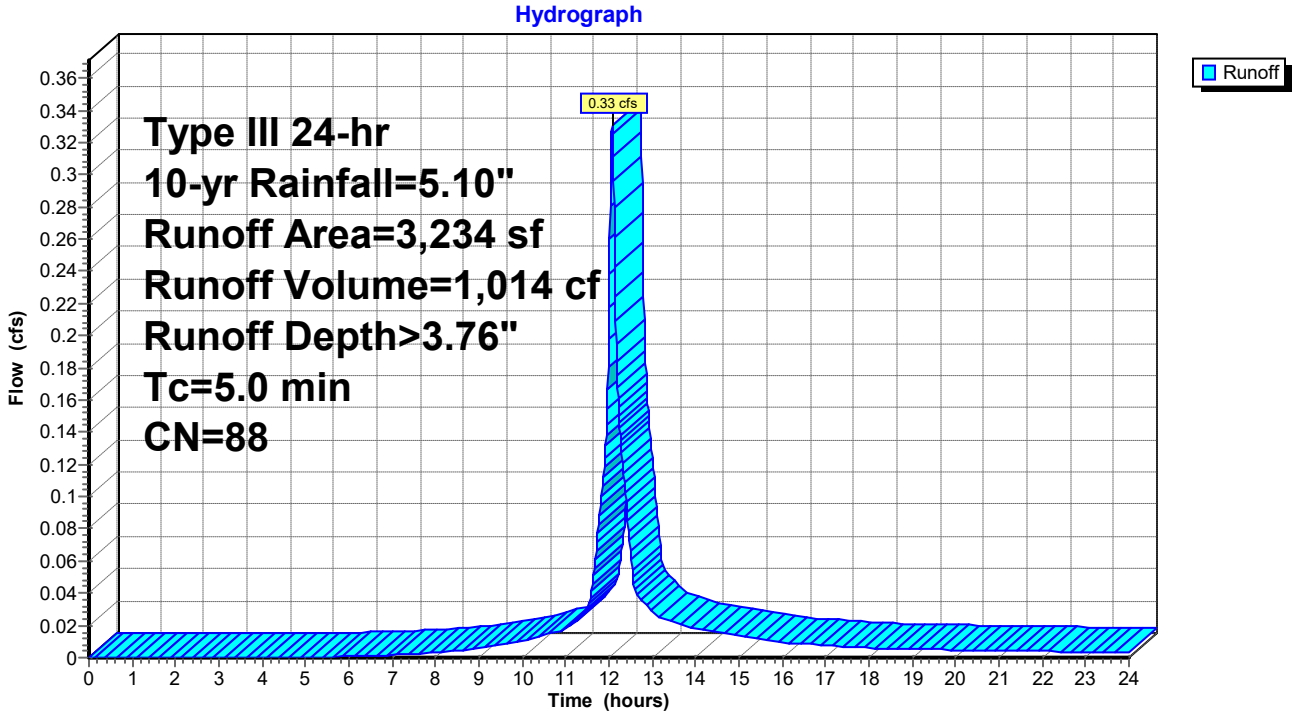
Runoff = 0.33 cfs @ 12.07 hrs, Volume= 1,014 cf, Depth> 3.76"
Routed to Pond 21P : Por Pvt-D2G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	1,833	98	Impervious
*	555	69	Lawn B
*	846	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	3,234	88	Weighted Average
	1,401		43.32% Pervious Area
	1,833		56.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2G: WS-D2G



Summary for Subcatchment D3: WS-D3

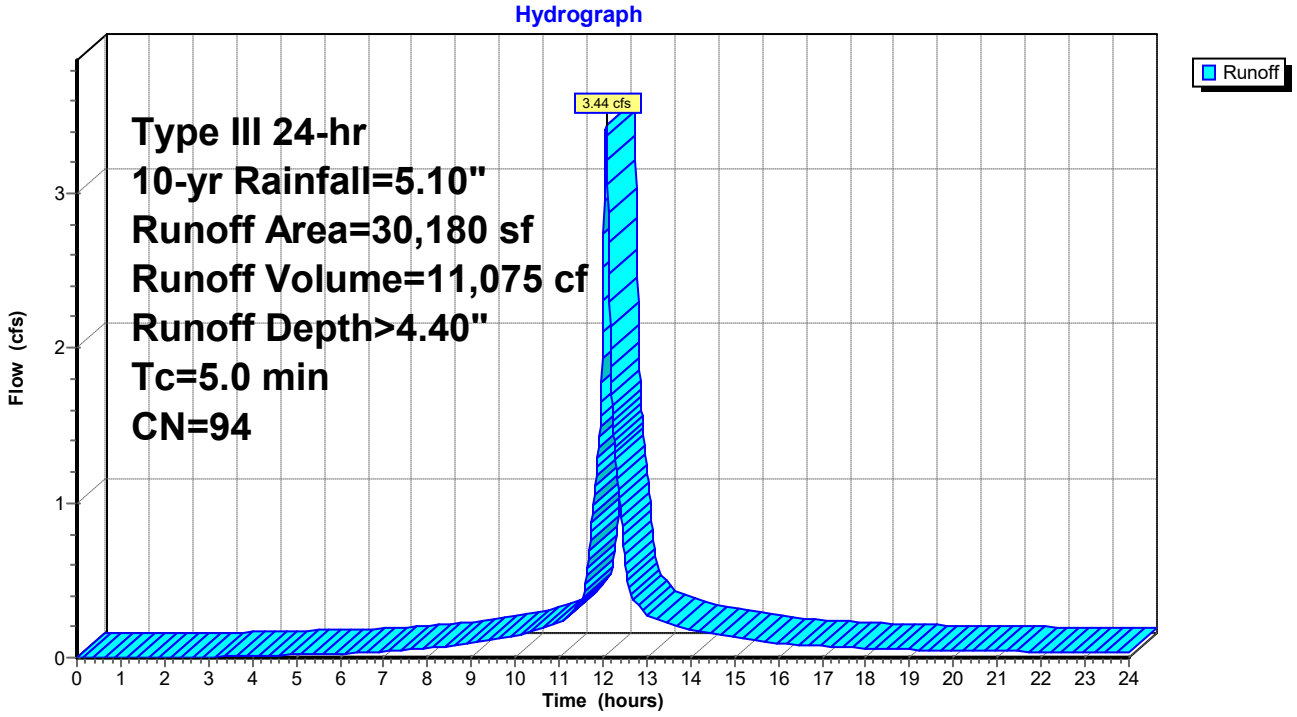
Runoff = 3.44 cfs @ 12.07 hrs, Volume= 11,075 cf, Depth> 4.40"
Routed to Pond PP03 : Por Pvt-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	23,042	98	Impervious
*	0	69	Lawn B
*	7,138	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	30,180	94	Weighted Average
	7,138		23.65% Pervious Area
	23,042		76.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D3: WS-D3



Summary for Subcatchment D4: WS-D4

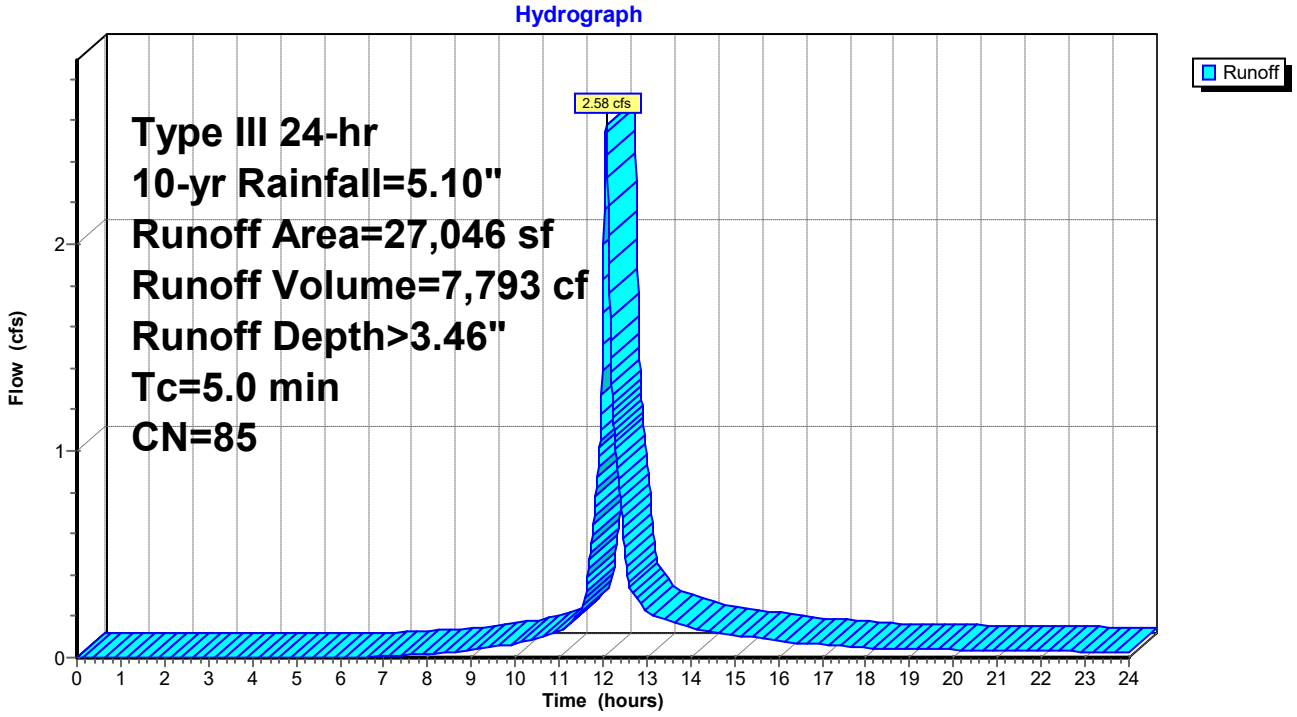
Runoff = 2.58 cfs @ 12.07 hrs, Volume= 7,793 cf, Depth> 3.46"
Routed to Pond PP07 : Por Pvt-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	14,753	98	Impervious
*	12,293	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	27,046	85	Weighted Average
	12,293		45.45% Pervious Area
	14,753		54.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D4: WS-D4



Summary for Subcatchment D5: WS-D5

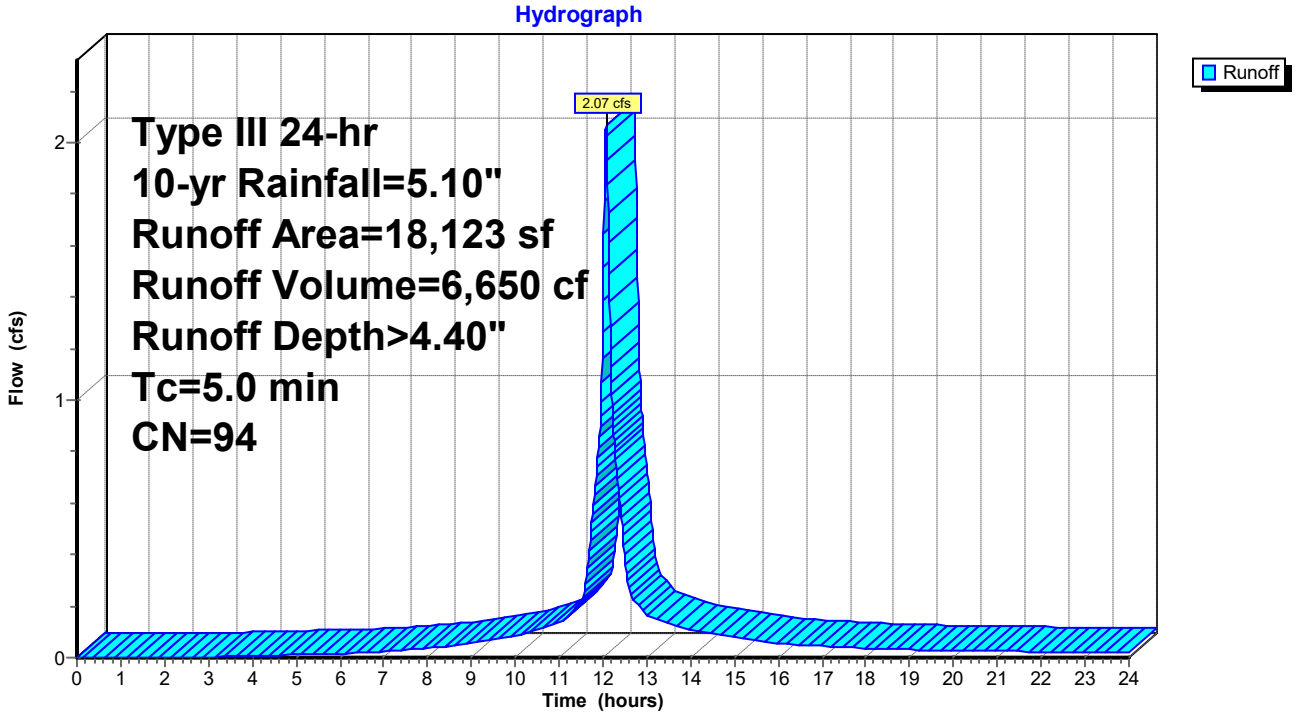
Runoff = 2.07 cfs @ 12.07 hrs, Volume= 6,650 cf, Depth> 4.40"
Routed to Pond PP02 : Por Pvt-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	14,849	98	Impervious
*	0	69	Lawn B
*	720	79	Lawn C
*	0	60	Forest B
*	2,554	73	Forest C
	18,123	94	Weighted Average
	3,274		18.07% Pervious Area
	14,849		81.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D5: WS-D5



Summary for Subcatchment D6: WS-D6

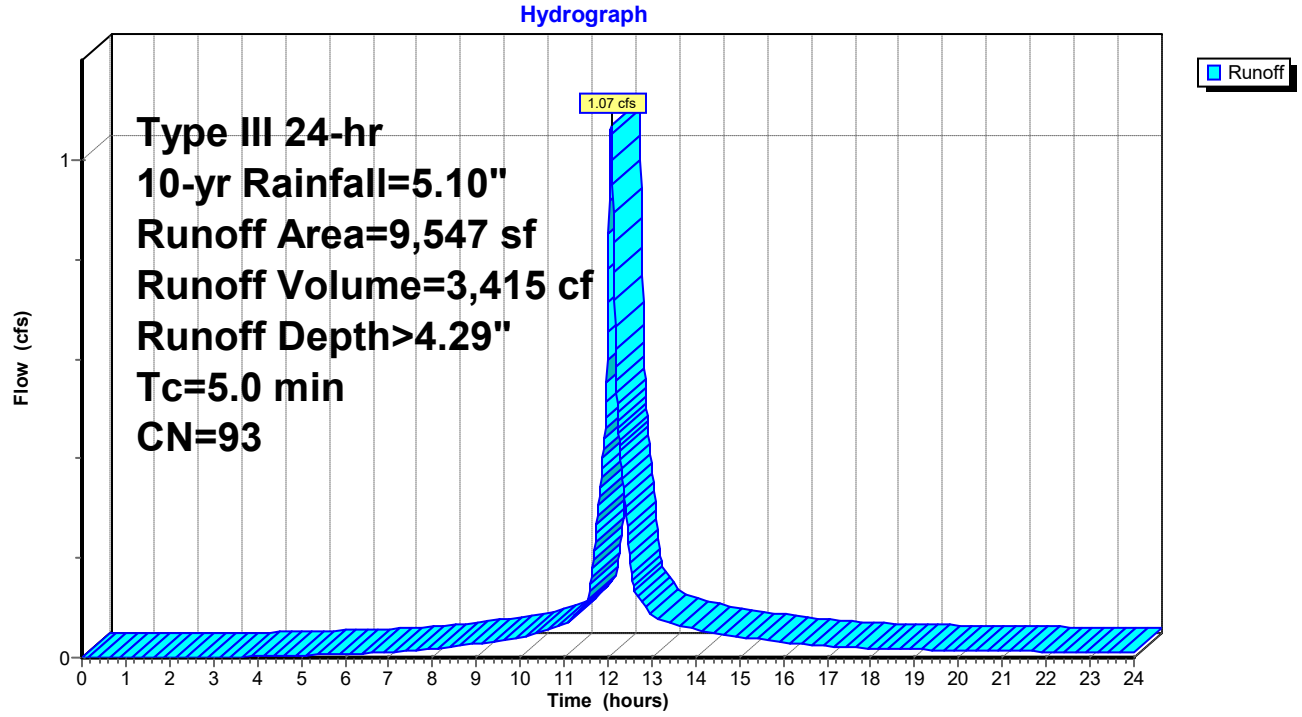
Runoff = 1.07 cfs @ 12.07 hrs, Volume= 3,415 cf, Depth> 4.29"
Routed to Pond PP04 : Por Pvt-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	6,988	98	Impervious
*	0	69	Lawn B
*	2,559	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	9,547	93	Weighted Average
	2,559		26.80% Pervious Area
	6,988		73.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D6: WS-D6



Summary for Subcatchment D7: WS-D7

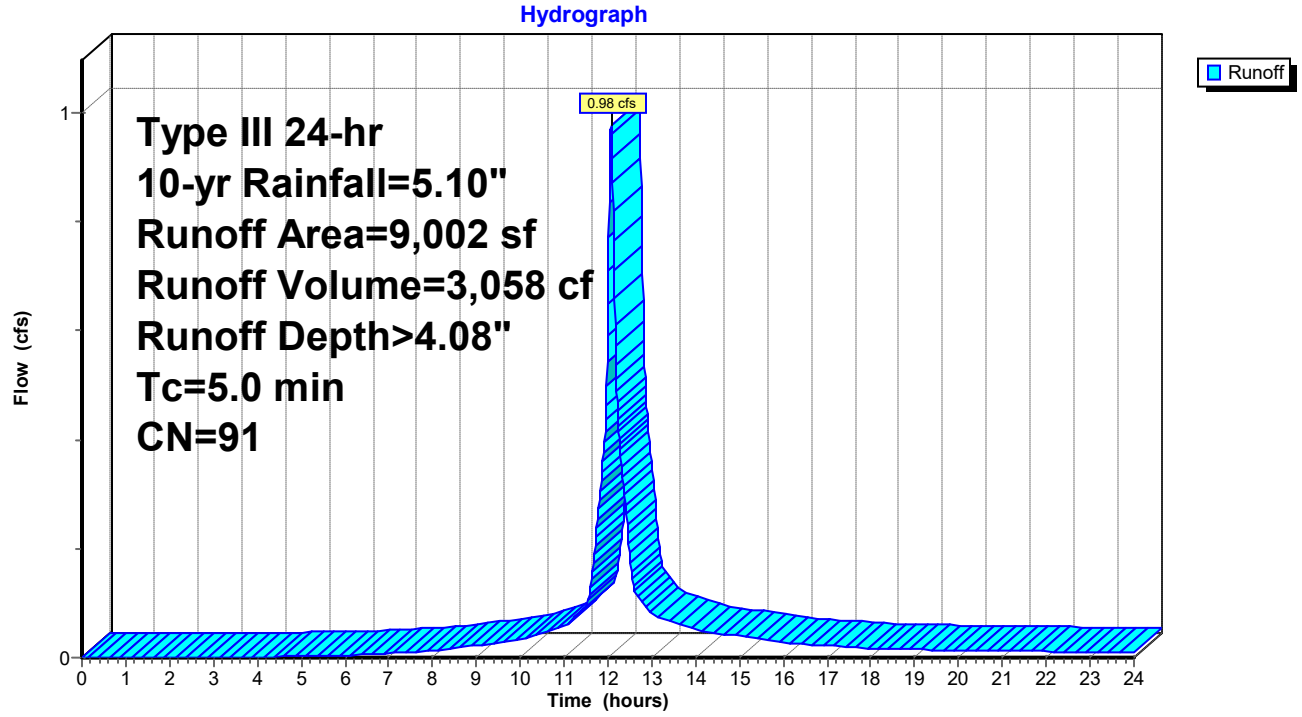
Runoff = 0.98 cfs @ 12.07 hrs, Volume= 3,058 cf, Depth> 4.08"
Routed to Pond PP05 : Por Pvt-05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	6,727	98	Impervious
*	1,674	69	Lawn B
*	601	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	9,002	91	Weighted Average
	2,275		25.27% Pervious Area
	6,727		74.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D7: WS-D7



Summary for Subcatchment D8: WS-D8

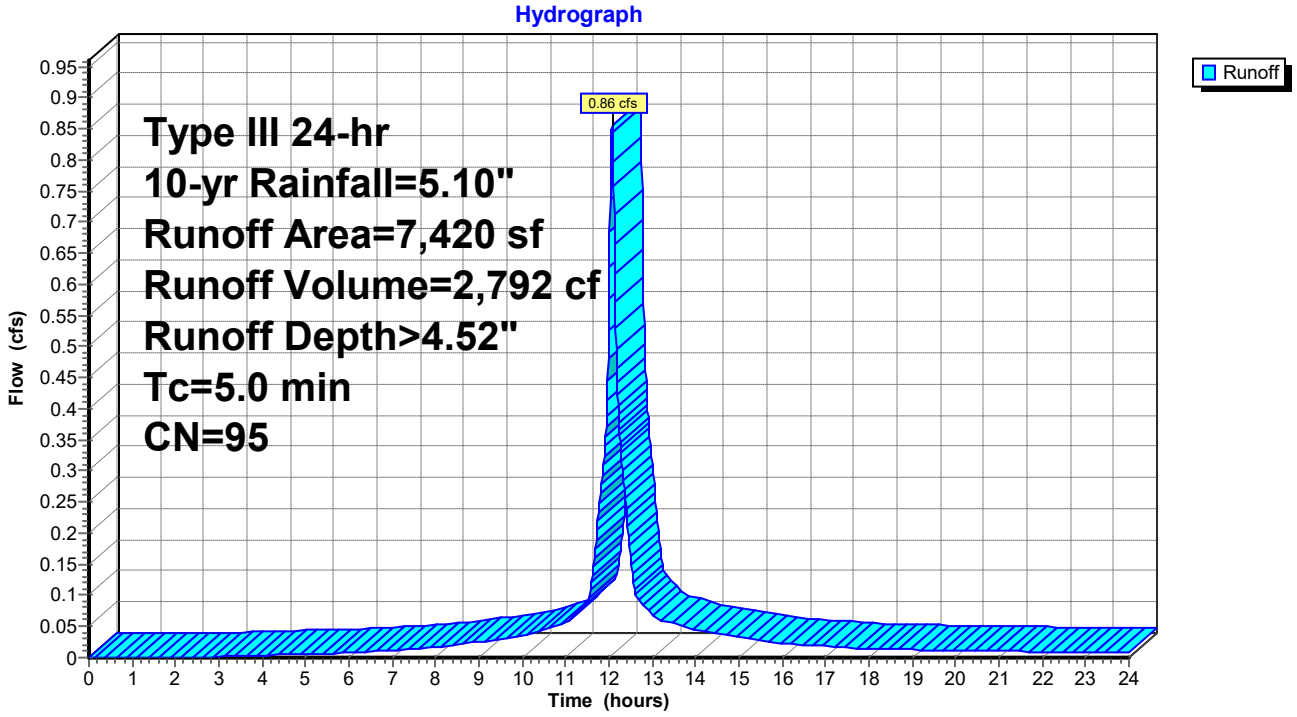
Runoff = 0.86 cfs @ 12.07 hrs, Volume= 2,792 cf, Depth> 4.52"
Routed to Pond PP06 : Por Pvt-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	6,549	98	Impervious
*	871	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	7,420	95	Weighted Average
	871		11.74% Pervious Area
	6,549		88.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D8: WS-D8



Summary for Subcatchment E1: WS-E1

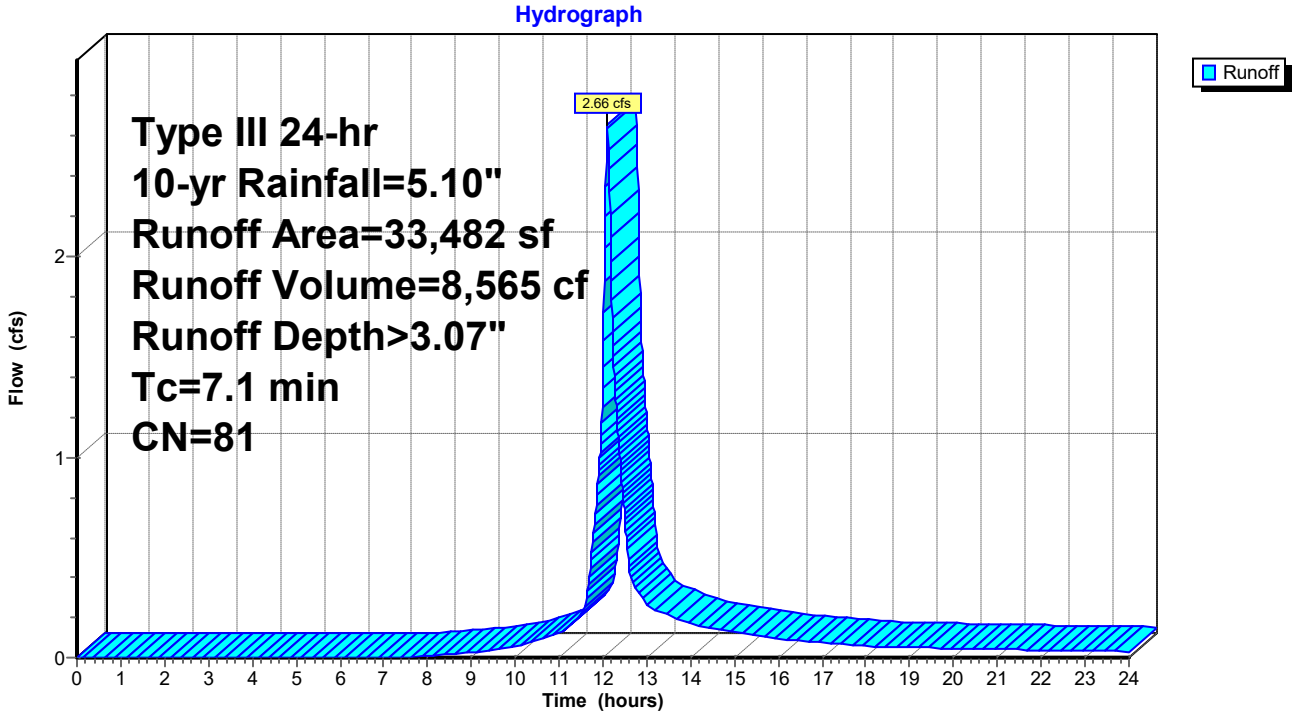
Runoff = 2.66 cfs @ 12.10 hrs, Volume= 8,565 cf, Depth> 3.07"
Routed to Pond UI02 : Und Inf 02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	10,193	98	Impervious
*	1,931	69	Lawn B
*	9,074	79	Lawn C
*	3,193	60	Forest B
*	9,091	73	Forest C
	33,482	81	Weighted Average
	23,289		69.56% Pervious Area
	10,193		30.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1					**Direct Entry,**

Subcatchment E1: WS-E1



Summary for Subcatchment E2: WS-E2

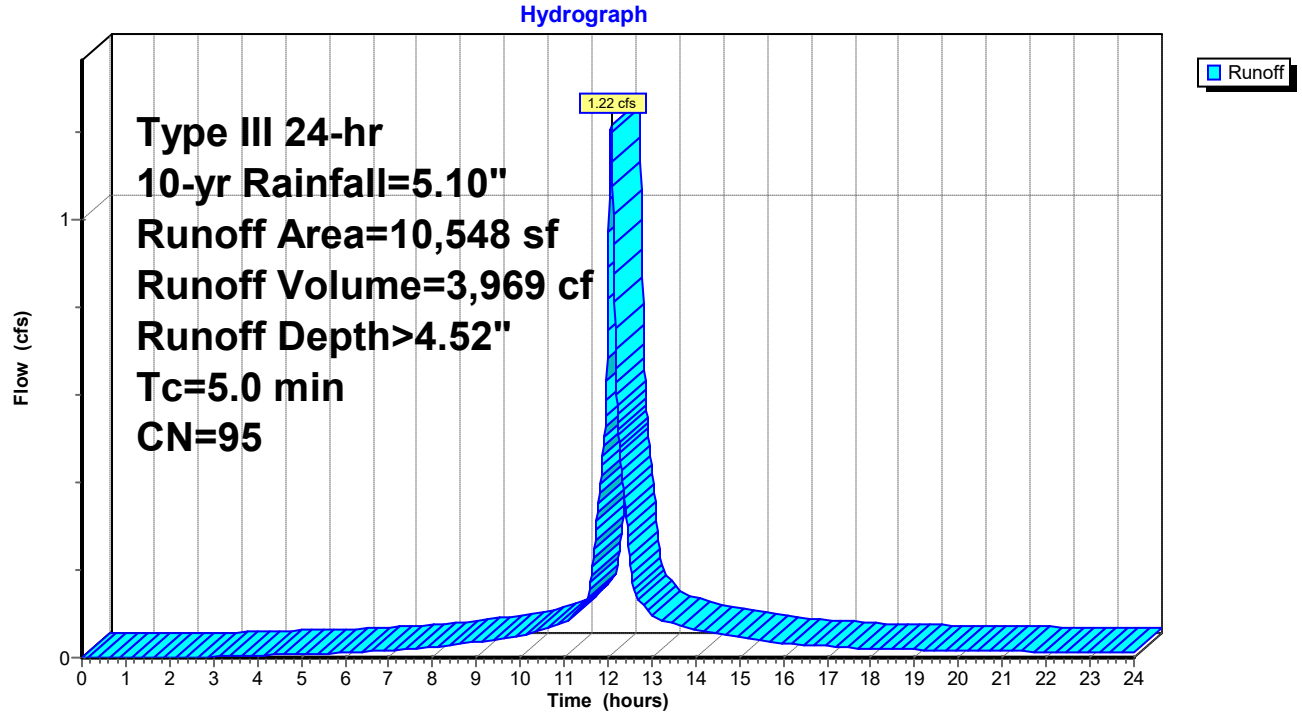
Runoff = 1.22 cfs @ 12.07 hrs, Volume= 3,969 cf, Depth> 4.52"
Routed to Pond RG04 : Rain Garden-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	8,740	98	Impervious
*	0	69	Lawn B
*	1,808	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	10,548	95	Weighted Average
	1,808		17.14% Pervious Area
	8,740		82.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment E2: WS-E2



Summary for Subcatchment R4: Roof-04

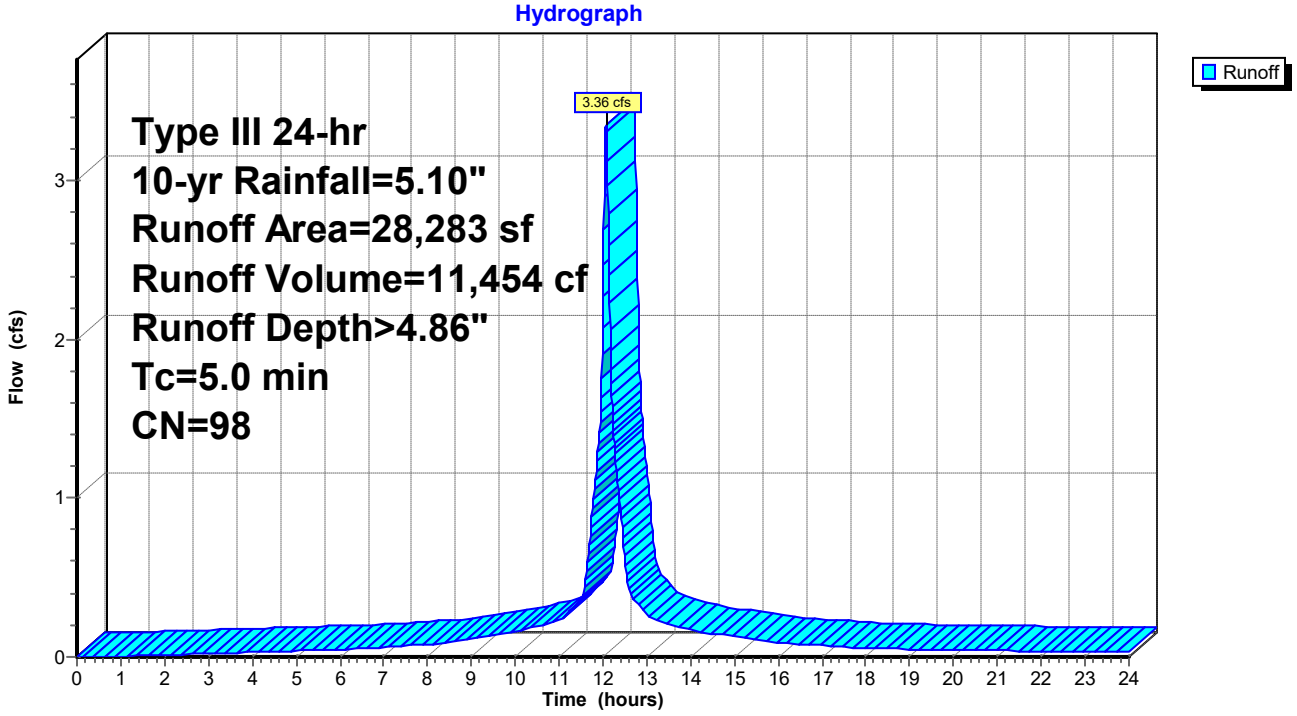
Runoff = 3.36 cfs @ 12.07 hrs, Volume= 11,454 cf, Depth> 4.86"
Routed to Pond UI01 : Und Inf 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	28,283	98	Impervious
	28,283		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment R4: Roof-04



Summary for Subcatchment R5: Roof-05

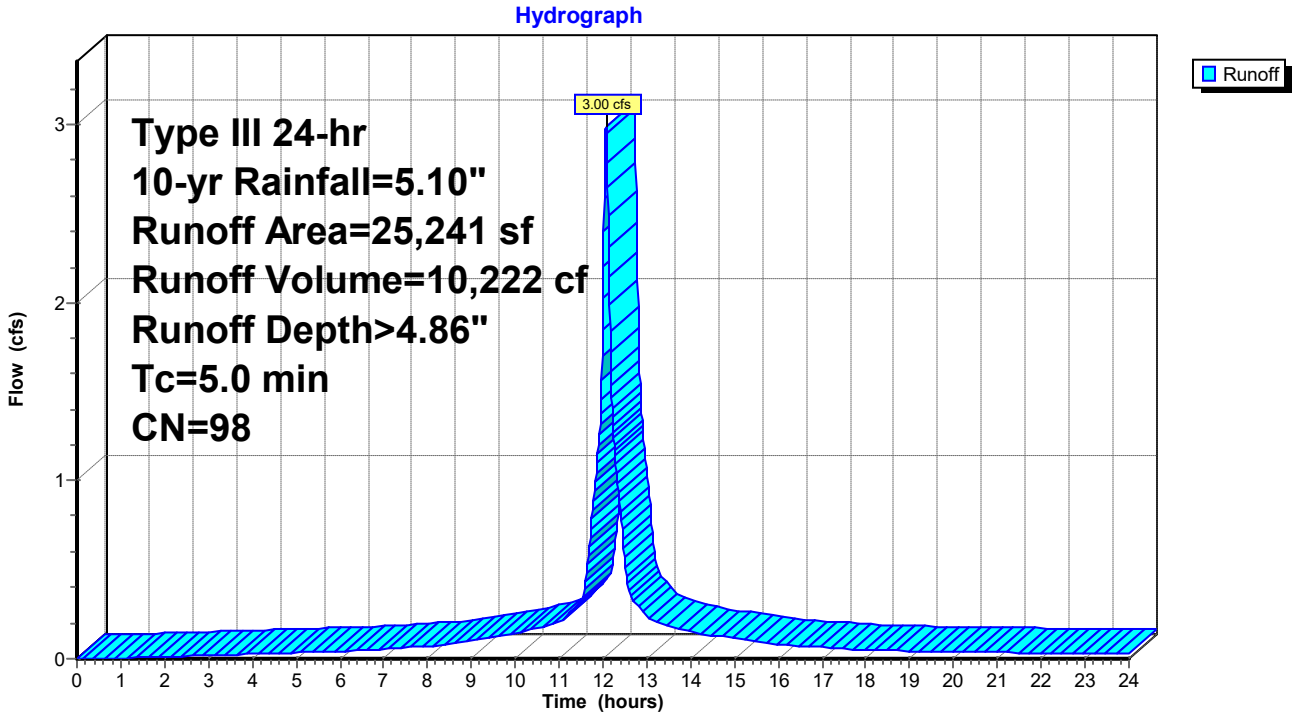
Runoff = 3.00 cfs @ 12.07 hrs, Volume= 10,222 cf, Depth> 4.86"
Routed to Pond UI01 : Und Inf 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

	Area (sf)	CN	Description
*	25,241	98	Impervious
*	0	79	Lawn C
	25,241	98	Weighted Average
	25,241		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment R5: Roof-05



Summary for Pond 13P: Por Pvt-D2A

Porous Pavement in Parking Spaces Only

Inflow Area = 16,536 sf, 85.26% Impervious, Inflow Depth > 4.77" for 10-yr event
Inflow = 1.85 cfs @ 12.07 hrs, Volume= 6,568 cf
Outflow = 0.74 cfs @ 12.40 hrs, Volume= 4,370 cf, Atten= 60%, Lag= 19.7 min
Primary = 0.74 cfs @ 12.40 hrs, Volume= 4,370 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 14P : Por Pvt-D2B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 58.06' @ 12.40 hrs Surf.Area= 2,848 sf Storage= 3,506 cf

Plug-Flow detention time= 192.5 min calculated for 4,369 cf (67% of inflow)
Center-of-Mass det. time= 100.7 min (862.4 - 761.7)

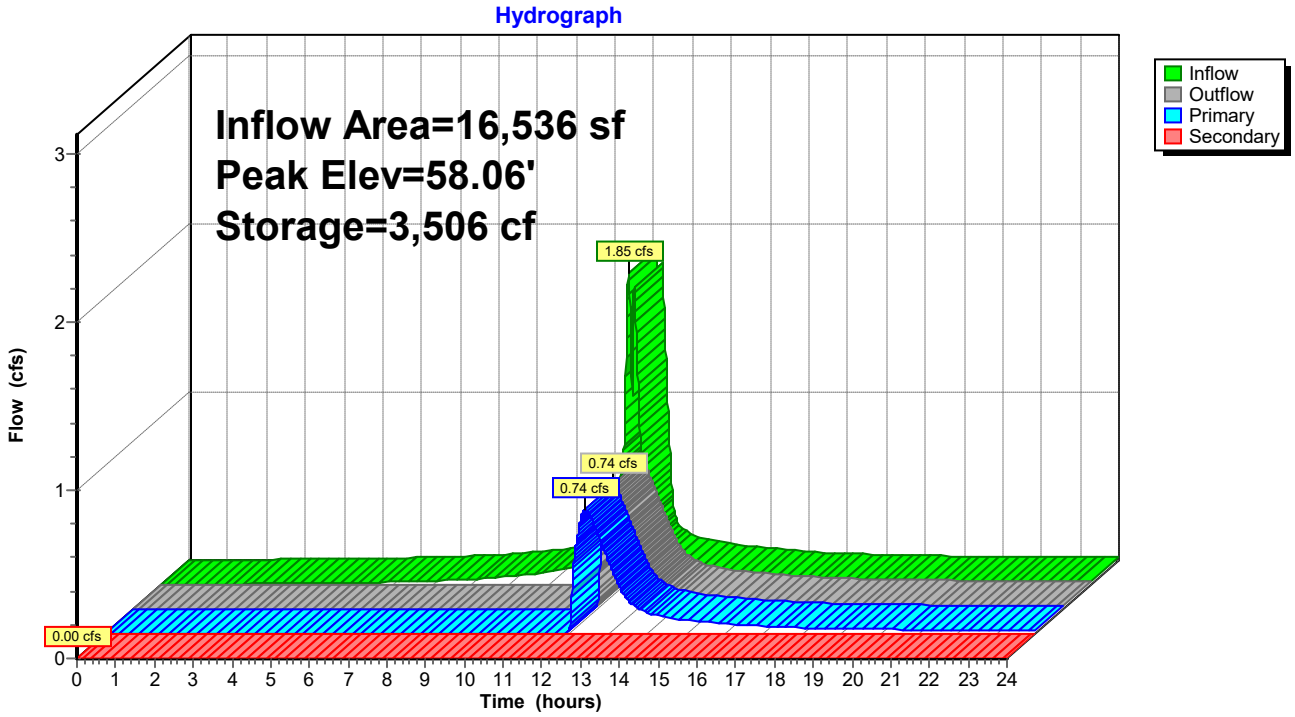
Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	5,683 cf	**20.00'W x 142.40'L x 5.00'H Porous Pavment** 14,240 cf Overall - 32 cf Embedded = 14,208 cf x 40.0% Voids
#2	56.84'	32 cf	**6.0" Round 6" underdrain** Inside #1 L= 162.0'
		5,715 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	56.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.84' / 56.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	59.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.74 cfs @ 12.40 hrs HW=58.06' TW=43.69' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.74 cfs @ 3.75 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=55.00' TW=53.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 13P: Por Pvt-D2A



Summary for Pond 14P: Por Pvt-D2B

Porous Pavement in Parking Spaces Only

Inflow Area = 1,998 sf, 46.45% Impervious, Inflow Depth > 3.17" for 10-yr event
Inflow = 0.18 cfs @ 12.07 hrs, Volume= 527 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 16P : Por Pvt-D2C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 54.66' @ 24.00 hrs Surf.Area= 796 sf Storage= 527 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

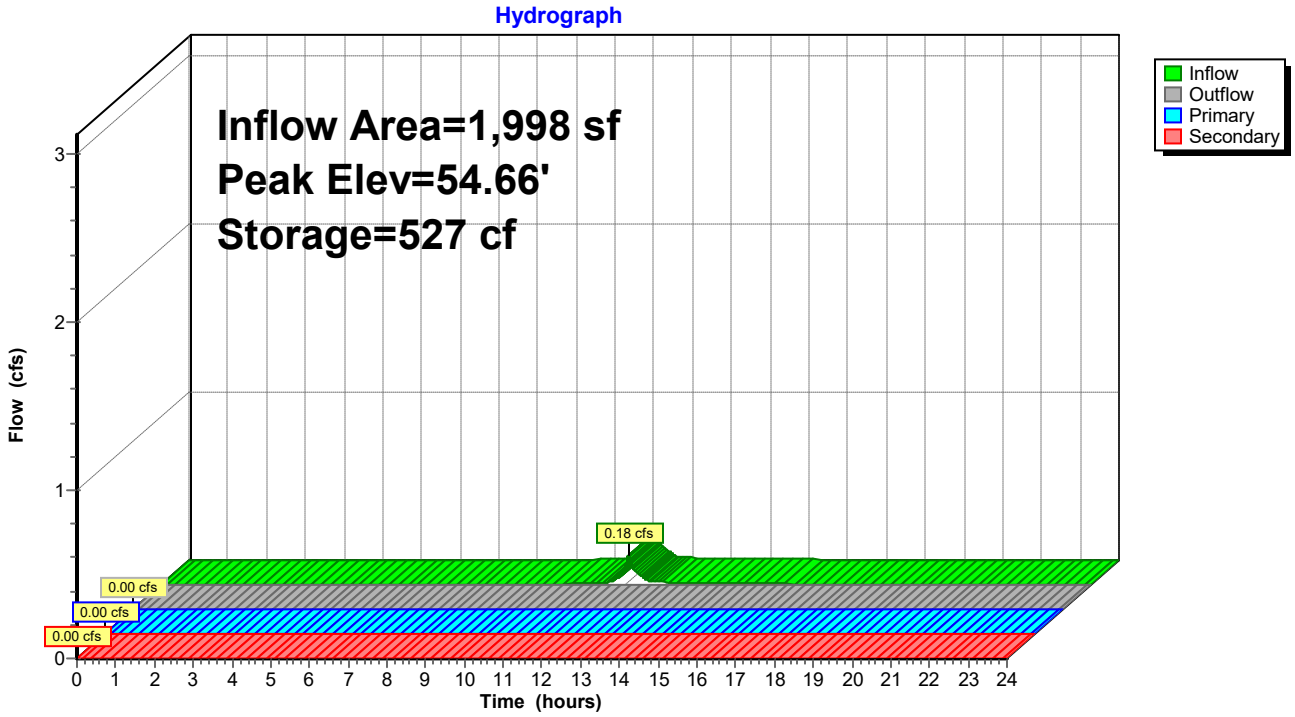
Volume	Invert	Avail.Storage	Storage Description
#1	53.00'	1,588 cf	**20.00'W x 39.80'L x 5.00'H Porous Pavment** 3,980 cf Overall - 11 cf Embedded = 3,969 cf x 40.0% Voids
#2	54.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 55.0'
		1,598 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	54.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 54.84' / 54.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	57.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=53.00' TW=42.54' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=53.00' TW=51.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 14P: Por Pvt-D2B



Summary for Pond 15P: Por Pvt-D1H

Porous Pavement in Parking Spaces Only

Inflow Area = 36,236 sf, 92.20% Impervious, Inflow Depth > 4.63" for 10-yr event
Inflow = 4.18 cfs @ 12.07 hrs, Volume= 13,972 cf
Outflow = 1.93 cfs @ 12.22 hrs, Volume= 11,115 cf, Atten= 54%, Lag= 8.8 min
Primary = 1.04 cfs @ 12.22 hrs, Volume= 10,618 cf
Routed to Pond YD33 : YD-33
Secondary = 0.89 cfs @ 12.22 hrs, Volume= 497 cf
Routed to Pond 13P : Por Pvt-D2A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 59.23' @ 12.22 hrs Surf.Area= 3,618 sf Storage= 6,150 cf

Plug-Flow detention time= 172.7 min calculated for 11,111 cf (80% of inflow)
Center-of-Mass det. time= 95.4 min (850.7 - 755.3)

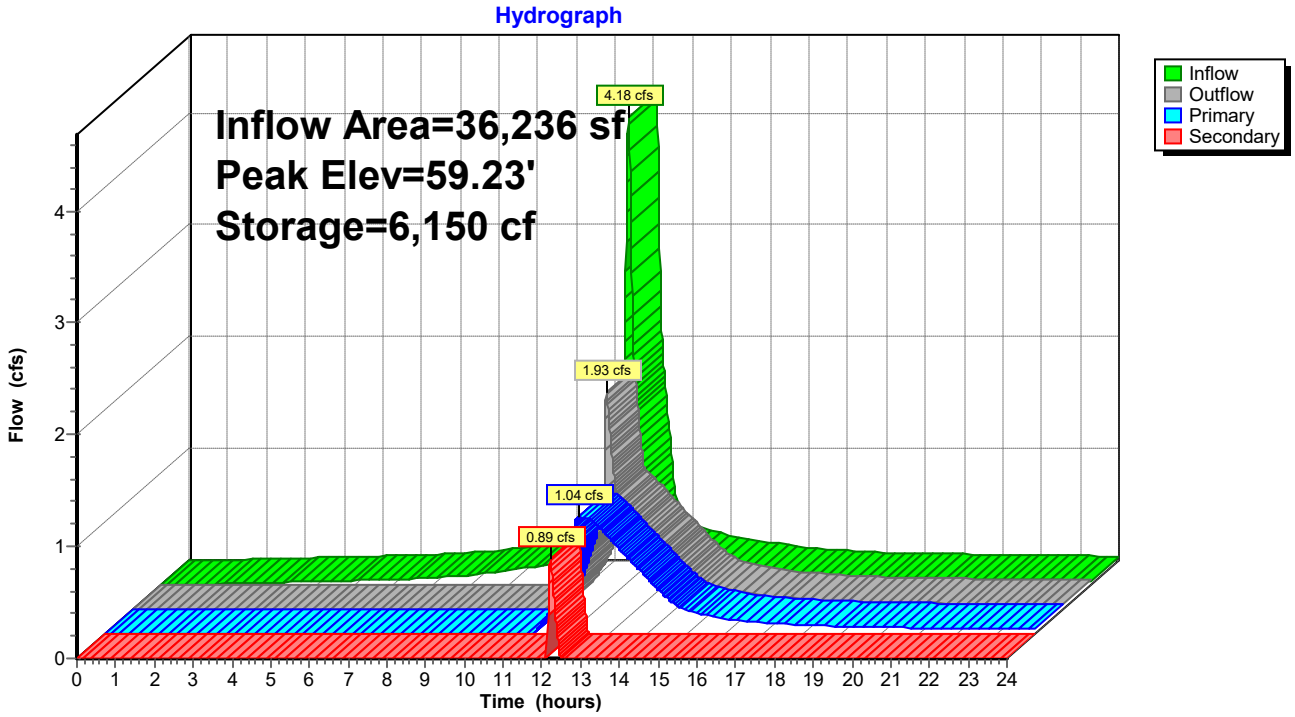
Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	7,220 cf	**20.00'W x 180.90'L x 5.00'H Porous Pavment** 18,090 cf Overall - 40 cf Embedded = 18,050 cf x 40.0% Voids
#2	56.84'	40 cf	**6.0" Round 6" underdrain** Inside #1 L= 204.0'
		7,260 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	56.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.84' / 56.67' S= 0.0567 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	59.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.04 cfs @ 12.22 hrs HW=59.23' TW=57.28' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.04 cfs @ 5.32 fps)

Secondary OutFlow Max=0.89 cfs @ 12.22 hrs HW=59.23' TW=57.76' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.89 cfs @ 0.70 fps)

Pond 15P: Por Pvt-D1H



Summary for Pond 16P: Por Pvt-D2C

Porous Pavement in Parking Spaces Only

Inflow Area = 6,166 sf, 86.99% Impervious, Inflow Depth > 4.46" for 10-yr event
Inflow = 0.69 cfs @ 12.07 hrs, Volume= 2,289 cf
Outflow = 0.50 cfs @ 12.14 hrs, Volume= 1,684 cf, Atten= 28%, Lag= 4.1 min
Primary = 0.50 cfs @ 12.14 hrs, Volume= 1,684 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 18P : Por Pvt-D2D

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 53.54' @ 12.14 hrs Surf.Area= 800 sf Storage= 819 cf

Plug-Flow detention time= 170.2 min calculated for 1,683 cf (74% of inflow)
Center-of-Mass det. time= 81.1 min (840.0 - 758.9)

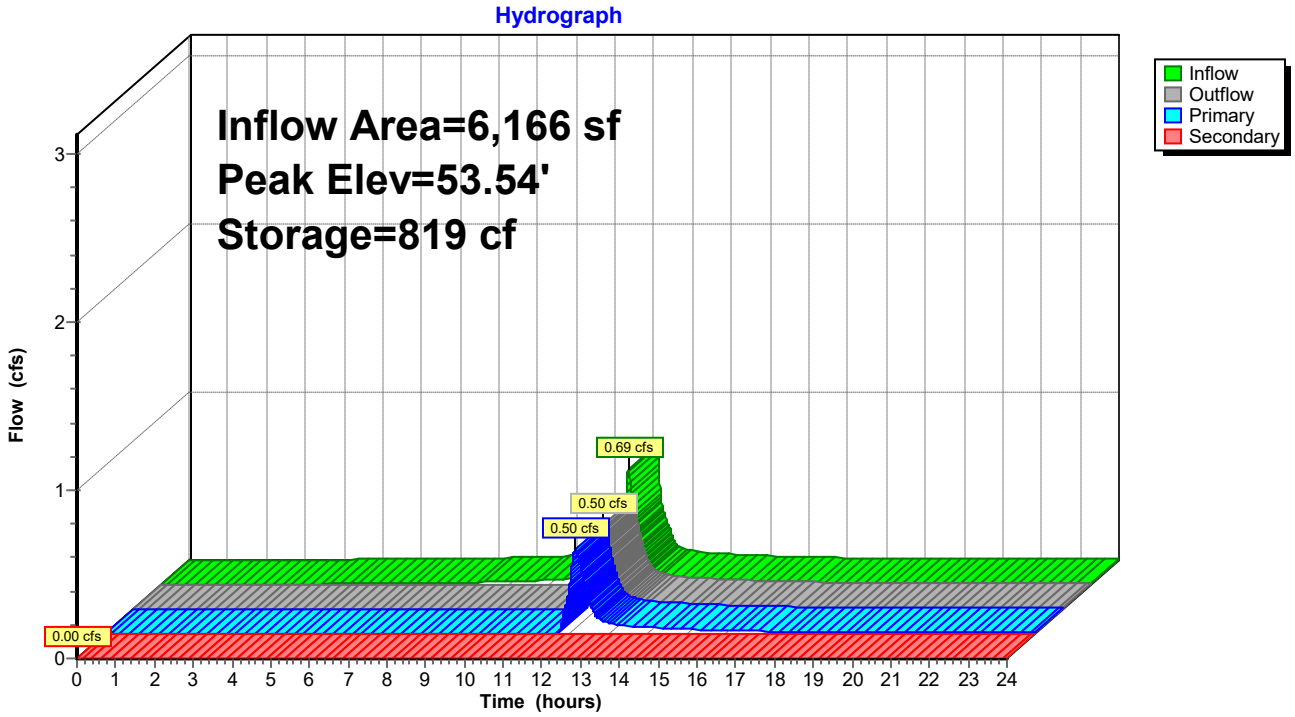
Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	52.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 55.0'
		1,606 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	52.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 52.84' / 52.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	55.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.50 cfs @ 12.14 hrs HW=53.54' TW=43.77' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.50 cfs @ 2.54 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=51.00' TW=49.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 16P: Por Pvt-D2C



Summary for Pond 18P: Por Pvt-D2D

Porous Pavement in Parking Spaces Only

Inflow Area = 6,023 sf, 88.83% Impervious, Inflow Depth > 4.51" for 10-yr event
Inflow = 0.68 cfs @ 12.07 hrs, Volume= 2,262 cf
Outflow = 0.49 cfs @ 12.14 hrs, Volume= 1,656 cf, Atten= 27%, Lag= 4.1 min
Primary = 0.49 cfs @ 12.14 hrs, Volume= 1,656 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 19P : Por Pvt-D2E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 51.53' @ 12.14 hrs Surf.Area= 800 sf Storage= 815 cf

Plug-Flow detention time= 171.7 min calculated for 1,656 cf (73% of inflow)
Center-of-Mass det. time= 82.0 min (839.7 - 757.7)

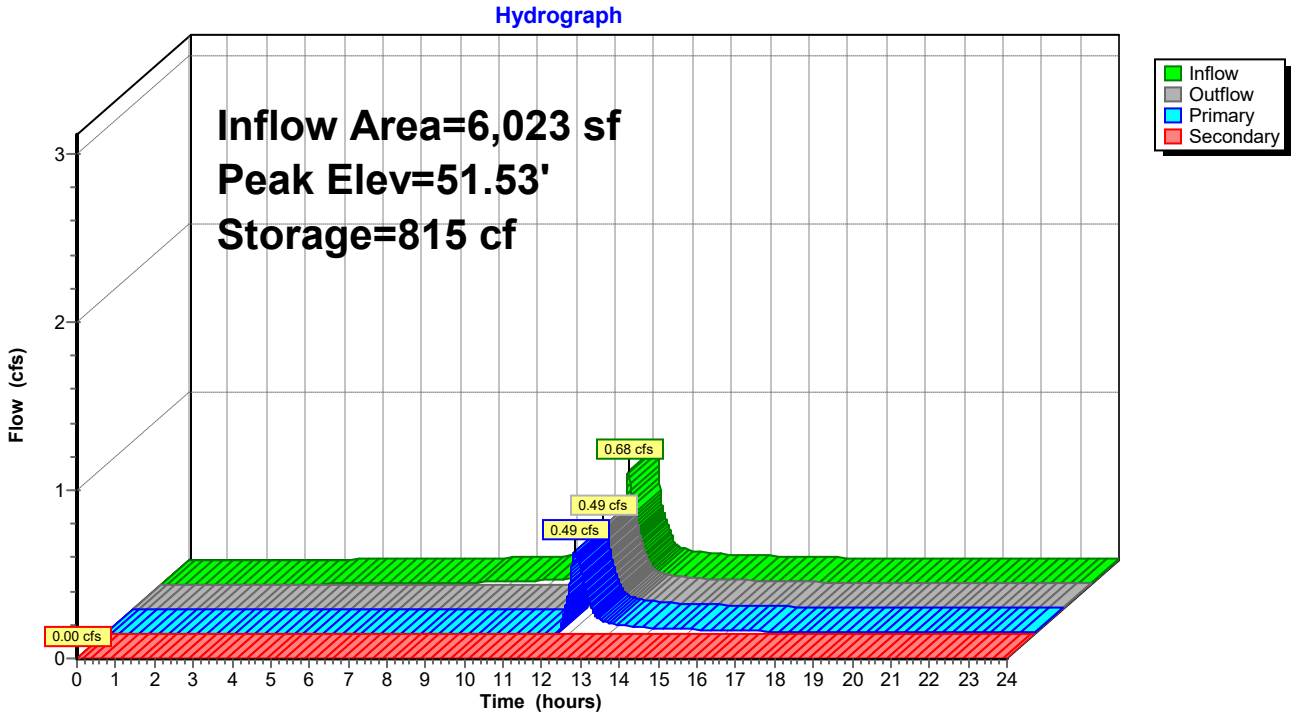
Volume	Invert	Avail.Storage	Storage Description
#1	49.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	50.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 54.0'
		1,606 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	50.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.84' / 50.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	53.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.49 cfs @ 12.14 hrs HW=51.53' TW=43.77' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.49 cfs @ 2.52 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=49.00' TW=47.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 18P: Por Pvt-D2D



Summary for Pond 19P: Por Pvt-D2E

Porous Pavement in Parking Spaces Only

Inflow Area = 6,016 sf, 88.30% Impervious, Inflow Depth > 4.48" for 10-yr event
Inflow = 0.68 cfs @ 12.07 hrs, Volume= 2,247 cf
Outflow = 0.49 cfs @ 12.14 hrs, Volume= 1,628 cf, Atten= 28%, Lag= 4.2 min
Primary = 0.49 cfs @ 12.14 hrs, Volume= 1,628 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 20P : Por Pvt-D2F

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 49.52' @ 12.14 hrs Surf.Area= 819 sf Storage= 831 cf

Plug-Flow detention time= 174.9 min calculated for 1,628 cf (72% of inflow)
Center-of-Mass det. time= 83.7 min (841.7 - 758.0)

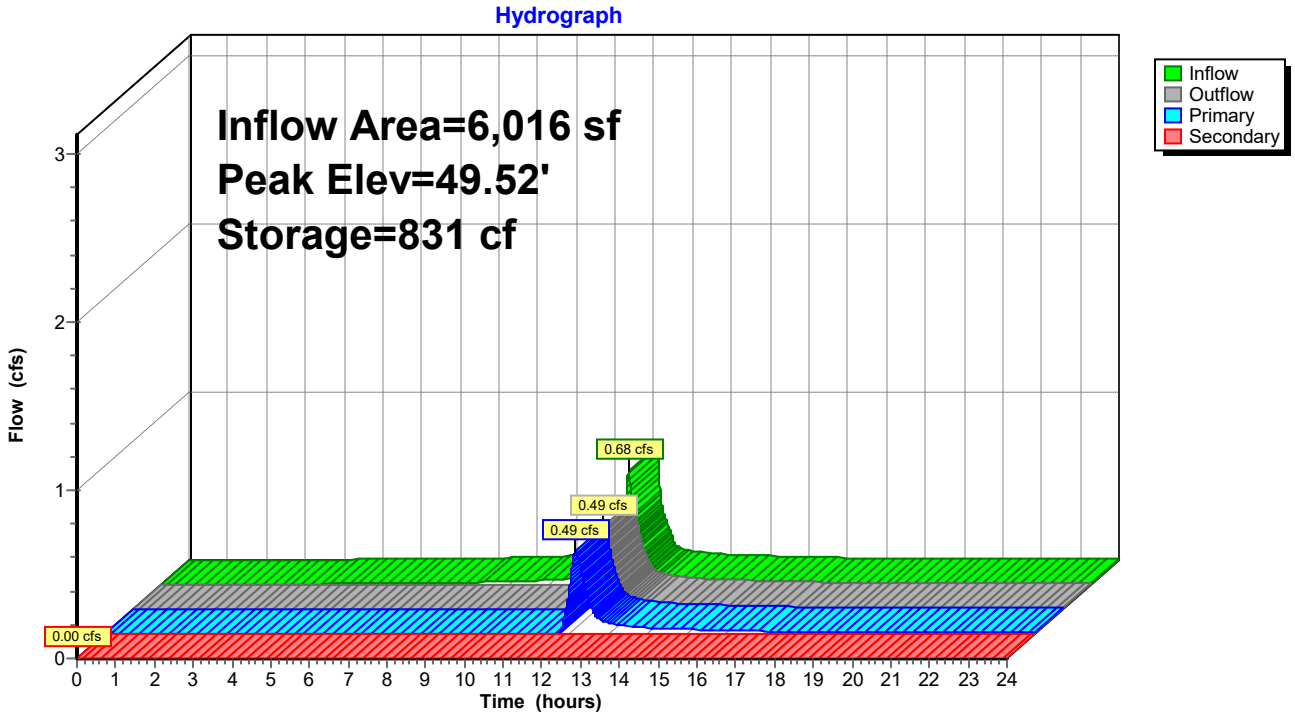
Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	1,634 cf	**20.00'W x 40.95'L x 5.00'H Porous Pavment** 4,095 cf Overall - 11 cf Embedded = 4,084 cf x 40.0% Voids
#2	48.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 54.0'
		1,644 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 48.84' / 48.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	51.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.49 cfs @ 12.14 hrs HW=49.52' TW=43.77' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.49 cfs @ 2.48 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=47.00' TW=45.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 19P: Por Pvt-D2E



Summary for Pond 20P: Por Pvt-D2F

Porous Pavement in Parking Spaces Only

Inflow Area = 5,836 sf, 90.88% Impervious, Inflow Depth > 4.56" for 10-yr event
Inflow = 0.66 cfs @ 12.07 hrs, Volume= 2,219 cf
Outflow = 0.49 cfs @ 12.14 hrs, Volume= 1,614 cf, Atten= 27%, Lag= 4.1 min
Primary = 0.49 cfs @ 12.14 hrs, Volume= 1,614 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 21P : Por Pvt-D2G

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 47.51' @ 12.14 hrs Surf.Area= 800 sf Storage= 811 cf

Plug-Flow detention time= 173.9 min calculated for 1,614 cf (73% of inflow)
Center-of-Mass det. time= 83.5 min (839.7 - 756.3)

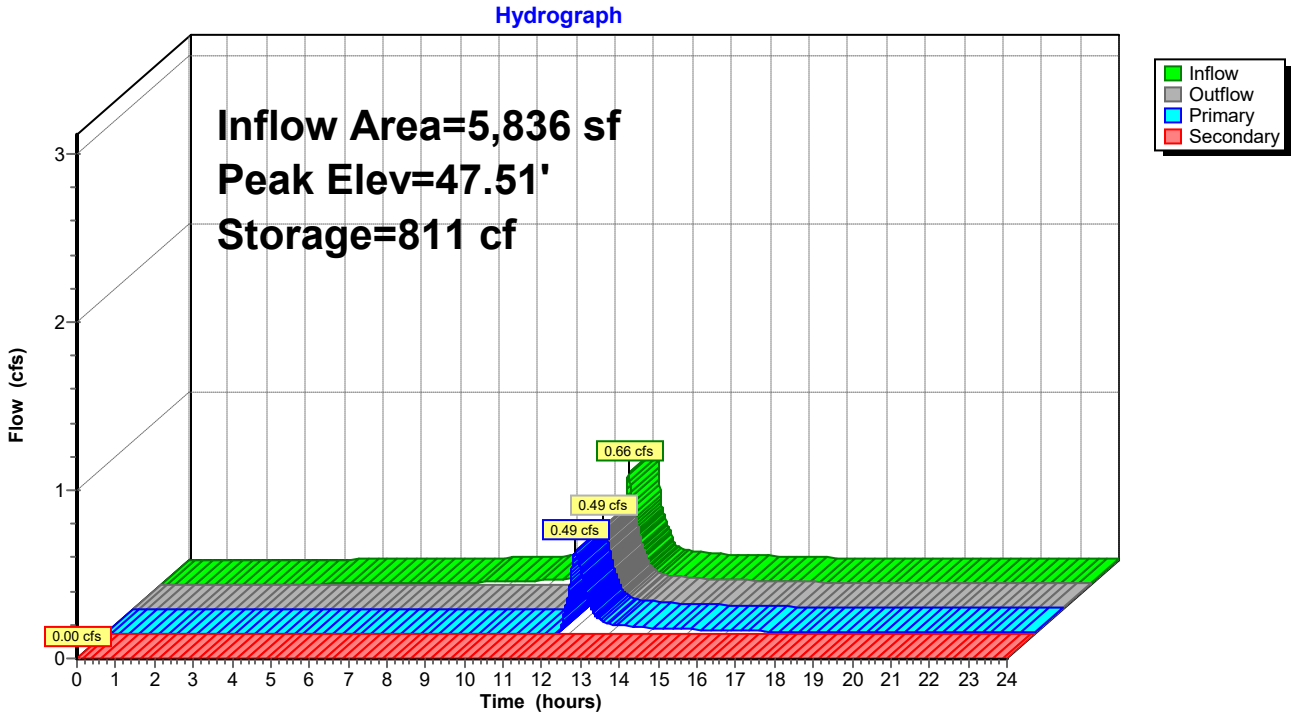
Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	46.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 57.0'
		1,607 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	46.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.84' / 46.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	49.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.48 cfs @ 12.14 hrs HW=47.51' TW=43.77' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.48 cfs @ 2.47 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.00' TW=42.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 20P: Por Pvt-D2F



Summary for Pond 21P: Por Pvt-D2G

Porous Pavement in Parking Spaces Only

Inflow Area = 3,234 sf, 56.68% Impervious, Inflow Depth > 3.76" for 10-yr event
Inflow = 0.33 cfs @ 12.07 hrs, Volume= 1,014 cf
Outflow = 0.01 cfs @ 14.92 hrs, Volume= 250 cf, Atten= 96%, Lag= 171.1 min
Primary = 0.01 cfs @ 14.92 hrs, Volume= 250 cf
Routed to Link Sub A : SUB A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.92' @ 14.92 hrs Surf.Area= 1,016 sf Storage= 780 cf

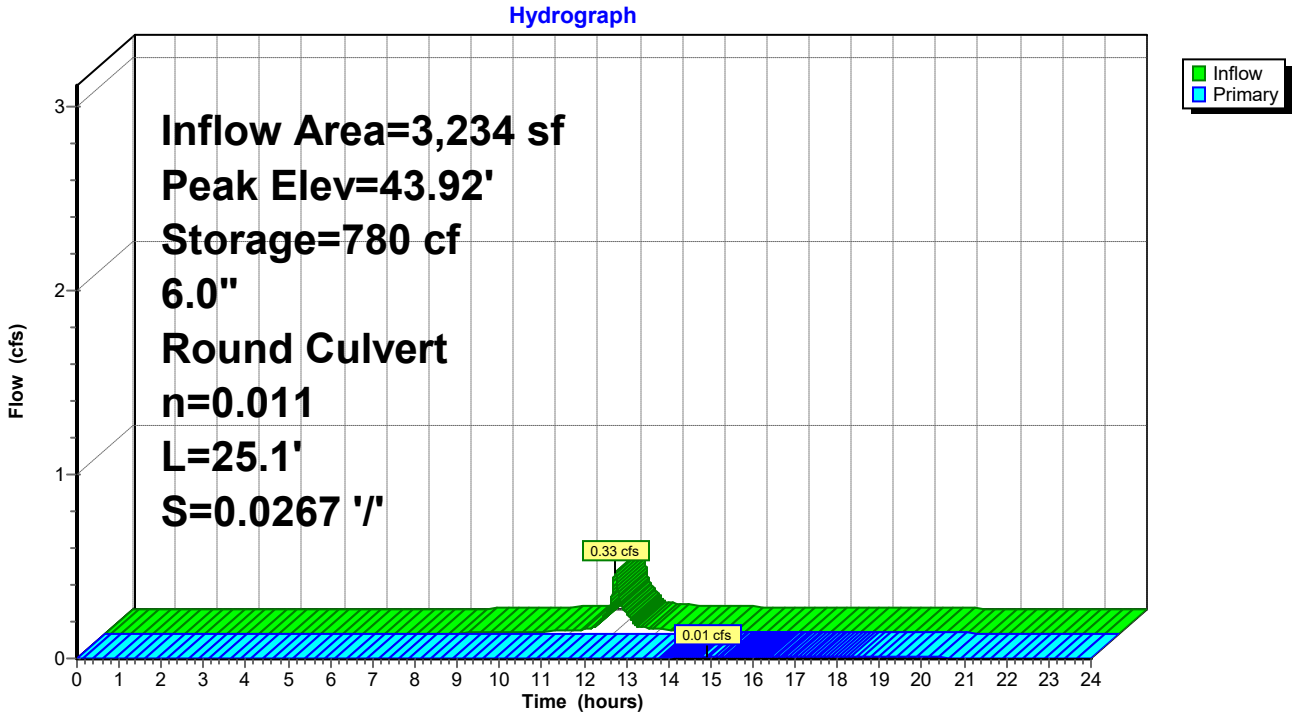
Plug-Flow detention time= 425.8 min calculated for 250 cf (25% of inflow)
Center-of-Mass det. time= 272.0 min (1,067.7 - 795.7)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	2,021 cf	**20.00'W x 50.80'L x 5.00'H Porous Pavment** 5,080 cf Overall - 27 cf Embedded = 5,053 cf x 40.0% Voids
#2	43.84'	27 cf	**6.0" Round 6" underdrain** Inside #1 L= 138.0'
		2,048 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	43.84'	**6.0" Round Culvert** L= 25.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.84' / 43.17' S= 0.0267 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf

Primary OutFlow Max=0.01 cfs @ 14.92 hrs HW=43.92' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.01 cfs @ 0.74 fps)

Pond 21P: Por Pvt-D2G



Summary for Pond DB01: Detention-01

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 60,955 sf, 0.00% Impervious, Inflow Depth > 1.45" for 10-yr event
Inflow = 1.51 cfs @ 12.23 hrs, Volume= 7,366 cf
Outflow = 1.48 cfs @ 12.28 hrs, Volume= 7,366 cf, Atten= 2%, Lag= 2.7 min
Primary = 1.48 cfs @ 12.28 hrs, Volume= 7,366 cf
Routed to Pond DMH13 : DMH-13

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 47.55' @ 12.28 hrs Surf.Area= 397 sf Storage= 145 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.8 min (877.4 - 876.6)

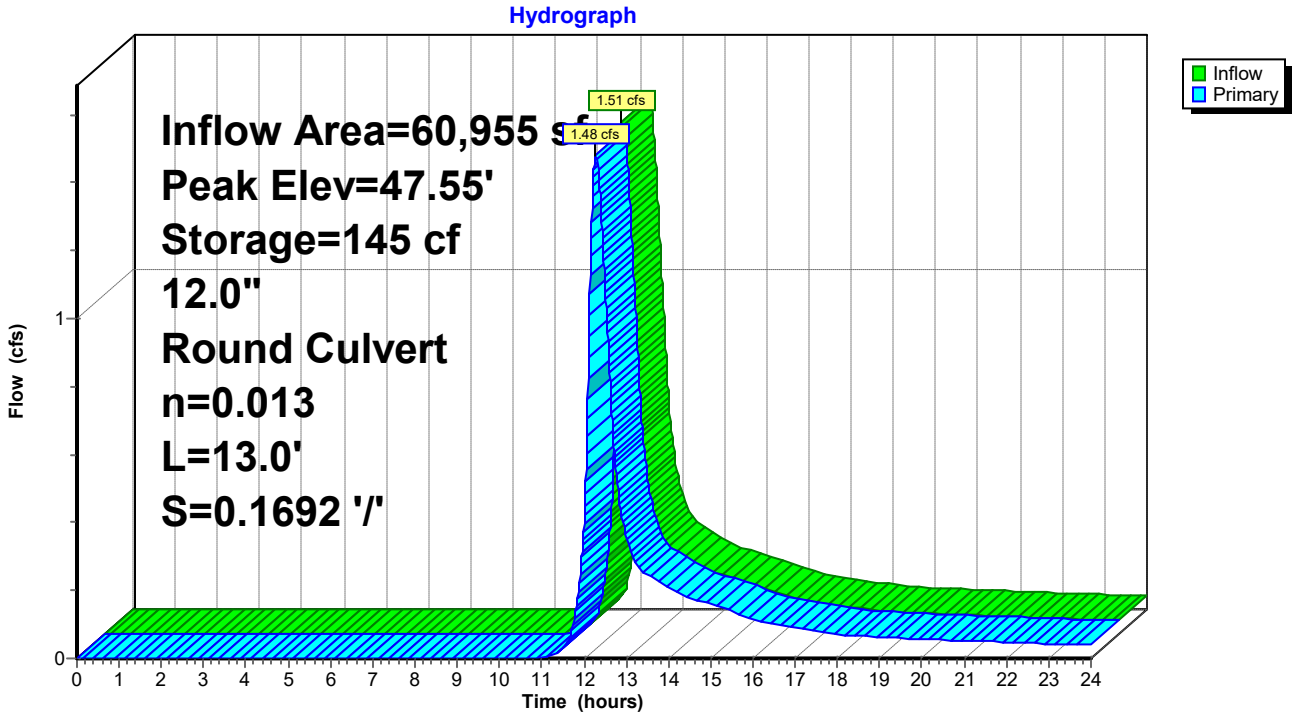
Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	1,719 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
47.00	128	0	0
48.00	614	371	371
49.00	2,082	1,348	1,719

Device	Routing	Invert	Outlet Devices
#1	Primary	46.80'	**12.0" Round Culvert** L= 13.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.80' / 44.60' S= 0.1692 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.48 cfs @ 12.28 hrs HW=47.55' TW=43.81' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.48 cfs @ 2.33 fps)

Pond DB01: Detention-01



Summary for Pond DB02: Detention-02

Inflow Area = 10,676 sf, 0.00% Impervious, Inflow Depth > 2.61" for 10-yr event
Inflow = 0.53 cfs @ 12.25 hrs, Volume= 2,321 cf
Outflow = 0.29 cfs @ 12.55 hrs, Volume= 1,770 cf, Atten= 46%, Lag= 18.3 min
Primary = 0.29 cfs @ 12.55 hrs, Volume= 1,770 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.76' @ 12.55 hrs Surf.Area= 1,544 sf Storage= 856 cf

Plug-Flow detention time= 148.3 min calculated for 1,770 cf (76% of inflow)
Center-of-Mass det. time= 63.6 min (903.5 - 839.9)

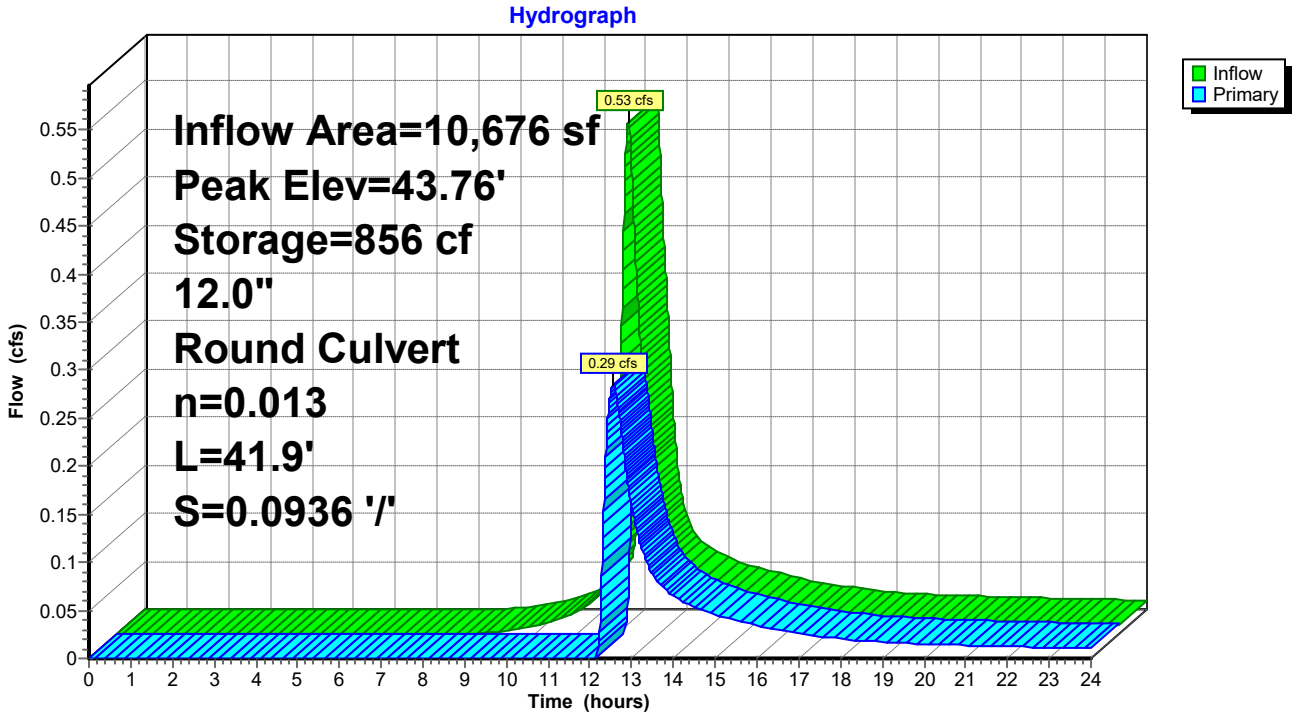
Volume	Invert	Avail.Storage	Storage Description
#1	43.00'	3,637 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.00	703	0	0
44.00	1,807	1,255	1,255
45.00	2,956	2,382	3,637

Device	Routing	Invert	Outlet Devices
#1	Primary	43.50'	**12.0" Round Culvert** L= 41.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.50' / 39.58' S= 0.0936 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.29 cfs @ 12.55 hrs HW=43.76' TW=39.91' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.29 cfs @ 1.74 fps)

Pond DB02: Detention-02



Summary for Pond DB03: Detention-03

Inflow Area = 13,682 sf, 0.00% Impervious, Inflow Depth > 2.44" for 10-yr event
Inflow = 0.71 cfs @ 12.18 hrs, Volume= 2,779 cf
Outflow = 0.33 cfs @ 12.50 hrs, Volume= 2,122 cf, Atten= 54%, Lag= 19.2 min
Primary = 0.33 cfs @ 12.50 hrs, Volume= 2,122 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.78' @ 12.50 hrs Surf.Area= 1,770 sf Storage= 1,032 cf

Plug-Flow detention time= 150.1 min calculated for 2,122 cf (76% of inflow)
Center-of-Mass det. time= 64.4 min (905.7 - 841.3)

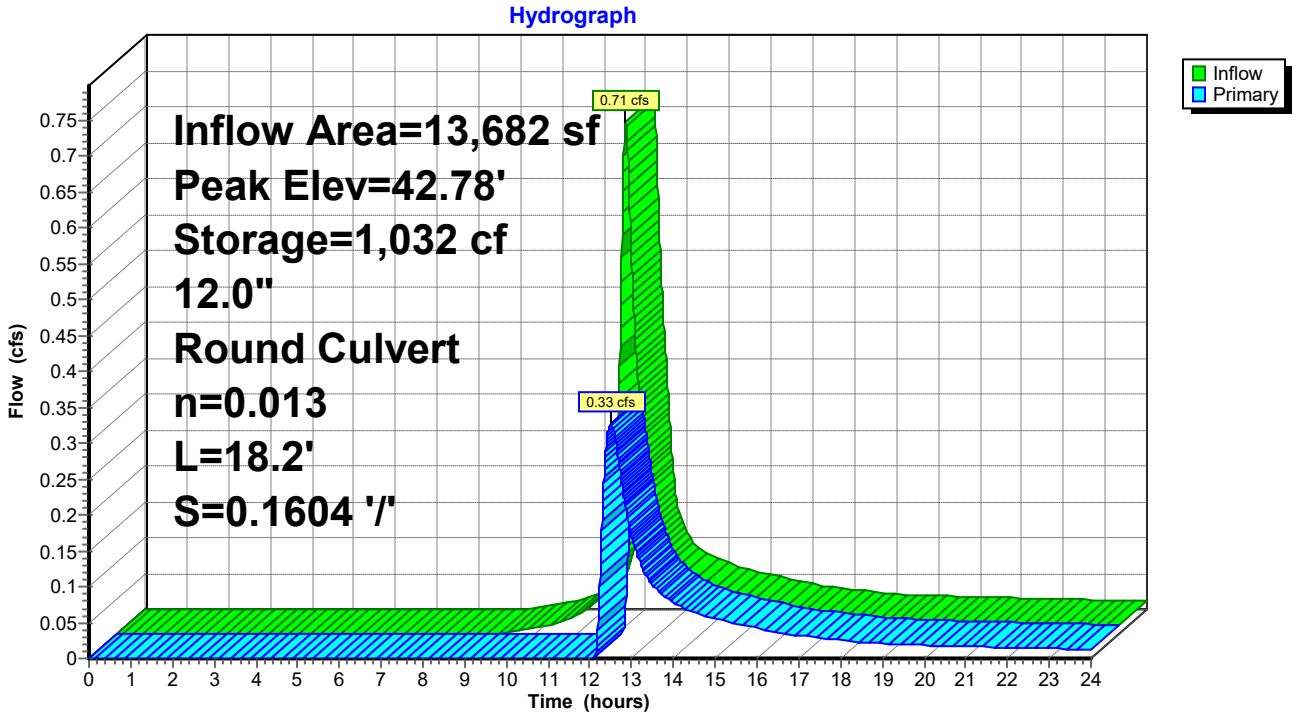
Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	12,357 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	870	0	0
43.00	2,022	1,446	1,446
44.00	3,054	2,538	3,984
45.00	4,148	3,601	7,585
46.00	5,395	4,772	12,357

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	**12.0" Round Culvert** L= 18.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 39.58' S= 0.1604 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.33 cfs @ 12.50 hrs HW=42.78' TW=39.96' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.33 cfs @ 1.81 fps)

Pond DB03: Detention-03



Summary for Pond DMH13: DMH-13

[57] Hint: Peaked at 43.83' (Flood elevation advised)

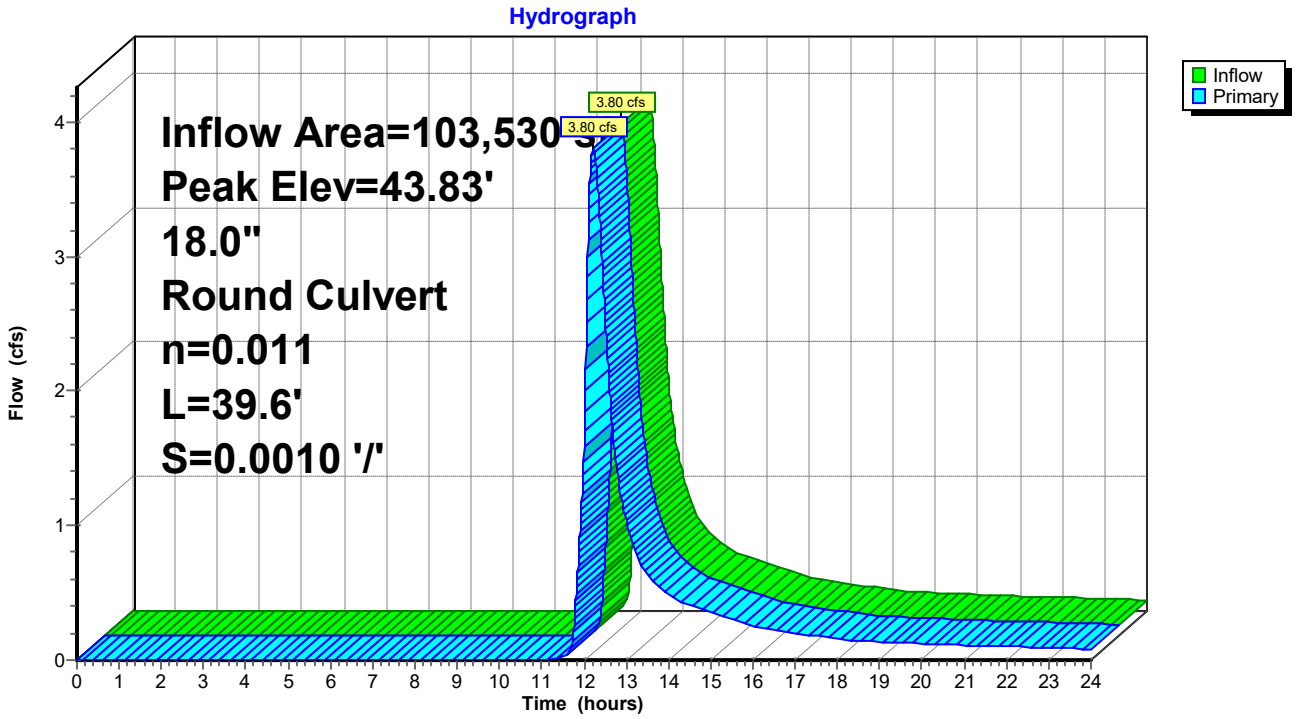
Inflow Area = 103,530 sf, 35.12% Impervious, Inflow Depth > 2.12" for 10-yr event
Inflow = 3.80 cfs @ 12.22 hrs, Volume= 18,318 cf
Outflow = 3.80 cfs @ 12.22 hrs, Volume= 18,318 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.80 cfs @ 12.22 hrs, Volume= 18,318 cf
Routed to Link Sub A : SUB A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.83' @ 12.22 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.54'	**18.0" Round Culvert** L= 39.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.54' / 42.50' S= 0.0010 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf

Primary OutFlow Max=3.80 cfs @ 12.22 hrs HW=43.83' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.80 cfs @ 3.16 fps)

Pond DMH13: DMH-13



Summary for Pond DMH8: DMH-08

[57] Hint: Peaked at 40.37' (Flood elevation advised)

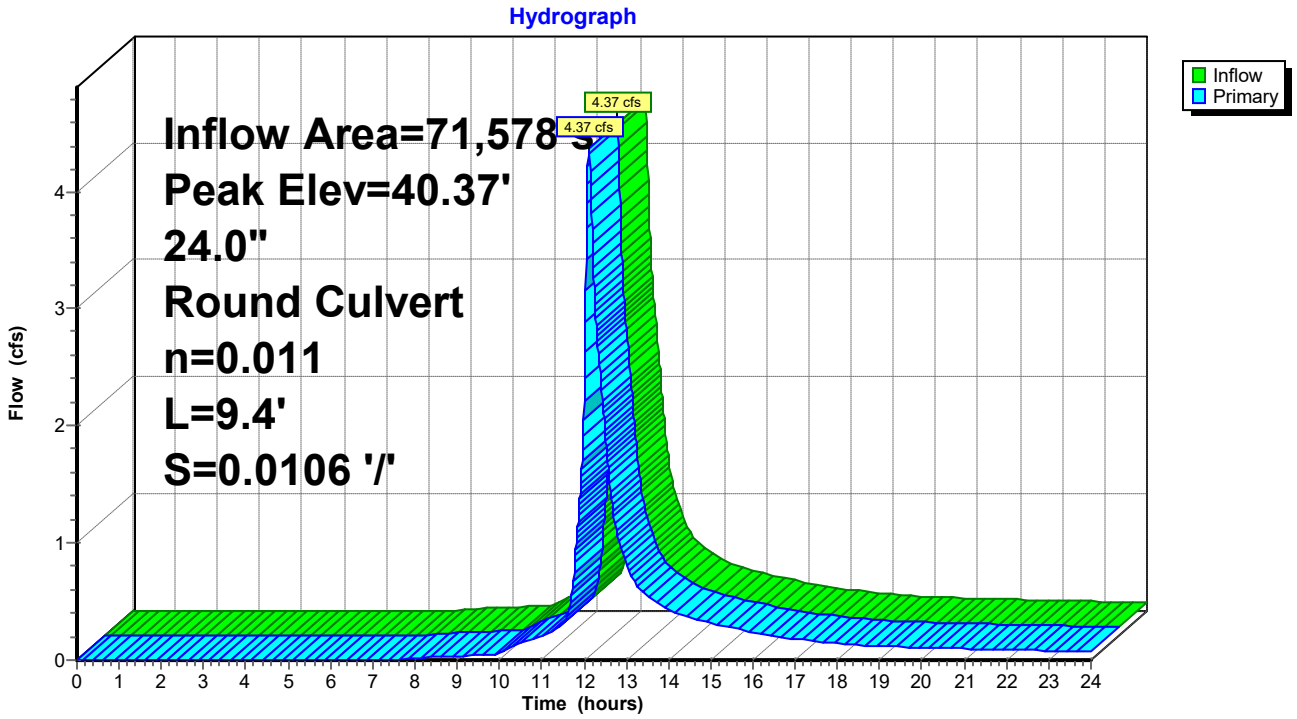
Inflow Area = 71,578 sf, 52.12% Impervious, Inflow Depth > 3.08" for 10-yr event
Inflow = 4.37 cfs @ 12.12 hrs, Volume= 18,376 cf
Outflow = 4.37 cfs @ 12.12 hrs, Volume= 18,376 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.37 cfs @ 12.12 hrs, Volume= 18,376 cf
Routed to Link 2 : Pipe 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.37' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.25'	**24.0" Round Culvert** L= 9.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.25' / 39.15' S= 0.0106 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=4.36 cfs @ 12.12 hrs HW=40.37' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 4.36 cfs @ 3.50 fps)

Pond DMH8: DMH-08



Summary for Pond PP02: Por Pvt-02

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 18,123 sf, 81.93% Impervious, Inflow Depth > 4.40" for 10-yr event
Inflow = 2.07 cfs @ 12.07 hrs, Volume= 6,650 cf
Outflow = 1.79 cfs @ 12.10 hrs, Volume= 5,926 cf, Atten= 13%, Lag= 1.9 min
Primary = 1.79 cfs @ 12.10 hrs, Volume= 5,926 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.71' @ 12.11 hrs Surf.Area= 1,476 sf Storage= 1,130 cf

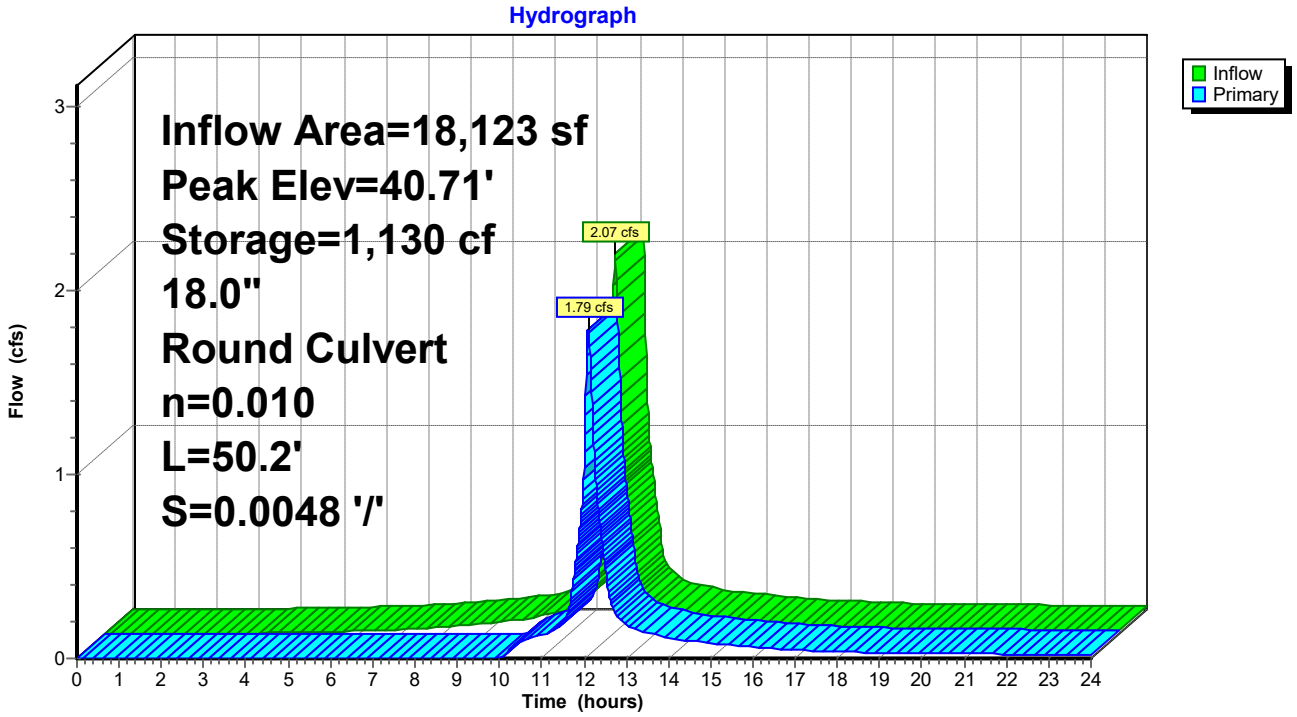
Plug-Flow detention time= 92.3 min calculated for 5,926 cf (89% of inflow)
Center-of-Mass det. time= 40.7 min (812.2 - 771.5)

Volume	Invert	Avail.Storage	Storage Description
#1	38.80'	2,946 cf	**18.00'W x 82.00'L x 5.00'H Porous Pavment** 7,380 cf Overall - 14 cf Embedded = 7,366 cf x 40.0% Voids
#2	40.64'	14 cf	**6.0" Round 6" underdrain** Inside #1 L= 72.0'
		2,960 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	39.96'	**18.0" Round Culvert** L= 50.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.96' / 39.72' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.76 cfs @ 12.10 hrs HW=40.71' TW=40.36' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.76 cfs @ 2.92 fps)

Pond PP02: Por Pvt-02



Summary for Pond PP03: Por Pvt-03

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 30,180 sf, 76.35% Impervious, Inflow Depth > 4.40" for 10-yr event
Inflow = 3.44 cfs @ 12.07 hrs, Volume= 11,075 cf
Outflow = 2.52 cfs @ 12.14 hrs, Volume= 9,646 cf, Atten= 27%, Lag= 4.1 min
Primary = 2.52 cfs @ 12.14 hrs, Volume= 9,646 cf
Routed to Link 3 : Pipe 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.55' @ 12.14 hrs Surf.Area= 2,484 sf Storage= 2,552 cf

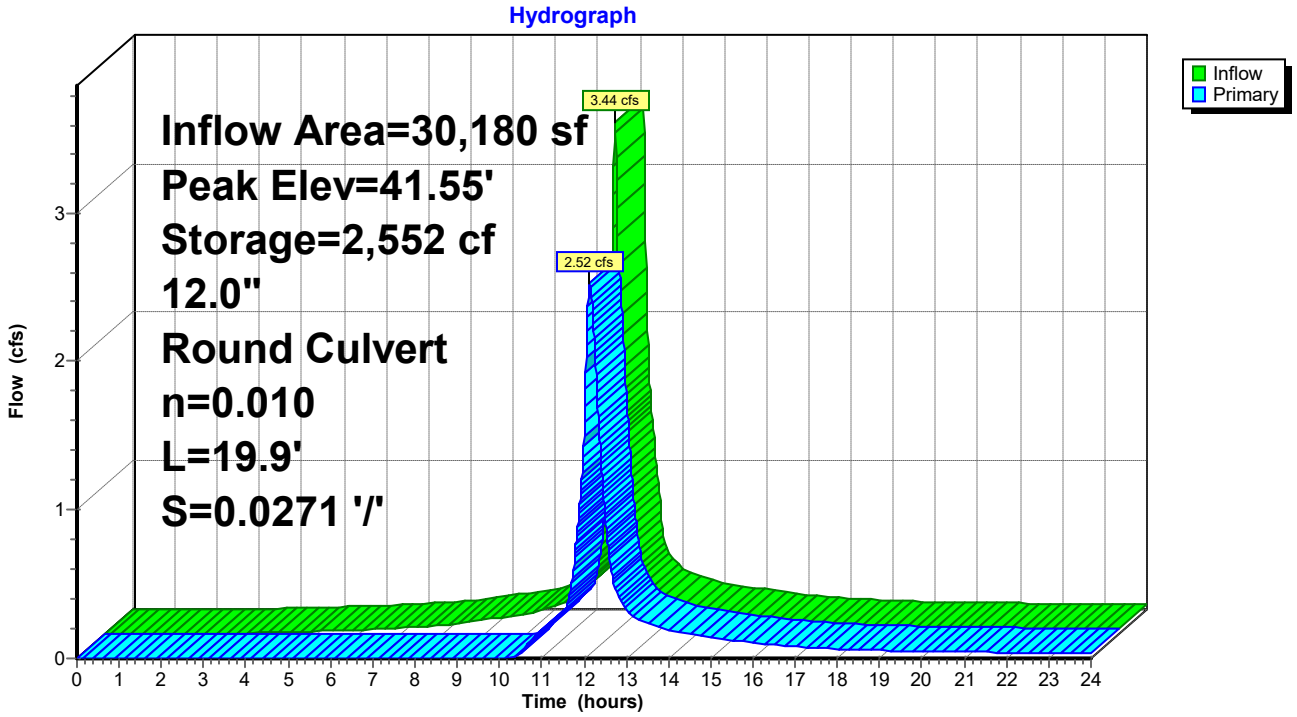
Plug-Flow detention time= 106.2 min calculated for 9,642 cf (87% of inflow)
Center-of-Mass det. time= 48.6 min (820.1 - 771.5)

Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	4,958 cf	**18.00'W x 138.00'L x 5.00'H Porous Pavment** 12,420 cf Overall - 24 cf Embedded = 12,396 cf x 40.0% Voids
#2	40.34'	24 cf	**6.0" Round 6" underdrain** Inside #1 L= 124.0'
		4,983 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.34'	**12.0" Round Culvert** L= 19.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.34' / 39.80' S= 0.0271 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.52 cfs @ 12.14 hrs HW=41.55' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.52 cfs @ 3.21 fps)

Pond PP03: Por Pvt-03



Summary for Pond PP04: Por Pvt-04

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 9,547 sf, 73.20% Impervious, Inflow Depth > 4.29" for 10-yr event
Inflow = 1.07 cfs @ 12.07 hrs, Volume= 3,415 cf
Outflow = 0.93 cfs @ 12.11 hrs, Volume= 2,610 cf, Atten= 13%, Lag= 2.6 min
Primary = 0.93 cfs @ 12.11 hrs, Volume= 2,610 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.57' @ 12.11 hrs Surf.Area= 1,296 sf Storage= 1,080 cf

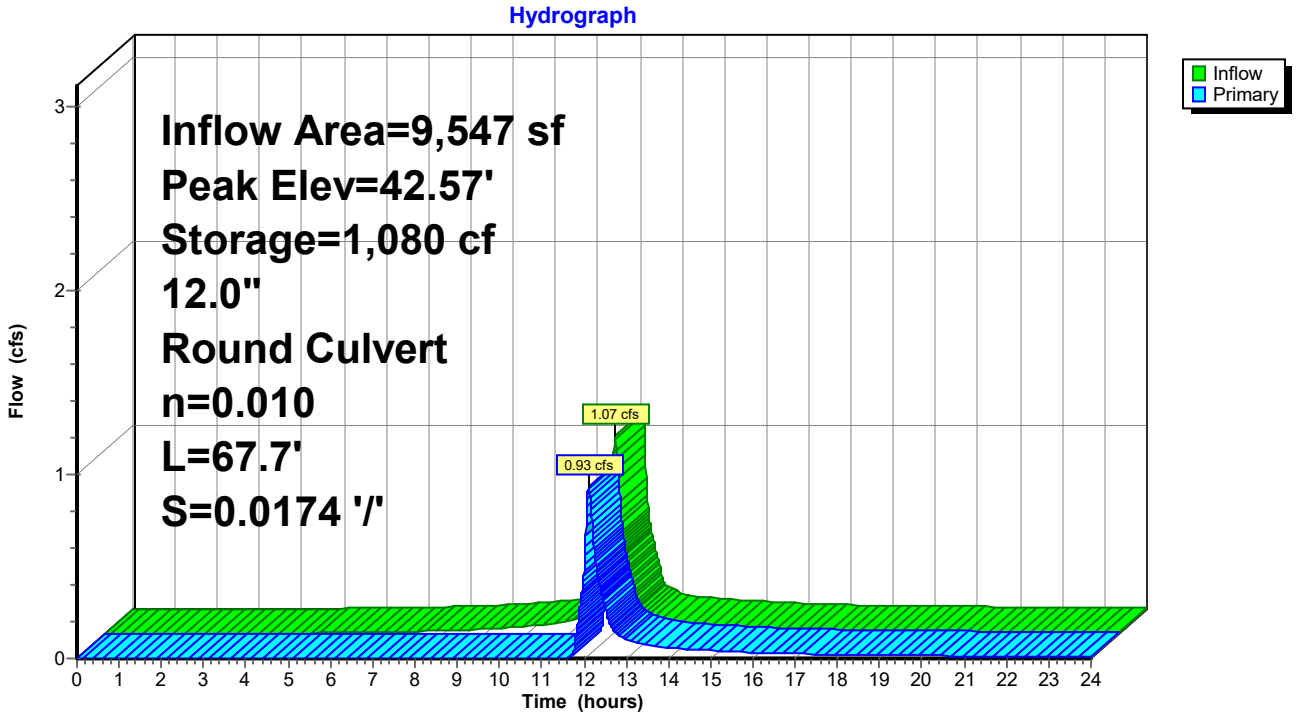
Plug-Flow detention time= 145.9 min calculated for 2,610 cf (76% of inflow)
Center-of-Mass det. time= 64.2 min (840.5 - 776.3)

Volume	Invert	Avail.Storage	Storage Description
#1	40.50'	2,587 cf	**18.00'W x 72.00'L x 5.00'H Porous Pavment** 6,480 cf Overall - 13 cf Embedded = 6,467 cf x 40.0% Voids
#2	42.00'	13 cf	**6.0" Round 6" underdrain** Inside #1 L= 68.0'
		2,600 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	**12.0" Round Culvert** L= 67.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.00' / 40.82' S= 0.0174 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.93 cfs @ 12.11 hrs HW=42.57' TW=40.37' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.93 cfs @ 2.02 fps)

Pond PP04: Por Pvt-04



Summary for Pond PP05: Por Pvt-05

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 9,002 sf, 74.73% Impervious, Inflow Depth > 4.08" for 10-yr event
Inflow = 0.98 cfs @ 12.07 hrs, Volume= 3,058 cf
Outflow = 0.75 cfs @ 12.13 hrs, Volume= 2,153 cf, Atten= 23%, Lag= 3.7 min
Primary = 0.75 cfs @ 12.13 hrs, Volume= 2,153 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 44.25' @ 12.13 hrs Surf.Area= 1,457 sf Storage= 1,176 cf

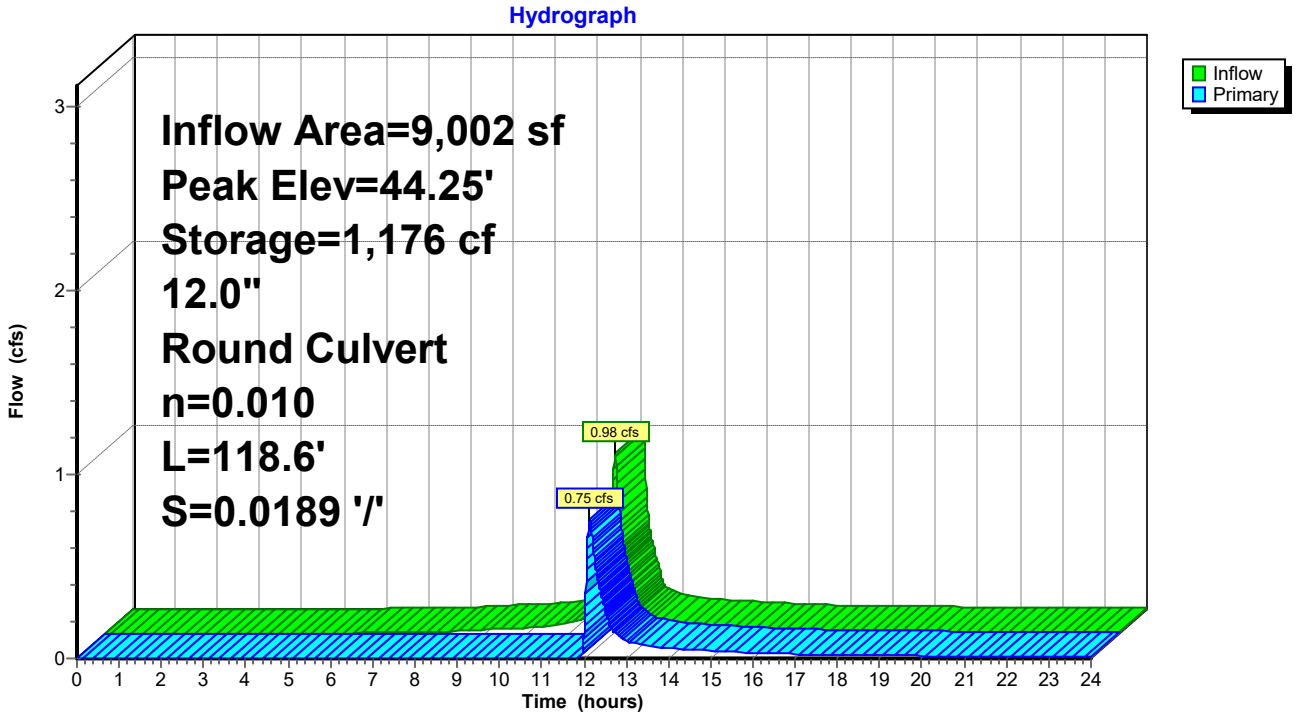
Plug-Flow detention time= 163.5 min calculated for 2,152 cf (70% of inflow)
Center-of-Mass det. time= 72.8 min (857.5 - 784.8)

Volume	Invert	Avail.Storage	Storage Description
#1	42.25'	2,909 cf	**18.00'W x 80.97'L x 5.00'H Porous Pavment** 7,287 cf Overall - 15 cf Embedded = 7,272 cf x 40.0% Voids
#2	43.75'	15 cf	**6.0" Round 6" underdrain** Inside #1 L= 77.0'
		2,924 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	43.75'	**12.0" Round Culvert** L= 118.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.75' / 41.51' S= 0.0189 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.75 cfs @ 12.13 hrs HW=44.25' TW=40.36' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.75 cfs @ 1.90 fps)

Pond PP05: Por Pvt-05



Summary for Pond PP06: Por Pvt-06

Only Main Driveway and Parking Area to be Porous Pavement

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 7,420 sf, 88.26% Impervious, Inflow Depth > 4.52" for 10-yr event
Inflow = 0.86 cfs @ 12.07 hrs, Volume= 2,792 cf
Outflow = 0.86 cfs @ 12.07 hrs, Volume= 2,792 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.86 cfs @ 12.07 hrs, Volume= 2,792 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.25' @ 0.00 hrs Surf.Area= 1,298 sf Storage= 0 cf

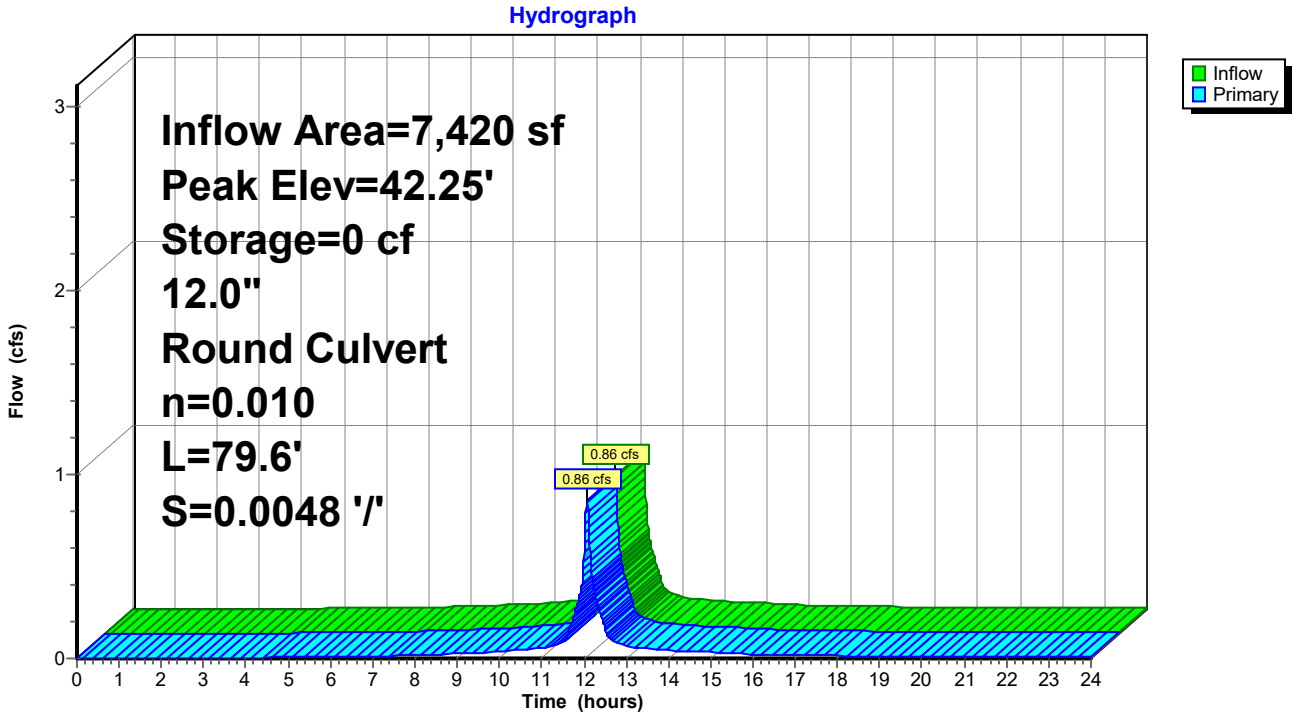
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (766.3 - 766.3)

Volume	Invert	Avail.Storage	Storage Description
#1	42.25'	2,590 cf	**18.00'W x 72.10'L x 5.00'H Porous Pavment** 6,489 cf Overall - 14 cf Embedded = 6,475 cf x 40.0% Voids
#2	43.75'	14 cf	**6.0" Round 6" underdrain** Inside #1 L= 69.0'
		2,604 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.94'	**12.0" Round Culvert** L= 79.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.94' / 40.56' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.07 hrs HW=42.25' TW=0.00' (Dynamic Tailwater)
1=Culvert (Passes 0.00 cfs of 2.69 cfs potential flow)

Pond PP06: Por Pvt-06



Summary for Pond PP07: Por Pvt-07

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 27,046 sf, 54.55% Impervious, Inflow Depth > 3.46" for 10-yr event
Inflow = 2.58 cfs @ 12.07 hrs, Volume= 7,793 cf
Outflow = 1.59 cfs @ 12.17 hrs, Volume= 6,340 cf, Atten= 39%, Lag= 5.6 min
Primary = 1.59 cfs @ 12.17 hrs, Volume= 6,340 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.89' @ 12.17 hrs Surf.Area= 4,085 sf Storage= 2,596 cf

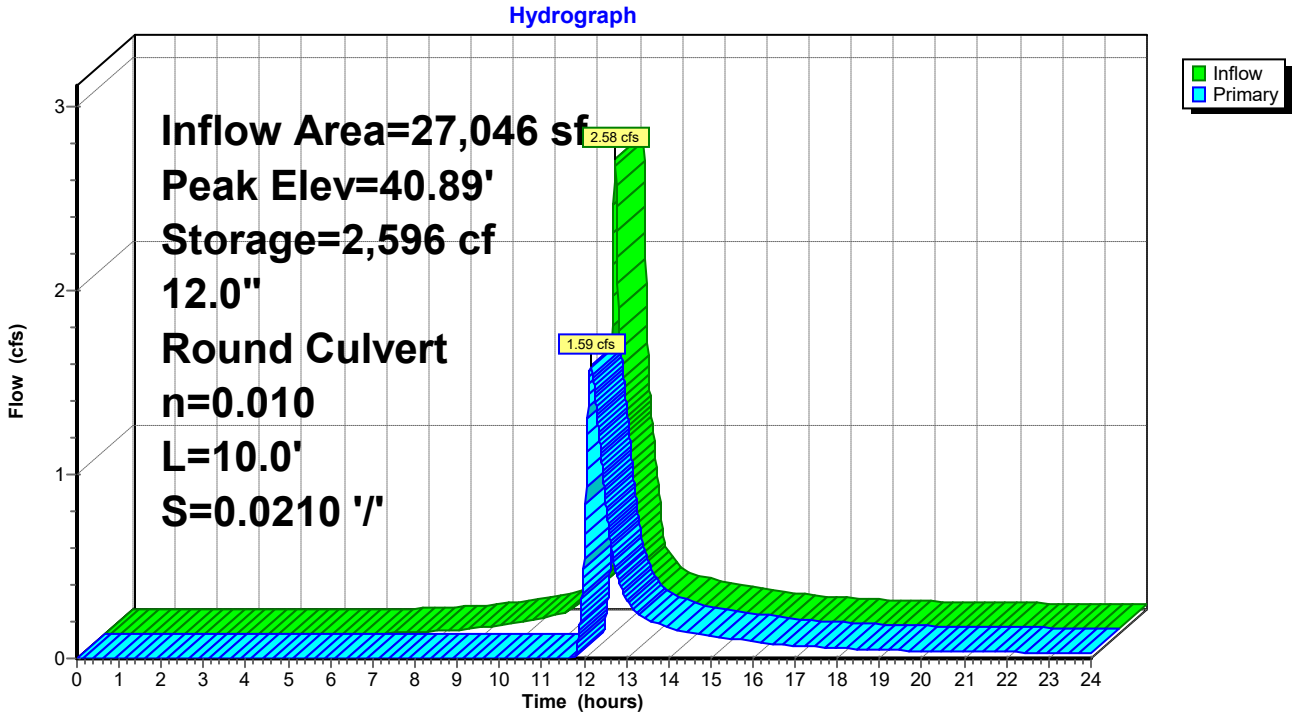
Plug-Flow detention time= 126.5 min calculated for 6,340 cf (81% of inflow)
Center-of-Mass det. time= 53.8 min (859.1 - 805.3)

Volume	Invert	Avail.Storage	Storage Description
#1	39.30'	8,152 cf	**18.00'W x 226.97'L x 5.00'H Porous Pavment** 20,427 cf Overall - 46 cf Embedded = 20,381 cf x 40.0% Voids
#2	41.14'	46 cf	**6.0" Round 6" underdrain** Inside #1 L= 236.0'
		8,199 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.10'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.10' / 39.89' S= 0.0210 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.58 cfs @ 12.17 hrs HW=40.89' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.58 cfs @ 2.39 fps)

Pond PP07: Por Pvt-07



Summary for Pond RG03: Rain Garden-03

Inflow Area = 5,425 sf, 57.01% Impervious, Inflow Depth > 3.97" for 10-yr event
Inflow = 0.53 cfs @ 12.10 hrs, Volume= 1,794 cf
Outflow = 0.26 cfs @ 12.28 hrs, Volume= 1,286 cf, Atten= 50%, Lag= 10.3 min
Primary = 0.26 cfs @ 12.28 hrs, Volume= 1,286 cf
Routed to Link 2 : Pipe 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.00' @ 12.28 hrs Surf.Area= 2,332 sf Storage= 776 cf

Plug-Flow detention time= 170.1 min calculated for 1,286 cf (72% of inflow)
Center-of-Mass det. time= 81.2 min (871.9 - 790.7)

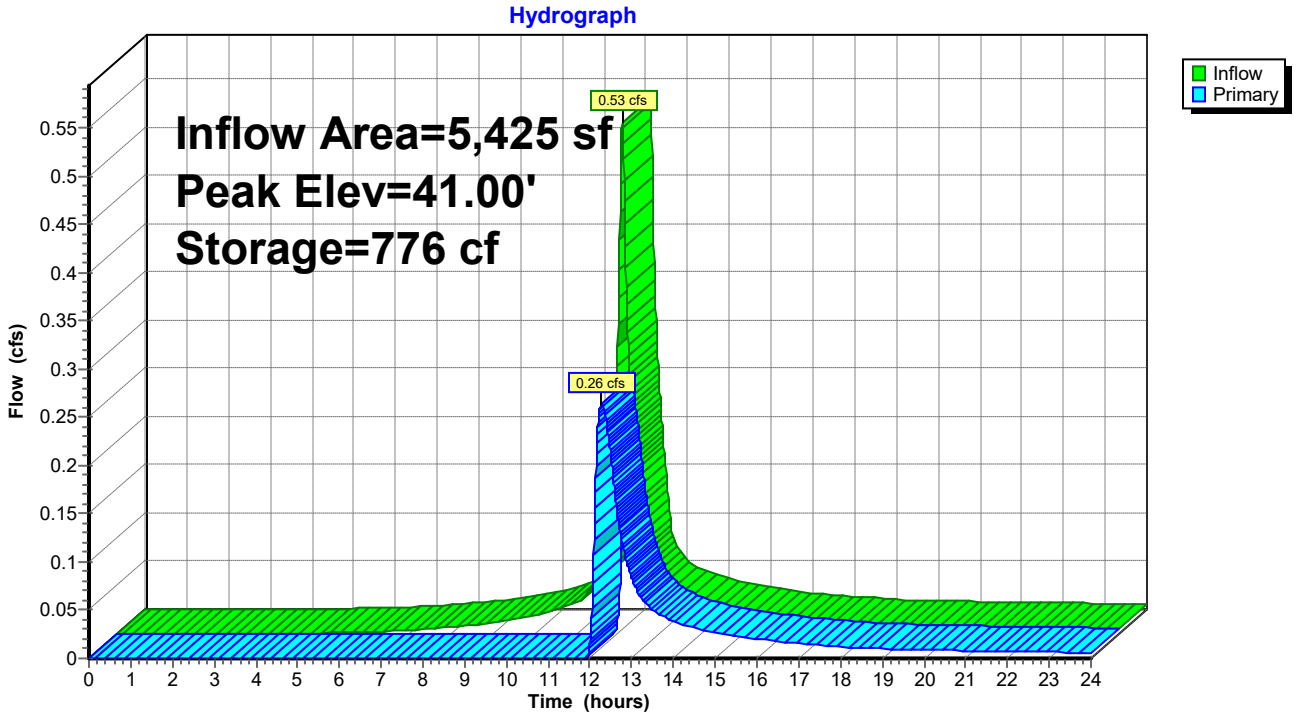
Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	1,867 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	43.67'	115 cf	**18.00'W x 129.55'L x 0.33'H Mulch** 770 cf Overall x 15.0% Voids
#3	41.17'	1,749 cf	**18.00'W x 129.55'L x 2.50'H Greenwich Soil Mix** 5,830 cf Overall x 30.0% Voids
#4	40.17'	928 cf	**18.00'W x 129.55'L x 1.00'H Crushed Stone** 2,332 cf Overall - 12 cf Embedded = 2,320 cf x 40.0% Voids
#5	40.67'	12 cf	**6.0" Round 6" underdrain** Inside #4 L= 62.0'
		4,671 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	1,402	0	0
45.00	2,332	1,867	1,867

Device	Routing	Invert	Outlet Devices
#1	Primary	39.77'	**12.0" Round Culvert** L= 9.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.77' / 39.67' S= 0.0101 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	44.50'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	40.67'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.26 cfs @ 12.28 hrs HW=41.00' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.26 cfs of 2.54 cfs potential flow)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.26 cfs @ 1.94 fps)

Pond RG03: Rain Garden-03



Summary for Pond RG04: Rain Garden-04

Inflow Area = 10,548 sf, 82.86% Impervious, Inflow Depth > 4.52" for 10-yr event
Inflow = 1.22 cfs @ 12.07 hrs, Volume= 3,969 cf
Outflow = 0.93 cfs @ 12.13 hrs, Volume= 3,796 cf, Atten= 24%, Lag= 3.7 min
Primary = 0.93 cfs @ 12.13 hrs, Volume= 3,796 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.39' @ 12.13 hrs Surf.Area= 1,542 sf Storage= 482 cf

Plug-Flow detention time= 49.8 min calculated for 3,796 cf (96% of inflow)
Center-of-Mass det. time= 24.5 min (790.8 - 766.3)

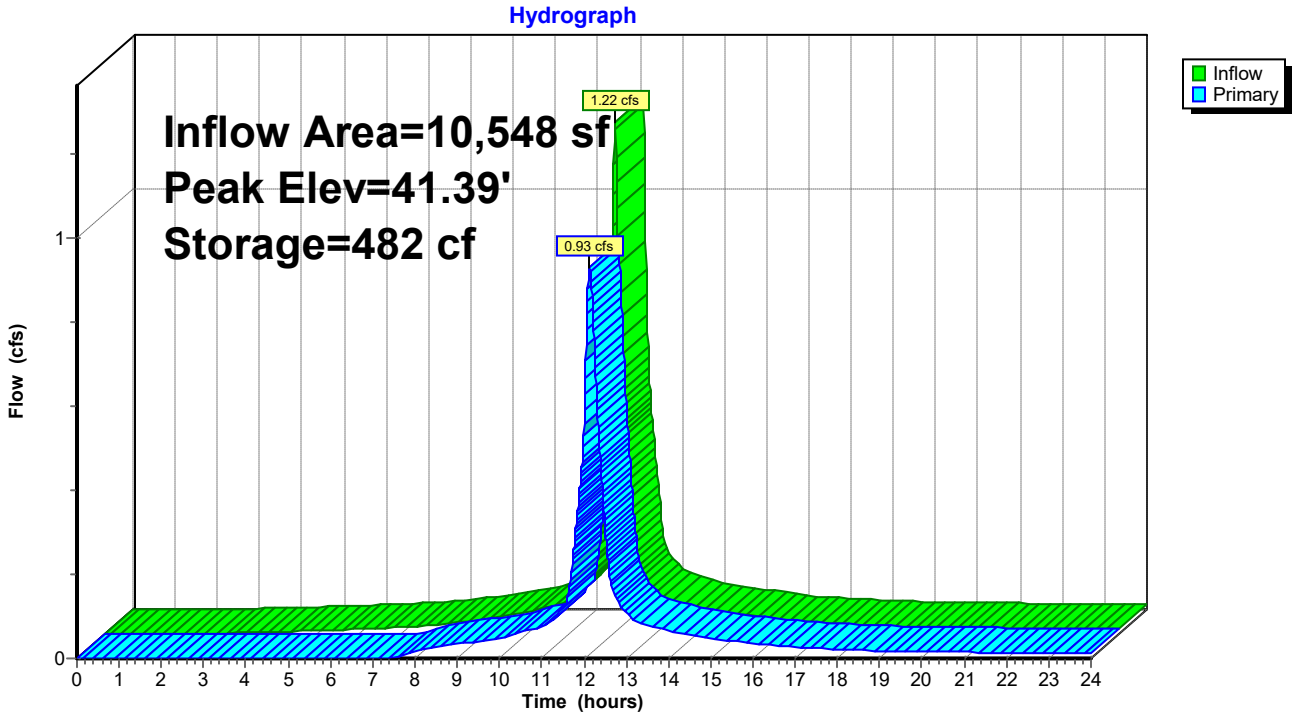
Volume	Invert	Avail.Storage	Storage Description
#1	43.50'	233 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	43.17'	38 cf	**11.00'W x 70.10'L x 0.33'H Mulch** 254 cf Overall x 15.0% Voids
#3	40.67'	578 cf	**11.00'W x 70.10'L x 2.50'H Greenwich Soil Mix** 1,928 cf Overall x 30.0% Voids
#4	39.67'	303 cf	**11.00'W x 70.09'L x 1.00'H Crushed Stone** 771 cf Overall - 14 cf Embedded = 757 cf x 40.0% Voids
#5	40.17'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		1,166 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.50	162	0	0
44.00	771	233	233

Device	Routing	Invert	Outlet Devices
#1	Device 2	43.50'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	40.17'	**12.0" Round Culvert** L= 8.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.17' / 39.96' S= 0.0239 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	40.17'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.93 cfs @ 12.13 hrs HW=41.39' TW=40.36' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.93 cfs of 3.20 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.93 cfs @ 4.73 fps)

Pond RG04: Rain Garden-04



Summary for Pond RG06: Rain Garden-06

Inflow Area = 4,026 sf, 70.89% Impervious, Inflow Depth > 3.97" for 10-yr event
Inflow = 0.43 cfs @ 12.07 hrs, Volume= 1,332 cf
Outflow = 0.40 cfs @ 12.10 hrs, Volume= 1,285 cf, Atten= 6%, Lag= 1.7 min
Primary = 0.40 cfs @ 12.10 hrs, Volume= 1,285 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.43' @ 12.10 hrs Surf.Area= 316 sf Storage= 104 cf

Plug-Flow detention time= 36.5 min calculated for 1,285 cf (97% of inflow)
Center-of-Mass det. time= 16.1 min (804.7 - 788.6)

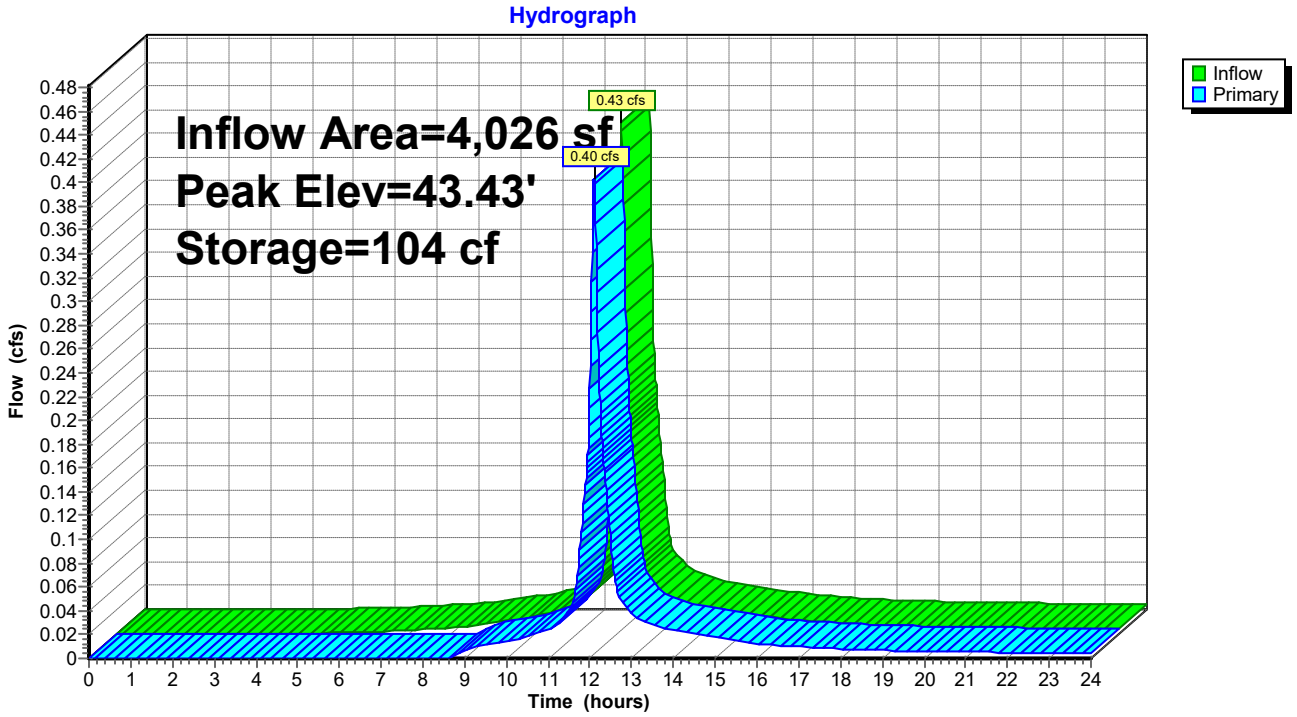
Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	117 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	46.17'	16 cf	**15.00'W x 21.07'L x 0.33'H Mulch** 104 cf Overall x 15.0% Voids
#3	43.67'	237 cf	**15.00'W x 21.07'L x 2.50'H Greenwich Soil Mix** 790 cf Overall x 30.0% Voids
#4	42.67'	121 cf	**15.00'W x 21.07'L x 1.00'H Crushed Stone** 316 cf Overall - 14 cf Embedded = 302 cf x 40.0% Voids
#5	43.00'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		504 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	151	0	0
47.00	316	117	117

Device	Routing	Invert	Outlet Devices
#1	Device 2	46.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	40.18'	**12.0" Round Culvert** L= 91.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.18' / 40.10' S= 0.0009 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	43.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.40 cfs @ 12.10 hrs HW=43.43' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.40 cfs of 4.60 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.40 cfs @ 2.24 fps)

Pond RG06: Rain Garden-06



Summary for Pond RG07: Rain Garden-07

Inflow Area = 4,109 sf, 58.46% Impervious, Inflow Depth > 3.56" for 10-yr event
Inflow = 0.40 cfs @ 12.07 hrs, Volume= 1,218 cf
Outflow = 0.38 cfs @ 12.10 hrs, Volume= 1,173 cf, Atten= 6%, Lag= 1.6 min
Primary = 0.38 cfs @ 12.10 hrs, Volume= 1,173 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.41' @ 12.10 hrs Surf.Area= 305 sf Storage= 98 cf

Plug-Flow detention time= 35.8 min calculated for 1,173 cf (96% of inflow)
Center-of-Mass det. time= 14.8 min (817.0 - 802.2)

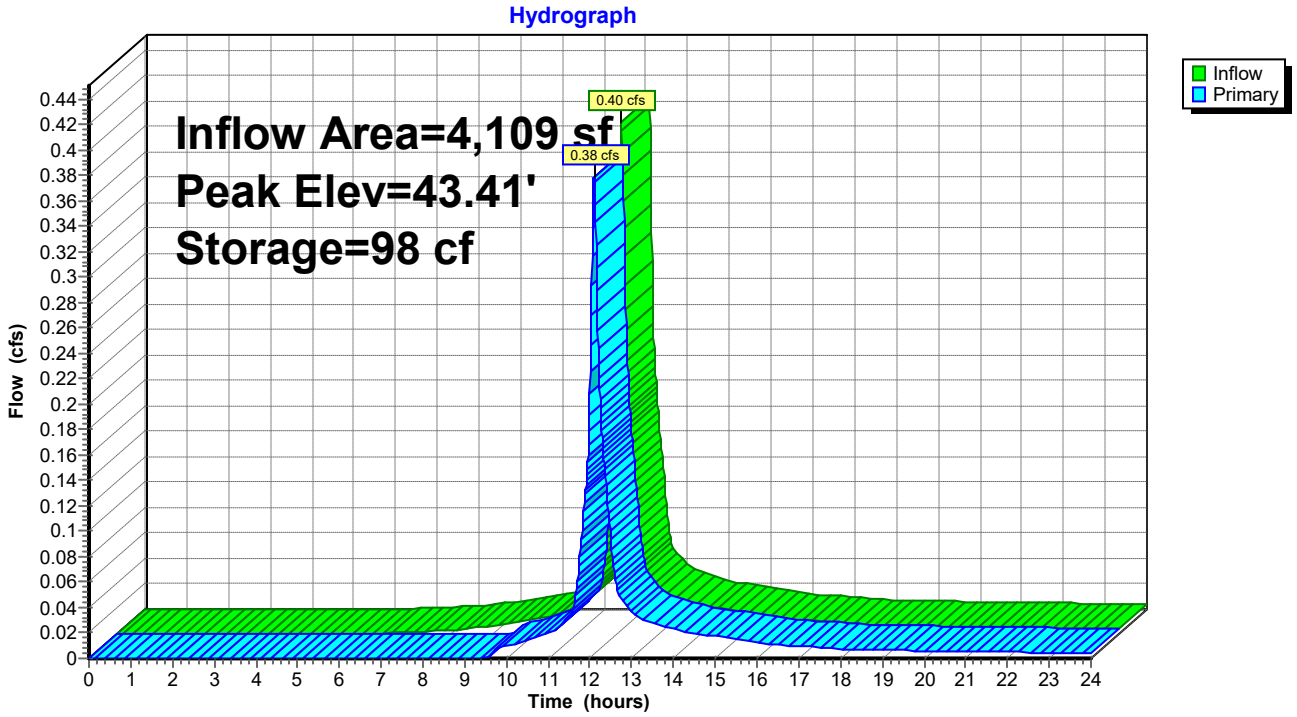
Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	112 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	46.17'	15 cf	**15.00'W x 20.33'L x 0.33'H Mulch** 101 cf Overall x 15.0% Voids
#3	43.67'	229 cf	**15.00'W x 20.33'L x 2.50'H Greenwich Soil Mix** 762 cf Overall x 30.0% Voids
#4	42.67'	116 cf	**15.00'W x 20.33'L x 1.00'H Crushed Stone** 305 cf Overall - 14 cf Embedded = 291 cf x 40.0% Voids
#5	43.00'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		486 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	144	0	0
47.00	305	112	112

Device	Routing	Invert	Outlet Devices
#1	Device 2	46.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	42.00'	**12.0" Round Culvert** L= 85.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.00' / 40.10' S= 0.0222 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	43.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.38 cfs @ 12.10 hrs HW=43.41' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.38 cfs of 3.61 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.38 cfs @ 2.19 fps)

Pond RG07: Rain Garden-07



Summary for Pond UI01: Und Inf 01

Inflow Area = 53,524 sf,100.00% Impervious, Inflow Depth > 4.86" for 10-yr event
Inflow = 6.35 cfs @ 12.07 hrs, Volume= 21,677 cf
Outflow = 1.75 cfs @ 12.40 hrs, Volume= 11,333 cf, Atten= 73%, Lag= 19.6 min
Primary = 1.75 cfs @ 12.40 hrs, Volume= 11,333 cf
Routed to Link 3 : Pipe 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.72' @ 12.40 hrs Surf.Area= 5,205 sf Storage= 12,703 cf

Plug-Flow detention time= 274.8 min calculated for 11,333 cf (52% of inflow)
Center-of-Mass det. time= 150.4 min (896.7 - 746.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	39.50'	5,260 cf	**40.50'W x 127.59'L x 4.75'H Field A** 24,545 cf Overall - 11,394 cf Embedded = 13,151 cf x 40.0% Voids
#2A	40.00'	11,394 cf	**ADS_StormTech MC-3500 d +Cap** x 102 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 102 Chambers in 6 Rows Cap Storage= 14.9 cf x 2 x 6 rows = 178.8 cf
#3	41.98'	264 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder** x 3
		16,918 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.98'	**15.0" Round Culvert** L= 36.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.98' / 41.53' S= 0.0123 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=1.75 cfs @ 12.40 hrs HW=42.72' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.75 cfs @ 2.31 fps)

Pond UI01: Und Inf 01 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= 14.9 cf x 2 x 6 rows = 178.8 cf

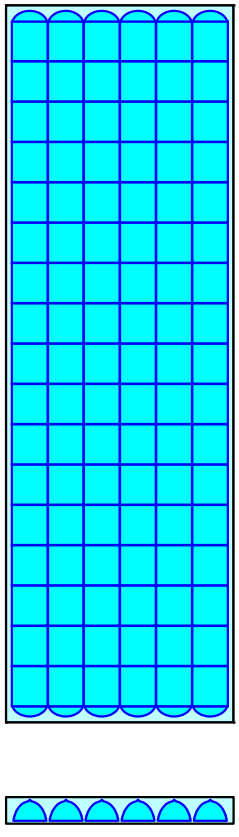
17 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 125.59' Row Length +12.0" End Stone x 2 = 127.59' Base Length
6 Rows x 77.0" Wide + 12.0" Side Stone x 2 = 40.50' Base Width
6.0" Stone Base + 45.0" Chamber Height + 6.0" Stone Cover = 4.75' Field Height

102 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 6 Rows = 11,393.9 cf Chamber Storage

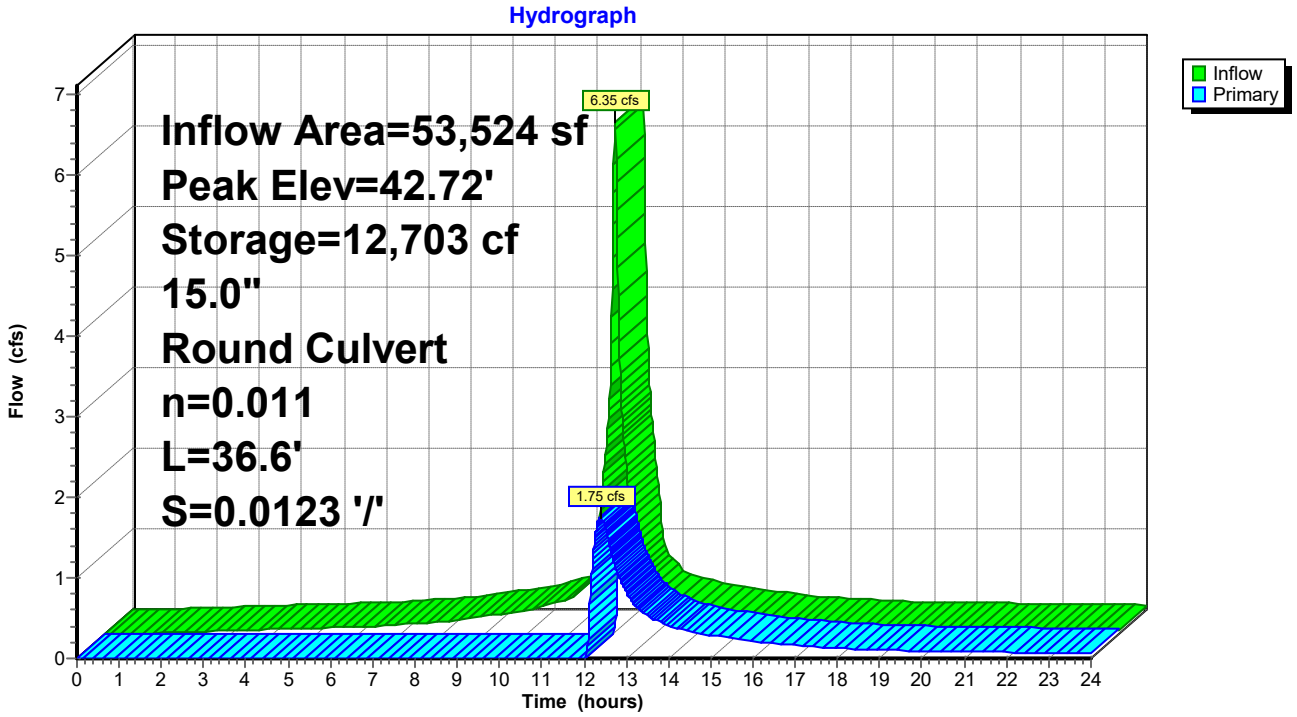
24,545.1 cf Field - 11,393.9 cf Chambers = 13,151.2 cf Stone x 40.0% Voids = 5,260.5 cf Stone Storage

Chamber Storage + Stone Storage = 16,654.4 cf = 0.382 af
Overall Storage Efficiency = 67.9%
Overall System Size = 127.59' x 40.50' x 4.75'

102 Chambers
909.1 cy Field
487.1 cy Stone



Pond UI01: Und Inf 01



Summary for Pond UI02: Und Inf 02

Inflow Area = 33,482 sf, 30.44% Impervious, Inflow Depth > 3.07" for 10-yr event
Inflow = 2.66 cfs @ 12.10 hrs, Volume= 8,565 cf
Outflow = 2.43 cfs @ 12.14 hrs, Volume= 8,109 cf, Atten= 9%, Lag= 2.3 min
Primary = 2.43 cfs @ 12.14 hrs, Volume= 8,109 cf
Routed to Link 1 : Pipe 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.68' @ 12.14 hrs Surf.Area= 558 sf Storage= 898 cf

Plug-Flow detention time= 45.6 min calculated for 8,109 cf (95% of inflow)
Center-of-Mass det. time= 16.8 min (835.2 - 818.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	39.97'	697 cf	**6.50'W x 82.00'L x 5.50'H Field A** 2,932 cf Overall - 1,188 cf Embedded = 1,743 cf x 40.0% Voids
#2A	40.47'	992 cf	**ADS N-12 48"** x 4 Inside #1 Inside= 47.7"W x 47.7"H => 12.40 sf x 20.00'L = 248.0 cf Outside= 54.0"W x 54.0"H => 14.86 sf x 20.00'L = 297.1 cf
#3	39.97'	144 cf	**4.00'D x 5.73'H Vertical Cone/Cylinder** x 2
		1,833 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 22.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 41.38' S= 0.0054 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.43 cfs @ 12.14 hrs HW=42.68' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.43 cfs @ 3.31 fps)

Pond UI02: Und Inf 02 - Chamber Wizard Field A

Chamber Model = ADS N-12 48" (ADS N-12® Pipe)
Inside= 47.7"W x 47.7"H => 12.40 sf x 20.00'L = 248.0 cf
Outside= 54.0"W x 54.0"H => 14.86 sf x 20.00'L = 297.1 cf

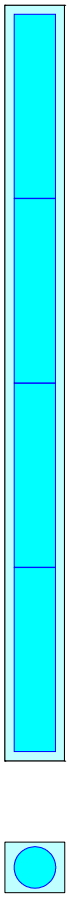
4 Chambers/Row x 20.00' Long = 80.00' Row Length +12.0" End Stone x 2 = 82.00' Base Length
1 Rows x 54.0" Wide + 12.0" Side Stone x 2 = 6.50' Base Width
6.0" Stone Base + 54.0" Chamber Height + 6.0" Stone Cover = 5.50' Field Height

4 Chambers x 248.0 cf = 992.0 cf Chamber Storage
4 Chambers x 297.1 cf = 1,188.4 cf Displacement

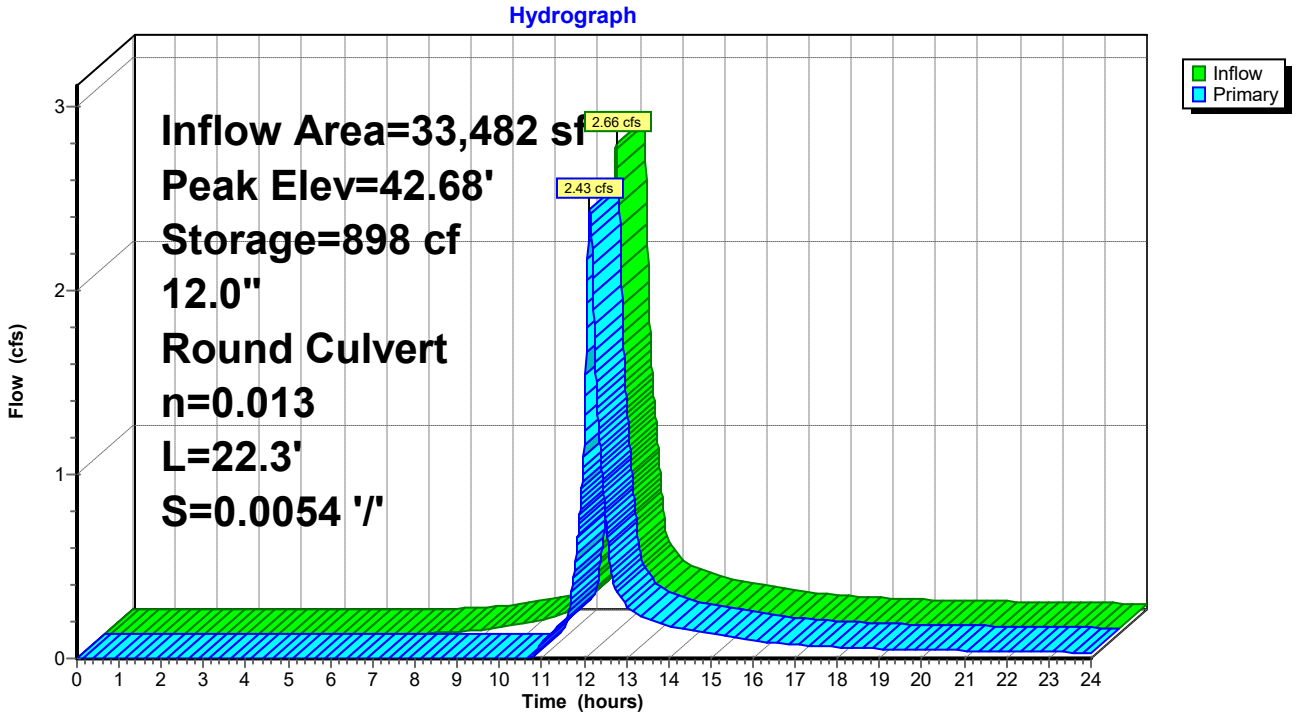
2,931.6 cf Field - 1,188.4 cf Chambers = 1,743.2 cf Stone x 40.0% Voids = 697.3 cf Stone Storage

Chamber Storage + Stone Storage = 1,689.3 cf = 0.039 af
Overall Storage Efficiency = 57.6%
Overall System Size = 82.00' x 6.50' x 5.50'

4 Chambers
108.6 cy Field
64.6 cy Stone



Pond UI02: Und Inf 02



Summary for Pond YD3: YD-03

[57] Hint: Peaked at 42.75' (Flood elevation advised)

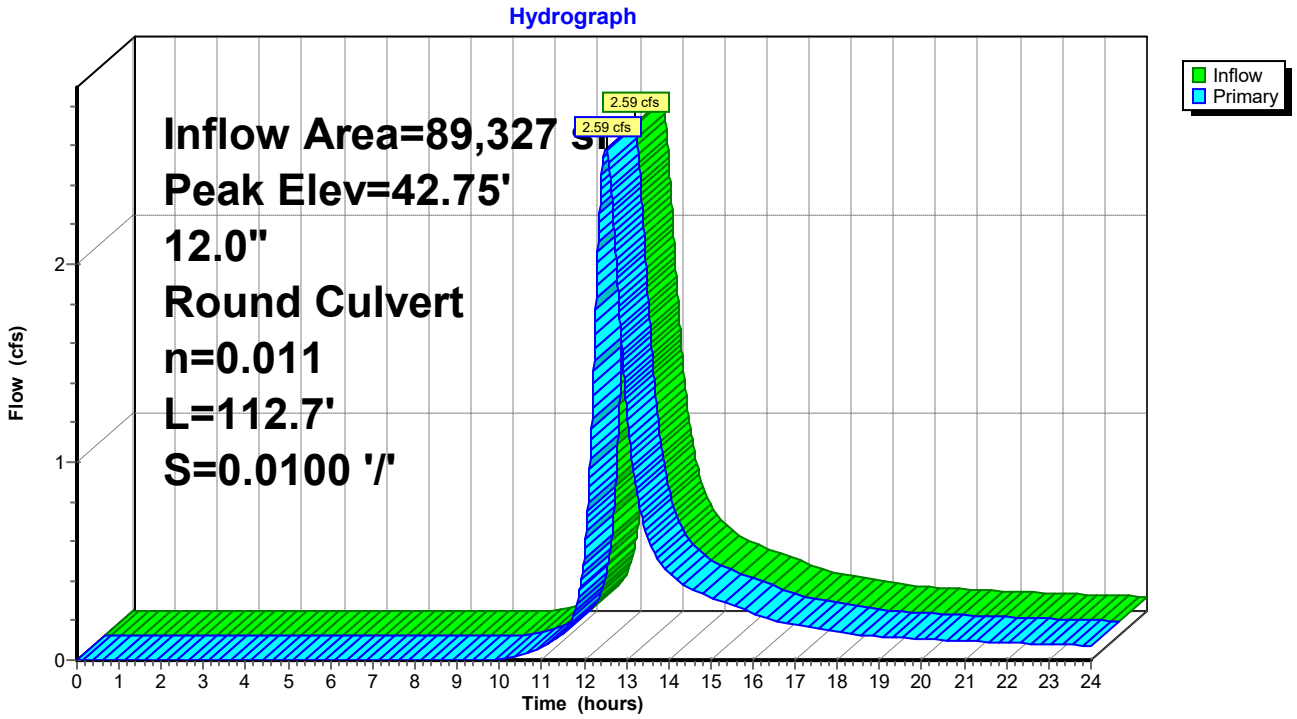
Inflow Area = 89,327 sf, 1.78% Impervious, Inflow Depth > 2.09" for 10-yr event
Inflow = 2.59 cfs @ 12.52 hrs, Volume= 15,574 cf
Outflow = 2.59 cfs @ 12.52 hrs, Volume= 15,574 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.59 cfs @ 12.52 hrs, Volume= 15,574 cf
Routed to Link Sub B : SUB B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.75' @ 12.52 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 112.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 40.37' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=2.59 cfs @ 12.52 hrs HW=42.75' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.59 cfs @ 3.29 fps)

Pond YD3: YD-03



Summary for Pond YD33: YD-33

[57] Hint: Peaked at 57.28' (Flood elevation advised)

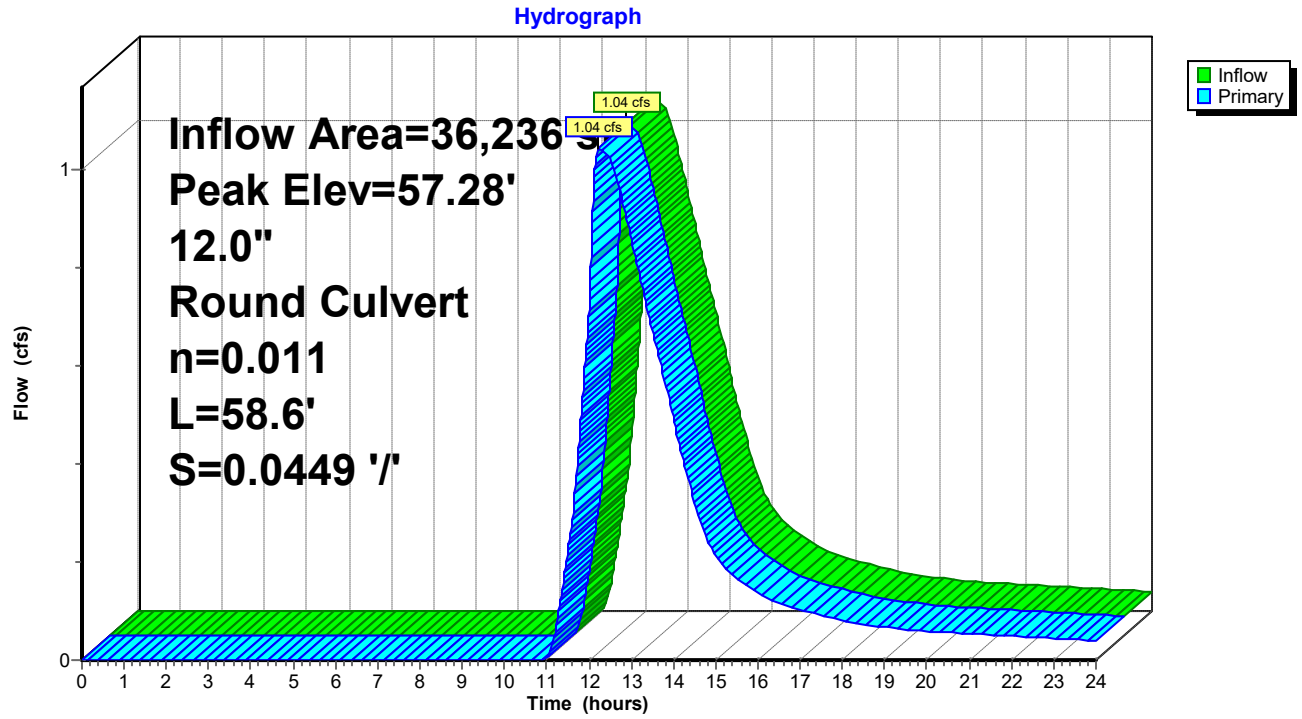
Inflow Area = 36,236 sf, 92.20% Impervious, Inflow Depth > 3.52" for 10-yr event
Inflow = 1.04 cfs @ 12.22 hrs, Volume= 10,618 cf
Outflow = 1.04 cfs @ 12.22 hrs, Volume= 10,618 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.04 cfs @ 12.22 hrs, Volume= 10,618 cf
Routed to Link SUB D1 : D1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.28' @ 12.22 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	56.67'	**12.0" Round Culvert** L= 58.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.67' / 54.04' S= 0.0449 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.04 cfs @ 12.22 hrs HW=57.28' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.04 cfs @ 2.09 fps)

Pond YD33: YD-33



Summary for Pond YD40: YD-40

[57] Hint: Peaked at 42.28' (Flood elevation advised)

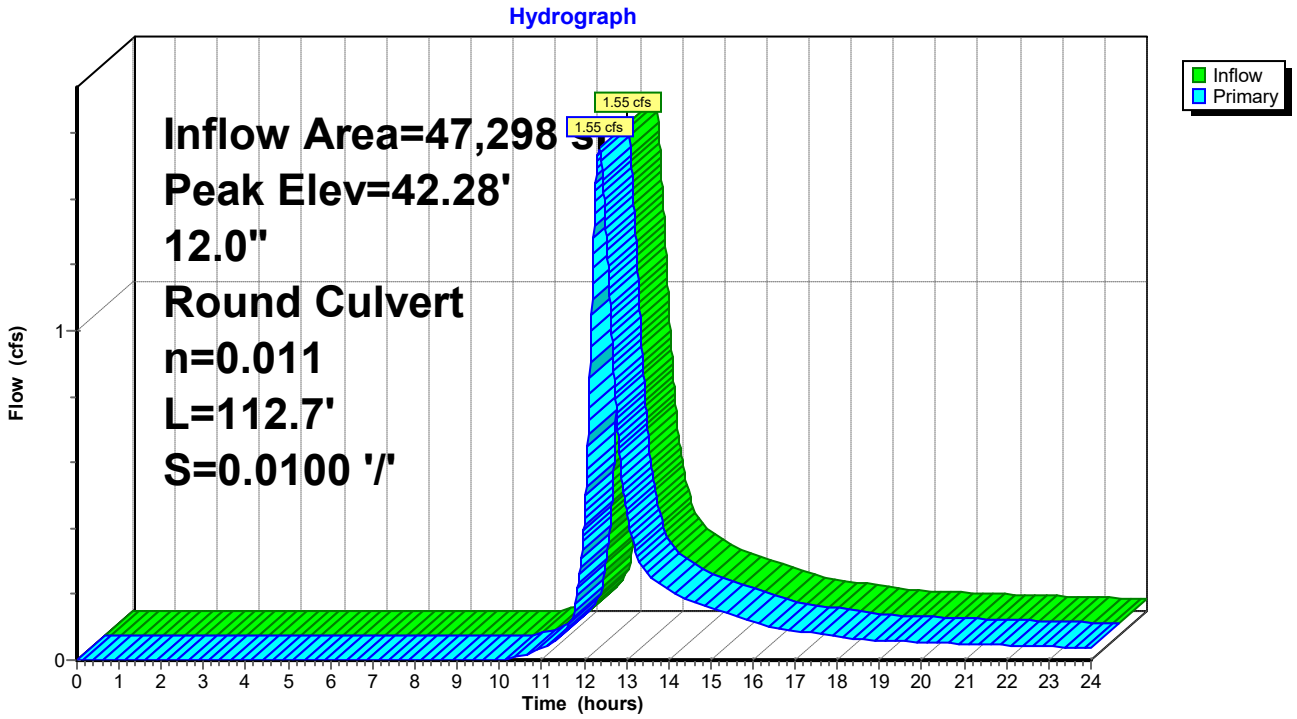
Inflow Area = 47,298 sf, 5.26% Impervious, Inflow Depth > 2.02" for 10-yr event
Inflow = 1.55 cfs @ 12.37 hrs, Volume= 7,954 cf
Outflow = 1.55 cfs @ 12.37 hrs, Volume= 7,954 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.55 cfs @ 12.37 hrs, Volume= 7,954 cf
Routed to Link Sub B : SUB B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.28' @ 12.37 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 112.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 40.37' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.55 cfs @ 12.37 hrs HW=42.28' TW=0.00' (Dynamic Tailwater)
↳**1=Culvert** (Inlet Controls 1.55 cfs @ 2.37 fps)

Pond YD40: YD-40

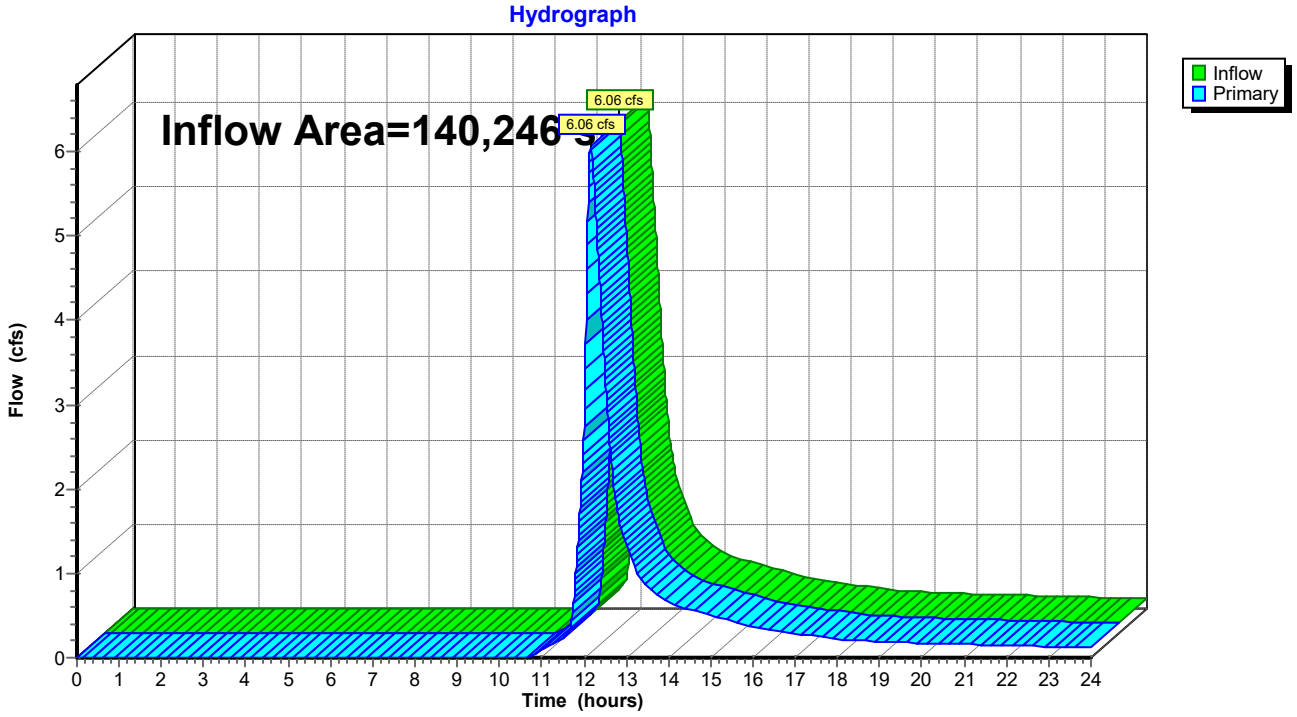


Summary for Link 1: Pipe 1

Inflow Area = 140,246 sf, 34.50% Impervious, Inflow Depth > 2.28" for 10-yr event
Inflow = 6.06 cfs @ 12.16 hrs, Volume= 26,677 cf
Primary = 6.06 cfs @ 12.16 hrs, Volume= 26,677 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 2 : Pipe 2

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1: Pipe 1

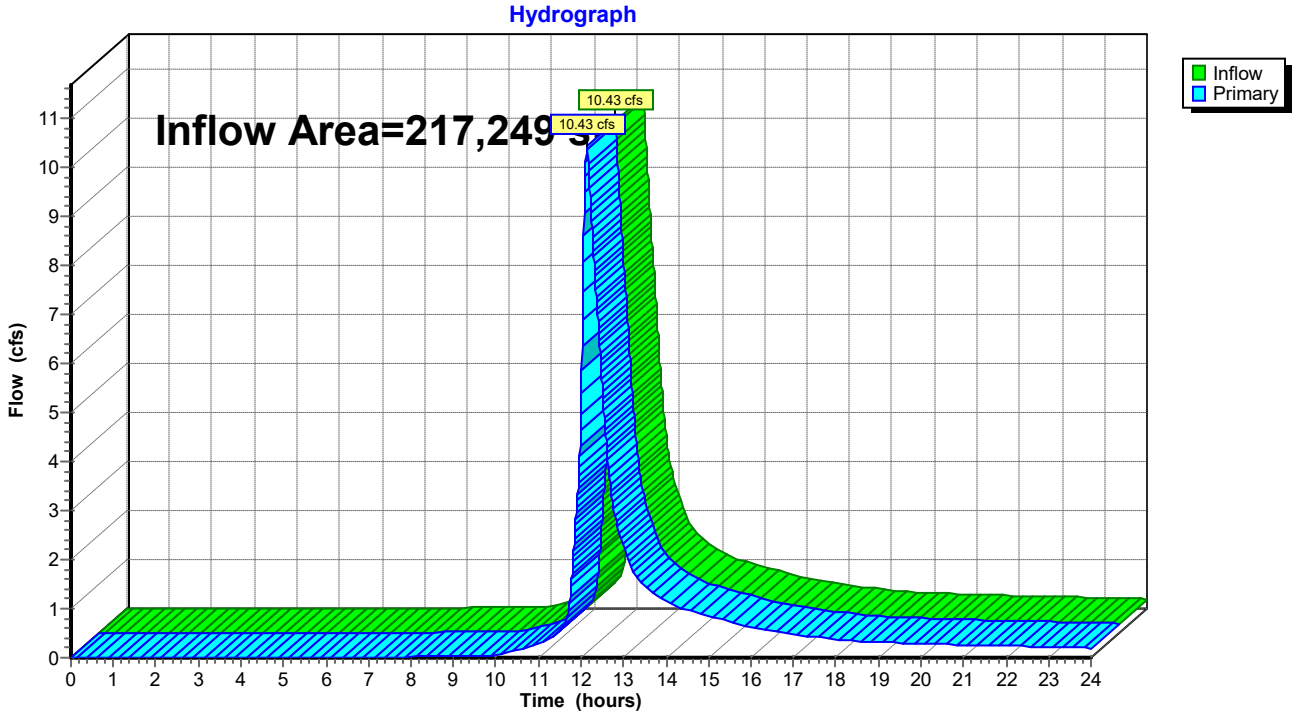


Summary for Link 2: Pipe 2

Inflow Area = 217,249 sf, 40.87% Impervious, Inflow Depth > 2.56" for 10-yr event
Inflow = 10.43 cfs @ 12.14 hrs, Volume= 46,340 cf
Primary = 10.43 cfs @ 12.14 hrs, Volume= 46,340 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3 : Pipe 3

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 2: Pipe 2

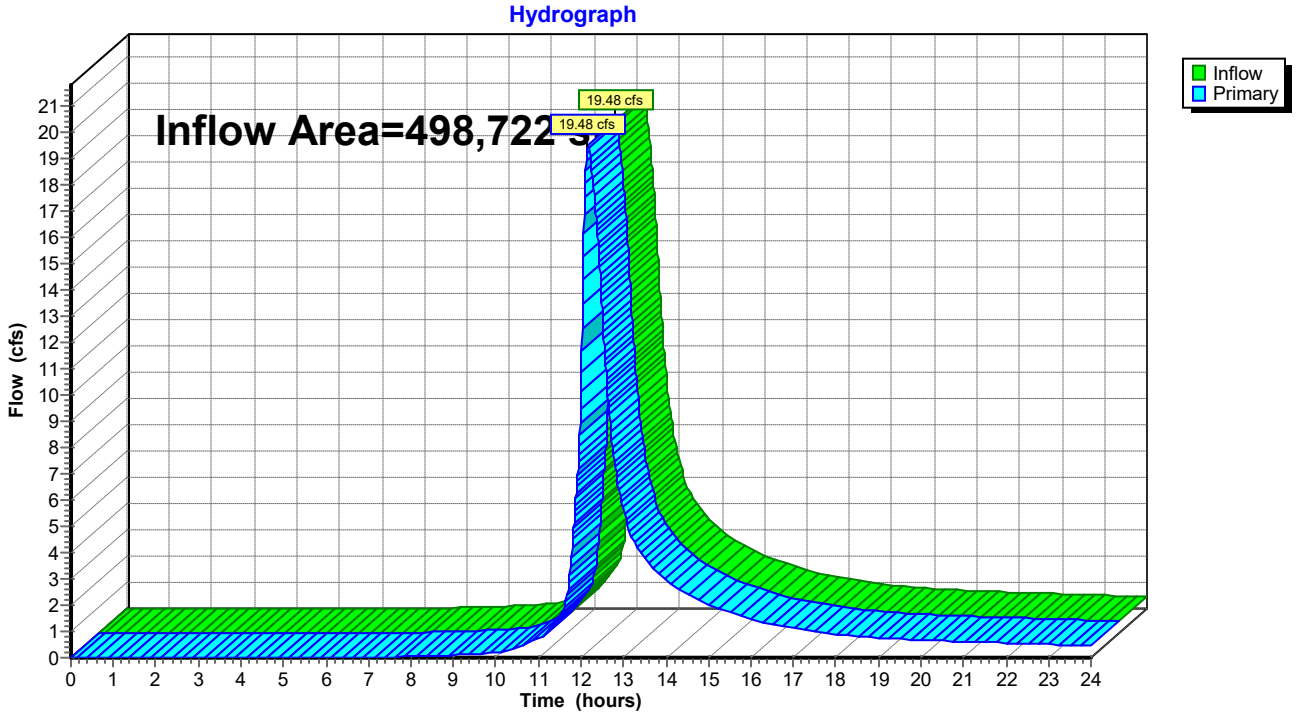


Summary for Link 3: Pipe 3

Inflow Area = 498,722 sf, 46.58% Impervious, Inflow Depth > 2.60" for 10-yr event
Inflow = 19.48 cfs @ 12.16 hrs, Volume= 108,165 cf
Primary = 19.48 cfs @ 12.16 hrs, Volume= 108,165 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4 : Pipe 4

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 3: Pipe 3

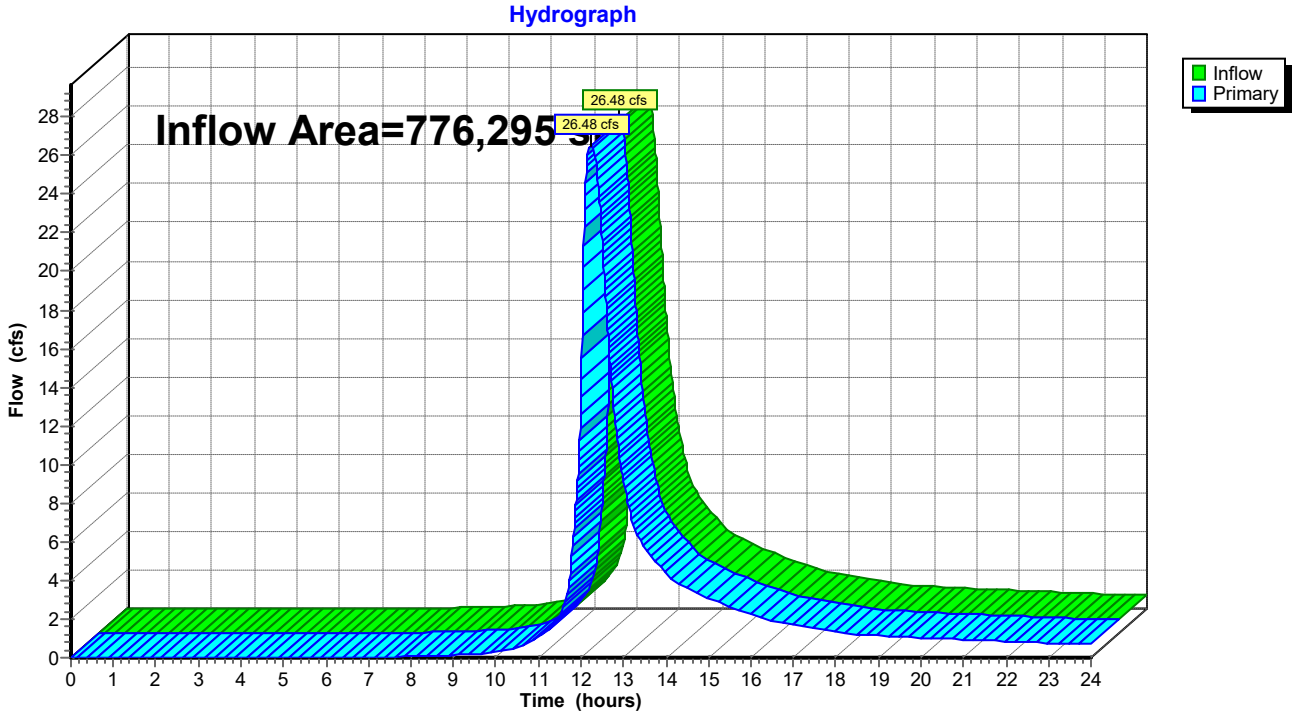


Summary for Link 4: Pipe 4

Inflow Area = 776,295 sf, 34.75% Impervious, Inflow Depth > 2.50" for 10-yr event
Inflow = 26.48 cfs @ 12.24 hrs, Volume= 162,051 cf
Primary = 26.48 cfs @ 12.24 hrs, Volume= 162,051 cf, Atten= 0%, Lag= 0.0 min
Routed to Link A : POC-A

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 4: Pipe 4

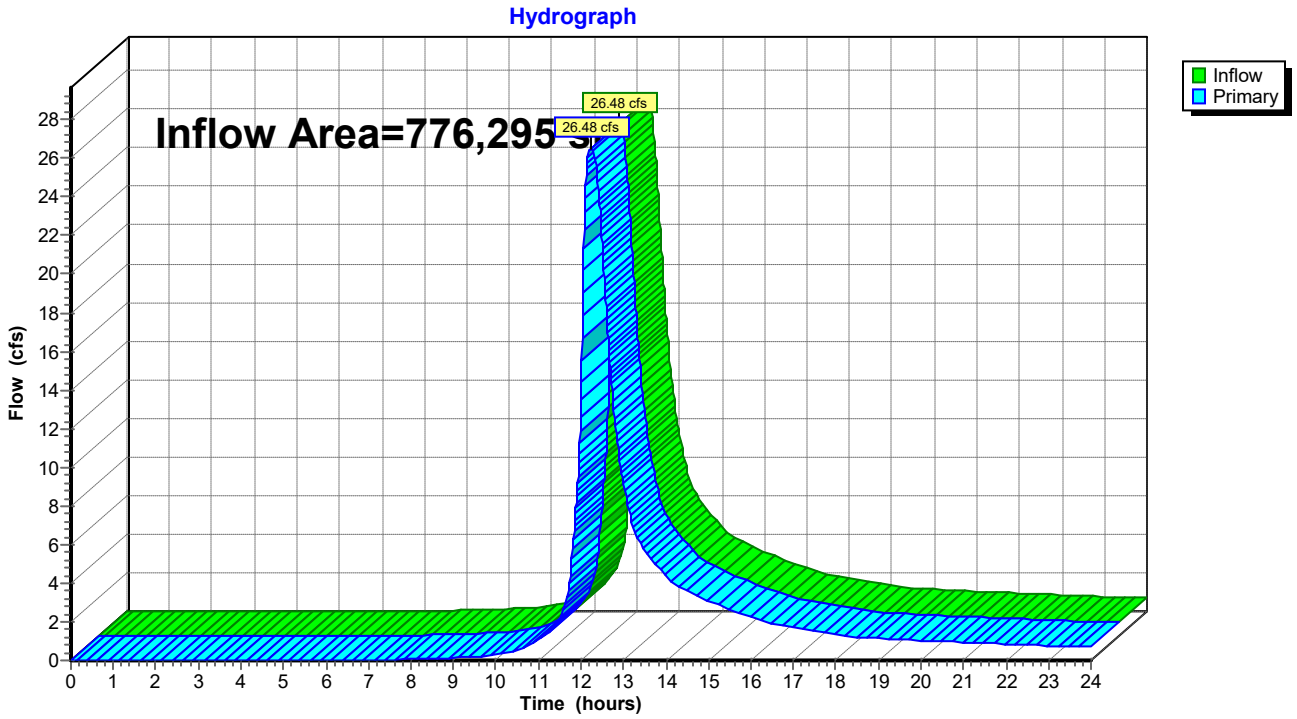


Summary for Link A: POC-A

Inflow Area = 776,295 sf, 34.75% Impervious, Inflow Depth > 2.50" for 10-yr event
Inflow = 26.48 cfs @ 12.24 hrs, Volume= 162,051 cf
Primary = 26.48 cfs @ 12.24 hrs, Volume= 162,051 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link A: POC-A

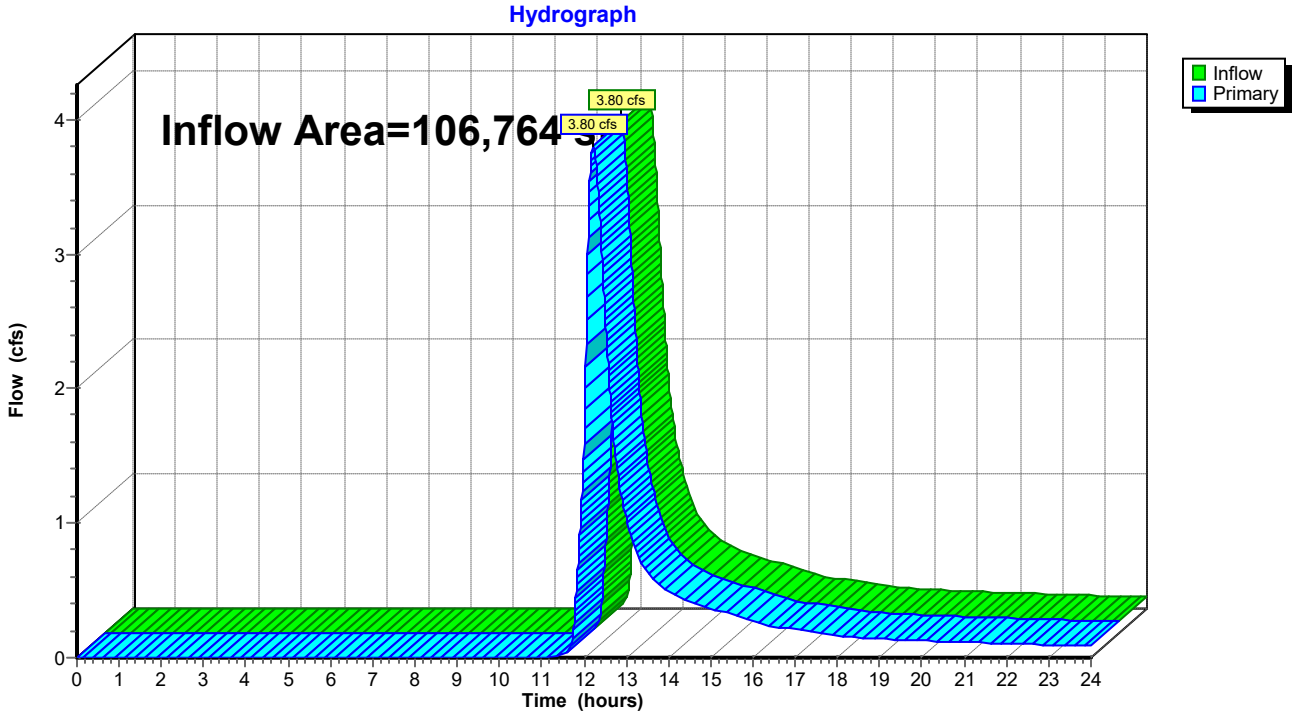


Summary for Link Sub A: SUB A

Inflow Area = 106,764 sf, 35.77% Impervious, Inflow Depth > 2.09" for 10-yr event
Inflow = 3.80 cfs @ 12.22 hrs, Volume= 18,568 cf
Primary = 3.80 cfs @ 12.22 hrs, Volume= 18,568 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 1 : Pipe 1

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Sub A: SUB A

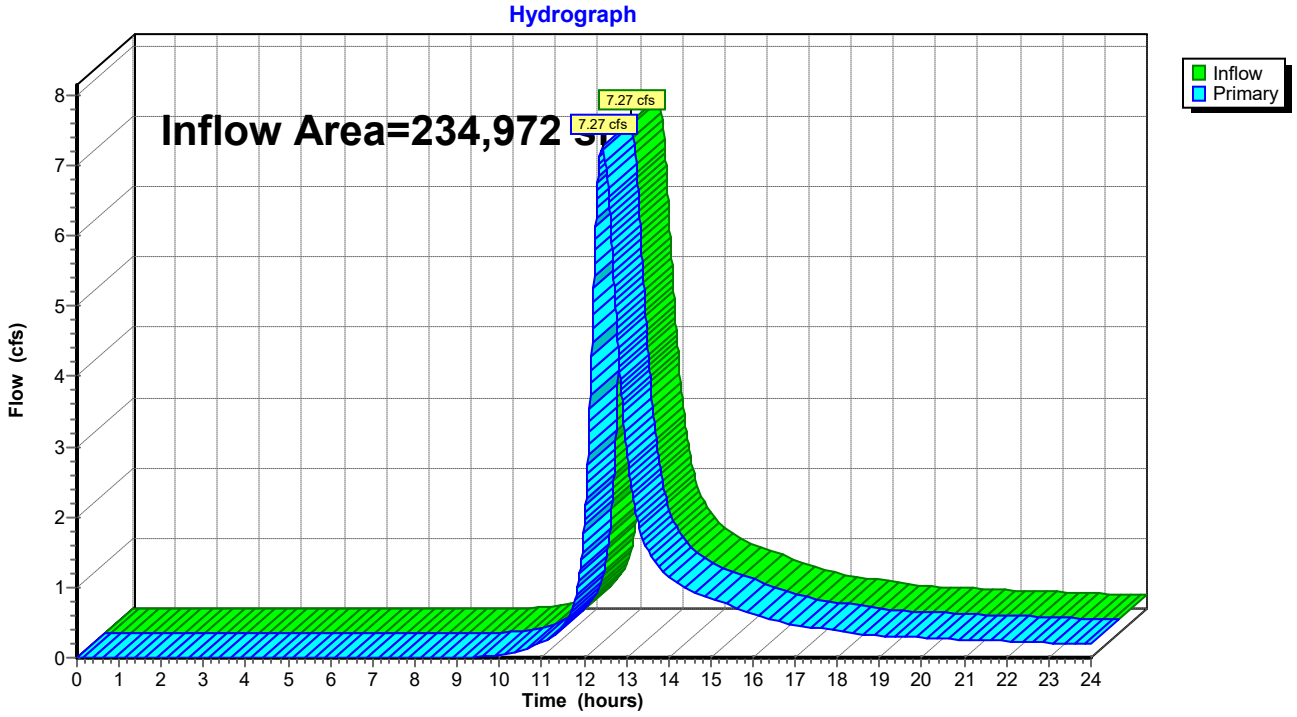


Summary for Link Sub B: SUB B

Inflow Area = 234,972 sf, 4.63% Impervious, Inflow Depth > 2.16" for 10-yr event
Inflow = 7.27 cfs @ 12.43 hrs, Volume= 42,295 cf
Primary = 7.27 cfs @ 12.43 hrs, Volume= 42,295 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4 : Pipe 4

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Sub B: SUB B

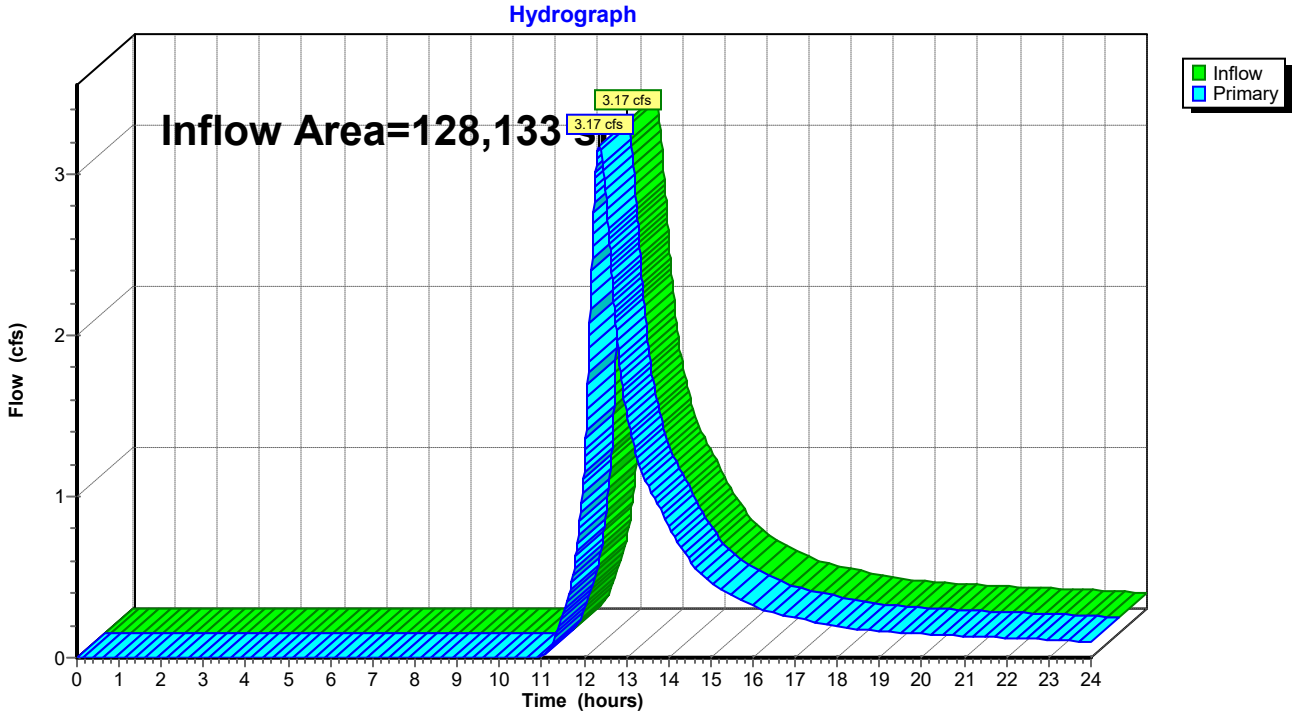


Summary for Link SUB D1: D1

Inflow Area = 128,133 sf, 28.03% Impervious, Inflow Depth > 2.06" for 10-yr event
Inflow = 3.17 cfs @ 12.36 hrs, Volume= 22,031 cf
Primary = 3.17 cfs @ 12.36 hrs, Volume= 22,031 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3 : Pipe 3

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link SUB D1: D1



Summary for Subcatchment 15S: D1H-R

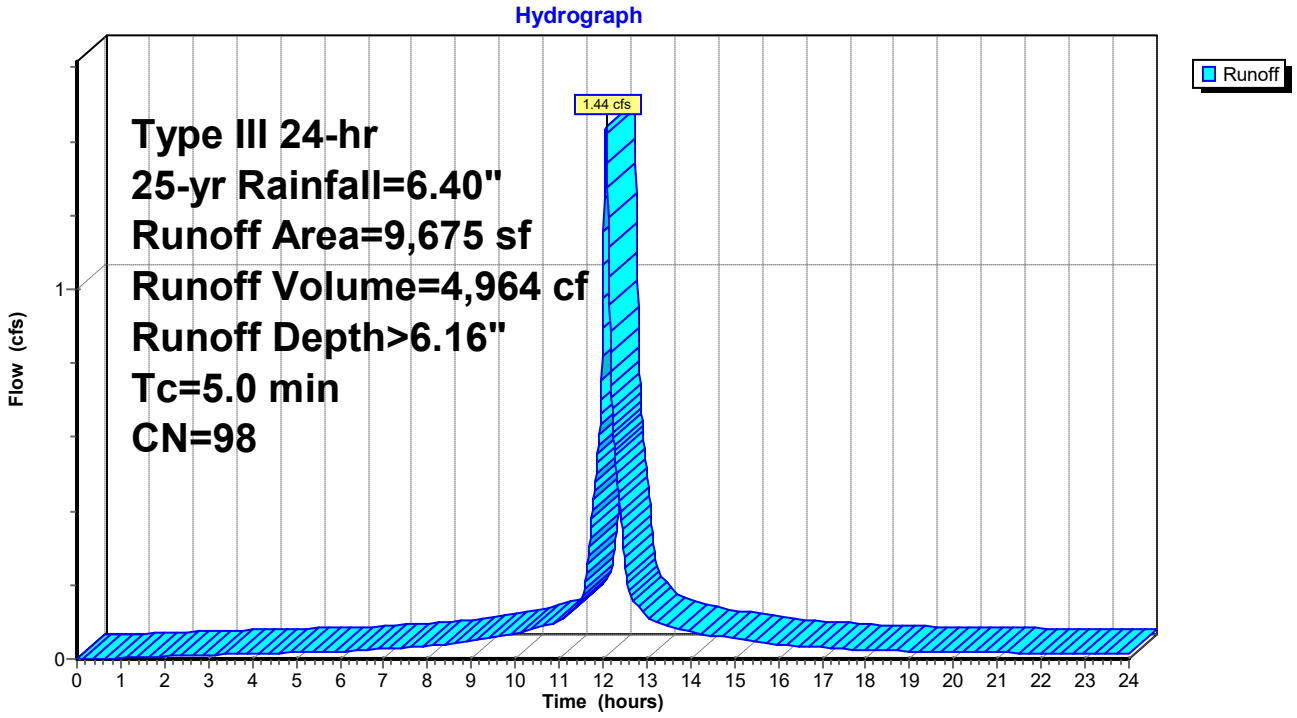
Runoff = 1.44 cfs @ 12.07 hrs, Volume= 4,964 cf, Depth> 6.16"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	9,675	98	Impervious
	9,675		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 15S: D1H-R



Summary for Subcatchment 16S: D1E-R

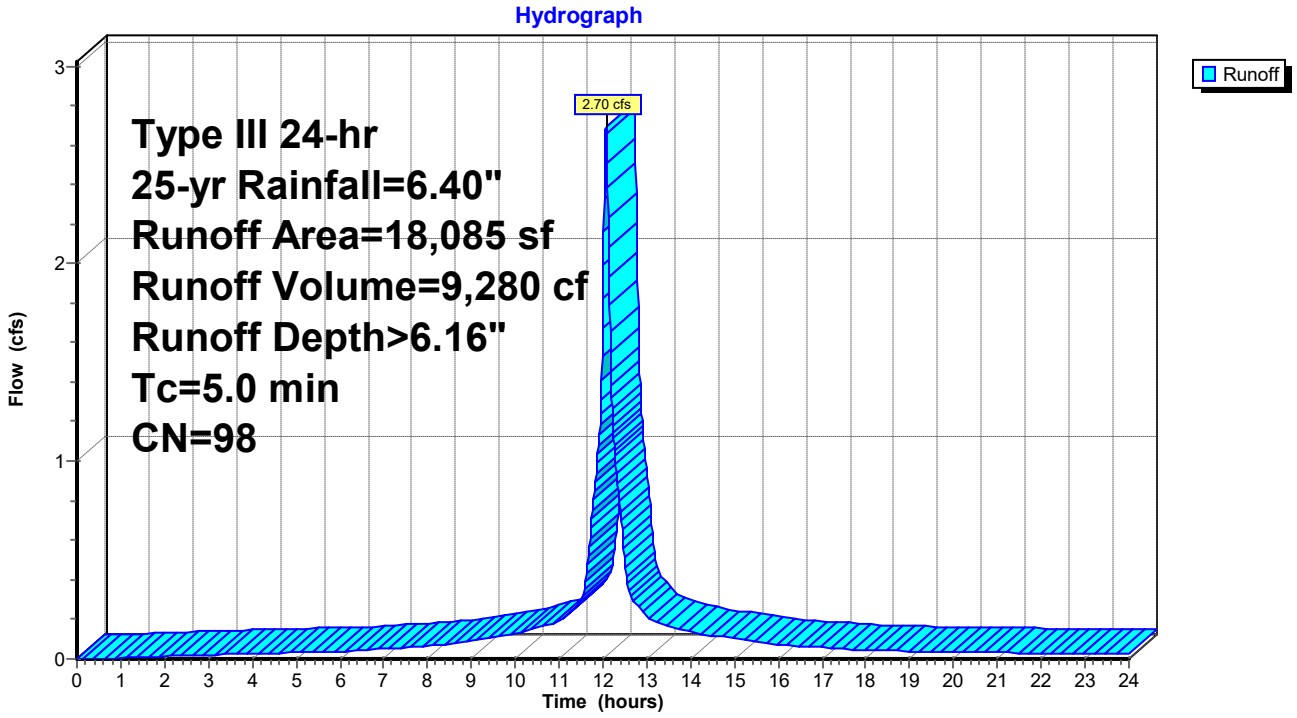
Runoff = 2.70 cfs @ 12.07 hrs, Volume= 9,280 cf, Depth> 6.16"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	18,085	98	Impervious
	18,085		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 16S: D1E-R



Summary for Subcatchment 22S: D2A-R

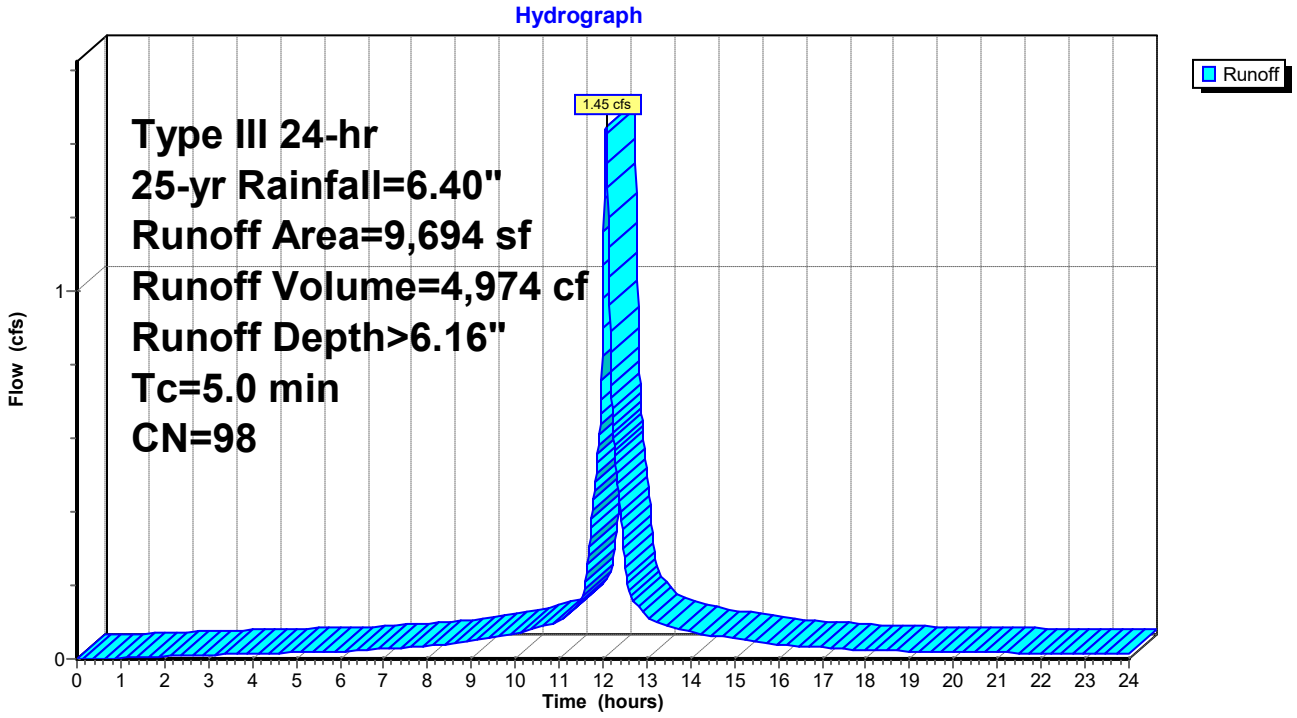
Runoff = 1.45 cfs @ 12.07 hrs, Volume= 4,974 cf, Depth> 6.16"
Routed to Pond 13P : Por Pvt-D2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	9,694	98	Impervious
	9,694		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 22S: D2A-R



Summary for Subcatchment 23S: D2C-R

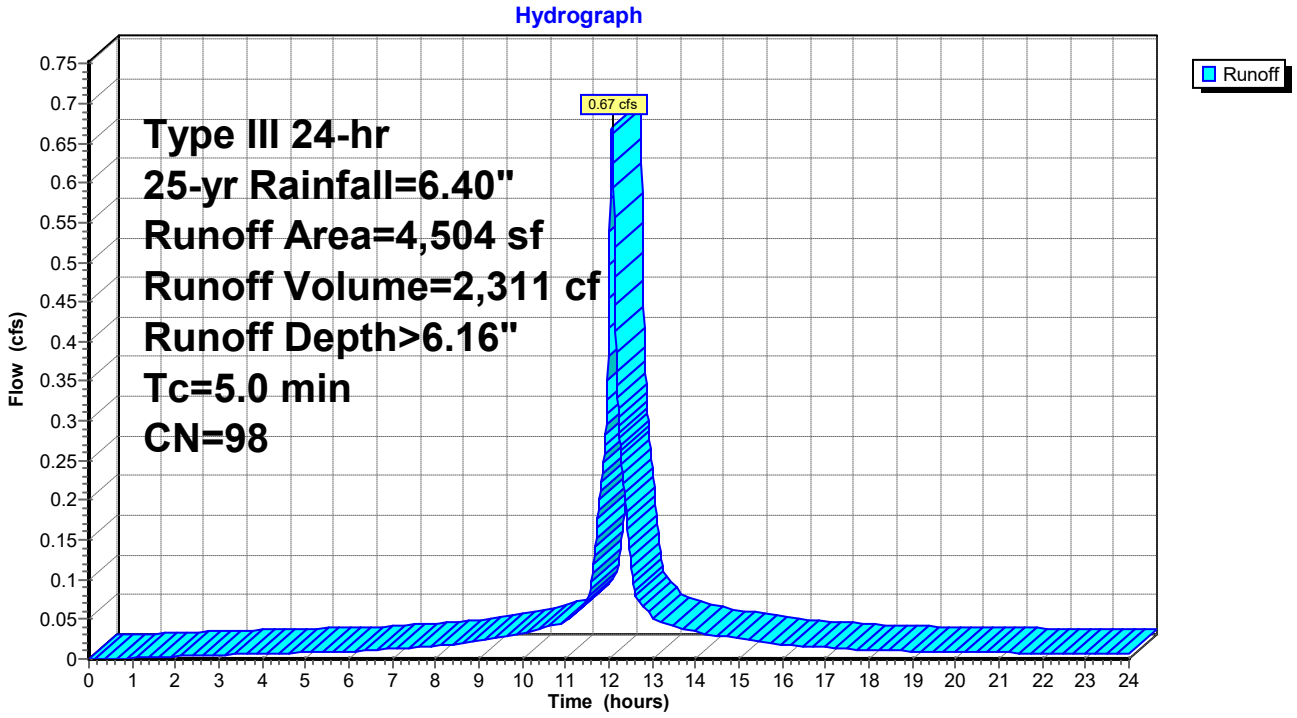
Runoff = 0.67 cfs @ 12.07 hrs, Volume= 2,311 cf, Depth> 6.16"
Routed to Pond 16P : Por Pvt-D2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 23S: D2C-R



Summary for Subcatchment 24S: D2D-R

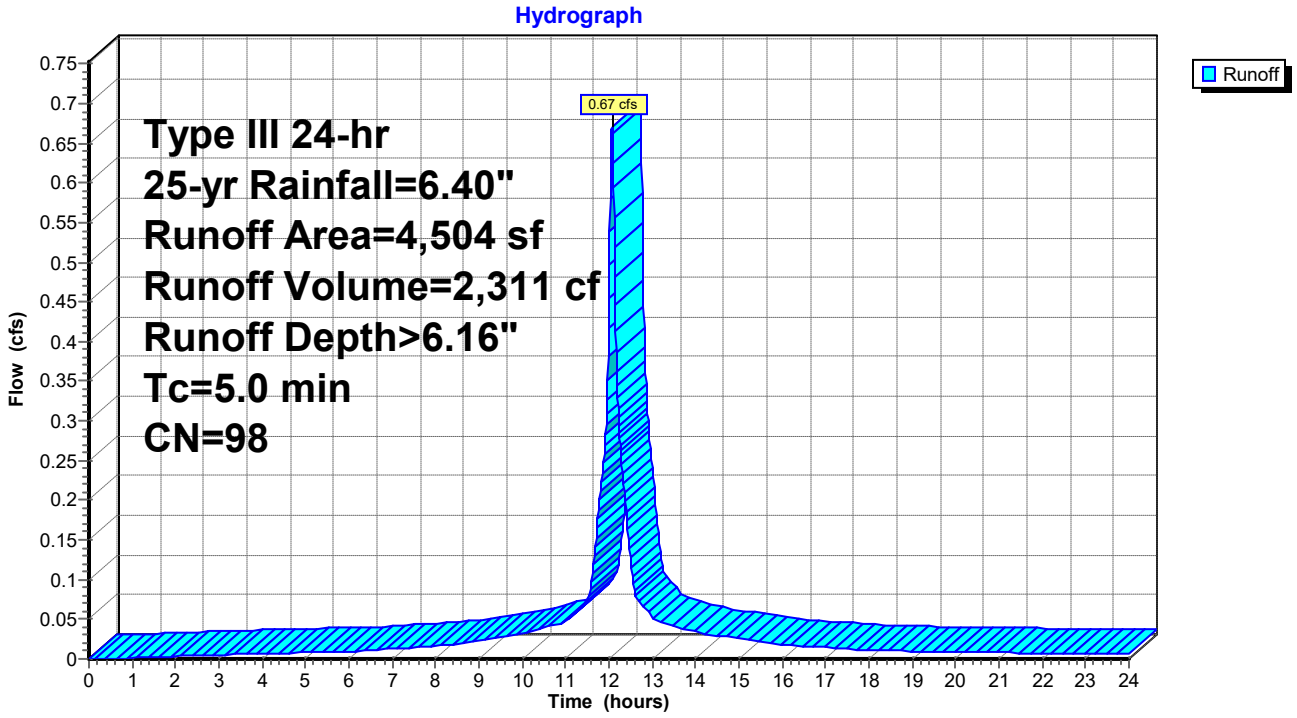
Runoff = 0.67 cfs @ 12.07 hrs, Volume= 2,311 cf, Depth> 6.16"
Routed to Pond 18P : Por Pvt-D2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 24S: D2D-R



Summary for Subcatchment 25S: D2E-R

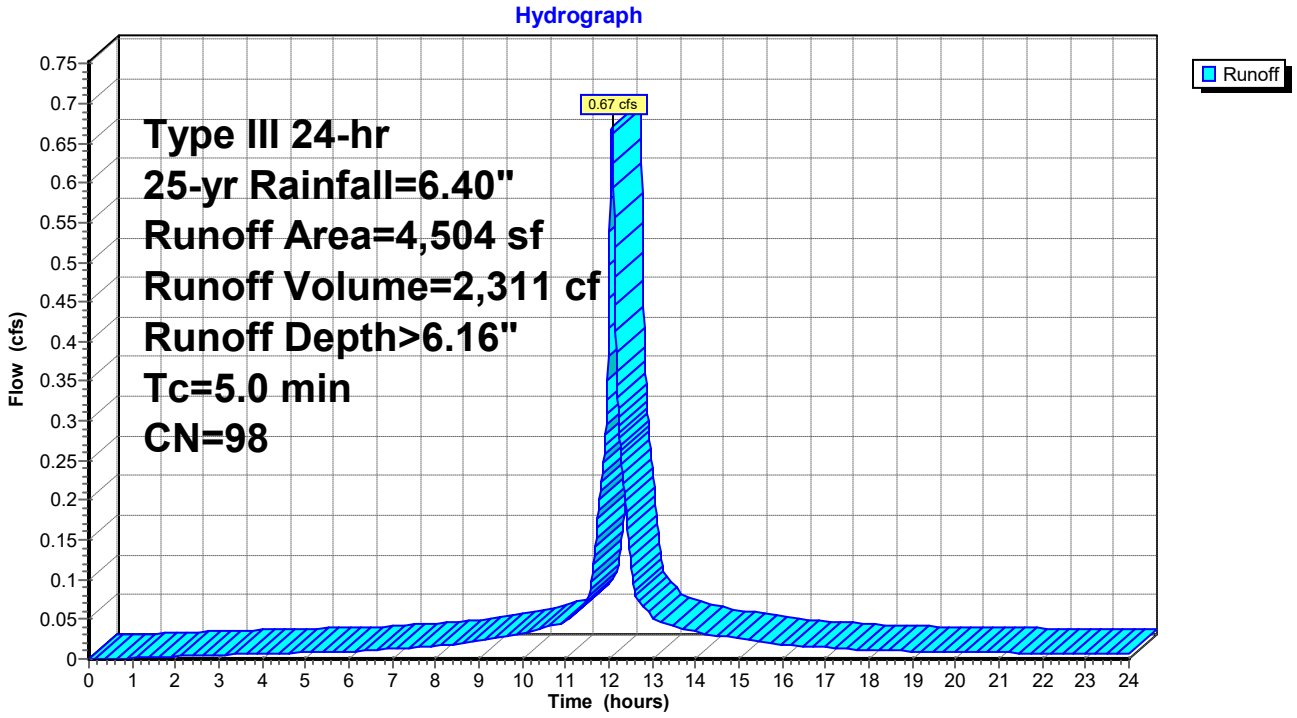
Runoff = 0.67 cfs @ 12.07 hrs, Volume= 2,311 cf, Depth> 6.16"
Routed to Pond 19P : Por Pvt-D2E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 25S: D2E-R



Summary for Subcatchment 26S: D2F-R

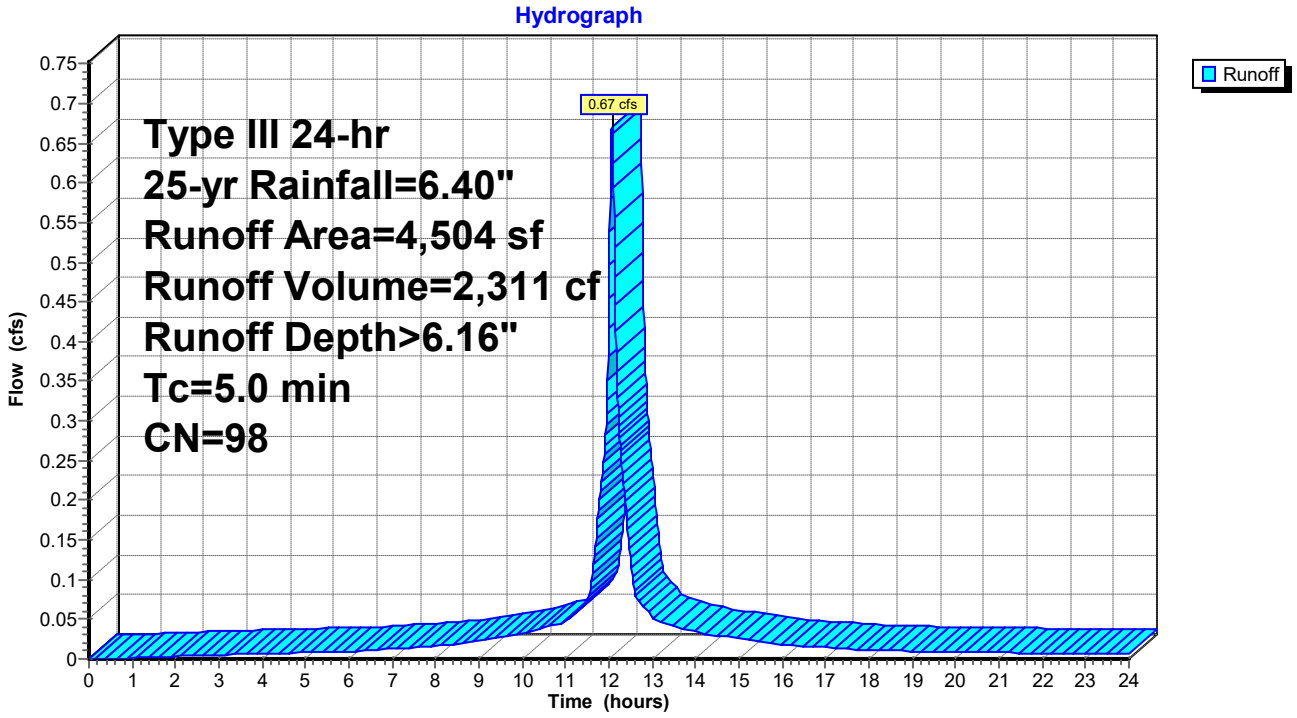
Runoff = 0.67 cfs @ 12.07 hrs, Volume= 2,311 cf, Depth> 6.16"
Routed to Pond 20P : Por Pvt-D2F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 26S: D2F-R



Summary for Subcatchment A1: WS-A1

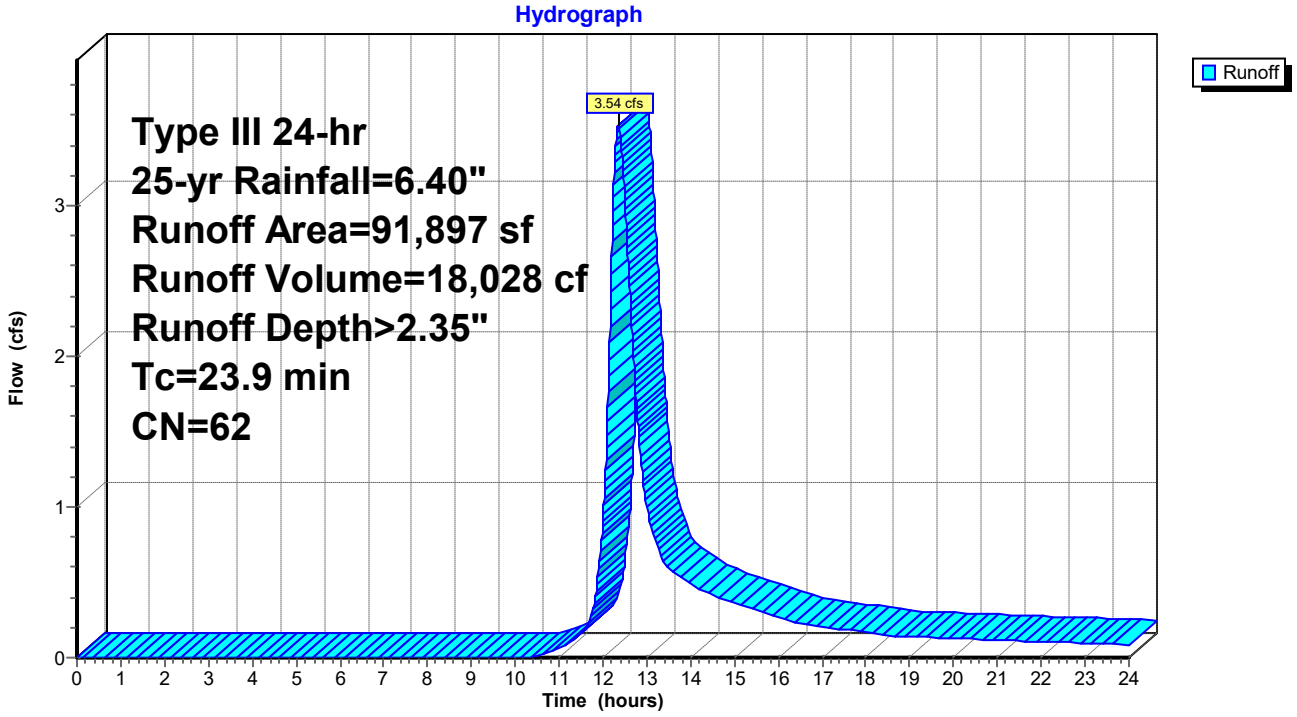
Runoff = 3.54 cfs @ 12.35 hrs, Volume= 18,028 cf, Depth> 2.35"
Routed to Link SUB D1 : D1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	2,508	98	Impervious - Roof
*	9,195	69	Lawn B
*	0	79	Lawn C
*	80,194	60	Forest B
*	0	73	Forest C
	91,897	62	Weighted Average
	89,389		97.27% Pervious Area
	2,508		2.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.9					**Direct Entry,**

Subcatchment A1: WS-A1



Summary for Subcatchment A2: WS-A2

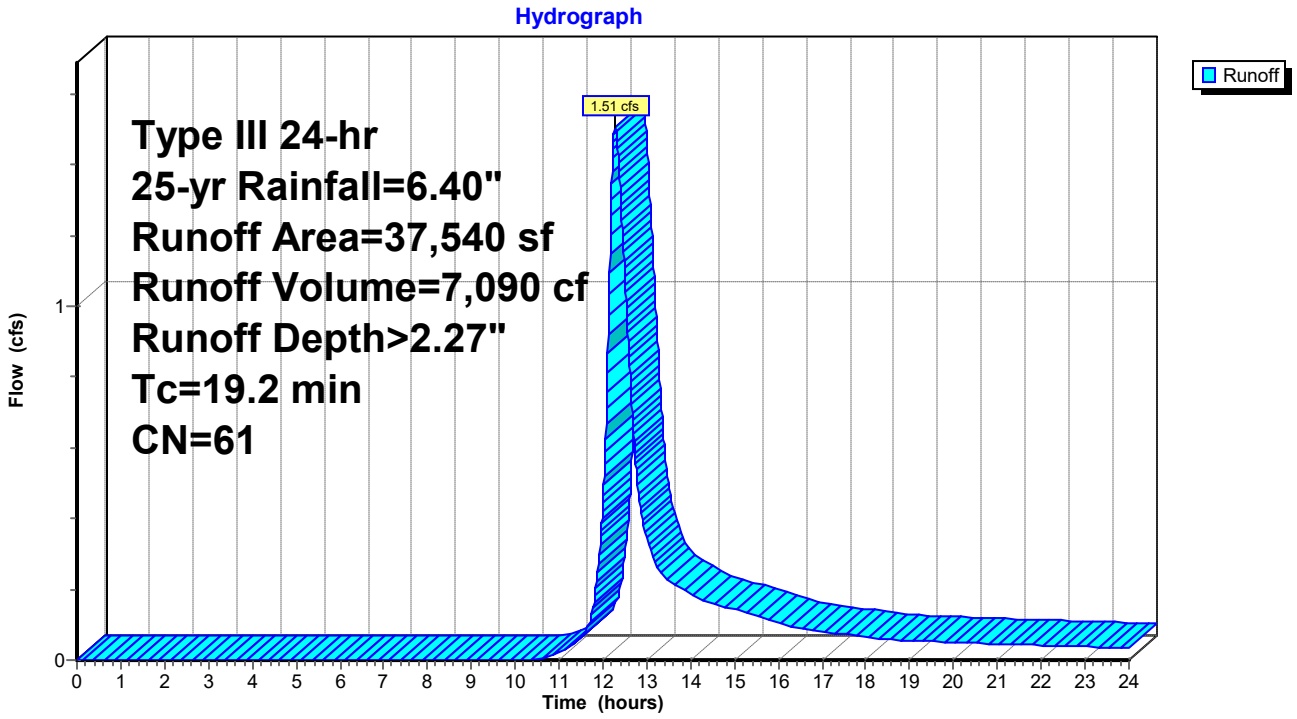
Runoff = 1.51 cfs @ 12.27 hrs, Volume= 7,090 cf, Depth> 2.27"
Routed to Pond DB01 : Detention-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	0	98	Impervious - Roof
*	5,793	69	Lawn B
*	0	79	Lawn C
*	31,747	60	Forest B
*	0	73	Forest C
	37,540	61	Weighted Average
	37,540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2					**Direct Entry,**

Subcatchment A2: WS-A2



Summary for Subcatchment A3: WS-A3

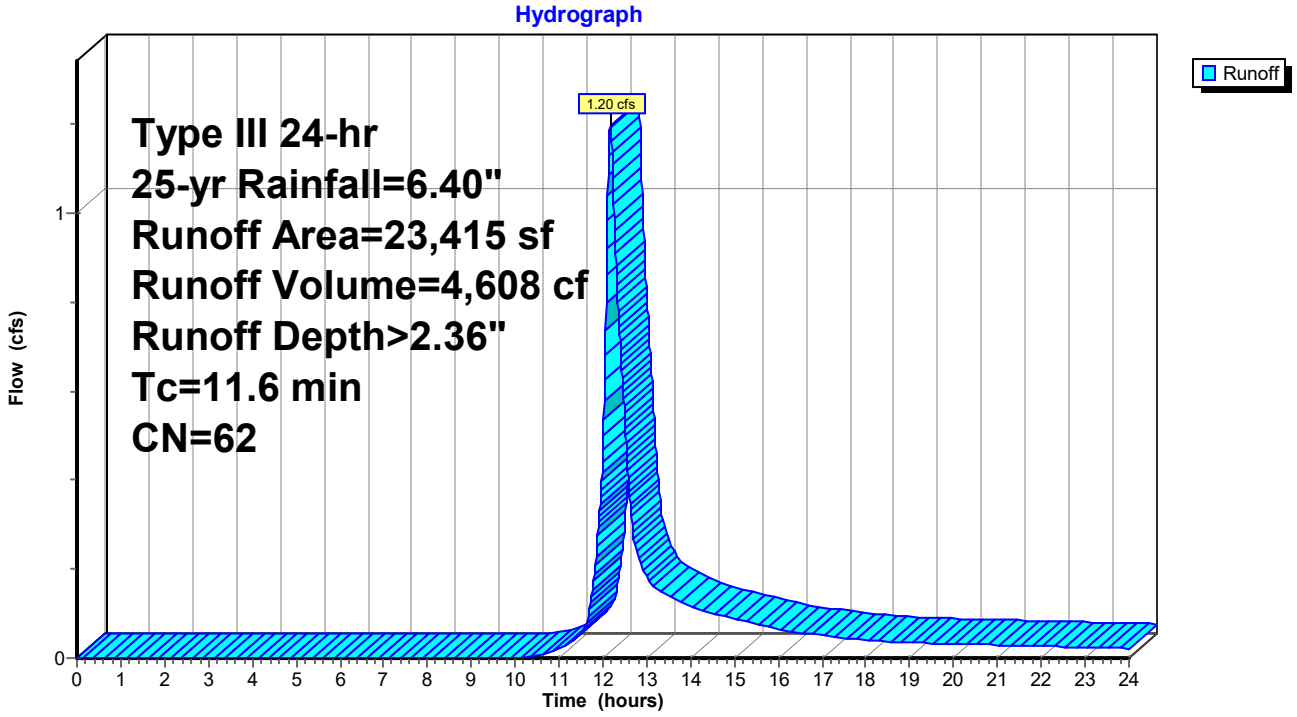
Runoff = 1.20 cfs @ 12.17 hrs, Volume= 4,608 cf, Depth> 2.36"
Routed to Pond DB01 : Detention-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	0	98	Impervious - Roof
*	4,949	69	Lawn B
*	0	79	Lawn C
*	18,466	60	Forest B
*	0	73	Forest C
	23,415	62	Weighted Average
	23,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6					**Direct Entry,**

Subcatchment A3: WS-A3



Summary for Subcatchment B1: WS-B1

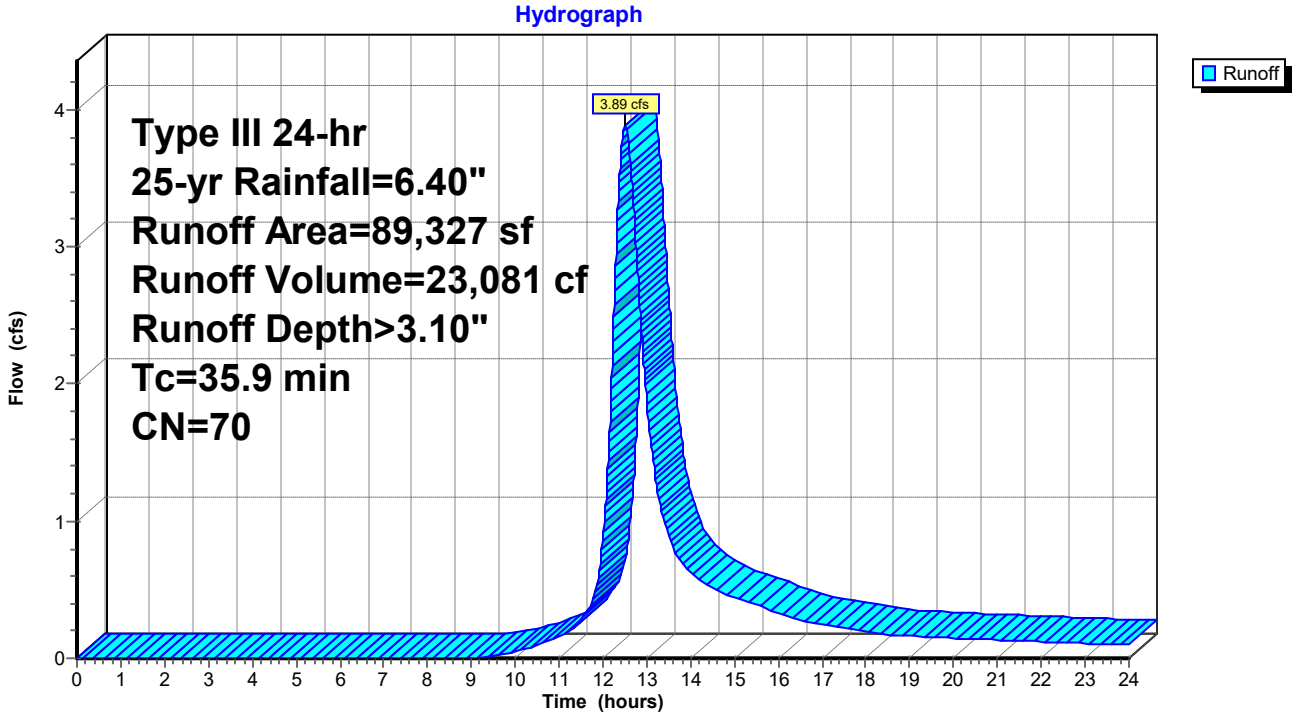
Runoff = 3.89 cfs @ 12.49 hrs, Volume= 23,081 cf, Depth> 3.10"
Routed to Pond YD3 : YD-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	1,588	98	Impervious
*	87,739	69	Lawn B
	89,327	70	Weighted Average
	87,739		98.22% Pervious Area
	1,588		1.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.9					**Direct Entry,**

Subcatchment B1: WS-B1



Summary for Subcatchment B2: WS-B2

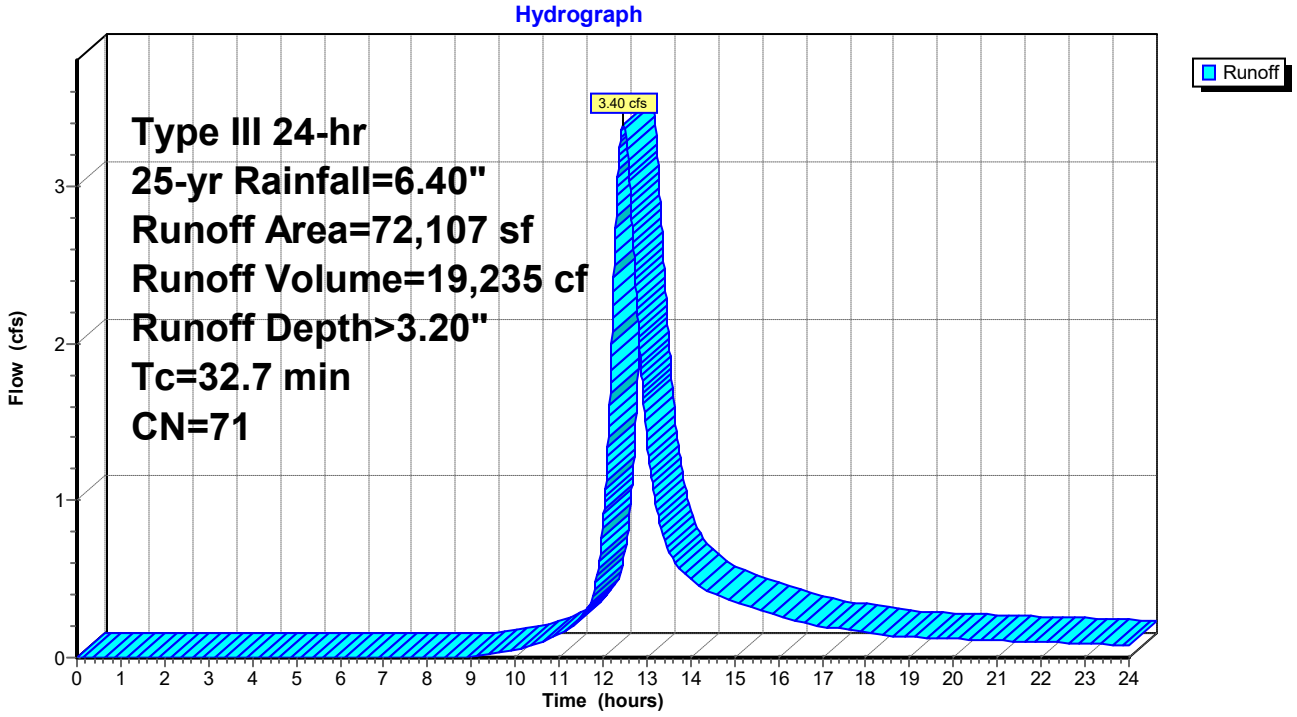
Runoff = 3.40 cfs @ 12.46 hrs, Volume= 19,235 cf, Depth> 3.20"
Routed to Link Sub B : SUB B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	49	98	Impervious
*	55,957	69	Lawn B
*	16,101	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	72,107	71	Weighted Average
	72,058		99.93% Pervious Area
	49		0.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.7					**Direct Entry,**

Subcatchment B2: WS-B2



Summary for Subcatchment B3: WS-B3

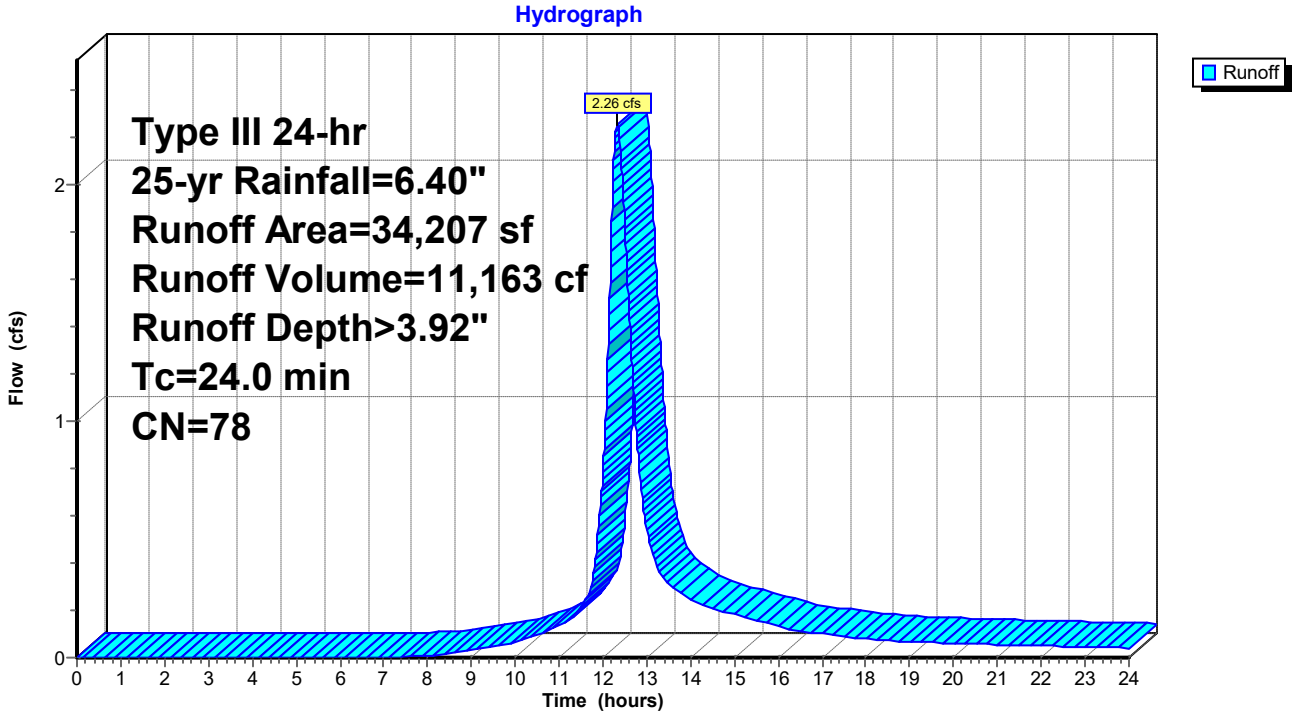
Runoff = 2.26 cfs @ 12.34 hrs, Volume= 11,163 cf, Depth> 3.92"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	12,332	98	Impervious
*	14,526	69	Lawn B
*	1,341	79	Lawn C
*	5,996	60	Forest B
*	12	73	Forest C
	34,207	78	Weighted Average
	21,875		63.95% Pervious Area
	12,332		36.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0					**Direct Entry,**

Subcatchment B3: WS-B3



Summary for Subcatchment B4: WS-B4

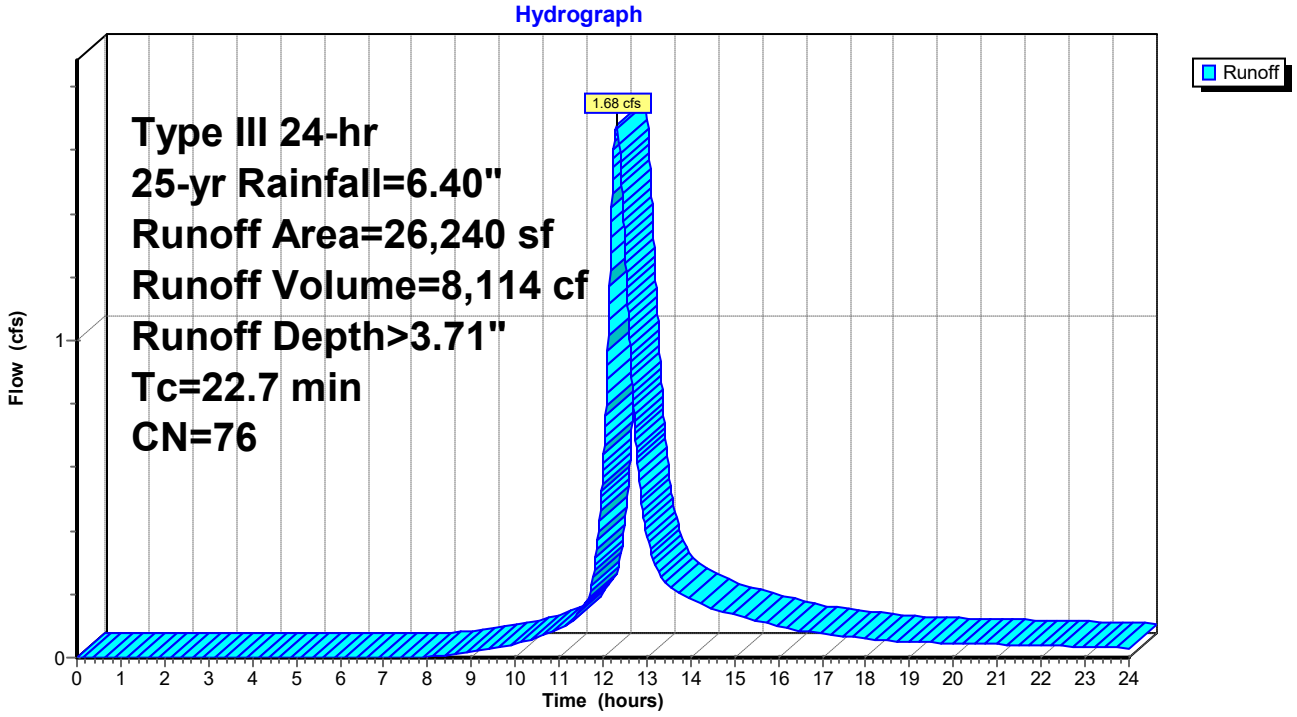
Runoff = 1.68 cfs @ 12.31 hrs, Volume= 8,114 cf, Depth> 3.71"
Routed to Link Sub B : SUB B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	6,749	98	Impervious
*	19,491	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	26,240	76	Weighted Average
	19,491		74.28% Pervious Area
	6,749		25.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.7					**Direct Entry,**

Subcatchment B4: WS-B4



Summary for Subcatchment B5: WS-B5

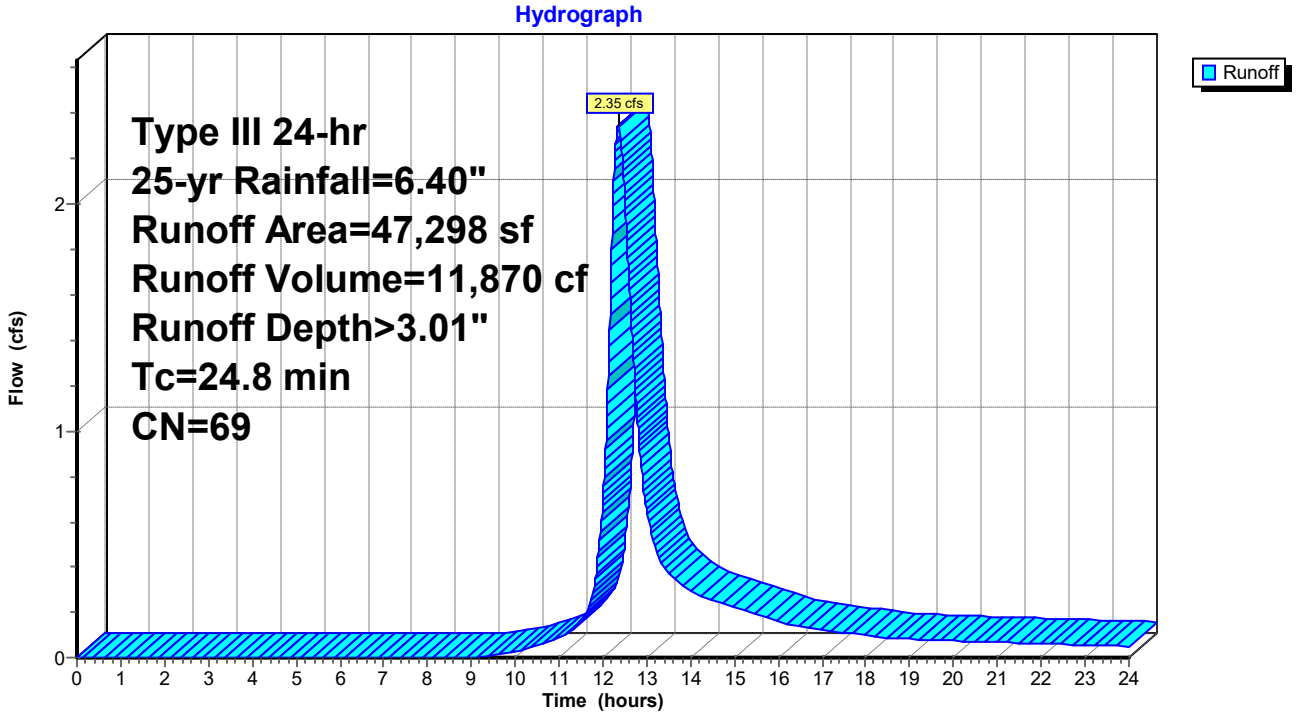
Runoff = 2.35 cfs @ 12.35 hrs, Volume= 11,870 cf, Depth> 3.01"
Routed to Pond YD40 : YD-40

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	2,488	98	Impervious
*	36,610	69	Lawn B
*	0	79	Lawn C
*	8,200	60	Forest B
*	0	73	Forest C
	47,298	69	Weighted Average
	44,810		94.74% Pervious Area
	2,488		5.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8					**Direct Entry,**

Subcatchment B5: WS-B5



Summary for Subcatchment B6: WS-B6

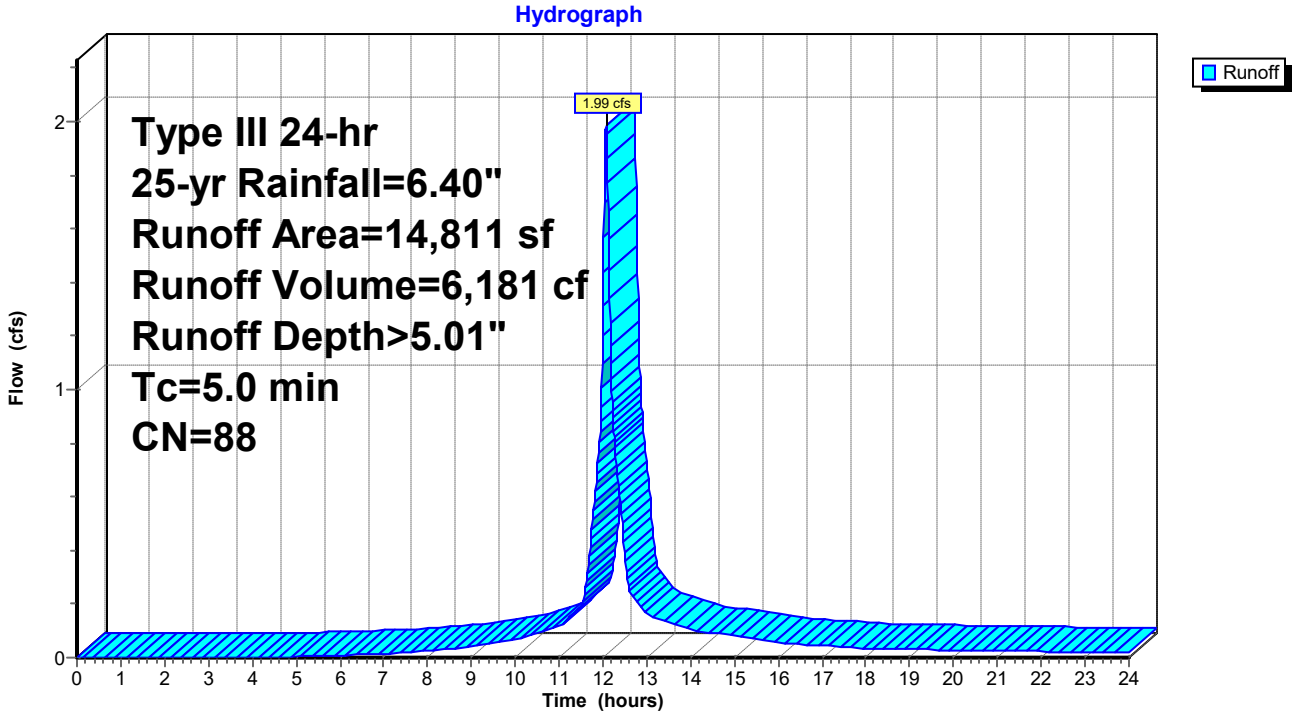
Runoff = 1.99 cfs @ 12.07 hrs, Volume= 6,181 cf, Depth> 5.01"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	9,953	98	Impervious
*	4,858	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	14,811	88	Weighted Average
	4,858		32.80% Pervious Area
	9,953		67.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment B6: WS-B6



Summary for Subcatchment C1: WS-C1

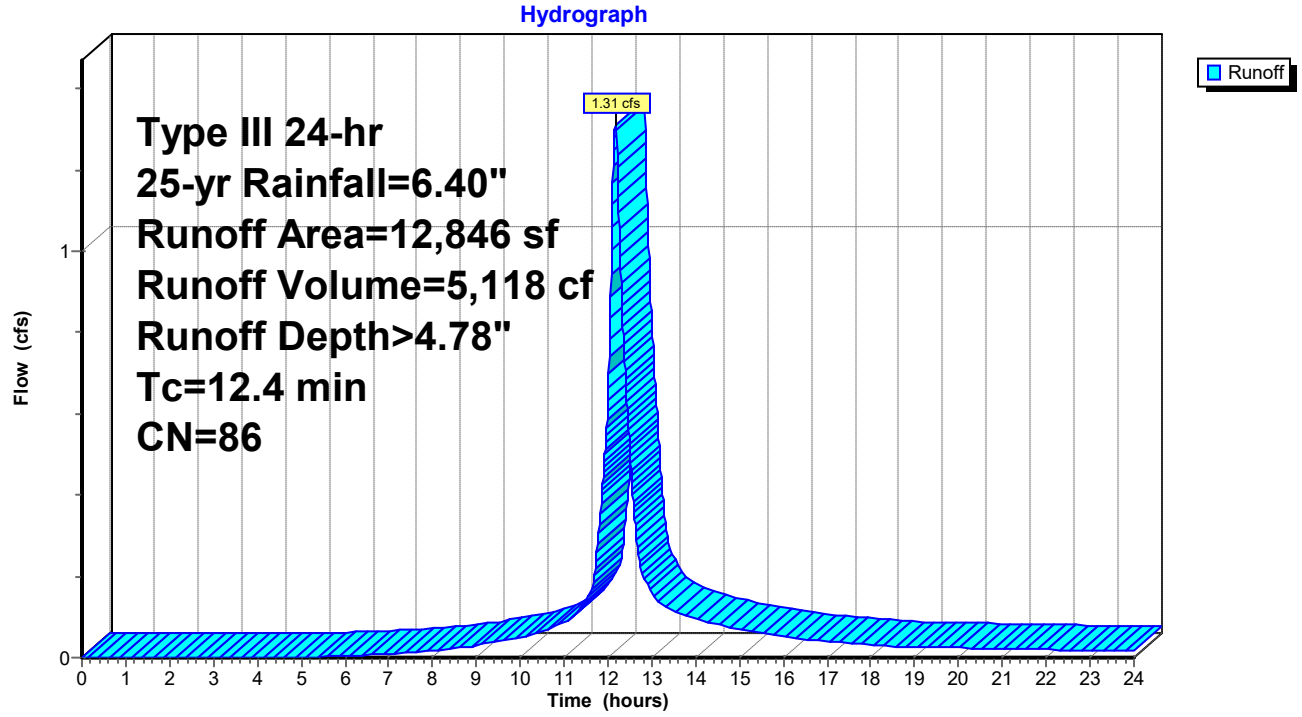
Runoff = 1.31 cfs @ 12.17 hrs, Volume= 5,118 cf, Depth> 4.78"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	5,006	98	Impervious
*	0	69	Lawn B
*	7,840	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	12,846	86	Weighted Average
	7,840		61.03% Pervious Area
	5,006		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4					**Direct Entry,**

Subcatchment C1: WS-C1



Summary for Subcatchment C2: WS-C2

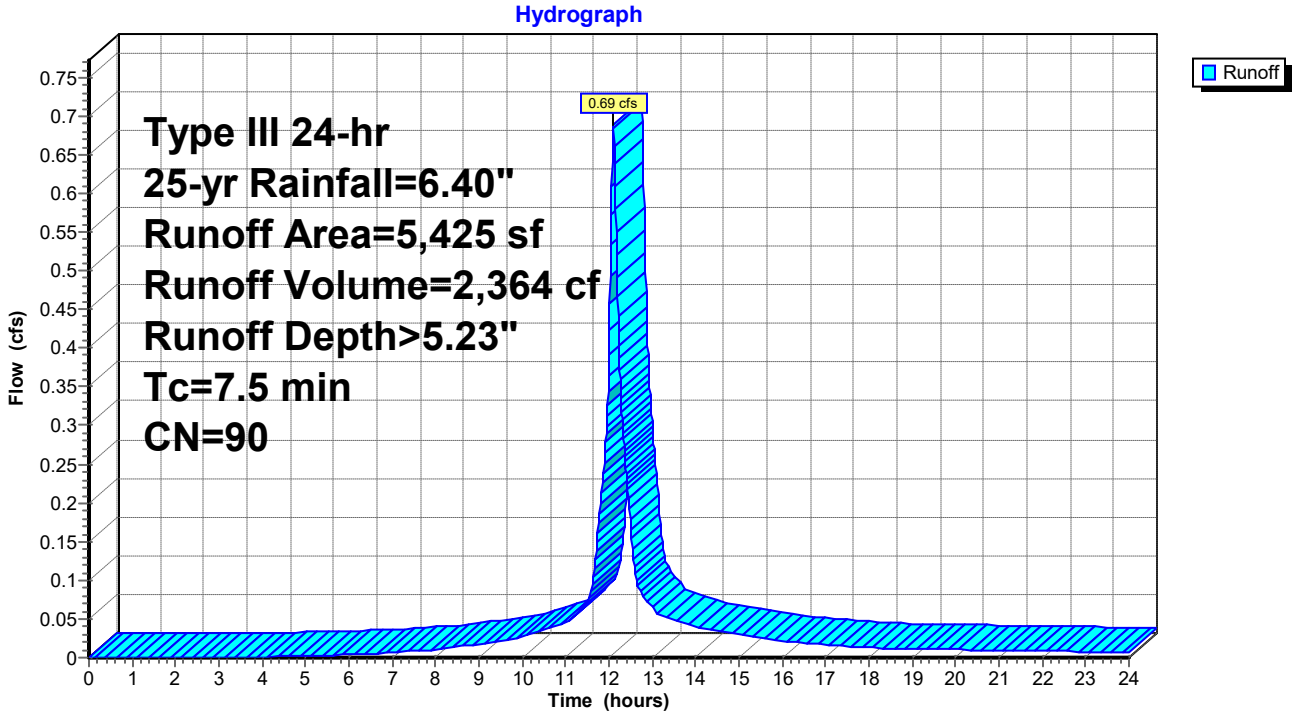
Runoff = 0.69 cfs @ 12.10 hrs, Volume= 2,364 cf, Depth> 5.23"
Routed to Pond RG03 : Rain Garden-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	3,093	98	Impervious
*	0	69	Lawn B
*	2,332	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	5,425	90	Weighted Average
	2,332		42.99% Pervious Area
	3,093		57.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5					**Direct Entry,**

Subcatchment C2: WS-C2



Summary for Subcatchment C3: WS-C3

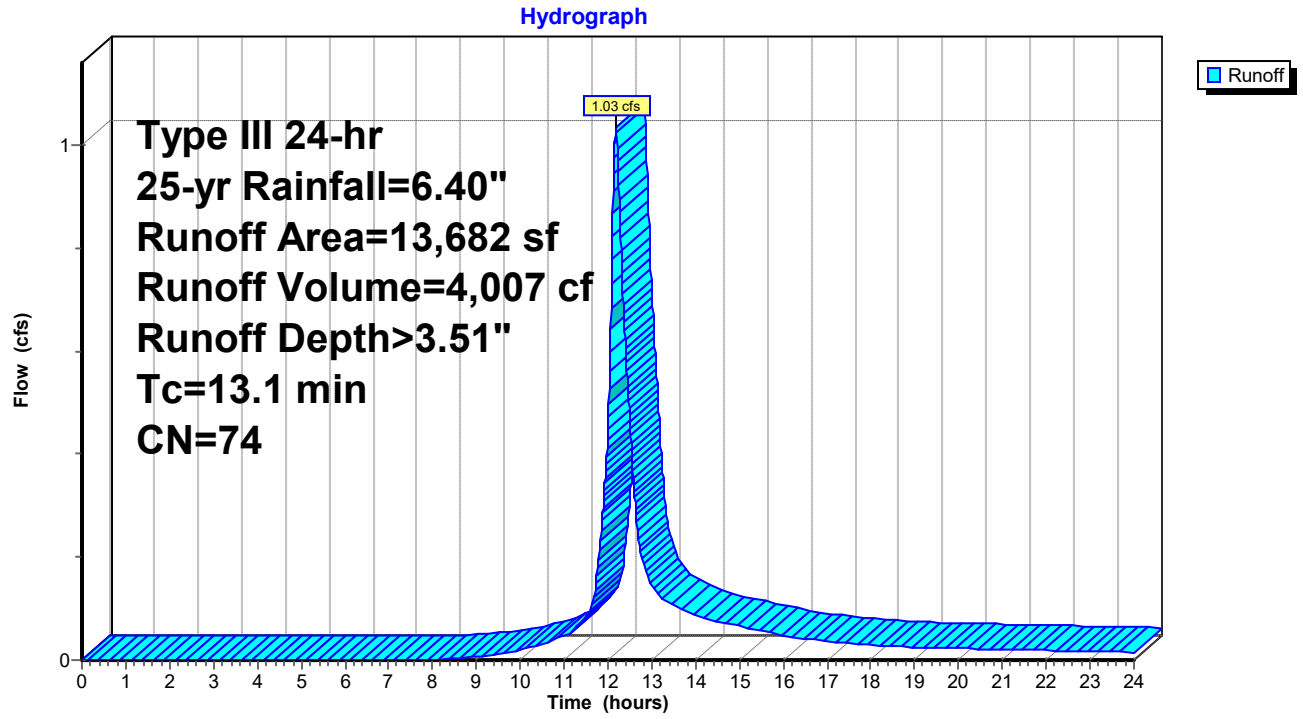
Runoff = 1.03 cfs @ 12.18 hrs, Volume= 4,007 cf, Depth> 3.51"
Routed to Pond DB03 : Detention-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	0	98	Impervious
*	143	69	Lawn B
*	5,032	79	Lawn C
*	1,722	60	Forest B
*	6,785	73	Forest C
	13,682	74	Weighted Average
	13,682		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1					**Direct Entry,**

Subcatchment C3: WS-C3



Summary for Subcatchment C4: WS-C4

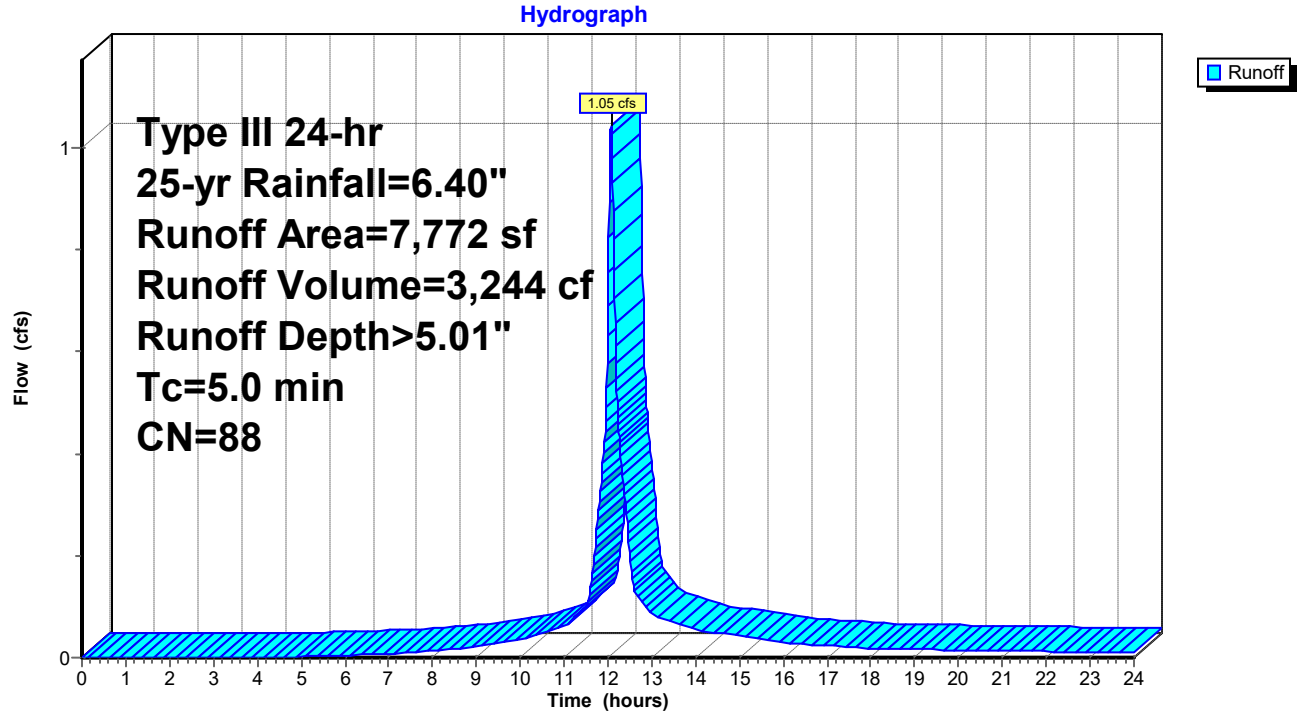
Runoff = 1.05 cfs @ 12.07 hrs, Volume= 3,244 cf, Depth> 5.01"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	3,764	98	Impervious
*	0	69	Lawn B
*	4,008	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	7,772	88	Weighted Average
	4,008		51.57% Pervious Area
	3,764		48.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C4: WS-C4



Summary for Subcatchment C5: WS-C5

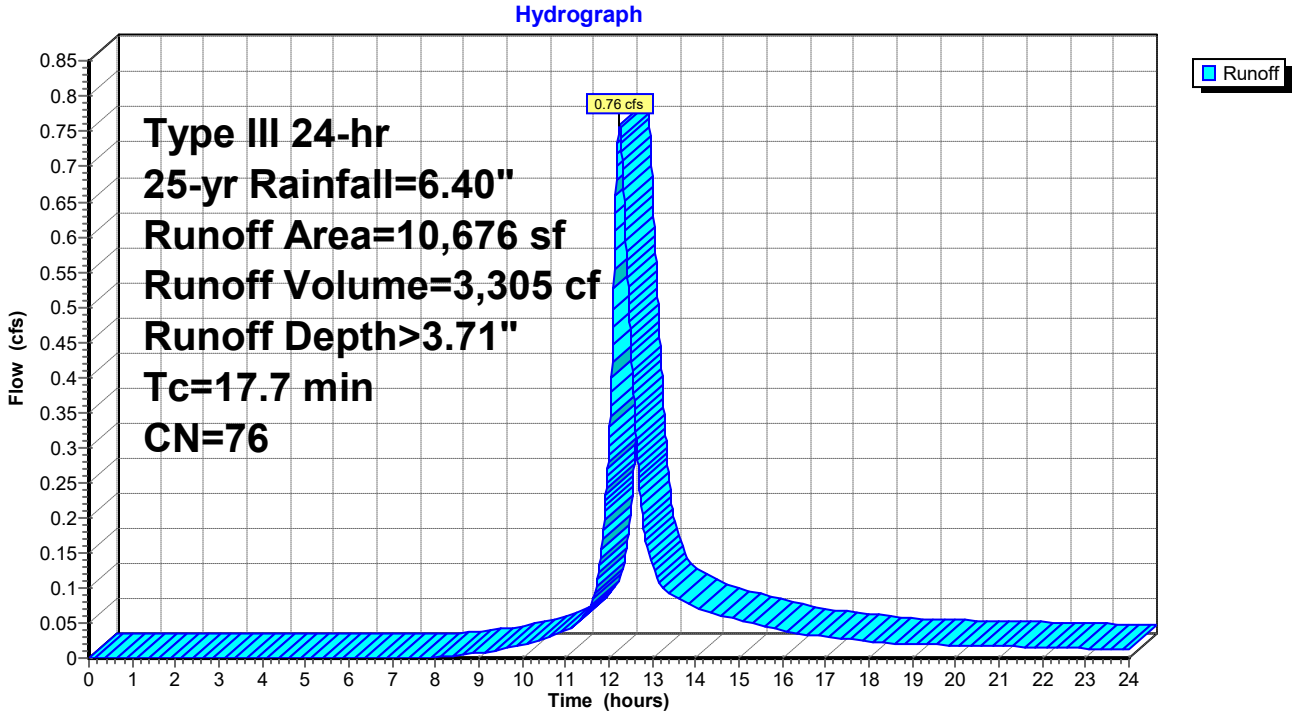
Runoff = 0.76 cfs @ 12.25 hrs, Volume= 3,305 cf, Depth> 3.71"
Routed to Pond DB02 : Detention-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	0	98	Impervious
*	209	69	Lawn B
*	6,162	79	Lawn C
*	569	60	Forest B
*	3,736	73	Forest C
	10,676	76	Weighted Average
	10,676		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7					**Direct Entry,**

Subcatchment C5: WS-C5



Summary for Subcatchment C6: WS-C6

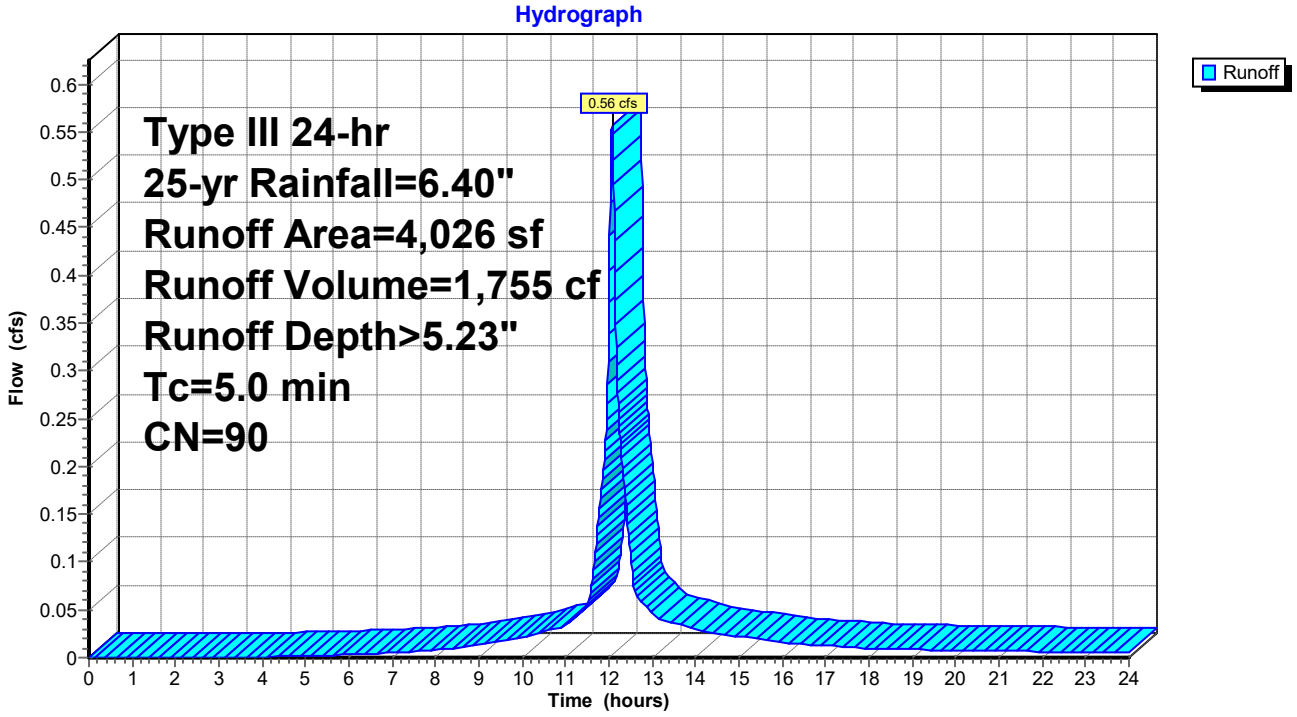
Runoff = 0.56 cfs @ 12.07 hrs, Volume= 1,755 cf, Depth> 5.23"
Routed to Pond RG06 : Rain Garden-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	2,854	98	Impervious
*	1,172	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	4,026	90	Weighted Average
	1,172		29.11% Pervious Area
	2,854		70.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C6: WS-C6



Summary for Subcatchment C7: WS-C7

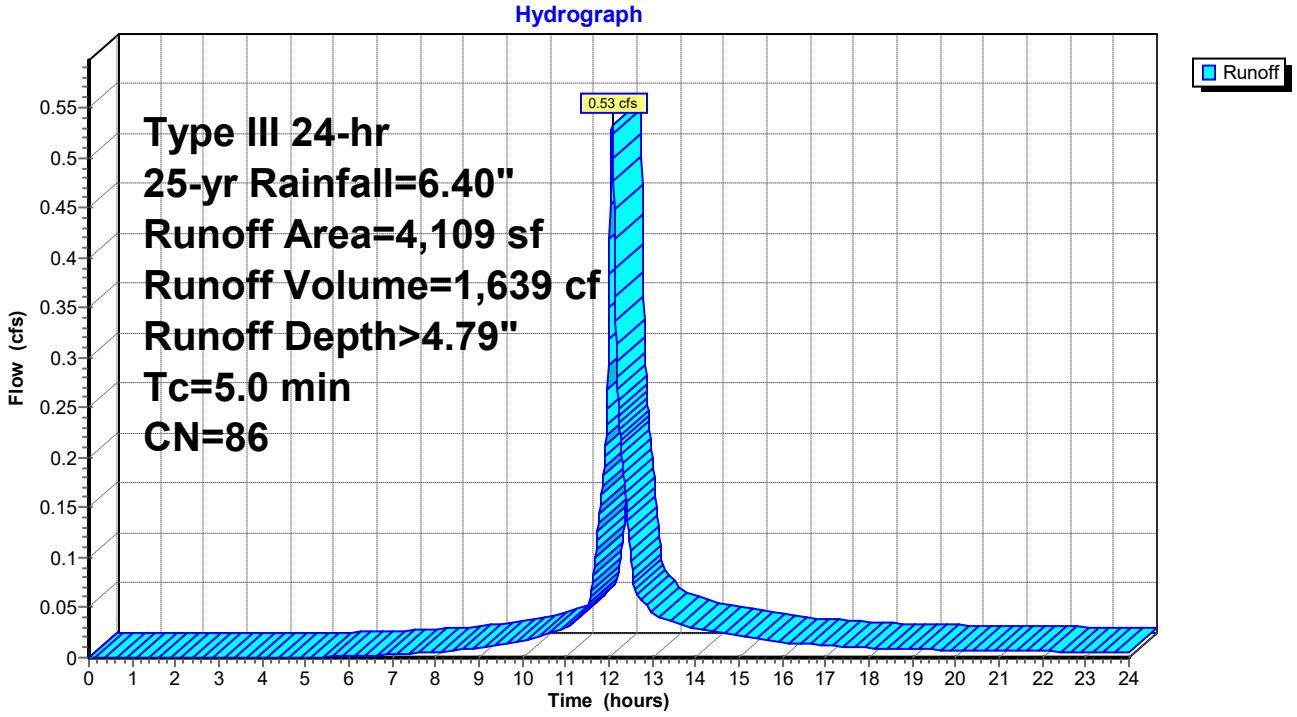
Runoff = 0.53 cfs @ 12.07 hrs, Volume= 1,639 cf, Depth> 4.79"
Routed to Pond RG07 : Rain Garden-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	2,402	98	Impervious
*	1,707	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	4,109	86	Weighted Average
	1,707		41.54% Pervious Area
	2,402		58.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C7: WS-C7



Summary for Subcatchment D1H: WS-D1H

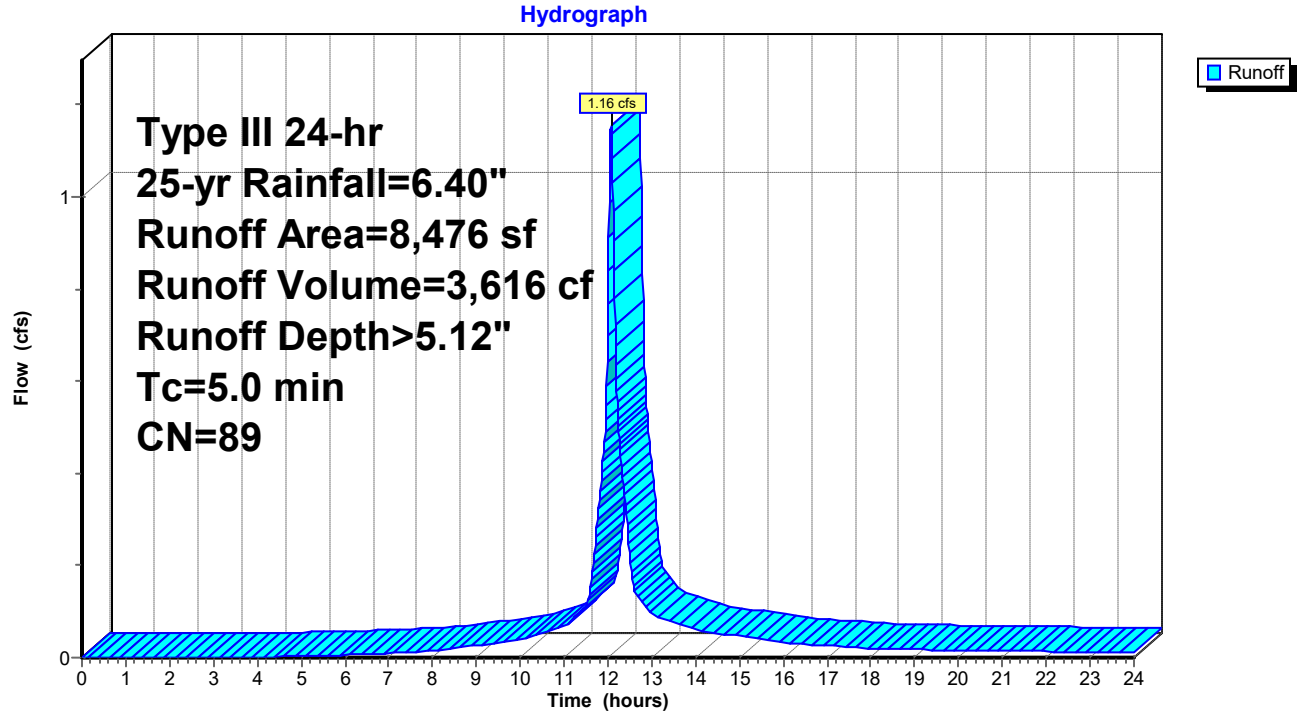
Runoff = 1.16 cfs @ 12.07 hrs, Volume= 3,616 cf, Depth> 5.12"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	5,649	98	Impervious
*	2,426	69	Lawn B
*	401	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	8,476	89	Weighted Average
	2,827		33.35% Pervious Area
	5,649		66.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D1H: WS-D1H



Summary for Subcatchment D2A: WS-D2A

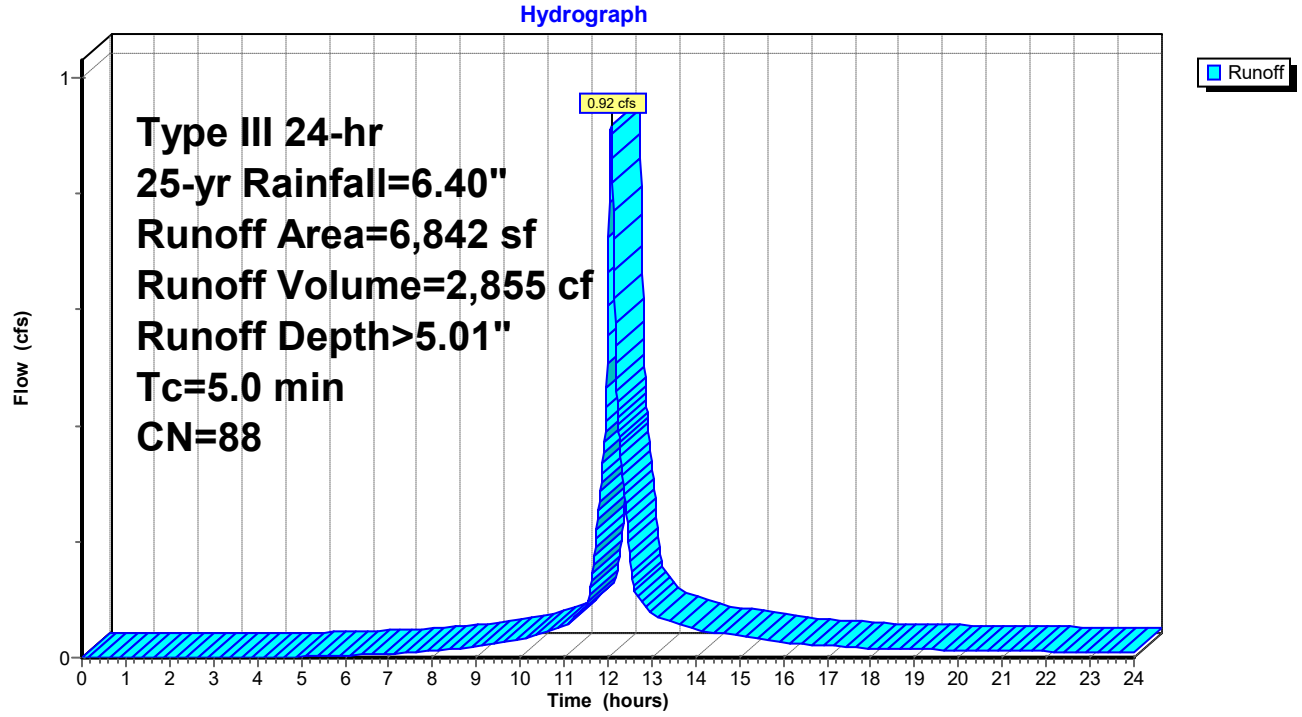
Runoff = 0.92 cfs @ 12.07 hrs, Volume= 2,855 cf, Depth> 5.01"
Routed to Pond 13P : Por Pvt-D2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	4,404	98	Impervious
*	2,438	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	6,842	88	Weighted Average
	2,438		35.63% Pervious Area
	4,404		64.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2A: WS-D2A



Summary for Subcatchment D2B: WS-D2B

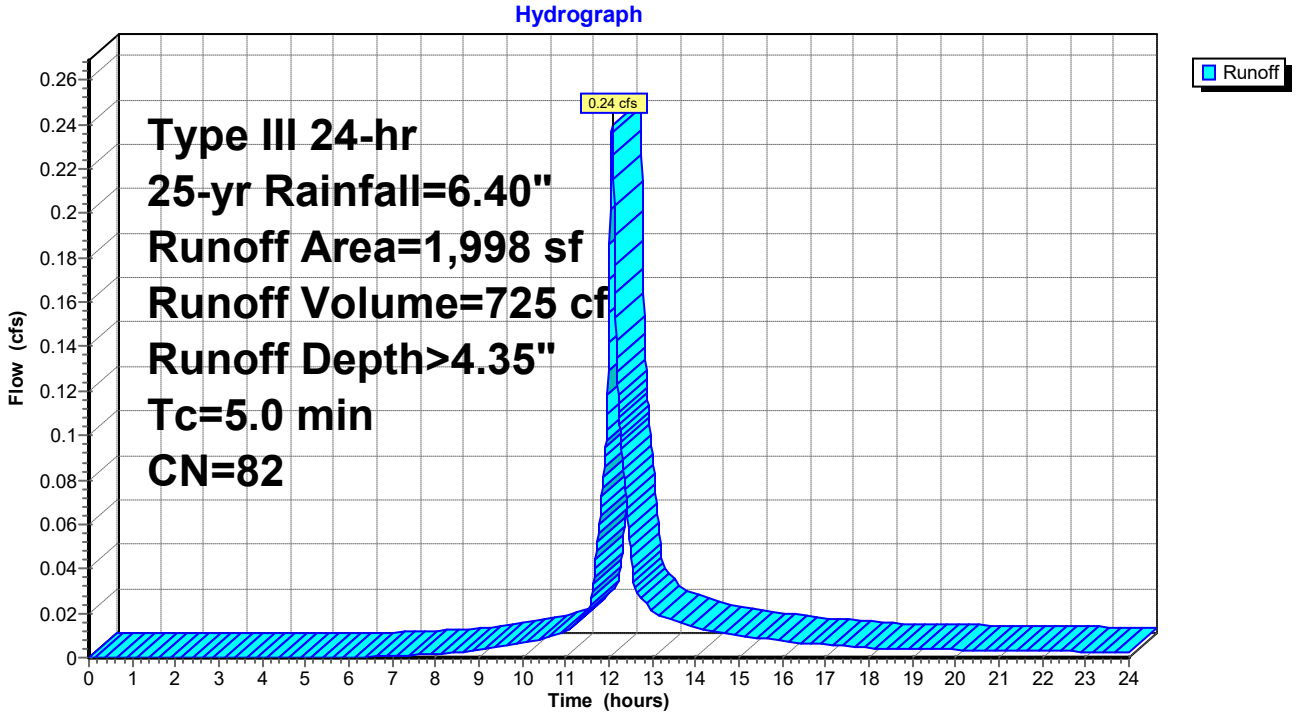
Runoff = 0.24 cfs @ 12.07 hrs, Volume= 725 cf, Depth> 4.35"
Routed to Pond 14P : Por Pvt-D2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	928	98	Impervious
*	1,070	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,998	82	Weighted Average
	1,070		53.55% Pervious Area
	928		46.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2B: WS-D2B



Summary for Subcatchment D2C: WS-D2C

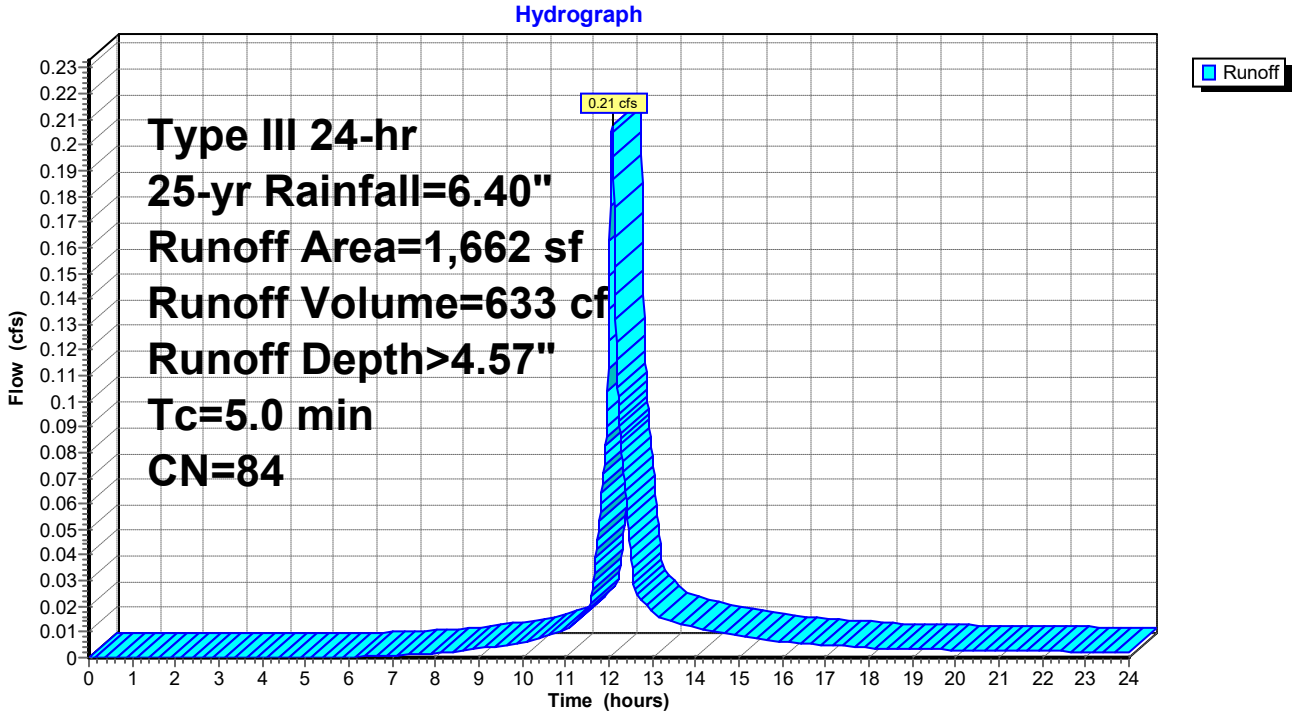
Runoff = 0.21 cfs @ 12.07 hrs, Volume= 633 cf, Depth> 4.57"
Routed to Pond 16P : Por Pvt-D2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	860	98	Impervious
*	802	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,662	84	Weighted Average
	802		48.26% Pervious Area
	860		51.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2C: WS-D2C



Summary for Subcatchment D2D: WS-D2D

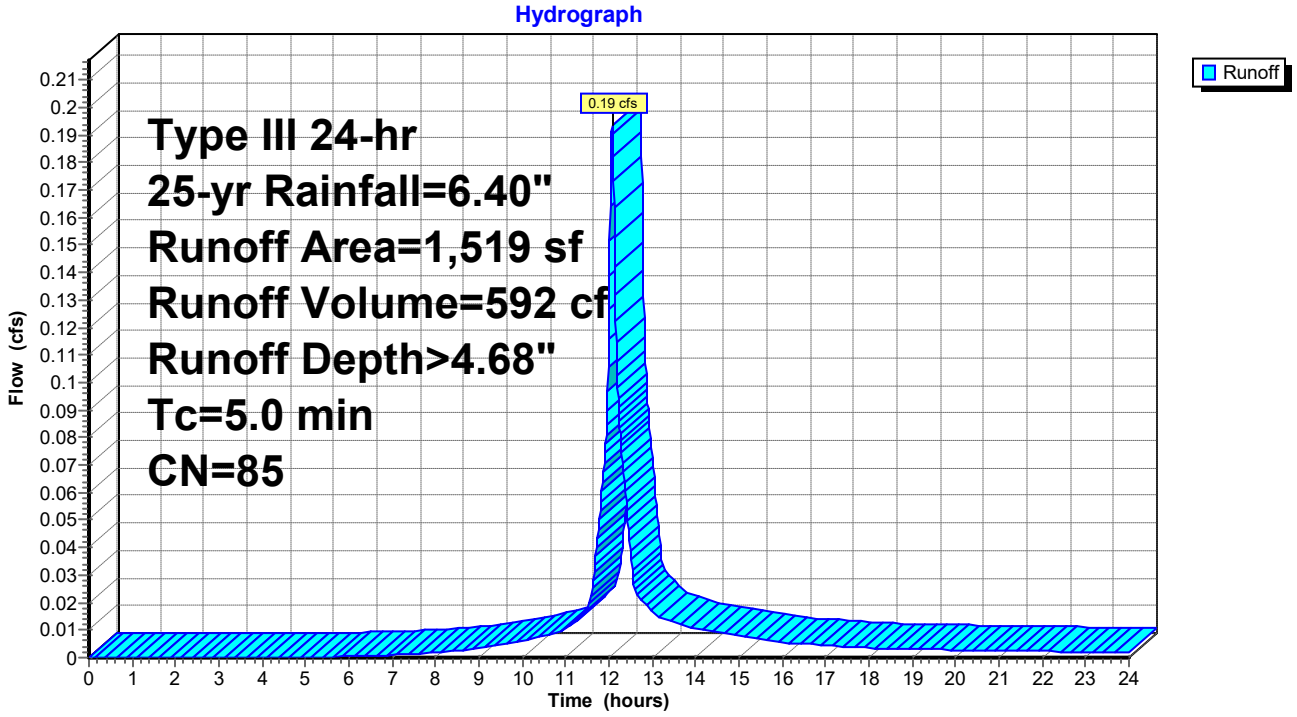
Runoff = 0.19 cfs @ 12.07 hrs, Volume= 592 cf, Depth> 4.68"
Routed to Pond 18P : Por Pvt-D2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	846	98	Impervious
*	673	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,519	85	Weighted Average
	673		44.31% Pervious Area
	846		55.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2D: WS-D2D



Summary for Subcatchment D2E: WS-D2E

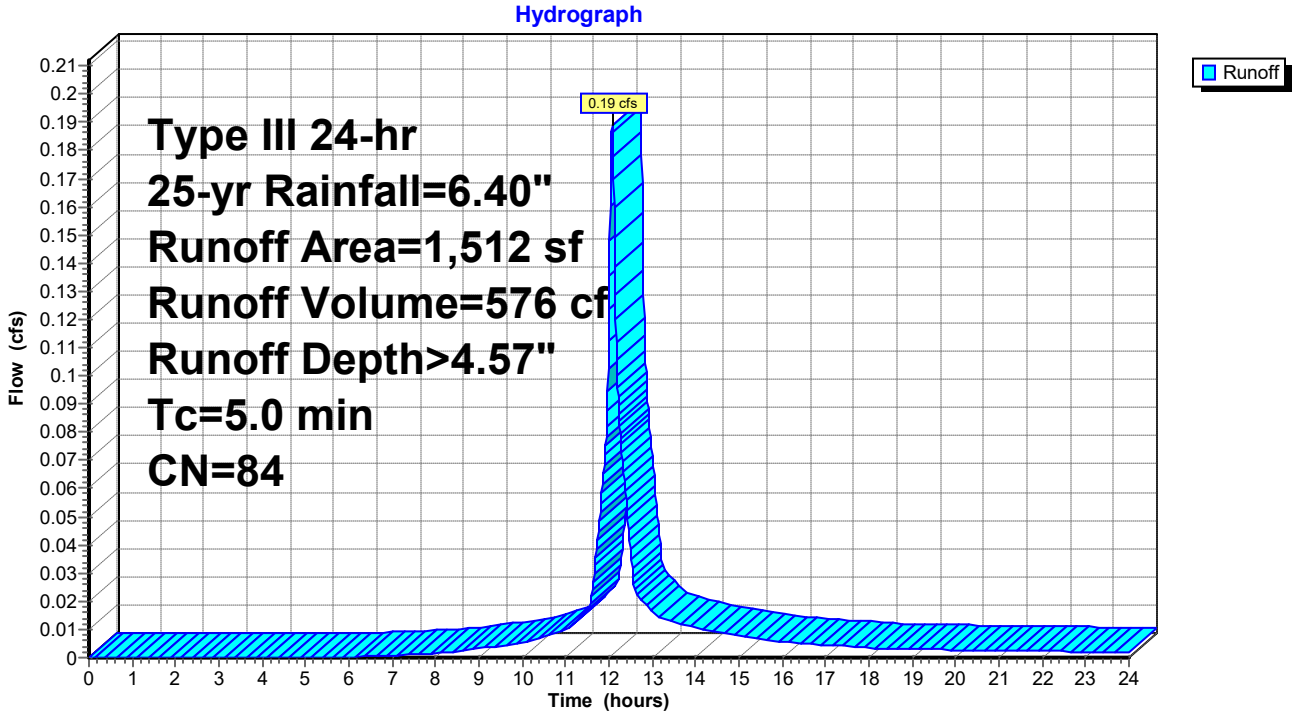
Runoff = 0.19 cfs @ 12.07 hrs, Volume= 576 cf, Depth> 4.57"
Routed to Pond 19P : Por Pvt-D2E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	808	98	Impervious
*	704	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,512	84	Weighted Average
	704		46.56% Pervious Area
	808		53.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2E: WS-D2E



Summary for Subcatchment D2F: WS-D2F

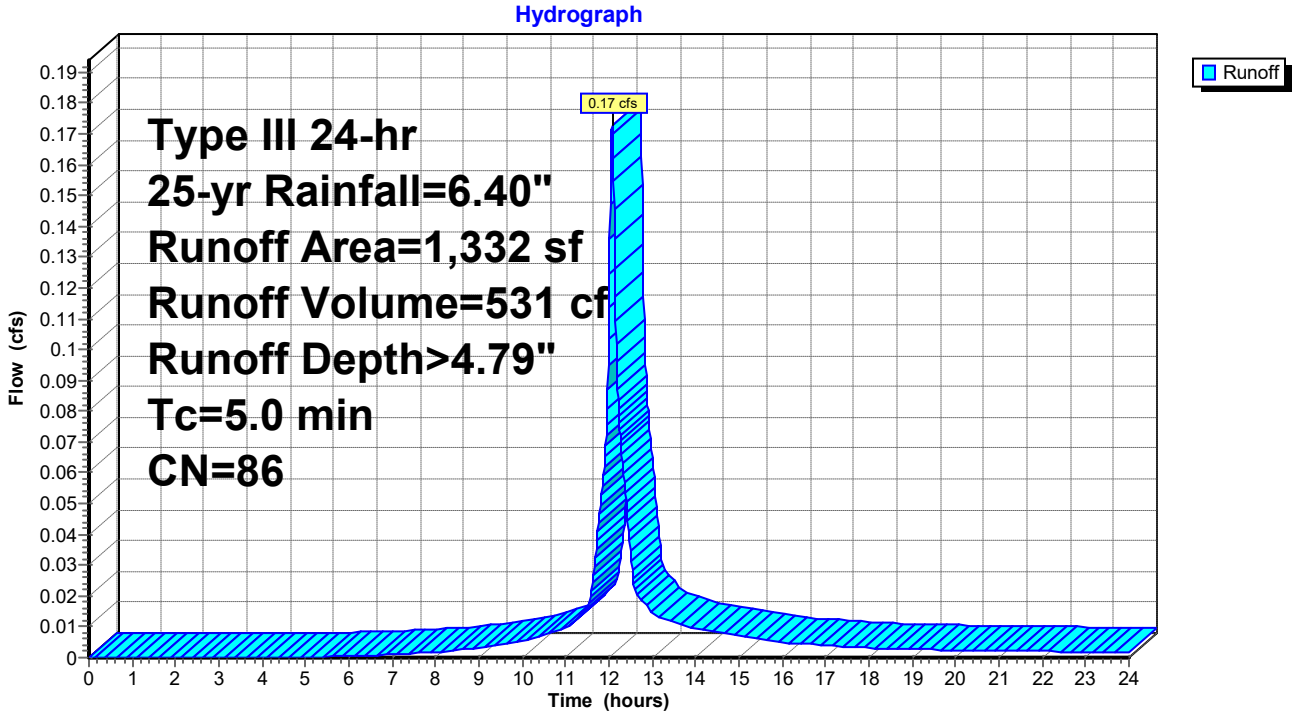
Runoff = 0.17 cfs @ 12.07 hrs, Volume= 531 cf, Depth> 4.79"
Routed to Pond 20P : Por Pvt-D2F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	800	98	Impervious
*	532	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,332	86	Weighted Average
	532		39.94% Pervious Area
	800		60.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2F: WS-D2F



Summary for Subcatchment D2G: WS-D2G

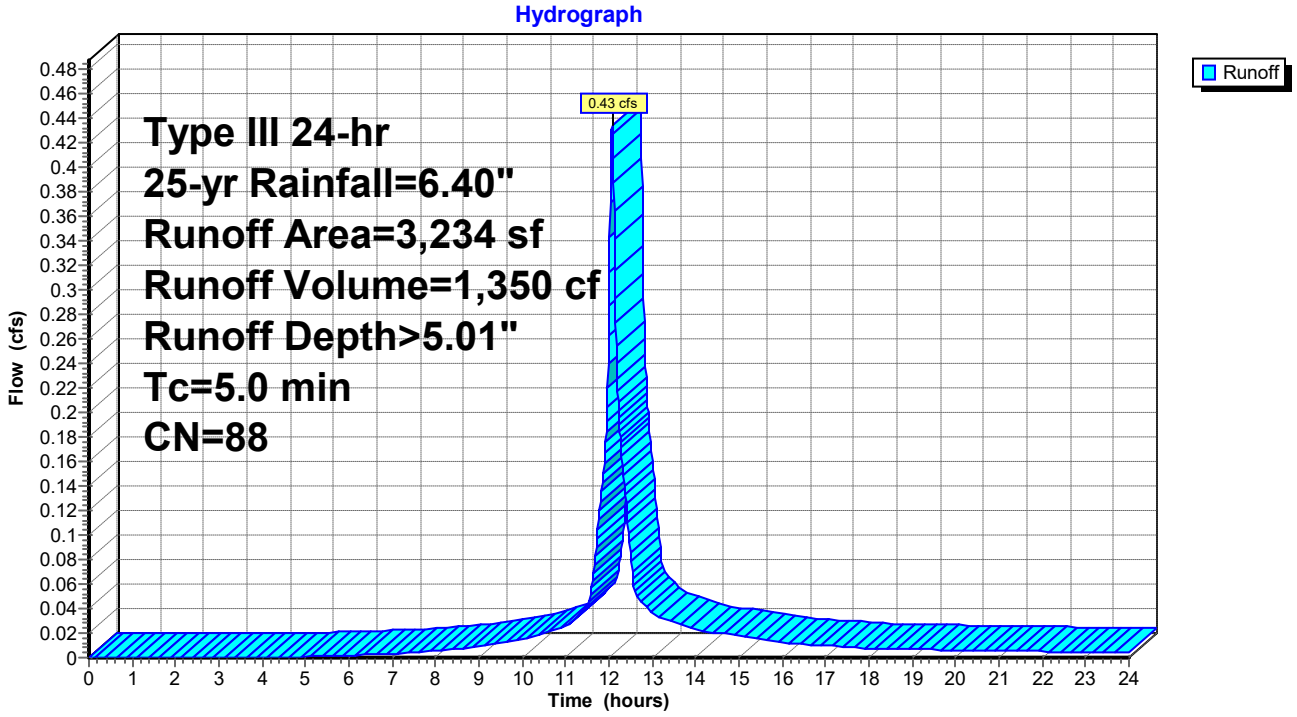
Runoff = 0.43 cfs @ 12.07 hrs, Volume= 1,350 cf, Depth> 5.01"
Routed to Pond 21P : Por Pvt-D2G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	1,833	98	Impervious
*	555	69	Lawn B
*	846	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	3,234	88	Weighted Average
	1,401		43.32% Pervious Area
	1,833		56.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2G: WS-D2G



Summary for Subcatchment D3: WS-D3

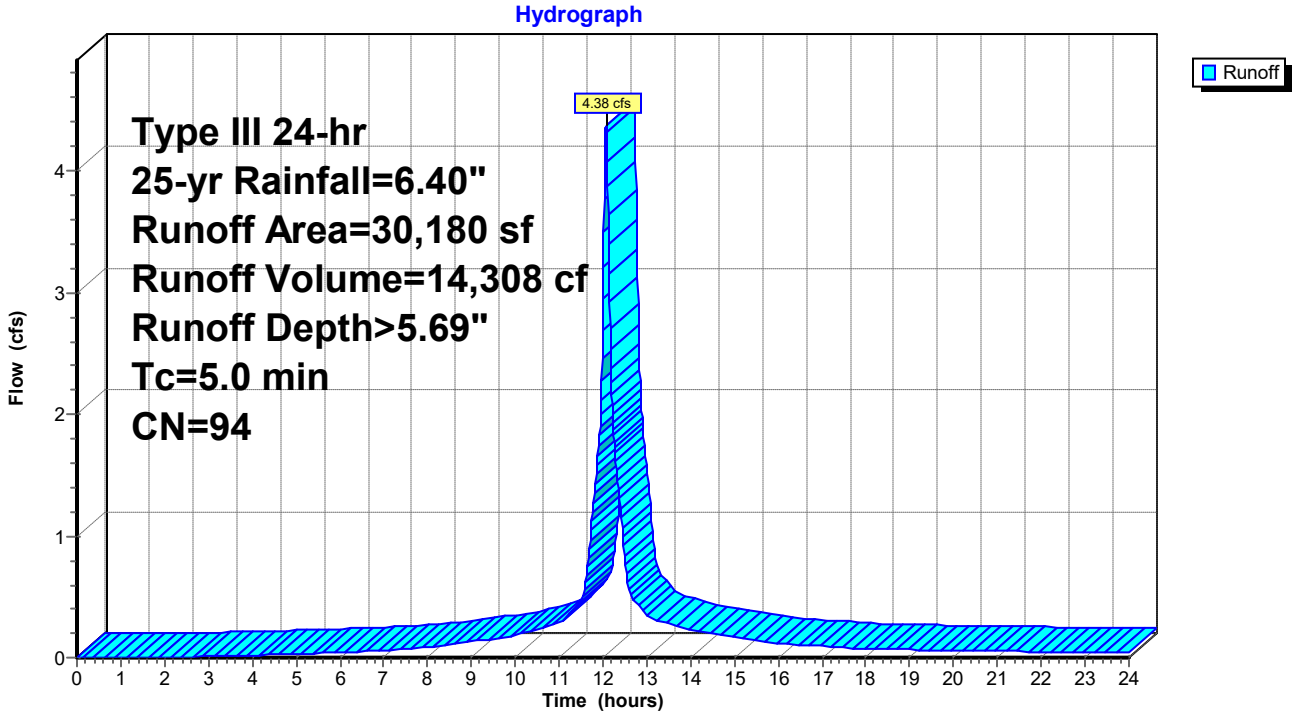
Runoff = 4.38 cfs @ 12.07 hrs, Volume= 14,308 cf, Depth> 5.69"
Routed to Pond PP03 : Por Pvt-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	23,042	98	Impervious
*	0	69	Lawn B
*	7,138	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	30,180	94	Weighted Average
	7,138		23.65% Pervious Area
	23,042		76.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D3: WS-D3



Summary for Subcatchment D4: WS-D4

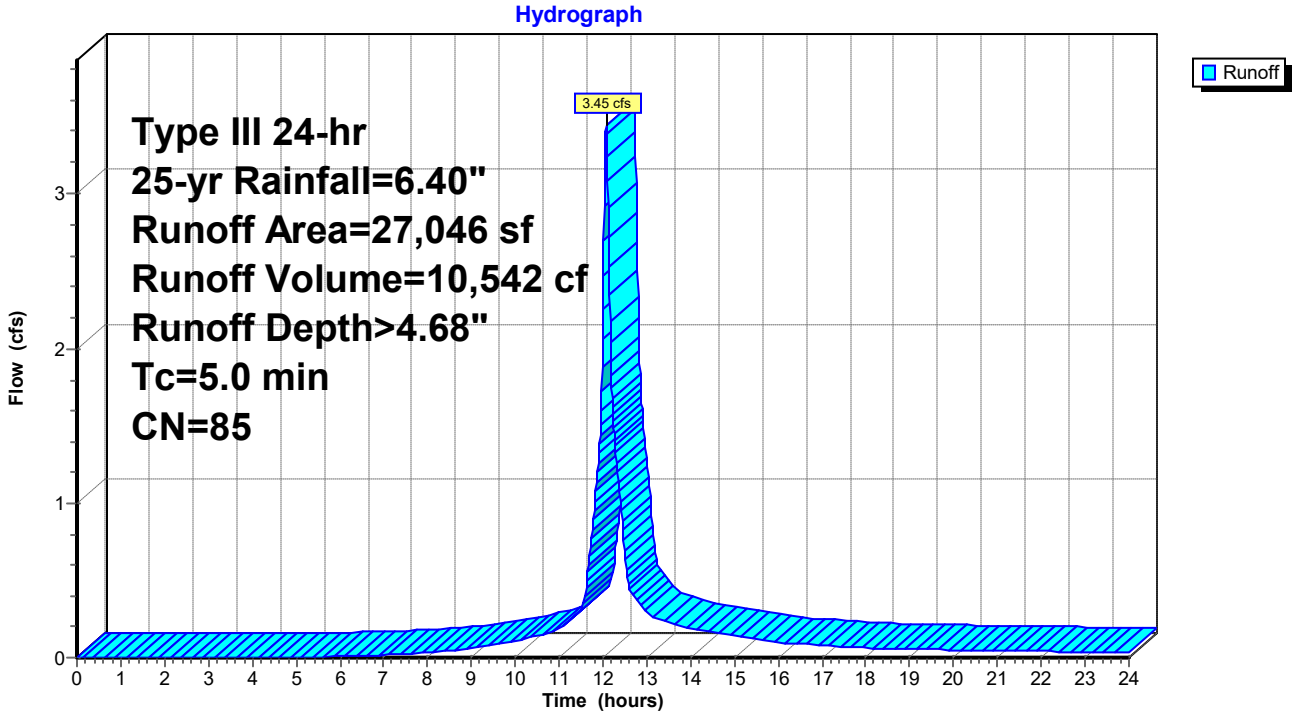
Runoff = 3.45 cfs @ 12.07 hrs, Volume= 10,542 cf, Depth> 4.68"
Routed to Pond PP07 : Por Pvt-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	14,753	98	Impervious
*	12,293	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	27,046	85	Weighted Average
	12,293		45.45% Pervious Area
	14,753		54.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D4: WS-D4



Summary for Subcatchment D5: WS-D5

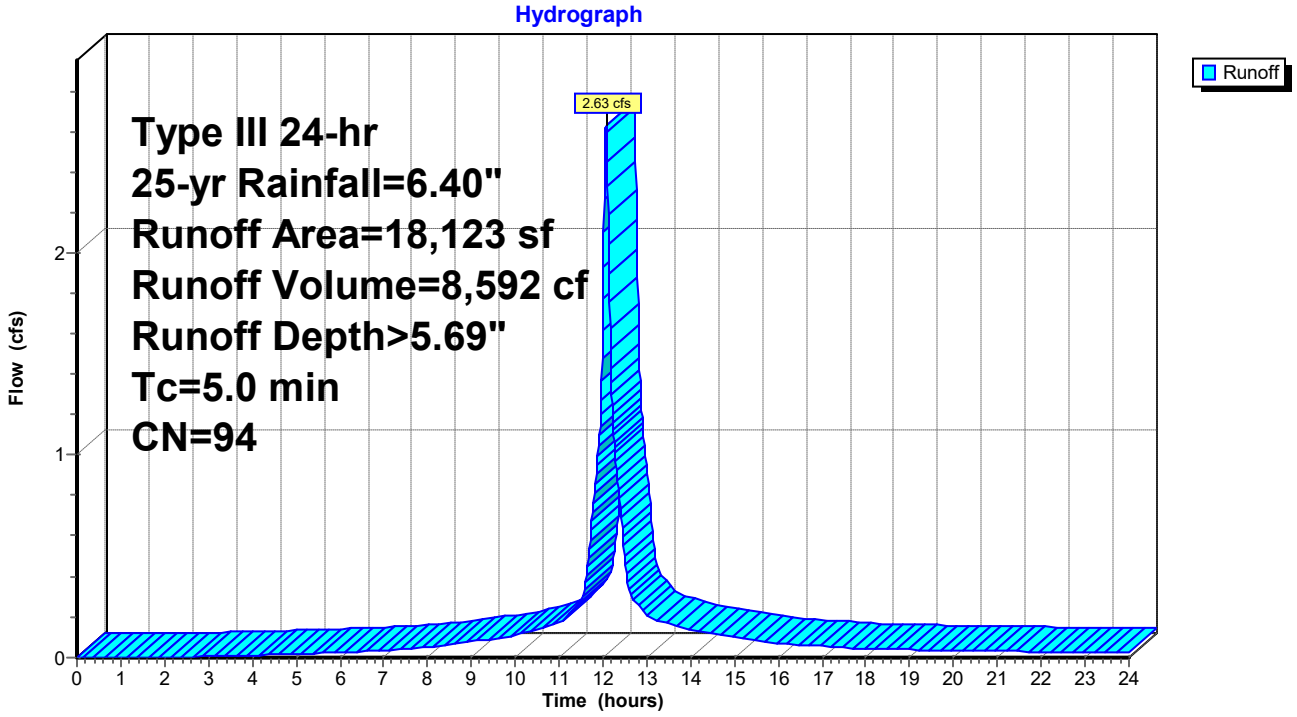
Runoff = 2.63 cfs @ 12.07 hrs, Volume= 8,592 cf, Depth> 5.69"
Routed to Pond PP02 : Por Pvt-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	14,849	98	Impervious
*	0	69	Lawn B
*	720	79	Lawn C
*	0	60	Forest B
*	2,554	73	Forest C
	18,123	94	Weighted Average
	3,274		18.07% Pervious Area
	14,849		81.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D5: WS-D5



Summary for Subcatchment D6: WS-D6

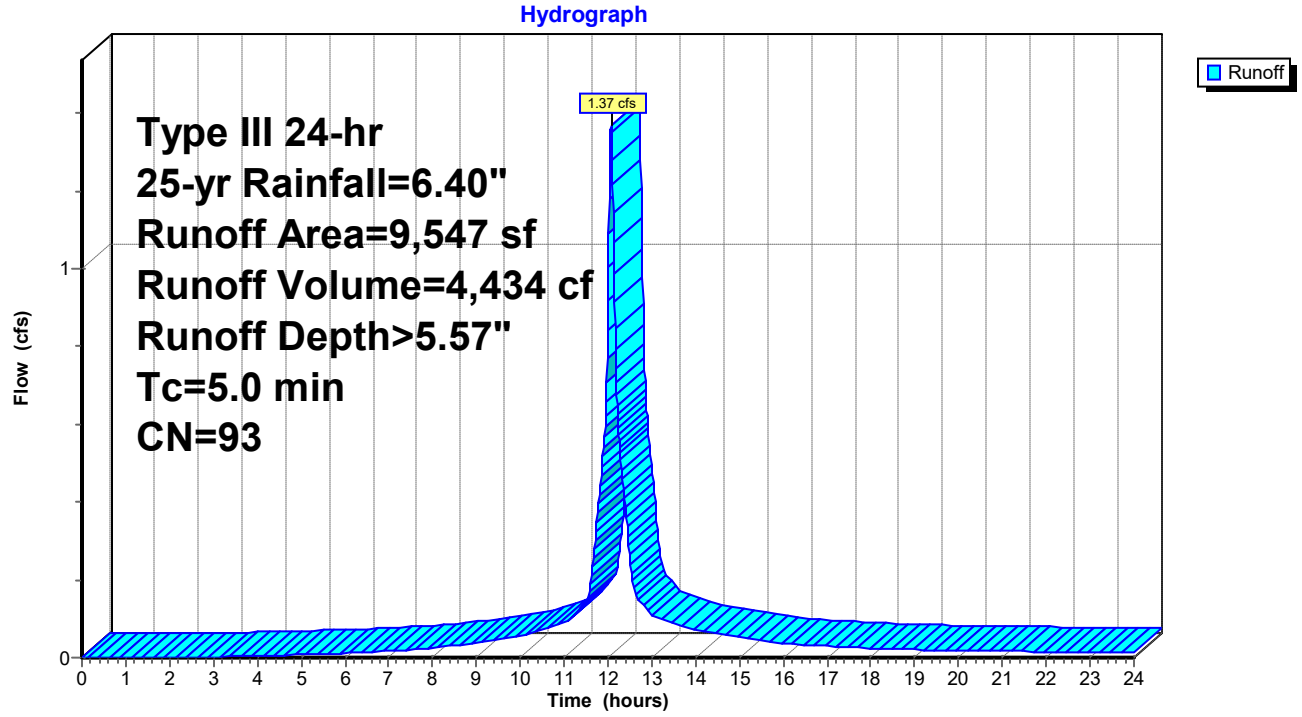
Runoff = 1.37 cfs @ 12.07 hrs, Volume= 4,434 cf, Depth> 5.57"
Routed to Pond PP04 : Por Pvt-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	6,988	98	Impervious
*	0	69	Lawn B
*	2,559	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	9,547	93	Weighted Average
	2,559		26.80% Pervious Area
	6,988		73.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D6: WS-D6



Summary for Subcatchment D7: WS-D7

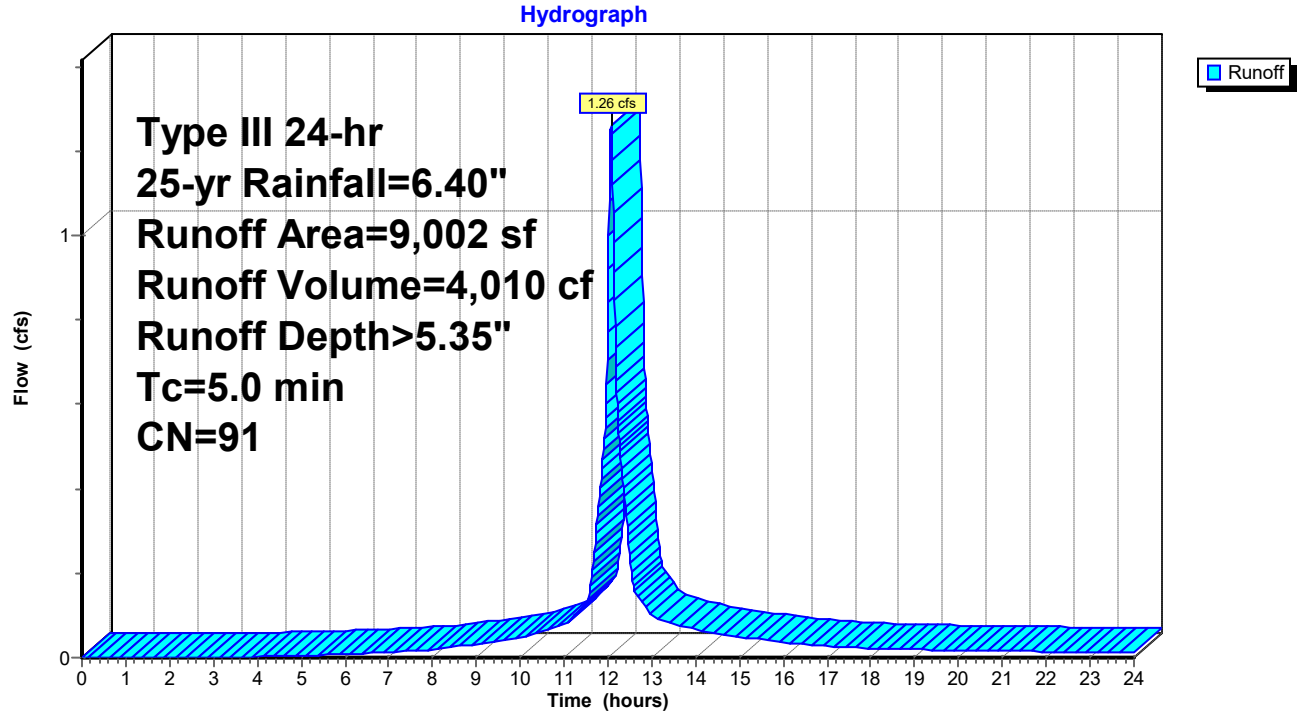
Runoff = 1.26 cfs @ 12.07 hrs, Volume= 4,010 cf, Depth> 5.35"
Routed to Pond PP05 : Por Pvt-05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	6,727	98	Impervious
*	1,674	69	Lawn B
*	601	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	9,002	91	Weighted Average
	2,275		25.27% Pervious Area
	6,727		74.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D7: WS-D7



Summary for Subcatchment D8: WS-D8

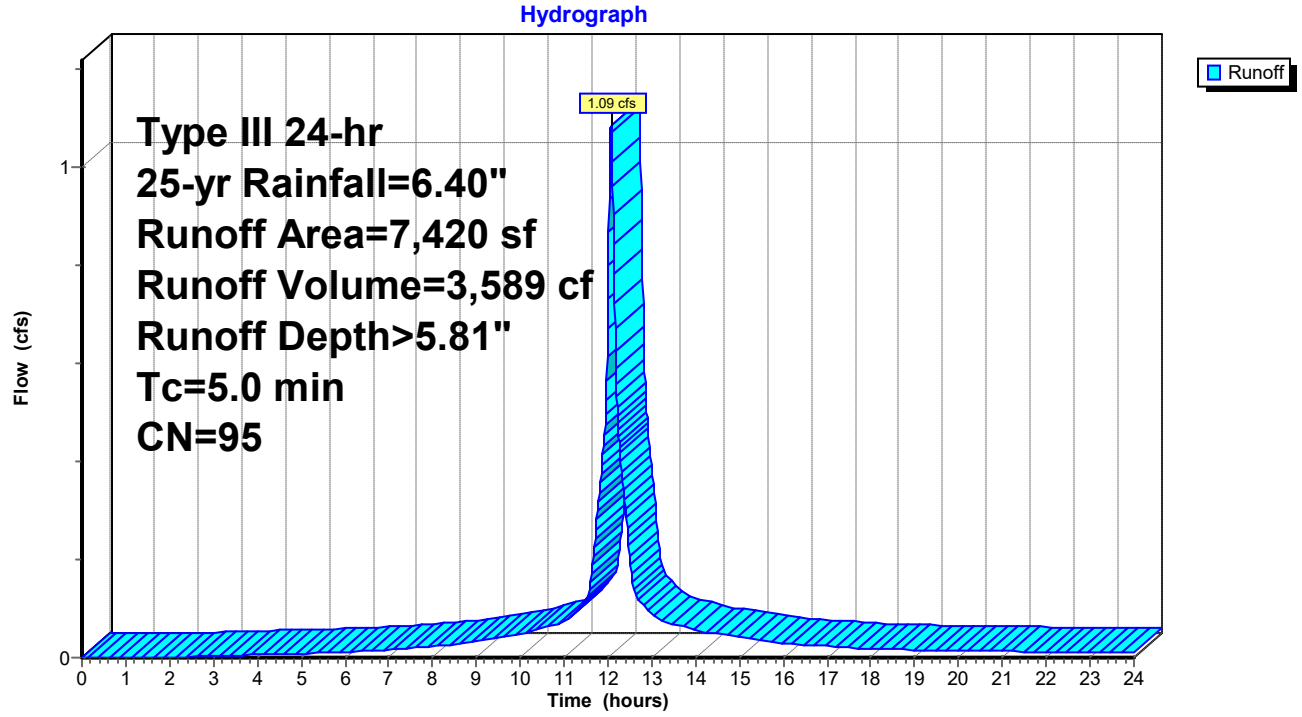
Runoff = 1.09 cfs @ 12.07 hrs, Volume= 3,589 cf, Depth> 5.81"
Routed to Pond PP06 : Por Pvt-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	6,549	98	Impervious
*	871	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	7,420	95	Weighted Average
	871		11.74% Pervious Area
	6,549		88.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D8: WS-D8



Summary for Subcatchment E1: WS-E1

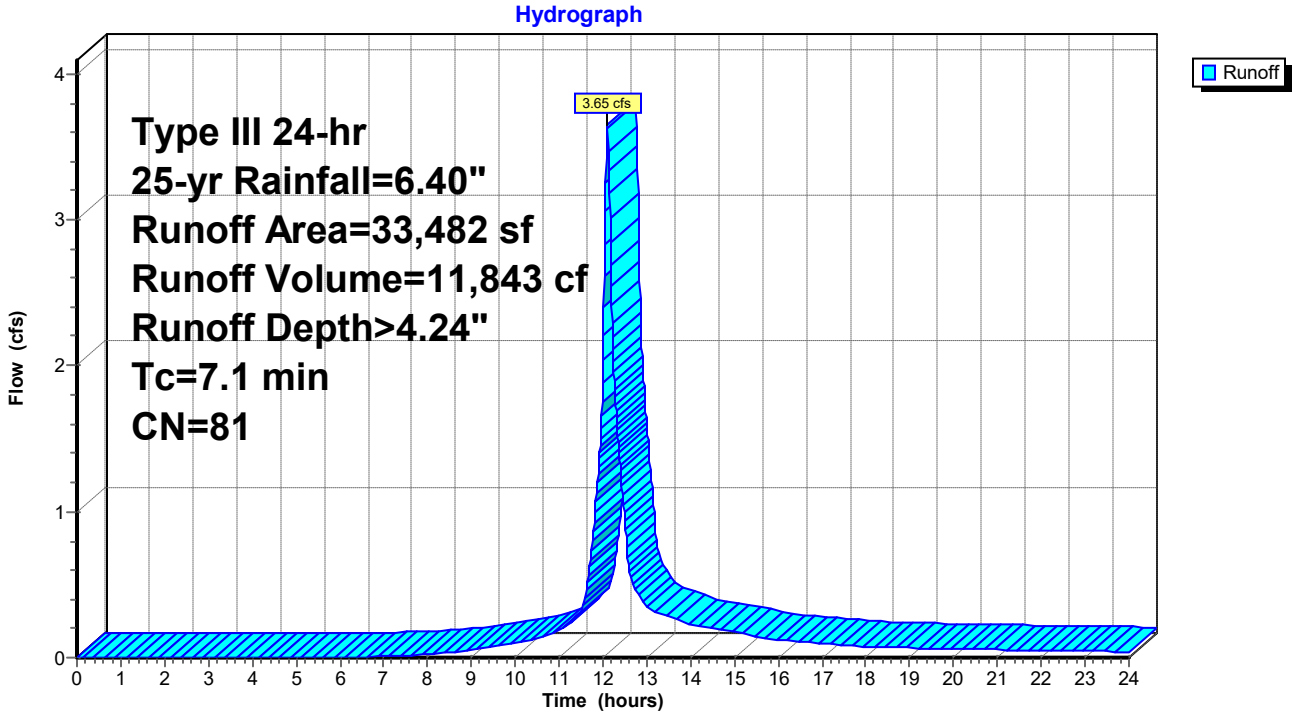
Runoff = 3.65 cfs @ 12.10 hrs, Volume= 11,843 cf, Depth> 4.24"
Routed to Pond UI02 : Und Inf 02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	10,193	98	Impervious
*	1,931	69	Lawn B
*	9,074	79	Lawn C
*	3,193	60	Forest B
*	9,091	73	Forest C
	33,482	81	Weighted Average
	23,289		69.56% Pervious Area
	10,193		30.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1					**Direct Entry,**

Subcatchment E1: WS-E1



Summary for Subcatchment E2: WS-E2

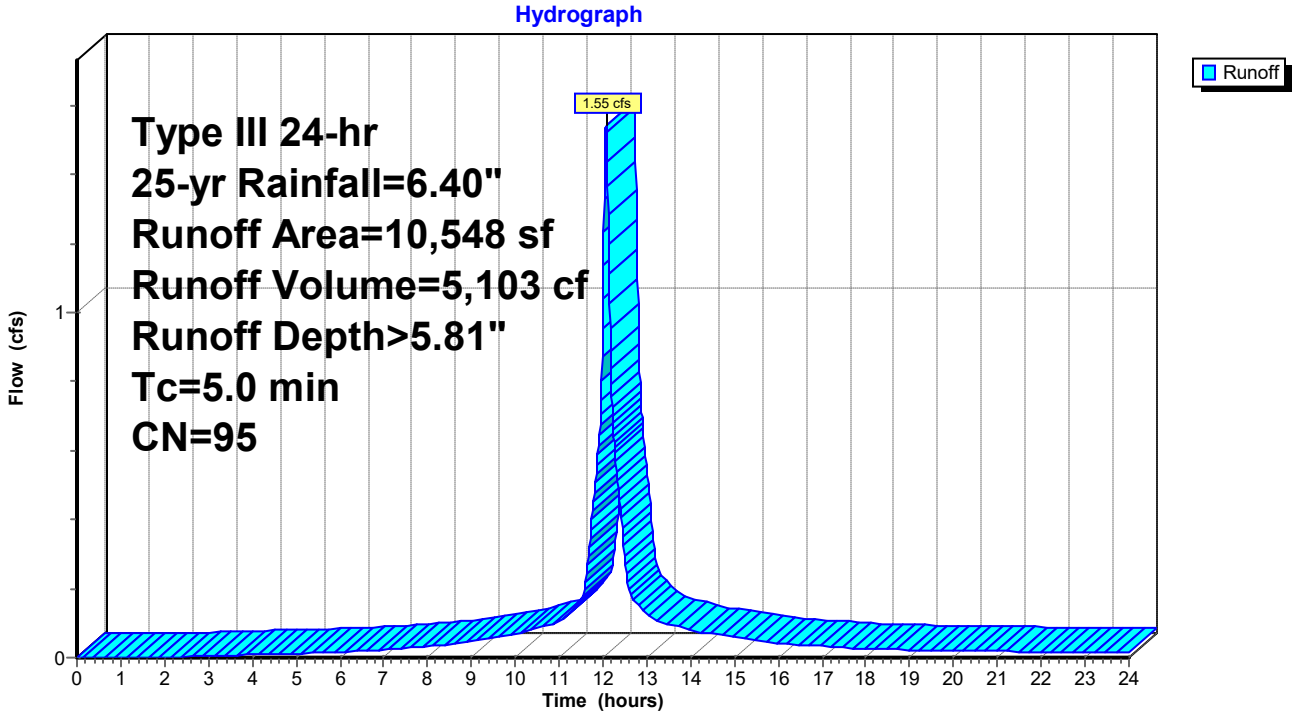
Runoff = 1.55 cfs @ 12.07 hrs, Volume= 5,103 cf, Depth> 5.81"
Routed to Pond RG04 : Rain Garden-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	8,740	98	Impervious
*	0	69	Lawn B
*	1,808	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	10,548	95	Weighted Average
	1,808		17.14% Pervious Area
	8,740		82.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment E2: WS-E2



Summary for Subcatchment R4: Roof-04

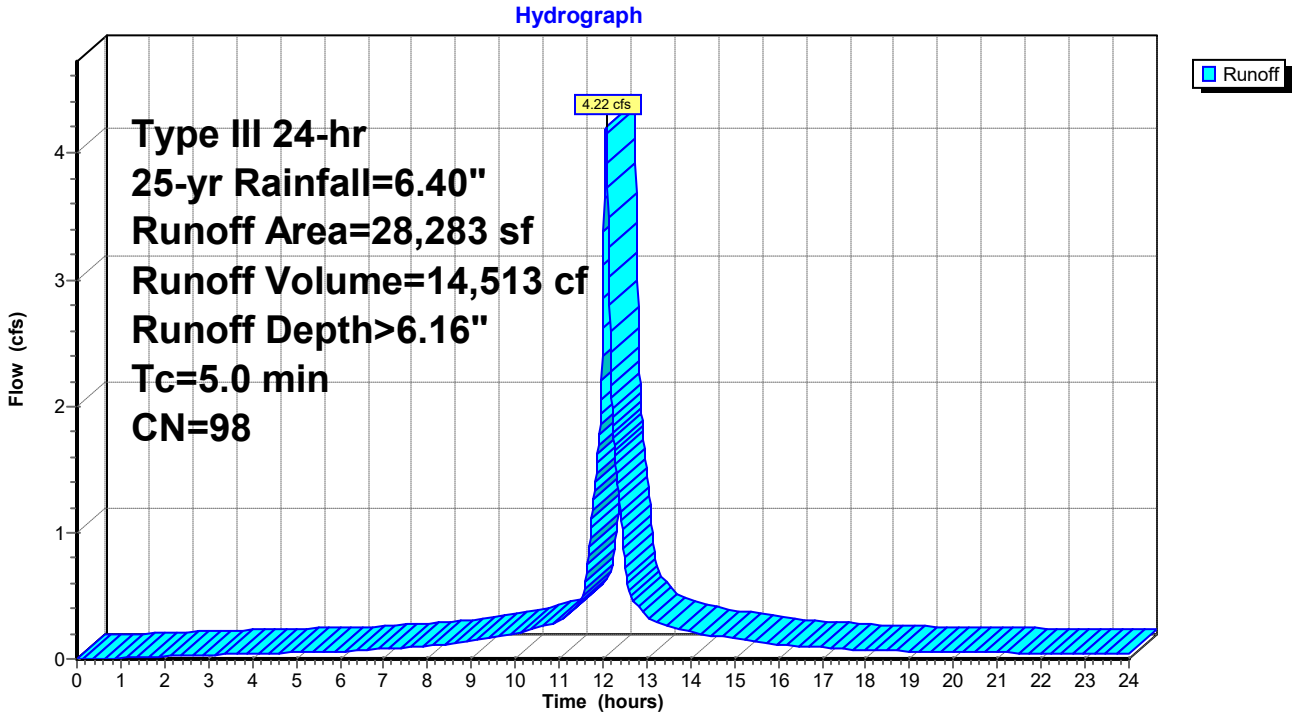
Runoff = 4.22 cfs @ 12.07 hrs, Volume= 14,513 cf, Depth> 6.16"
Routed to Pond UI01 : Und Inf 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	28,283	98	Impervious
	28,283		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment R4: Roof-04



Summary for Subcatchment R5: Roof-05

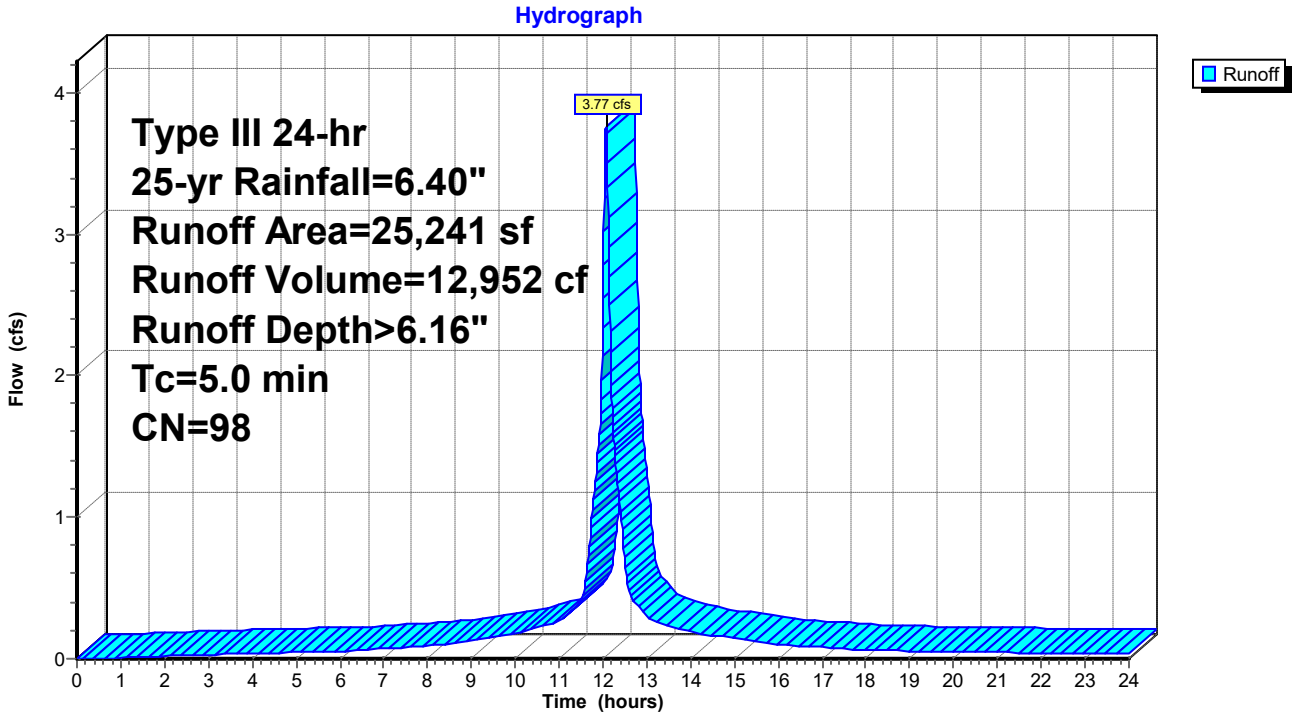
Runoff = 3.77 cfs @ 12.07 hrs, Volume= 12,952 cf, Depth> 6.16"
Routed to Pond UI01 : Und Inf 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.40"

	Area (sf)	CN	Description
*	25,241	98	Impervious
*	0	79	Lawn C
	25,241	98	Weighted Average
	25,241		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment R5: Roof-05



Summary for Pond 13P: Por Pvt-D2A

Porous Pavement in Parking Spaces Only

Inflow Area = 16,536 sf, 85.26% Impervious, Inflow Depth > 7.15" for 25-yr event
Inflow = 5.66 cfs @ 12.11 hrs, Volume= 9,854 cf
Outflow = 2.22 cfs @ 12.23 hrs, Volume= 7,644 cf, Atten= 61%, Lag= 7.4 min
Primary = 1.10 cfs @ 12.23 hrs, Volume= 7,079 cf
Routed to Pond DMH13 : DMH-13
Secondary = 1.13 cfs @ 12.23 hrs, Volume= 565 cf
Routed to Pond 14P : Por Pvt-D2B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 59.24' @ 12.23 hrs Surf.Area= 2,848 sf Storage= 4,854 cf

Plug-Flow detention time= 148.6 min calculated for 7,644 cf (78% of inflow)
Center-of-Mass det. time= 79.7 min (833.4 - 753.8)

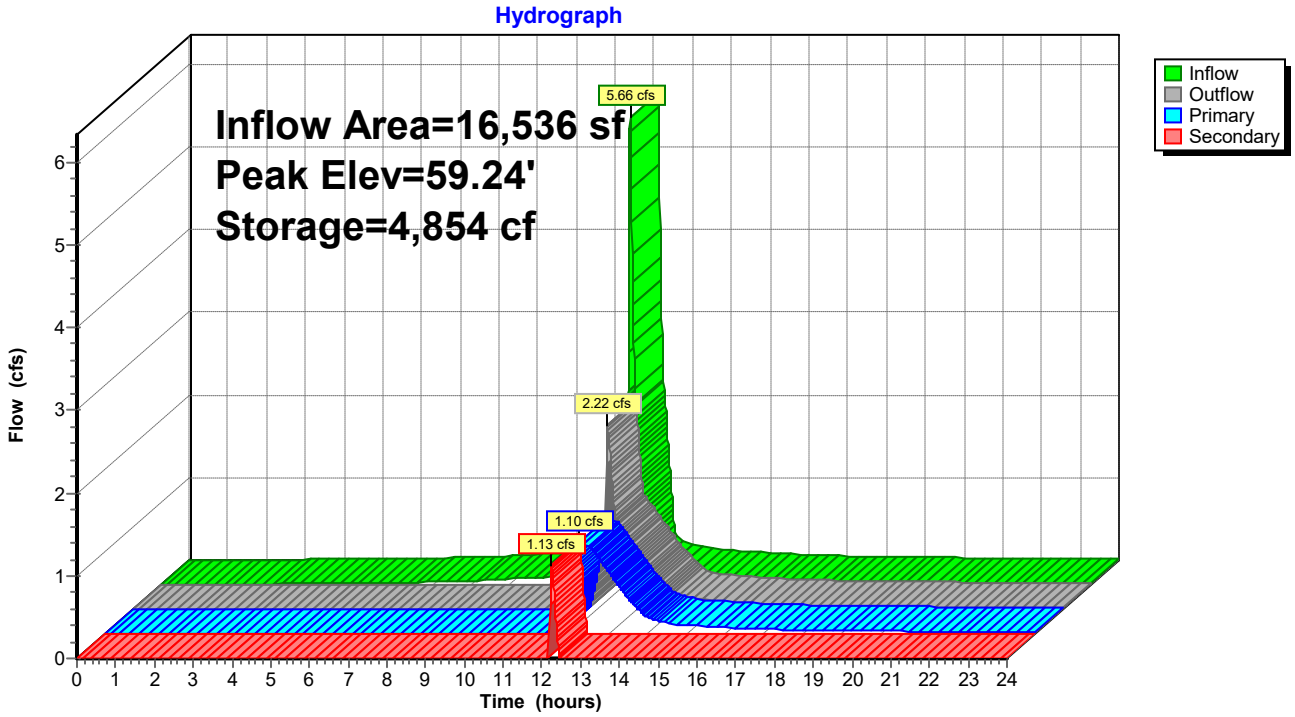
Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	5,683 cf	**20.00'W x 142.40'L x 5.00'H Porous Pavment** 14,240 cf Overall - 32 cf Embedded = 14,208 cf x 40.0% Voids
#2	56.84'	32 cf	**6.0" Round 6" underdrain** Inside #1 L= 162.0'
		5,715 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	56.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.84' / 56.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	59.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.10 cfs @ 12.23 hrs HW=59.24' TW=44.19' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.10 cfs @ 5.58 fps)

Secondary OutFlow Max=1.12 cfs @ 12.23 hrs HW=59.24' TW=54.39' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 1.12 cfs @ 0.76 fps)

Pond 13P: Por Pvt-D2A



Summary for Pond 14P: Por Pvt-D2B

Porous Pavement in Parking Spaces Only

Inflow Area = 1,998 sf, 46.45% Impervious, Inflow Depth > 7.75" for 25-yr event
Inflow = 1.24 cfs @ 12.23 hrs, Volume= 1,290 cf
Outflow = 0.46 cfs @ 12.38 hrs, Volume= 693 cf, Atten= 63%, Lag= 8.8 min
Primary = 0.46 cfs @ 12.38 hrs, Volume= 693 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 16P : Por Pvt-D2C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 55.46' @ 12.38 hrs Surf.Area= 796 sf Storage= 791 cf

Plug-Flow detention time= 130.2 min calculated for 693 cf (54% of inflow)
Center-of-Mass det. time= 67.8 min (843.2 - 775.4)

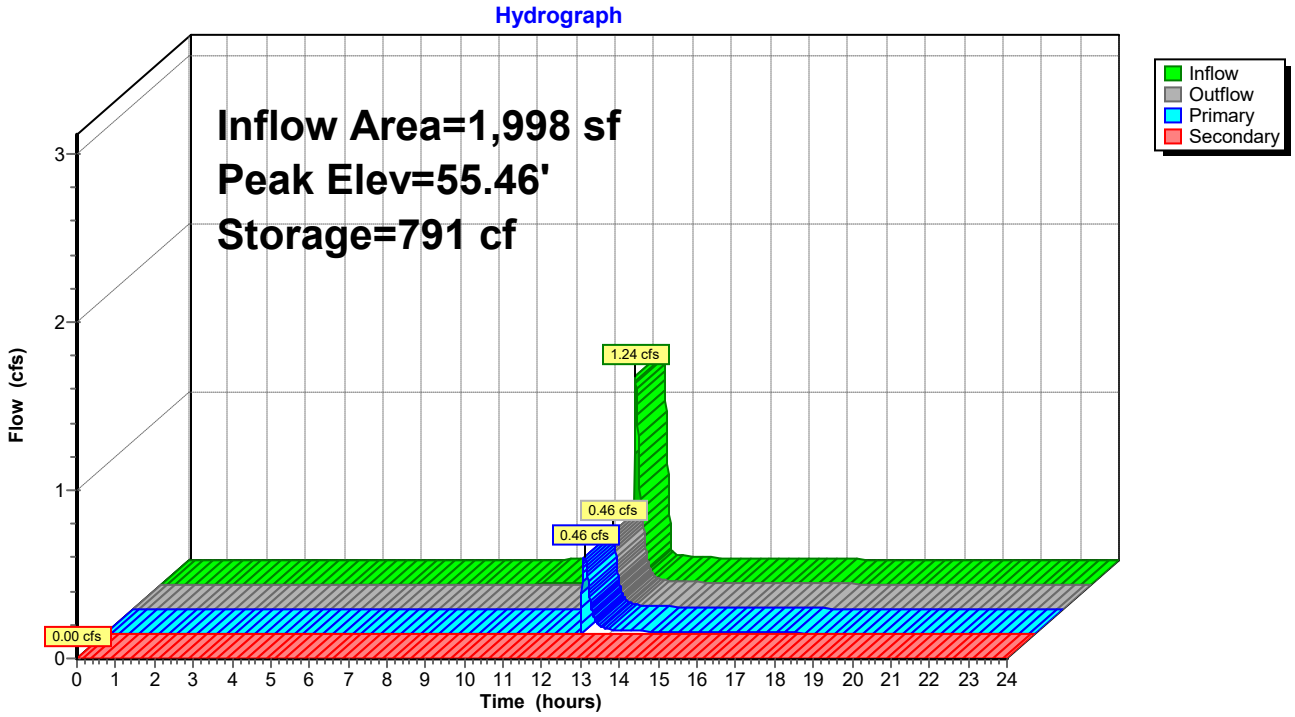
Volume	Invert	Avail.Storage	Storage Description
#1	53.00'	1,588 cf	**20.00'W x 39.80'L x 5.00'H Porous Pavment** 3,980 cf Overall - 11 cf Embedded = 3,969 cf x 40.0% Voids
#2	54.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 55.0'
		1,598 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	54.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 54.84' / 54.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	57.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.46 cfs @ 12.38 hrs HW=55.46' TW=44.16' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.46 cfs @ 2.33 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=53.00' TW=51.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 14P: Por Pvt-D2B



Summary for Pond 15P: Por Pvt-D1H

Porous Pavement in Parking Spaces Only

Inflow Area = 36,236 sf, 92.20% Impervious, Inflow Depth > 5.91" for 25-yr event
Inflow = 5.30 cfs @ 12.07 hrs, Volume= 17,861 cf
Outflow = 4.65 cfs @ 12.11 hrs, Volume= 14,979 cf, Atten= 12%, Lag= 2.6 min
Primary = 1.07 cfs @ 12.11 hrs, Volume= 12,955 cf
Routed to Pond YD33 : YD-33
Secondary = 3.58 cfs @ 12.11 hrs, Volume= 2,024 cf
Routed to Pond 13P : Por Pvt-D2A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 59.33' @ 12.11 hrs Surf.Area= 3,618 sf Storage= 6,290 cf

Plug-Flow detention time= 152.3 min calculated for 14,979 cf (84% of inflow)
Center-of-Mass det. time= 84.6 min (835.9 - 751.3)

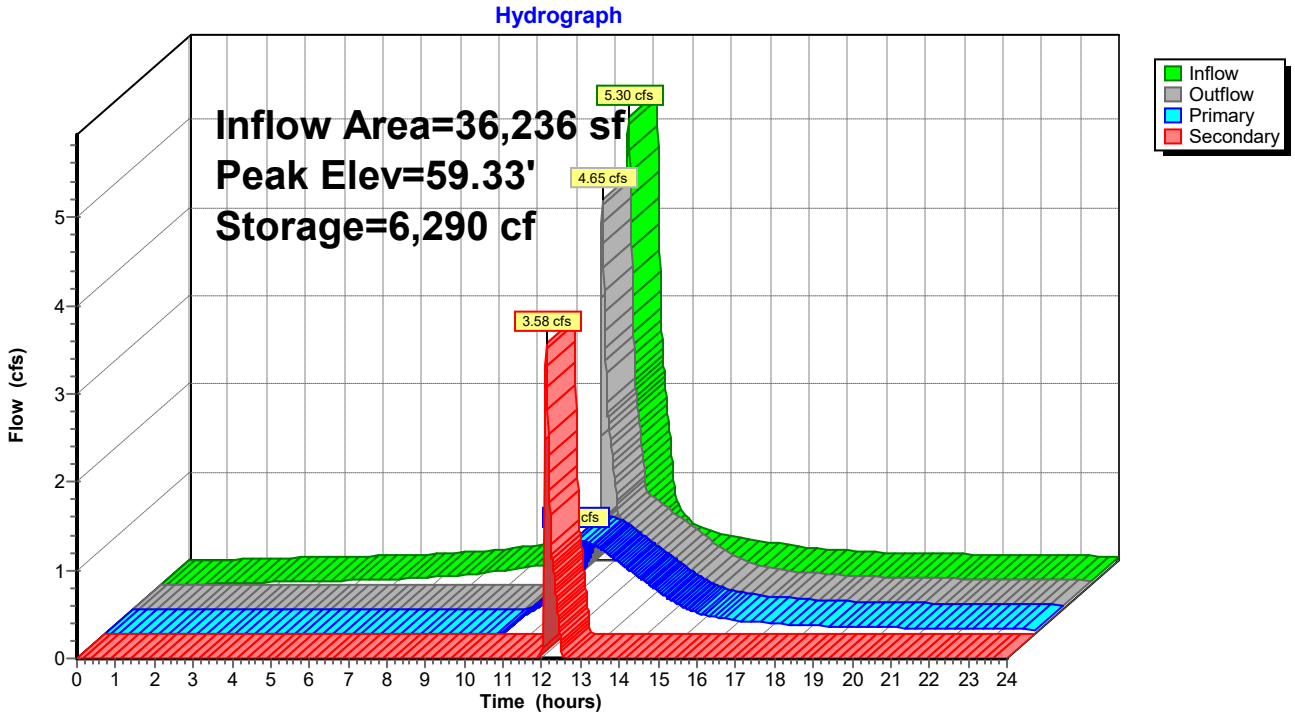
Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	7,220 cf	**20.00'W x 180.90'L x 5.00'H Porous Pavment** 18,090 cf Overall - 40 cf Embedded = 18,050 cf x 40.0% Voids
#2	56.84'	40 cf	**6.0" Round 6" underdrain** Inside #1 L= 204.0'
		7,260 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	56.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.84' / 56.67' S= 0.0567 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	59.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.07 cfs @ 12.11 hrs HW=59.33' TW=57.28' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.07 cfs @ 5.43 fps)

Secondary OutFlow Max=3.54 cfs @ 12.11 hrs HW=59.33' TW=58.29' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 3.54 cfs @ 1.12 fps)

Pond 15P: Por Pvt-D1H



Summary for Pond 16P: Por Pvt-D2C

Porous Pavement in Parking Spaces Only

Inflow Area = 6,166 sf, 86.99% Impervious, Inflow Depth > 5.73" for 25-yr event
Inflow = 0.88 cfs @ 12.07 hrs, Volume= 2,944 cf
Outflow = 0.61 cfs @ 12.15 hrs, Volume= 2,336 cf, Atten= 31%, Lag= 4.5 min
Primary = 0.61 cfs @ 12.15 hrs, Volume= 2,336 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 18P : Por Pvt-D2D

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 53.76' @ 12.15 hrs Surf.Area= 800 sf Storage= 888 cf

Plug-Flow detention time= 150.4 min calculated for 2,335 cf (79% of inflow)
Center-of-Mass det. time= 72.2 min (827.2 - 755.0)

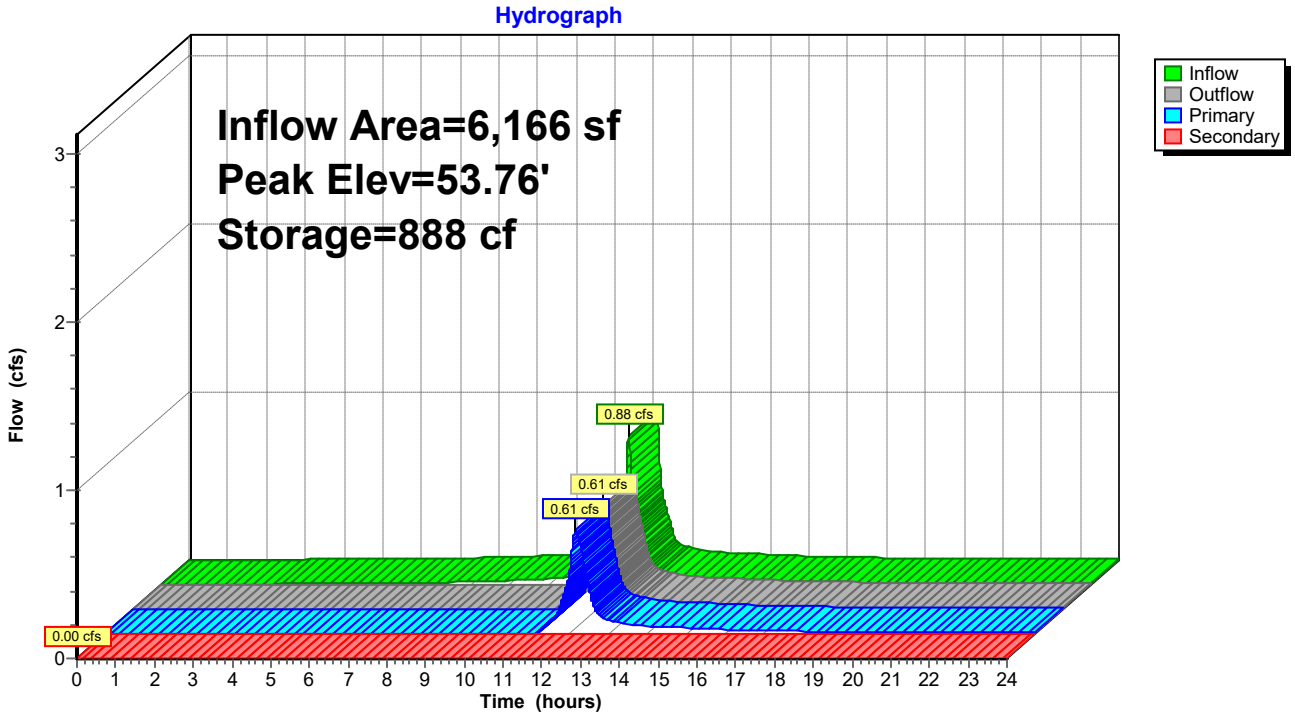
Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	52.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 55.0'
		1,606 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	52.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 52.84' / 52.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	55.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.61 cfs @ 12.15 hrs HW=53.75' TW=44.12' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.61 cfs @ 3.10 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=51.00' TW=49.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 16P: Por Pvt-D2C



Summary for Pond 18P: Por Pvt-D2D

Porous Pavement in Parking Spaces Only

Inflow Area = 6,023 sf, 88.83% Impervious, Inflow Depth > 5.78" for 25-yr event
Inflow = 0.87 cfs @ 12.07 hrs, Volume= 2,903 cf
Outflow = 0.60 cfs @ 12.14 hrs, Volume= 2,296 cf, Atten= 31%, Lag= 4.5 min
Primary = 0.60 cfs @ 12.14 hrs, Volume= 2,296 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 19P : Por Pvt-D2E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 51.74' @ 12.14 hrs Surf.Area= 800 sf Storage= 883 cf

Plug-Flow detention time= 151.9 min calculated for 2,295 cf (79% of inflow)
Center-of-Mass det. time= 73.1 min (826.9 - 753.8)

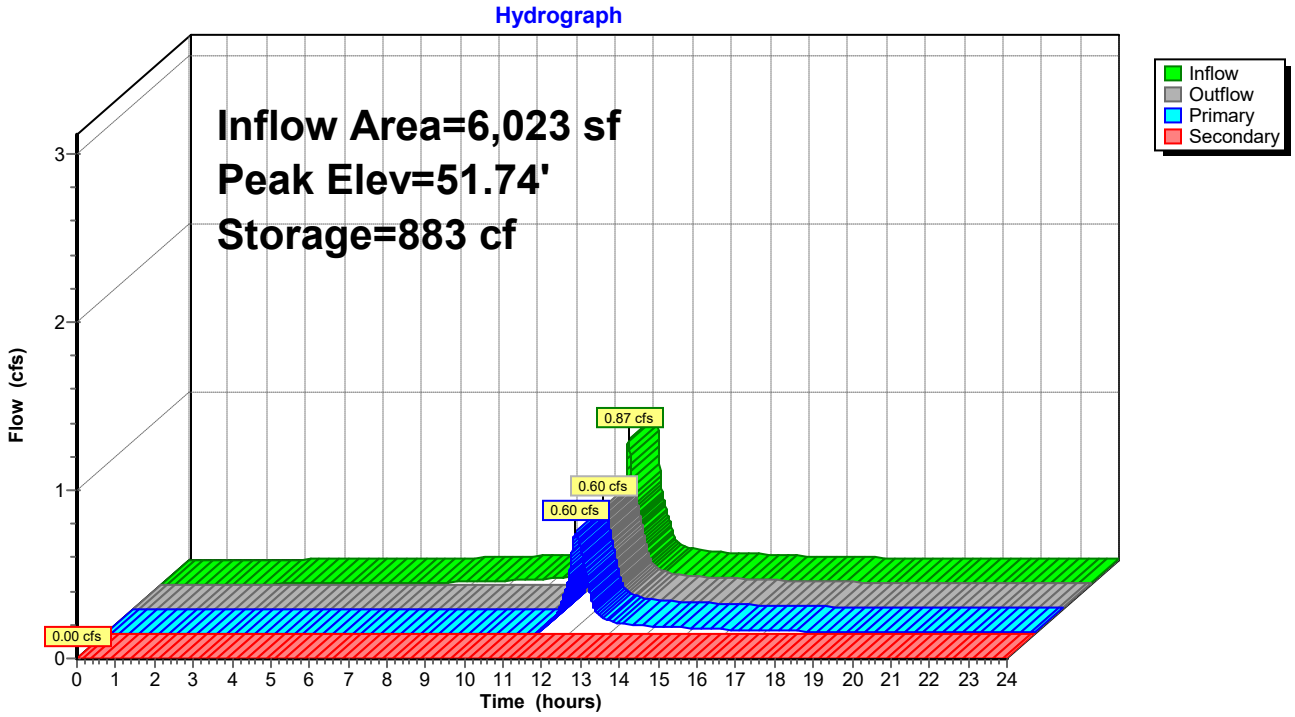
Volume	Invert	Avail.Storage	Storage Description
#1	49.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	50.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 54.0'
		1,606 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	50.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.84' / 50.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	53.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.60 cfs @ 12.14 hrs HW=51.74' TW=44.11' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.60 cfs @ 3.06 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=49.00' TW=47.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 18P: Por Pvt-D2D



Summary for Pond 19P: Por Pvt-D2E

Porous Pavement in Parking Spaces Only

Inflow Area = 6,016 sf, 88.30% Impervious, Inflow Depth > 5.76" for 25-yr event
Inflow = 0.86 cfs @ 12.07 hrs, Volume= 2,887 cf
Outflow = 0.60 cfs @ 12.15 hrs, Volume= 2,265 cf, Atten= 31%, Lag= 4.5 min
Primary = 0.60 cfs @ 12.15 hrs, Volume= 2,265 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 20P : Por Pvt-D2F

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 49.73' @ 12.15 hrs Surf.Area= 819 sf Storage= 900 cf

Plug-Flow detention time= 154.5 min calculated for 2,264 cf (78% of inflow)
Center-of-Mass det. time= 74.4 min (828.6 - 754.1)

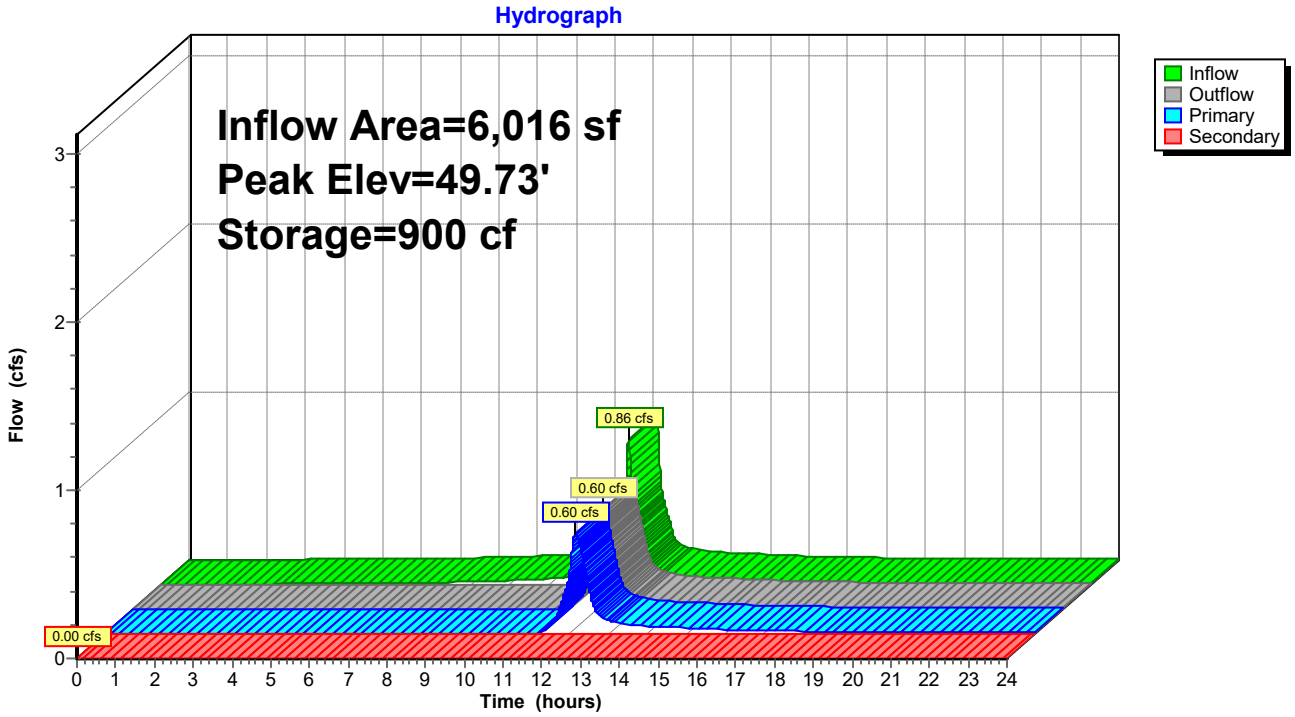
Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	1,634 cf	**20.00'W x 40.95'L x 5.00'H Porous Pavment** 4,095 cf Overall - 11 cf Embedded = 4,084 cf x 40.0% Voids
#2	48.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 54.0'
		1,644 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 48.84' / 48.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	51.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.60 cfs @ 12.15 hrs HW=49.73' TW=44.12' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.60 cfs @ 3.03 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=47.00' TW=45.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 19P: Por Pvt-D2E



Summary for Pond 20P: Por Pvt-D2F

Porous Pavement in Parking Spaces Only

Inflow Area = 5,836 sf, 90.88% Impervious, Inflow Depth > 5.84" for 25-yr event
Inflow = 0.85 cfs @ 12.07 hrs, Volume= 2,842 cf
Outflow = 0.59 cfs @ 12.14 hrs, Volume= 2,235 cf, Atten= 30%, Lag= 4.4 min
Primary = 0.59 cfs @ 12.14 hrs, Volume= 2,235 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 21P : Por Pvt-D2G

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 47.71' @ 12.14 hrs Surf.Area= 800 sf Storage= 875 cf

Plug-Flow detention time= 154.1 min calculated for 2,234 cf (79% of inflow)
Center-of-Mass det. time= 74.5 min (826.9 - 752.4)

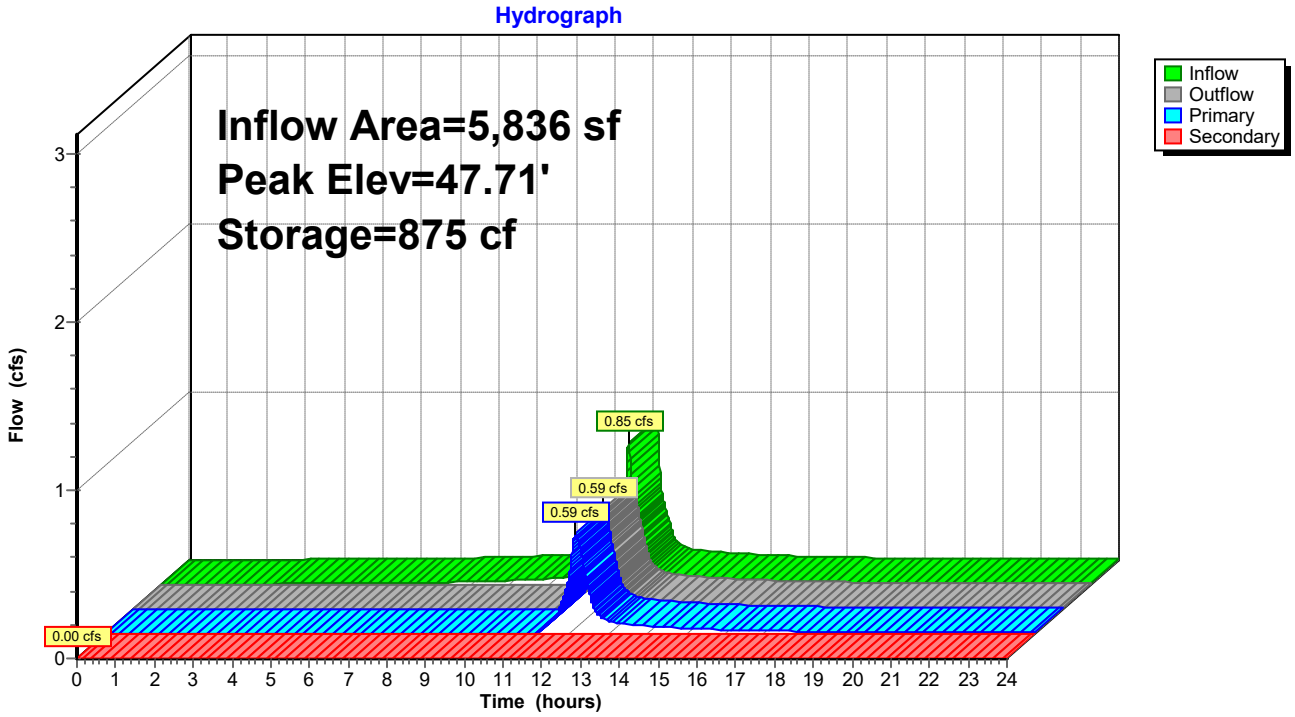
Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	46.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 57.0'
		1,607 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	46.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.84' / 46.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	49.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.59 cfs @ 12.14 hrs HW=47.71' TW=44.11' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.59 cfs @ 3.00 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.00' TW=42.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 20P: Por Pvt-D2F



Summary for Pond 21P: Por Pvt-D2G

Porous Pavement in Parking Spaces Only

Inflow Area = 3,234 sf, 56.68% Impervious, Inflow Depth > 5.01" for 25-yr event
Inflow = 0.43 cfs @ 12.07 hrs, Volume= 1,350 cf
Outflow = 0.06 cfs @ 12.56 hrs, Volume= 584 cf, Atten= 86%, Lag= 29.3 min
Primary = 0.06 cfs @ 12.56 hrs, Volume= 584 cf
Routed to Link Sub A : SUB A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 44.01' @ 12.56 hrs Surf.Area= 1,016 sf Storage= 820 cf

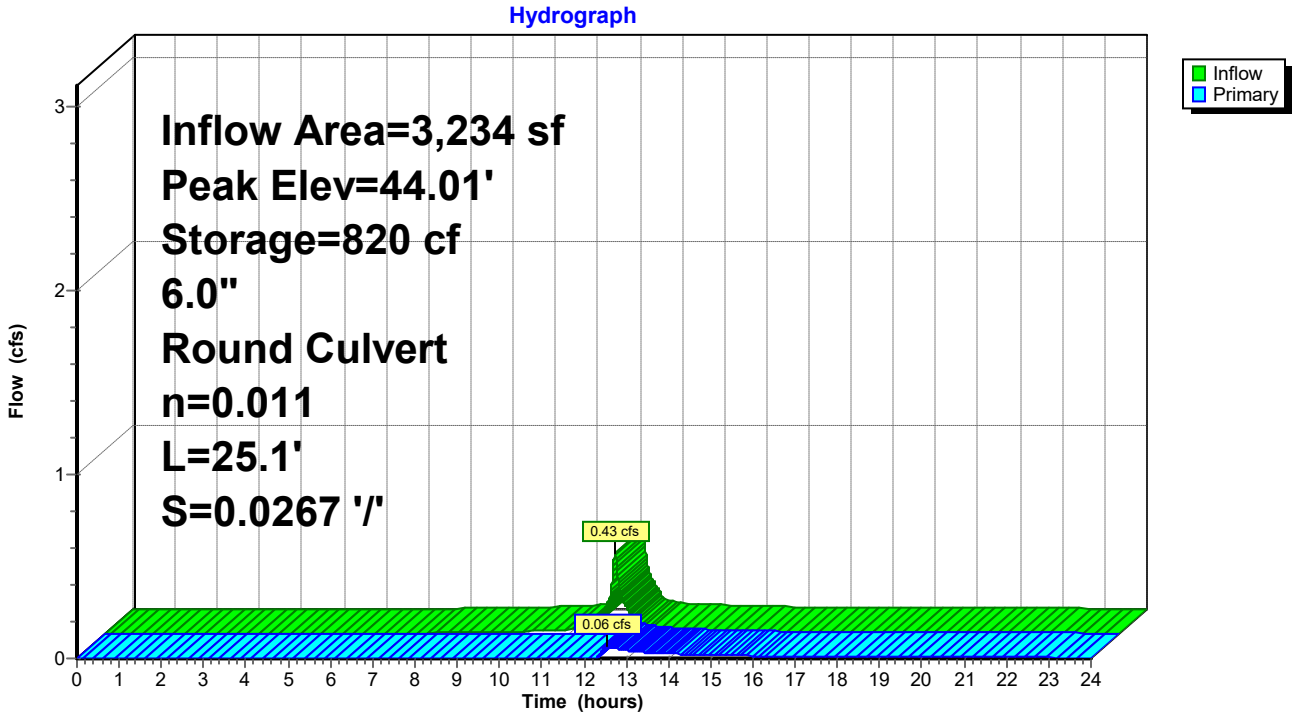
Plug-Flow detention time= 275.3 min calculated for 584 cf (43% of inflow)
Center-of-Mass det. time= 153.9 min (941.7 - 787.9)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	2,021 cf	**20.00'W x 50.80'L x 5.00'H Porous Pavment** 5,080 cf Overall - 27 cf Embedded = 5,053 cf x 40.0% Voids
#2	43.84'	27 cf	**6.0" Round 6" underdrain** Inside #1 L= 138.0'
		2,048 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	43.84'	**6.0" Round Culvert** L= 25.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.84' / 43.17' S= 0.0267 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf

Primary OutFlow Max=0.06 cfs @ 12.56 hrs HW=44.01' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.06 cfs @ 1.10 fps)

Pond 21P: Por Pvt-D2G



Summary for Pond DB01: Detention-01

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 60,955 sf, 0.00% Impervious, Inflow Depth > 2.30" for 25-yr event
Inflow = 2.53 cfs @ 12.22 hrs, Volume= 11,699 cf
Outflow = 2.39 cfs @ 12.30 hrs, Volume= 11,699 cf, Atten= 6%, Lag= 4.6 min
Primary = 2.39 cfs @ 12.30 hrs, Volume= 11,699 cf
Routed to Pond DMH13 : DMH-13

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 47.94' @ 12.30 hrs Surf.Area= 584 sf Storage= 334 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.1 min (863.5 - 862.4)

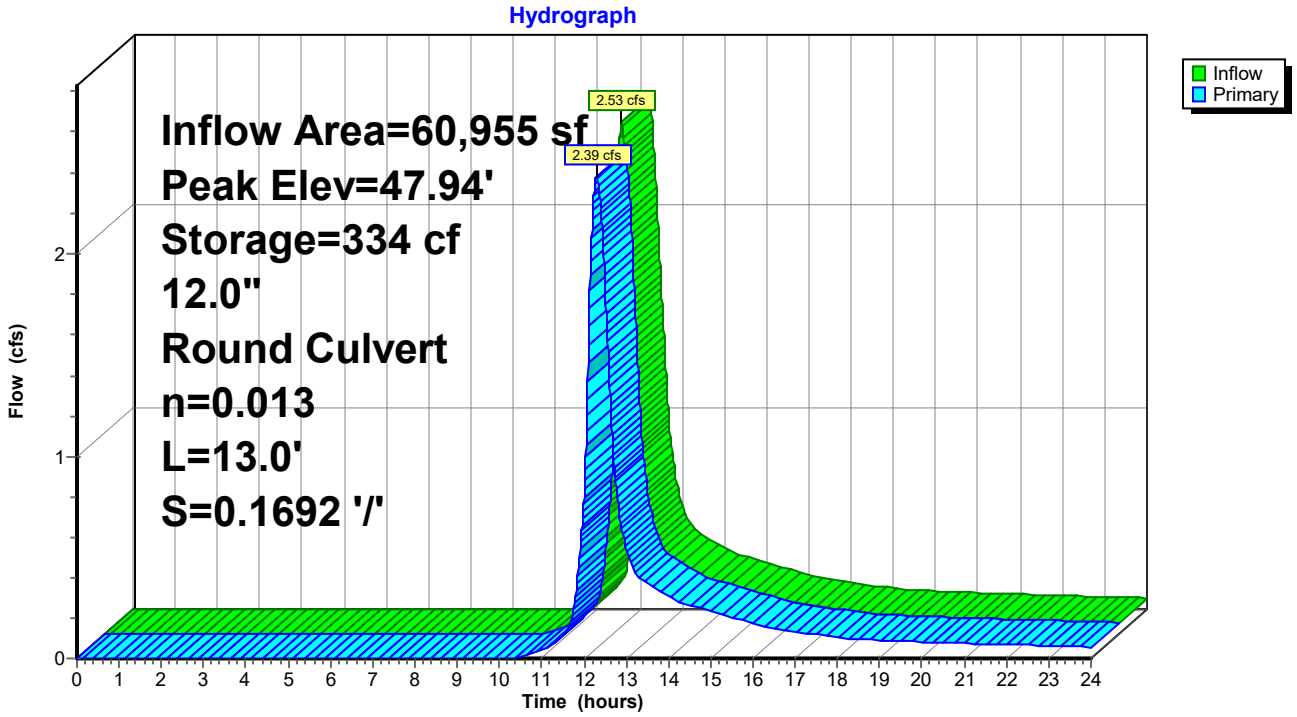
Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	1,719 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
47.00	128	0	0
48.00	614	371	371
49.00	2,082	1,348	1,719

Device	Routing	Invert	Outlet Devices
#1	Primary	46.80'	**12.0" Round Culvert** L= 13.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.80' / 44.60' S= 0.1692 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.39 cfs @ 12.30 hrs HW=47.94' TW=44.21' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.39 cfs @ 3.04 fps)

Pond DB01: Detention-01



Summary for Pond DB02: Detention-02

Inflow Area = 10,676 sf, 0.00% Impervious, Inflow Depth > 3.71" for 25-yr event
Inflow = 0.76 cfs @ 12.25 hrs, Volume= 3,305 cf
Outflow = 0.53 cfs @ 12.44 hrs, Volume= 2,745 cf, Atten= 30%, Lag= 11.4 min
Primary = 0.53 cfs @ 12.44 hrs, Volume= 2,745 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.86' @ 12.44 hrs Surf.Area= 1,658 sf Storage= 1,021 cf

Plug-Flow detention time= 117.6 min calculated for 2,744 cf (83% of inflow)
Center-of-Mass det. time= 49.3 min (879.2 - 829.9)

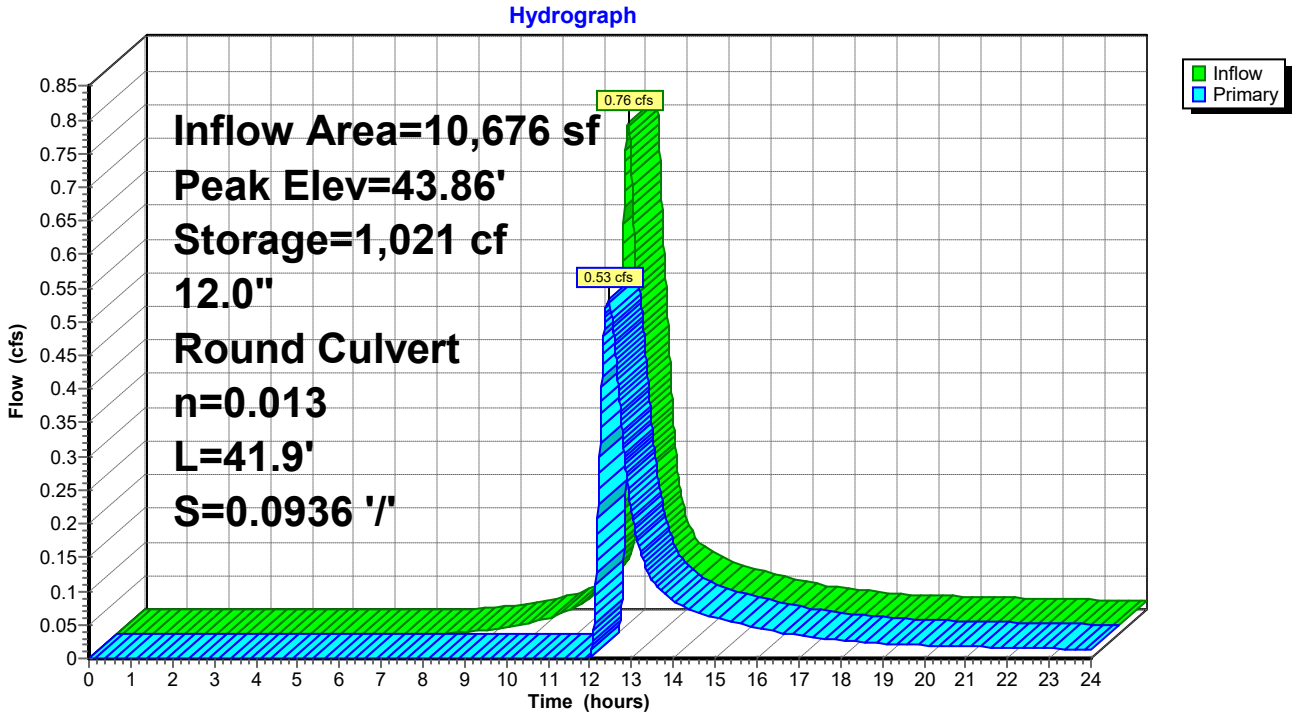
Volume	Invert	Avail.Storage	Storage Description
#1	43.00'	3,637 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.00	703	0	0
44.00	1,807	1,255	1,255
45.00	2,956	2,382	3,637

Device	Routing	Invert	Outlet Devices
#1	Primary	43.50'	**12.0" Round Culvert** L= 41.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.50' / 39.58' S= 0.0936 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.53 cfs @ 12.44 hrs HW=43.86' TW=40.21' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.53 cfs @ 2.06 fps)

Pond DB02: Detention-02



Summary for Pond DB03: Detention-03

Inflow Area = 13,682 sf, 0.00% Impervious, Inflow Depth > 3.51" for 25-yr event
Inflow = 1.03 cfs @ 12.18 hrs, Volume= 4,007 cf
Outflow = 0.65 cfs @ 12.38 hrs, Volume= 3,338 cf, Atten= 37%, Lag= 11.7 min
Primary = 0.65 cfs @ 12.38 hrs, Volume= 3,338 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.91' @ 12.38 hrs Surf.Area= 1,913 sf Storage= 1,259 cf

Plug-Flow detention time= 117.6 min calculated for 3,338 cf (83% of inflow)
Center-of-Mass det. time= 49.0 min (879.8 - 830.8)

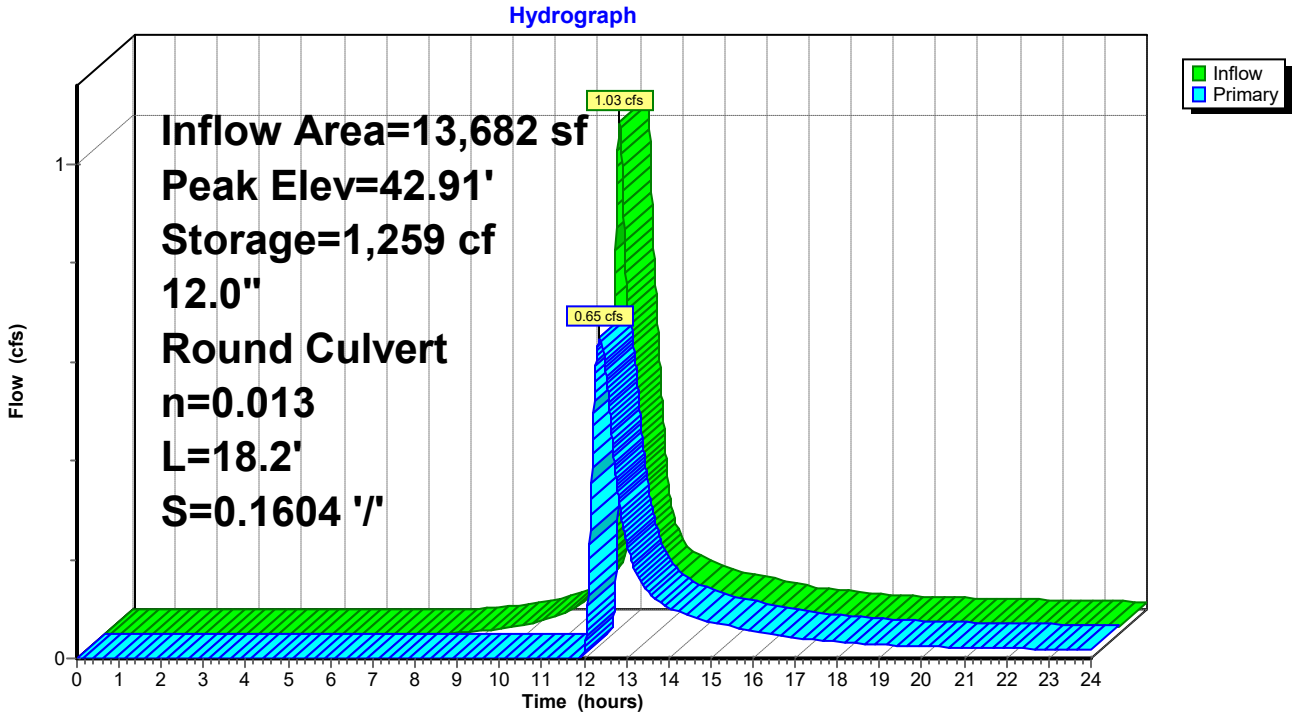
Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	12,357 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	870	0	0
43.00	2,022	1,446	1,446
44.00	3,054	2,538	3,984
45.00	4,148	3,601	7,585
46.00	5,395	4,772	12,357

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	**12.0" Round Culvert** L= 18.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 39.58' S= 0.1604 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.65 cfs @ 12.38 hrs HW=42.91' TW=40.27' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.65 cfs @ 2.17 fps)

Pond DB03: Detention-03



Summary for Pond DMH13: DMH-13

[57] Hint: Peaked at 44.21' (Flood elevation advised)

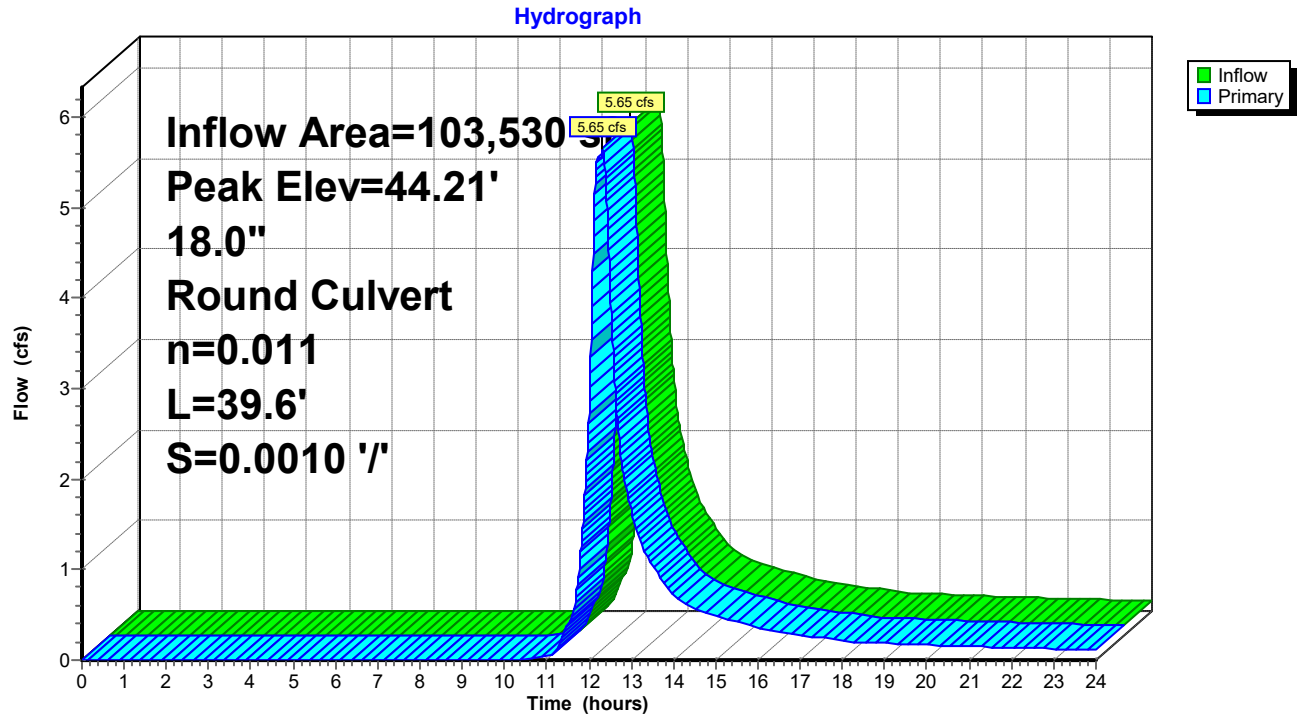
Inflow Area = 103,530 sf, 35.12% Impervious, Inflow Depth > 3.32" for 25-yr event
Inflow = 5.65 cfs @ 12.32 hrs, Volume= 28,604 cf
Outflow = 5.65 cfs @ 12.32 hrs, Volume= 28,604 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.65 cfs @ 12.32 hrs, Volume= 28,604 cf
Routed to Link Sub A : SUB A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 44.21' @ 12.32 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.54'	**18.0" Round Culvert** L= 39.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.54' / 42.50' S= 0.0010 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf

Primary OutFlow Max=5.65 cfs @ 12.32 hrs HW=44.21' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 5.65 cfs @ 3.58 fps)

Pond DMH13: DMH-13



Summary for Pond DMH8: DMH-08

[57] Hint: Peaked at 40.58' (Flood elevation advised)

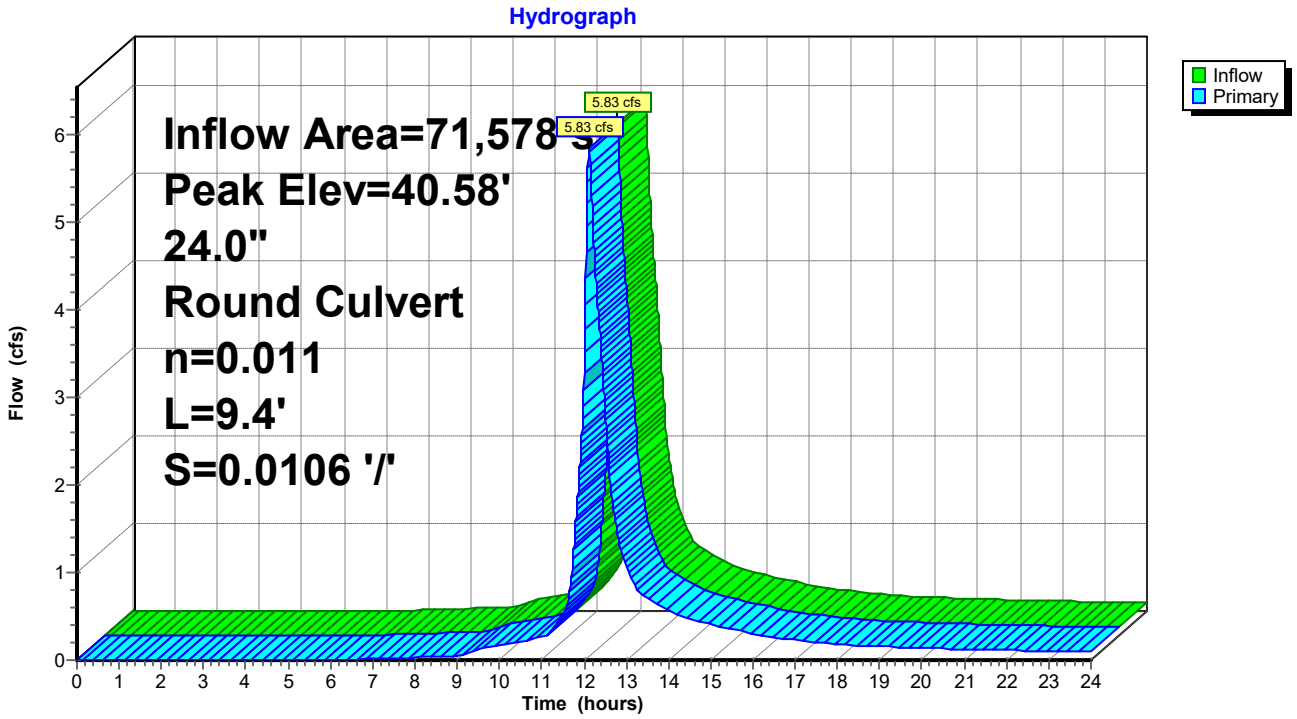
Inflow Area = 71,578 sf, 52.12% Impervious, Inflow Depth > 4.29" for 25-yr event
Inflow = 5.83 cfs @ 12.12 hrs, Volume= 25,600 cf
Outflow = 5.83 cfs @ 12.12 hrs, Volume= 25,600 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.83 cfs @ 12.12 hrs, Volume= 25,600 cf
Routed to Link 2 : Pipe 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.58' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.25'	**24.0" Round Culvert** L= 9.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.25' / 39.15' S= 0.0106 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=5.83 cfs @ 12.12 hrs HW=40.58' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 5.83 cfs @ 3.74 fps)

Pond DMH8: DMH-08



Summary for Pond PP02: Por Pvt-02

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 18,123 sf, 81.93% Impervious, Inflow Depth > 5.69" for 25-yr event
Inflow = 2.63 cfs @ 12.07 hrs, Volume= 8,592 cf
Outflow = 2.25 cfs @ 12.10 hrs, Volume= 7,863 cf, Atten= 14%, Lag= 2.0 min
Primary = 2.25 cfs @ 12.10 hrs, Volume= 7,863 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.88' @ 12.12 hrs Surf.Area= 1,476 sf Storage= 1,231 cf

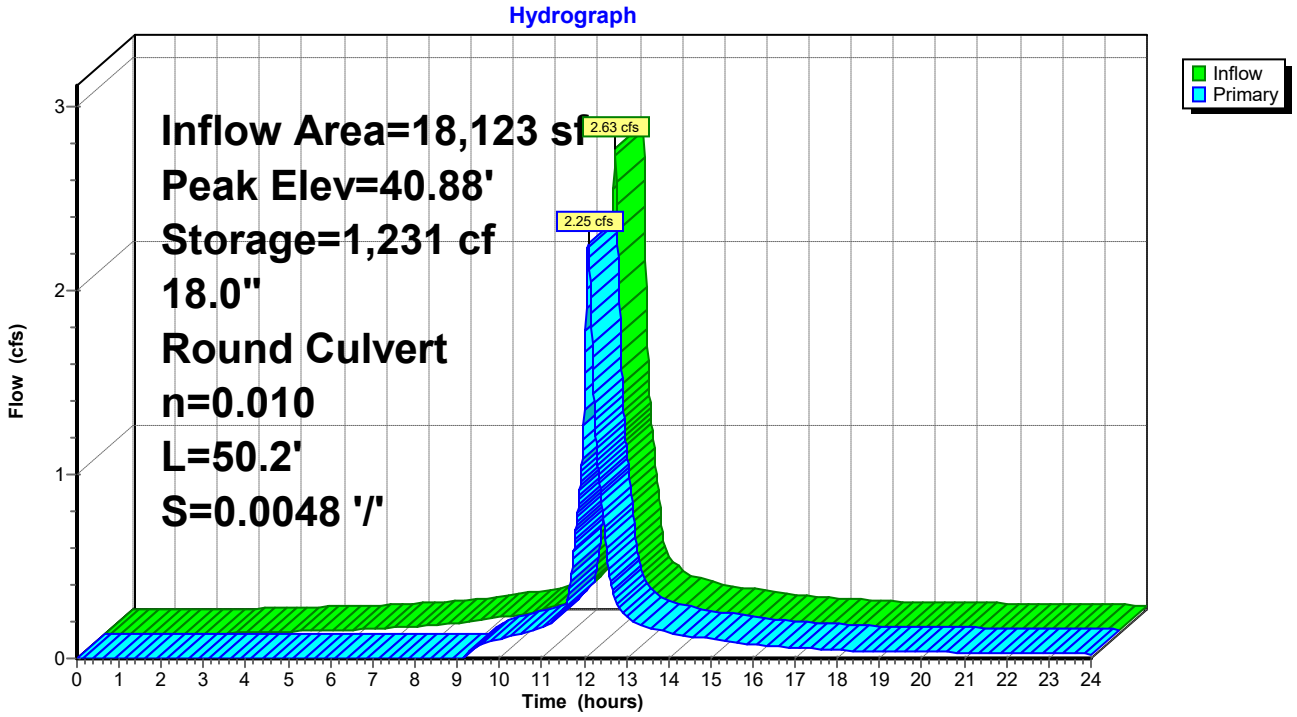
Plug-Flow detention time= 79.7 min calculated for 7,860 cf (91% of inflow)
Center-of-Mass det. time= 36.4 min (801.9 - 765.4)

Volume	Invert	Avail.Storage	Storage Description
#1	38.80'	2,946 cf	**18.00'W x 82.00'L x 5.00'H Porous Pavment** 7,380 cf Overall - 14 cf Embedded = 7,366 cf x 40.0% Voids
#2	40.64'	14 cf	**6.0" Round 6" underdrain** Inside #1 L= 72.0'
		2,960 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	39.96'	**18.0" Round Culvert** L= 50.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.96' / 39.72' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.20 cfs @ 12.10 hrs HW=40.87' TW=40.57' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 2.20 cfs @ 2.81 fps)

Pond PP02: Por Pvt-02



Summary for Pond PP03: Por Pvt-03

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 30,180 sf, 76.35% Impervious, Inflow Depth > 5.69" for 25-yr event
Inflow = 4.38 cfs @ 12.07 hrs, Volume= 14,308 cf
Outflow = 3.06 cfs @ 12.14 hrs, Volume= 12,868 cf, Atten= 30%, Lag= 4.4 min
Primary = 3.06 cfs @ 12.14 hrs, Volume= 12,868 cf
Routed to Link 3 : Pipe 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.89' @ 12.14 hrs Surf.Area= 2,484 sf Storage= 2,885 cf

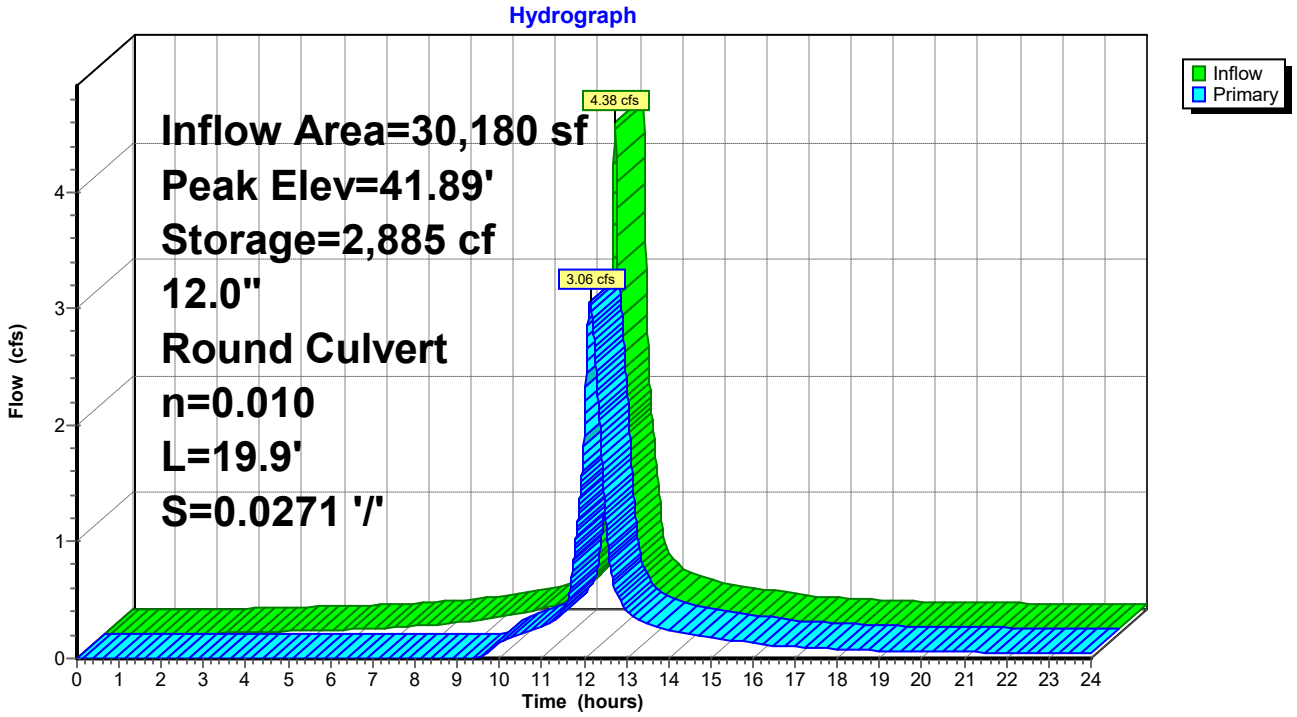
Plug-Flow detention time= 92.7 min calculated for 12,862 cf (90% of inflow)
Center-of-Mass det. time= 43.8 min (809.2 - 765.4)

Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	4,958 cf	**18.00'W x 138.00'L x 5.00'H Porous Pavment** 12,420 cf Overall - 24 cf Embedded = 12,396 cf x 40.0% Voids
#2	40.34'	24 cf	**6.0" Round 6" underdrain** Inside #1 L= 124.0'
		4,983 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.34'	**12.0" Round Culvert** L= 19.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.34' / 39.80' S= 0.0271 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.06 cfs @ 12.14 hrs HW=41.89' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.06 cfs @ 3.89 fps)

Pond PP03: Por Pvt-03



Summary for Pond PP04: Por Pvt-04

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 9,547 sf, 73.20% Impervious, Inflow Depth > 5.57" for 25-yr event
Inflow = 1.37 cfs @ 12.07 hrs, Volume= 4,434 cf
Outflow = 1.21 cfs @ 12.11 hrs, Volume= 3,625 cf, Atten= 12%, Lag= 2.4 min
Primary = 1.21 cfs @ 12.11 hrs, Volume= 3,625 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.66' @ 12.11 hrs Surf.Area= 1,296 sf Storage= 1,130 cf

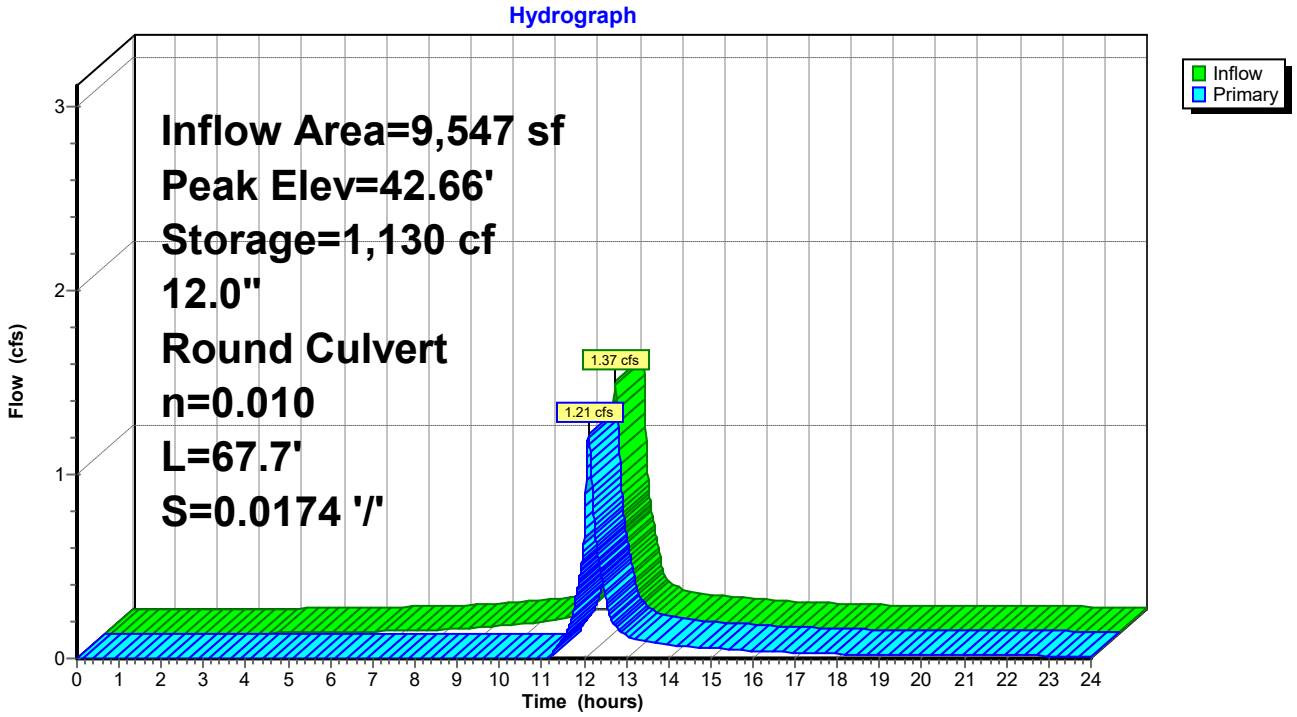
Plug-Flow detention time= 128.5 min calculated for 3,624 cf (82% of inflow)
Center-of-Mass det. time= 57.3 min (827.1 - 769.8)

Volume	Invert	Avail.Storage	Storage Description
#1	40.50'	2,587 cf	**18.00'W x 72.00'L x 5.00'H Porous Pavment** 6,480 cf Overall - 13 cf Embedded = 6,467 cf x 40.0% Voids
#2	42.00'	13 cf	**6.0" Round 6" underdrain** Inside #1 L= 68.0'
		2,600 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	**12.0" Round Culvert** L= 67.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.00' / 40.82' S= 0.0174 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.21 cfs @ 12.11 hrs HW=42.66' TW=40.57' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.21 cfs @ 2.19 fps)

Pond PP04: Por Pvt-04



Summary for Pond PP05: Por Pvt-05

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 9,002 sf, 74.73% Impervious, Inflow Depth > 5.35" for 25-yr event
Inflow = 1.26 cfs @ 12.07 hrs, Volume= 4,010 cf
Outflow = 1.09 cfs @ 12.12 hrs, Volume= 3,101 cf, Atten= 14%, Lag= 2.7 min
Primary = 1.09 cfs @ 12.12 hrs, Volume= 3,101 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 44.37' @ 12.12 hrs Surf.Area= 1,457 sf Storage= 1,245 cf

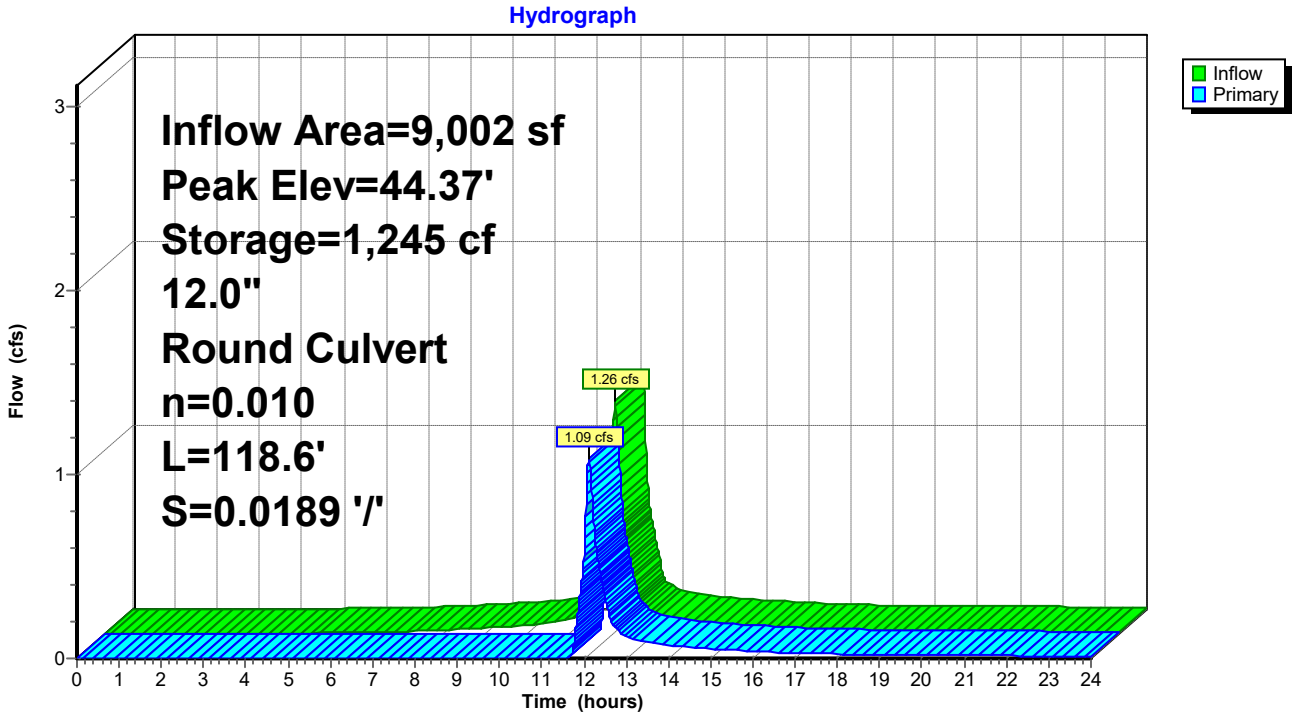
Plug-Flow detention time= 142.2 min calculated for 3,100 cf (77% of inflow)
Center-of-Mass det. time= 62.3 min (840.0 - 777.7)

Volume	Invert	Avail.Storage	Storage Description
#1	42.25'	2,909 cf	**18.00'W x 80.97'L x 5.00'H Porous Pavment** 7,287 cf Overall - 15 cf Embedded = 7,272 cf x 40.0% Voids
#2	43.75'	15 cf	**6.0" Round 6" underdrain** Inside #1 L= 77.0'
		2,924 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	43.75'	**12.0" Round Culvert** L= 118.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.75' / 41.51' S= 0.0189 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.08 cfs @ 12.12 hrs HW=44.37' TW=40.57' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.08 cfs @ 2.12 fps)

Pond PP05: Por Pvt-05



Summary for Pond PP06: Por Pvt-06

Only Main Driveway and Parking Area to be Porous Pavement

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 7,420 sf, 88.26% Impervious, Inflow Depth > 5.81" for 25-yr event
Inflow = 1.09 cfs @ 12.07 hrs, Volume= 3,589 cf
Outflow = 1.09 cfs @ 12.07 hrs, Volume= 3,589 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.09 cfs @ 12.07 hrs, Volume= 3,589 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.25' @ 12.06 hrs Surf.Area= 1,298 sf Storage= 0 cf

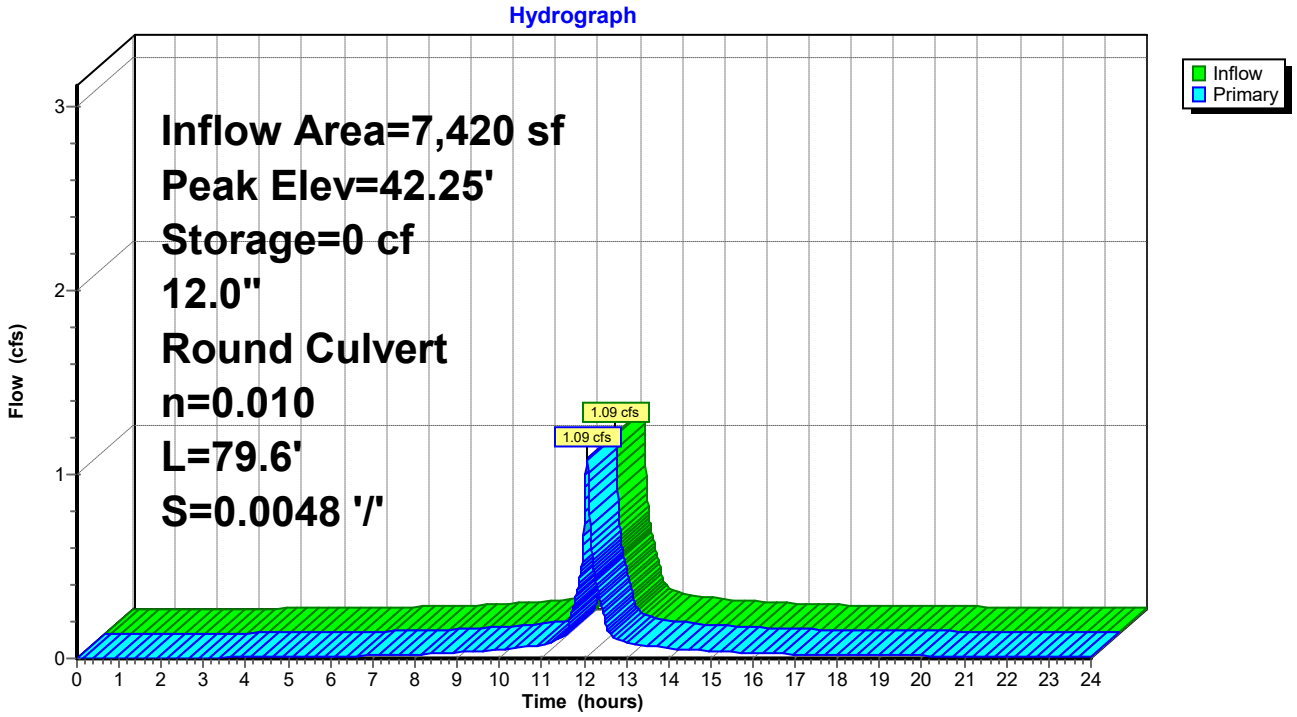
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (760.7 - 760.7)

Volume	Invert	Avail.Storage	Storage Description
#1	42.25'	2,590 cf	**18.00'W x 72.10'L x 5.00'H Porous Pavment** 6,489 cf Overall - 14 cf Embedded = 6,475 cf x 40.0% Voids
#2	43.75'	14 cf	**6.0" Round 6" underdrain** Inside #1 L= 69.0'
		2,604 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.94'	**12.0" Round Culvert** L= 79.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.94' / 40.56' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.69 cfs @ 12.07 hrs HW=42.25' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.69 cfs @ 3.42 fps)

Pond PP06: Por Pvt-06



Summary for Pond PP07: Por Pvt-07

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 27,046 sf, 54.55% Impervious, Inflow Depth > 4.68" for 25-yr event
Inflow = 3.45 cfs @ 12.07 hrs, Volume= 10,542 cf
Outflow = 2.20 cfs @ 12.16 hrs, Volume= 9,070 cf, Atten= 36%, Lag= 5.2 min
Primary = 2.20 cfs @ 12.16 hrs, Volume= 9,070 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.14' @ 12.16 hrs Surf.Area= 4,085 sf Storage= 3,014 cf

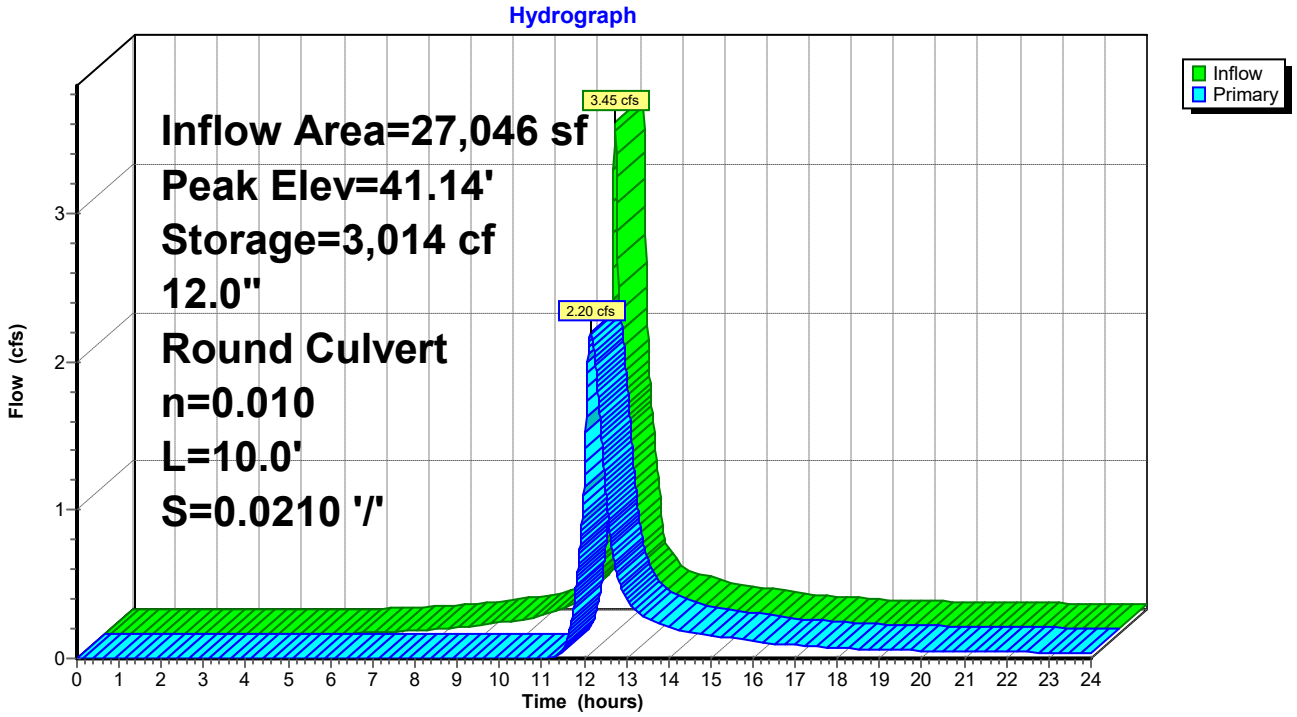
Plug-Flow detention time= 107.5 min calculated for 9,070 cf (86% of inflow)
Center-of-Mass det. time= 46.9 min (843.7 - 796.8)

Volume	Invert	Avail.Storage	Storage Description
#1	39.30'	8,152 cf	**18.00'W x 226.97'L x 5.00'H Porous Pavment** 20,427 cf Overall - 46 cf Embedded = 20,381 cf x 40.0% Voids
#2	41.14'	46 cf	**6.0" Round 6" underdrain** Inside #1 L= 236.0'
		8,199 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.10'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.10' / 39.89' S= 0.0210 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.20 cfs @ 12.16 hrs HW=41.14' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.20 cfs @ 2.80 fps)

Pond PP07: Por Pvt-07



Summary for Pond RG03: Rain Garden-03

Inflow Area = 5,425 sf, 57.01% Impervious, Inflow Depth > 5.23" for 25-yr event
Inflow = 0.69 cfs @ 12.10 hrs, Volume= 2,364 cf
Outflow = 0.42 cfs @ 12.22 hrs, Volume= 1,852 cf, Atten= 39%, Lag= 7.0 min
Primary = 0.42 cfs @ 12.22 hrs, Volume= 1,852 cf
Routed to Link 2 : Pipe 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.12' @ 12.22 hrs Surf.Area= 2,332 sf Storage= 890 cf

Plug-Flow detention time= 147.8 min calculated for 1,851 cf (78% of inflow)
Center-of-Mass det. time= 70.0 min (853.3 - 783.3)

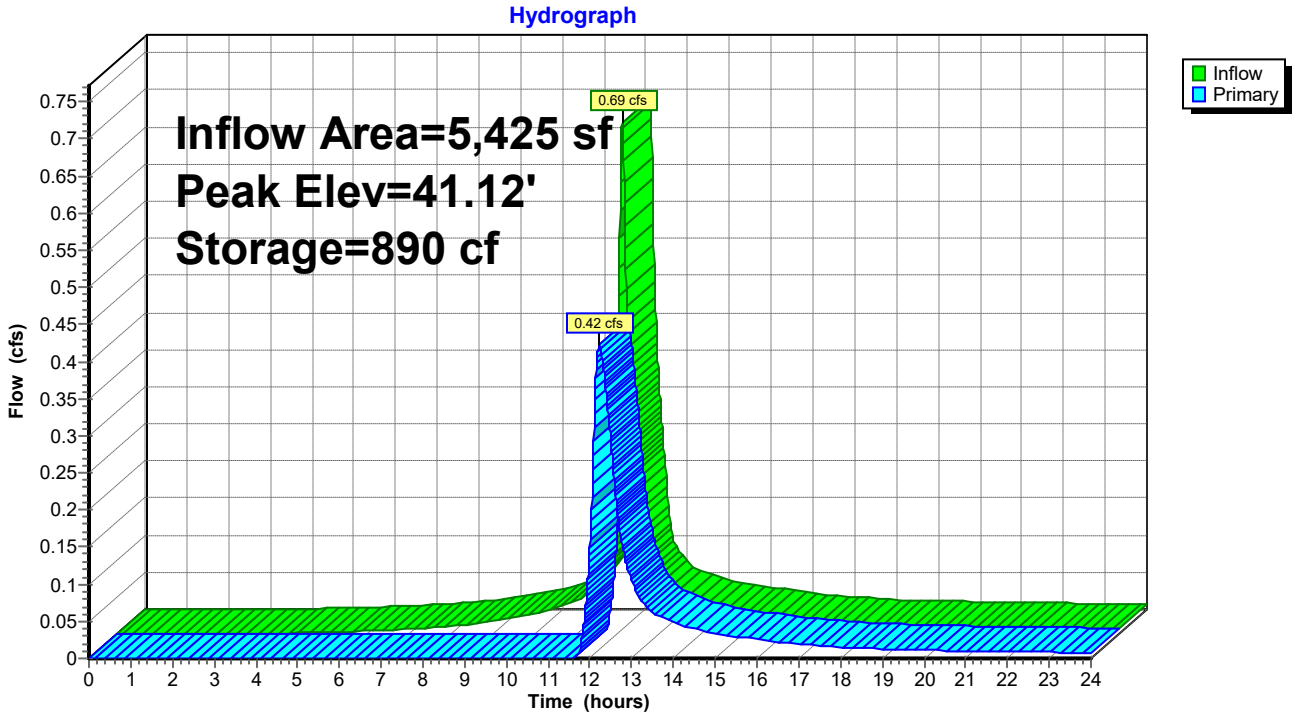
Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	1,867 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	43.67'	115 cf	**18.00'W x 129.55'L x 0.33'H Mulch** 770 cf Overall x 15.0% Voids
#3	41.17'	1,749 cf	**18.00'W x 129.55'L x 2.50'H Greenwich Soil Mix** 5,830 cf Overall x 30.0% Voids
#4	40.17'	928 cf	**18.00'W x 129.55'L x 1.00'H Crushed Stone** 2,332 cf Overall - 12 cf Embedded = 2,320 cf x 40.0% Voids
#5	40.67'	12 cf	**6.0" Round 6" underdrain** Inside #4 L= 62.0'
		4,671 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	1,402	0	0
45.00	2,332	1,867	1,867

Device	Routing	Invert	Outlet Devices
#1	Primary	39.77'	**12.0" Round Culvert** L= 9.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.77' / 39.67' S= 0.0101 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	44.50'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	40.67'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.42 cfs @ 12.22 hrs HW=41.12' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Passes 0.42 cfs of 2.75 cfs potential flow)
↑**2=Orifice/Grate** (Controls 0.00 cfs)
3=Orifice/Grate (Orifice Controls 0.42 cfs @ 2.28 fps)

Pond RG03: Rain Garden-03



Summary for Pond RG04: Rain Garden-04

Inflow Area = 10,548 sf, 82.86% Impervious, Inflow Depth > 5.81" for 25-yr event
Inflow = 1.55 cfs @ 12.07 hrs, Volume= 5,103 cf
Outflow = 1.09 cfs @ 12.15 hrs, Volume= 4,927 cf, Atten= 30%, Lag= 4.9 min
Primary = 1.09 cfs @ 12.15 hrs, Volume= 4,927 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.89' @ 12.14 hrs Surf.Area= 1,542 sf Storage= 598 cf

Plug-Flow detention time= 42.5 min calculated for 4,925 cf (97% of inflow)
Center-of-Mass det. time= 21.8 min (782.5 - 760.7)

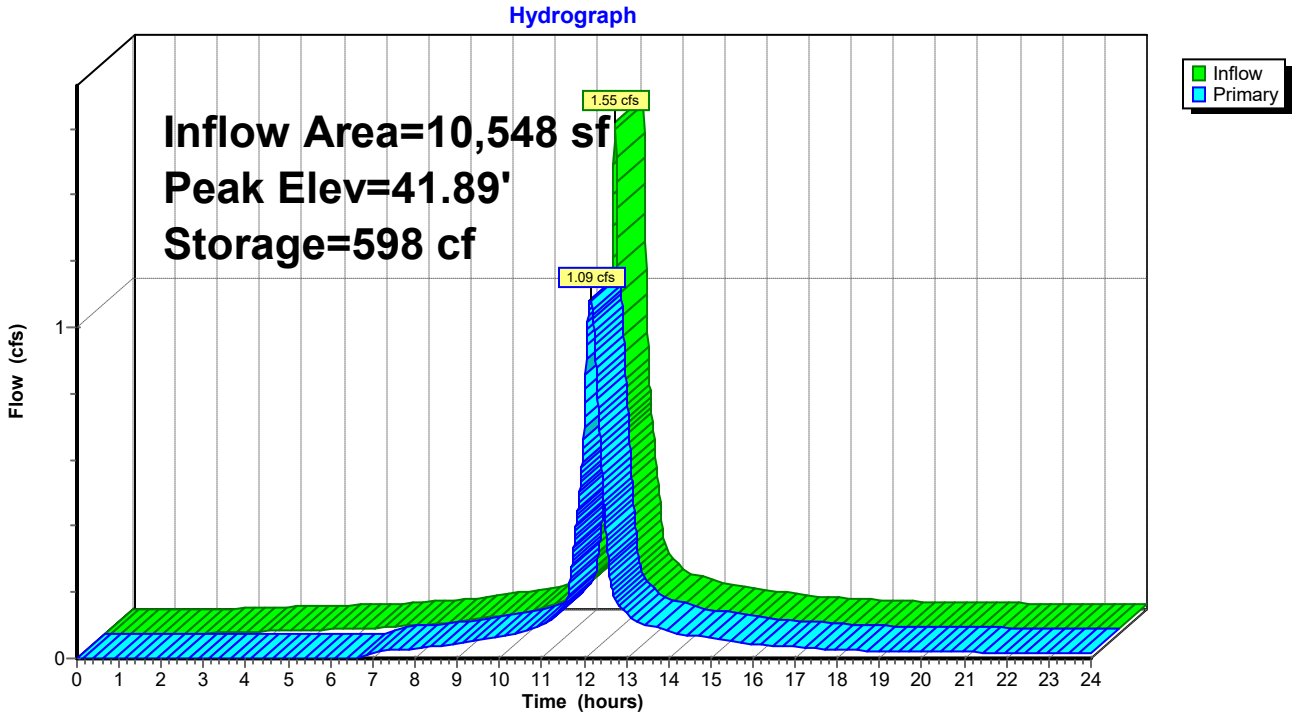
Volume	Invert	Avail.Storage	Storage Description
#1	43.50'	233 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	43.17'	38 cf	**11.00'W x 70.10'L x 0.33'H Mulch** 254 cf Overall x 15.0% Voids
#3	40.67'	578 cf	**11.00'W x 70.10'L x 2.50'H Greenwich Soil Mix** 1,928 cf Overall x 30.0% Voids
#4	39.67'	303 cf	**11.00'W x 70.09'L x 1.00'H Crushed Stone** 771 cf Overall - 14 cf Embedded = 757 cf x 40.0% Voids
#5	40.17'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		1,166 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.50	162	0	0
44.00	771	233	233

Device	Routing	Invert	Outlet Devices
#1	Device 2	43.50'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	40.17'	**12.0" Round Culvert** L= 8.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.17' / 39.96' S= 0.0239 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	40.17'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.09 cfs @ 12.15 hrs HW=41.88' TW=40.55' (Dynamic Tailwater)
└**2=Culvert** (Passes 1.09 cfs of 4.16 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 1.09 cfs @ 5.56 fps)

Pond RG04: Rain Garden-04



Summary for Pond RG06: Rain Garden-06

Inflow Area = 4,026 sf, 70.89% Impervious, Inflow Depth > 5.23" for 25-yr event
Inflow = 0.56 cfs @ 12.07 hrs, Volume= 1,755 cf
Outflow = 0.52 cfs @ 12.10 hrs, Volume= 1,708 cf, Atten= 8%, Lag= 1.9 min
Primary = 0.52 cfs @ 12.10 hrs, Volume= 1,708 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.55' @ 12.10 hrs Surf.Area= 316 sf Storage= 119 cf

Plug-Flow detention time= 30.3 min calculated for 1,708 cf (97% of inflow)
Center-of-Mass det. time= 14.2 min (795.4 - 781.2)

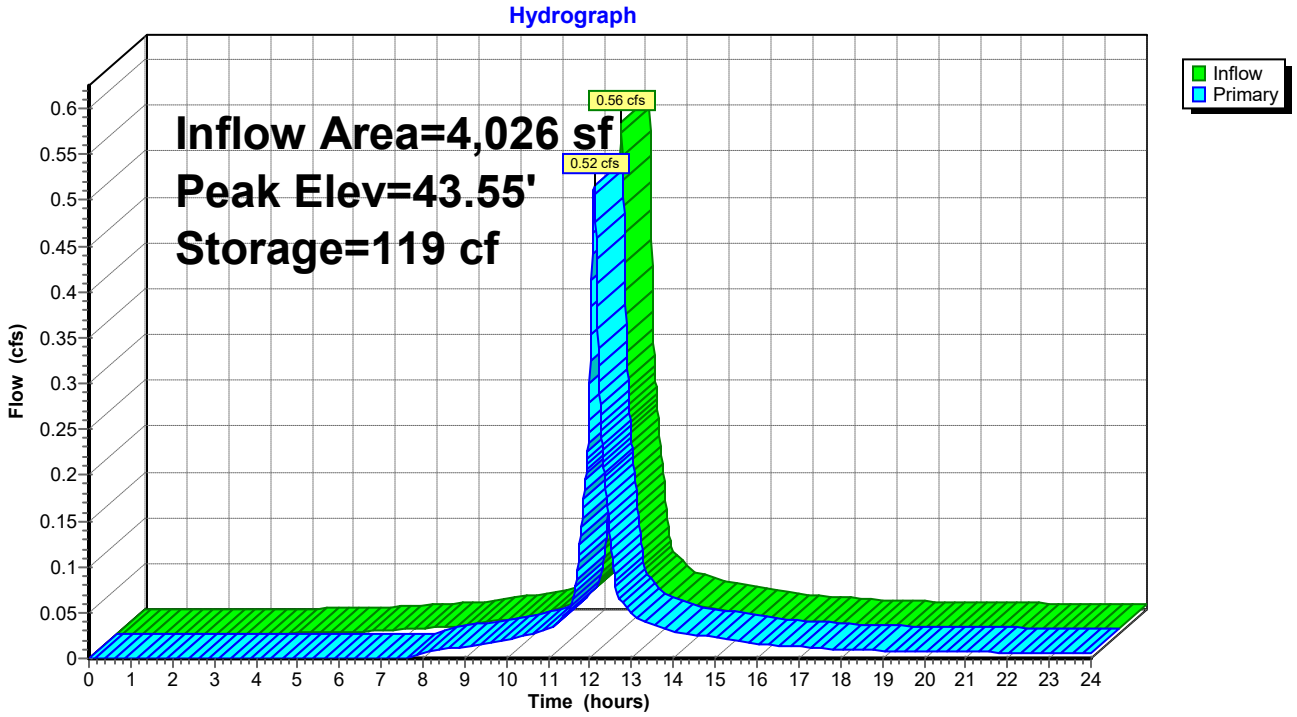
Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	117 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	46.17'	16 cf	**15.00'W x 21.07'L x 0.33'H Mulch** 104 cf Overall x 15.0% Voids
#3	43.67'	237 cf	**15.00'W x 21.07'L x 2.50'H Greenwich Soil Mix** 790 cf Overall x 30.0% Voids
#4	42.67'	121 cf	**15.00'W x 21.07'L x 1.00'H Crushed Stone** 316 cf Overall - 14 cf Embedded = 302 cf x 40.0% Voids
#5	43.00'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		504 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	151	0	0
47.00	316	117	117

Device	Routing	Invert	Outlet Devices
#1	Device 2	46.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	40.18'	**12.0" Round Culvert** L= 91.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.18' / 40.10' S= 0.0009 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	43.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.51 cfs @ 12.10 hrs HW=43.55' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.51 cfs of 4.71 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.51 cfs @ 2.62 fps)

Pond RG06: Rain Garden-06



Summary for Pond RG07: Rain Garden-07

Inflow Area = 4,109 sf, 58.46% Impervious, Inflow Depth > 4.79" for 25-yr event
Inflow = 0.53 cfs @ 12.07 hrs, Volume= 1,639 cf
Outflow = 0.50 cfs @ 12.10 hrs, Volume= 1,594 cf, Atten= 7%, Lag= 1.8 min
Primary = 0.50 cfs @ 12.10 hrs, Volume= 1,594 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.53' @ 12.10 hrs Surf.Area= 305 sf Storage= 113 cf

Plug-Flow detention time= 29.3 min calculated for 1,593 cf (97% of inflow)
Center-of-Mass det. time= 13.0 min (806.9 - 794.0)

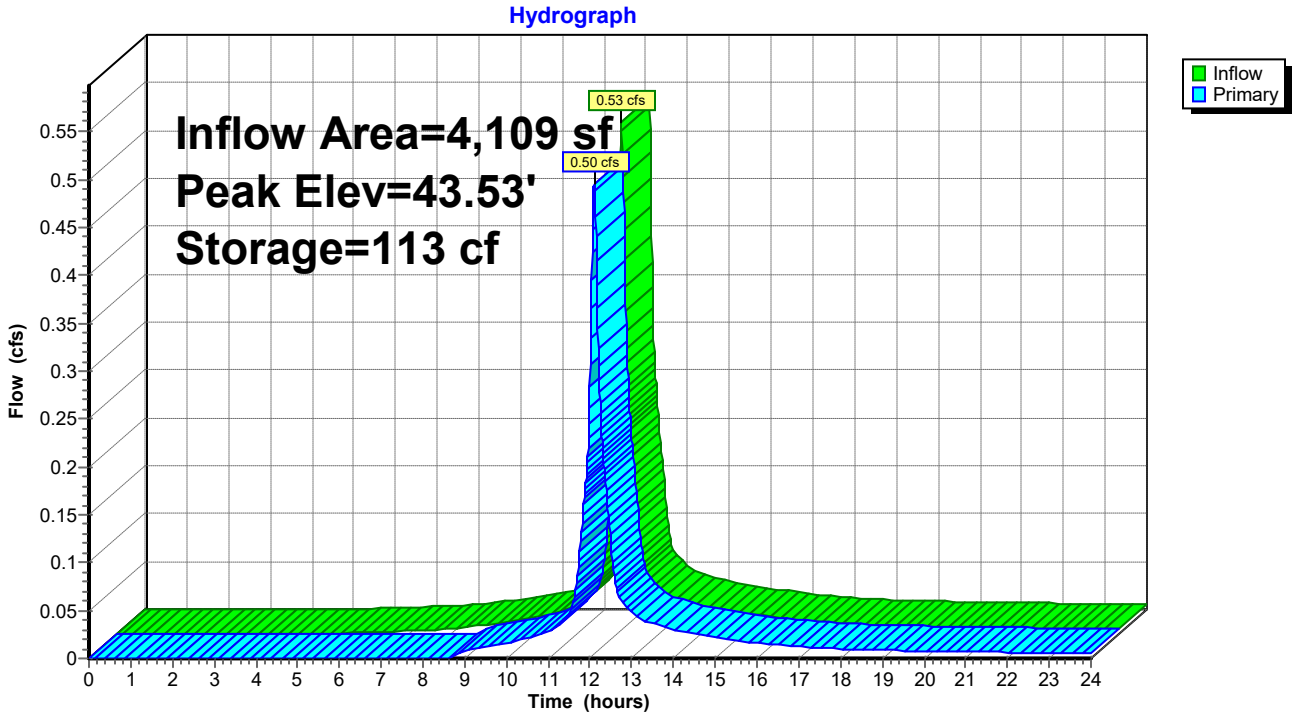
Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	112 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	46.17'	15 cf	**15.00'W x 20.33'L x 0.33'H Mulch** 101 cf Overall x 15.0% Voids
#3	43.67'	229 cf	**15.00'W x 20.33'L x 2.50'H Greenwich Soil Mix** 762 cf Overall x 30.0% Voids
#4	42.67'	116 cf	**15.00'W x 20.33'L x 1.00'H Crushed Stone** 305 cf Overall - 14 cf Embedded = 291 cf x 40.0% Voids
#5	43.00'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		486 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	144	0	0
47.00	305	112	112

Device	Routing	Invert	Outlet Devices
#1	Device 2	46.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	42.00'	**12.0" Round Culvert** L= 85.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.00' / 40.10' S= 0.0222 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	43.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.50 cfs @ 12.10 hrs HW=43.52' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.50 cfs of 3.83 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.50 cfs @ 2.52 fps)

Pond RG07: Rain Garden-07



Summary for Pond UI01: Und Inf 01

Inflow Area = 53,524 sf,100.00% Impervious, Inflow Depth > 6.16" for 25-yr event
Inflow = 7.99 cfs @ 12.07 hrs, Volume= 27,464 cf
Outflow = 3.50 cfs @ 12.23 hrs, Volume= 17,062 cf, Atten= 56%, Lag= 9.6 min
Primary = 3.50 cfs @ 12.23 hrs, Volume= 17,062 cf
Routed to Link 3 : Pipe 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.16' @ 12.23 hrs Surf.Area= 5,205 sf Storage= 14,195 cf

Plug-Flow detention time= 233.0 min calculated for 17,055 cf (62% of inflow)
Center-of-Mass det. time= 125.1 min (867.9 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	39.50'	5,260 cf	**40.50'W x 127.59'L x 4.75'H Field A** 24,545 cf Overall - 11,394 cf Embedded = 13,151 cf x 40.0% Voids
#2A	40.00'	11,394 cf	**ADS_StormTech MC-3500 d +Cap** x 102 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 102 Chambers in 6 Rows Cap Storage= 14.9 cf x 2 x 6 rows = 178.8 cf
#3	41.98'	264 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder** x 3
		16,918 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.98'	**15.0" Round Culvert** L= 36.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.98' / 41.53' S= 0.0123 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=3.50 cfs @ 12.23 hrs HW=43.16' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.50 cfs @ 2.92 fps)

Pond UI01: Und Inf 01 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= 14.9 cf x 2 x 6 rows = 178.8 cf

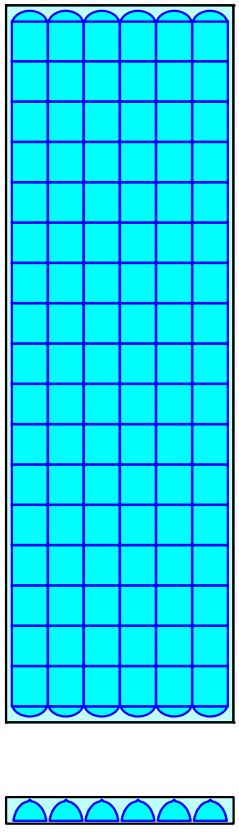
17 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 125.59' Row Length +12.0" End Stone x 2 = 127.59' Base Length
6 Rows x 77.0" Wide + 12.0" Side Stone x 2 = 40.50' Base Width
6.0" Stone Base + 45.0" Chamber Height + 6.0" Stone Cover = 4.75' Field Height

102 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 6 Rows = 11,393.9 cf Chamber Storage

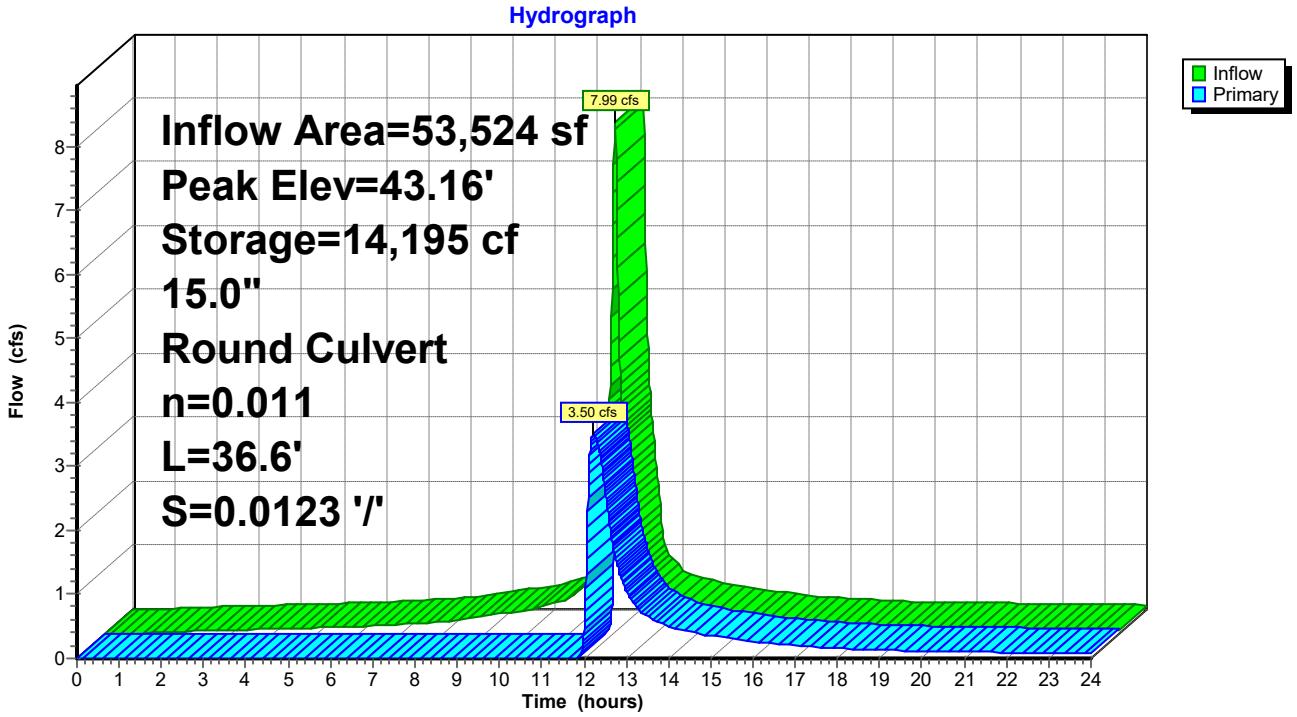
24,545.1 cf Field - 11,393.9 cf Chambers = 13,151.2 cf Stone x 40.0% Voids = 5,260.5 cf Stone Storage

Chamber Storage + Stone Storage = 16,654.4 cf = 0.382 af
Overall Storage Efficiency = 67.9%
Overall System Size = 127.59' x 40.50' x 4.75'

102 Chambers
909.1 cy Field
487.1 cy Stone



Pond UI01: Und Inf 01



Summary for Pond UI02: Und Inf 02

Inflow Area = 33,482 sf, 30.44% Impervious, Inflow Depth > 4.24" for 25-yr event
Inflow = 3.65 cfs @ 12.10 hrs, Volume= 11,843 cf
Outflow = 3.18 cfs @ 12.15 hrs, Volume= 11,382 cf, Atten= 13%, Lag= 2.9 min
Primary = 3.18 cfs @ 12.15 hrs, Volume= 11,382 cf
Routed to Link 1 : Pipe 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.14' @ 12.15 hrs Surf.Area= 558 sf Storage= 1,089 cf

Plug-Flow detention time= 36.7 min calculated for 11,382 cf (96% of inflow)
Center-of-Mass det. time= 14.7 min (823.9 - 809.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	39.97'	697 cf	**6.50'W x 82.00'L x 5.50'H Field A** 2,932 cf Overall - 1,188 cf Embedded = 1,743 cf x 40.0% Voids
#2A	40.47'	992 cf	**ADS N-12 48"** x 4 Inside #1 Inside= 47.7"W x 47.7"H => 12.40 sf x 20.00'L = 248.0 cf Outside= 54.0"W x 54.0"H => 14.86 sf x 20.00'L = 297.1 cf
#3	39.97'	144 cf	**4.00'D x 5.73'H Vertical Cone/Cylinder** x 2
		1,833 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 22.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 41.38' S= 0.0054 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.18 cfs @ 12.15 hrs HW=43.14' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.18 cfs @ 4.05 fps)

Pond UI02: Und Inf 02 - Chamber Wizard Field A

Chamber Model = ADS N-12 48" (ADS N-12® Pipe)
Inside= 47.7"W x 47.7"H => 12.40 sf x 20.00'L = 248.0 cf
Outside= 54.0"W x 54.0"H => 14.86 sf x 20.00'L = 297.1 cf

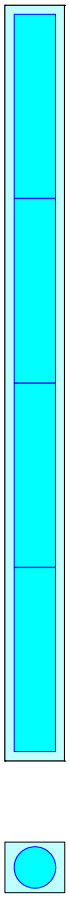
4 Chambers/Row x 20.00' Long = 80.00' Row Length +12.0" End Stone x 2 = 82.00' Base Length
1 Rows x 54.0" Wide + 12.0" Side Stone x 2 = 6.50' Base Width
6.0" Stone Base + 54.0" Chamber Height + 6.0" Stone Cover = 5.50' Field Height

4 Chambers x 248.0 cf = 992.0 cf Chamber Storage
4 Chambers x 297.1 cf = 1,188.4 cf Displacement

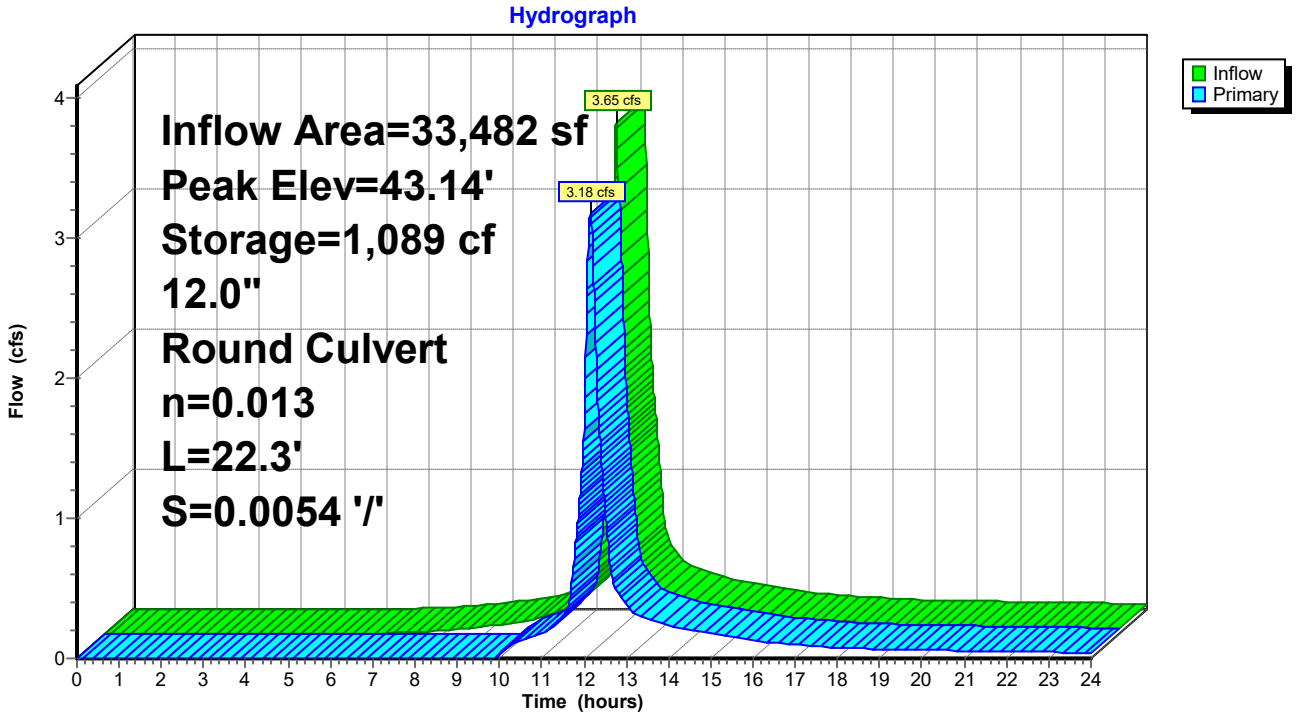
2,931.6 cf Field - 1,188.4 cf Chambers = 1,743.2 cf Stone x 40.0% Voids = 697.3 cf Stone Storage

Chamber Storage + Stone Storage = 1,689.3 cf = 0.039 af
Overall Storage Efficiency = 57.6%
Overall System Size = 82.00' x 6.50' x 5.50'

4 Chambers
108.6 cy Field
64.6 cy Stone



Pond UI02: Und Inf 02



Summary for Pond YD3: YD-03

[57] Hint: Peaked at 43.69' (Flood elevation advised)

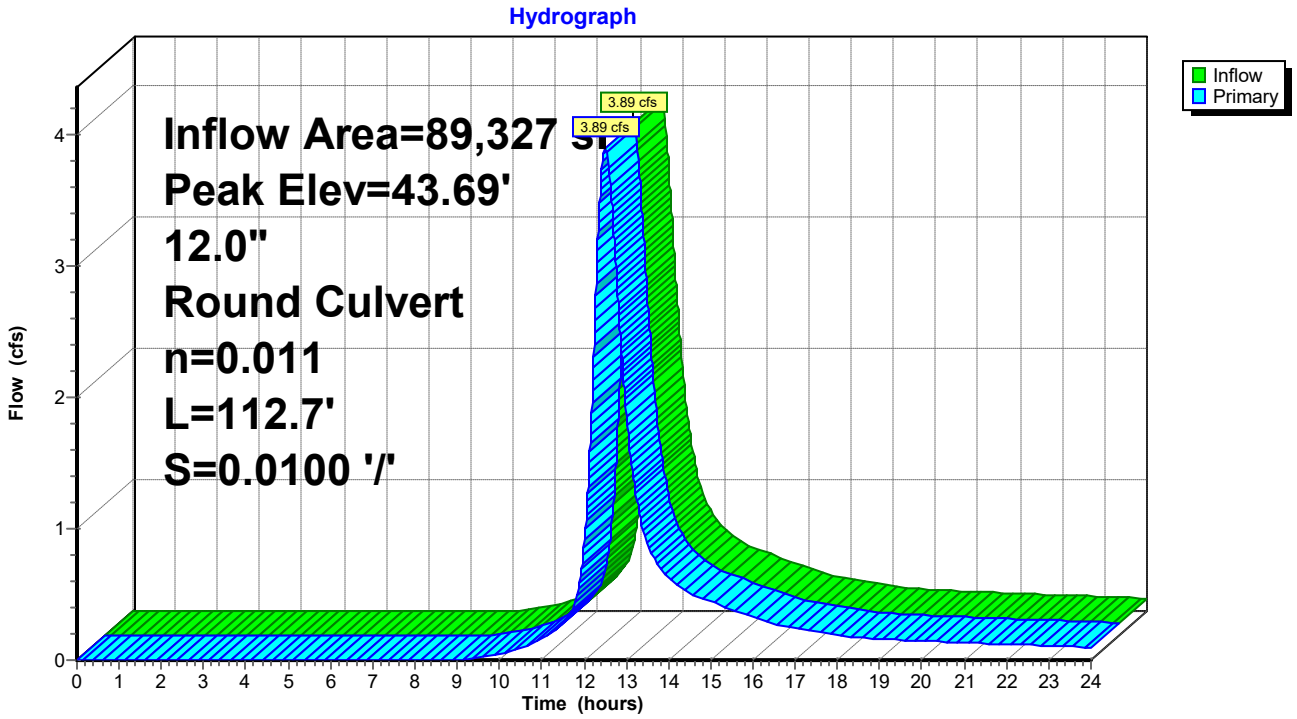
Inflow Area = 89,327 sf, 1.78% Impervious, Inflow Depth > 3.10" for 25-yr event
Inflow = 3.89 cfs @ 12.49 hrs, Volume= 23,081 cf
Outflow = 3.89 cfs @ 12.49 hrs, Volume= 23,081 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.89 cfs @ 12.49 hrs, Volume= 23,081 cf
Routed to Link Sub B : SUB B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.69' @ 12.49 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 112.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 40.37' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=3.89 cfs @ 12.49 hrs HW=43.69' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.89 cfs @ 4.95 fps)

Pond YD3: YD-03



Summary for Pond YD33: YD-33

[57] Hint: Peaked at 57.28' (Flood elevation advised)

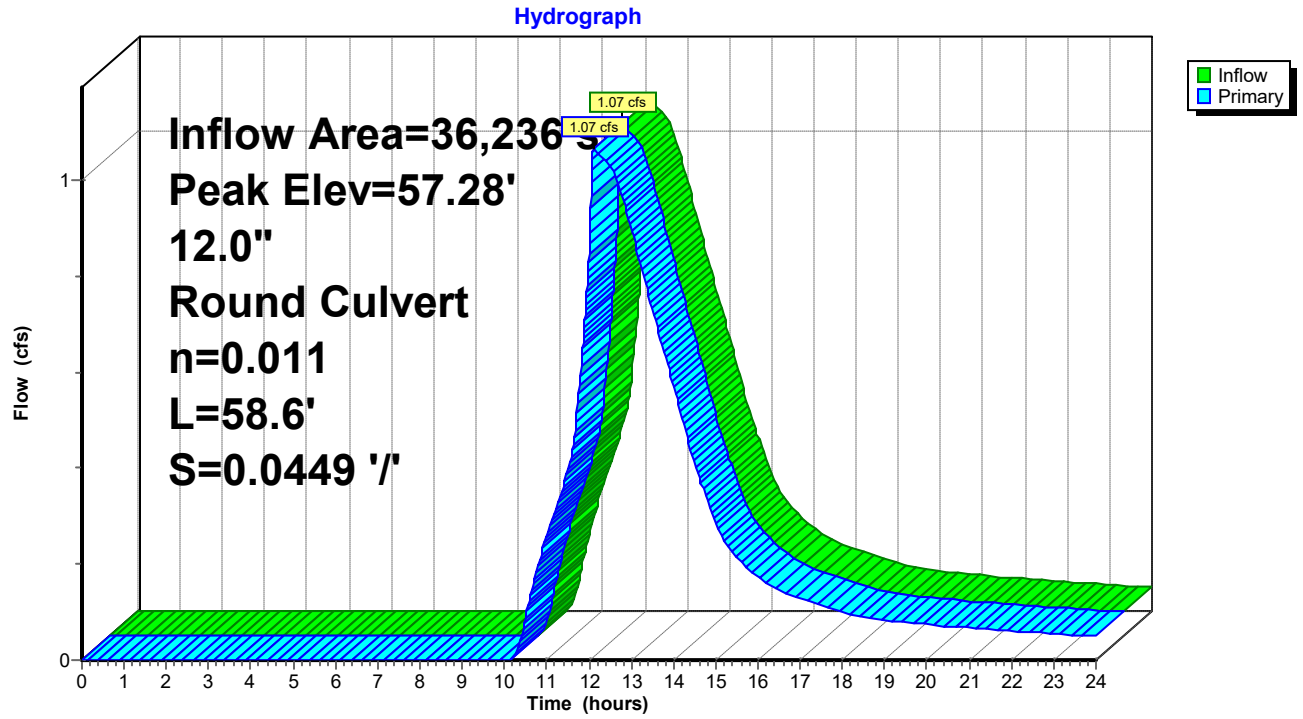
Inflow Area = 36,236 sf, 92.20% Impervious, Inflow Depth > 4.29" for 25-yr event
Inflow = 1.07 cfs @ 12.11 hrs, Volume= 12,955 cf
Outflow = 1.07 cfs @ 12.11 hrs, Volume= 12,955 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.07 cfs @ 12.11 hrs, Volume= 12,955 cf
Routed to Link SUB D1 : D1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.28' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	56.67'	**12.0" Round Culvert** L= 58.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.67' / 54.04' S= 0.0449 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.07 cfs @ 12.11 hrs HW=57.28' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.07 cfs @ 2.11 fps)

Pond YD33: YD-33



Summary for Pond YD40: YD-40

[57] Hint: Peaked at 42.62' (Flood elevation advised)

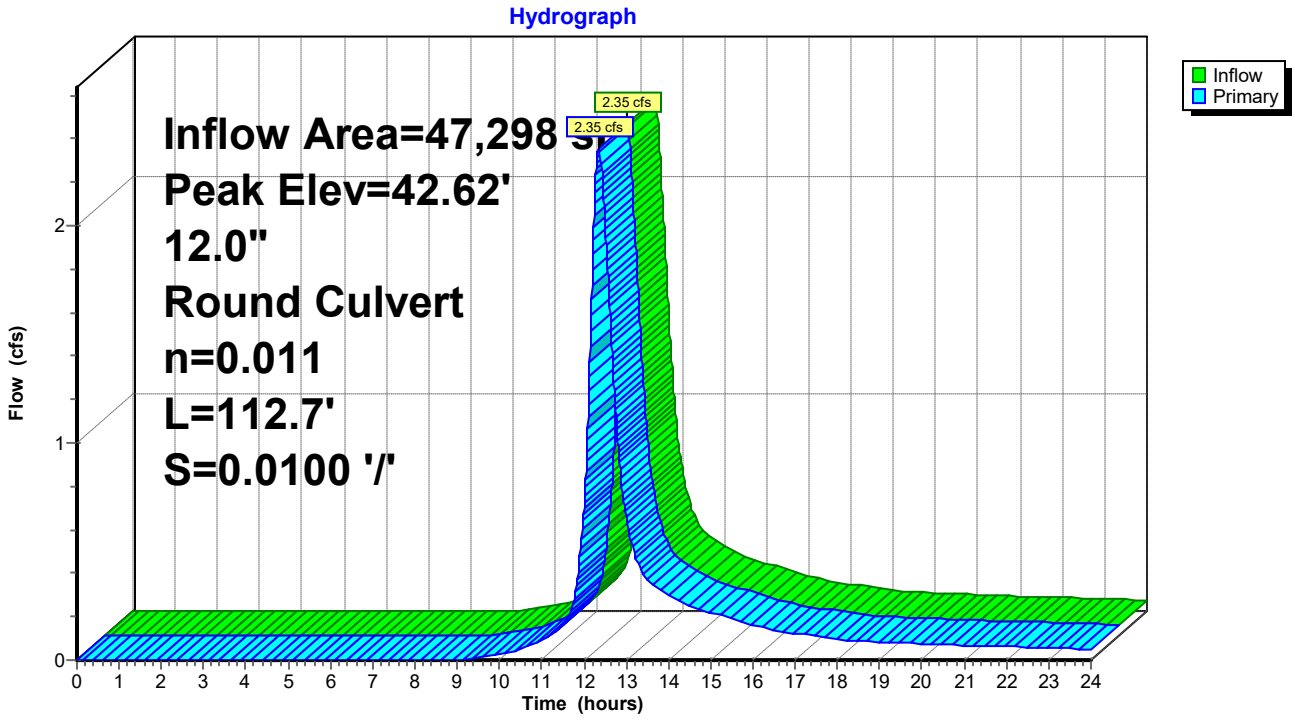
Inflow Area = 47,298 sf, 5.26% Impervious, Inflow Depth > 3.01" for 25-yr event
Inflow = 2.35 cfs @ 12.35 hrs, Volume= 11,870 cf
Outflow = 2.35 cfs @ 12.35 hrs, Volume= 11,870 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.35 cfs @ 12.35 hrs, Volume= 11,870 cf
Routed to Link Sub B : SUB B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.62' @ 12.35 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 112.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 40.37' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=2.35 cfs @ 12.35 hrs HW=42.62' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.35 cfs @ 3.00 fps)

Pond YD40: YD-40

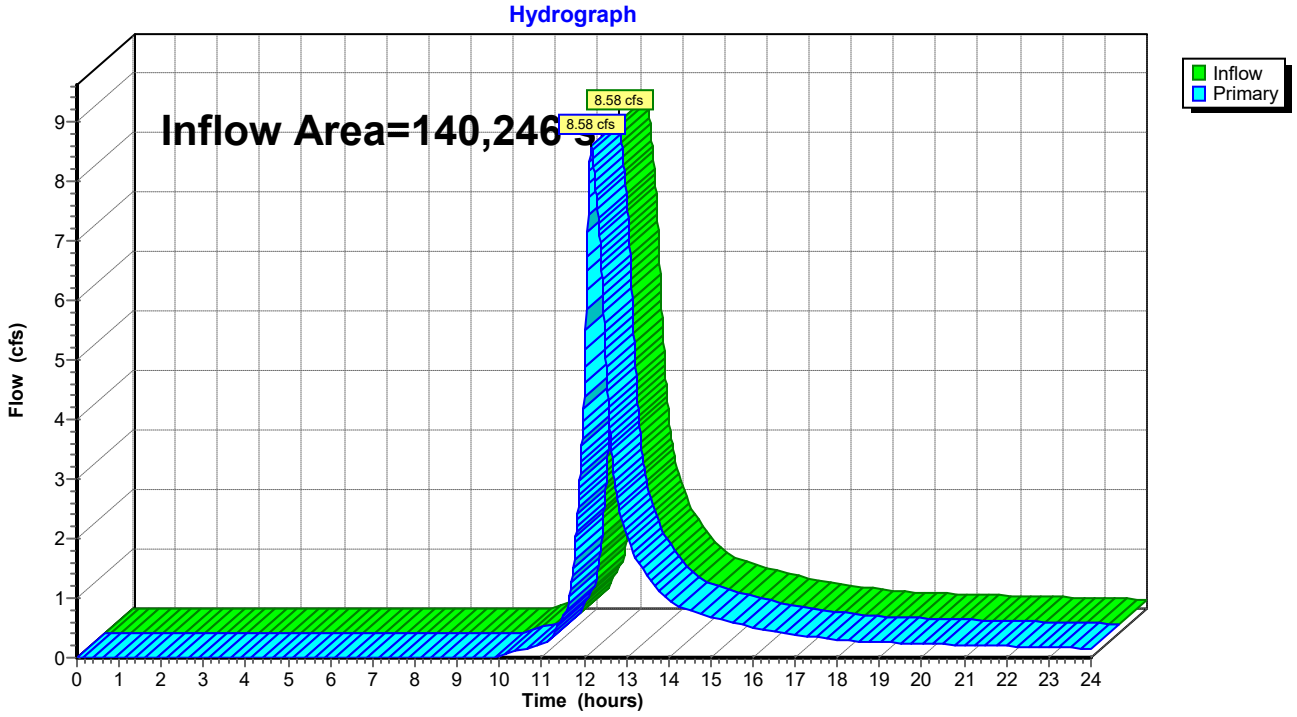


Summary for Link 1: Pipe 1

Inflow Area = 140,246 sf, 34.50% Impervious, Inflow Depth > 3.47" for 25-yr event
Inflow = 8.58 cfs @ 12.18 hrs, Volume= 40,570 cf
Primary = 8.58 cfs @ 12.18 hrs, Volume= 40,570 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 2 : Pipe 2

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1: Pipe 1

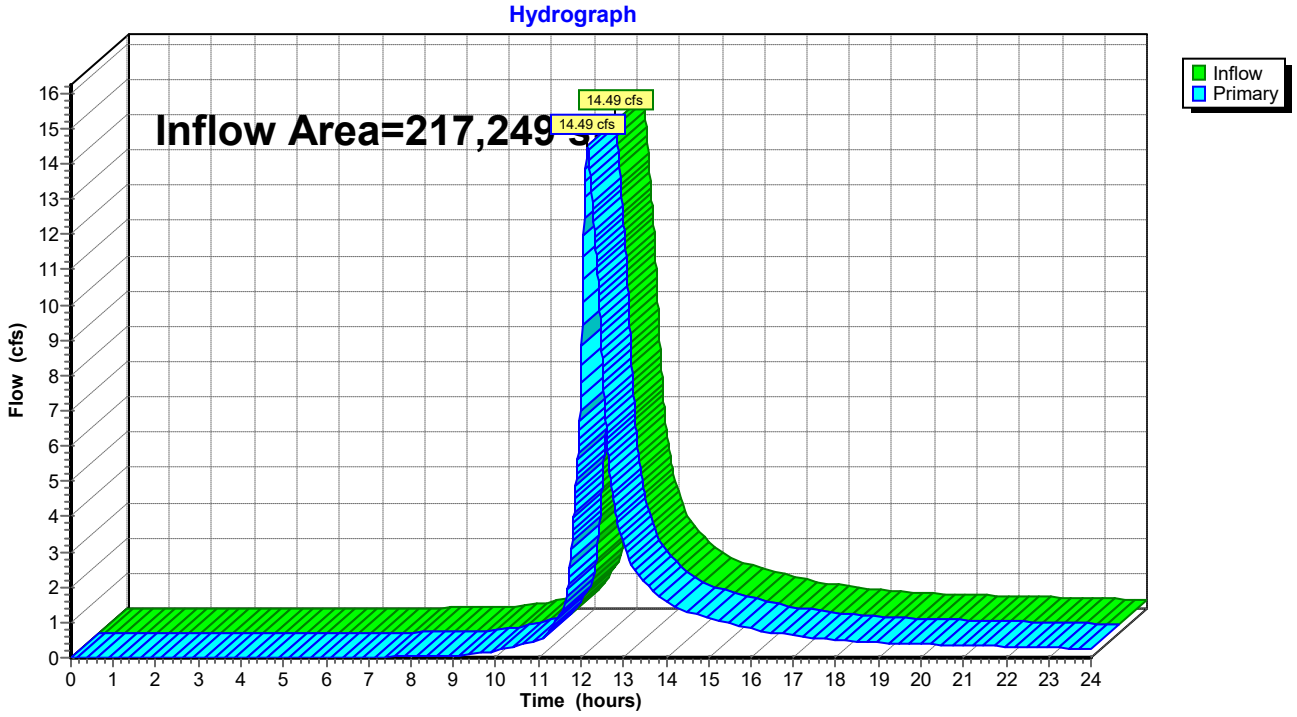


Summary for Link 2: Pipe 2

Inflow Area = 217,249 sf, 40.87% Impervious, Inflow Depth > 3.76" for 25-yr event
Inflow = 14.49 cfs @ 12.15 hrs, Volume= 68,021 cf
Primary = 14.49 cfs @ 12.15 hrs, Volume= 68,021 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3 : Pipe 3

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 2: Pipe 2

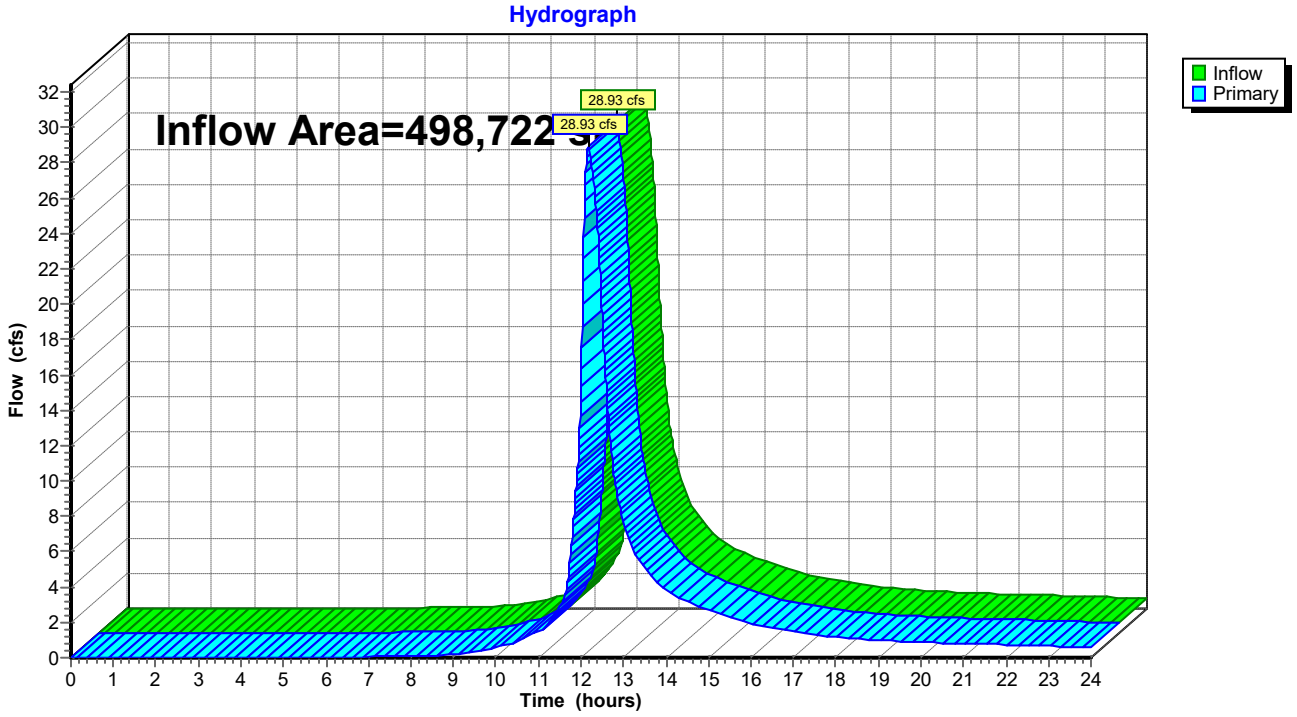


Summary for Link 3: Pipe 3

Inflow Area = 498,722 sf, 46.58% Impervious, Inflow Depth > 3.72" for 25-yr event
Inflow = 28.93 cfs @ 12.17 hrs, Volume= 154,640 cf
Primary = 28.93 cfs @ 12.17 hrs, Volume= 154,640 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4 : Pipe 4

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 3: Pipe 3

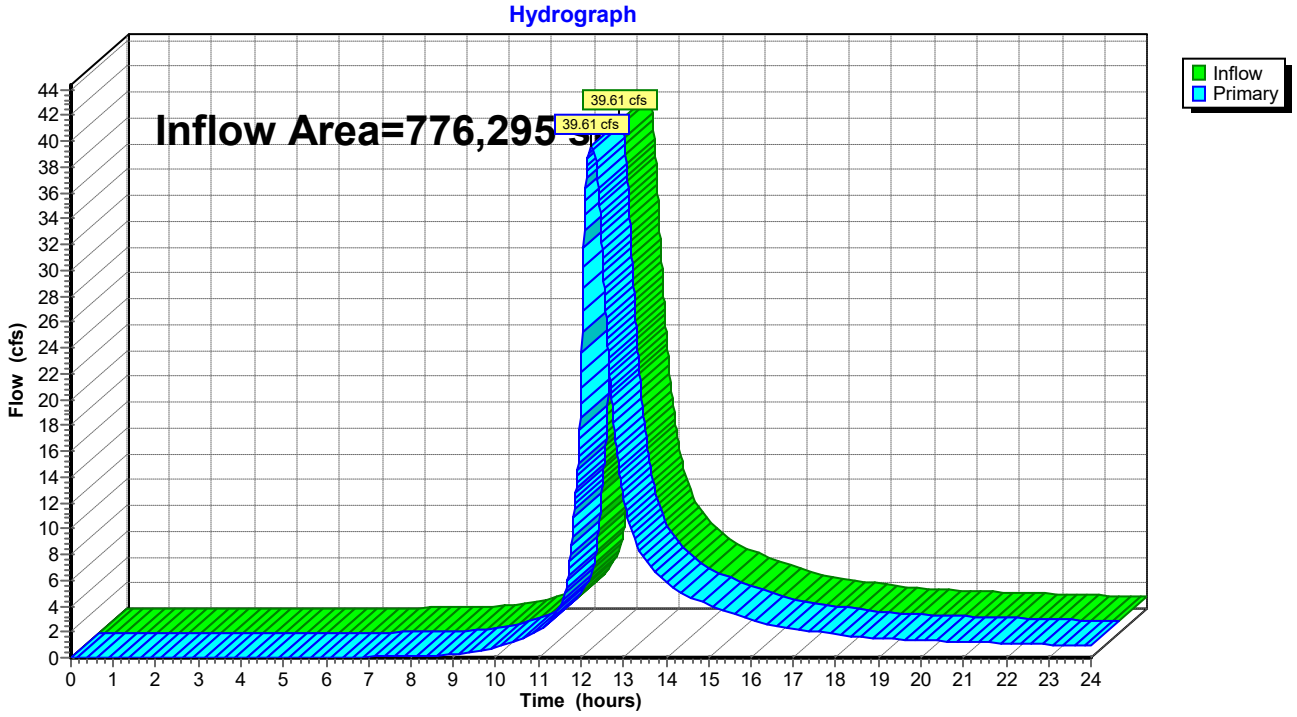


Summary for Link 4: Pipe 4

Inflow Area = 776,295 sf, 34.75% Impervious, Inflow Depth > 3.60" for 25-yr event
Inflow = 39.61 cfs @ 12.25 hrs, Volume= 232,900 cf
Primary = 39.61 cfs @ 12.25 hrs, Volume= 232,900 cf, Atten= 0%, Lag= 0.0 min
Routed to Link A : POC-A

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 4: Pipe 4

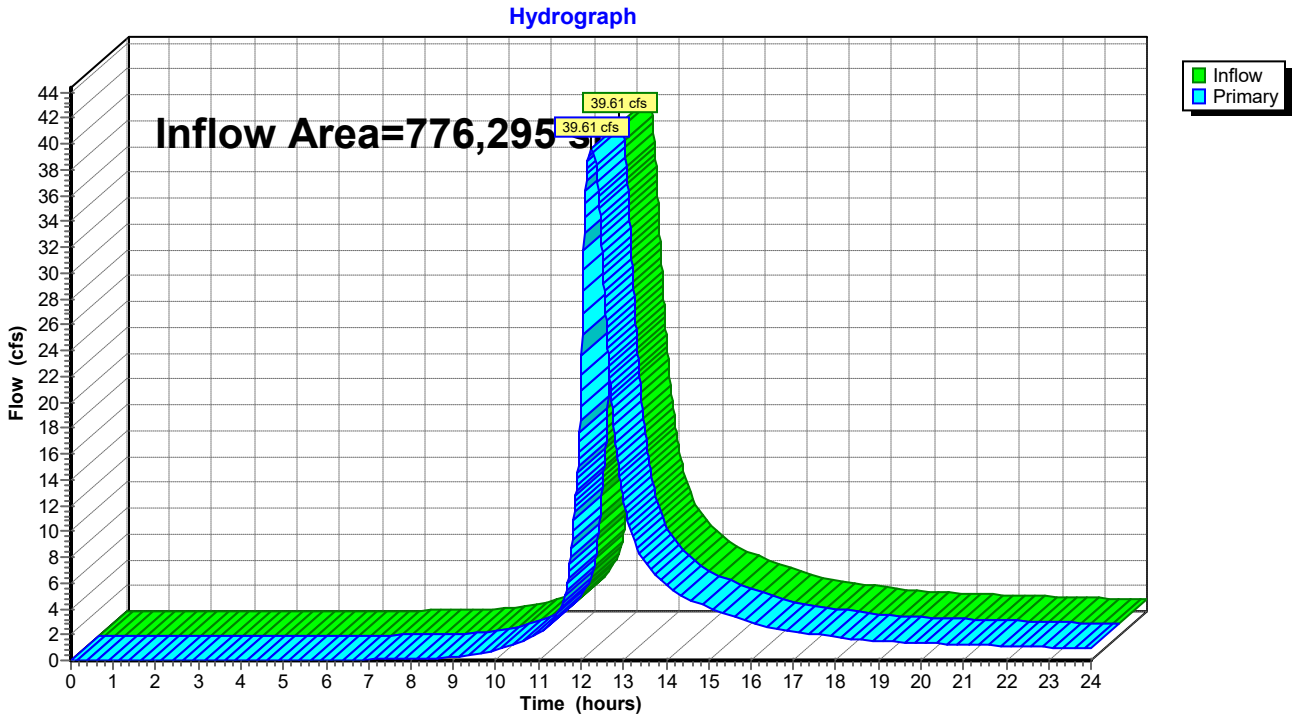


Summary for Link A: POC-A

Inflow Area = 776,295 sf, 34.75% Impervious, Inflow Depth > 3.60" for 25-yr event
Inflow = 39.61 cfs @ 12.25 hrs, Volume= 232,900 cf
Primary = 39.61 cfs @ 12.25 hrs, Volume= 232,900 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link A: POC-A

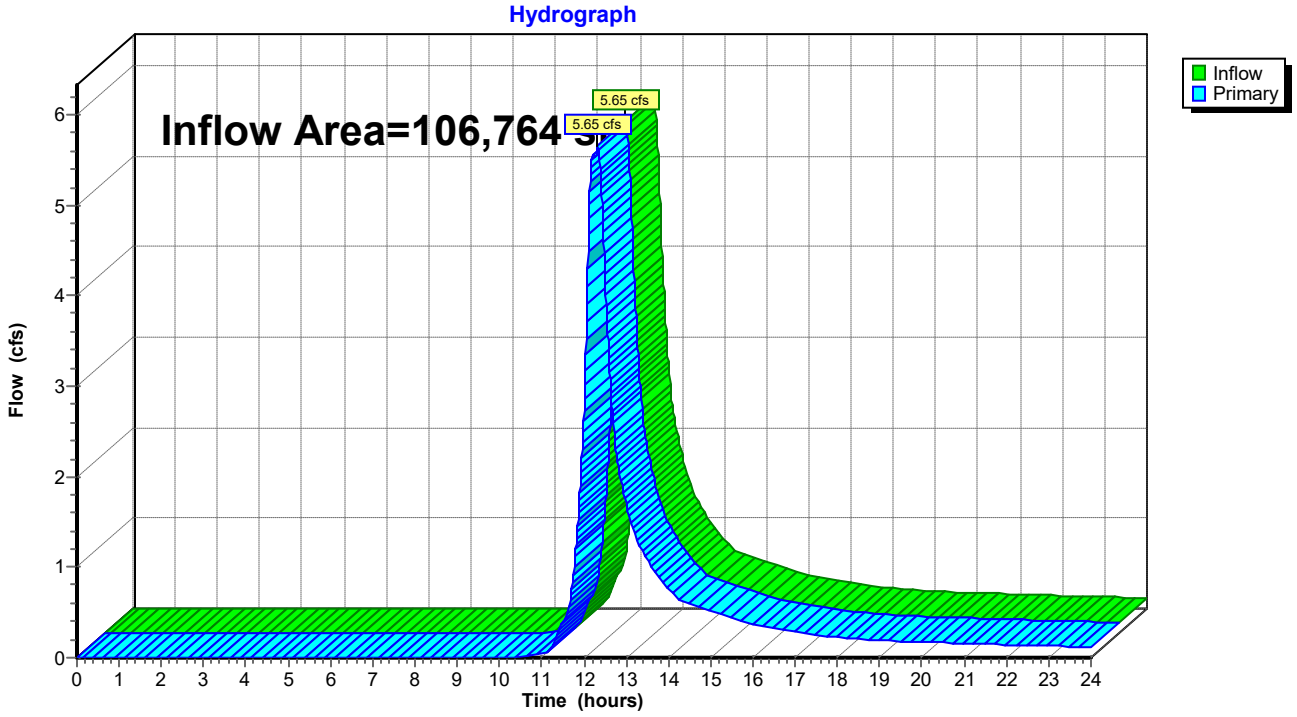


Summary for Link Sub A: SUB A

Inflow Area = 106,764 sf, 35.77% Impervious, Inflow Depth > 3.28" for 25-yr event
Inflow = 5.65 cfs @ 12.32 hrs, Volume= 29,188 cf
Primary = 5.65 cfs @ 12.32 hrs, Volume= 29,188 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 1 : Pipe 1

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Sub A: SUB A

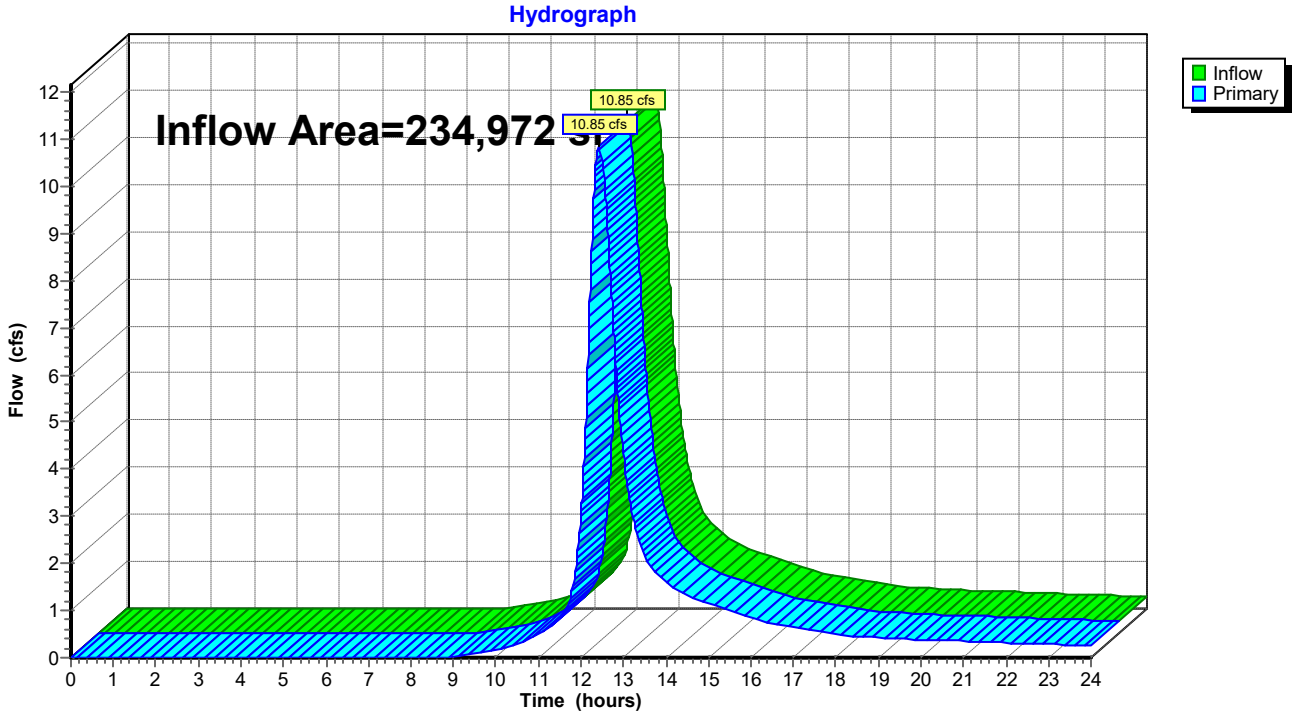


Summary for Link Sub B: SUB B

Inflow Area = 234,972 sf, 4.63% Impervious, Inflow Depth > 3.18" for 25-yr event
Inflow = 10.85 cfs @ 12.43 hrs, Volume= 62,299 cf
Primary = 10.85 cfs @ 12.43 hrs, Volume= 62,299 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4 : Pipe 4

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Sub B: SUB B

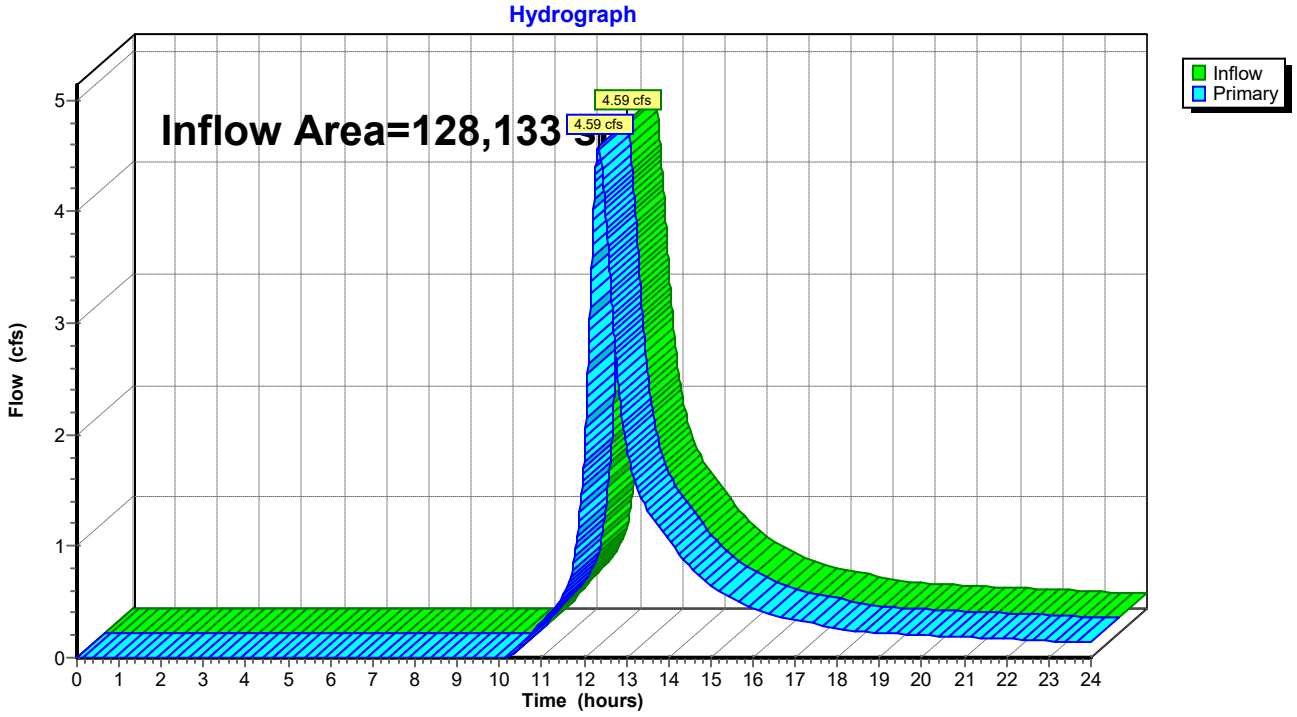


Summary for Link SUB D1: D1

Inflow Area = 128,133 sf, 28.03% Impervious, Inflow Depth > 2.90" for 25-yr event
Inflow = 4.59 cfs @ 12.35 hrs, Volume= 30,983 cf
Primary = 4.59 cfs @ 12.35 hrs, Volume= 30,983 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3 : Pipe 3

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link SUB D1: D1



Summary for Subcatchment 15S: D1H-R

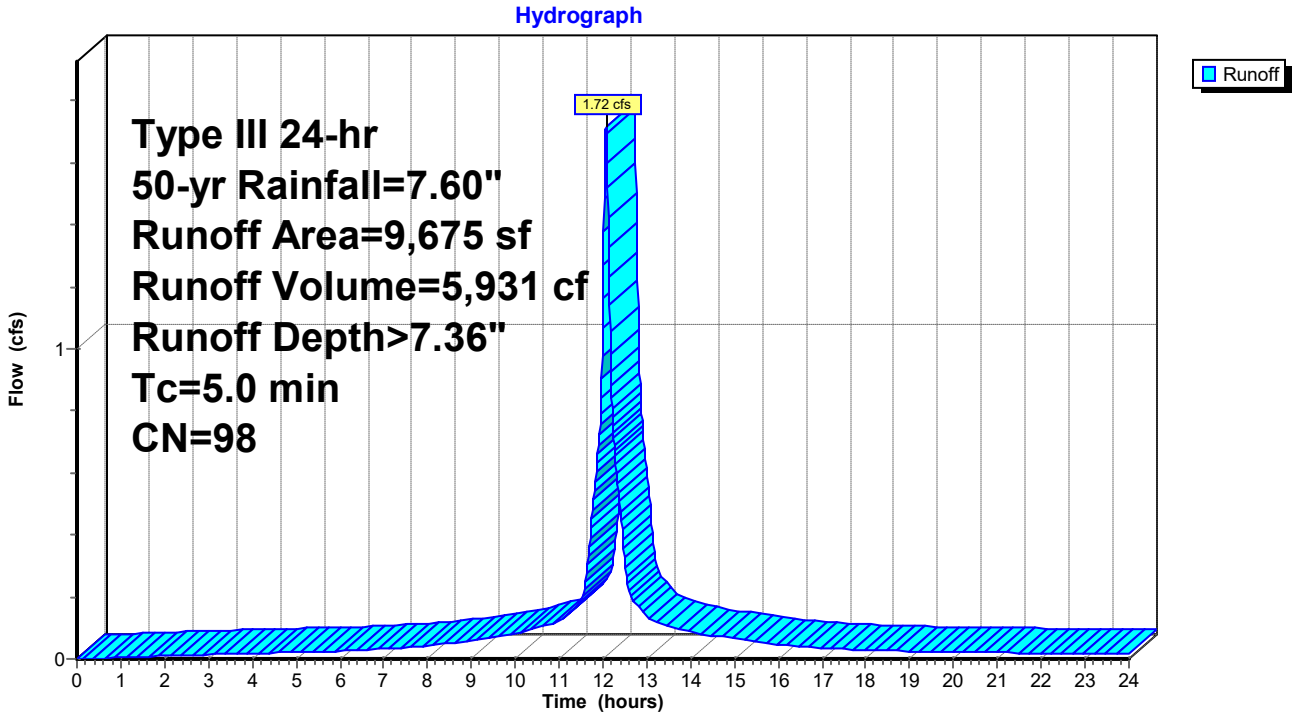
Runoff = 1.72 cfs @ 12.07 hrs, Volume= 5,931 cf, Depth> 7.36"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	9,675	98	Impervious
	9,675		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 15S: D1H-R



Summary for Subcatchment 16S: D1E-R

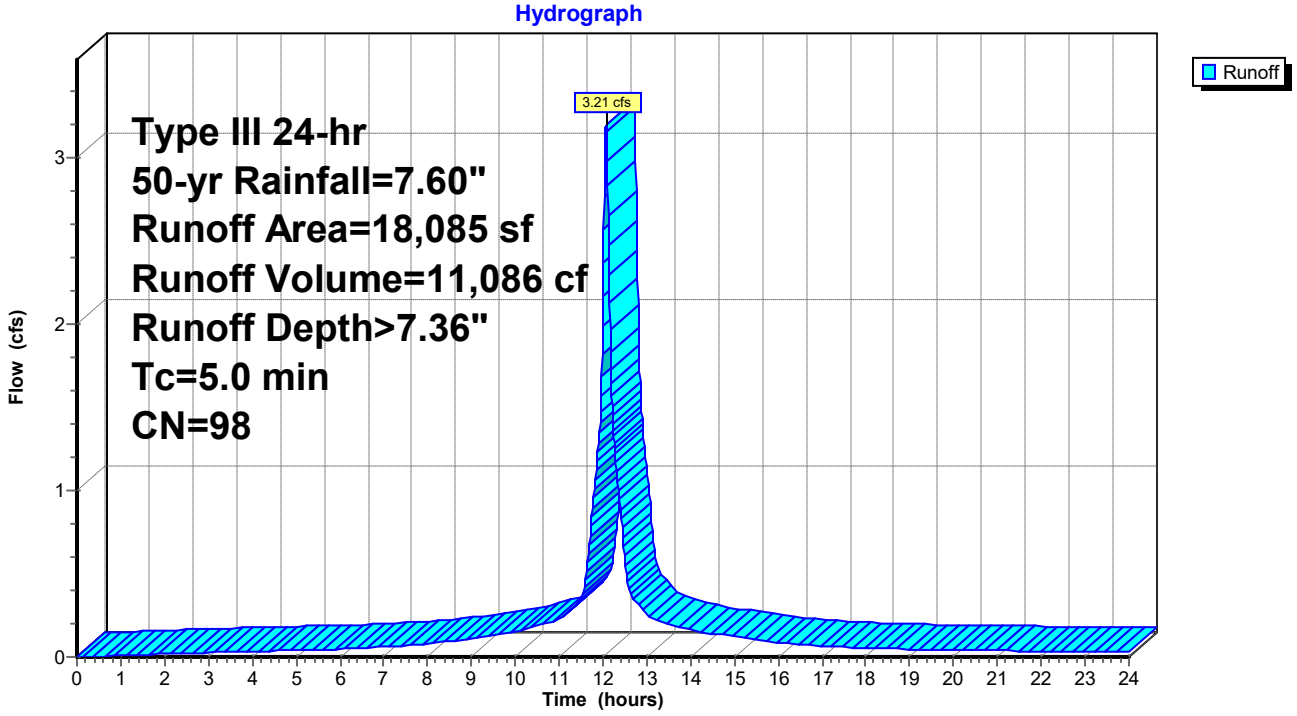
Runoff = 3.21 cfs @ 12.07 hrs, Volume= 11,086 cf, Depth> 7.36"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	18,085	98	Impervious
	18,085		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 16S: D1E-R



Summary for Subcatchment 22S: D2A-R

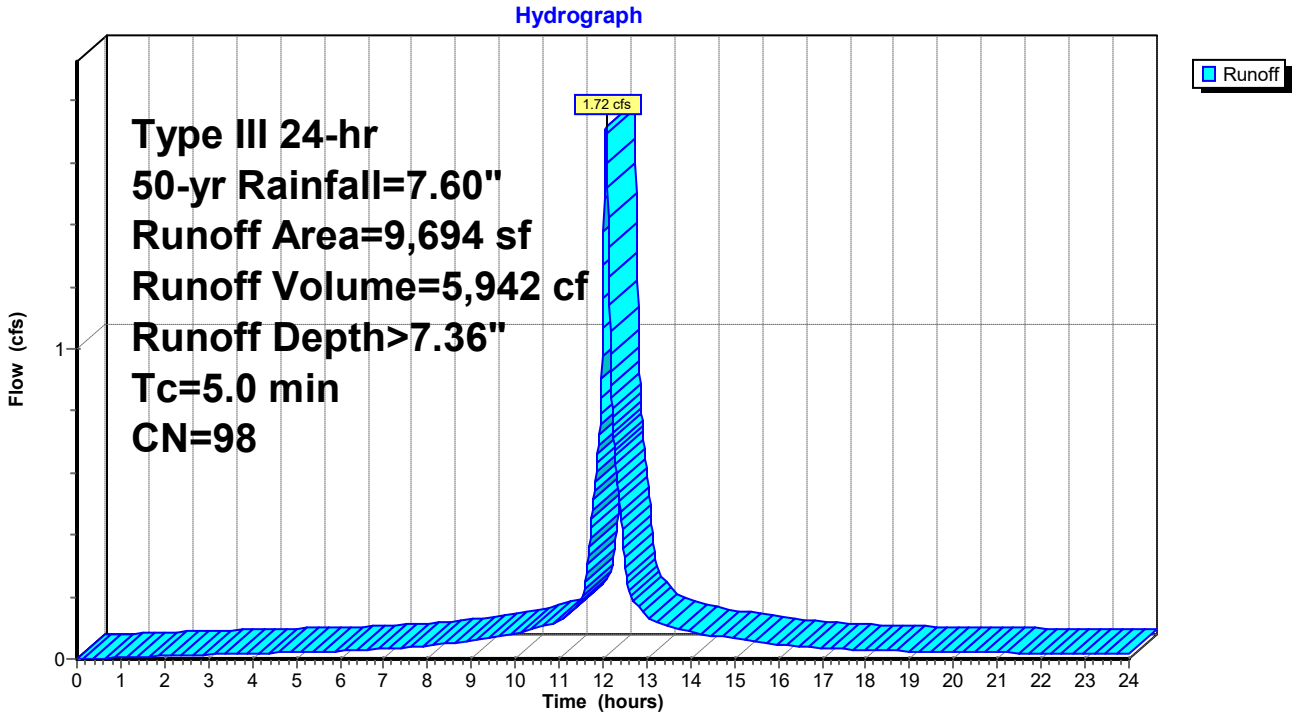
Runoff = 1.72 cfs @ 12.07 hrs, Volume= 5,942 cf, Depth> 7.36"
Routed to Pond 13P : Por Pvt-D2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	9,694	98	Impervious
	9,694		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 22S: D2A-R



Summary for Subcatchment 23S: D2C-R

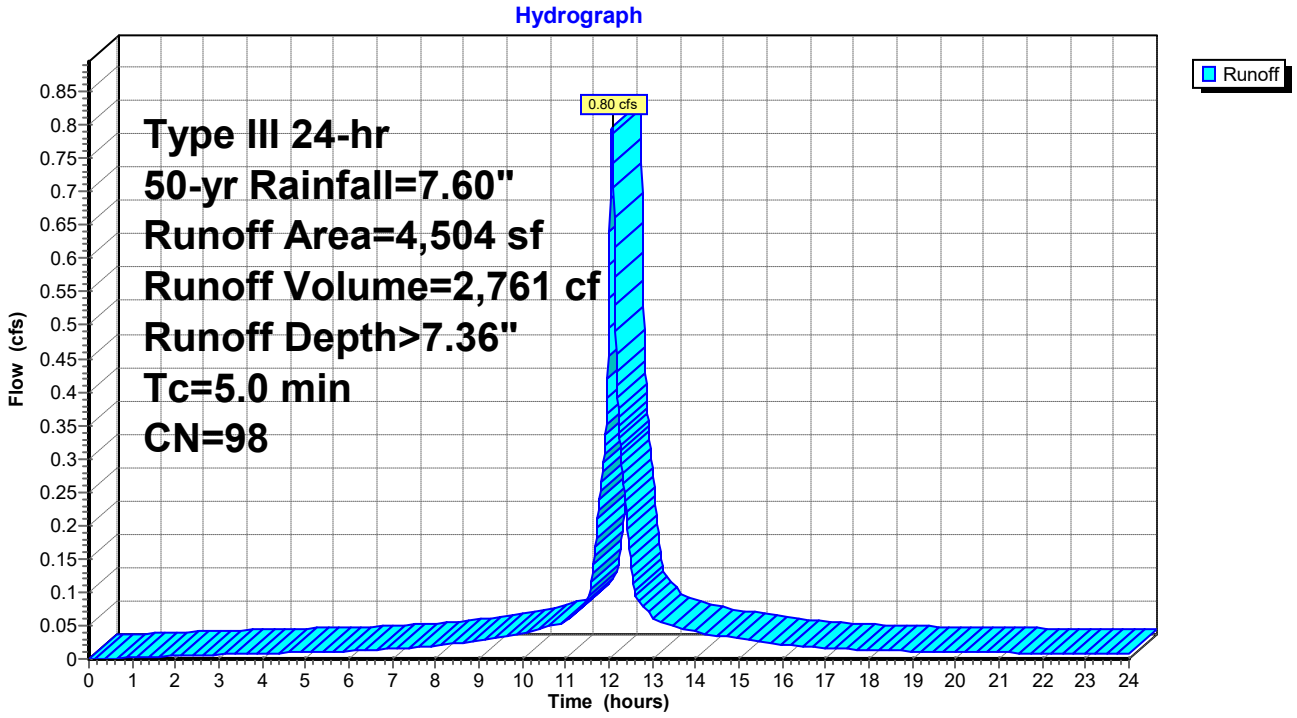
Runoff = 0.80 cfs @ 12.07 hrs, Volume= 2,761 cf, Depth> 7.36"
Routed to Pond 16P : Por Pvt-D2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 23S: D2C-R



Summary for Subcatchment 24S: D2D-R

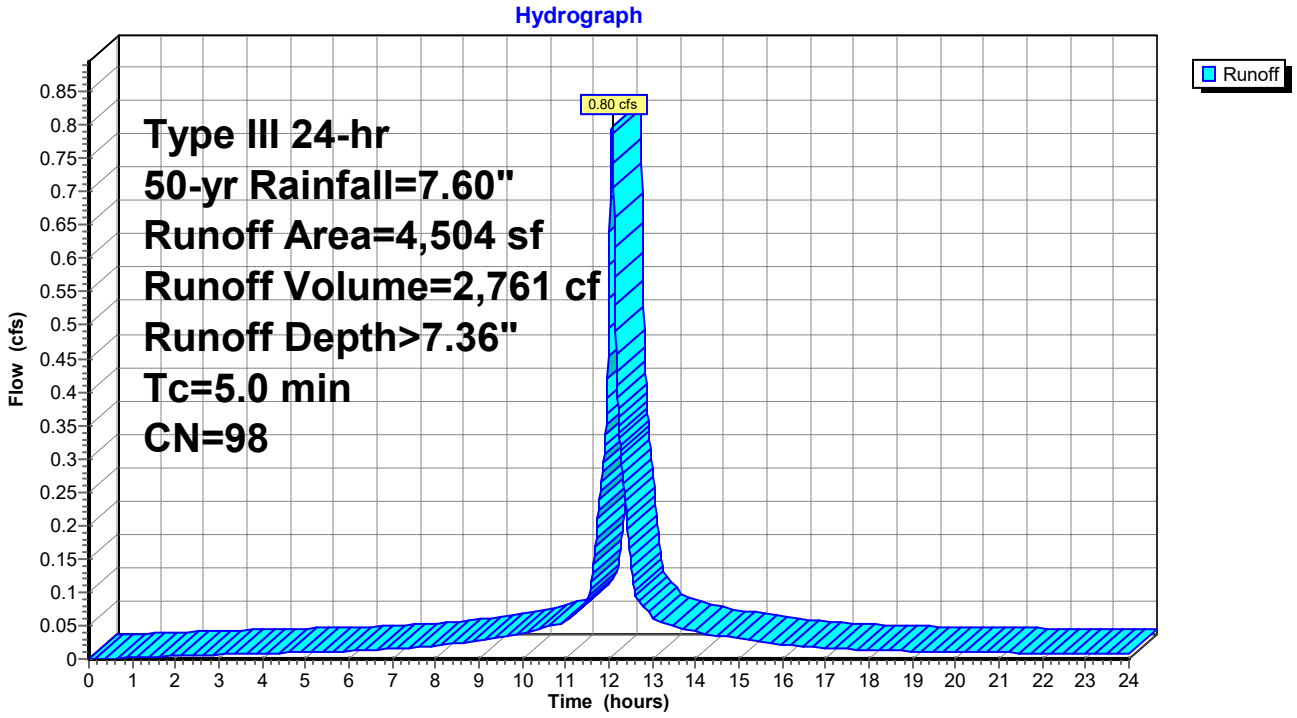
Runoff = 0.80 cfs @ 12.07 hrs, Volume= 2,761 cf, Depth> 7.36"
Routed to Pond 18P : Por Pvt-D2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 24S: D2D-R



Summary for Subcatchment 25S: D2E-R

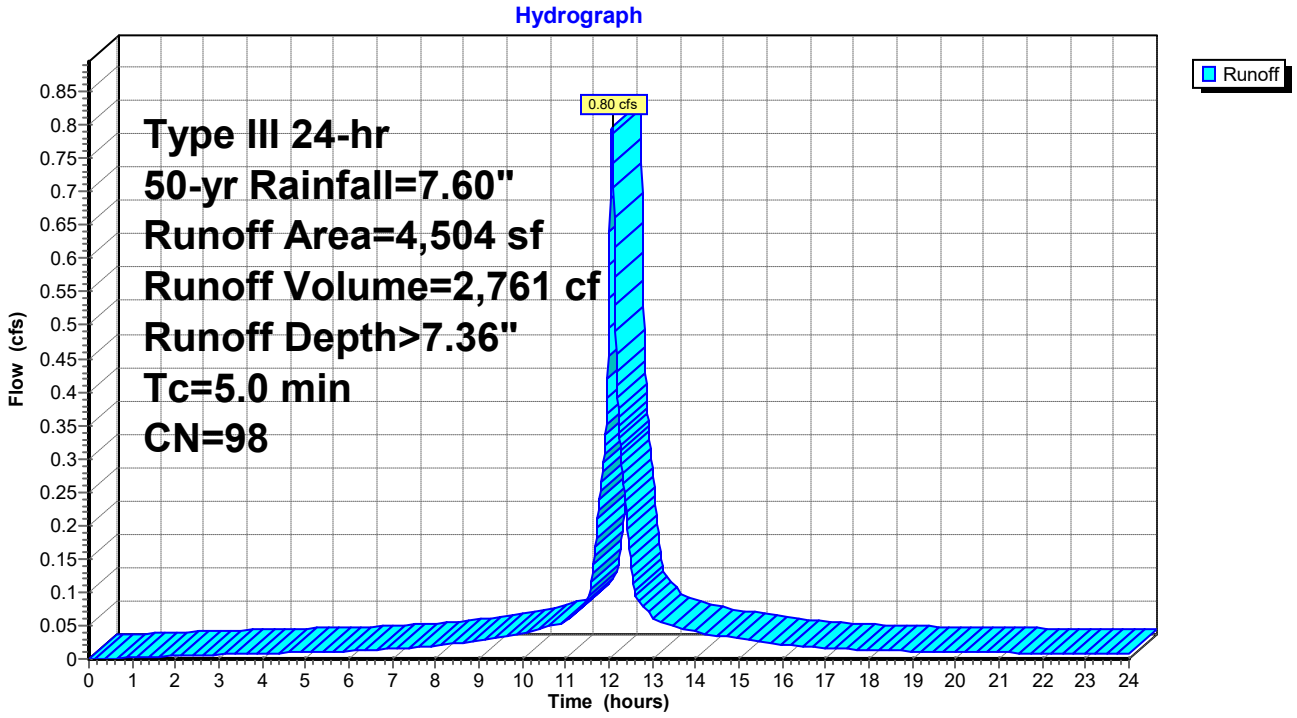
Runoff = 0.80 cfs @ 12.07 hrs, Volume= 2,761 cf, Depth> 7.36"
Routed to Pond 19P : Por Pvt-D2E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 25S: D2E-R



Summary for Subcatchment 26S: D2F-R

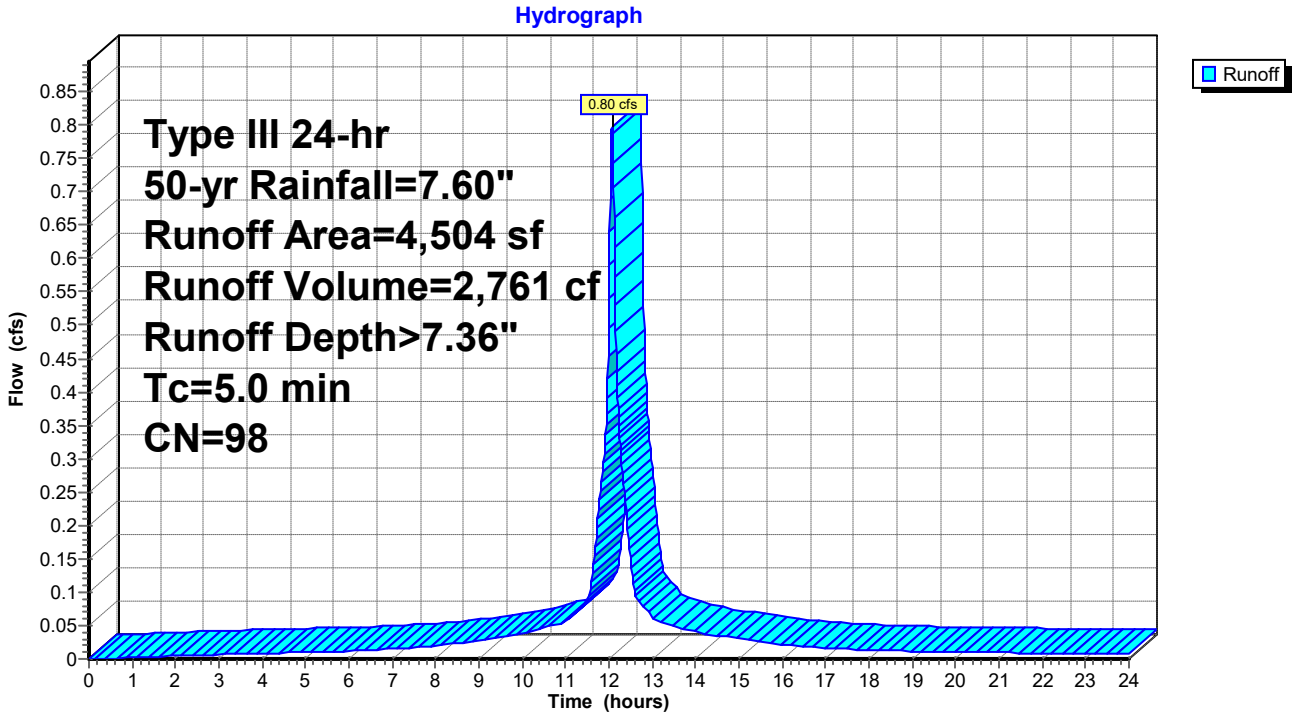
Runoff = 0.80 cfs @ 12.07 hrs, Volume= 2,761 cf, Depth> 7.36"
Routed to Pond 20P : Por Pvt-D2F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 26S: D2F-R



Summary for Subcatchment A1: WS-A1

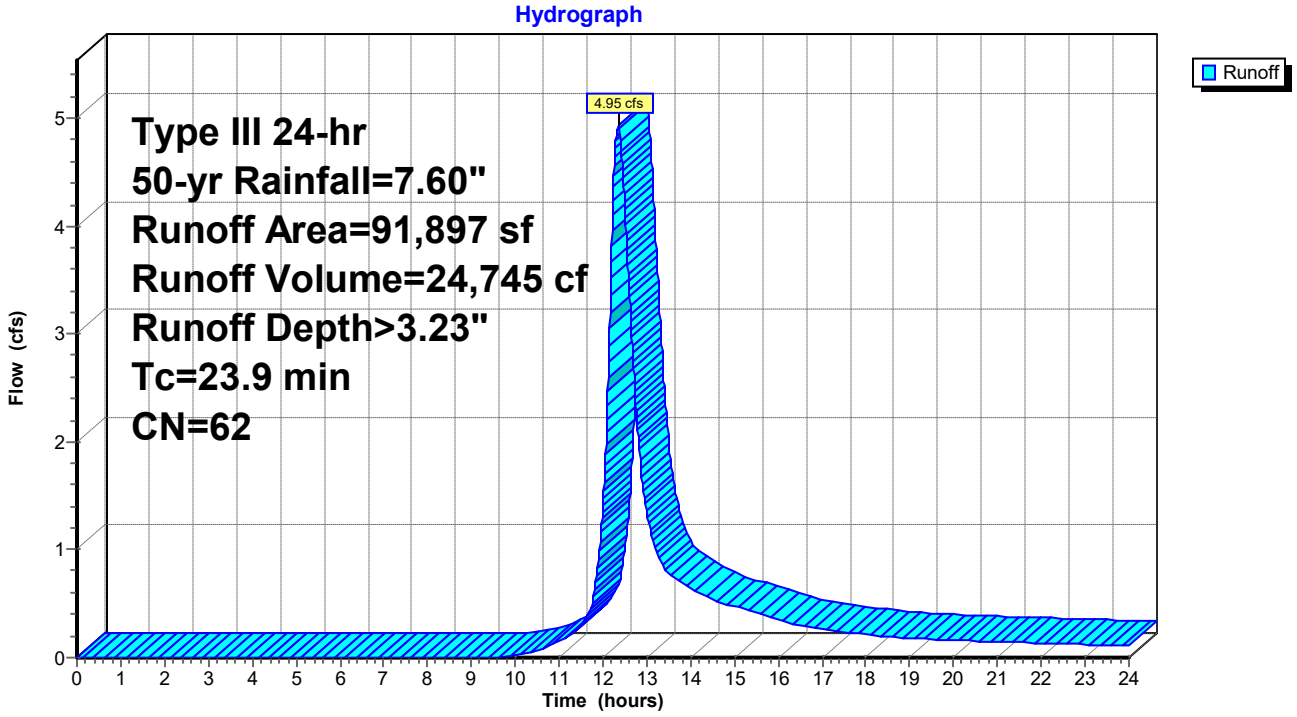
Runoff = 4.95 cfs @ 12.35 hrs, Volume= 24,745 cf, Depth> 3.23"
Routed to Link SUB D1 : D1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	2,508	98	Impervious - Roof
*	9,195	69	Lawn B
*	0	79	Lawn C
*	80,194	60	Forest B
*	0	73	Forest C
	91,897	62	Weighted Average
	89,389		97.27% Pervious Area
	2,508		2.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.9					**Direct Entry,**

Subcatchment A1: WS-A1



Summary for Subcatchment A2: WS-A2

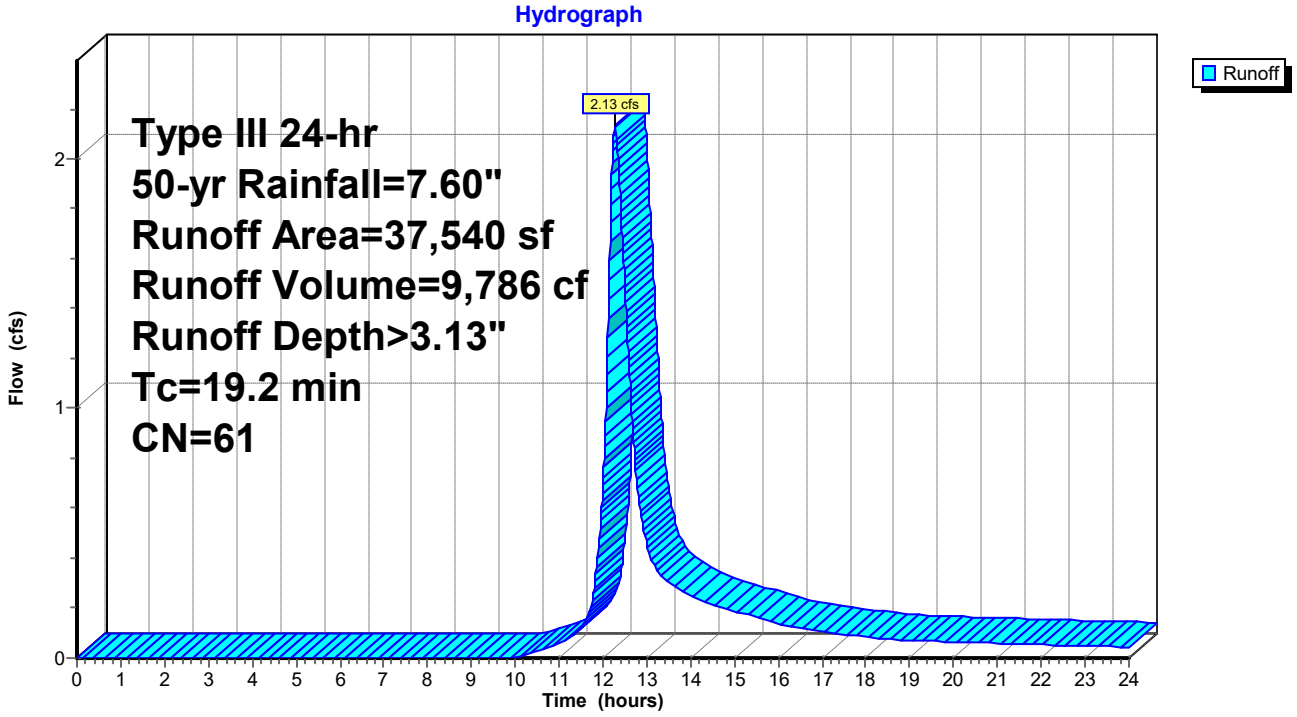
Runoff = 2.13 cfs @ 12.27 hrs, Volume= 9,786 cf, Depth> 3.13"
Routed to Pond DB01 : Detention-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	0	98	Impervious - Roof
*	5,793	69	Lawn B
*	0	79	Lawn C
*	31,747	60	Forest B
*	0	73	Forest C
	37,540	61	Weighted Average
	37,540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2					**Direct Entry,**

Subcatchment A2: WS-A2



Summary for Subcatchment A3: WS-A3

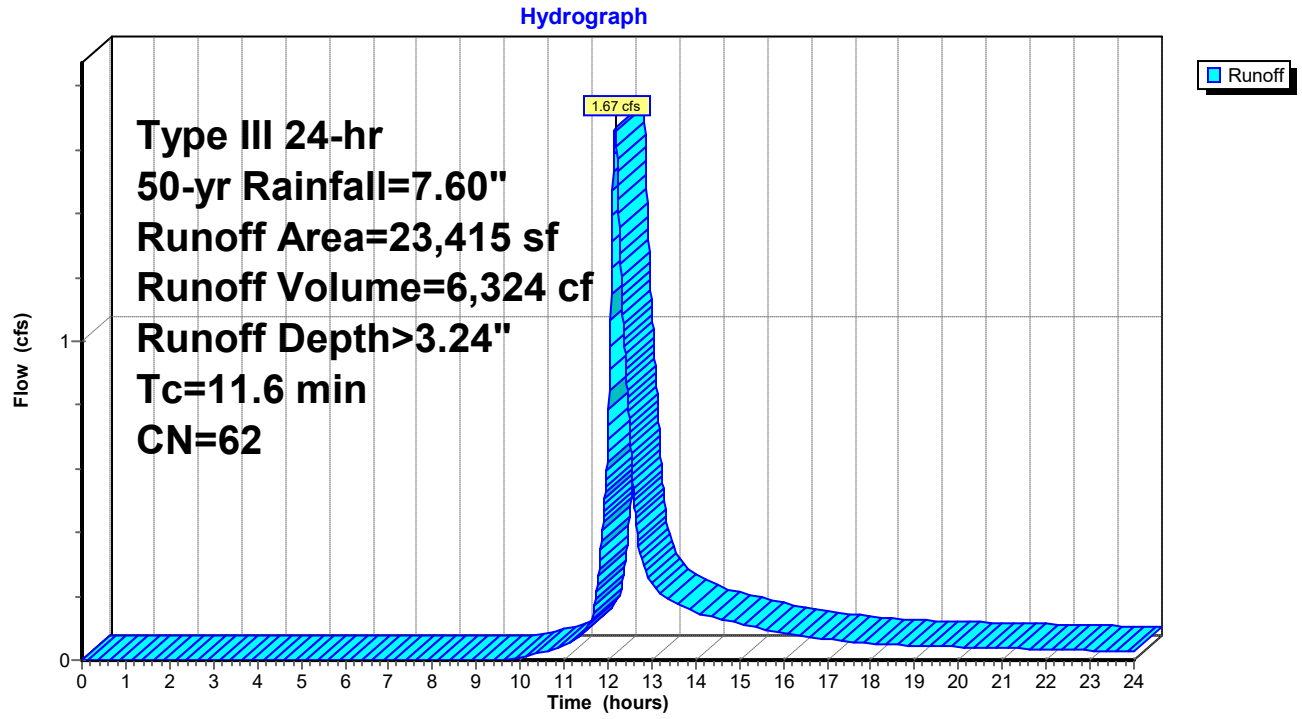
Runoff = 1.67 cfs @ 12.17 hrs, Volume= 6,324 cf, Depth> 3.24"
Routed to Pond DB01 : Detention-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	0	98	Impervious - Roof
*	4,949	69	Lawn B
*	0	79	Lawn C
*	18,466	60	Forest B
*	0	73	Forest C
	23,415	62	Weighted Average
	23,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6					**Direct Entry,**

Subcatchment A3: WS-A3



Summary for Subcatchment B1: WS-B1

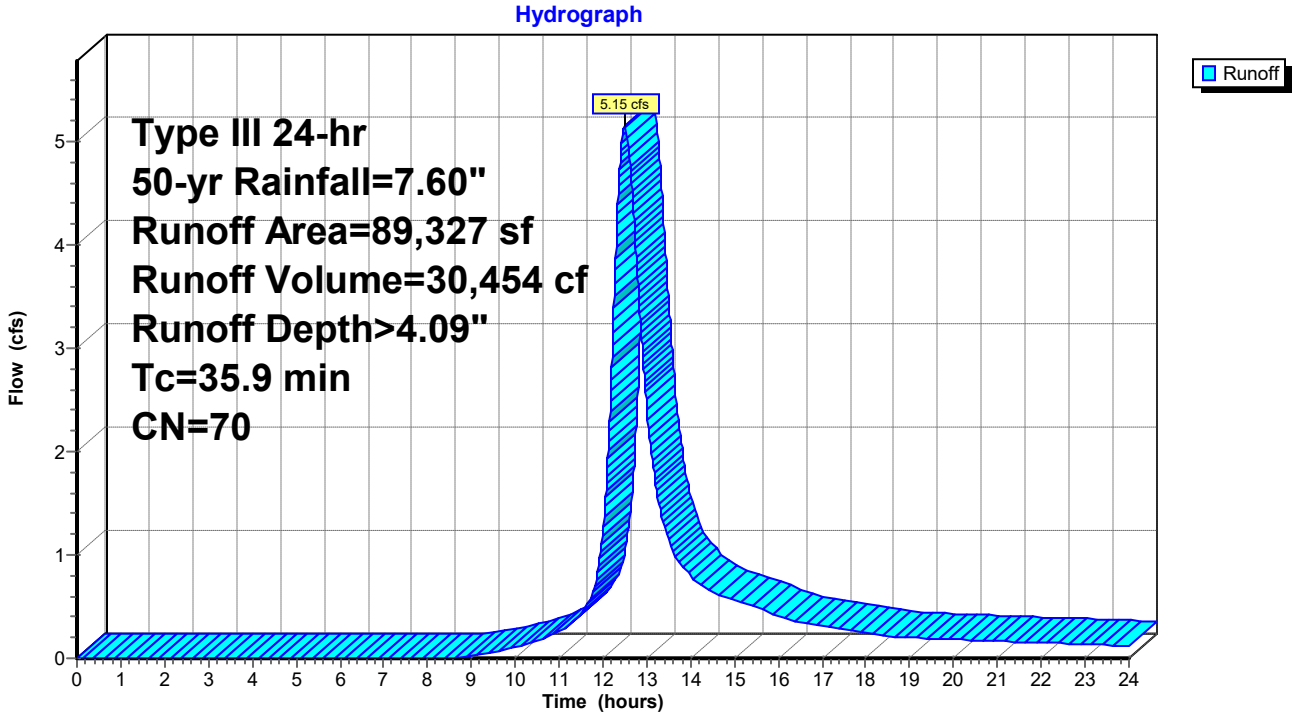
Runoff = 5.15 cfs @ 12.49 hrs, Volume= 30,454 cf, Depth> 4.09"
Routed to Pond YD3 : YD-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	1,588	98	Impervious
*	87,739	69	Lawn B
	89,327	70	Weighted Average
	87,739		98.22% Pervious Area
	1,588		1.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.9					**Direct Entry,**

Subcatchment B1: WS-B1



Summary for Subcatchment B2: WS-B2

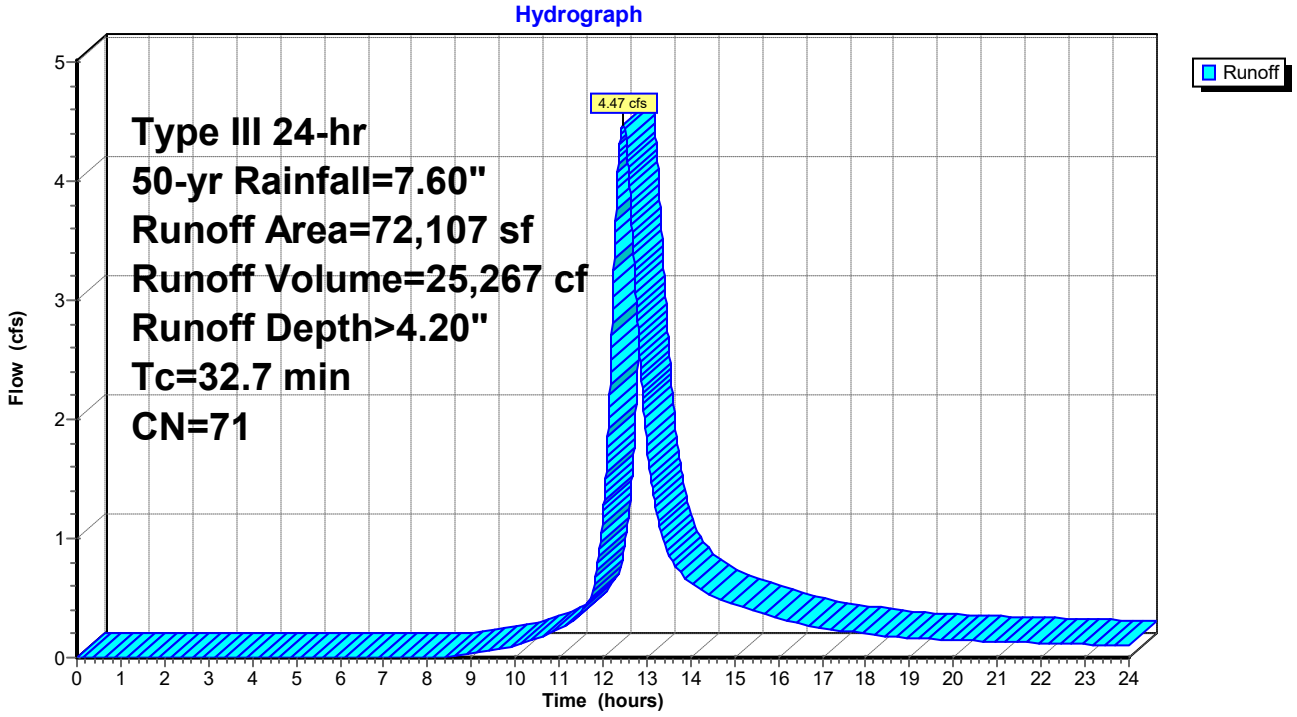
Runoff = 4.47 cfs @ 12.46 hrs, Volume= 25,267 cf, Depth> 4.20"
Routed to Link Sub B : SUB B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	49	98	Impervious
*	55,957	69	Lawn B
*	16,101	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	72,107	71	Weighted Average
	72,058		99.93% Pervious Area
	49		0.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.7					**Direct Entry,**

Subcatchment B2: WS-B2



Summary for Subcatchment B3: WS-B3

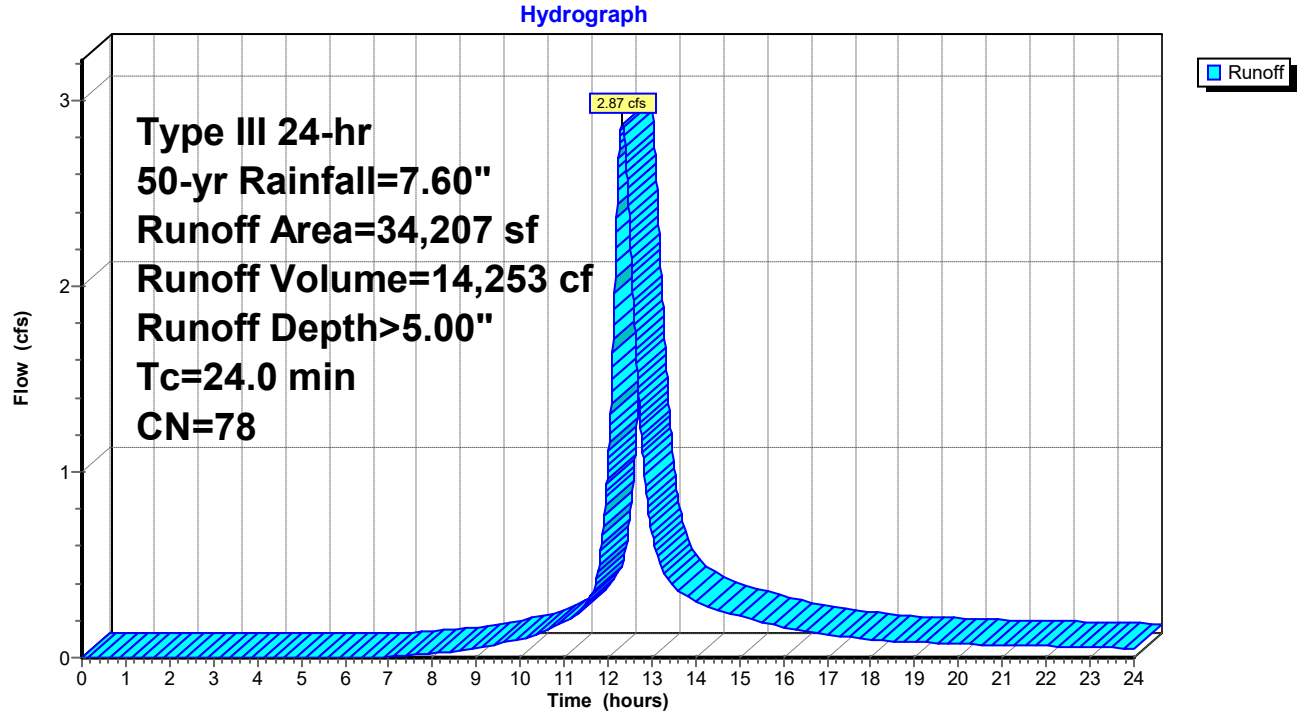
Runoff = 2.87 cfs @ 12.32 hrs, Volume= 14,253 cf, Depth> 5.00"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	12,332	98	Impervious
*	14,526	69	Lawn B
*	1,341	79	Lawn C
*	5,996	60	Forest B
*	12	73	Forest C
	34,207	78	Weighted Average
	21,875		63.95% Pervious Area
	12,332		36.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0					**Direct Entry,**

Subcatchment B3: WS-B3



Summary for Subcatchment B4: WS-B4

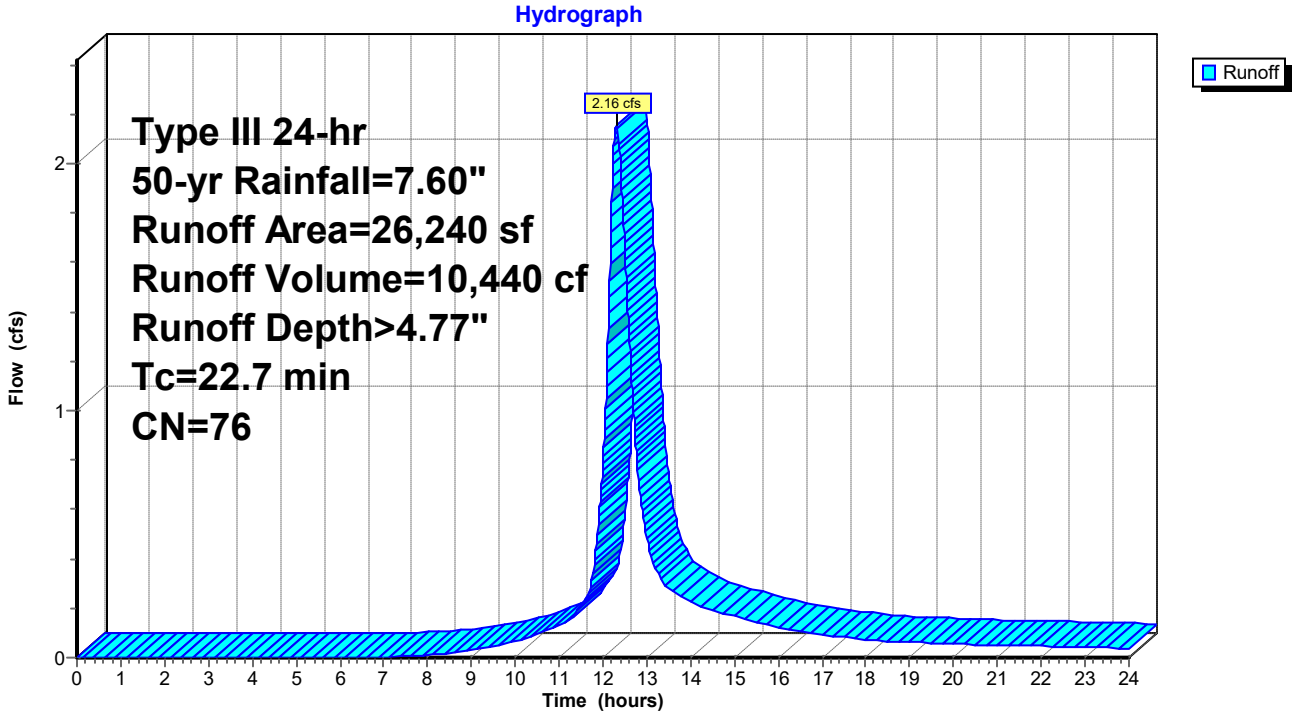
Runoff = 2.16 cfs @ 12.31 hrs, Volume= 10,440 cf, Depth> 4.77"
Routed to Link Sub B : SUB B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	6,749	98	Impervious
*	19,491	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	26,240	76	Weighted Average
	19,491		74.28% Pervious Area
	6,749		25.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.7					**Direct Entry,**

Subcatchment B4: WS-B4



Summary for Subcatchment B5: WS-B5

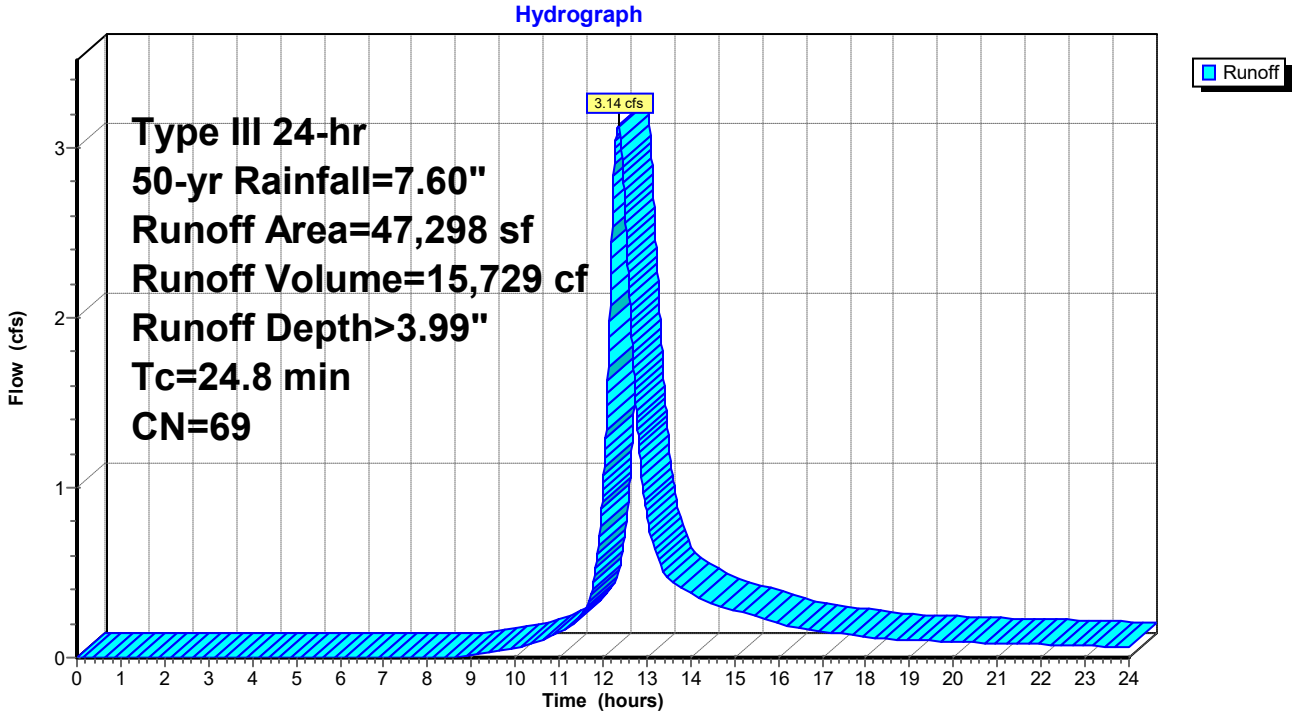
Runoff = 3.14 cfs @ 12.35 hrs, Volume= 15,729 cf, Depth> 3.99"
Routed to Pond YD40 : YD-40

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	2,488	98	Impervious
*	36,610	69	Lawn B
*	0	79	Lawn C
*	8,200	60	Forest B
*	0	73	Forest C
	47,298	69	Weighted Average
	44,810		94.74% Pervious Area
	2,488		5.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8					**Direct Entry,**

Subcatchment B5: WS-B5



Summary for Subcatchment B6: WS-B6

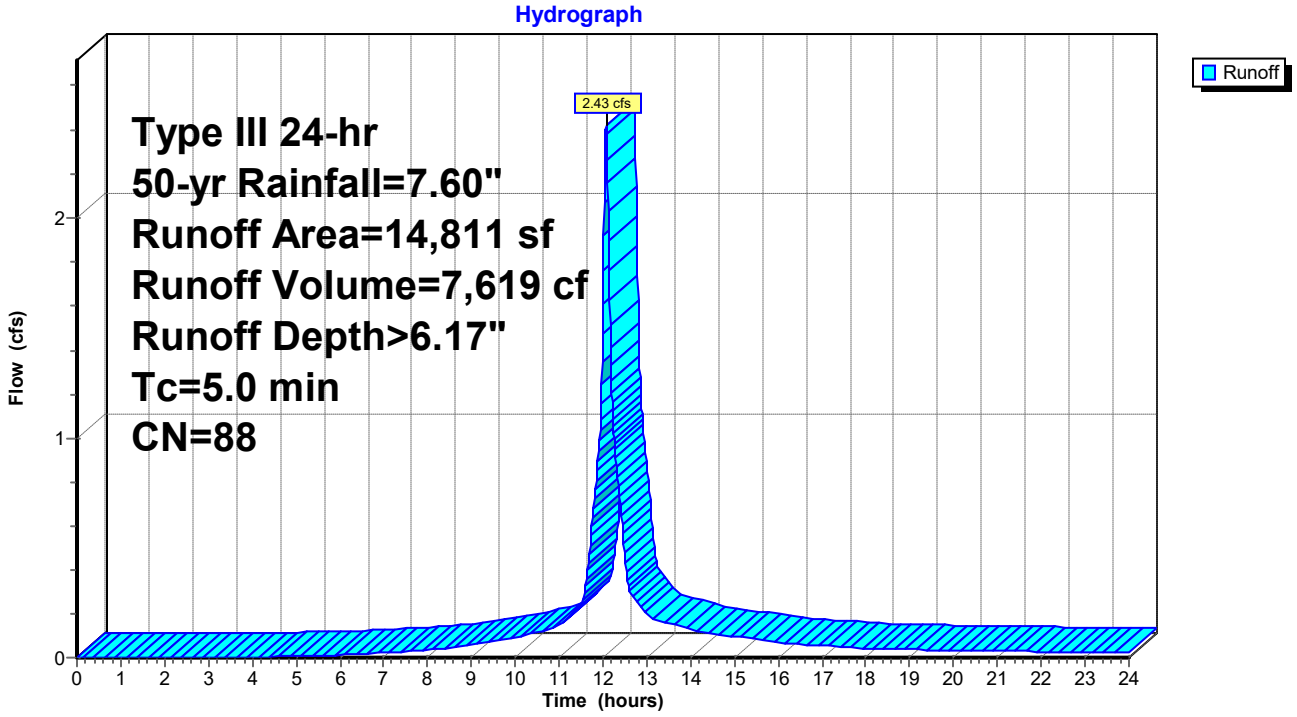
Runoff = 2.43 cfs @ 12.07 hrs, Volume= 7,619 cf, Depth> 6.17"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	9,953	98	Impervious
*	4,858	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	14,811	88	Weighted Average
	4,858		32.80% Pervious Area
	9,953		67.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment B6: WS-B6



Summary for Subcatchment C1: WS-C1

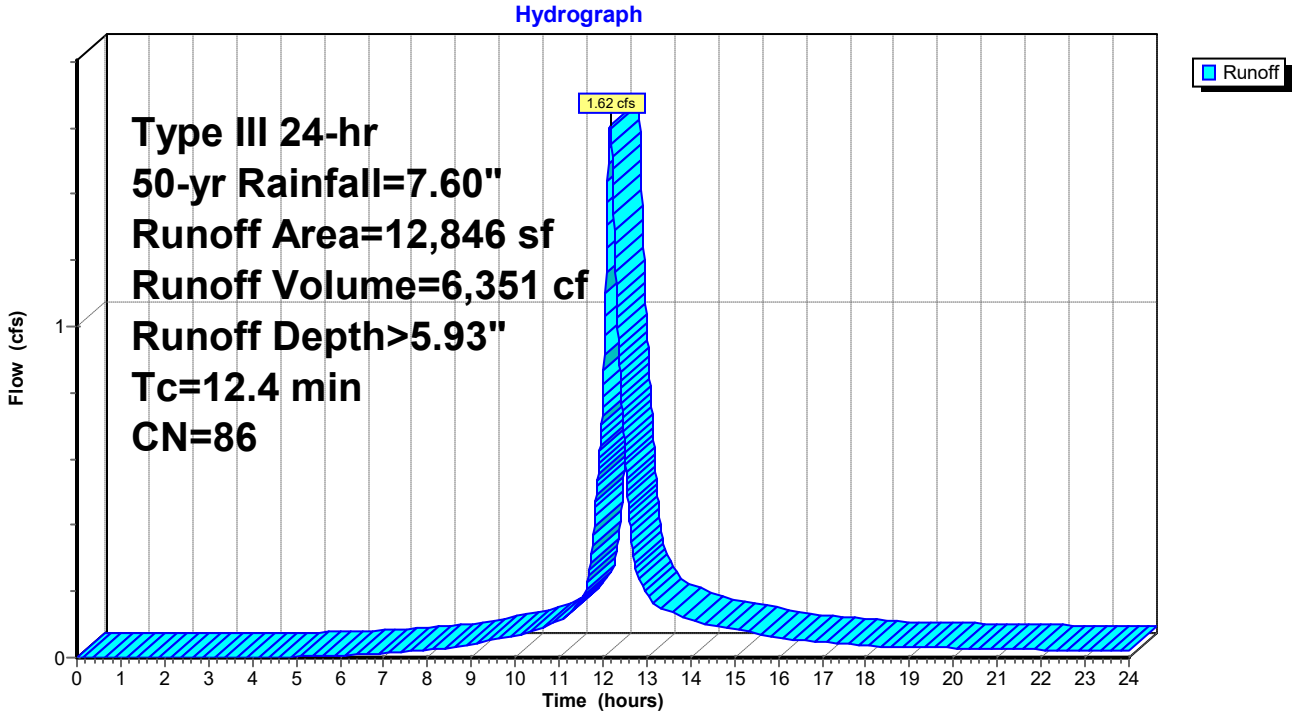
Runoff = 1.62 cfs @ 12.17 hrs, Volume= 6,351 cf, Depth> 5.93"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	5,006	98	Impervious
*	0	69	Lawn B
*	7,840	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	12,846	86	Weighted Average
	7,840		61.03% Pervious Area
	5,006		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4					**Direct Entry,**

Subcatchment C1: WS-C1



Summary for Subcatchment C2: WS-C2

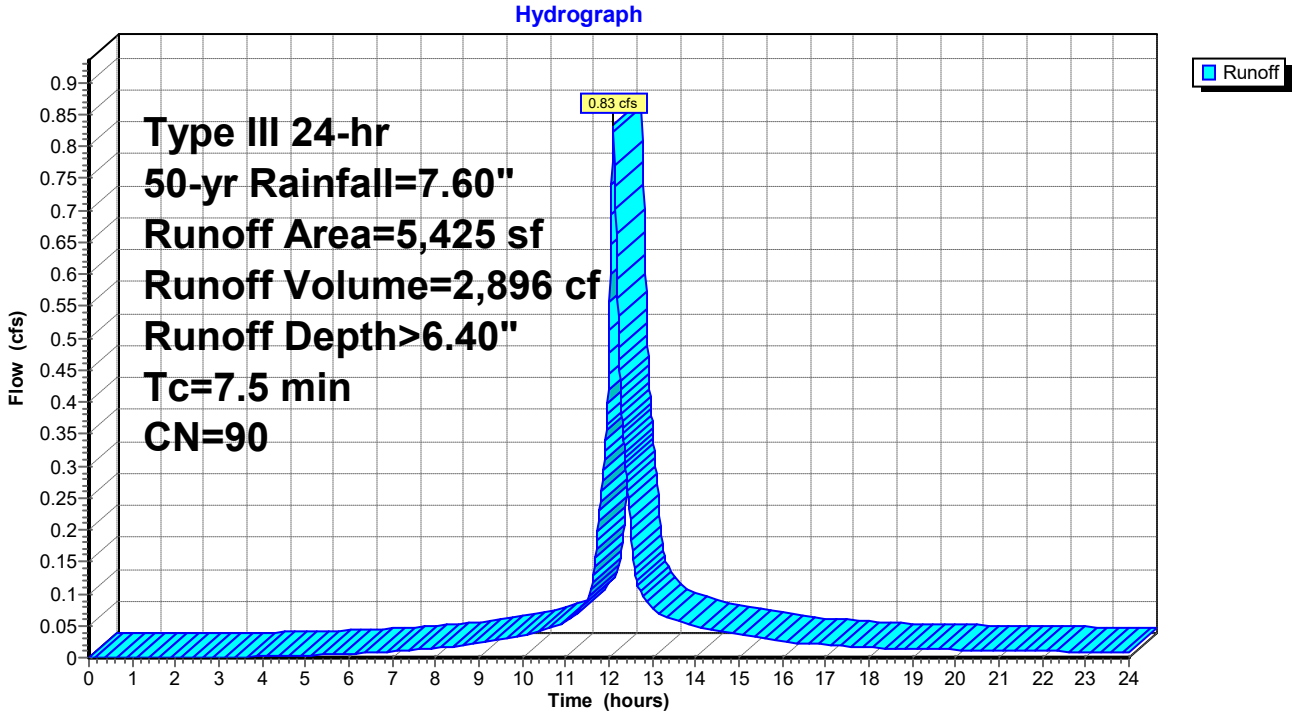
Runoff = 0.83 cfs @ 12.10 hrs, Volume= 2,896 cf, Depth> 6.40"
Routed to Pond RG03 : Rain Garden-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	3,093	98	Impervious
*	0	69	Lawn B
*	2,332	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	5,425	90	Weighted Average
	2,332		42.99% Pervious Area
	3,093		57.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5					**Direct Entry,**

Subcatchment C2: WS-C2



Summary for Subcatchment C3: WS-C3

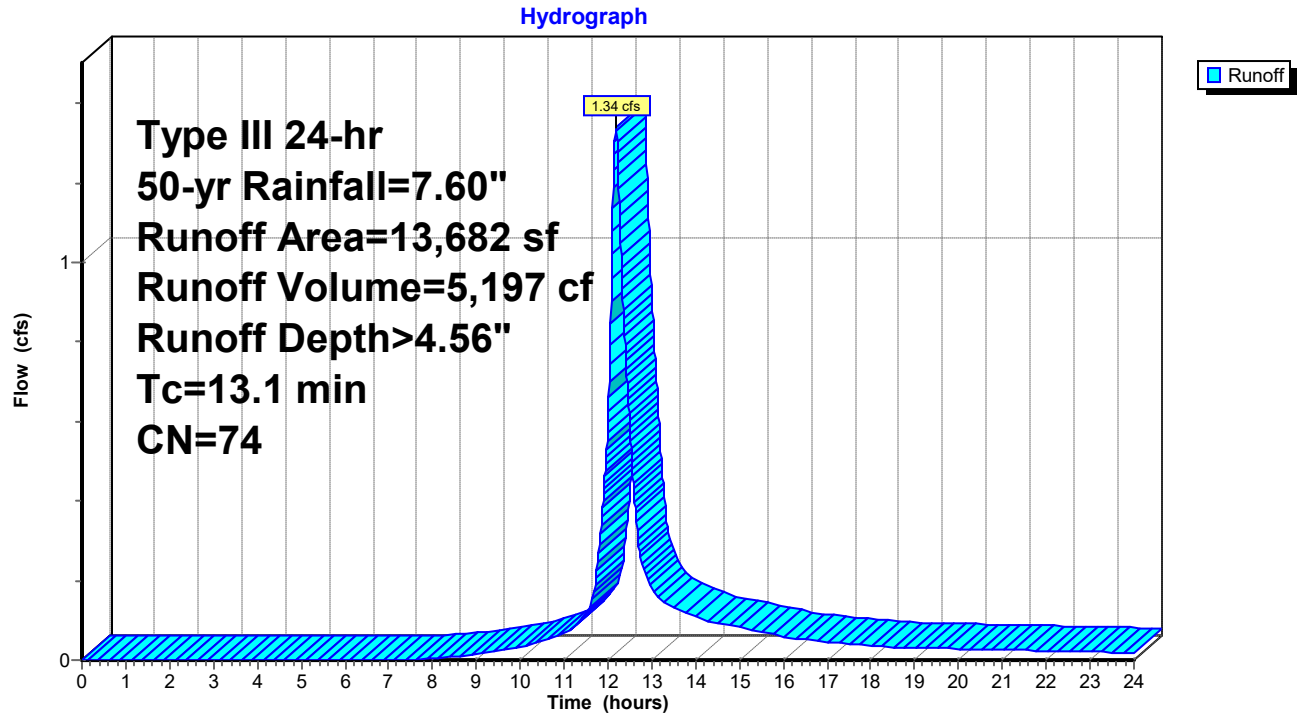
Runoff = 1.34 cfs @ 12.18 hrs, Volume= 5,197 cf, Depth> 4.56"
Routed to Pond DB03 : Detention-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	0	98	Impervious
*	143	69	Lawn B
*	5,032	79	Lawn C
*	1,722	60	Forest B
*	6,785	73	Forest C
	13,682	74	Weighted Average
	13,682		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1					**Direct Entry,**

Subcatchment C3: WS-C3



Summary for Subcatchment C4: WS-C4

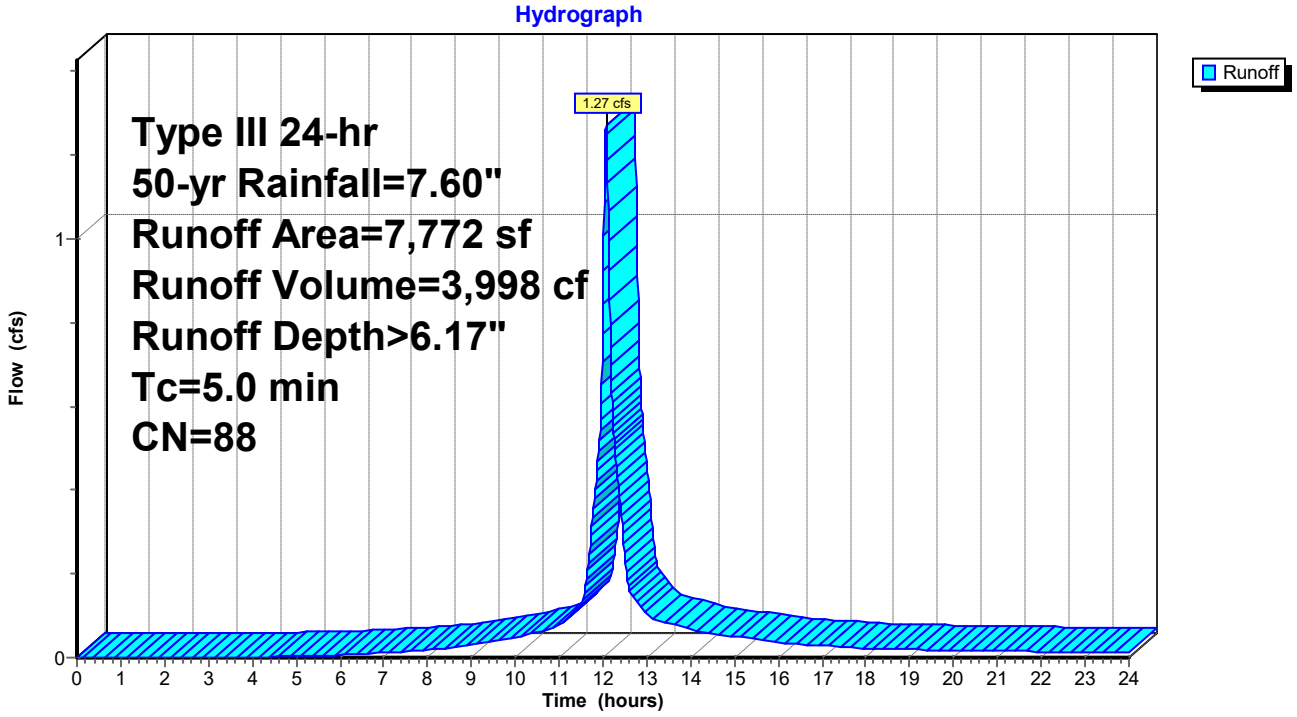
Runoff = 1.27 cfs @ 12.07 hrs, Volume= 3,998 cf, Depth> 6.17"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	3,764	98	Impervious
*	0	69	Lawn B
*	4,008	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	7,772	88	Weighted Average
	4,008		51.57% Pervious Area
	3,764		48.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C4: WS-C4



Summary for Subcatchment C5: WS-C5

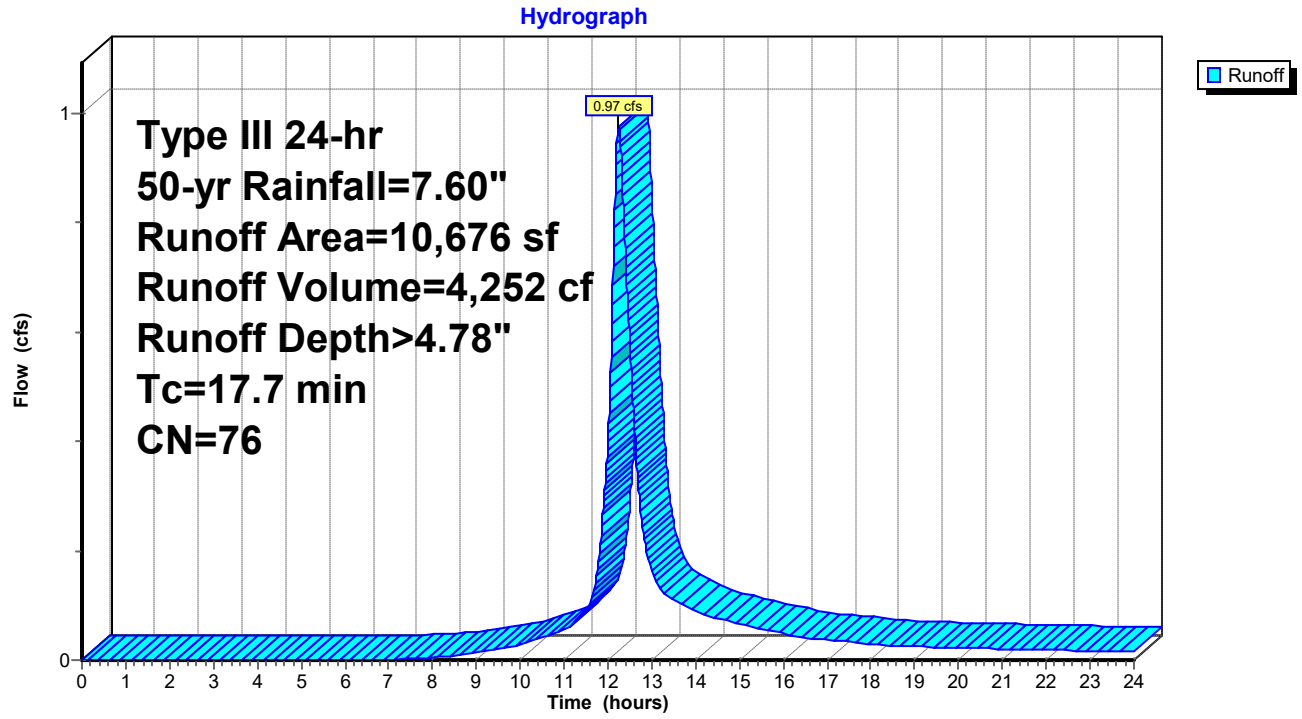
Runoff = 0.97 cfs @ 12.25 hrs, Volume= 4,252 cf, Depth> 4.78"
Routed to Pond DB02 : Detention-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	0	98	Impervious
*	209	69	Lawn B
*	6,162	79	Lawn C
*	569	60	Forest B
*	3,736	73	Forest C
	10,676	76	Weighted Average
	10,676		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7					**Direct Entry,**

Subcatchment C5: WS-C5



Summary for Subcatchment C6: WS-C6

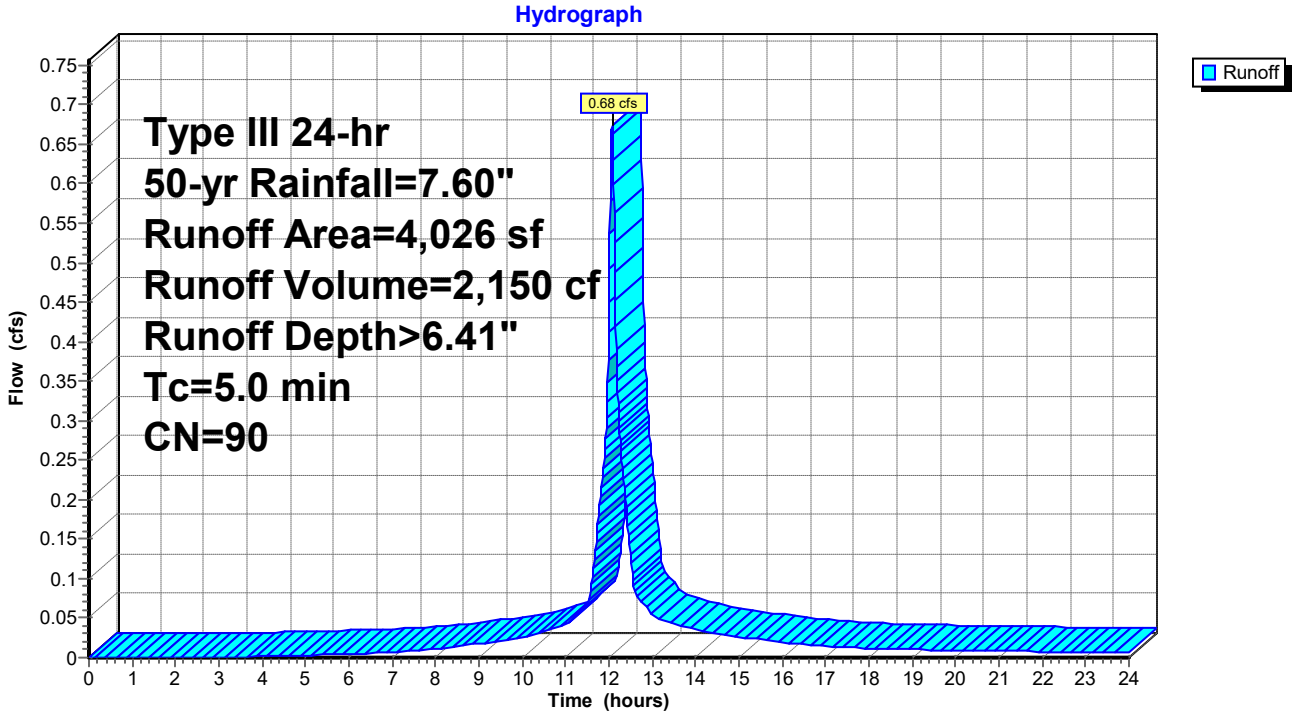
Runoff = 0.68 cfs @ 12.07 hrs, Volume= 2,150 cf, Depth> 6.41"
Routed to Pond RG06 : Rain Garden-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	2,854	98	Impervious
*	1,172	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	4,026	90	Weighted Average
	1,172		29.11% Pervious Area
	2,854		70.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C6: WS-C6



Summary for Subcatchment C7: WS-C7

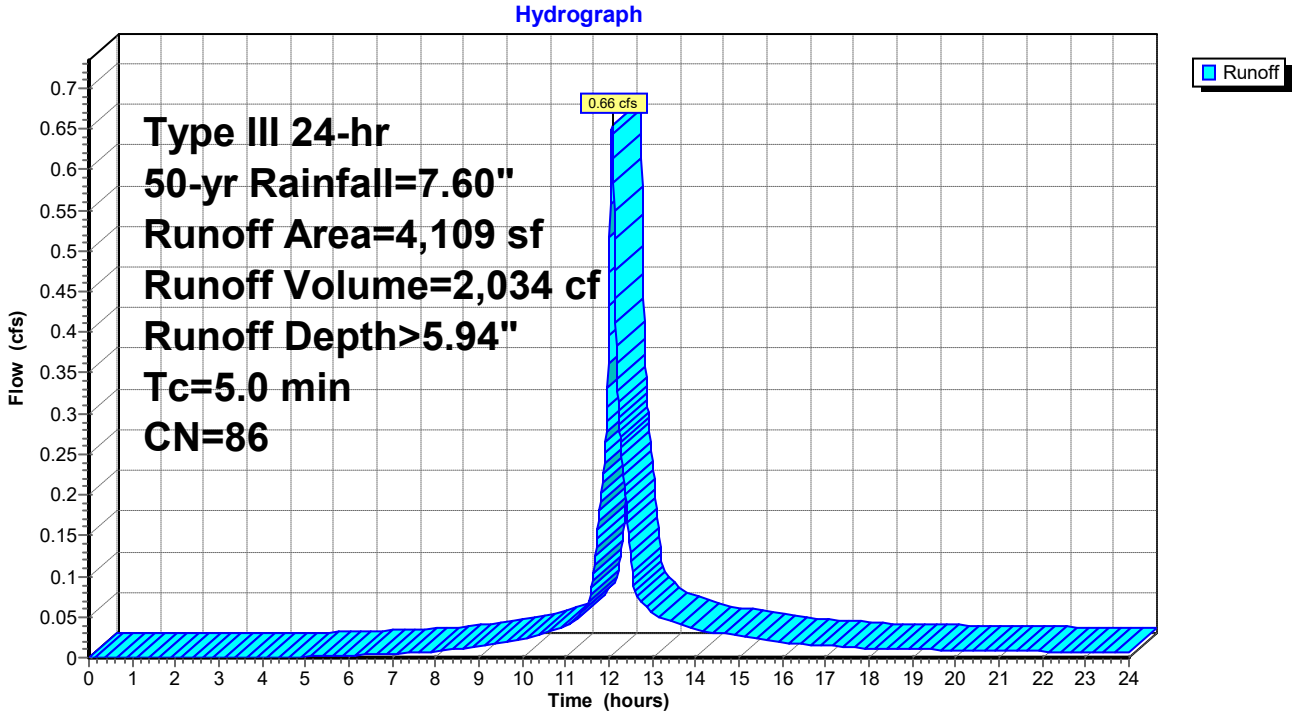
Runoff = 0.66 cfs @ 12.07 hrs, Volume= 2,034 cf, Depth> 5.94"
Routed to Pond RG07 : Rain Garden-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	2,402	98	Impervious
*	1,707	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	4,109	86	Weighted Average
	1,707		41.54% Pervious Area
	2,402		58.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C7: WS-C7



Summary for Subcatchment D1H: WS-D1H

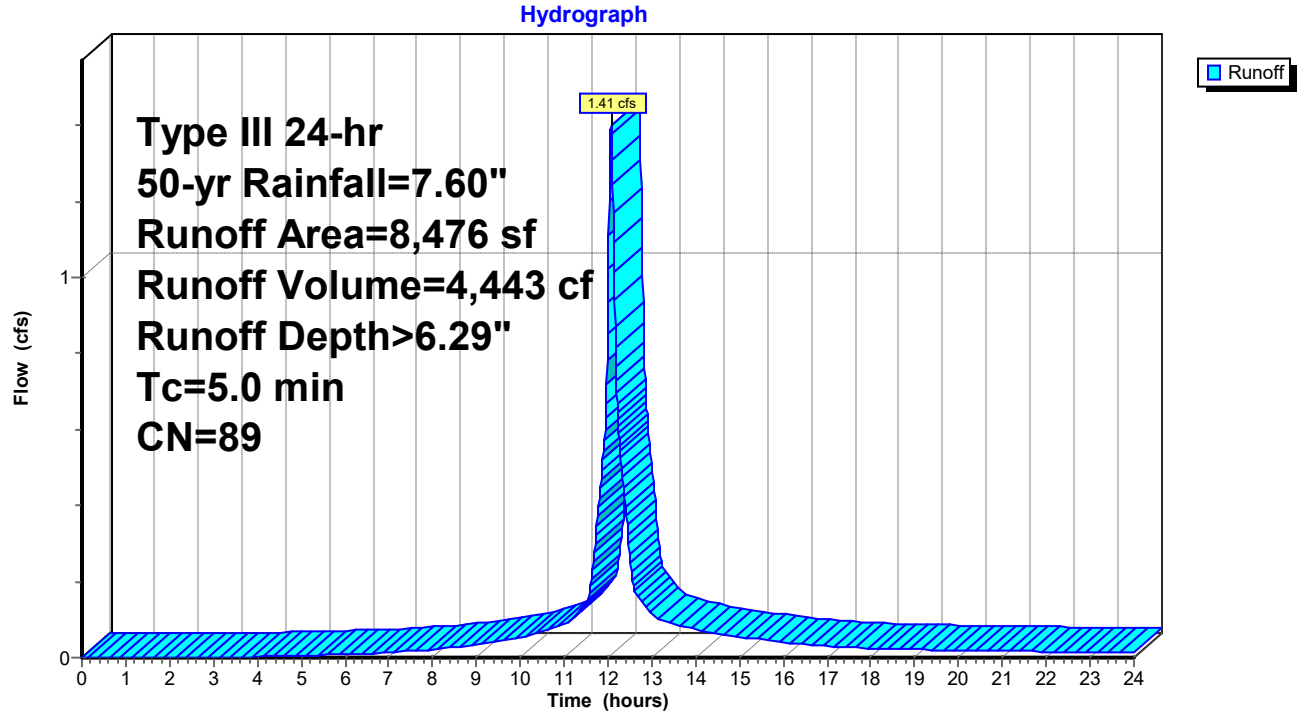
Runoff = 1.41 cfs @ 12.07 hrs, Volume= 4,443 cf, Depth> 6.29"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	5,649	98	Impervious
*	2,426	69	Lawn B
*	401	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	8,476	89	Weighted Average
	2,827		33.35% Pervious Area
	5,649		66.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D1H: WS-D1H



Summary for Subcatchment D2A: WS-D2A

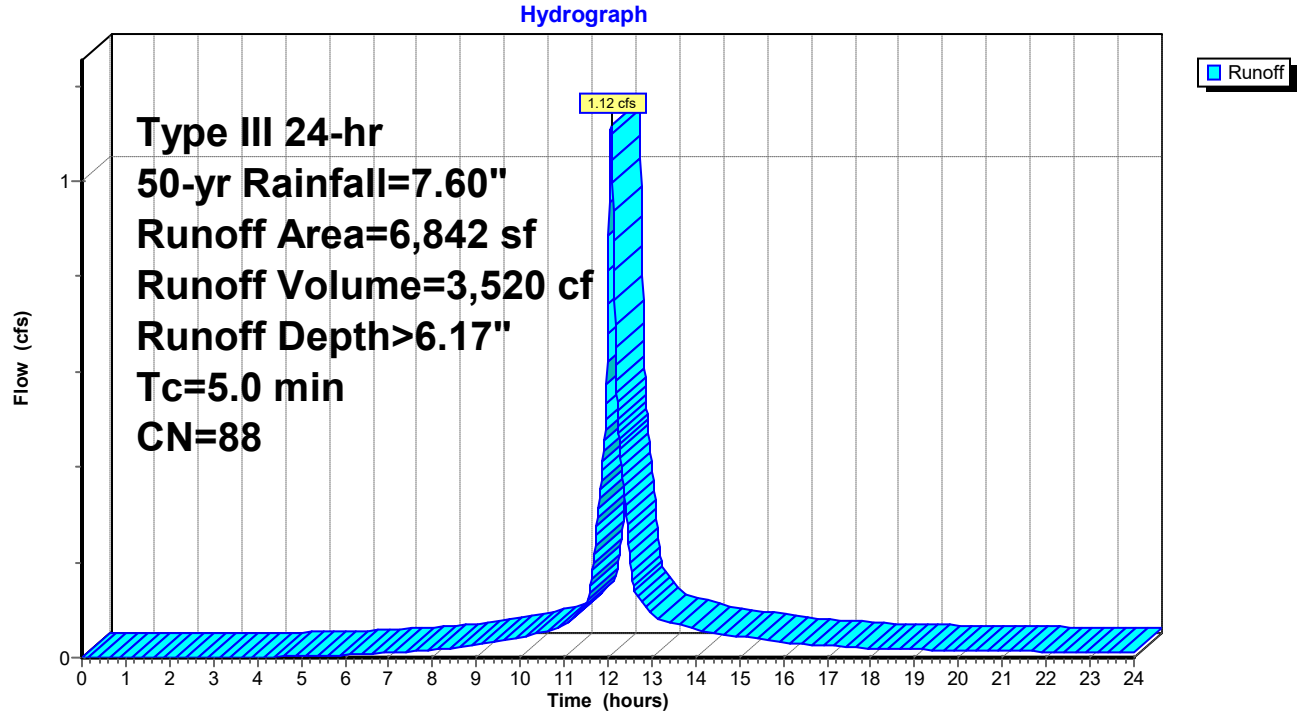
Runoff = 1.12 cfs @ 12.07 hrs, Volume= 3,520 cf, Depth> 6.17"
Routed to Pond 13P : Por Pvt-D2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	4,404	98	Impervious
*	2,438	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	6,842	88	Weighted Average
	2,438		35.63% Pervious Area
	4,404		64.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2A: WS-D2A



Summary for Subcatchment D2B: WS-D2B

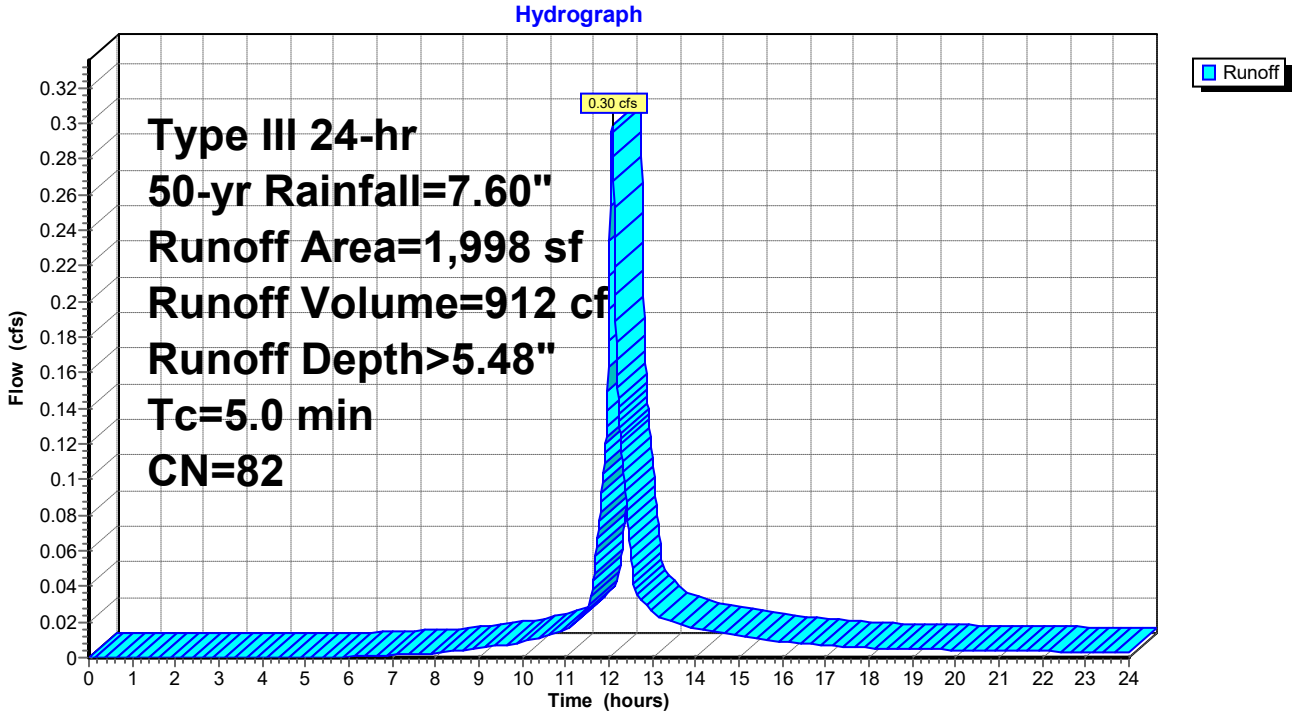
Runoff = 0.30 cfs @ 12.07 hrs, Volume= 912 cf, Depth> 5.48"
Routed to Pond 14P : Por Pvt-D2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	928	98	Impervious
*	1,070	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,998	82	Weighted Average
	1,070		53.55% Pervious Area
	928		46.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2B: WS-D2B



Summary for Subcatchment D2C: WS-D2C

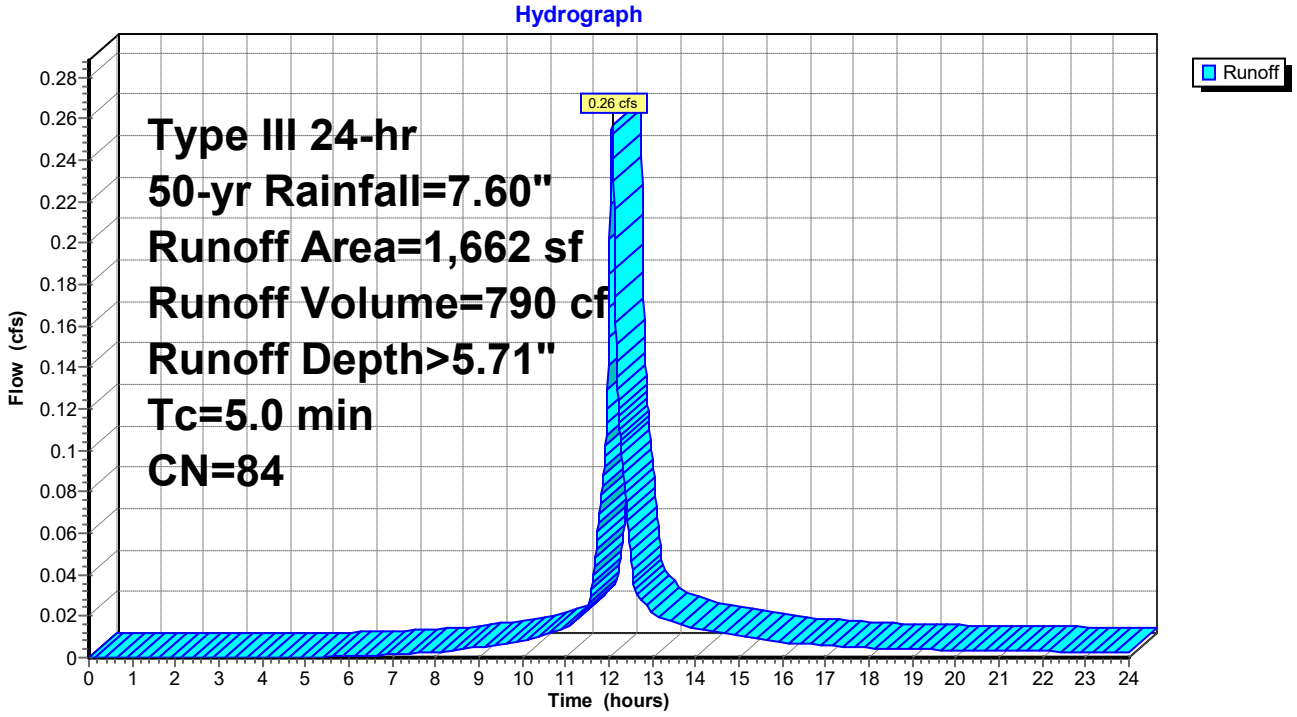
Runoff = 0.26 cfs @ 12.07 hrs, Volume= 790 cf, Depth> 5.71"
Routed to Pond 16P : Por Pvt-D2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	860	98	Impervious
*	802	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,662	84	Weighted Average
	802		48.26% Pervious Area
	860		51.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2C: WS-D2C



Summary for Subcatchment D2D: WS-D2D

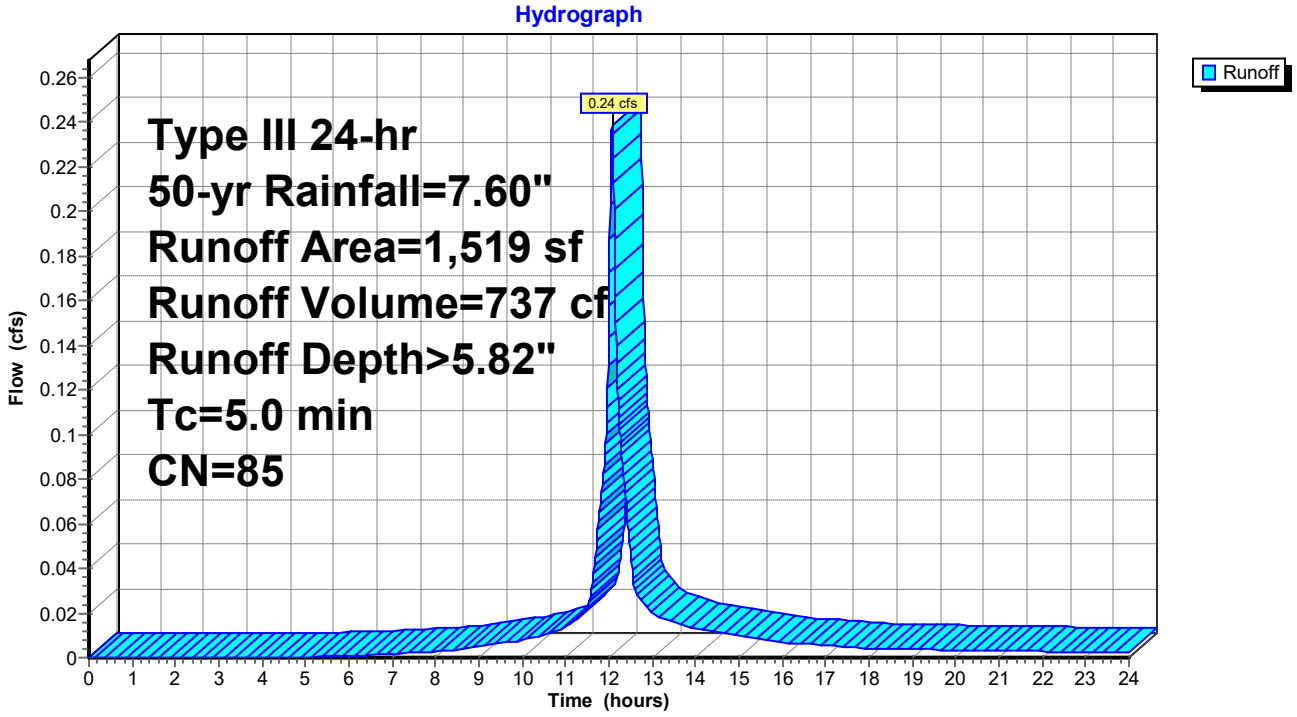
Runoff = 0.24 cfs @ 12.07 hrs, Volume= 737 cf, Depth> 5.82"
Routed to Pond 18P : Por Pvt-D2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	846	98	Impervious
*	673	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,519	85	Weighted Average
	673		44.31% Pervious Area
	846		55.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2D: WS-D2D



Summary for Subcatchment D2E: WS-D2E

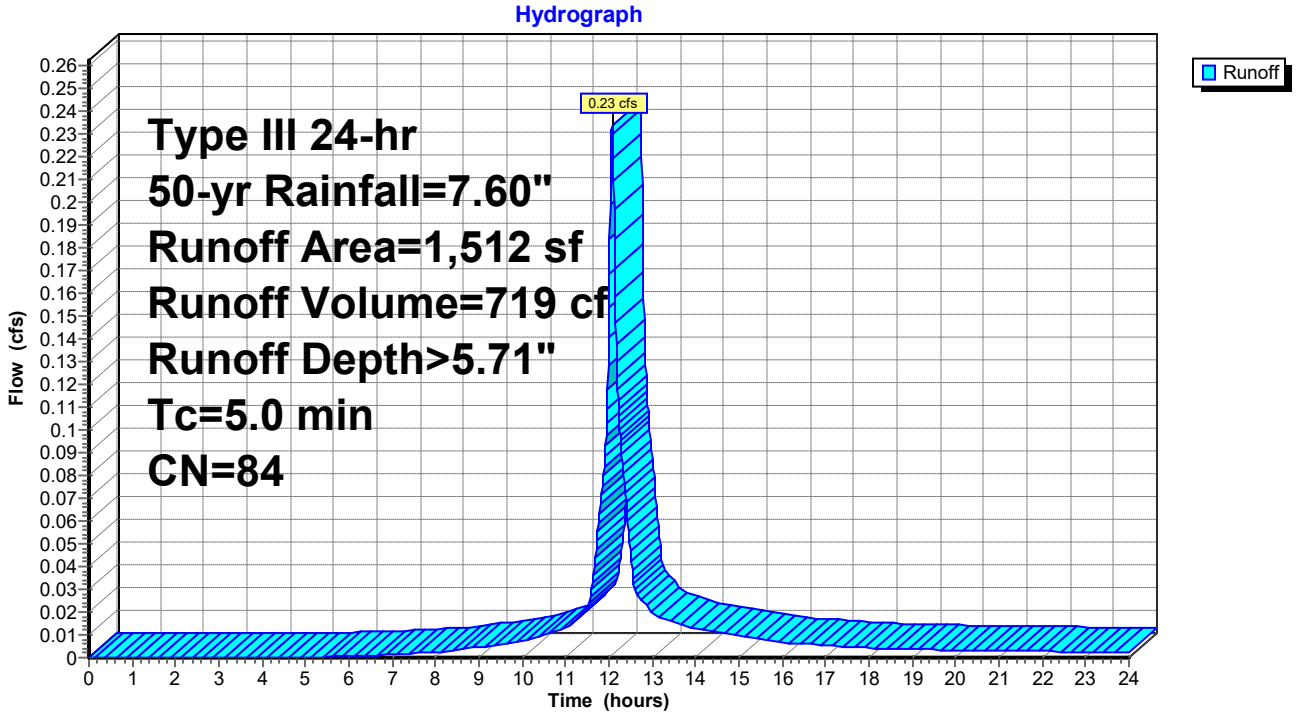
Runoff = 0.23 cfs @ 12.07 hrs, Volume= 719 cf, Depth> 5.71"
Routed to Pond 19P : Por Pvt-D2E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	808	98	Impervious
*	704	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,512	84	Weighted Average
	704		46.56% Pervious Area
	808		53.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2E: WS-D2E



Summary for Subcatchment D2F: WS-D2F

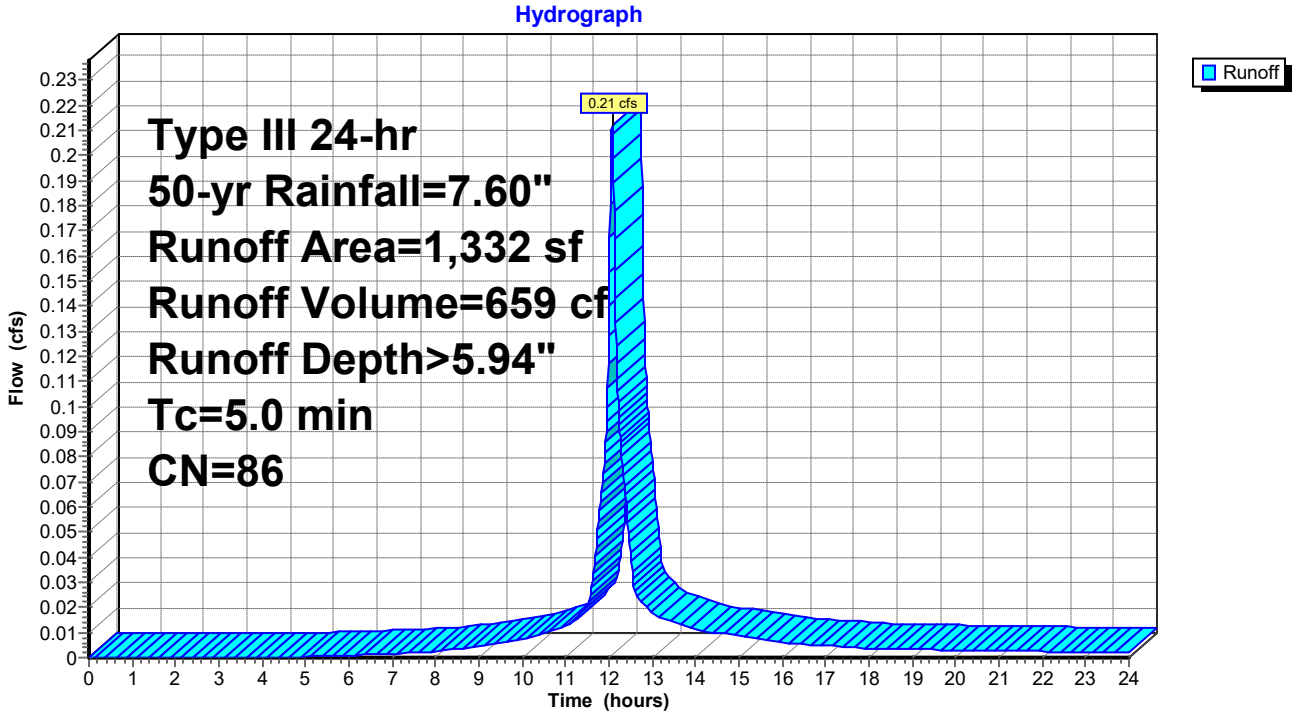
Runoff = 0.21 cfs @ 12.07 hrs, Volume= 659 cf, Depth> 5.94"
Routed to Pond 20P : Por Pvt-D2F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	800	98	Impervious
*	532	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,332	86	Weighted Average
	532		39.94% Pervious Area
	800		60.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2F: WS-D2F



Summary for Subcatchment D2G: WS-D2G

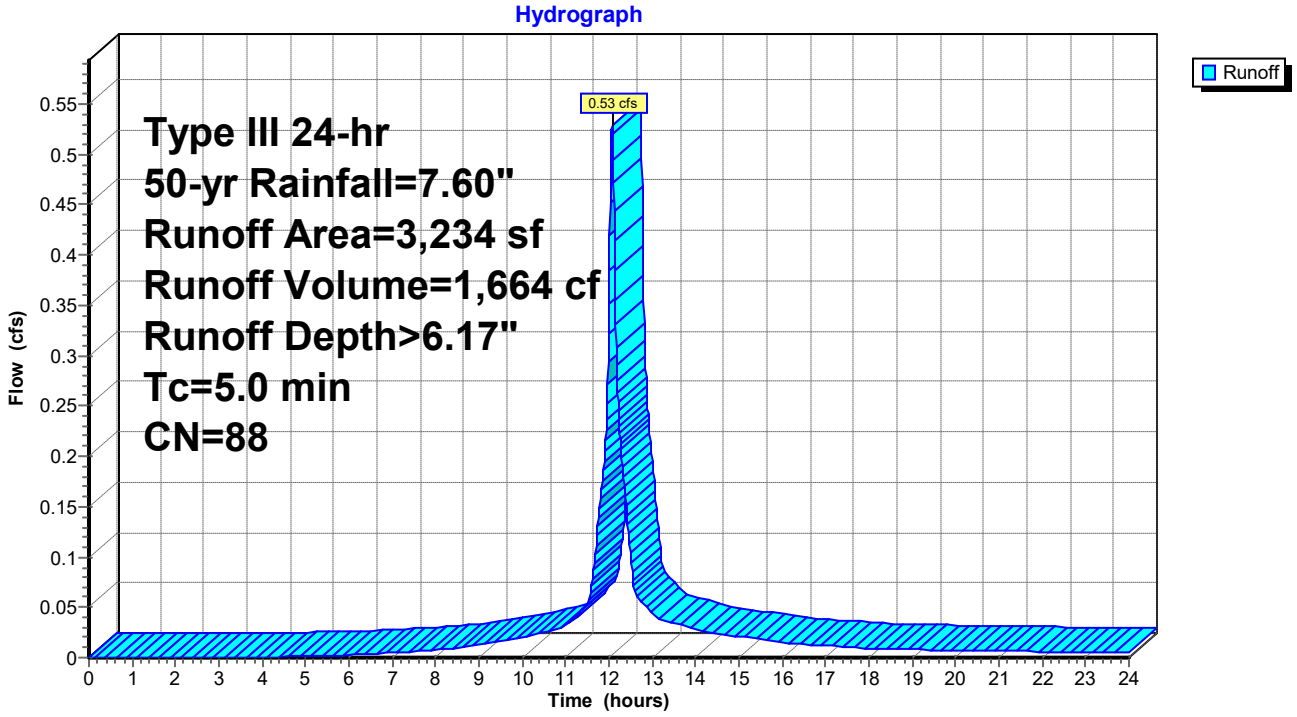
Runoff = 0.53 cfs @ 12.07 hrs, Volume= 1,664 cf, Depth> 6.17"
Routed to Pond 21P : Por Pvt-D2G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	1,833	98	Impervious
*	555	69	Lawn B
*	846	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	3,234	88	Weighted Average
	1,401		43.32% Pervious Area
	1,833		56.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2G: WS-D2G



Summary for Subcatchment D3: WS-D3

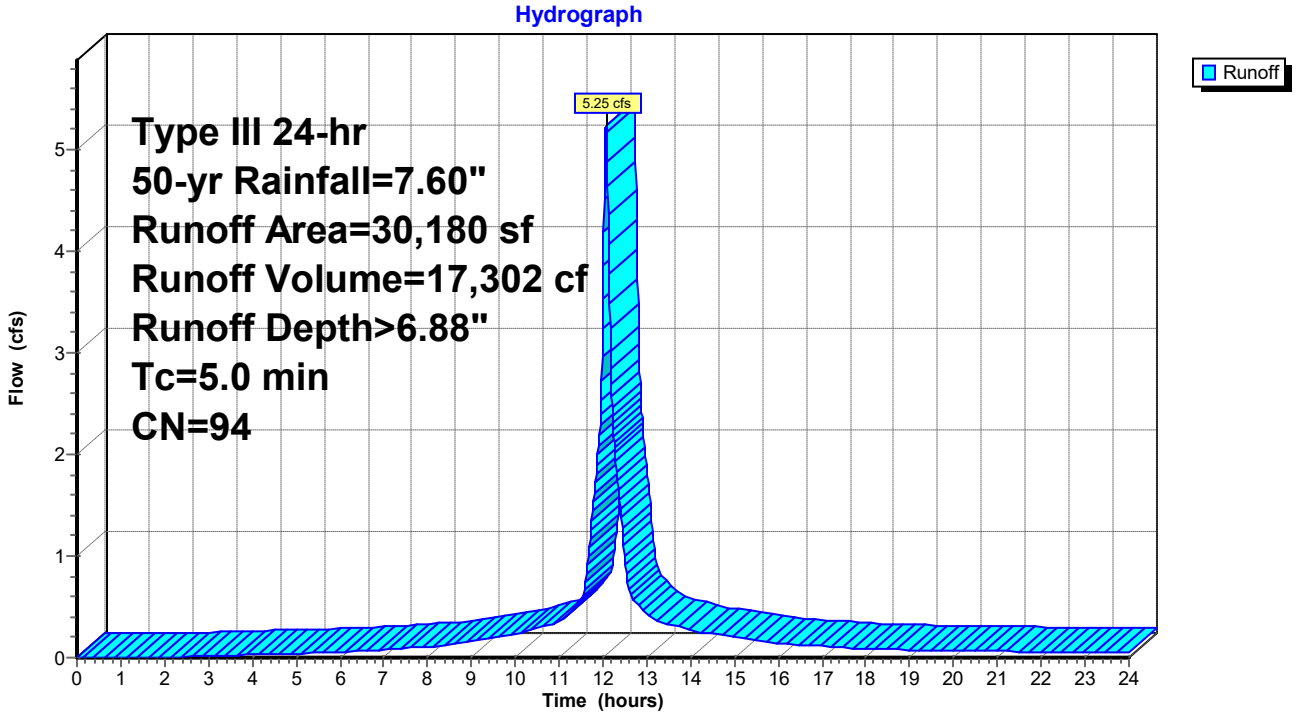
Runoff = 5.25 cfs @ 12.07 hrs, Volume= 17,302 cf, Depth> 6.88"
Routed to Pond PP03 : Por Pvt-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	23,042	98	Impervious
*	0	69	Lawn B
*	7,138	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	30,180	94	Weighted Average
	7,138		23.65% Pervious Area
	23,042		76.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D3: WS-D3



Summary for Subcatchment D4: WS-D4

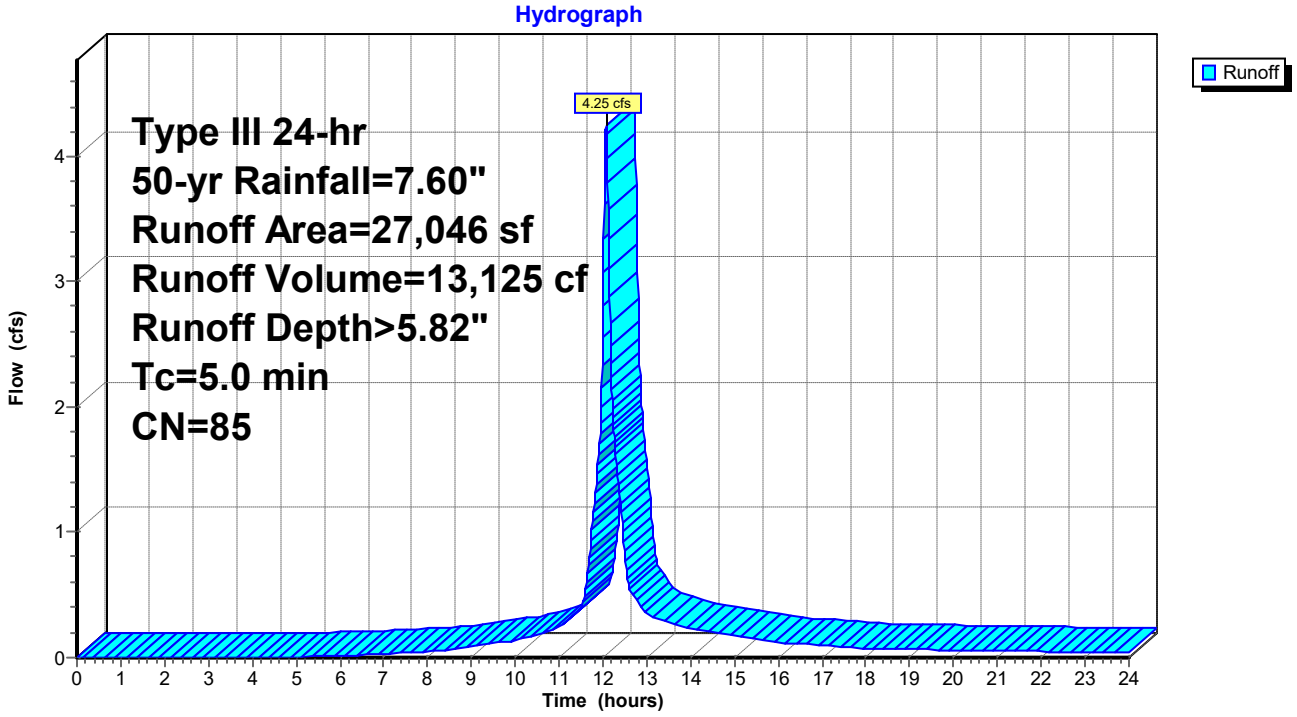
Runoff = 4.25 cfs @ 12.07 hrs, Volume= 13,125 cf, Depth> 5.82"
Routed to Pond PP07 : Por Pvt-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	14,753	98	Impervious
*	12,293	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	27,046	85	Weighted Average
	12,293		45.45% Pervious Area
	14,753		54.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D4: WS-D4



Summary for Subcatchment D5: WS-D5

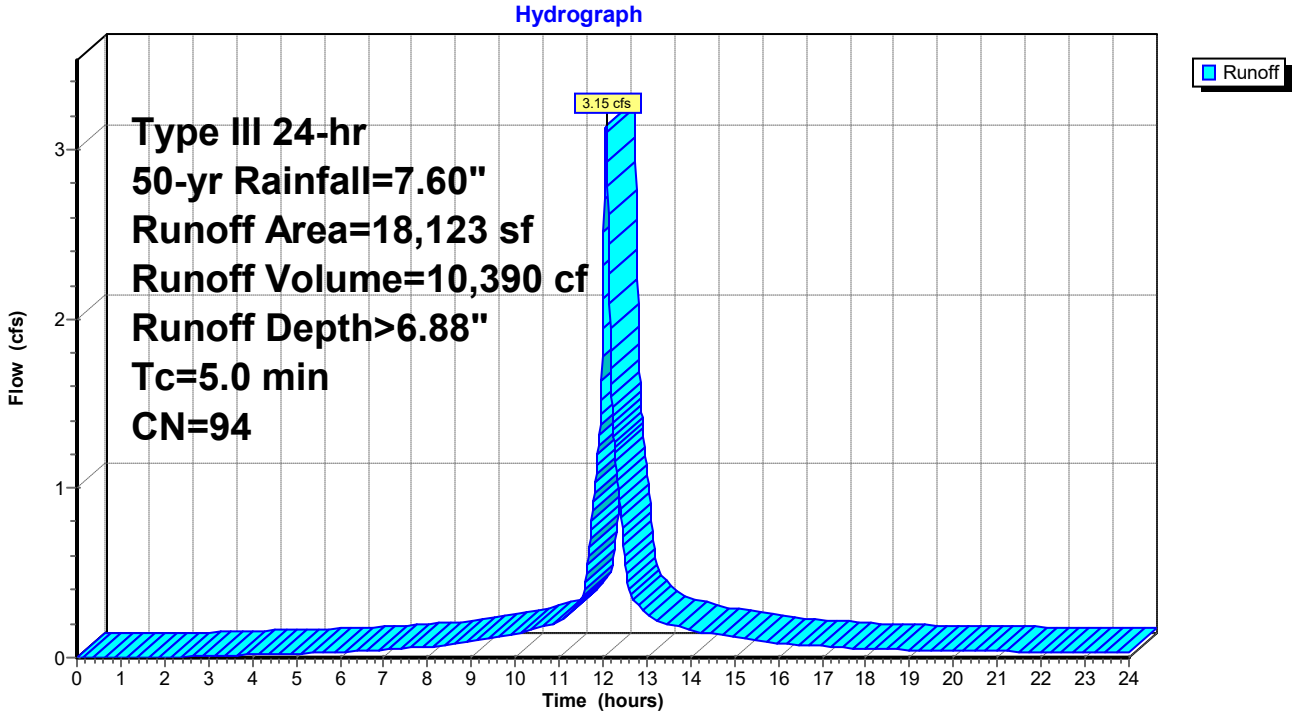
Runoff = 3.15 cfs @ 12.07 hrs, Volume= 10,390 cf, Depth> 6.88"
Routed to Pond PP02 : Por Pvt-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	14,849	98	Impervious
*	0	69	Lawn B
*	720	79	Lawn C
*	0	60	Forest B
*	2,554	73	Forest C
	18,123	94	Weighted Average
	3,274		18.07% Pervious Area
	14,849		81.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D5: WS-D5



Summary for Subcatchment D6: WS-D6

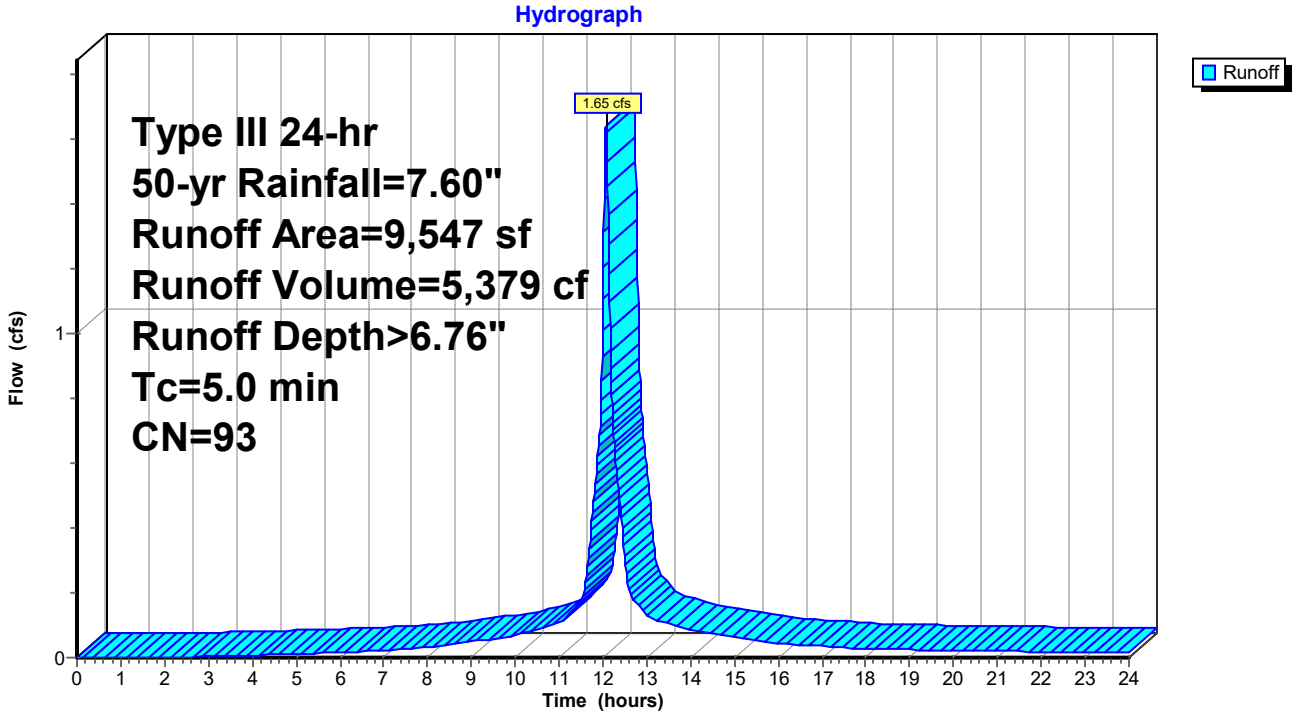
Runoff = 1.65 cfs @ 12.07 hrs, Volume= 5,379 cf, Depth> 6.76"
Routed to Pond PP04 : Por Pvt-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	6,988	98	Impervious
*	0	69	Lawn B
*	2,559	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	9,547	93	Weighted Average
	2,559		26.80% Pervious Area
	6,988		73.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D6: WS-D6



Summary for Subcatchment D7: WS-D7

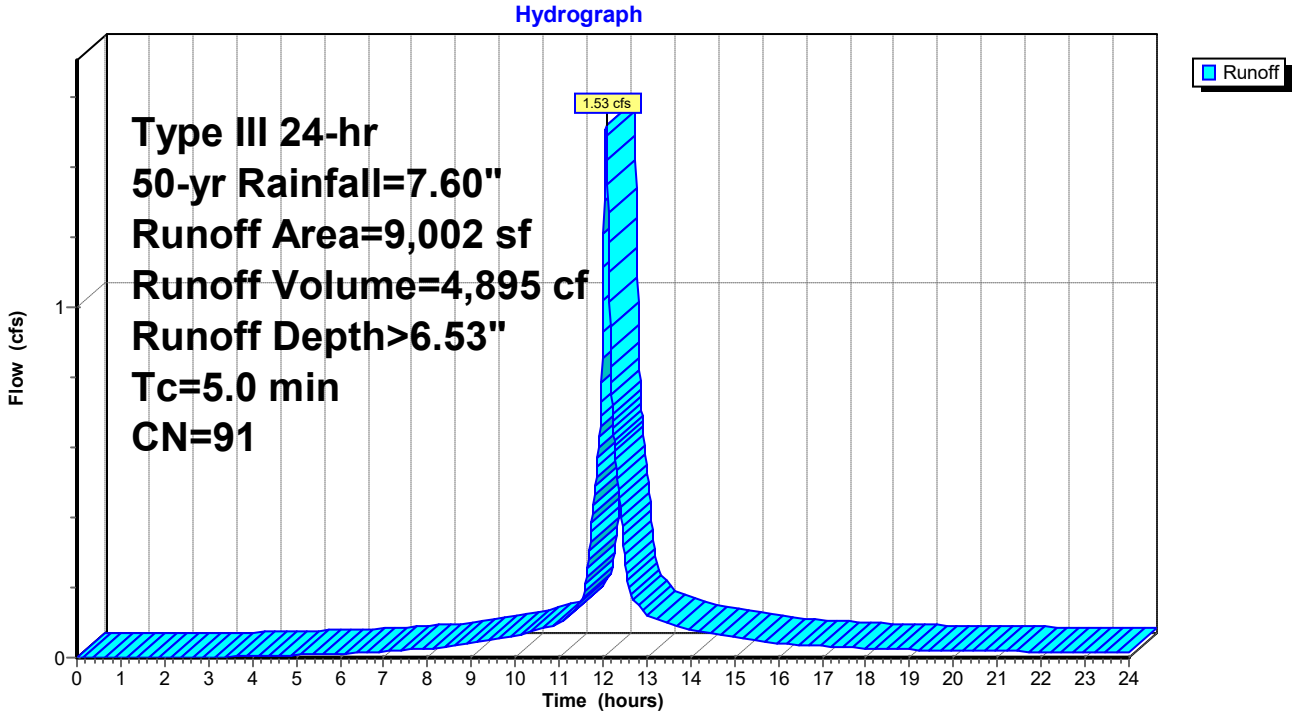
Runoff = 1.53 cfs @ 12.07 hrs, Volume= 4,895 cf, Depth> 6.53"
Routed to Pond PP05 : Por Pvt-05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	6,727	98	Impervious
*	1,674	69	Lawn B
*	601	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	9,002	91	Weighted Average
	2,275		25.27% Pervious Area
	6,727		74.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D7: WS-D7



Summary for Subcatchment D8: WS-D8

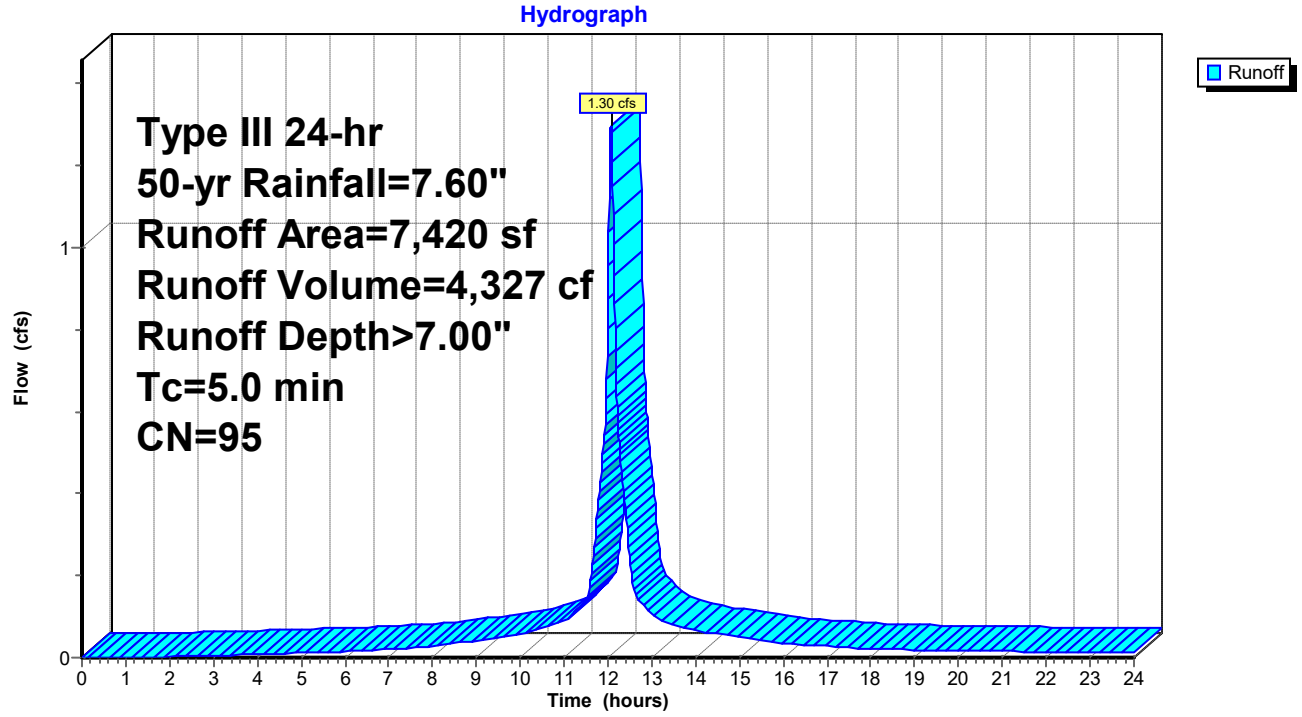
Runoff = 1.30 cfs @ 12.07 hrs, Volume= 4,327 cf, Depth> 7.00"
Routed to Pond PP06 : Por Pvt-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	6,549	98	Impervious
*	871	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	7,420	95	Weighted Average
	871		11.74% Pervious Area
	6,549		88.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D8: WS-D8



Summary for Subcatchment E1: WS-E1

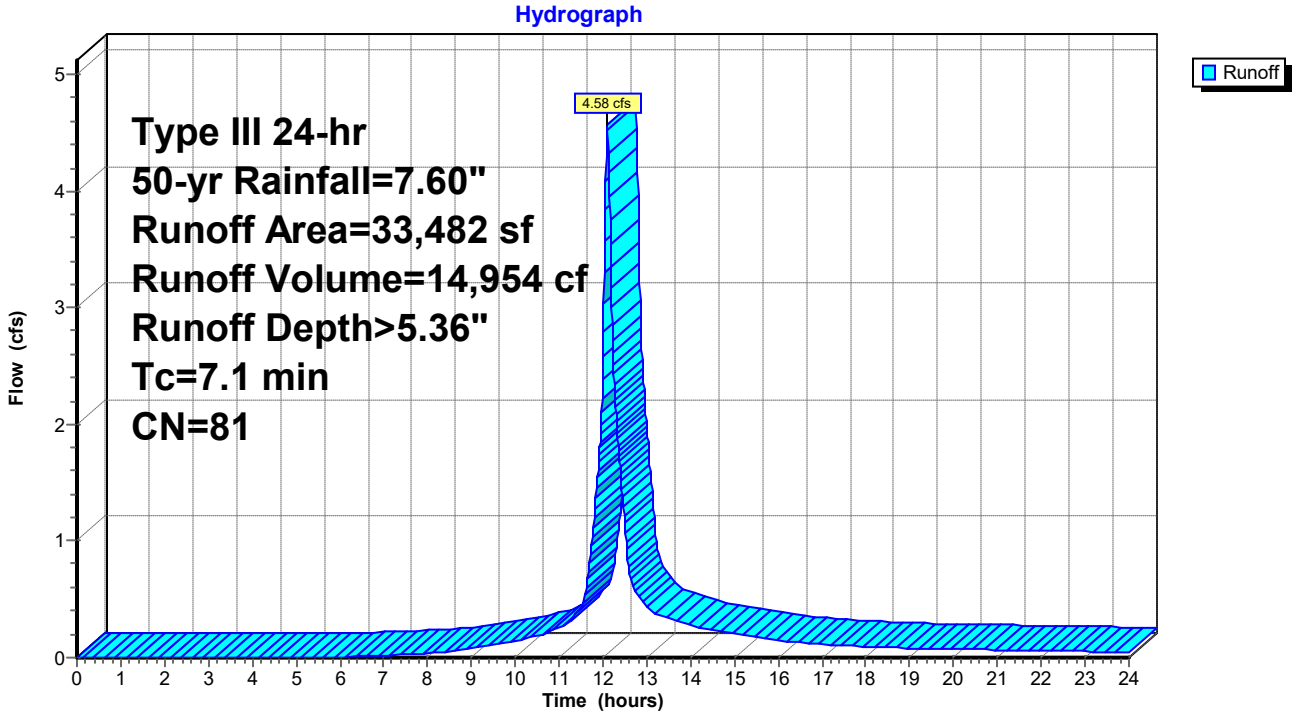
Runoff = 4.58 cfs @ 12.10 hrs, Volume= 14,954 cf, Depth> 5.36"
Routed to Pond UI02 : Und Inf 02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	10,193	98	Impervious
*	1,931	69	Lawn B
*	9,074	79	Lawn C
*	3,193	60	Forest B
*	9,091	73	Forest C
	33,482	81	Weighted Average
	23,289		69.56% Pervious Area
	10,193		30.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1					**Direct Entry,**

Subcatchment E1: WS-E1



Summary for Subcatchment E2: WS-E2

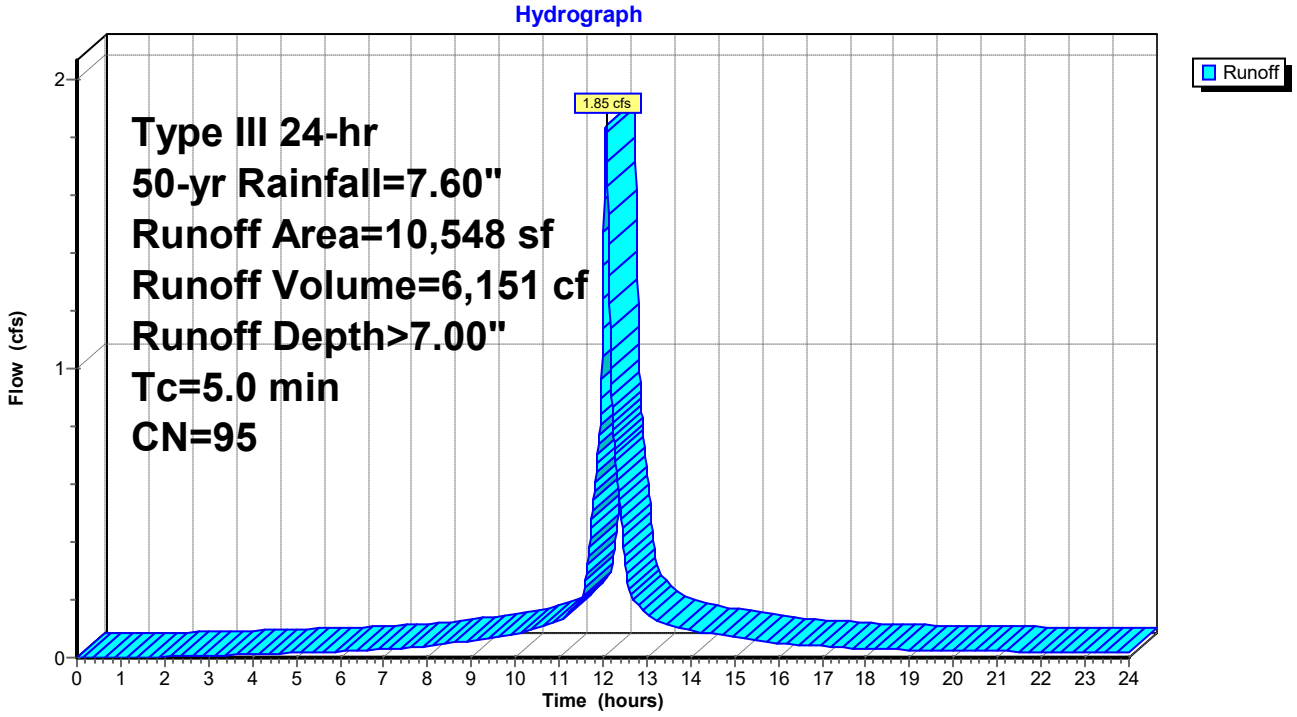
Runoff = 1.85 cfs @ 12.07 hrs, Volume= 6,151 cf, Depth> 7.00"
Routed to Pond RG04 : Rain Garden-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	8,740	98	Impervious
*	0	69	Lawn B
*	1,808	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	10,548	95	Weighted Average
	1,808		17.14% Pervious Area
	8,740		82.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment E2: WS-E2



Summary for Subcatchment R4: Roof-04

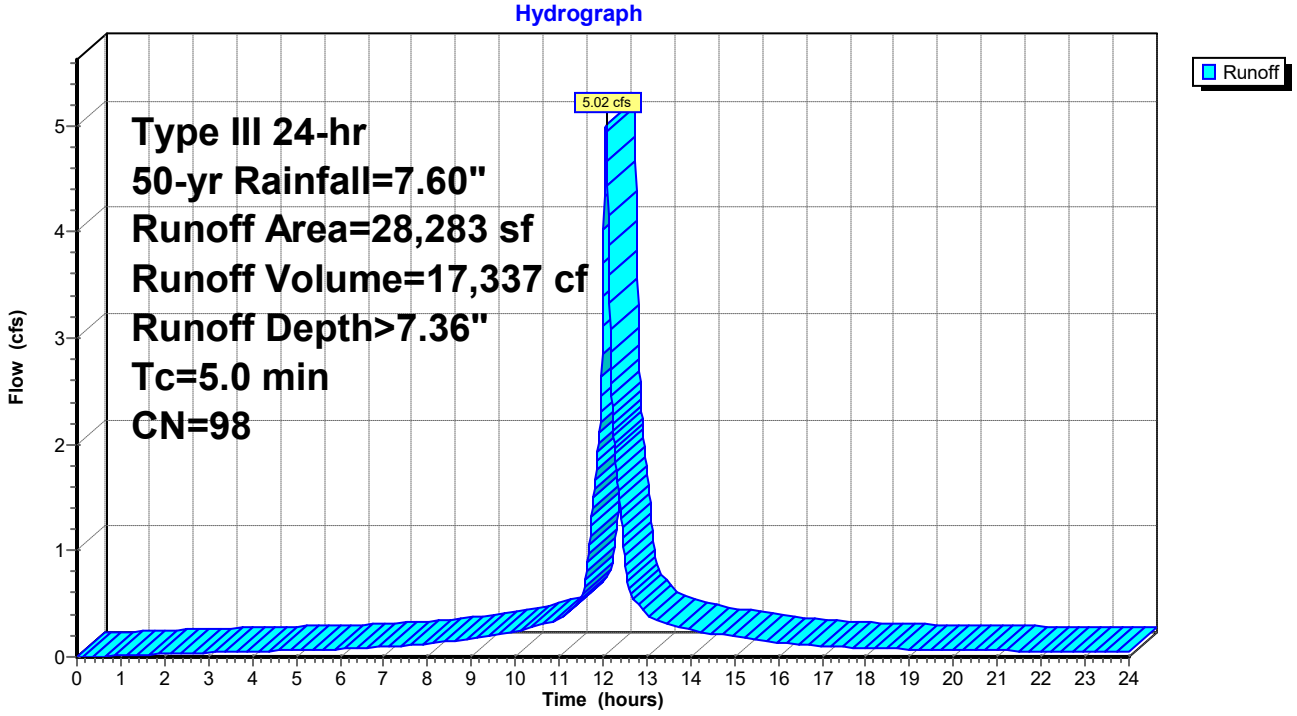
Runoff = 5.02 cfs @ 12.07 hrs, Volume= 17,337 cf, Depth> 7.36"
Routed to Pond UI01 : Und Inf 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	28,283	98	Impervious
	28,283		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment R4: Roof-04



Summary for Subcatchment R5: Roof-05

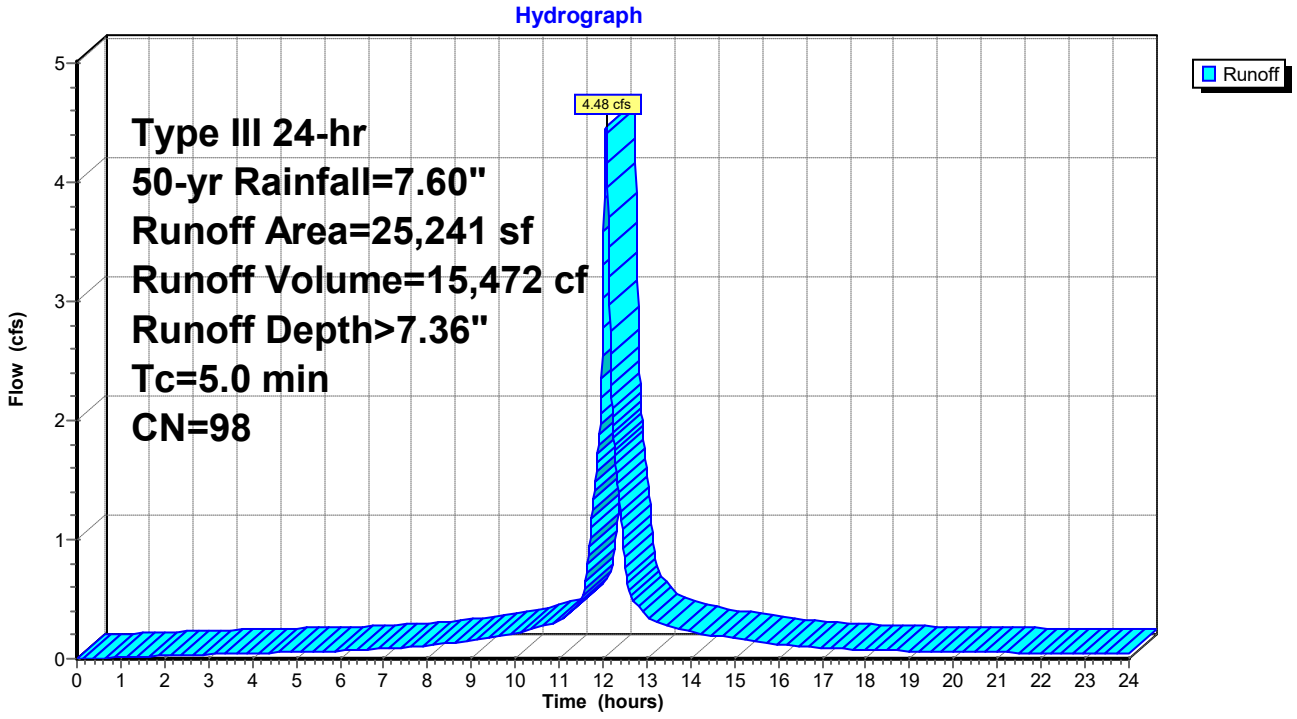
Runoff = 4.48 cfs @ 12.07 hrs, Volume= 15,472 cf, Depth> 7.36"
Routed to Pond UI01 : Und Inf 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	25,241	98	Impervious
*	0	79	Lawn C
	25,241	98	Weighted Average
	25,241		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment R5: Roof-05



Summary for Pond 13P: Por Pvt-D2A

Porous Pavement in Parking Spaces Only

Inflow Area = 16,536 sf, 85.26% Impervious, Inflow Depth > 9.39" for 50-yr event
Inflow = 7.94 cfs @ 12.08 hrs, Volume= 12,942 cf
Outflow = 5.99 cfs @ 12.12 hrs, Volume= 10,721 cf, Atten= 25%, Lag= 2.5 min
Primary = 1.13 cfs @ 12.12 hrs, Volume= 8,160 cf
Routed to Pond DMH13 : DMH-13
Secondary = 4.86 cfs @ 12.12 hrs, Volume= 2,561 cf
Routed to Pond 14P : Por Pvt-D2B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 59.37' @ 12.12 hrs Surf.Area= 2,848 sf Storage= 4,993 cf

Plug-Flow detention time= 123.7 min calculated for 10,721 cf (83% of inflow)
Center-of-Mass det. time= 65.9 min (815.3 - 749.4)

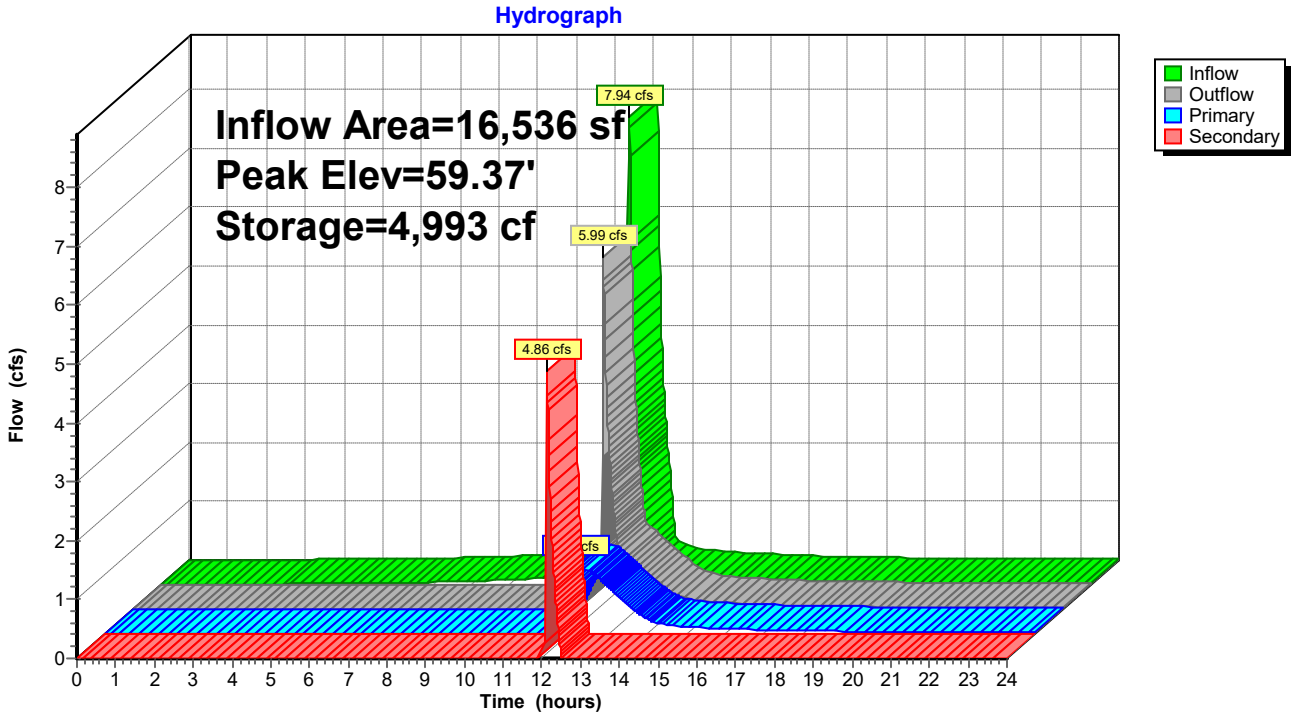
Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	5,683 cf	**20.00'W x 142.40'L x 5.00'H Porous Pavment** 14,240 cf Overall - 32 cf Embedded = 14,208 cf x 40.0% Voids
#2	56.84'	32 cf	**6.0" Round 6" underdrain** Inside #1 L= 162.0'
		5,715 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	56.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.84' / 56.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	59.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.13 cfs @ 12.12 hrs HW=59.36' TW=44.30' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.13 cfs @ 5.73 fps)

Secondary OutFlow Max=4.63 cfs @ 12.12 hrs HW=59.36' TW=55.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 4.63 cfs @ 1.22 fps)

Pond 13P: Por Pvt-D2A



Summary for Pond 14P: Por Pvt-D2B

Porous Pavement in Parking Spaces Only

Inflow Area = 1,998 sf, 46.45% Impervious, Inflow Depth > 20.86" for 50-yr event
Inflow = 5.11 cfs @ 12.12 hrs, Volume= 3,473 cf
Outflow = 3.84 cfs @ 12.19 hrs, Volume= 2,876 cf, Atten= 25%, Lag= 4.1 min
Primary = 1.11 cfs @ 12.19 hrs, Volume= 2,233 cf
Routed to Pond DMH13 : DMH-13
Secondary = 2.73 cfs @ 12.19 hrs, Volume= 642 cf
Routed to Pond 16P : Por Pvt-D2C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.30' @ 12.19 hrs Surf.Area= 796 sf Storage= 1,377 cf

Plug-Flow detention time= 44.9 min calculated for 2,876 cf (83% of inflow)
Center-of-Mass det. time= 19.7 min (770.0 - 750.3)

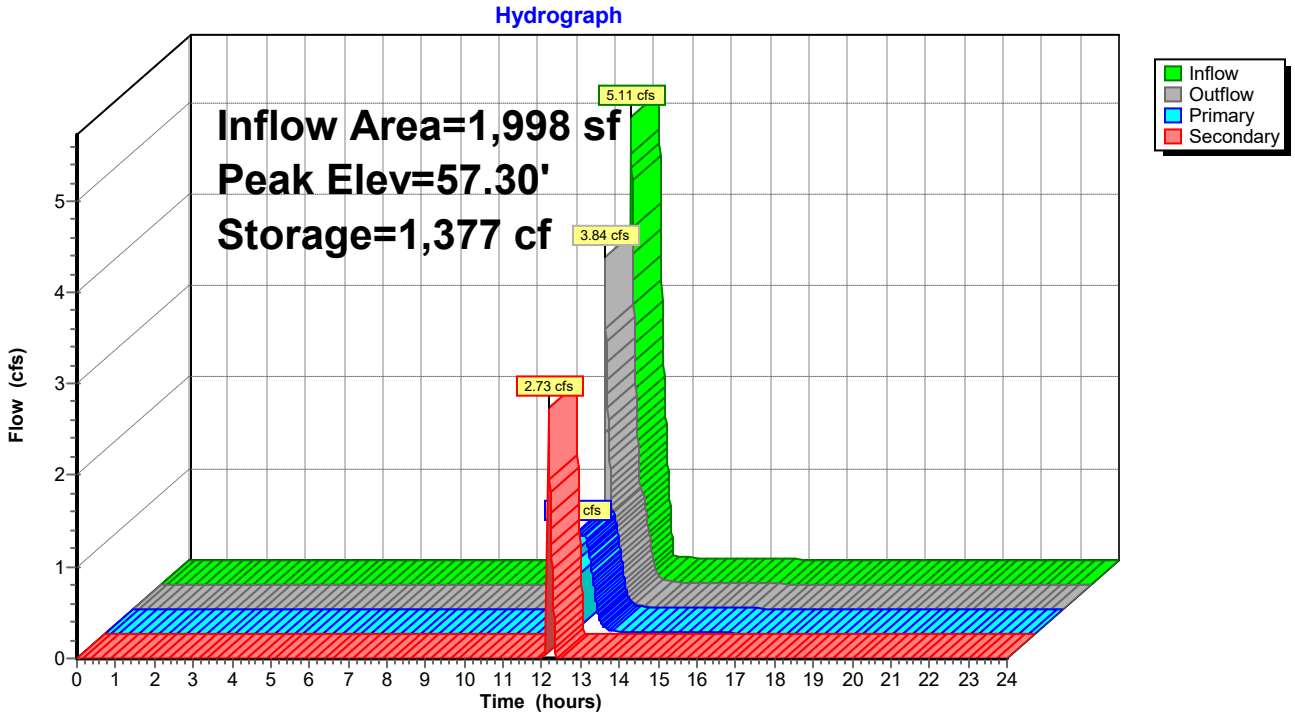
Volume	Invert	Avail.Storage	Storage Description
#1	53.00'	1,588 cf	**20.00'W x 39.80'L x 5.00'H Porous Pavment** 3,980 cf Overall - 11 cf Embedded = 3,969 cf x 40.0% Voids
#2	54.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 55.0'
		1,598 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	54.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 54.84' / 54.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	57.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.11 cfs @ 12.19 hrs HW=57.30' TW=44.73' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.11 cfs @ 5.65 fps)

Secondary OutFlow Max=2.51 cfs @ 12.19 hrs HW=57.30' TW=54.22' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 2.51 cfs @ 0.99 fps)

Pond 14P: Por Pvt-D2B



Summary for Pond 15P: Por Pvt-D1H

Porous Pavement in Parking Spaces Only

Inflow Area = 36,236 sf, 92.20% Impervious, Inflow Depth > 7.11" for 50-yr event
Inflow = 6.33 cfs @ 12.07 hrs, Volume= 21,459 cf
Outflow = 6.21 cfs @ 12.09 hrs, Volume= 18,557 cf, Atten= 2%, Lag= 0.9 min
Primary = 1.08 cfs @ 12.14 hrs, Volume= 15,078 cf
Routed to Pond YD33 : YD-33
Secondary = 5.13 cfs @ 12.09 hrs, Volume= 3,480 cf
Routed to Pond 13P : Por Pvt-D2A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 59.40' @ 12.14 hrs Surf.Area= 3,618 sf Storage= 6,388 cf

Plug-Flow detention time= 138.3 min calculated for 18,557 cf (86% of inflow)
Center-of-Mass det. time= 77.4 min (825.9 - 748.5)

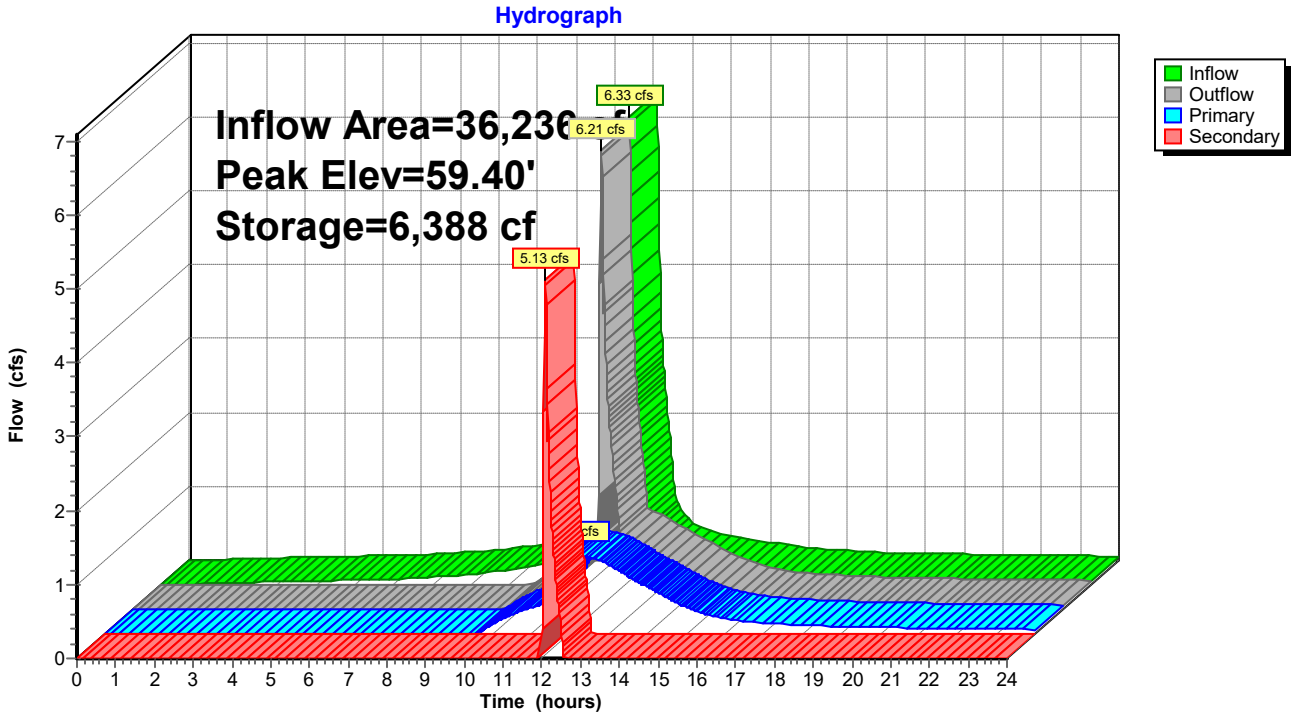
Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	7,220 cf	**20.00'W x 180.90'L x 5.00'H Porous Pavment** 18,090 cf Overall - 40 cf Embedded = 18,050 cf x 40.0% Voids
#2	56.84'	40 cf	**6.0" Round 6" underdrain** Inside #1 L= 204.0'
		7,260 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	56.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.84' / 56.67' S= 0.0567 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	59.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.08 cfs @ 12.14 hrs HW=59.40' TW=57.29' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.08 cfs @ 5.52 fps)

Secondary OutFlow Max=5.12 cfs @ 12.09 hrs HW=59.37' TW=58.84' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 5.12 cfs @ 1.26 fps)

Pond 15P: Por Pvt-D1H



Summary for Pond 16P: Por Pvt-D2C

Porous Pavement in Parking Spaces Only

Inflow Area = 6,166 sf, 86.99% Impervious, Inflow Depth > 8.16" for 50-yr event
Inflow = 3.27 cfs @ 12.19 hrs, Volume= 4,194 cf
Outflow = 1.06 cfs @ 12.29 hrs, Volume= 3,584 cf, Atten= 68%, Lag= 5.7 min
Primary = 1.06 cfs @ 12.29 hrs, Volume= 3,584 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 18P : Por Pvt-D2D

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 55.09' @ 12.29 hrs Surf.Area= 800 sf Storage= 1,316 cf

Plug-Flow detention time= 114.3 min calculated for 3,583 cf (85% of inflow)
Center-of-Mass det. time= 56.1 min (805.6 - 749.5)

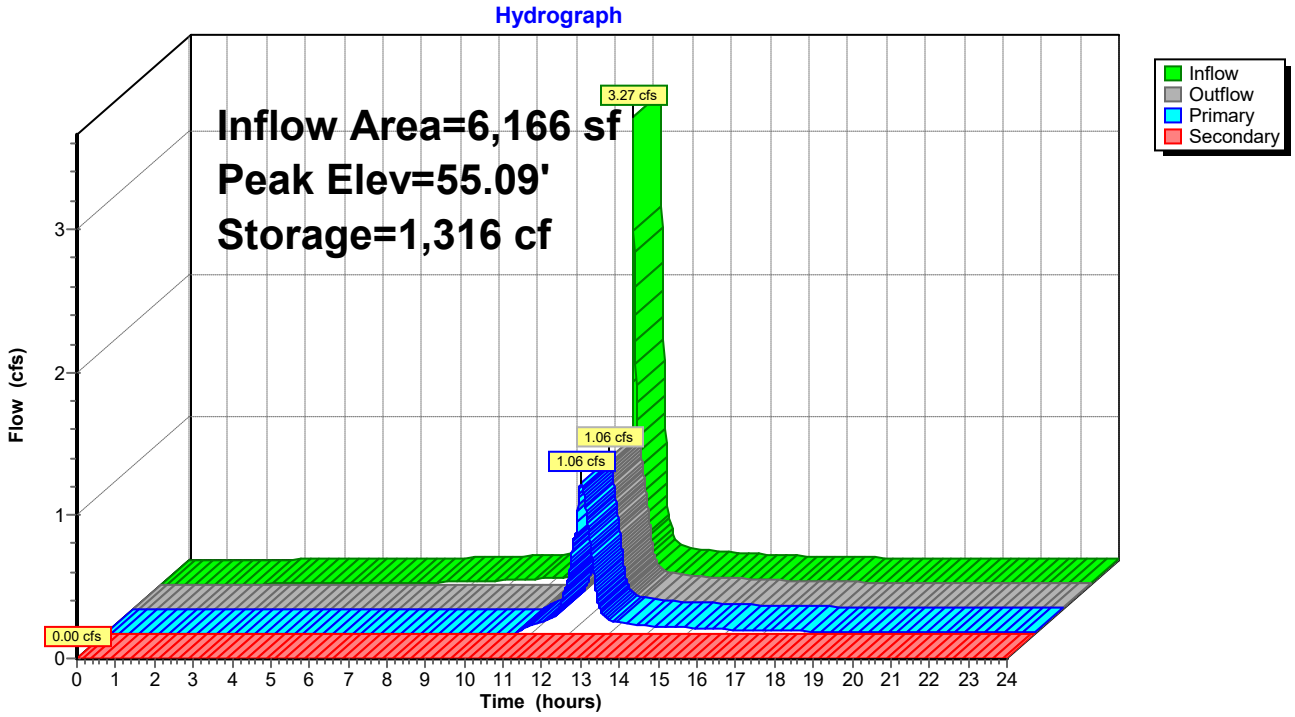
Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	52.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 55.0'
		1,606 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	52.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 52.84' / 52.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	55.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.06 cfs @ 12.29 hrs HW=55.09' TW=44.78' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.06 cfs @ 5.38 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=51.00' TW=49.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 16P: Por Pvt-D2C



Summary for Pond 18P: Por Pvt-D2D

Porous Pavement in Parking Spaces Only

Inflow Area = 6,023 sf, 88.83% Impervious, Inflow Depth > 6.97" for 50-yr event
Inflow = 1.04 cfs @ 12.07 hrs, Volume= 3,498 cf
Outflow = 0.69 cfs @ 12.15 hrs, Volume= 2,889 cf, Atten= 33%, Lag= 4.8 min
Primary = 0.69 cfs @ 12.15 hrs, Volume= 2,889 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 19P : Por Pvt-D2E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 51.95' @ 12.15 hrs Surf.Area= 800 sf Storage= 950 cf

Plug-Flow detention time= 138.4 min calculated for 2,889 cf (83% of inflow)
Center-of-Mass det. time= 67.3 min (818.3 - 751.1)

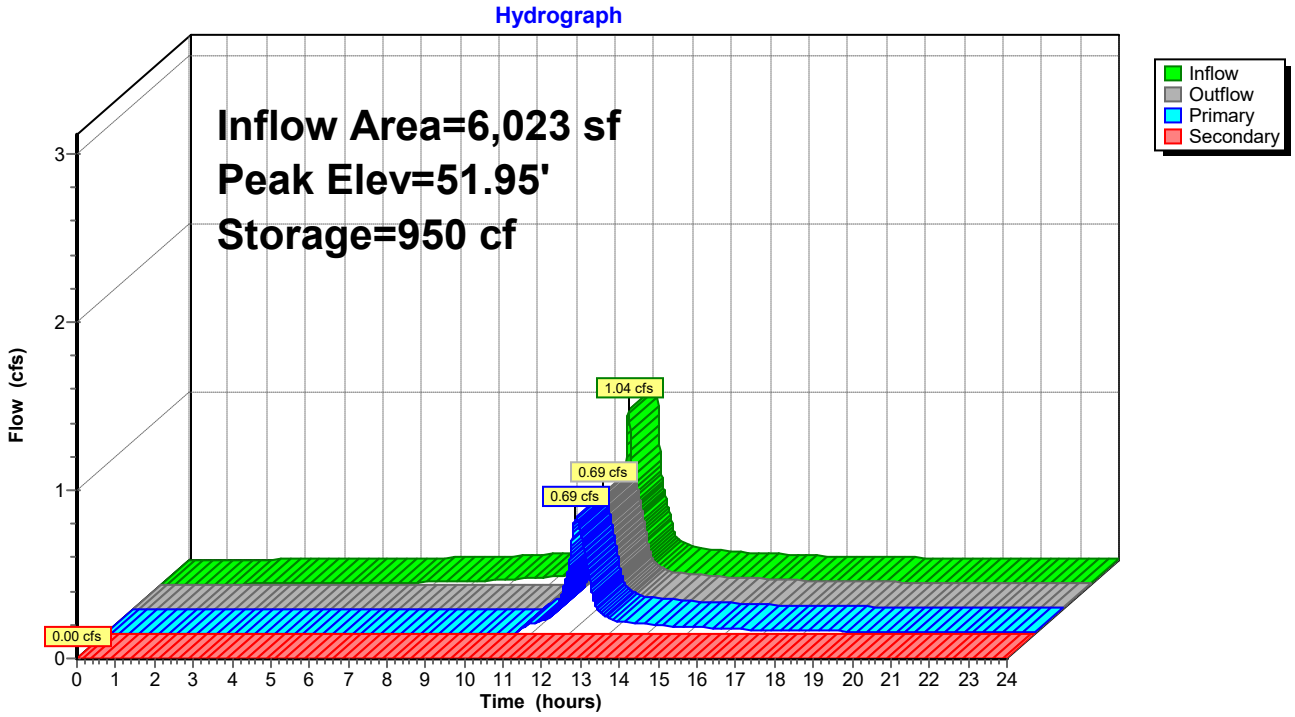
Volume	Invert	Avail.Storage	Storage Description
#1	49.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	50.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 54.0'
		1,606 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	50.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.84' / 50.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	53.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.69 cfs @ 12.15 hrs HW=51.95' TW=44.61' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.69 cfs @ 3.52 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=49.00' TW=47.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 18P: Por Pvt-D2D



Summary for Pond 19P: Por Pvt-D2E

Porous Pavement in Parking Spaces Only

Inflow Area = 6,016 sf, 88.30% Impervious, Inflow Depth > 6.94" for 50-yr event
Inflow = 1.03 cfs @ 12.07 hrs, Volume= 3,480 cf
Outflow = 0.69 cfs @ 12.15 hrs, Volume= 2,856 cf, Atten= 34%, Lag= 4.8 min
Primary = 0.69 cfs @ 12.15 hrs, Volume= 2,856 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 20P : Por Pvt-D2F

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 49.93' @ 12.15 hrs Surf.Area= 819 sf Storage= 967 cf

Plug-Flow detention time= 140.9 min calculated for 2,856 cf (82% of inflow)
Center-of-Mass det. time= 68.5 min (819.9 - 751.4)

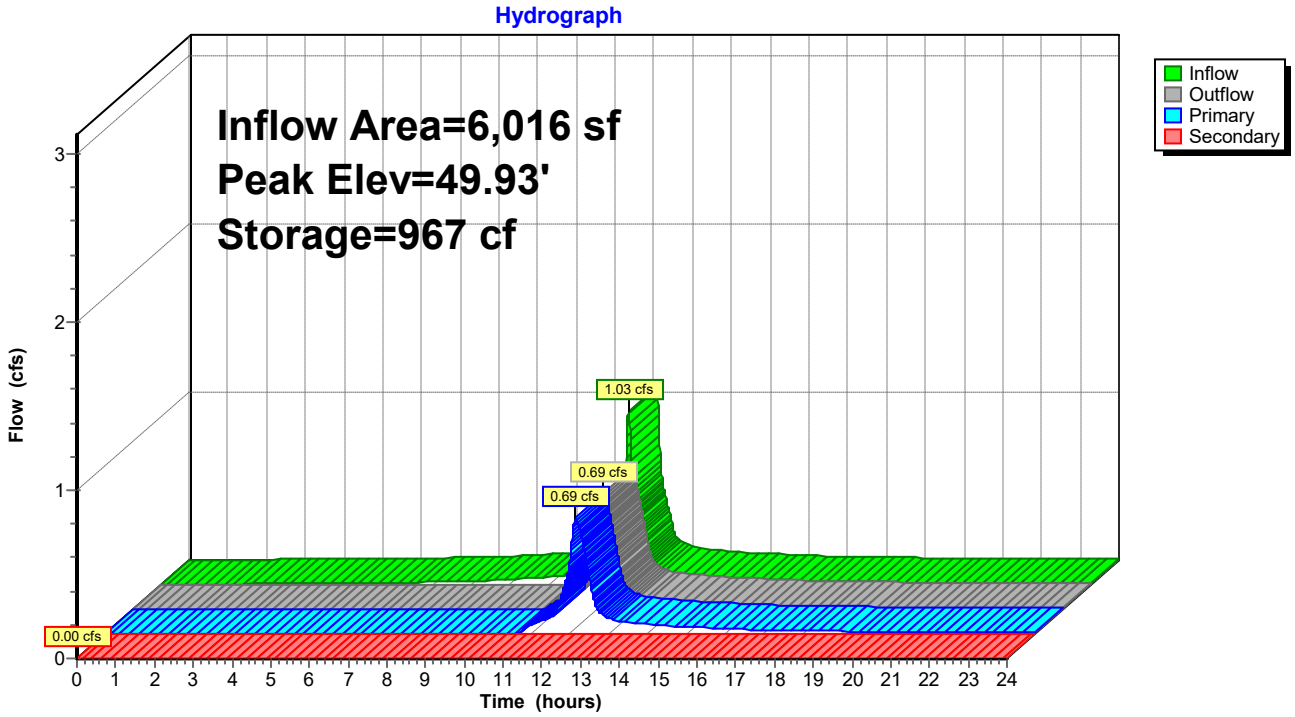
Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	1,634 cf	**20.00'W x 40.95'L x 5.00'H Porous Pavment** 4,095 cf Overall - 11 cf Embedded = 4,084 cf x 40.0% Voids
#2	48.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 54.0'
		1,644 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 48.84' / 48.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	51.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.69 cfs @ 12.15 hrs HW=49.93' TW=44.62' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.69 cfs @ 3.49 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=47.00' TW=45.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 19P: Por Pvt-D2E



Summary for Pond 20P: Por Pvt-D2F

Porous Pavement in Parking Spaces Only

Inflow Area = 5,836 sf, 90.88% Impervious, Inflow Depth > 7.03" for 50-yr event
Inflow = 1.01 cfs @ 12.07 hrs, Volume= 3,420 cf
Outflow = 0.68 cfs @ 12.15 hrs, Volume= 2,811 cf, Atten= 33%, Lag= 4.7 min
Primary = 0.68 cfs @ 12.15 hrs, Volume= 2,811 cf
Routed to Pond DMH13 : DMH-13
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 21P : Por Pvt-D2G

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 47.92' @ 12.15 hrs Surf.Area= 800 sf Storage= 940 cf

Plug-Flow detention time= 140.7 min calculated for 2,811 cf (82% of inflow)
Center-of-Mass det. time= 68.6 min (818.3 - 749.7)

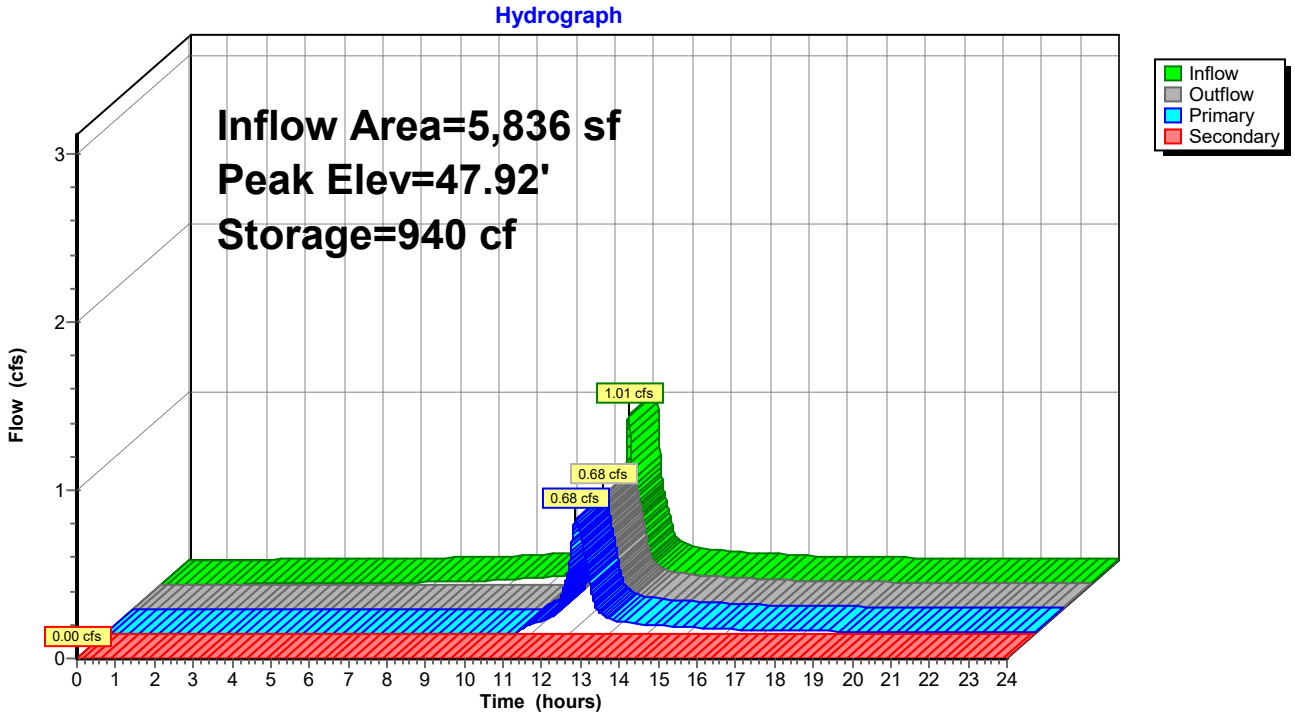
Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	46.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 57.0'
		1,607 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	46.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.84' / 46.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	49.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.68 cfs @ 12.15 hrs HW=47.92' TW=44.61' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.68 cfs @ 3.45 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.00' TW=42.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 20P: Por Pvt-D2F



Summary for Pond 21P: Por Pvt-D2G

Porous Pavement in Parking Spaces Only

Inflow Area = 3,234 sf, 56.68% Impervious, Inflow Depth > 6.17" for 50-yr event
Inflow = 0.53 cfs @ 12.07 hrs, Volume= 1,664 cf
Outflow = 0.17 cfs @ 12.35 hrs, Volume= 897 cf, Atten= 67%, Lag= 16.5 min
Primary = 0.17 cfs @ 12.35 hrs, Volume= 897 cf
Routed to Link Sub A : SUB A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 44.13' @ 12.35 hrs Surf.Area= 1,016 sf Storage= 877 cf

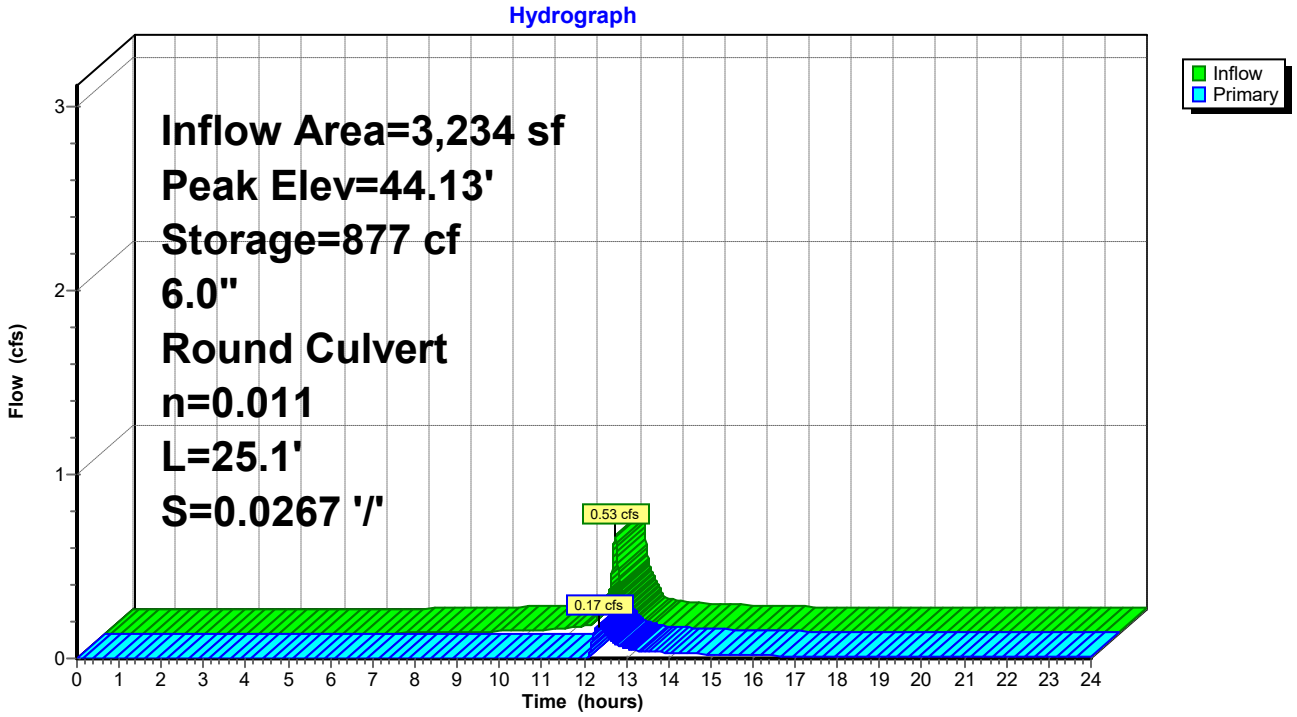
Plug-Flow detention time= 224.4 min calculated for 896 cf (54% of inflow)
Center-of-Mass det. time= 115.2 min (897.4 - 782.3)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	2,021 cf	**20.00'W x 50.80'L x 5.00'H Porous Pavment** 5,080 cf Overall - 27 cf Embedded = 5,053 cf x 40.0% Voids
#2	43.84'	27 cf	**6.0" Round 6" underdrain** Inside #1 L= 138.0'
		2,048 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	43.84'	**6.0" Round Culvert** L= 25.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.84' / 43.17' S= 0.0267 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf

Primary OutFlow Max=0.17 cfs @ 12.35 hrs HW=44.13' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.17 cfs @ 1.45 fps)

Pond 21P: Por Pvt-D2G



Summary for Pond DB01: Detention-01

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 60,955 sf, 0.00% Impervious, Inflow Depth > 3.17" for 50-yr event
Inflow = 3.56 cfs @ 12.22 hrs, Volume= 16,110 cf
Outflow = 3.10 cfs @ 12.34 hrs, Volume= 16,110 cf, Atten= 13%, Lag= 7.4 min
Primary = 3.10 cfs @ 12.34 hrs, Volume= 16,110 cf
Routed to Pond DMH13 : DMH-13

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 48.38' @ 12.34 hrs Surf.Area= 1,169 sf Storage= 708 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.6 min (854.5 - 853.0)

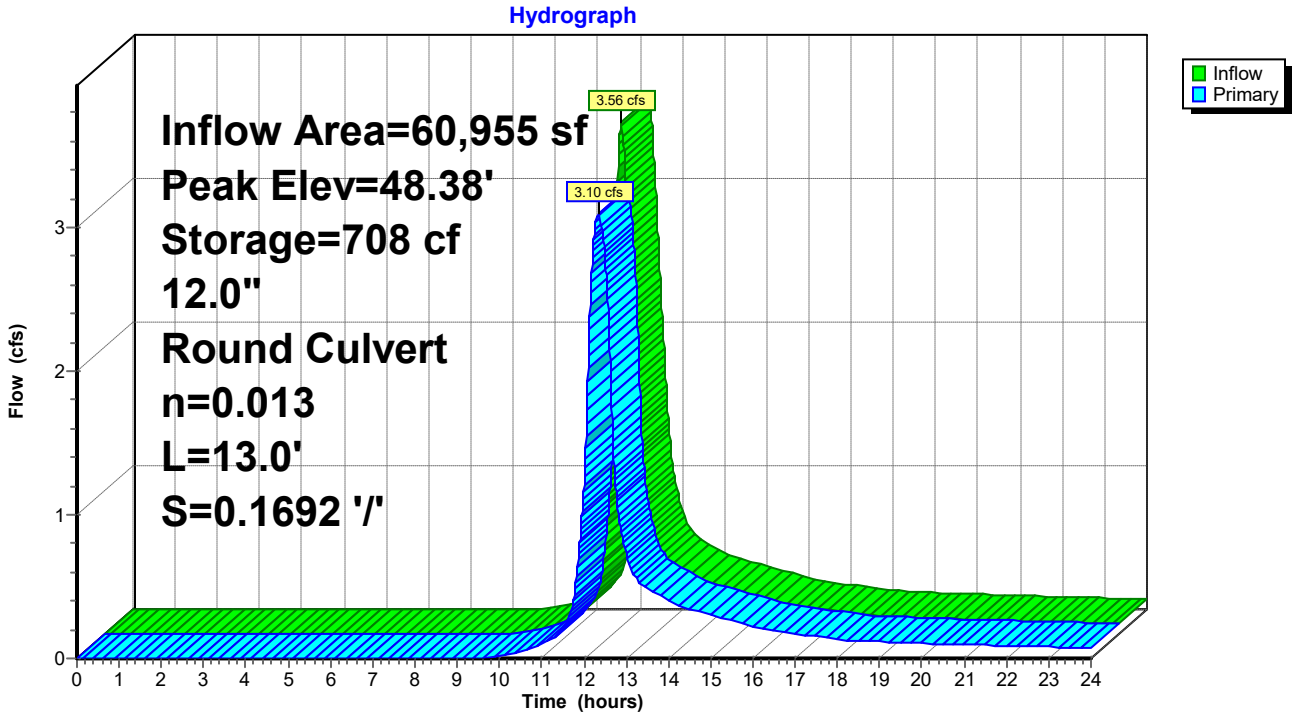
Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	1,719 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
47.00	128	0	0
48.00	614	371	371
49.00	2,082	1,348	1,719

Device	Routing	Invert	Outlet Devices
#1	Primary	46.80'	**12.0" Round Culvert** L= 13.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.80' / 44.60' S= 0.1692 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.10 cfs @ 12.34 hrs HW=48.38' TW=44.74' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.10 cfs @ 3.95 fps)

Pond DB01: Detention-01



Summary for Pond DB02: Detention-02

Inflow Area = 10,676 sf, 0.00% Impervious, Inflow Depth > 4.78" for 50-yr event
Inflow = 0.97 cfs @ 12.25 hrs, Volume= 4,252 cf
Outflow = 0.76 cfs @ 12.39 hrs, Volume= 3,685 cf, Atten= 22%, Lag= 8.7 min
Primary = 0.76 cfs @ 12.39 hrs, Volume= 3,685 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.94' @ 12.39 hrs Surf.Area= 1,742 sf Storage= 1,151 cf

Plug-Flow detention time= 101.3 min calculated for 3,683 cf (87% of inflow)
Center-of-Mass det. time= 43.1 min (865.9 - 822.8)

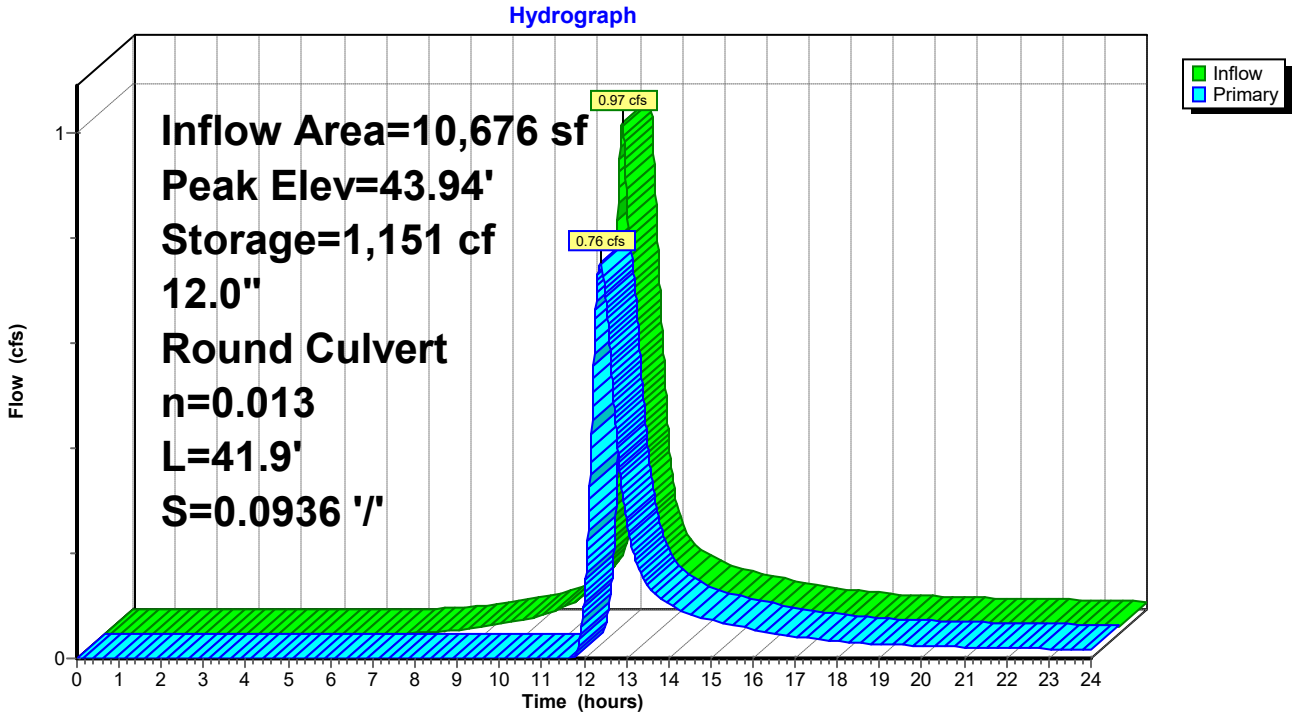
Volume	Invert	Avail.Storage	Storage Description
#1	43.00'	3,637 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.00	703	0	0
44.00	1,807	1,255	1,255
45.00	2,956	2,382	3,637

Device	Routing	Invert	Outlet Devices
#1	Primary	43.50'	**12.0" Round Culvert** L= 41.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.50' / 39.58' S= 0.0936 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.76 cfs @ 12.39 hrs HW=43.94' TW=40.42' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.76 cfs @ 2.26 fps)

Pond DB02: Detention-02



Summary for Pond DB03: Detention-03

Inflow Area = 13,682 sf, 0.00% Impervious, Inflow Depth > 4.56" for 50-yr event
Inflow = 1.34 cfs @ 12.18 hrs, Volume= 5,197 cf
Outflow = 0.95 cfs @ 12.32 hrs, Volume= 4,518 cf, Atten= 29%, Lag= 8.7 min
Primary = 0.95 cfs @ 12.32 hrs, Volume= 4,518 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.00' @ 12.32 hrs Surf.Area= 2,022 sf Storage= 1,447 cf

Plug-Flow detention time= 100.5 min calculated for 4,518 cf (87% of inflow)
Center-of-Mass det. time= 42.5 min (865.9 - 823.5)

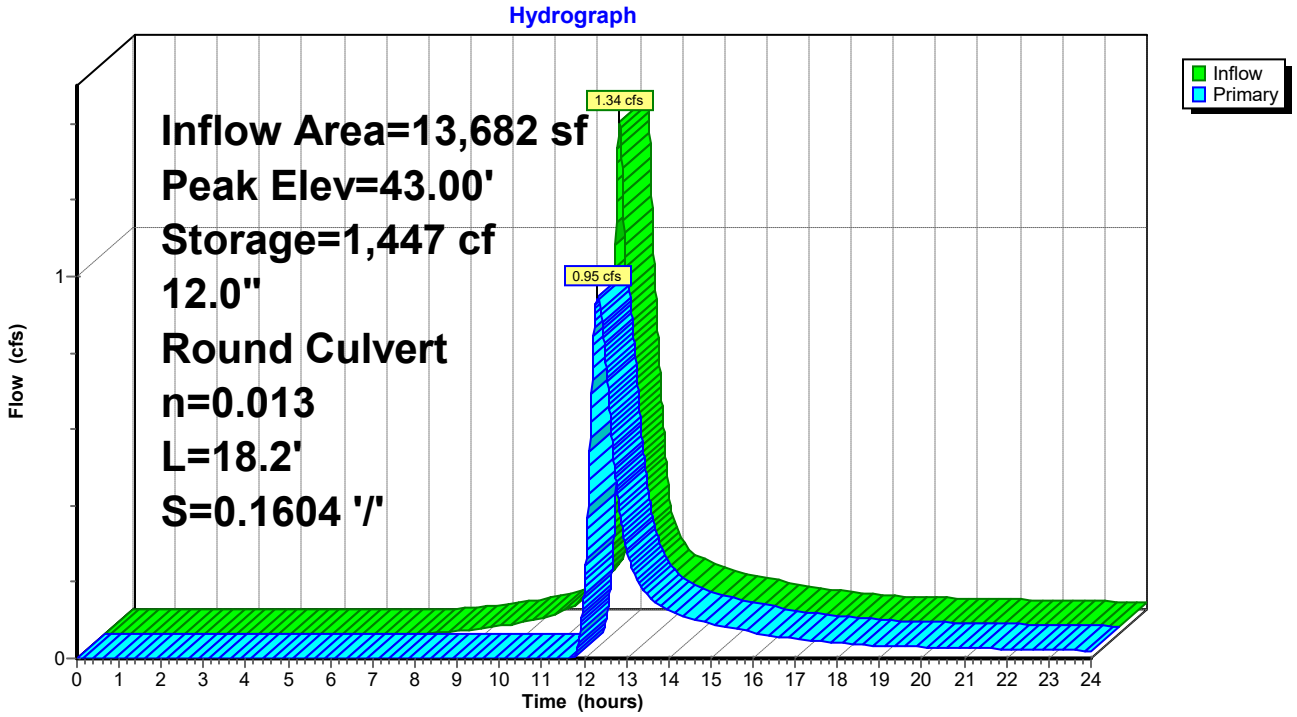
Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	12,357 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	870	0	0
43.00	2,022	1,446	1,446
44.00	3,054	2,538	3,984
45.00	4,148	3,601	7,585
46.00	5,395	4,772	12,357

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	**12.0" Round Culvert** L= 18.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 39.58' S= 0.1604 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.95 cfs @ 12.32 hrs HW=43.00' TW=40.50' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.95 cfs @ 2.41 fps)

Pond DB03: Detention-03



Summary for Pond DMH13: DMH-13

[57] Hint: Peaked at 44.78' (Flood elevation advised)

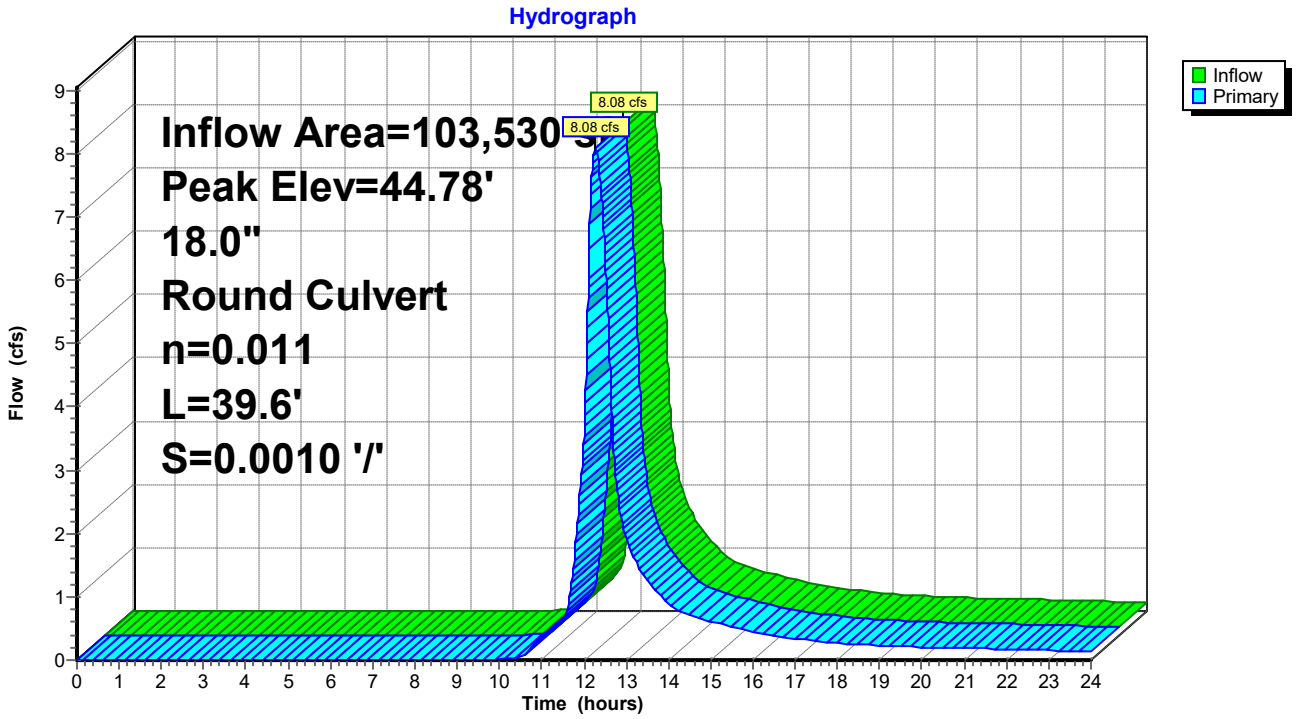
Inflow Area = 103,530 sf, 35.12% Impervious, Inflow Depth > 4.48" for 50-yr event
Inflow = 8.08 cfs @ 12.26 hrs, Volume= 38,645 cf
Outflow = 8.08 cfs @ 12.26 hrs, Volume= 38,645 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.08 cfs @ 12.26 hrs, Volume= 38,645 cf
Routed to Link Sub A : SUB A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 44.78' @ 12.26 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.54'	**18.0" Round Culvert** L= 39.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.54' / 42.50' S= 0.0010 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf

Primary OutFlow Max=8.08 cfs @ 12.26 hrs HW=44.78' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 8.08 cfs @ 4.57 fps)

Pond DMH13: DMH-13



Summary for Pond DMH8: DMH-08

[57] Hint: Peaked at 40.77' (Flood elevation advised)

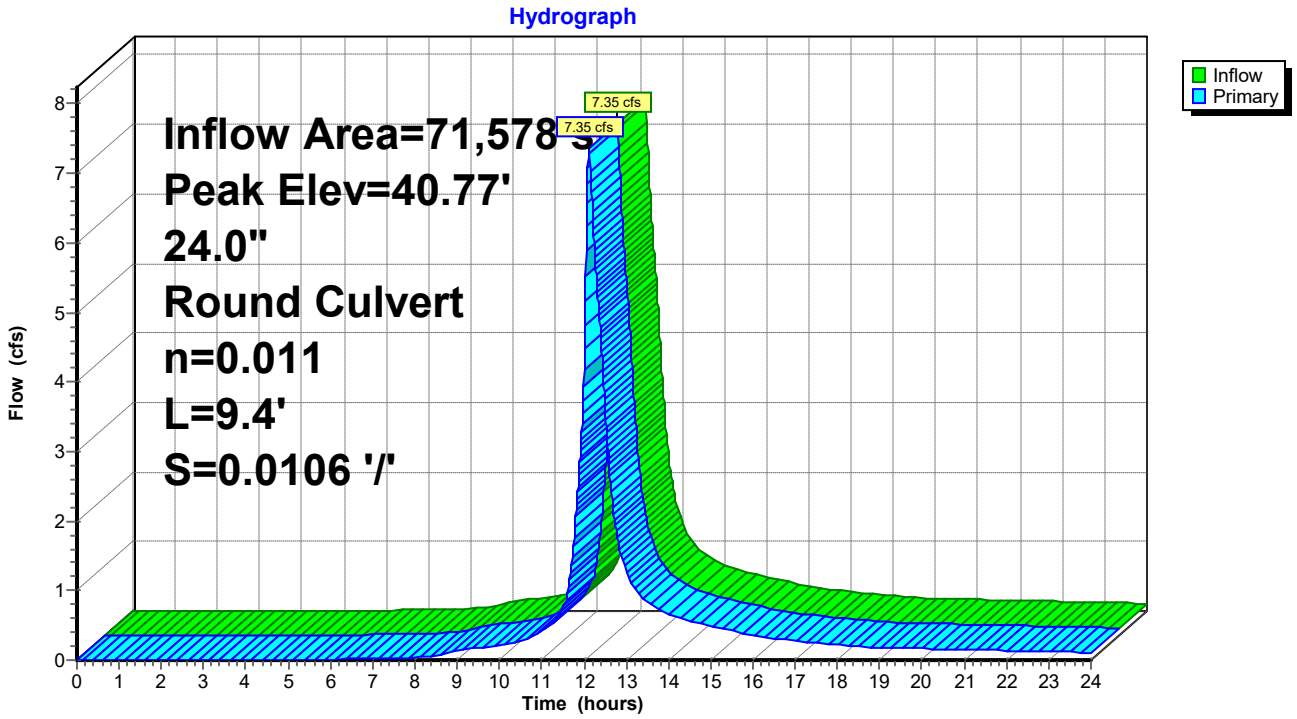
Inflow Area = 71,578 sf, 52.12% Impervious, Inflow Depth > 5.43" for 50-yr event
Inflow = 7.35 cfs @ 12.12 hrs, Volume= 32,384 cf
Outflow = 7.35 cfs @ 12.12 hrs, Volume= 32,384 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.35 cfs @ 12.12 hrs, Volume= 32,384 cf
Routed to Link 2 : Pipe 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 40.77' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.25'	**24.0" Round Culvert** L= 9.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.25' / 39.15' S= 0.0106 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=7.35 cfs @ 12.12 hrs HW=40.77' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 7.35 cfs @ 3.96 fps)

Pond DMH8: DMH-08



Summary for Pond PP02: Por Pvt-02

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 18,123 sf, 81.93% Impervious, Inflow Depth > 6.88" for 50-yr event
Inflow = 3.15 cfs @ 12.07 hrs, Volume= 10,390 cf
Outflow = 2.68 cfs @ 12.10 hrs, Volume= 9,657 cf, Atten= 15%, Lag= 2.0 min
Primary = 2.68 cfs @ 12.10 hrs, Volume= 9,657 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.04' @ 12.12 hrs Surf.Area= 1,476 sf Storage= 1,332 cf

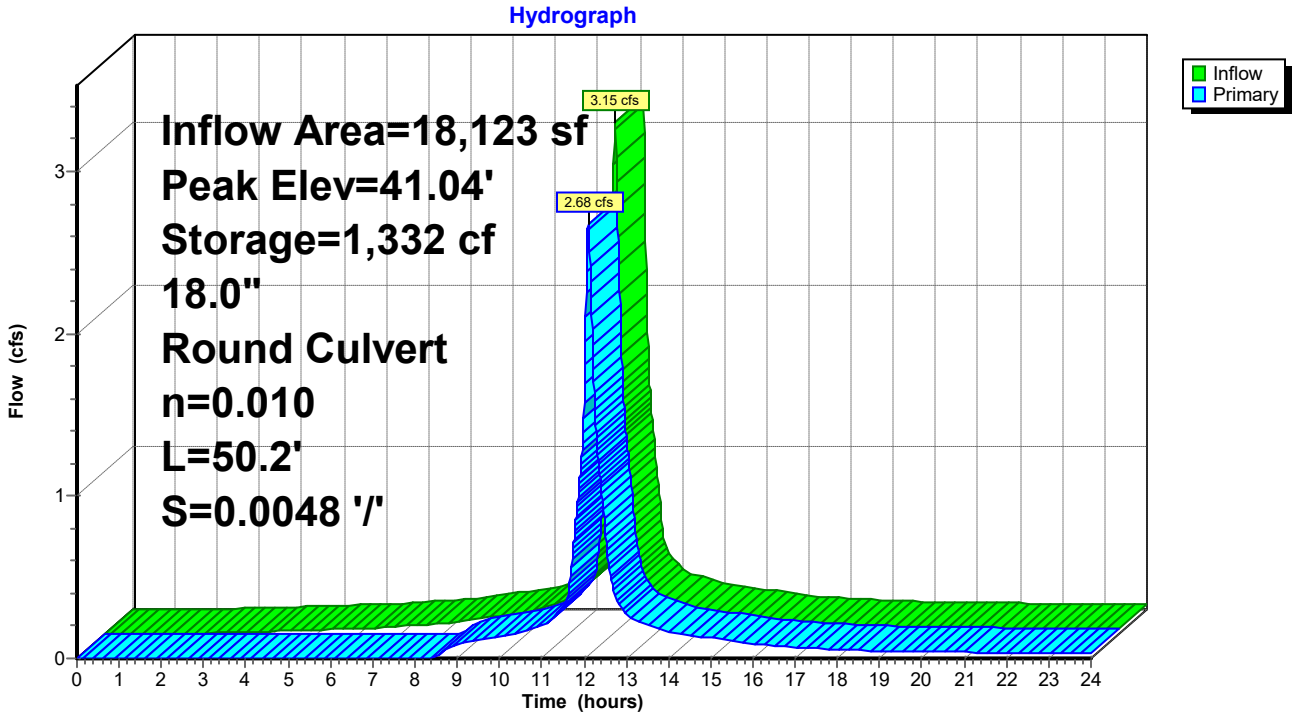
Plug-Flow detention time= 71.2 min calculated for 9,657 cf (93% of inflow)
Center-of-Mass det. time= 33.4 min (794.6 - 761.2)

Volume	Invert	Avail.Storage	Storage Description
#1	38.80'	2,946 cf	**18.00'W x 82.00'L x 5.00'H Porous Pavment** 7,380 cf Overall - 14 cf Embedded = 7,366 cf x 40.0% Voids
#2	40.64'	14 cf	**6.0" Round 6" underdrain** Inside #1 L= 72.0'
		2,960 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	39.96'	**18.0" Round Culvert** L= 50.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.96' / 39.72' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.59 cfs @ 12.10 hrs HW=41.03' TW=40.76' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 2.59 cfs @ 2.68 fps)

Pond PP02: Por Pvt-02



Summary for Pond PP03: Por Pvt-03

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 30,180 sf, 76.35% Impervious, Inflow Depth > 6.88" for 50-yr event
Inflow = 5.25 cfs @ 12.07 hrs, Volume= 17,302 cf
Outflow = 3.52 cfs @ 12.15 hrs, Volume= 15,852 cf, Atten= 33%, Lag= 4.7 min
Primary = 3.52 cfs @ 12.15 hrs, Volume= 15,852 cf
Routed to Link 3 : Pipe 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.23' @ 12.15 hrs Surf.Area= 2,484 sf Storage= 3,220 cf

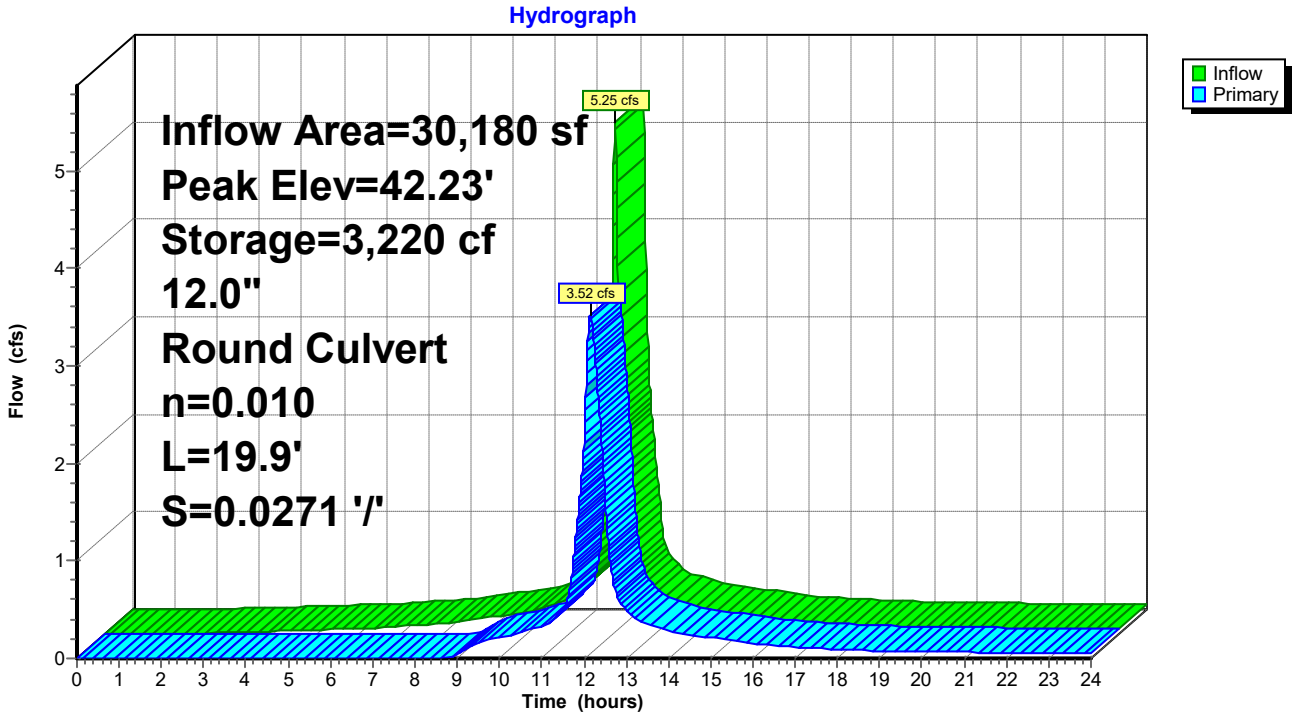
Plug-Flow detention time= 83.6 min calculated for 15,852 cf (92% of inflow)
Center-of-Mass det. time= 40.5 min (801.7 - 761.2)

Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	4,958 cf	**18.00'W x 138.00'L x 5.00'H Porous Pavment** 12,420 cf Overall - 24 cf Embedded = 12,396 cf x 40.0% Voids
#2	40.34'	24 cf	**6.0" Round 6" underdrain** Inside #1 L= 124.0'
		4,983 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.34'	**12.0" Round Culvert** L= 19.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.34' / 39.80' S= 0.0271 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.51 cfs @ 12.15 hrs HW=42.23' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.51 cfs @ 4.48 fps)

Pond PP03: Por Pvt-03



Summary for Pond PP04: Por Pvt-04

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 9,547 sf, 73.20% Impervious, Inflow Depth > 6.76" for 50-yr event
Inflow = 1.65 cfs @ 12.07 hrs, Volume= 5,379 cf
Outflow = 1.47 cfs @ 12.11 hrs, Volume= 4,567 cf, Atten= 11%, Lag= 2.3 min
Primary = 1.47 cfs @ 12.11 hrs, Volume= 4,567 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.75' @ 12.11 hrs Surf.Area= 1,296 sf Storage= 1,173 cf

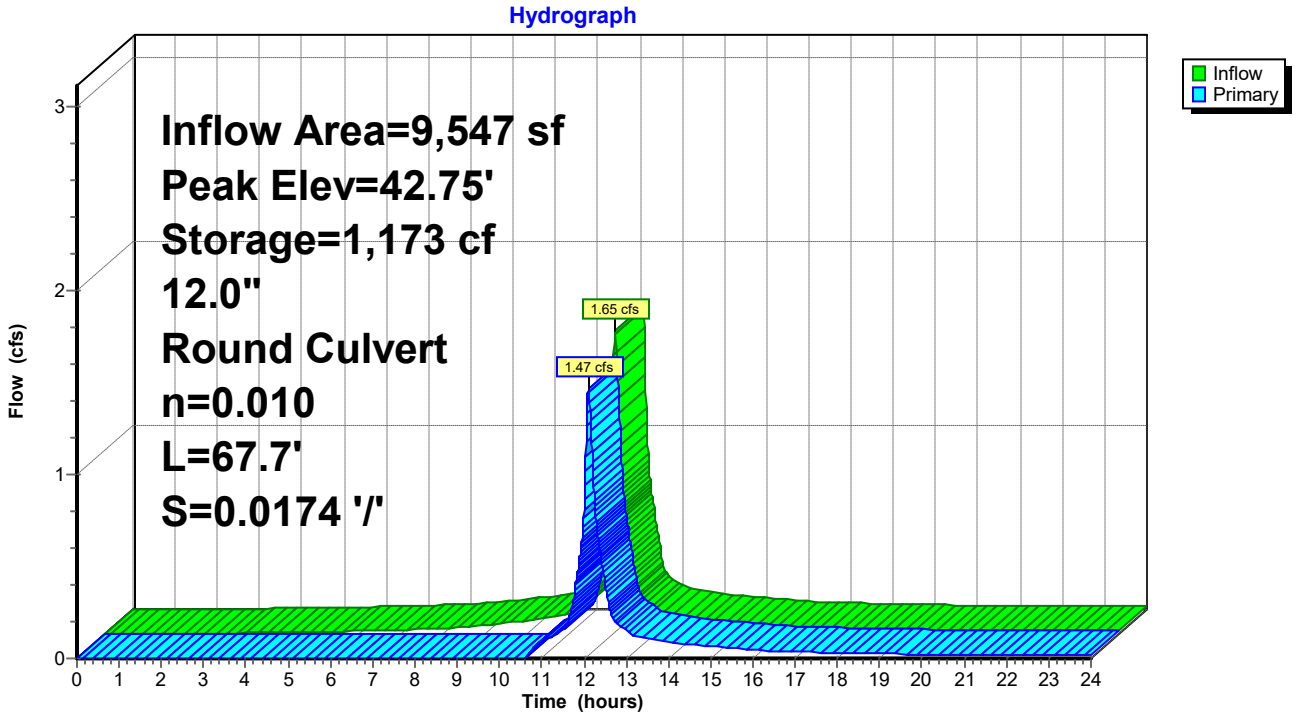
Plug-Flow detention time= 116.8 min calculated for 4,567 cf (85% of inflow)
Center-of-Mass det. time= 52.9 min (818.2 - 765.3)

Volume	Invert	Avail.Storage	Storage Description
#1	40.50'	2,587 cf	**18.00'W x 72.00'L x 5.00'H Porous Pavment** 6,480 cf Overall - 13 cf Embedded = 6,467 cf x 40.0% Voids
#2	42.00'	13 cf	**6.0" Round 6" underdrain** Inside #1 L= 68.0'
		2,600 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	**12.0" Round Culvert** L= 67.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.00' / 40.82' S= 0.0174 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.46 cfs @ 12.11 hrs HW=42.75' TW=40.77' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.46 cfs @ 2.32 fps)

Pond PP04: Por Pvt-04



Summary for Pond PP05: Por Pvt-05

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 9,002 sf, 74.73% Impervious, Inflow Depth > 6.53" for 50-yr event
Inflow = 1.53 cfs @ 12.07 hrs, Volume= 4,895 cf
Outflow = 1.33 cfs @ 12.11 hrs, Volume= 3,983 cf, Atten= 13%, Lag= 2.6 min
Primary = 1.33 cfs @ 12.11 hrs, Volume= 3,983 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 44.45' @ 12.11 hrs Surf.Area= 1,457 sf Storage= 1,293 cf

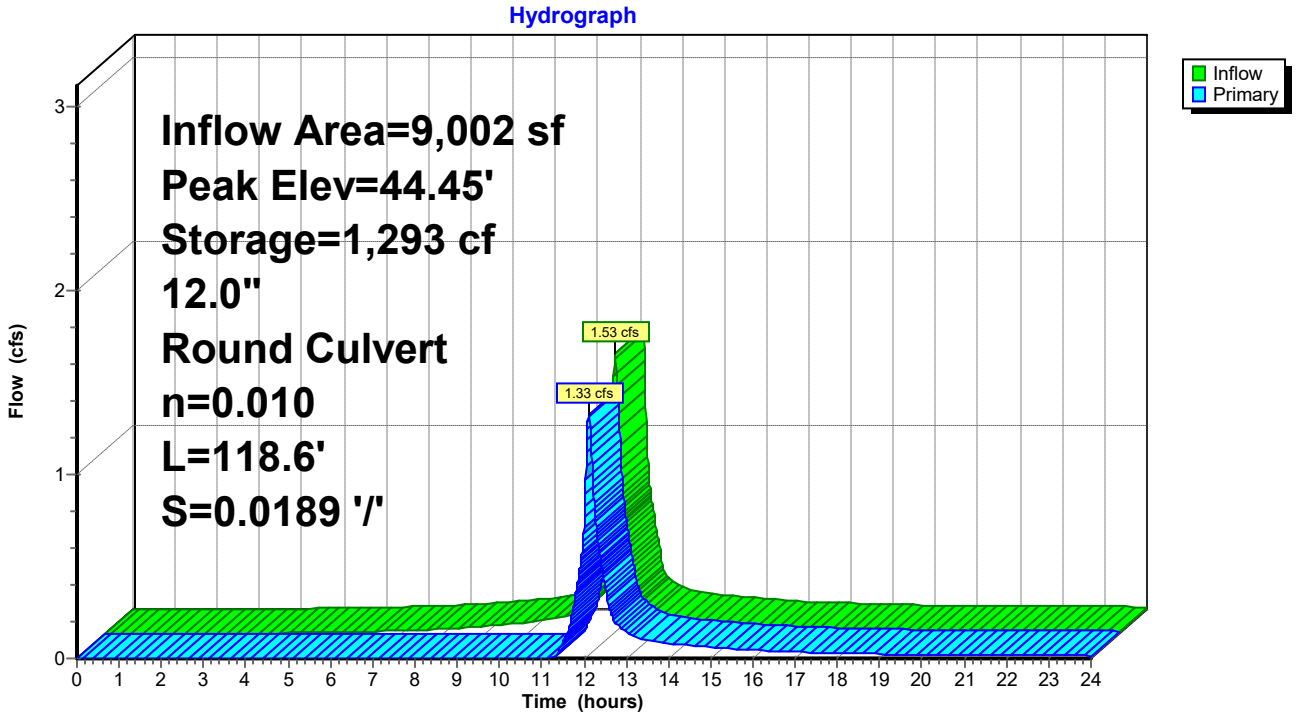
Plug-Flow detention time= 129.3 min calculated for 3,983 cf (81% of inflow)
Center-of-Mass det. time= 57.2 min (829.8 - 772.6)

Volume	Invert	Avail.Storage	Storage Description
#1	42.25'	2,909 cf	**18.00'W x 80.97'L x 5.00'H Porous Pavment** 7,287 cf Overall - 15 cf Embedded = 7,272 cf x 40.0% Voids
#2	43.75'	15 cf	**6.0" Round 6" underdrain** Inside #1 L= 77.0'
		2,924 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	43.75'	**12.0" Round Culvert** L= 118.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.75' / 41.51' S= 0.0189 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.33 cfs @ 12.11 hrs HW=44.45' TW=40.77' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.33 cfs @ 2.25 fps)

Pond PP05: Por Pvt-05



Summary for Pond PP06: Por Pvt-06

Only Main Driveway and Parking Area to be Porous Pavement

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 7,420 sf, 88.26% Impervious, Inflow Depth > 7.00" for 50-yr event
Inflow = 1.30 cfs @ 12.07 hrs, Volume= 4,327 cf
Outflow = 1.30 cfs @ 12.07 hrs, Volume= 4,327 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.30 cfs @ 12.07 hrs, Volume= 4,327 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.25' @ 12.07 hrs Surf.Area= 1,298 sf Storage= 0 cf

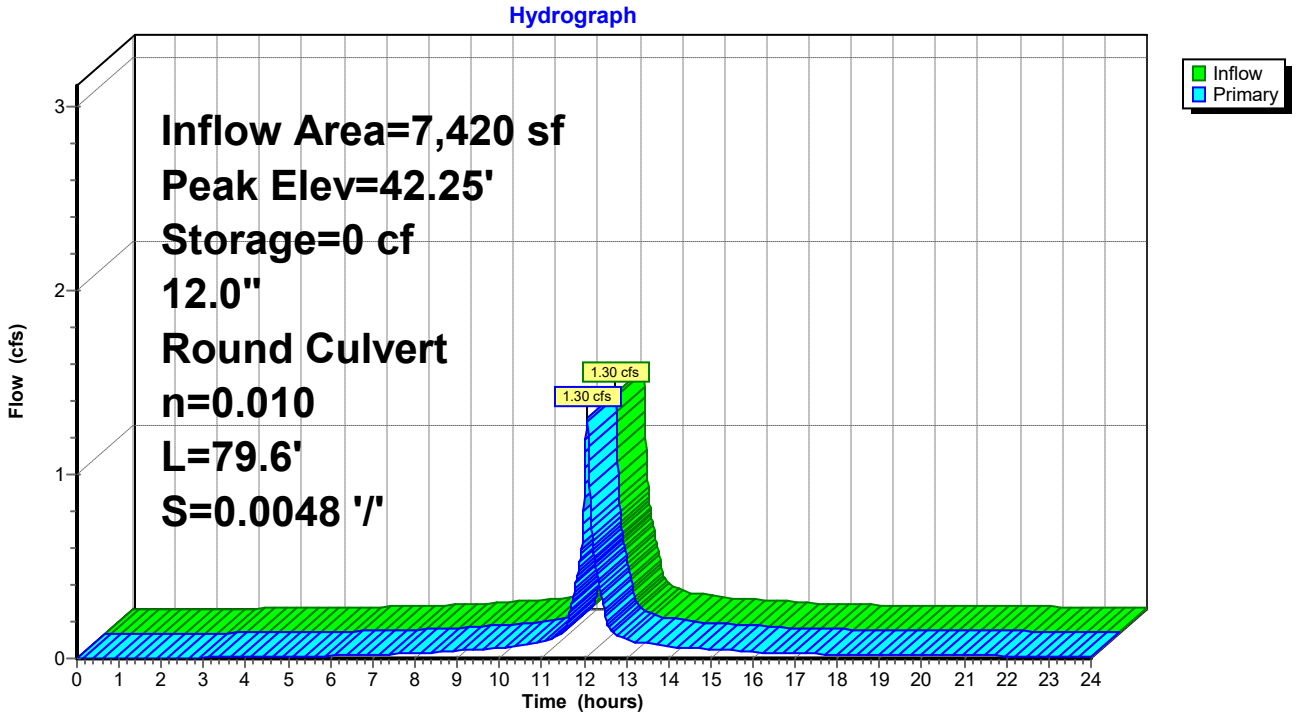
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (756.8 - 756.8)

Volume	Invert	Avail.Storage	Storage Description
#1	42.25'	2,590 cf	**18.00'W x 72.10'L x 5.00'H Porous Pavment** 6,489 cf Overall - 14 cf Embedded = 6,475 cf x 40.0% Voids
#2	43.75'	14 cf	**6.0" Round 6" underdrain** Inside #1 L= 69.0'
		2,604 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.94'	**12.0" Round Culvert** L= 79.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.94' / 40.56' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.69 cfs @ 12.07 hrs HW=42.25' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.69 cfs @ 3.42 fps)

Pond PP06: Por Pvt-06



Summary for Pond PP07: Por Pvt-07

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 27,046 sf, 54.55% Impervious, Inflow Depth > 5.82" for 50-yr event
Inflow = 4.25 cfs @ 12.07 hrs, Volume= 13,125 cf
Outflow = 2.61 cfs @ 12.16 hrs, Volume= 11,637 cf, Atten= 39%, Lag= 5.5 min
Primary = 2.61 cfs @ 12.16 hrs, Volume= 11,637 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.36' @ 12.16 hrs Surf.Area= 4,085 sf Storage= 3,386 cf

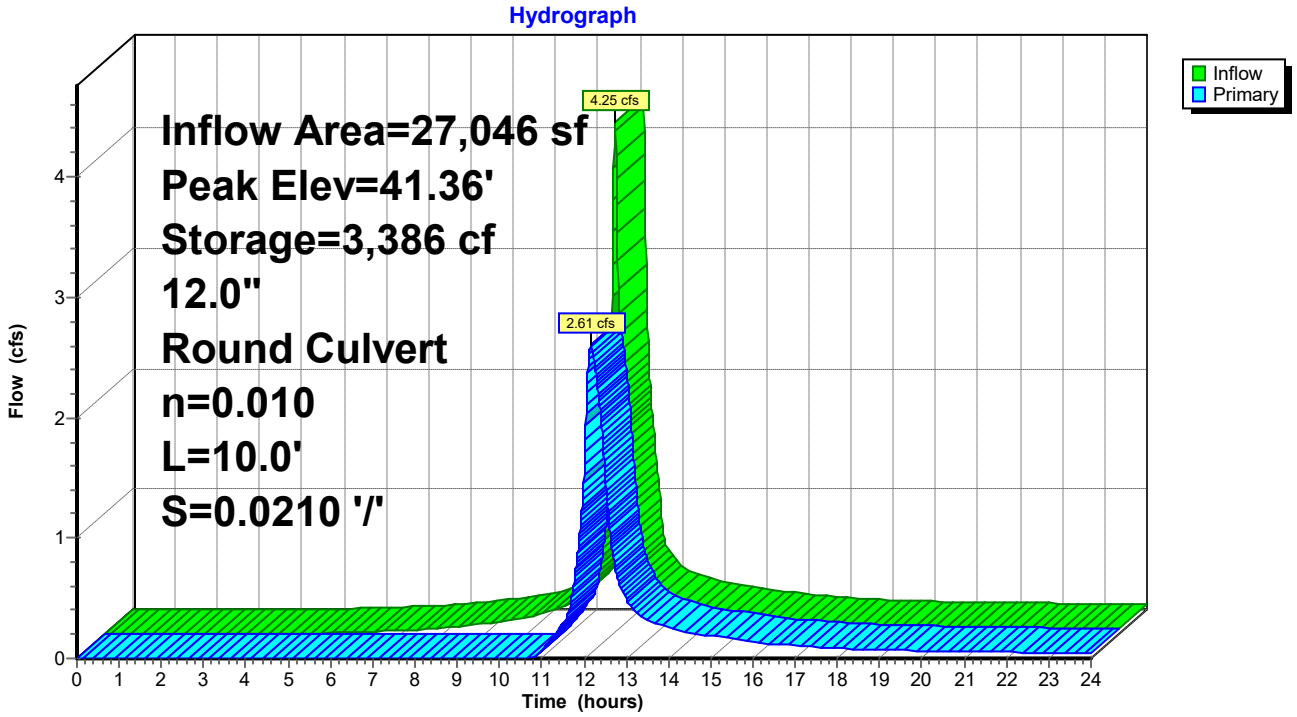
Plug-Flow detention time= 96.1 min calculated for 11,637 cf (89% of inflow)
Center-of-Mass det. time= 43.3 min (834.1 - 790.8)

Volume	Invert	Avail.Storage	Storage Description
#1	39.30'	8,152 cf	**18.00'W x 226.97'L x 5.00'H Porous Pavment** 20,427 cf Overall - 46 cf Embedded = 20,381 cf x 40.0% Voids
#2	41.14'	46 cf	**6.0" Round 6" underdrain** Inside #1 L= 236.0'
		8,199 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.10'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.10' / 39.89' S= 0.0210 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.61 cfs @ 12.16 hrs HW=41.36' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.61 cfs @ 3.32 fps)

Pond PP07: Por Pvt-07



Summary for Pond RG03: Rain Garden-03

Inflow Area = 5,425 sf, 57.01% Impervious, Inflow Depth > 6.40" for 50-yr event
Inflow = 0.83 cfs @ 12.10 hrs, Volume= 2,896 cf
Outflow = 0.52 cfs @ 12.21 hrs, Volume= 2,379 cf, Atten= 37%, Lag= 6.6 min
Primary = 0.52 cfs @ 12.21 hrs, Volume= 2,379 cf
Routed to Link 2 : Pipe 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.23' @ 12.21 hrs Surf.Area= 4,664 sf Storage= 979 cf

Plug-Flow detention time= 134.5 min calculated for 2,378 cf (82% of inflow)
Center-of-Mass det. time= 64.5 min (842.6 - 778.1)

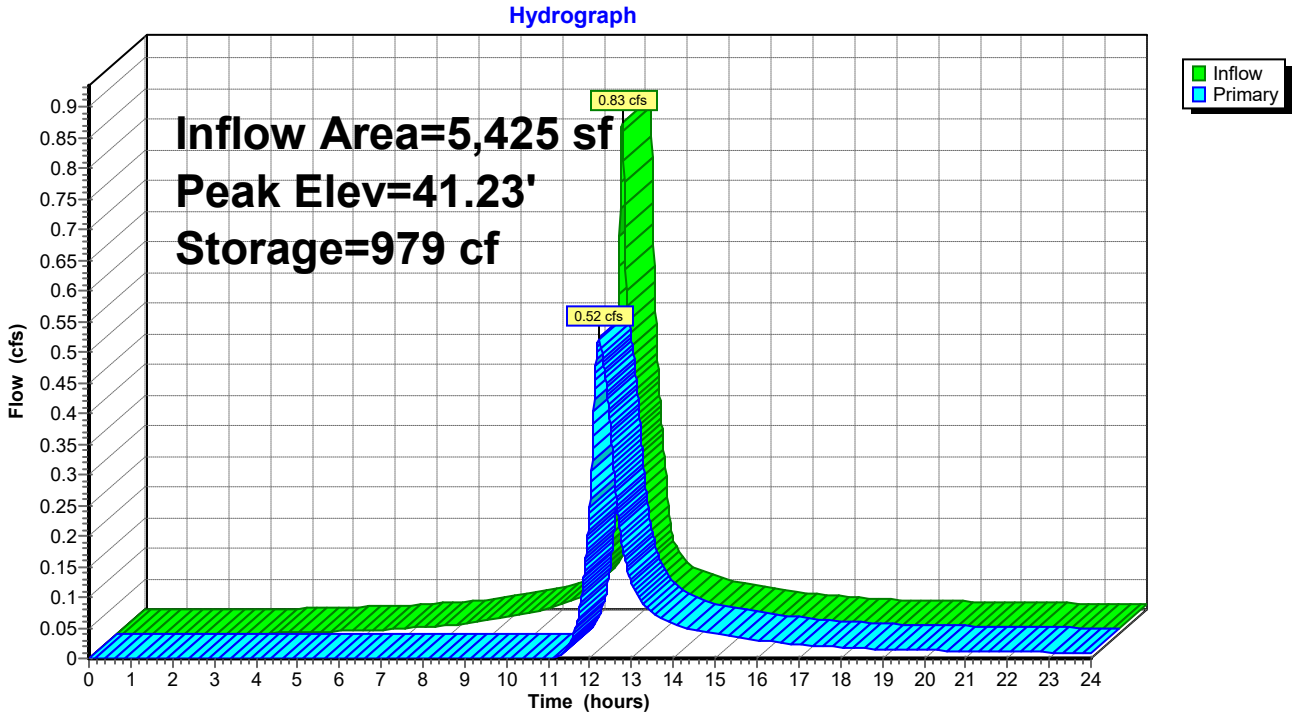
Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	1,867 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	43.67'	115 cf	**18.00'W x 129.55'L x 0.33'H Mulch** 770 cf Overall x 15.0% Voids
#3	41.17'	1,749 cf	**18.00'W x 129.55'L x 2.50'H Greenwich Soil Mix** 5,830 cf Overall x 30.0% Voids
#4	40.17'	928 cf	**18.00'W x 129.55'L x 1.00'H Crushed Stone** 2,332 cf Overall - 12 cf Embedded = 2,320 cf x 40.0% Voids
#5	40.67'	12 cf	**6.0" Round 6" underdrain** Inside #4 L= 62.0'
		4,671 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	1,402	0	0
45.00	2,332	1,867	1,867

Device	Routing	Invert	Outlet Devices
#1	Primary	39.77'	**12.0" Round Culvert** L= 9.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.77' / 39.67' S= 0.0101 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	44.50'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	40.67'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.52 cfs @ 12.21 hrs HW=41.22' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.52 cfs of 2.92 cfs potential flow)
  ├─**2=Orifice/Grate** (Controls 0.00 cfs)
  └─**3=Orifice/Grate** (Orifice Controls 0.52 cfs @ 2.66 fps)

Pond RG03: Rain Garden-03



Summary for Pond RG04: Rain Garden-04

Inflow Area = 10,548 sf, 82.86% Impervious, Inflow Depth > 7.00" for 50-yr event
Inflow = 1.85 cfs @ 12.07 hrs, Volume= 6,151 cf
Outflow = 1.22 cfs @ 12.16 hrs, Volume= 5,974 cf, Atten= 34%, Lag= 5.5 min
Primary = 1.22 cfs @ 12.16 hrs, Volume= 5,974 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.43' @ 12.15 hrs Surf.Area= 1,542 sf Storage= 724 cf

Plug-Flow detention time= 37.9 min calculated for 5,974 cf (97% of inflow)
Center-of-Mass det. time= 20.1 min (776.9 - 756.8)

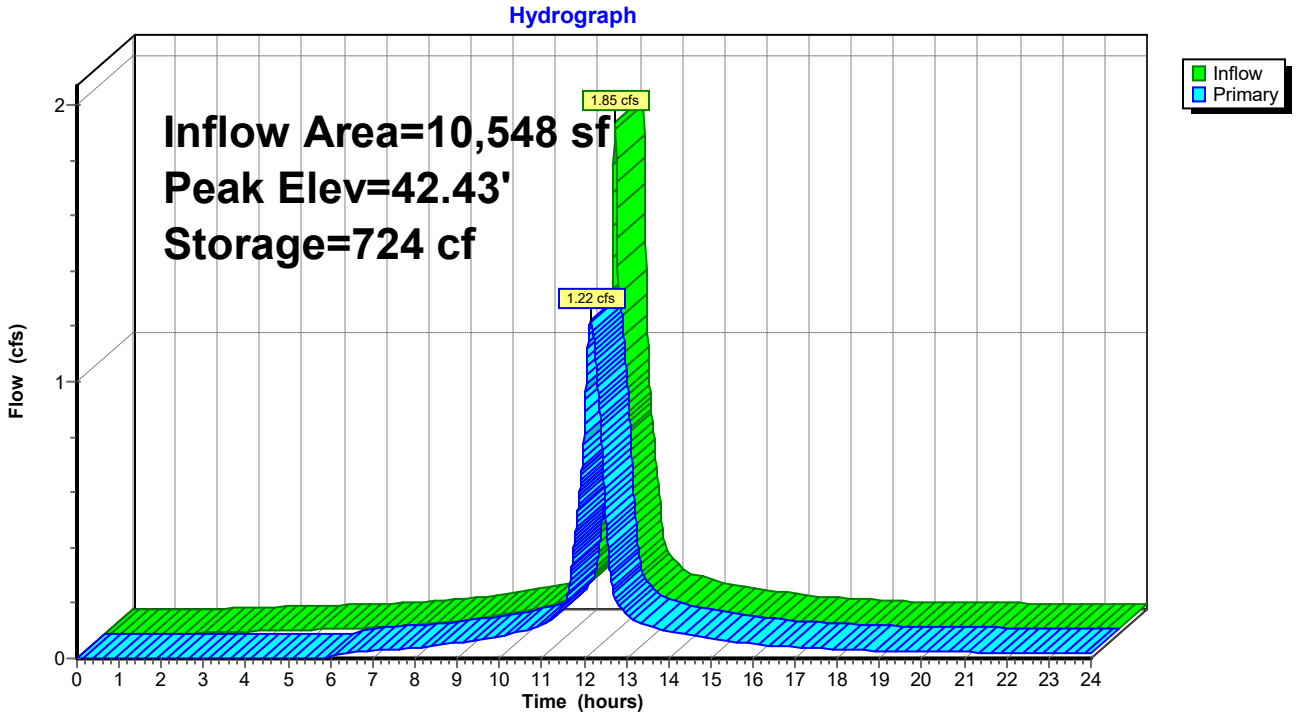
Volume	Invert	Avail.Storage	Storage Description
#1	43.50'	233 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	43.17'	38 cf	**11.00'W x 70.10'L x 0.33'H Mulch** 254 cf Overall x 15.0% Voids
#3	40.67'	578 cf	**11.00'W x 70.10'L x 2.50'H Greenwich Soil Mix** 1,928 cf Overall x 30.0% Voids
#4	39.67'	303 cf	**11.00'W x 70.09'L x 1.00'H Crushed Stone** 771 cf Overall - 14 cf Embedded = 757 cf x 40.0% Voids
#5	40.17'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		1,166 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.50	162	0	0
44.00	771	233	233

Device	Routing	Invert	Outlet Devices
#1	Device 2	43.50'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	40.17'	**12.0" Round Culvert** L= 8.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.17' / 39.96' S= 0.0239 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	40.17'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.23 cfs @ 12.16 hrs HW=42.42' TW=40.73' (Dynamic Tailwater)
└**2=Culvert** (Passes 1.23 cfs of 4.92 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 1.23 cfs @ 6.26 fps)

Pond RG04: Rain Garden-04



Summary for Pond RG06: Rain Garden-06

Inflow Area = 4,026 sf, 70.89% Impervious, Inflow Depth > 6.41" for 50-yr event
Inflow = 0.68 cfs @ 12.07 hrs, Volume= 2,150 cf
Outflow = 0.61 cfs @ 12.11 hrs, Volume= 2,102 cf, Atten= 9%, Lag= 2.1 min
Primary = 0.61 cfs @ 12.11 hrs, Volume= 2,102 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.67' @ 12.11 hrs Surf.Area= 632 sf Storage= 135 cf

Plug-Flow detention time= 26.5 min calculated for 2,102 cf (98% of inflow)
Center-of-Mass det. time= 12.9 min (788.9 - 776.0)

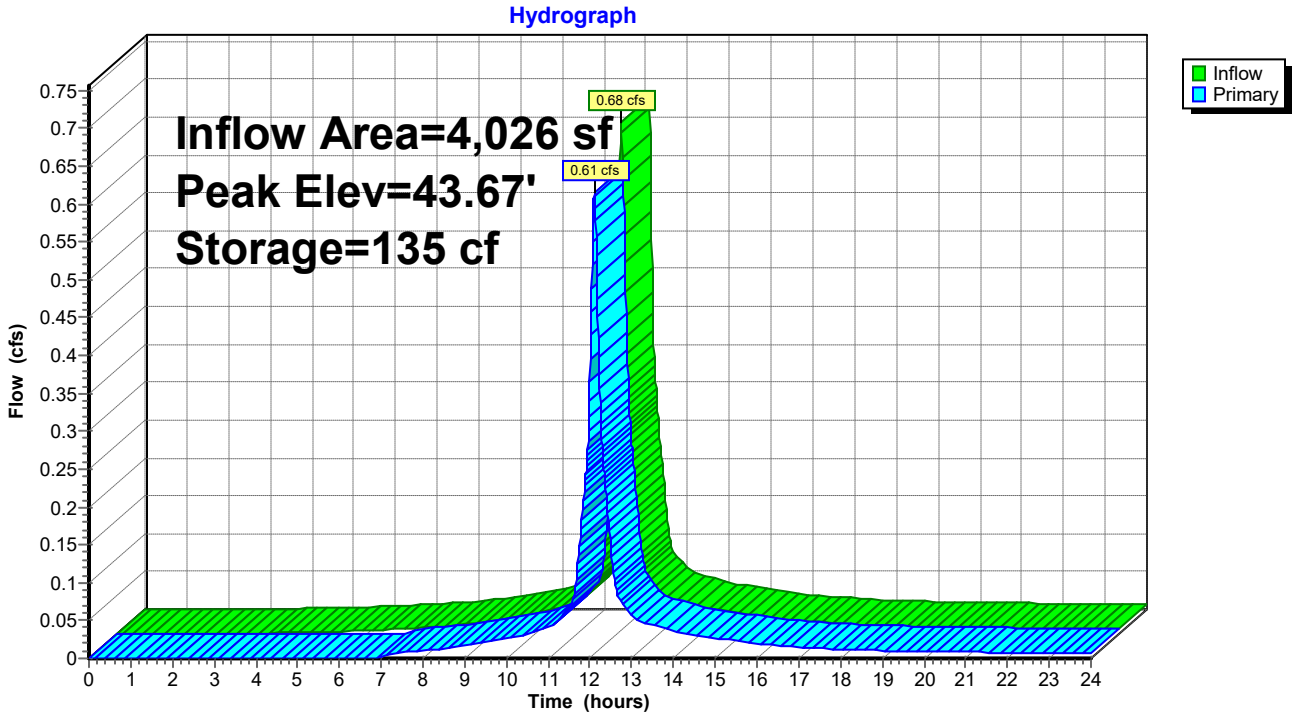
Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	117 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	46.17'	16 cf	**15.00'W x 21.07'L x 0.33'H Mulch** 104 cf Overall x 15.0% Voids
#3	43.67'	237 cf	**15.00'W x 21.07'L x 2.50'H Greenwich Soil Mix** 790 cf Overall x 30.0% Voids
#4	42.67'	121 cf	**15.00'W x 21.07'L x 1.00'H Crushed Stone** 316 cf Overall - 14 cf Embedded = 302 cf x 40.0% Voids
#5	43.00'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		504 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	151	0	0
47.00	316	117	117

Device	Routing	Invert	Outlet Devices
#1	Device 2	46.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	40.18'	**12.0" Round Culvert** L= 91.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.18' / 40.10' S= 0.0009 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	43.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.61 cfs @ 12.11 hrs HW=43.67' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.61 cfs of 4.83 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.61 cfs @ 3.13 fps)

Pond RG06: Rain Garden-06



Summary for Pond RG07: Rain Garden-07

Inflow Area = 4,109 sf, 58.46% Impervious, Inflow Depth > 5.94" for 50-yr event
Inflow = 0.66 cfs @ 12.07 hrs, Volume= 2,034 cf
Outflow = 0.60 cfs @ 12.10 hrs, Volume= 1,988 cf, Atten= 8%, Lag= 2.0 min
Primary = 0.60 cfs @ 12.10 hrs, Volume= 1,988 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.65' @ 12.10 hrs Surf.Area= 305 sf Storage= 128 cf

Plug-Flow detention time= 25.4 min calculated for 1,987 cf (98% of inflow)
Center-of-Mass det. time= 11.8 min (799.8 - 788.1)

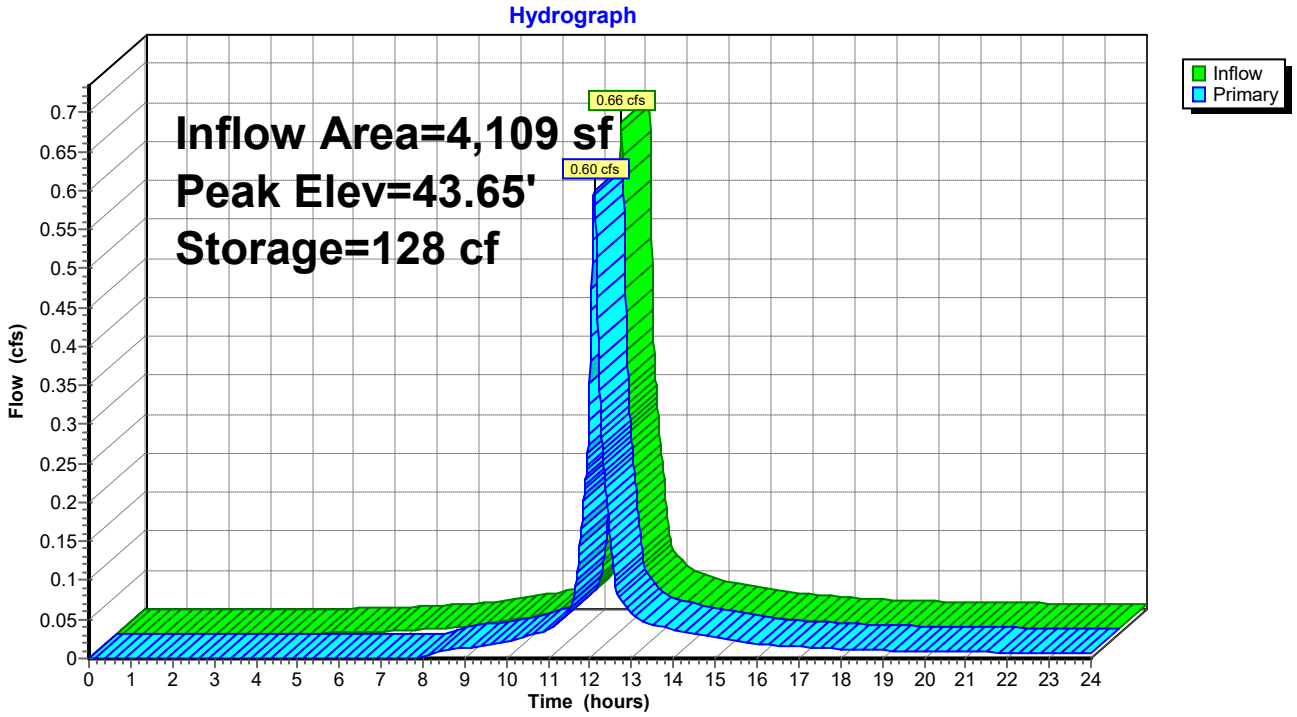
Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	112 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	46.17'	15 cf	**15.00'W x 20.33'L x 0.33'H Mulch** 101 cf Overall x 15.0% Voids
#3	43.67'	229 cf	**15.00'W x 20.33'L x 2.50'H Greenwich Soil Mix** 762 cf Overall x 30.0% Voids
#4	42.67'	116 cf	**15.00'W x 20.33'L x 1.00'H Crushed Stone** 305 cf Overall - 14 cf Embedded = 291 cf x 40.0% Voids
#5	43.00'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		486 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	144	0	0
47.00	305	112	112

Device	Routing	Invert	Outlet Devices
#1	Device 2	46.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	42.00'	**12.0" Round Culvert** L= 85.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.00' / 40.10' S= 0.0222 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	43.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.60 cfs @ 12.10 hrs HW=43.65' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.60 cfs of 4.06 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.60 cfs @ 3.05 fps)

Pond RG07: Rain Garden-07



Summary for Pond UI01: Und Inf 01

Inflow Area = 53,524 sf,100.00% Impervious, Inflow Depth > 7.36" for 50-yr event
Inflow = 9.50 cfs @ 12.07 hrs, Volume= 32,809 cf
Outflow = 4.85 cfs @ 12.19 hrs, Volume= 22,358 cf, Atten= 49%, Lag= 7.2 min
Primary = 4.85 cfs @ 12.19 hrs, Volume= 22,358 cf
Routed to Link 3 : Pipe 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.69' @ 12.19 hrs Surf.Area= 5,205 sf Storage= 15,553 cf

Plug-Flow detention time= 212.1 min calculated for 22,358 cf (68% of inflow)
Center-of-Mass det. time= 113.1 min (853.6 - 740.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	39.50'	5,260 cf	**40.50'W x 127.59'L x 4.75'H Field A** 24,545 cf Overall - 11,394 cf Embedded = 13,151 cf x 40.0% Voids
#2A	40.00'	11,394 cf	**ADS_StormTech MC-3500 d +Cap** x 102 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 102 Chambers in 6 Rows Cap Storage= 14.9 cf x 2 x 6 rows = 178.8 cf
#3	41.98'	264 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder** x 3
		16,918 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.98'	**15.0" Round Culvert** L= 36.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.98' / 41.53' S= 0.0123 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=4.85 cfs @ 12.19 hrs HW=43.69' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.85 cfs @ 3.95 fps)

Pond UI01: Und Inf 01 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= 14.9 cf x 2 x 6 rows = 178.8 cf

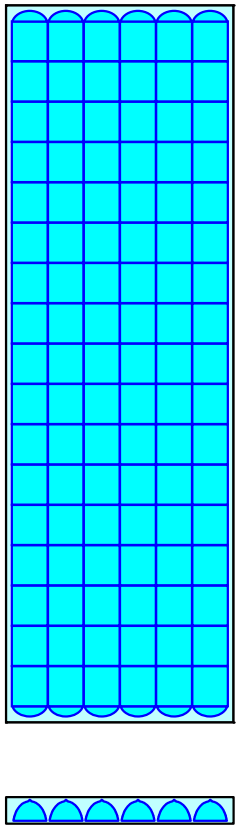
17 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 125.59' Row Length +12.0" End Stone x 2 = 127.59' Base Length
6 Rows x 77.0" Wide + 12.0" Side Stone x 2 = 40.50' Base Width
6.0" Stone Base + 45.0" Chamber Height + 6.0" Stone Cover = 4.75' Field Height

102 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 6 Rows = 11,393.9 cf Chamber Storage

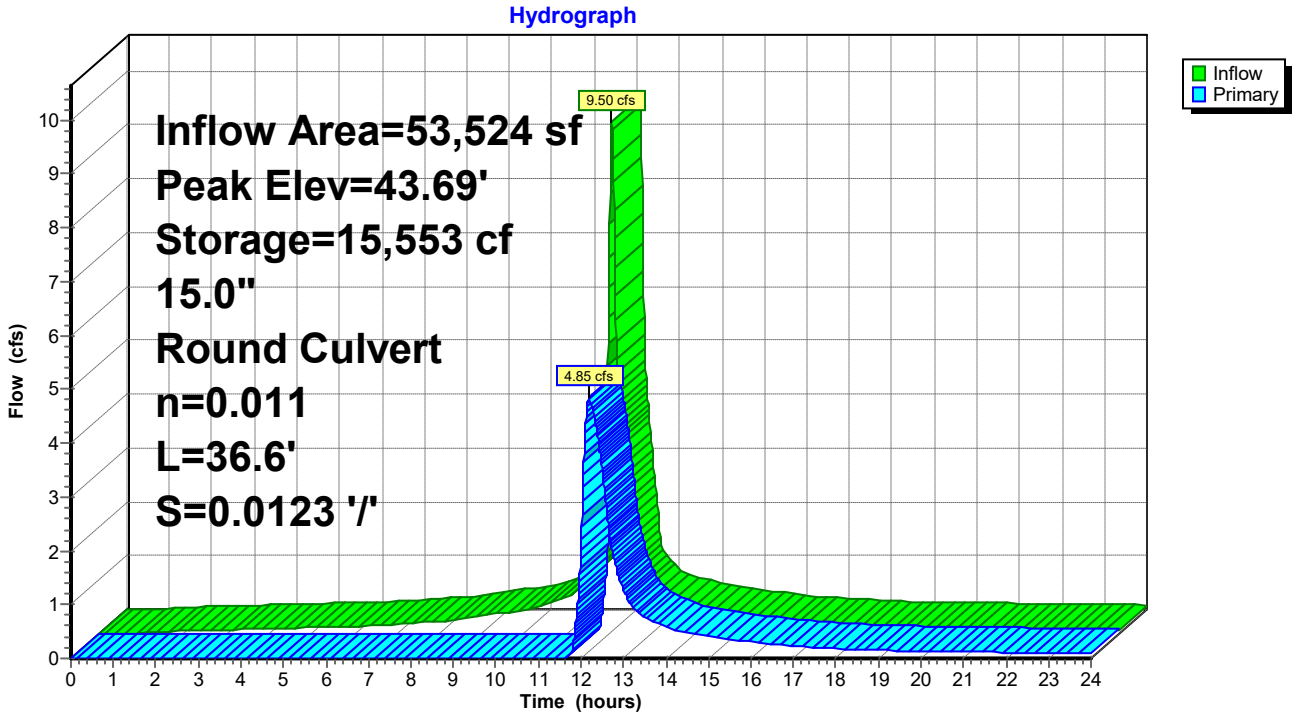
24,545.1 cf Field - 11,393.9 cf Chambers = 13,151.2 cf Stone x 40.0% Voids = 5,260.5 cf Stone Storage

Chamber Storage + Stone Storage = 16,654.4 cf = 0.382 af
Overall Storage Efficiency = 67.9%
Overall System Size = 127.59' x 40.50' x 4.75'

102 Chambers
909.1 cy Field
487.1 cy Stone



Pond UI01: Und Inf 01



Summary for Pond UI02: Und Inf 02

Inflow Area = 33,482 sf, 30.44% Impervious, Inflow Depth > 5.36" for 50-yr event
Inflow = 4.58 cfs @ 12.10 hrs, Volume= 14,954 cf
Outflow = 3.85 cfs @ 12.16 hrs, Volume= 14,487 cf, Atten= 16%, Lag= 3.3 min
Primary = 3.85 cfs @ 12.16 hrs, Volume= 14,487 cf
Routed to Link 1 : Pipe 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.66' @ 12.16 hrs Surf.Area= 558 sf Storage= 1,304 cf

Plug-Flow detention time= 31.4 min calculated for 14,481 cf (97% of inflow)
Center-of-Mass det. time= 13.4 min (816.0 - 802.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	39.97'	697 cf	**6.50'W x 82.00'L x 5.50'H Field A** 2,932 cf Overall - 1,188 cf Embedded = 1,743 cf x 40.0% Voids
#2A	40.47'	992 cf	**ADS N-12 48"** x 4 Inside #1 Inside= 47.7"W x 47.7"H => 12.40 sf x 20.00'L = 248.0 cf Outside= 54.0"W x 54.0"H => 14.86 sf x 20.00'L = 297.1 cf
#3	39.97'	144 cf	**4.00'D x 5.73'H Vertical Cone/Cylinder** x 2
		1,833 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 22.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 41.38' S= 0.0054 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.85 cfs @ 12.16 hrs HW=43.66' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.85 cfs @ 4.90 fps)

Pond UI02: Und Inf 02 - Chamber Wizard Field A

Chamber Model = ADS N-12 48" (ADS N-12® Pipe)
Inside= 47.7"W x 47.7"H => 12.40 sf x 20.00'L = 248.0 cf
Outside= 54.0"W x 54.0"H => 14.86 sf x 20.00'L = 297.1 cf

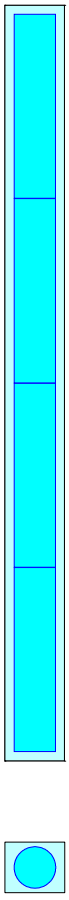
4 Chambers/Row x 20.00' Long = 80.00' Row Length +12.0" End Stone x 2 = 82.00' Base Length
1 Rows x 54.0" Wide + 12.0" Side Stone x 2 = 6.50' Base Width
6.0" Stone Base + 54.0" Chamber Height + 6.0" Stone Cover = 5.50' Field Height

4 Chambers x 248.0 cf = 992.0 cf Chamber Storage
4 Chambers x 297.1 cf = 1,188.4 cf Displacement

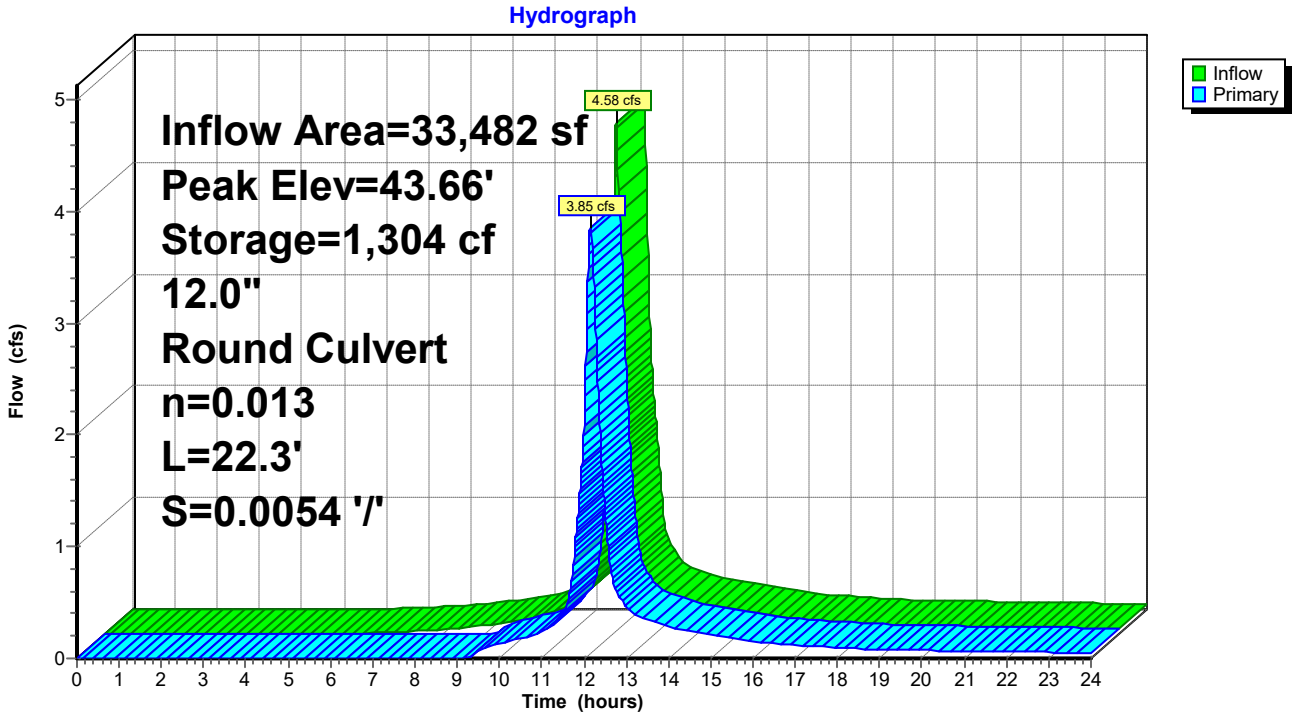
2,931.6 cf Field - 1,188.4 cf Chambers = 1,743.2 cf Stone x 40.0% Voids = 697.3 cf Stone Storage

Chamber Storage + Stone Storage = 1,689.3 cf = 0.039 af
Overall Storage Efficiency = 57.6%
Overall System Size = 82.00' x 6.50' x 5.50'

4 Chambers
108.6 cy Field
64.6 cy Stone



Pond UI02: Und Inf 02



Summary for Pond YD3: YD-03

[57] Hint: Peaked at 44.98' (Flood elevation advised)

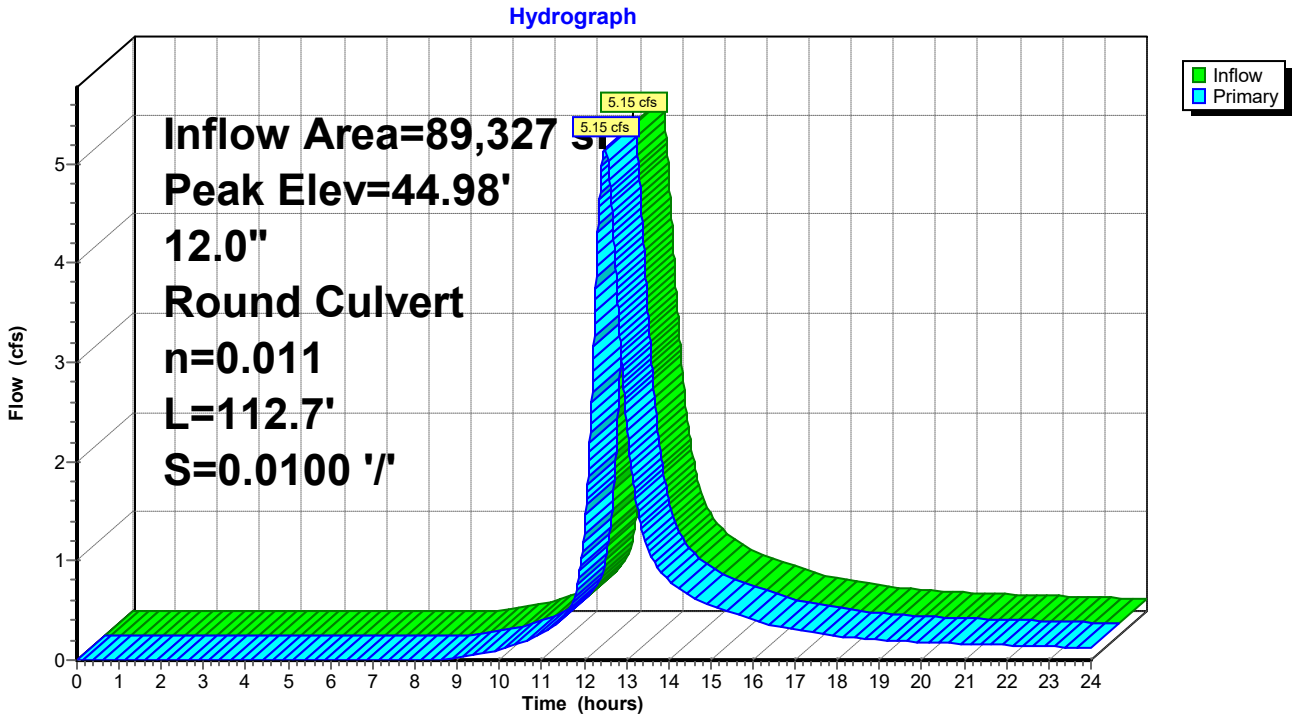
Inflow Area = 89,327 sf, 1.78% Impervious, Inflow Depth > 4.09" for 50-yr event
Inflow = 5.15 cfs @ 12.49 hrs, Volume= 30,454 cf
Outflow = 5.15 cfs @ 12.49 hrs, Volume= 30,454 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.15 cfs @ 12.49 hrs, Volume= 30,454 cf
Routed to Link Sub B : SUB B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 44.98' @ 12.49 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 112.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 40.37' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=5.15 cfs @ 12.49 hrs HW=44.98' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.15 cfs @ 6.56 fps)

Pond YD3: YD-03



Summary for Pond YD33: YD-33

[57] Hint: Peaked at 57.29' (Flood elevation advised)

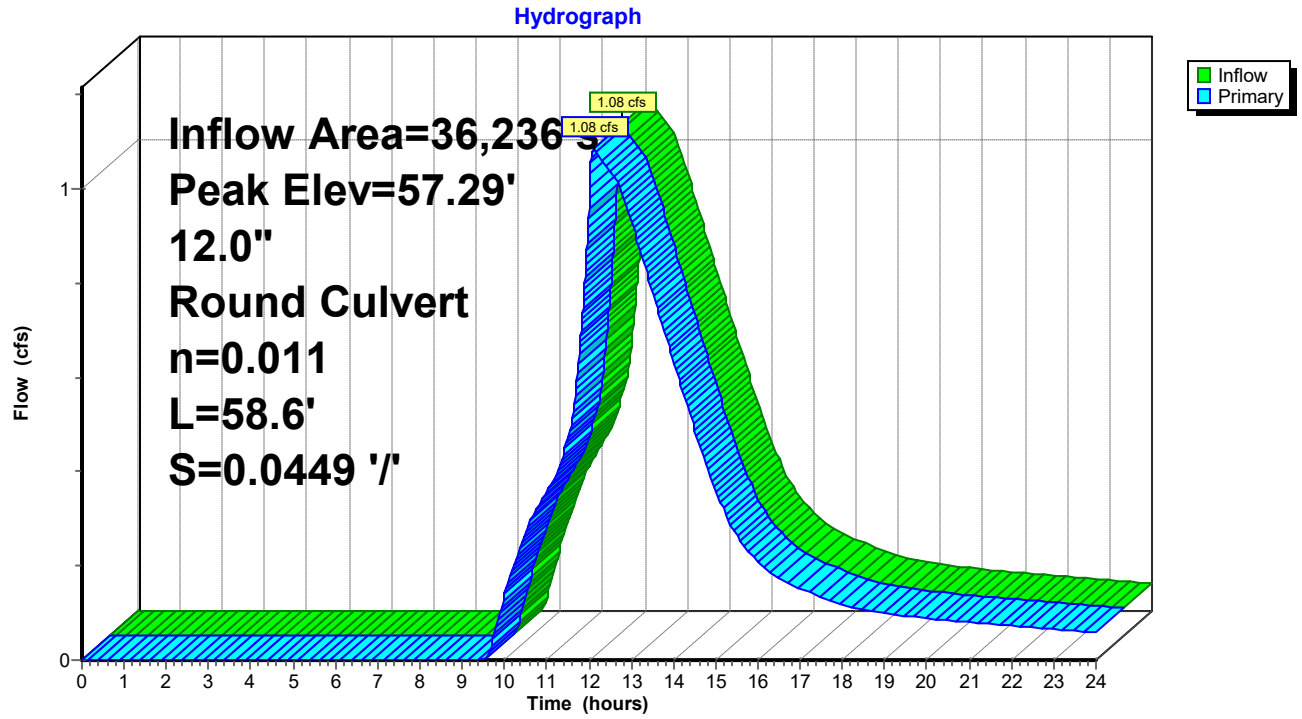
Inflow Area = 36,236 sf, 92.20% Impervious, Inflow Depth > 4.99" for 50-yr event
Inflow = 1.08 cfs @ 12.14 hrs, Volume= 15,078 cf
Outflow = 1.08 cfs @ 12.14 hrs, Volume= 15,078 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.08 cfs @ 12.14 hrs, Volume= 15,078 cf
Routed to Link SUB D1 : D1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.29' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	56.67'	**12.0" Round Culvert** L= 58.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.67' / 54.04' S= 0.0449 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.08 cfs @ 12.14 hrs HW=57.29' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.08 cfs @ 2.12 fps)

Pond YD33: YD-33



Summary for Pond YD40: YD-40

[57] Hint: Peaked at 43.10' (Flood elevation advised)

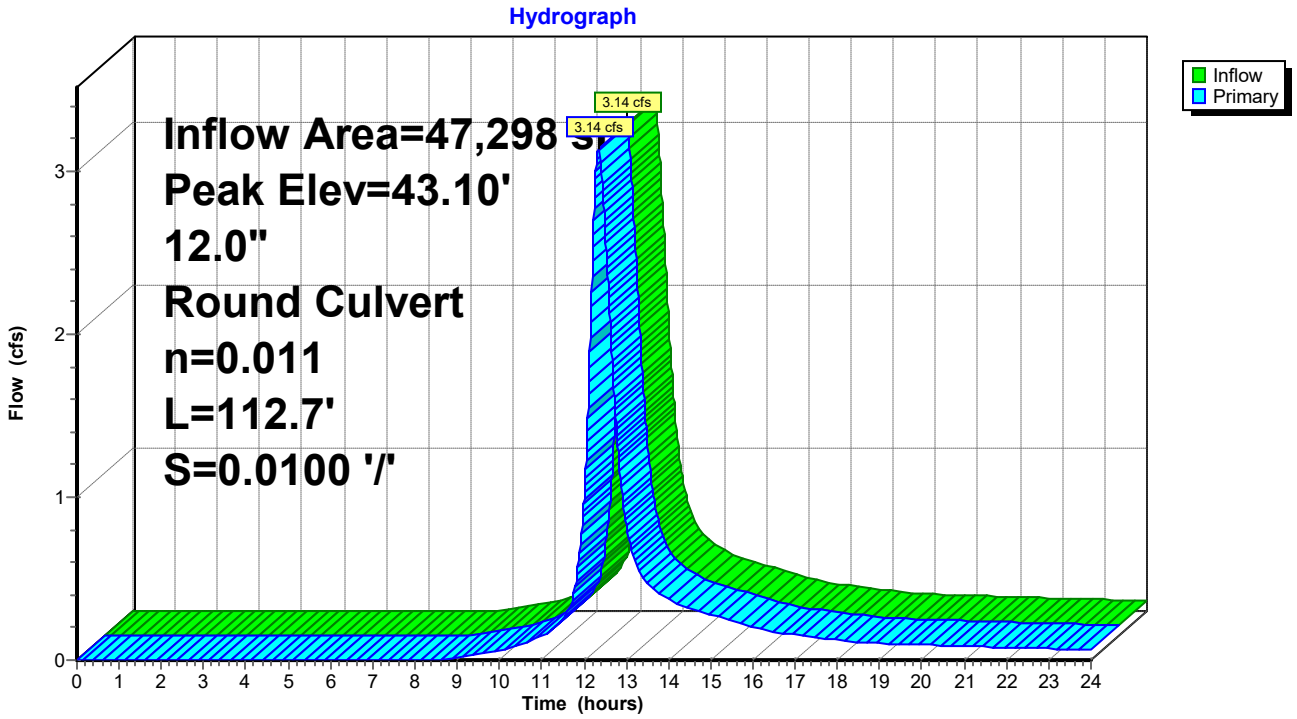
Inflow Area = 47,298 sf, 5.26% Impervious, Inflow Depth > 3.99" for 50-yr event
Inflow = 3.14 cfs @ 12.35 hrs, Volume= 15,729 cf
Outflow = 3.14 cfs @ 12.35 hrs, Volume= 15,729 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.14 cfs @ 12.35 hrs, Volume= 15,729 cf
Routed to Link Sub B : SUB B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.10' @ 12.35 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 112.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 40.37' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=3.14 cfs @ 12.35 hrs HW=43.10' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.14 cfs @ 3.99 fps)

Pond YD40: YD-40

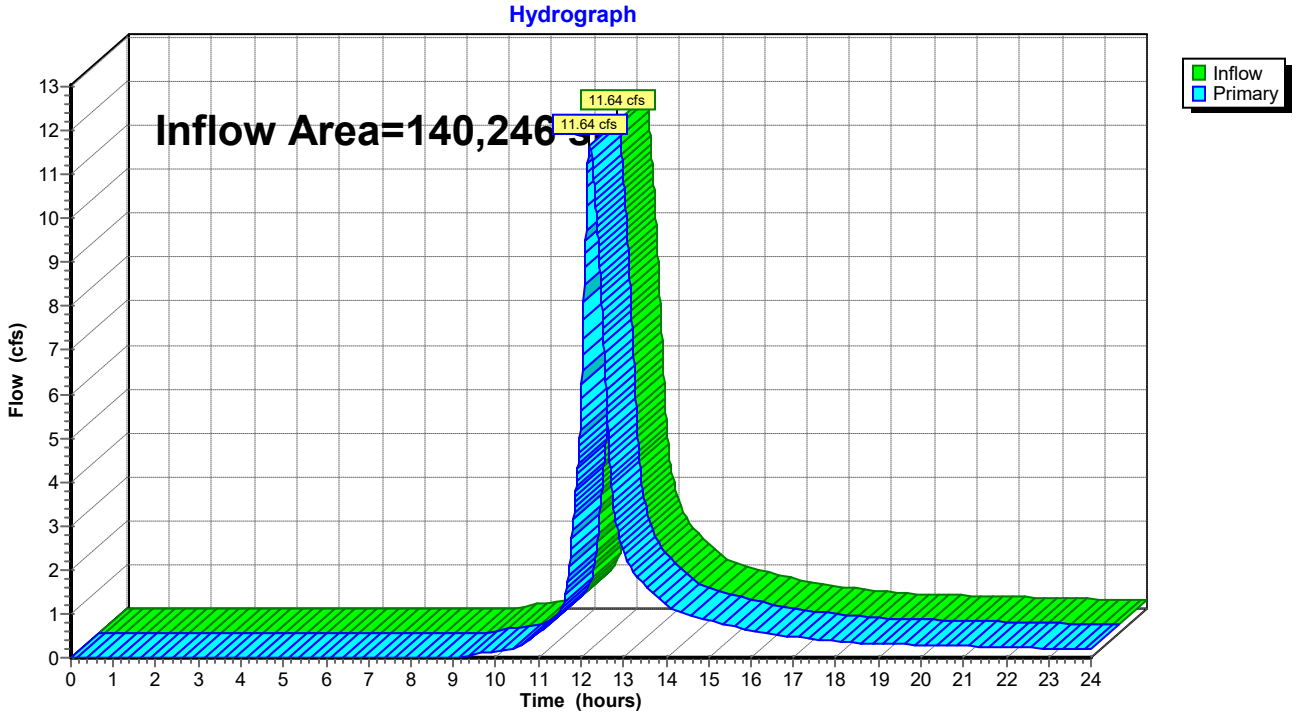


Summary for Link 1: Pipe 1

Inflow Area = 140,246 sf, 34.50% Impervious, Inflow Depth > 4.62" for 50-yr event
Inflow = 11.64 cfs @ 12.21 hrs, Volume= 54,029 cf
Primary = 11.64 cfs @ 12.21 hrs, Volume= 54,029 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 2 : Pipe 2

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1: Pipe 1

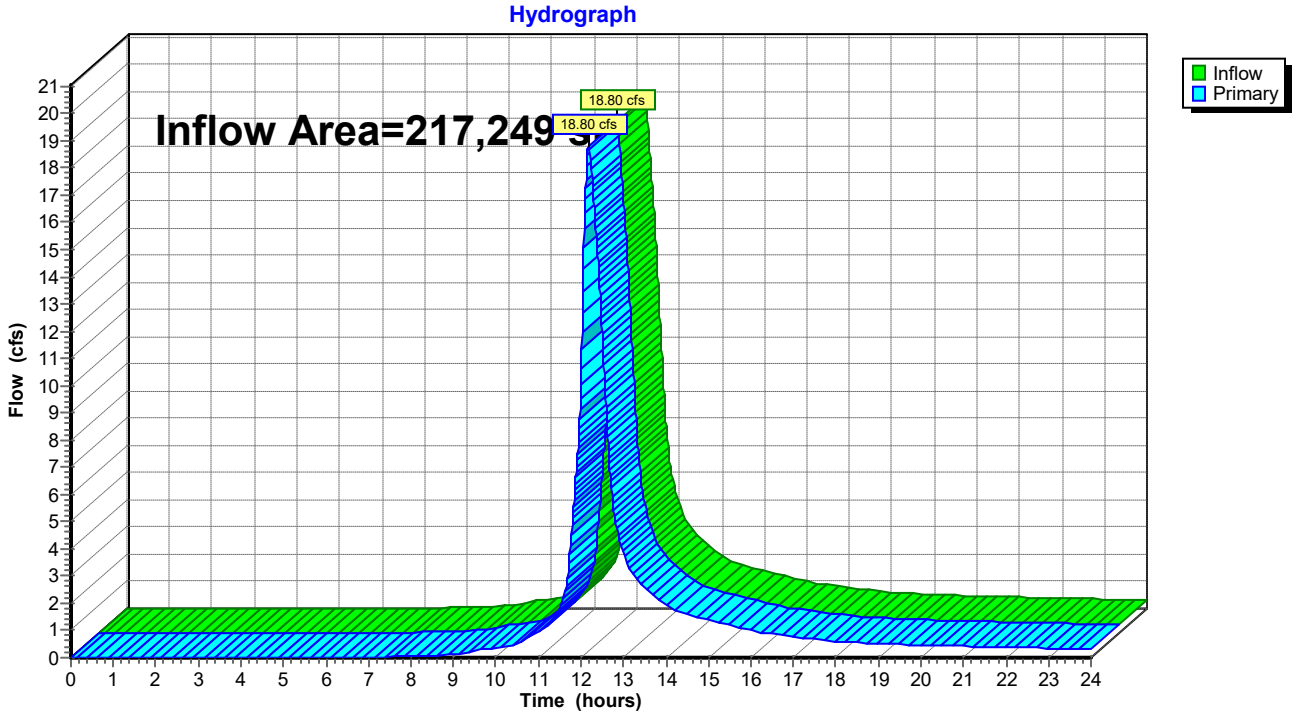


Summary for Link 2: Pipe 2

Inflow Area = 217,249 sf, 40.87% Impervious, Inflow Depth > 4.90" for 50-yr event
Inflow = 18.80 cfs @ 12.17 hrs, Volume= 88,791 cf
Primary = 18.80 cfs @ 12.17 hrs, Volume= 88,791 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3 : Pipe 3

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 2: Pipe 2

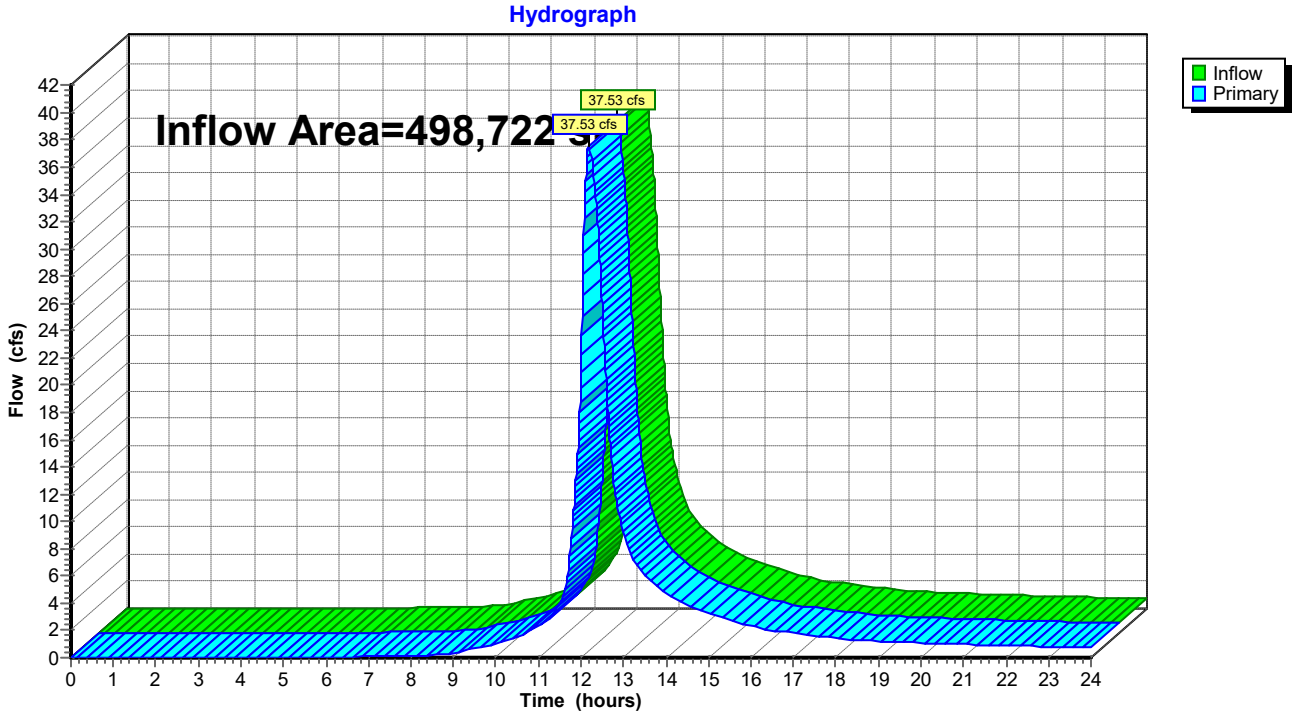


Summary for Link 3: Pipe 3

Inflow Area = 498,722 sf, 46.58% Impervious, Inflow Depth > 4.79" for 50-yr event
Inflow = 37.53 cfs @ 12.19 hrs, Volume= 199,044 cf
Primary = 37.53 cfs @ 12.19 hrs, Volume= 199,044 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4 : Pipe 4

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 3: Pipe 3

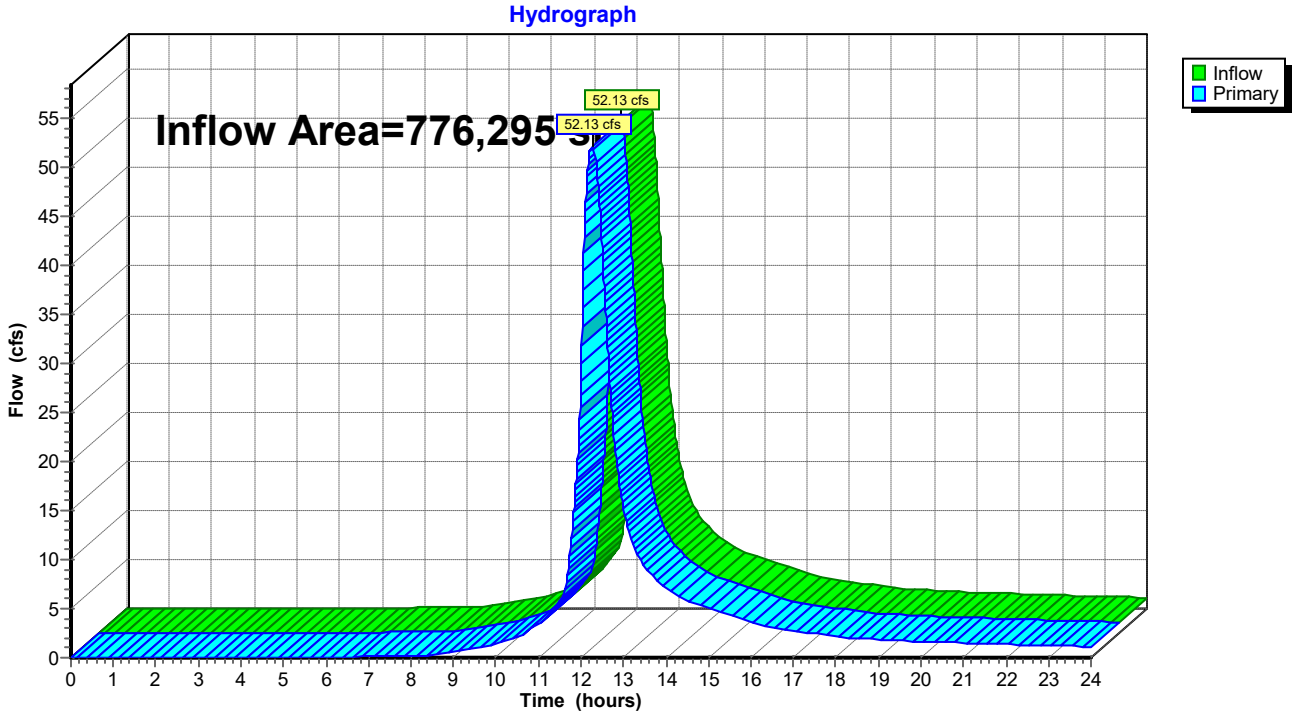


Summary for Link 4: Pipe 4

Inflow Area = 776,295 sf, 34.75% Impervious, Inflow Depth > 4.65" for 50-yr event
Inflow = 52.13 cfs @ 12.27 hrs, Volume= 300,989 cf
Primary = 52.13 cfs @ 12.27 hrs, Volume= 300,989 cf, Atten= 0%, Lag= 0.0 min
Routed to Link A : POC-A

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 4: Pipe 4

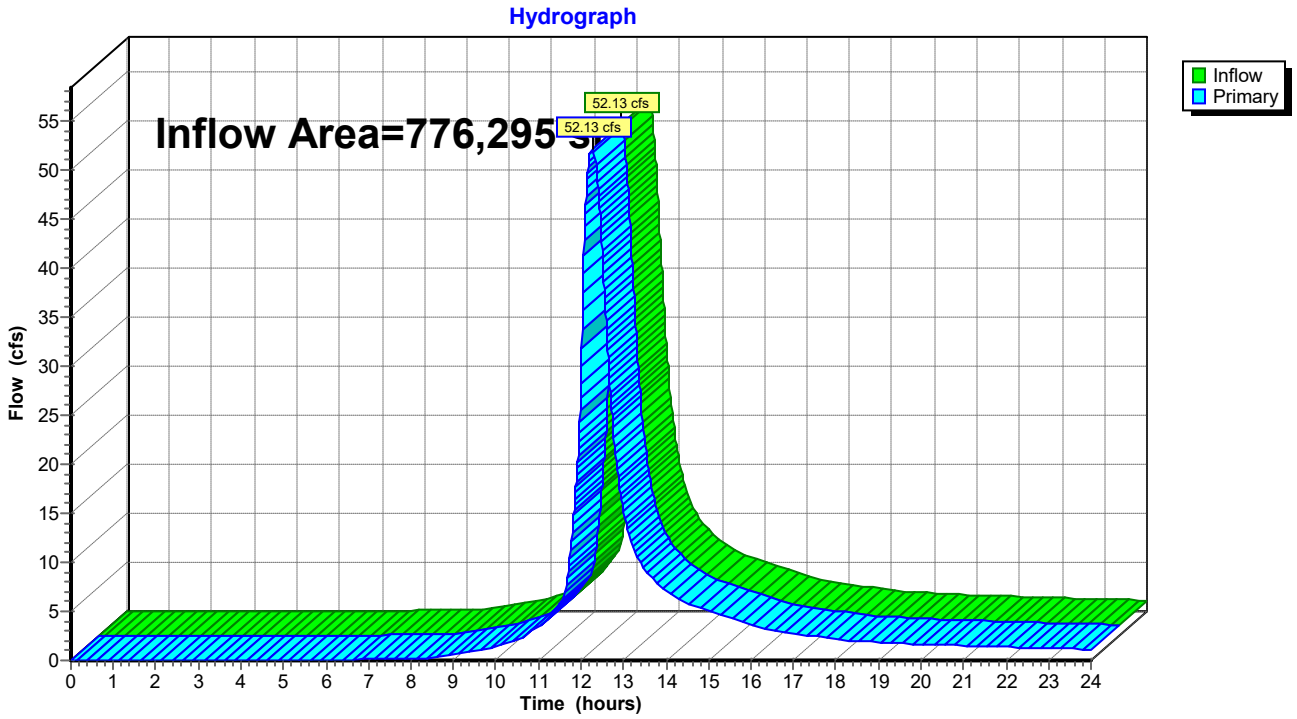


Summary for Link A: POC-A

Inflow Area = 776,295 sf, 34.75% Impervious, Inflow Depth > 4.65" for 50-yr event
Inflow = 52.13 cfs @ 12.27 hrs, Volume= 300,989 cf
Primary = 52.13 cfs @ 12.27 hrs, Volume= 300,989 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link A: POC-A

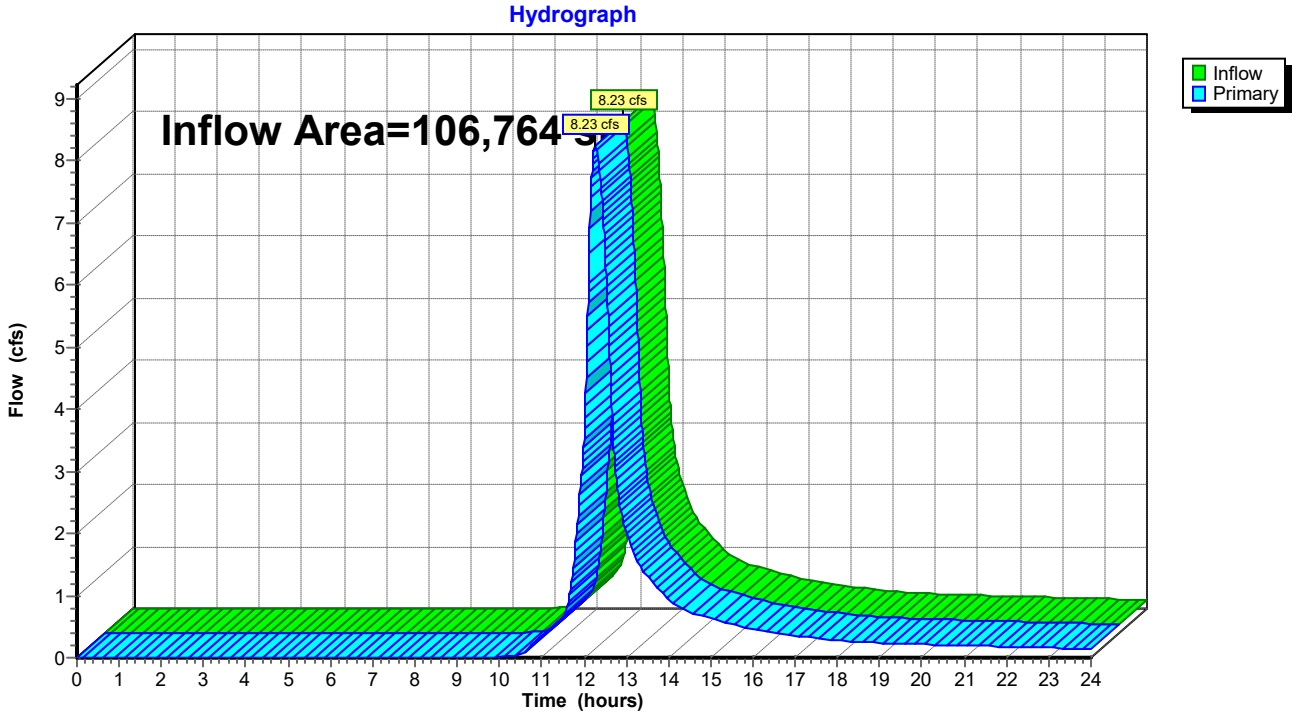


Summary for Link Sub A: SUB A

Inflow Area = 106,764 sf, 35.77% Impervious, Inflow Depth > 4.44" for 50-yr event
Inflow = 8.23 cfs @ 12.27 hrs, Volume= 39,541 cf
Primary = 8.23 cfs @ 12.27 hrs, Volume= 39,541 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 1 : Pipe 1

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Sub A: SUB A

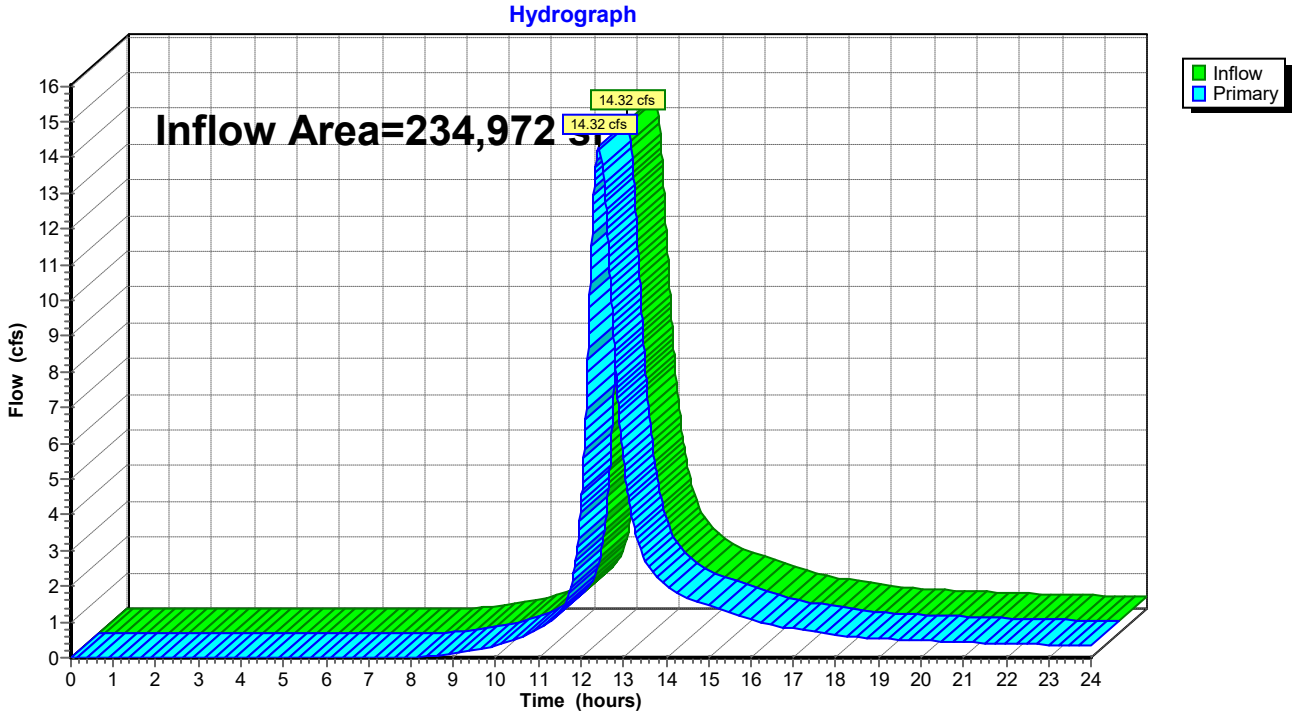


Summary for Link Sub B: SUB B

Inflow Area = 234,972 sf, 4.63% Impervious, Inflow Depth > 4.18" for 50-yr event
Inflow = 14.32 cfs @ 12.41 hrs, Volume= 81,890 cf
Primary = 14.32 cfs @ 12.41 hrs, Volume= 81,890 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4 : Pipe 4

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Sub B: SUB B

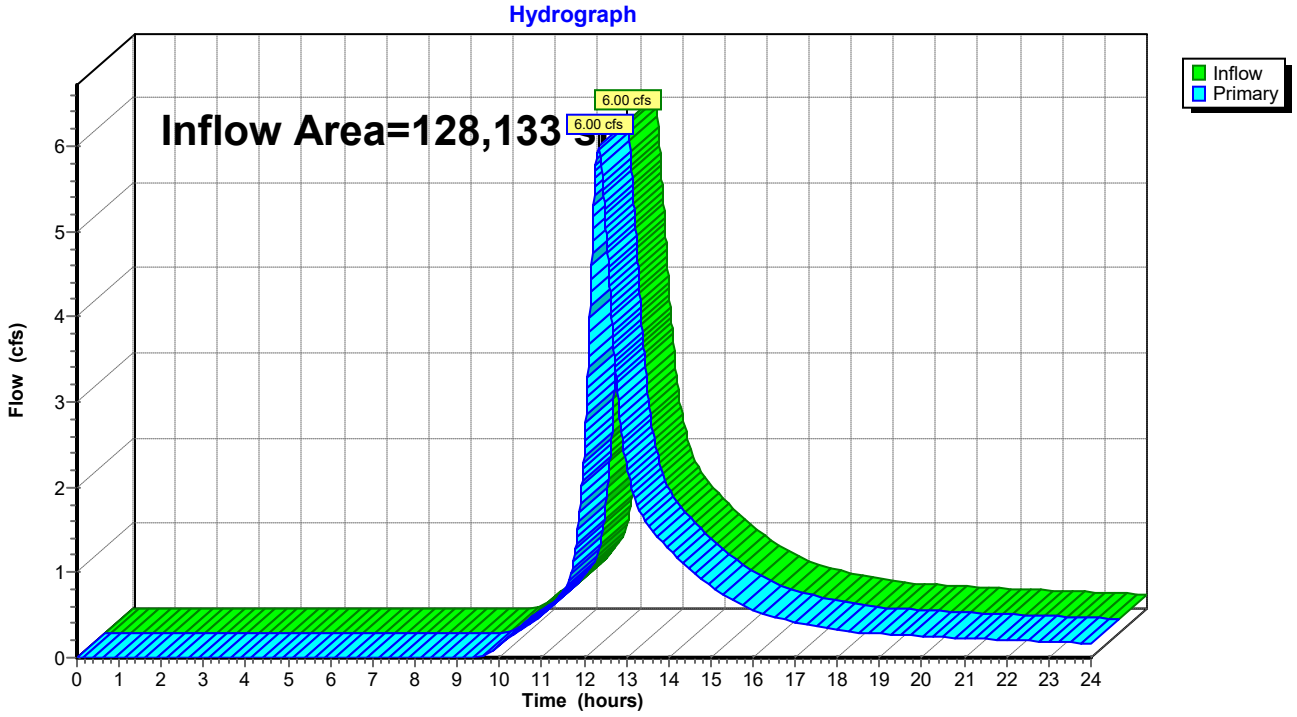


Summary for Link SUB D1: D1

Inflow Area = 128,133 sf, 28.03% Impervious, Inflow Depth > 3.73" for 50-yr event
Inflow = 6.00 cfs @ 12.35 hrs, Volume= 39,822 cf
Primary = 6.00 cfs @ 12.35 hrs, Volume= 39,822 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3 : Pipe 3

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link SUB D1: D1



Summary for Subcatchment 15S: D1H-R

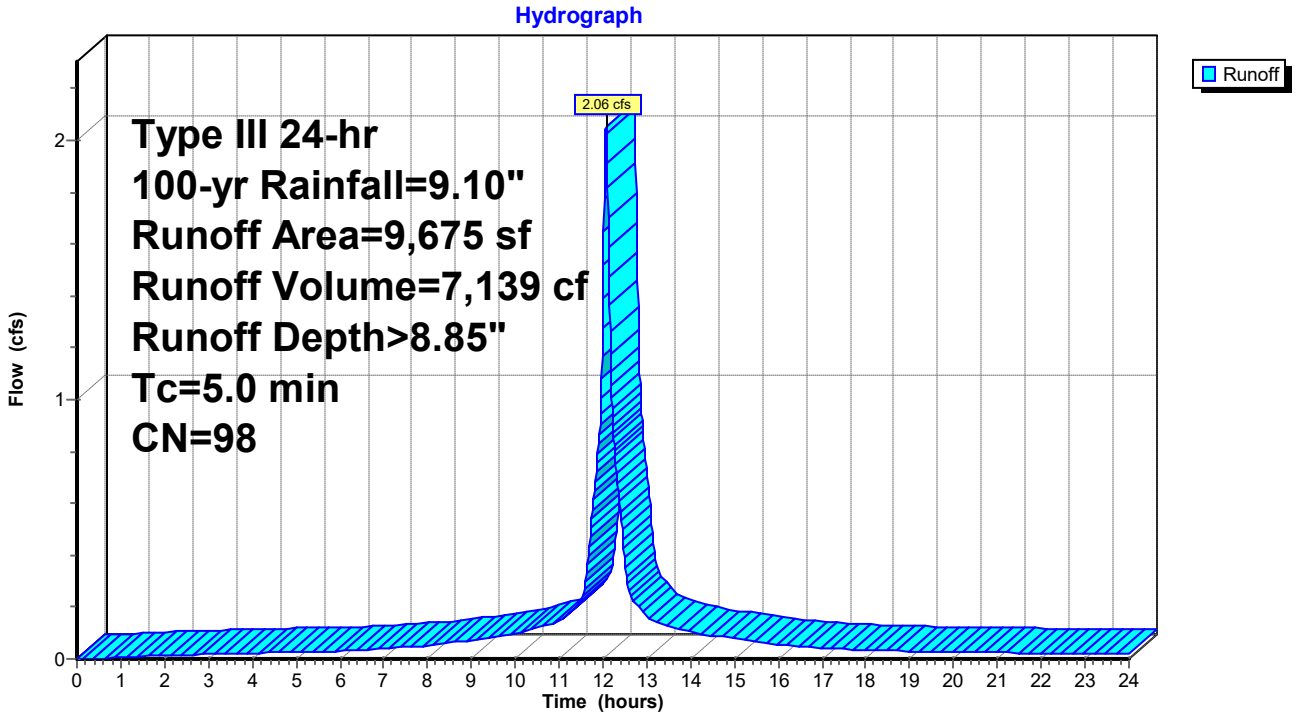
Runoff = 2.06 cfs @ 12.07 hrs, Volume= 7,139 cf, Depth> 8.85"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	9,675	98	Impervious
	9,675		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 15S: D1H-R



Summary for Subcatchment 16S: D1E-R

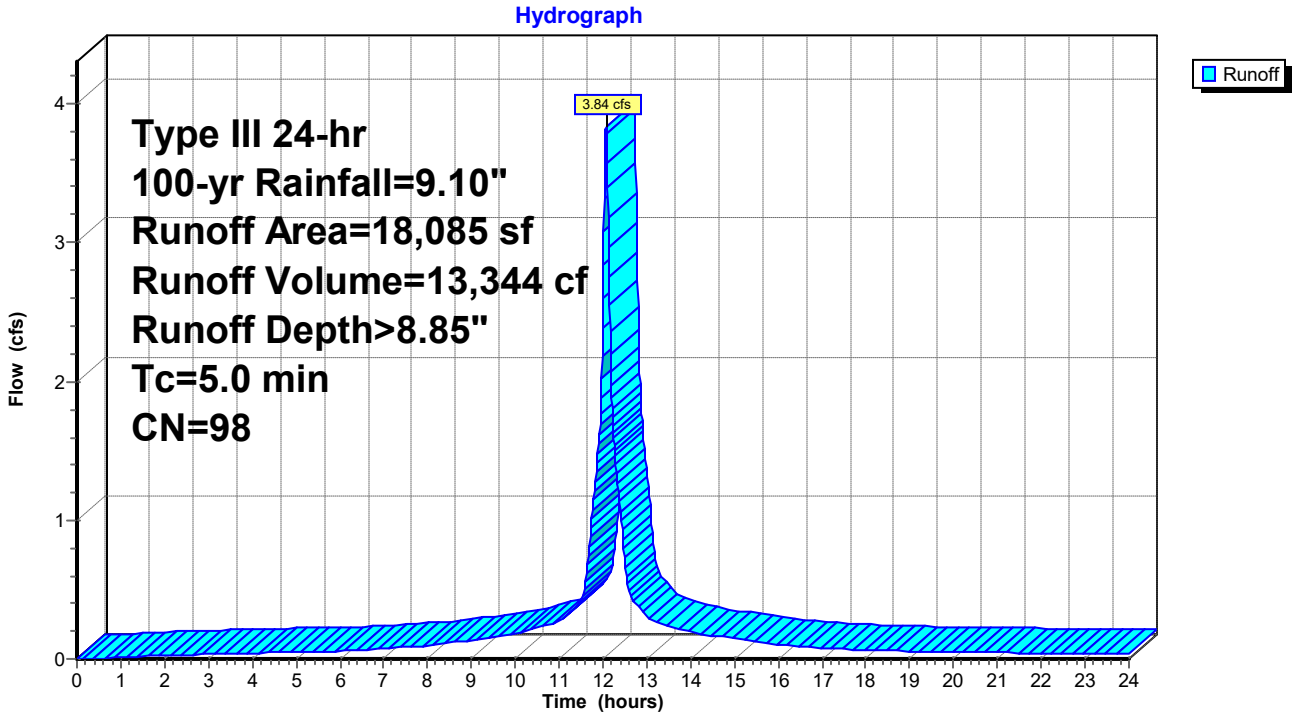
Runoff = 3.84 cfs @ 12.07 hrs, Volume= 13,344 cf, Depth> 8.85"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	18,085	98	Impervious
	18,085		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 16S: D1E-R



Summary for Subcatchment 22S: D2A-R

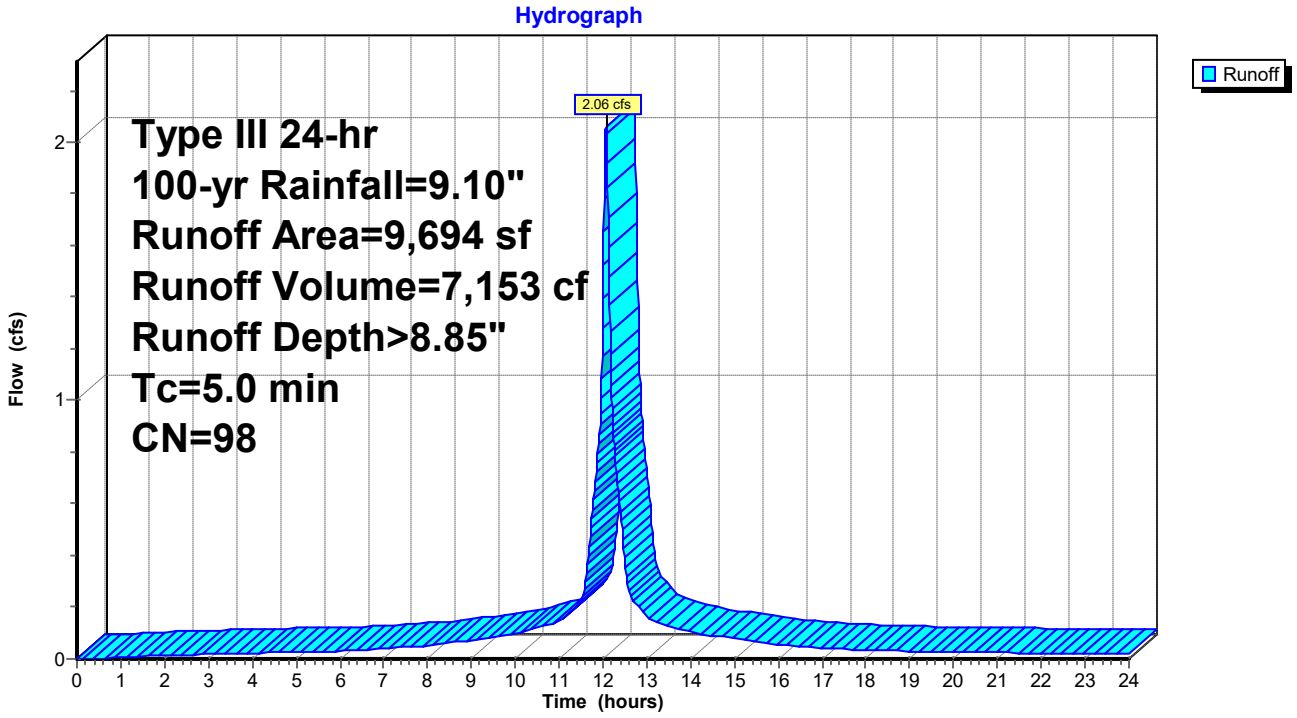
Runoff = 2.06 cfs @ 12.07 hrs, Volume= 7,153 cf, Depth> 8.85"
Routed to Pond 13P : Por Pvt-D2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	9,694	98	Impervious
	9,694		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 22S: D2A-R



Summary for Subcatchment 23S: D2C-R

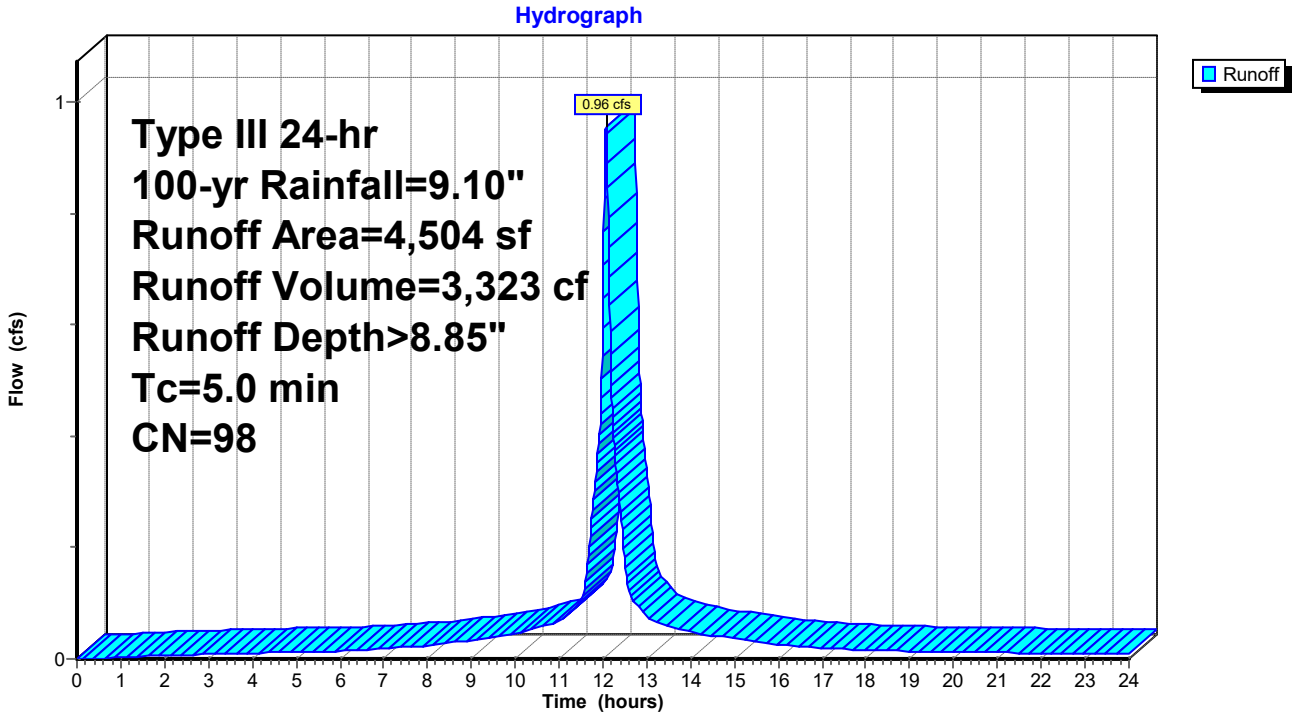
Runoff = 0.96 cfs @ 12.07 hrs, Volume= 3,323 cf, Depth> 8.85"
Routed to Pond 16P : Por Pvt-D2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 23S: D2C-R



Summary for Subcatchment 24S: D2D-R

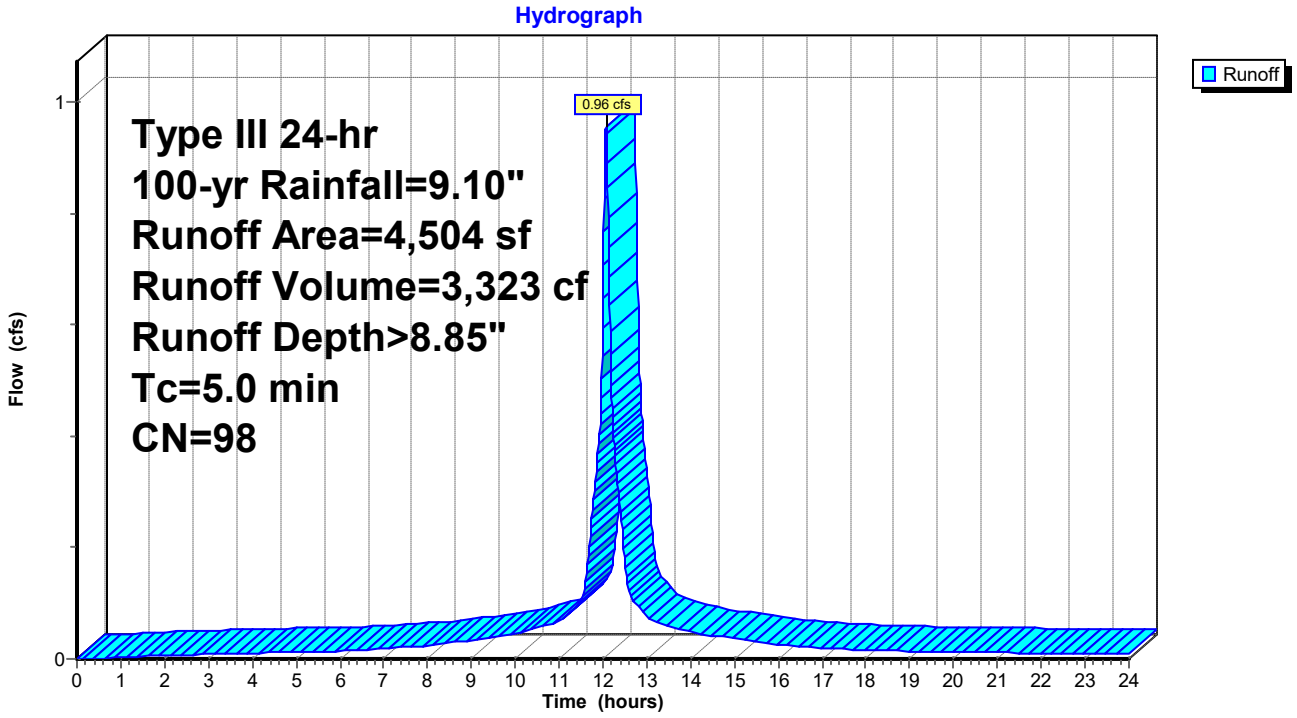
Runoff = 0.96 cfs @ 12.07 hrs, Volume= 3,323 cf, Depth> 8.85"
Routed to Pond 18P : Por Pvt-D2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 24S: D2D-R



Summary for Subcatchment 25S: D2E-R

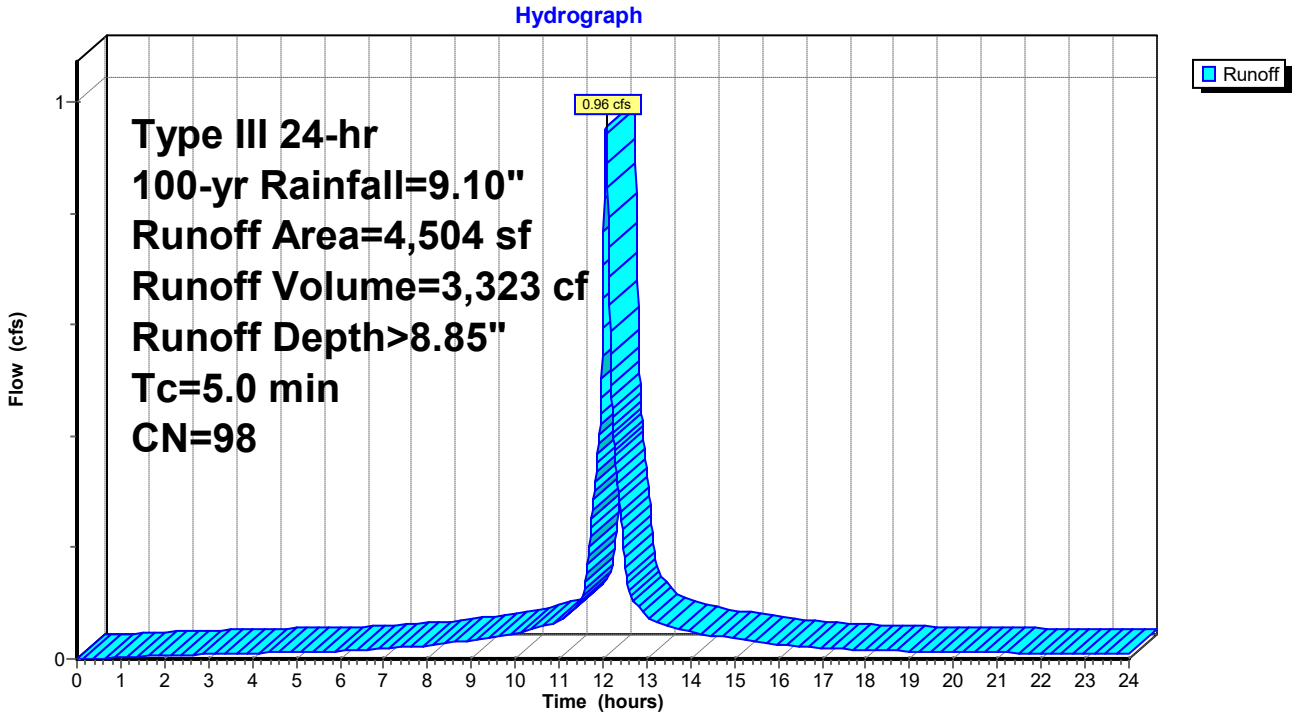
Runoff = 0.96 cfs @ 12.07 hrs, Volume= 3,323 cf, Depth> 8.85"
Routed to Pond 19P : Por Pvt-D2E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 25S: D2E-R



Summary for Subcatchment 26S: D2F-R

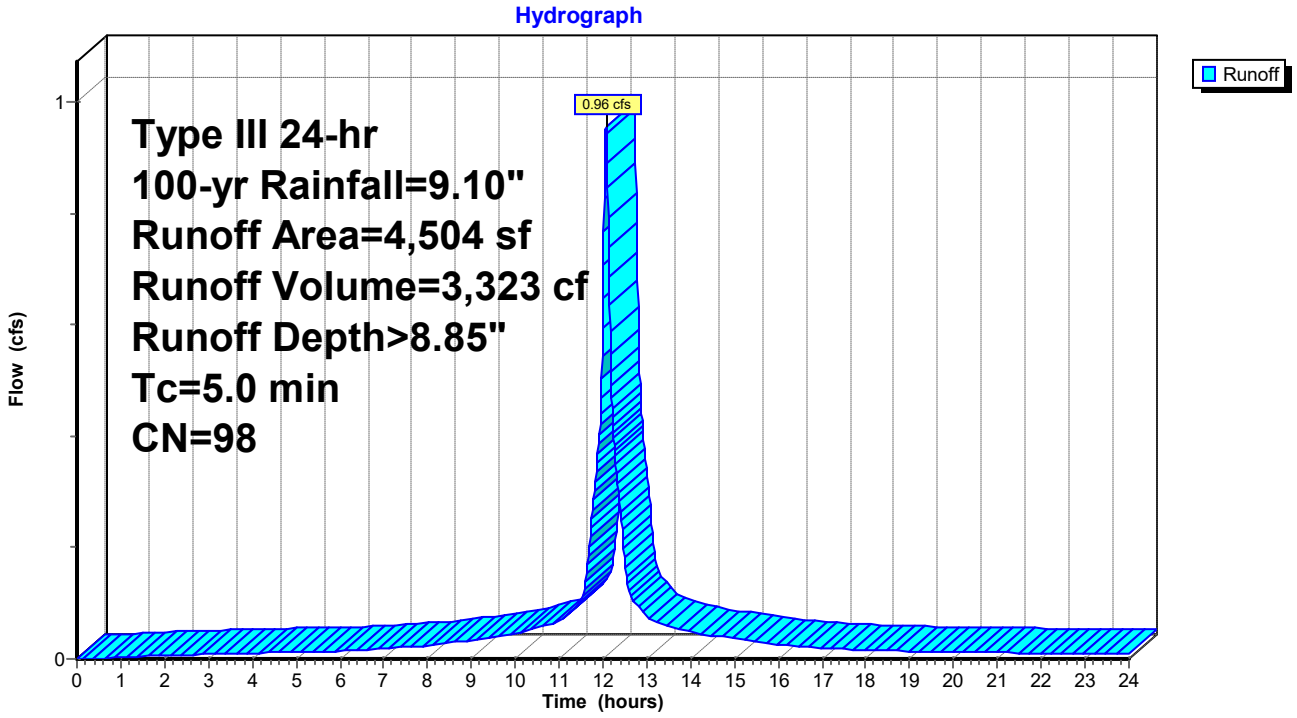
Runoff = 0.96 cfs @ 12.07 hrs, Volume= 3,323 cf, Depth> 8.85"
Routed to Pond 20P : Por Pvt-D2F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	4,504	98	Impervious
	4,504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 26S: D2F-R



Summary for Subcatchment A1: WS-A1

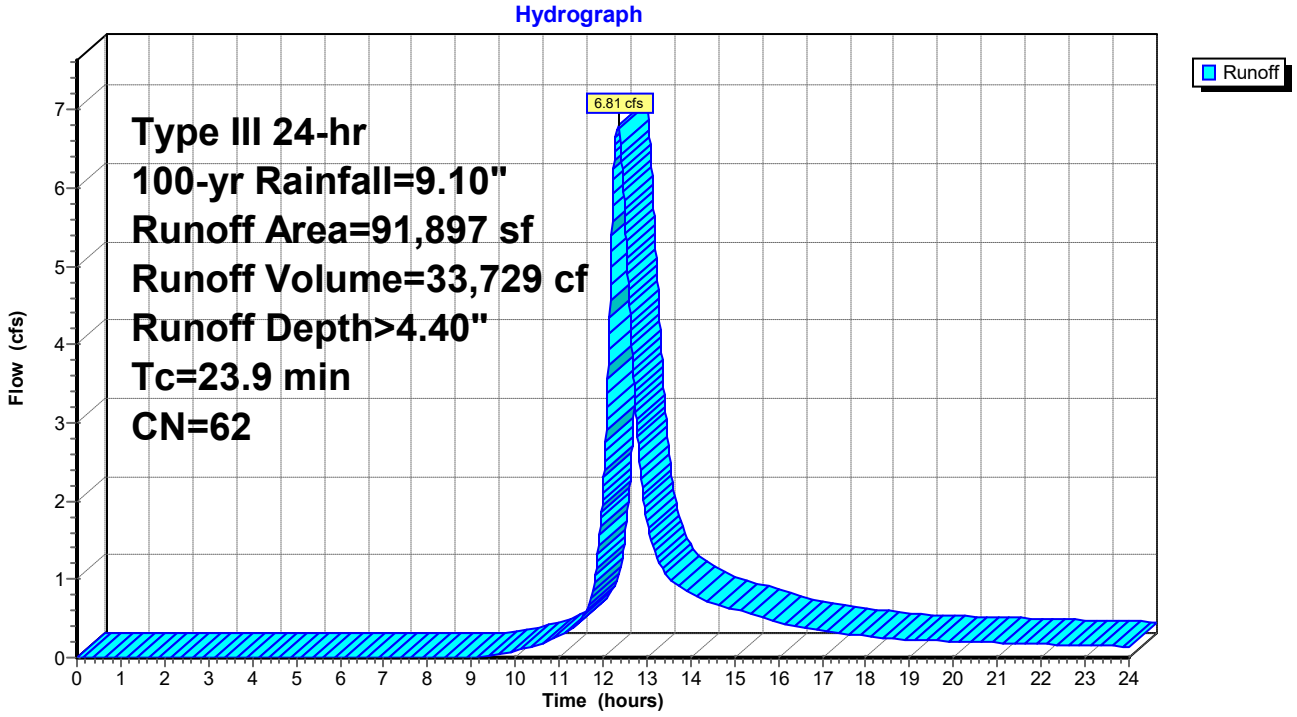
Runoff = 6.81 cfs @ 12.35 hrs, Volume= 33,729 cf, Depth> 4.40"
Routed to Link SUB D1 : D1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	2,508	98	Impervious - Roof
*	9,195	69	Lawn B
*	0	79	Lawn C
*	80,194	60	Forest B
*	0	73	Forest C
	91,897	62	Weighted Average
	89,389		97.27% Pervious Area
	2,508		2.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.9					**Direct Entry,**

Subcatchment A1: WS-A1



Summary for Subcatchment A2: WS-A2

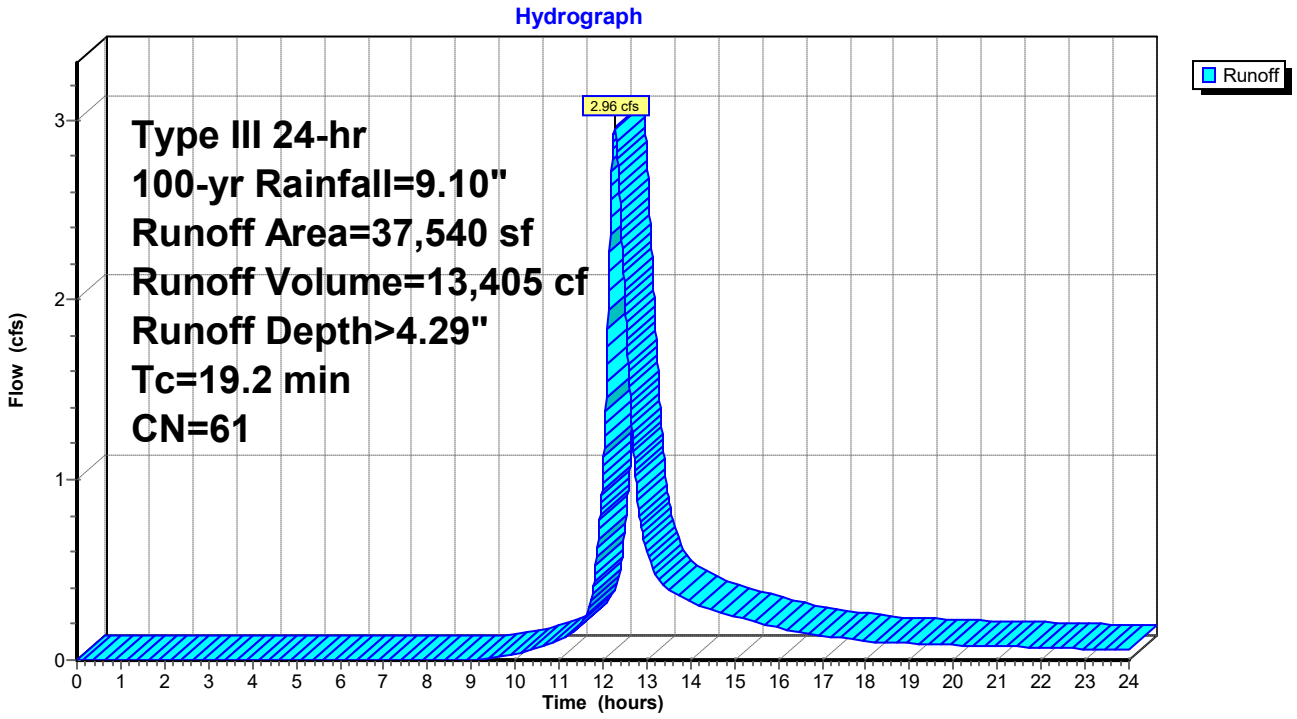
Runoff = 2.96 cfs @ 12.27 hrs, Volume= 13,405 cf, Depth> 4.29"
Routed to Pond DB01 : Detention-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	0	98	Impervious - Roof
*	5,793	69	Lawn B
*	0	79	Lawn C
*	31,747	60	Forest B
*	0	73	Forest C
	37,540	61	Weighted Average
	37,540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2					**Direct Entry,**

Subcatchment A2: WS-A2



Summary for Subcatchment A3: WS-A3

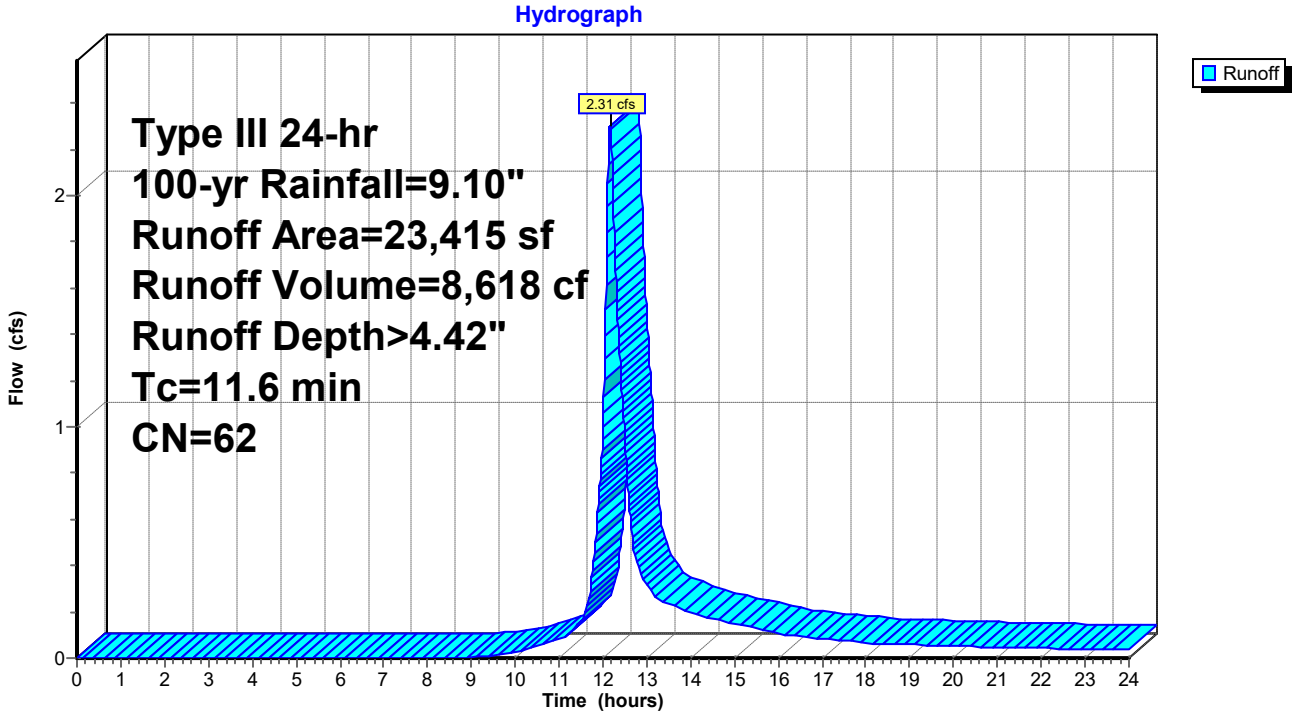
Runoff = 2.31 cfs @ 12.16 hrs, Volume= 8,618 cf, Depth> 4.42"
Routed to Pond DB01 : Detention-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	0	98	Impervious - Roof
*	4,949	69	Lawn B
*	0	79	Lawn C
*	18,466	60	Forest B
*	0	73	Forest C
	23,415	62	Weighted Average
	23,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6					**Direct Entry,**

Subcatchment A3: WS-A3



Summary for Subcatchment B1: WS-B1

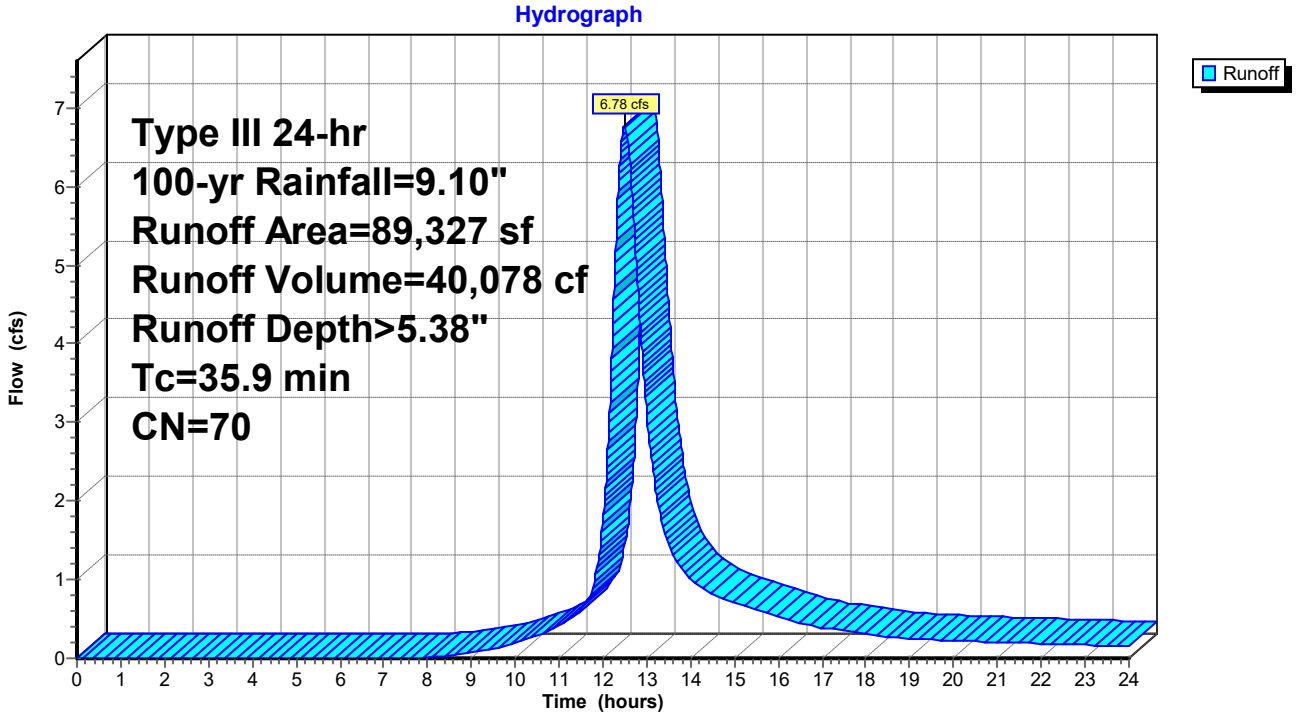
Runoff = 6.78 cfs @ 12.49 hrs, Volume= 40,078 cf, Depth> 5.38"
Routed to Pond YD3 : YD-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	1,588	98	Impervious
*	87,739	69	Lawn B
	89,327	70	Weighted Average
	87,739		98.22% Pervious Area
	1,588		1.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.9					**Direct Entry,**

Subcatchment B1: WS-B1



Summary for Subcatchment B2: WS-B2

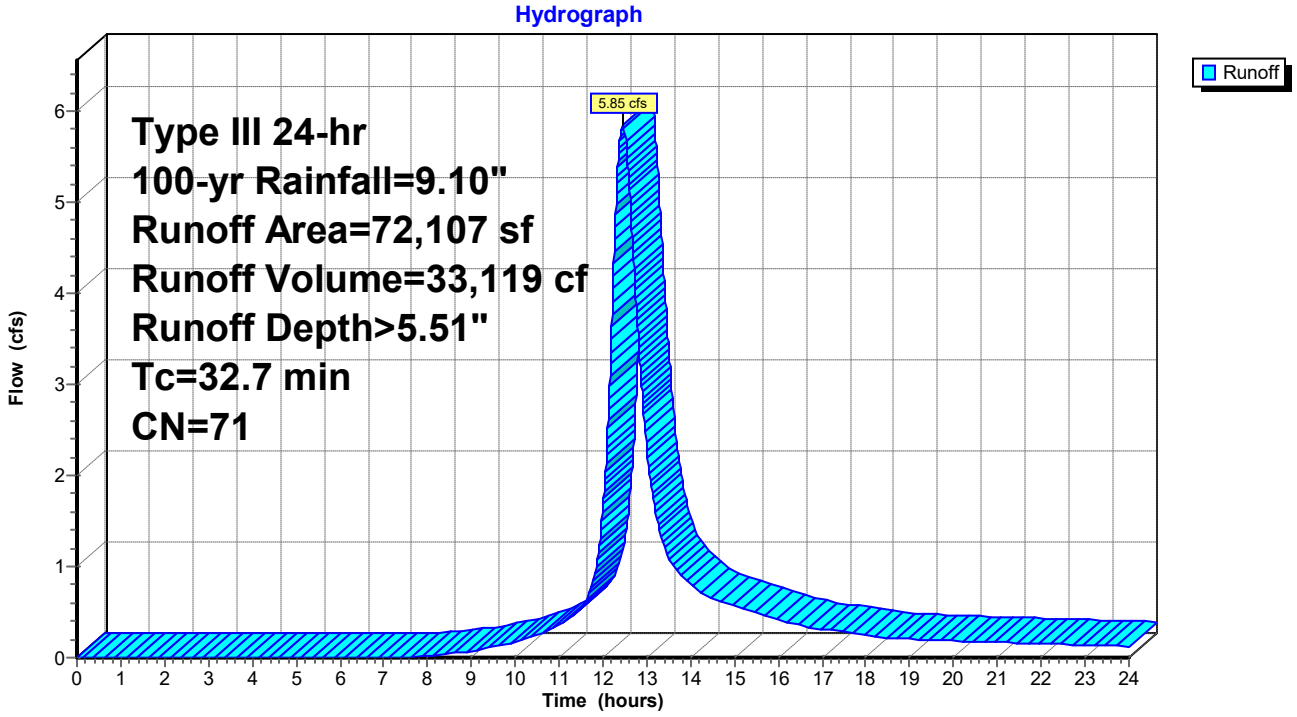
Runoff = 5.85 cfs @ 12.46 hrs, Volume= 33,119 cf, Depth> 5.51"
Routed to Link Sub B : SUB B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	49	98	Impervious
*	55,957	69	Lawn B
*	16,101	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	72,107	71	Weighted Average
	72,058		99.93% Pervious Area
	49		0.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.7					**Direct Entry,**

Subcatchment B2: WS-B2



Summary for Subcatchment B3: WS-B3

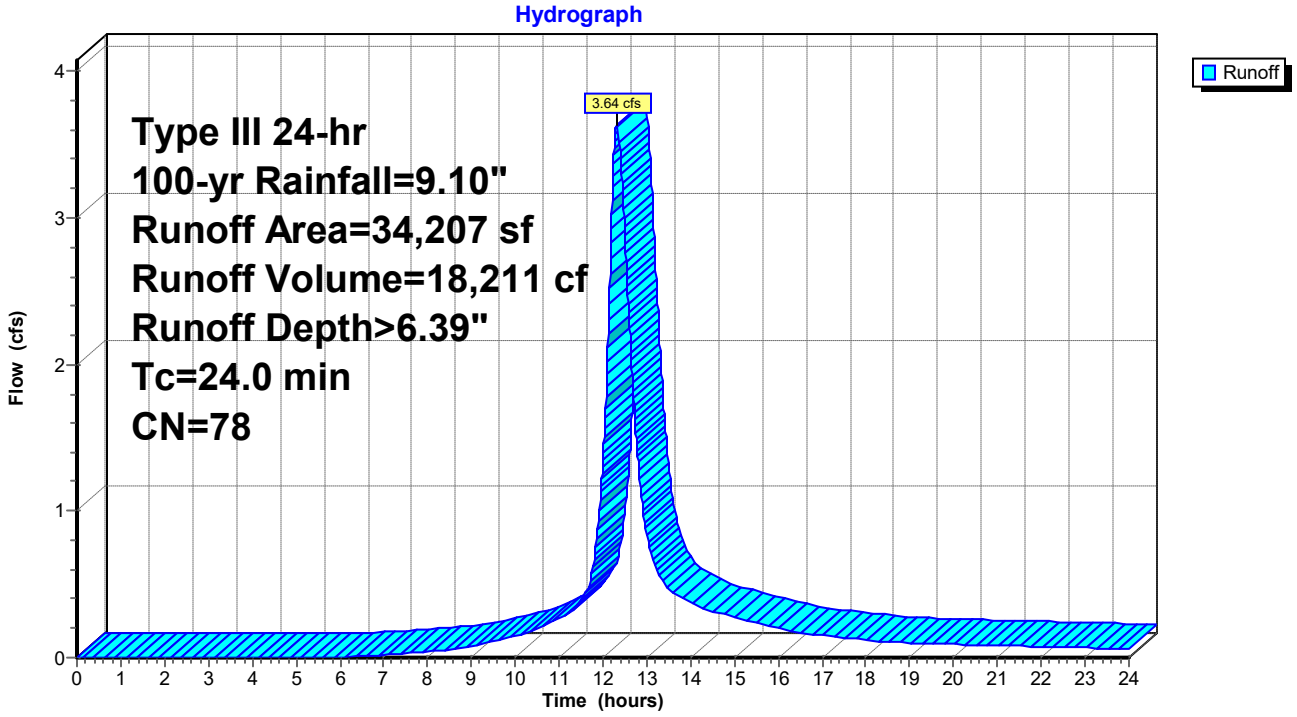
Runoff = 3.64 cfs @ 12.32 hrs, Volume= 18,211 cf, Depth> 6.39"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	12,332	98	Impervious
*	14,526	69	Lawn B
*	1,341	79	Lawn C
*	5,996	60	Forest B
*	12	73	Forest C
	34,207	78	Weighted Average
	21,875		63.95% Pervious Area
	12,332		36.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0					**Direct Entry,**

Subcatchment B3: WS-B3



Summary for Subcatchment B4: WS-B4

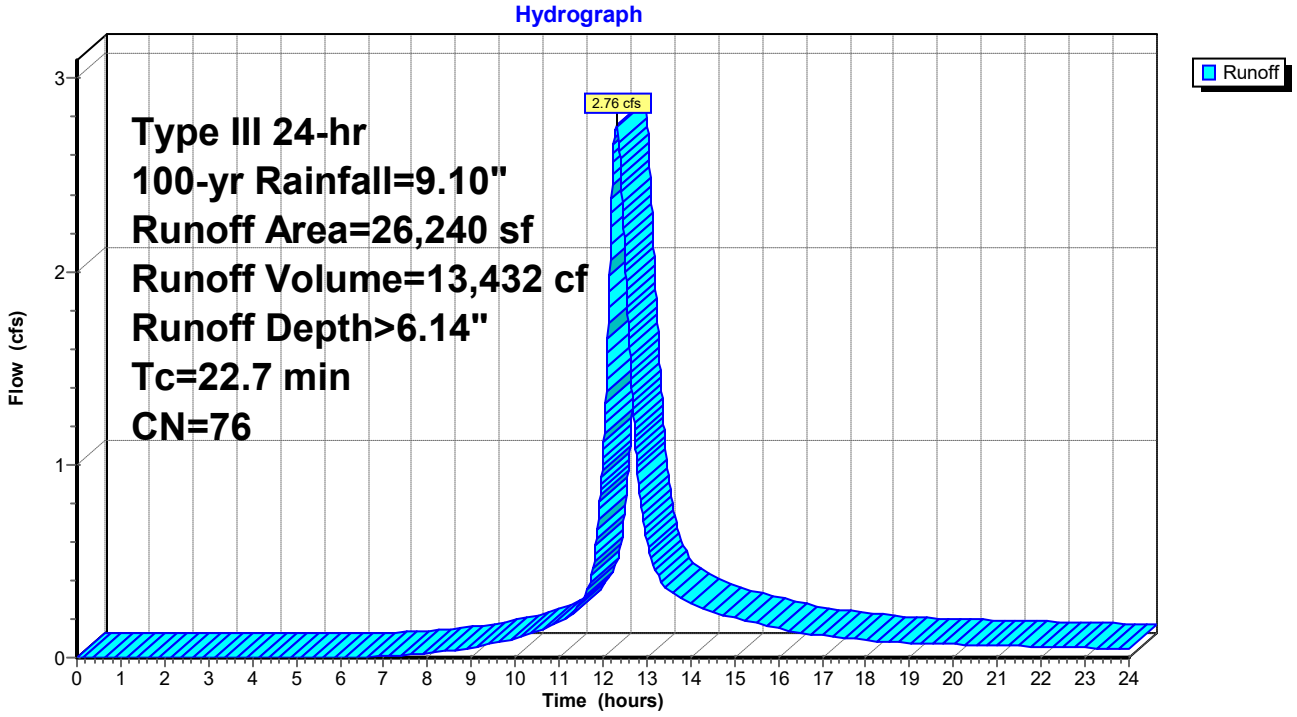
Runoff = 2.76 cfs @ 12.31 hrs, Volume= 13,432 cf, Depth> 6.14"
Routed to Link Sub B : SUB B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	6,749	98	Impervious
*	19,491	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	26,240	76	Weighted Average
	19,491		74.28% Pervious Area
	6,749		25.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.7					**Direct Entry,**

Subcatchment B4: WS-B4



Summary for Subcatchment B5: WS-B5

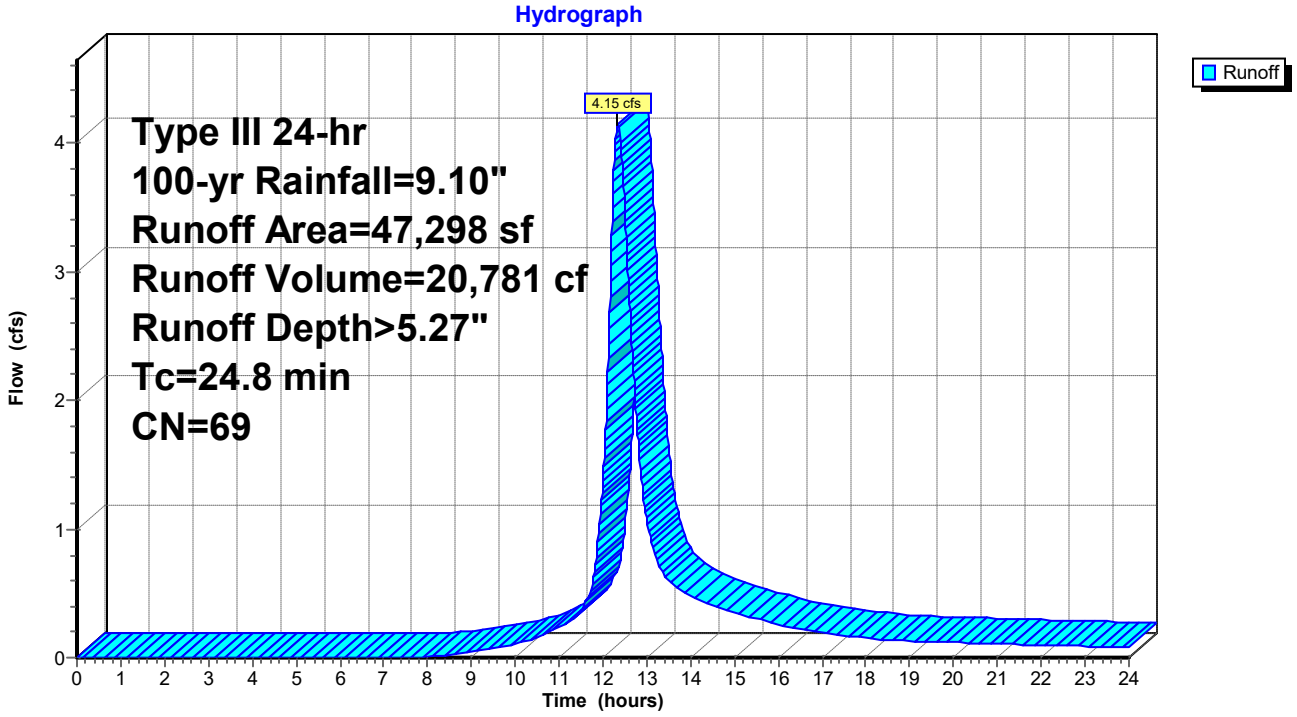
Runoff = 4.15 cfs @ 12.34 hrs, Volume= 20,781 cf, Depth> 5.27"
Routed to Pond YD40 : YD-40

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	2,488	98	Impervious
*	36,610	69	Lawn B
*	0	79	Lawn C
*	8,200	60	Forest B
*	0	73	Forest C
	47,298	69	Weighted Average
	44,810		94.74% Pervious Area
	2,488		5.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8					**Direct Entry,**

Subcatchment B5: WS-B5



Summary for Subcatchment B6: WS-B6

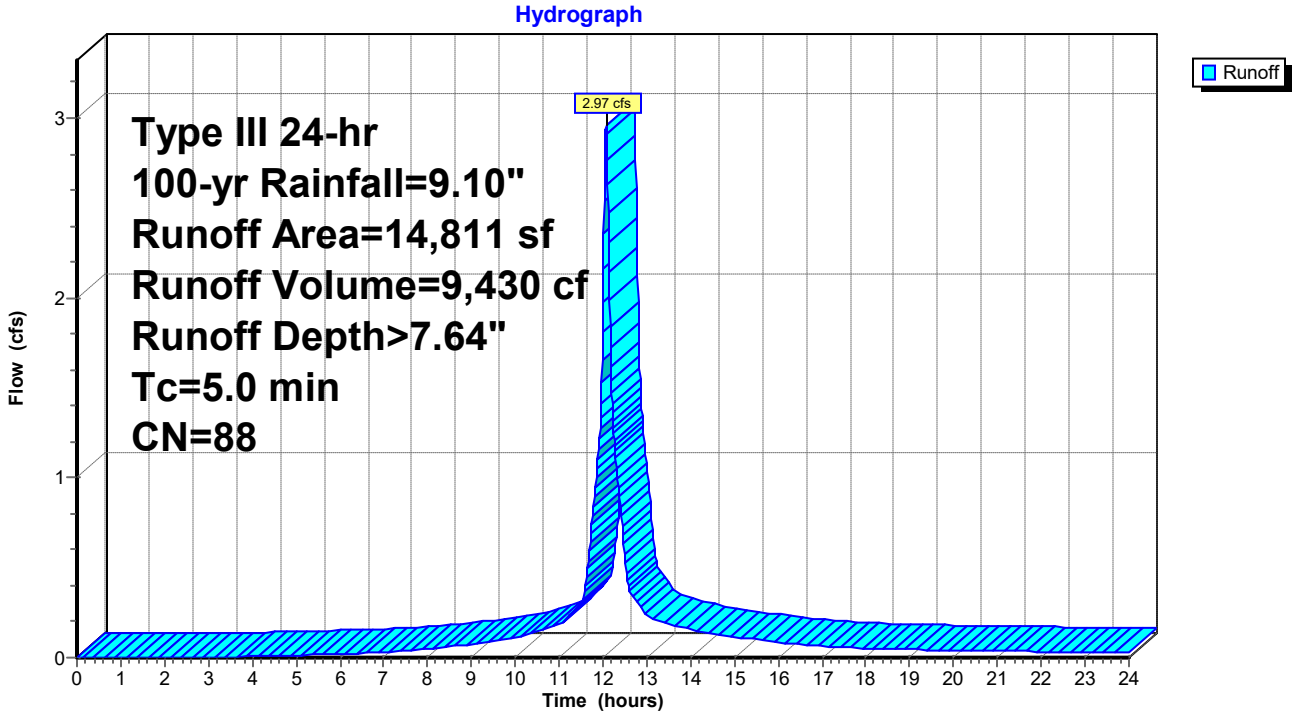
Runoff = 2.97 cfs @ 12.07 hrs, Volume= 9,430 cf, Depth> 7.64"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	9,953	98	Impervious
*	4,858	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	14,811	88	Weighted Average
	4,858		32.80% Pervious Area
	9,953		67.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment B6: WS-B6



Summary for Subcatchment C1: WS-C1

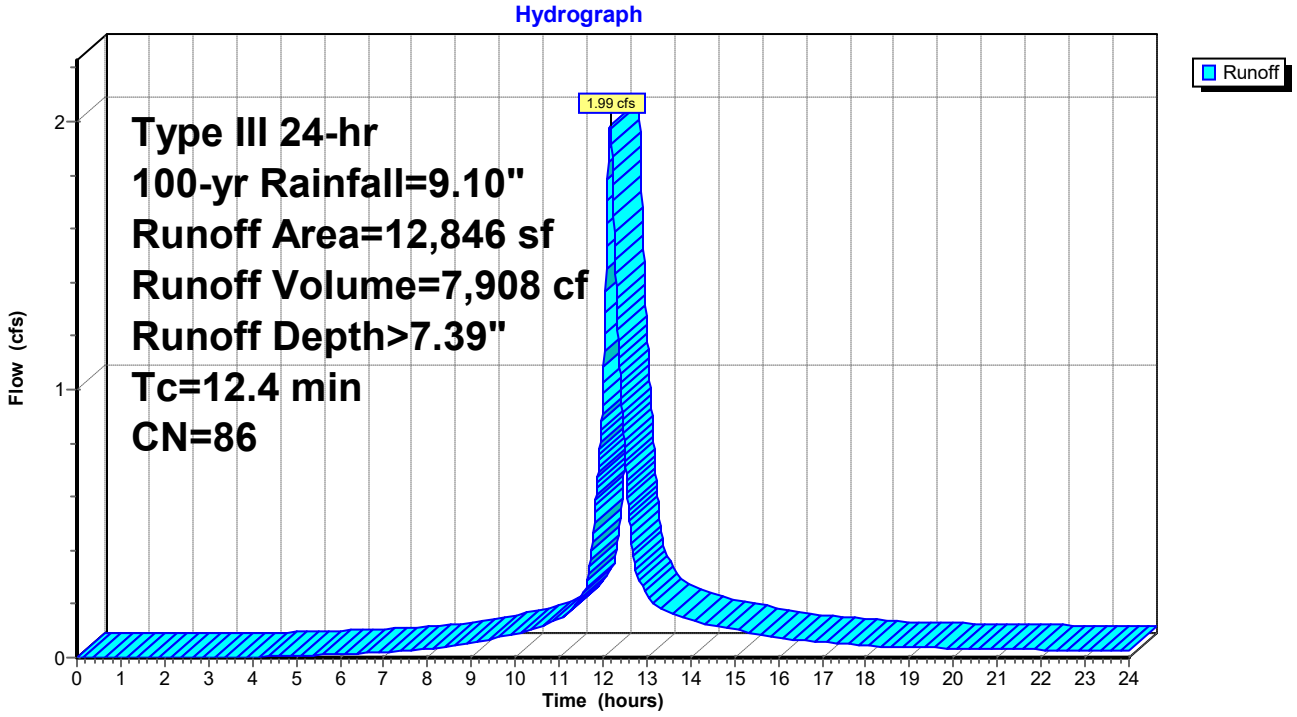
Runoff = 1.99 cfs @ 12.17 hrs, Volume= 7,908 cf, Depth> 7.39"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	5,006	98	Impervious
*	0	69	Lawn B
*	7,840	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	12,846	86	Weighted Average
	7,840		61.03% Pervious Area
	5,006		38.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4					**Direct Entry,**

Subcatchment C1: WS-C1



Summary for Subcatchment C2: WS-C2

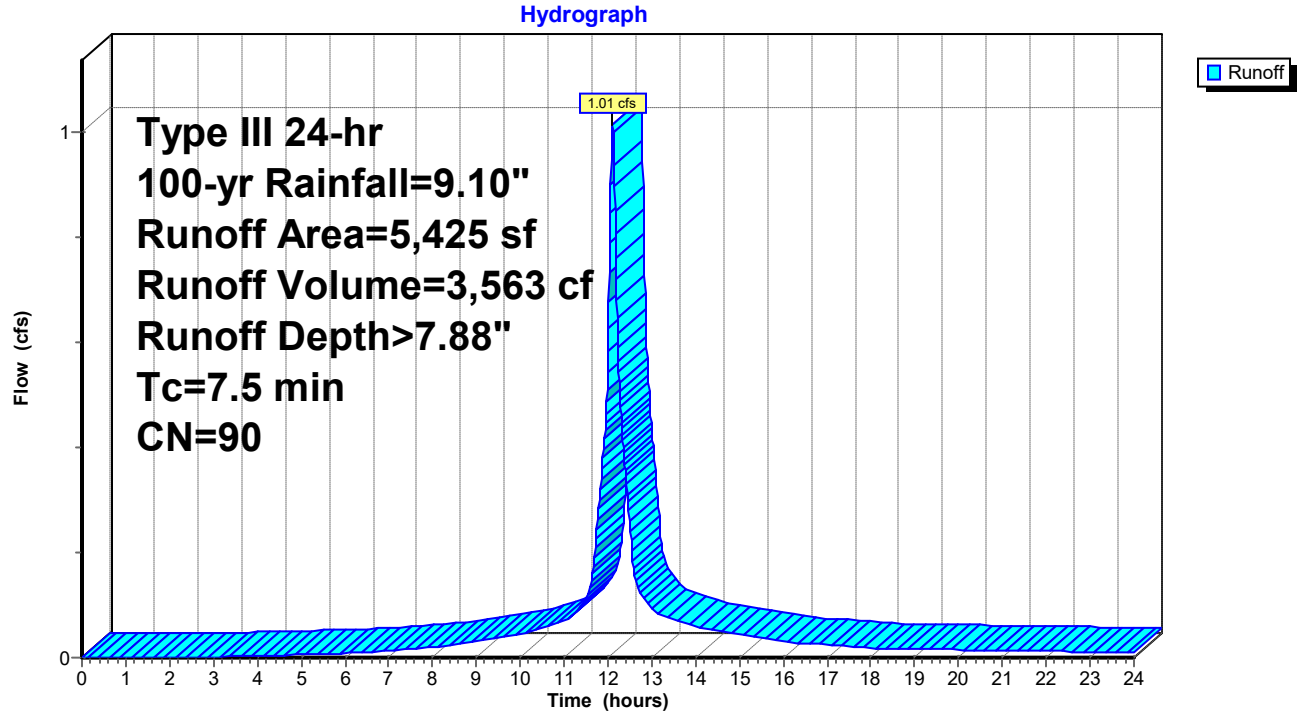
Runoff = 1.01 cfs @ 12.10 hrs, Volume= 3,563 cf, Depth> 7.88"
Routed to Pond RG03 : Rain Garden-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	3,093	98	Impervious
*	0	69	Lawn B
*	2,332	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	5,425	90	Weighted Average
	2,332		42.99% Pervious Area
	3,093		57.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5					**Direct Entry,**

Subcatchment C2: WS-C2



Summary for Subcatchment C3: WS-C3

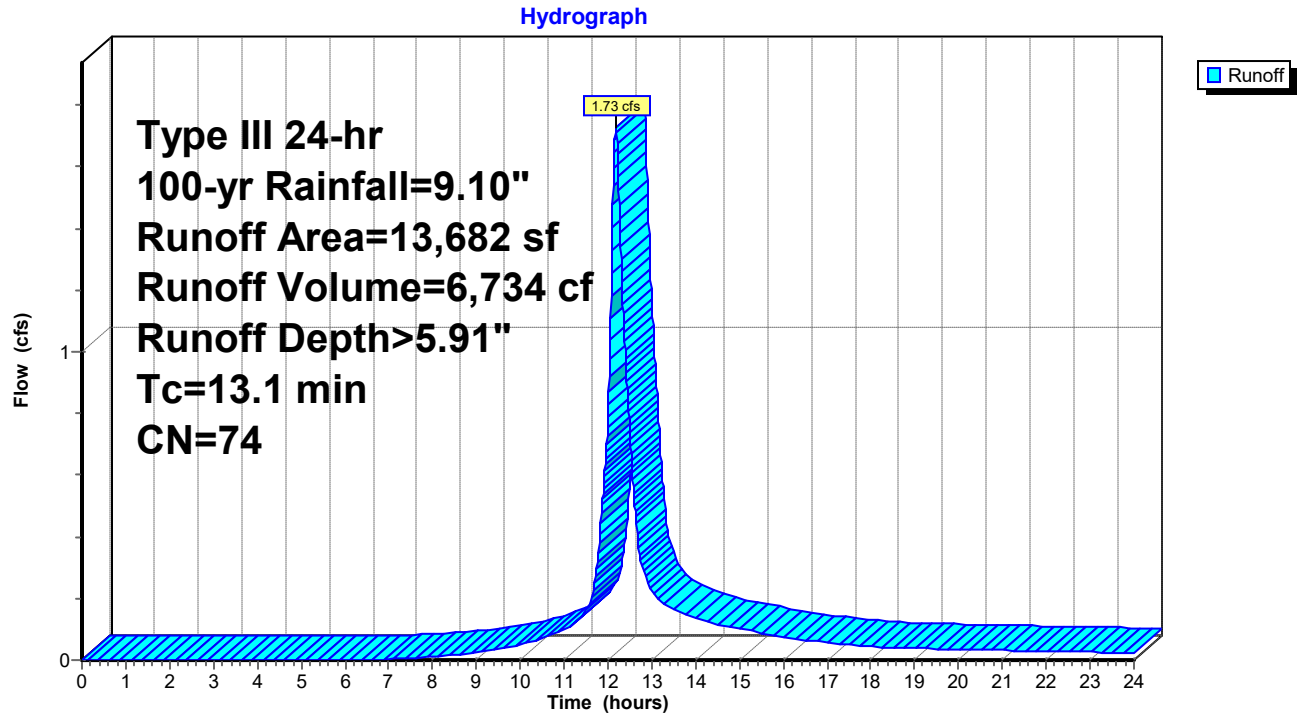
Runoff = 1.73 cfs @ 12.18 hrs, Volume= 6,734 cf, Depth> 5.91"
Routed to Pond DB03 : Detention-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	0	98	Impervious
*	143	69	Lawn B
*	5,032	79	Lawn C
*	1,722	60	Forest B
*	6,785	73	Forest C
	13,682	74	Weighted Average
	13,682		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1					**Direct Entry,**

Subcatchment C3: WS-C3



Summary for Subcatchment C4: WS-C4

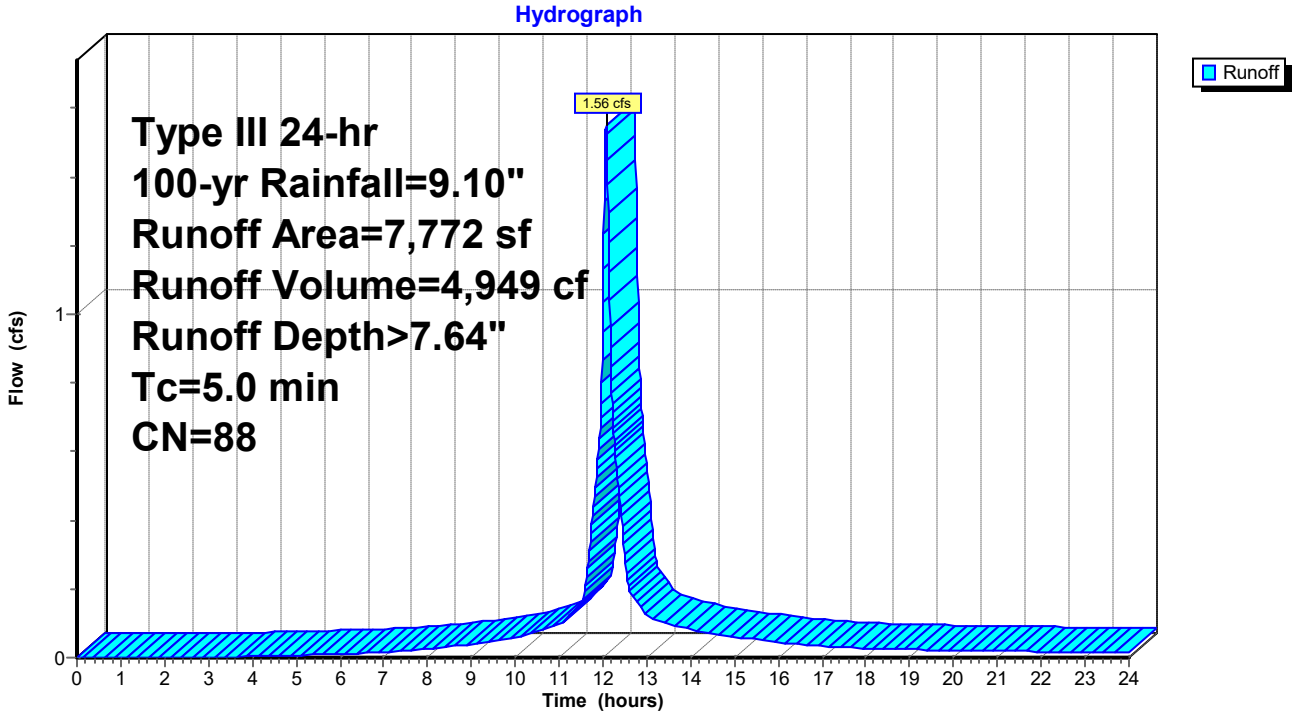
Runoff = 1.56 cfs @ 12.07 hrs, Volume= 4,949 cf, Depth> 7.64"
Routed to Link 3 : Pipe 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	3,764	98	Impervious
*	0	69	Lawn B
*	4,008	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	7,772	88	Weighted Average
	4,008		51.57% Pervious Area
	3,764		48.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C4: WS-C4



Summary for Subcatchment C5: WS-C5

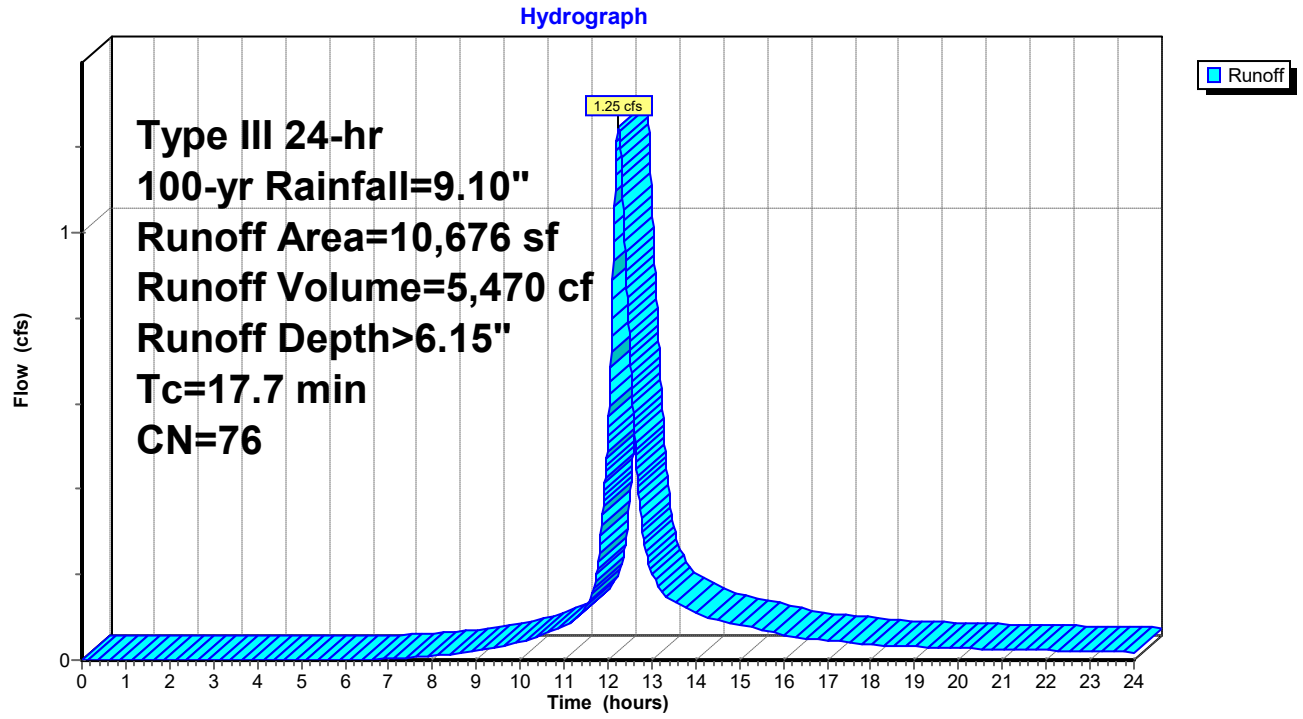
Runoff = 1.25 cfs @ 12.24 hrs, Volume= 5,470 cf, Depth> 6.15"
Routed to Pond DB02 : Detention-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	0	98	Impervious
*	209	69	Lawn B
*	6,162	79	Lawn C
*	569	60	Forest B
*	3,736	73	Forest C
	10,676	76	Weighted Average
	10,676		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7					**Direct Entry,**

Subcatchment C5: WS-C5



Summary for Subcatchment C6: WS-C6

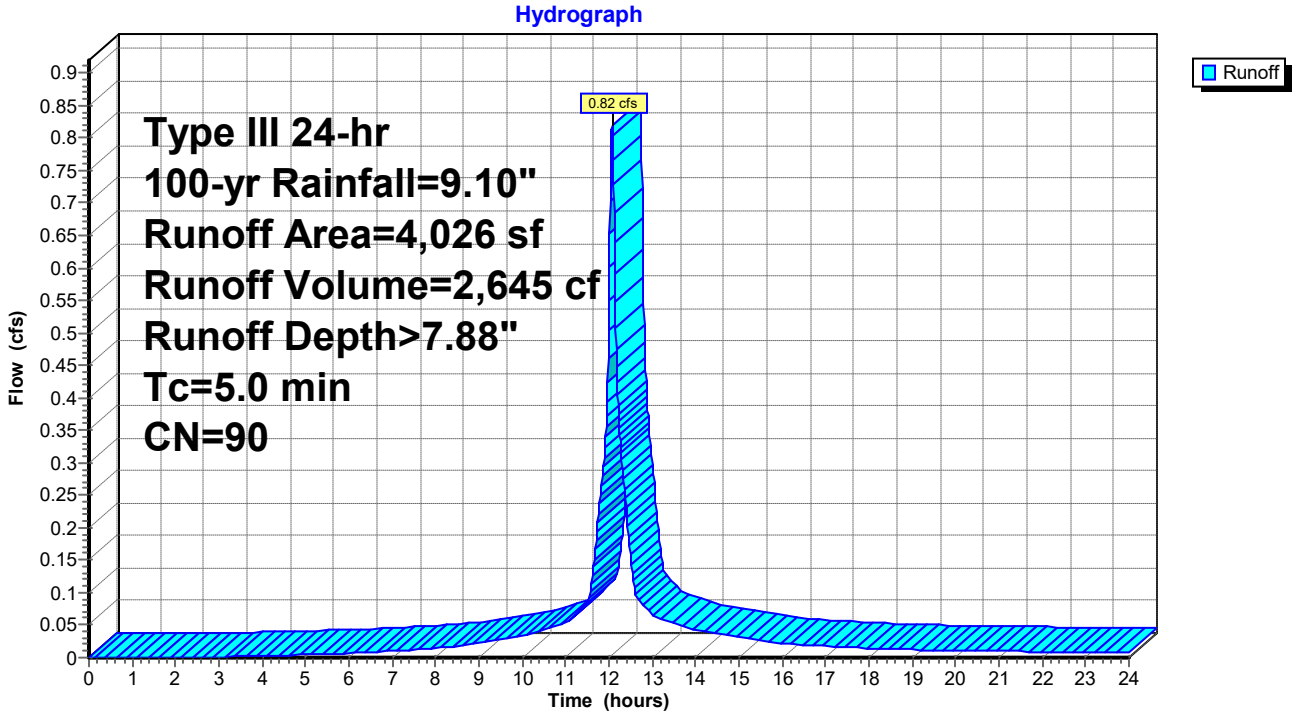
Runoff = 0.82 cfs @ 12.07 hrs, Volume= 2,645 cf, Depth> 7.88"
Routed to Pond RG06 : Rain Garden-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	2,854	98	Impervious
*	1,172	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	4,026	90	Weighted Average
	1,172		29.11% Pervious Area
	2,854		70.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C6: WS-C6



Summary for Subcatchment C7: WS-C7

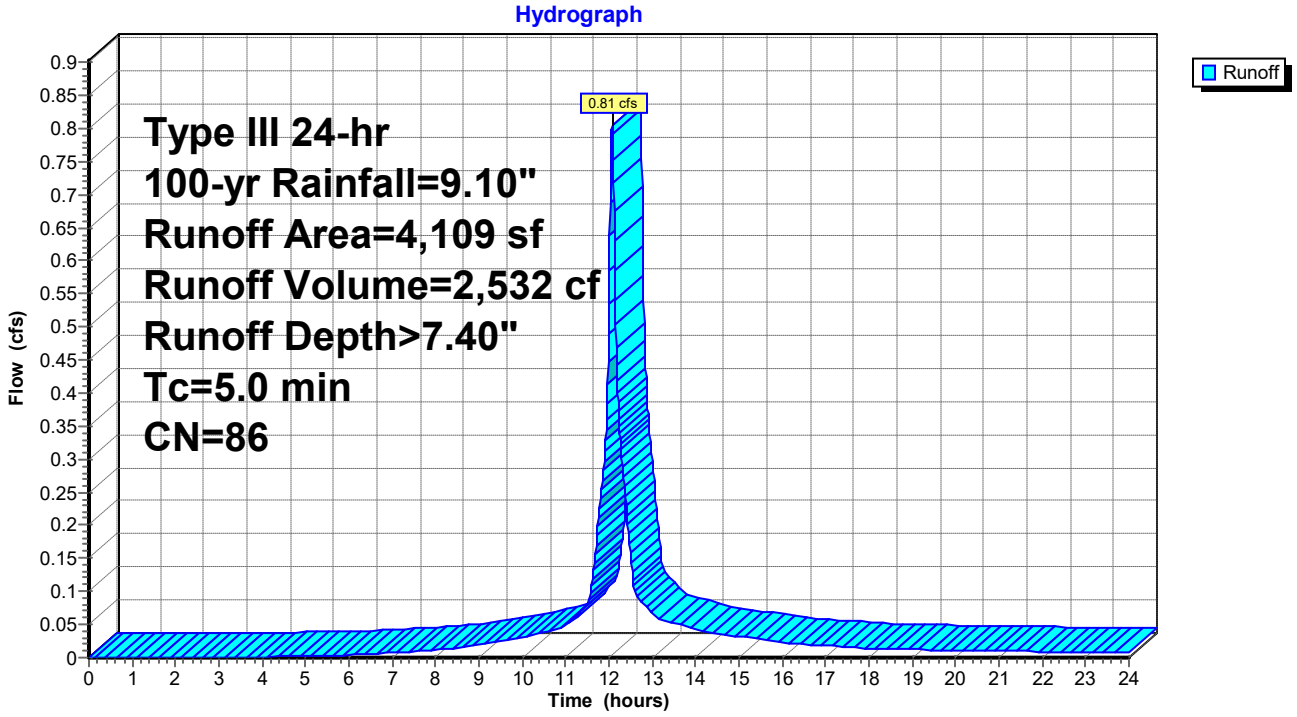
Runoff = 0.81 cfs @ 12.07 hrs, Volume= 2,532 cf, Depth> 7.40"
Routed to Pond RG07 : Rain Garden-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	2,402	98	Impervious
*	1,707	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	4,109	86	Weighted Average
	1,707		41.54% Pervious Area
	2,402		58.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment C7: WS-C7



Summary for Subcatchment D1H: WS-D1H

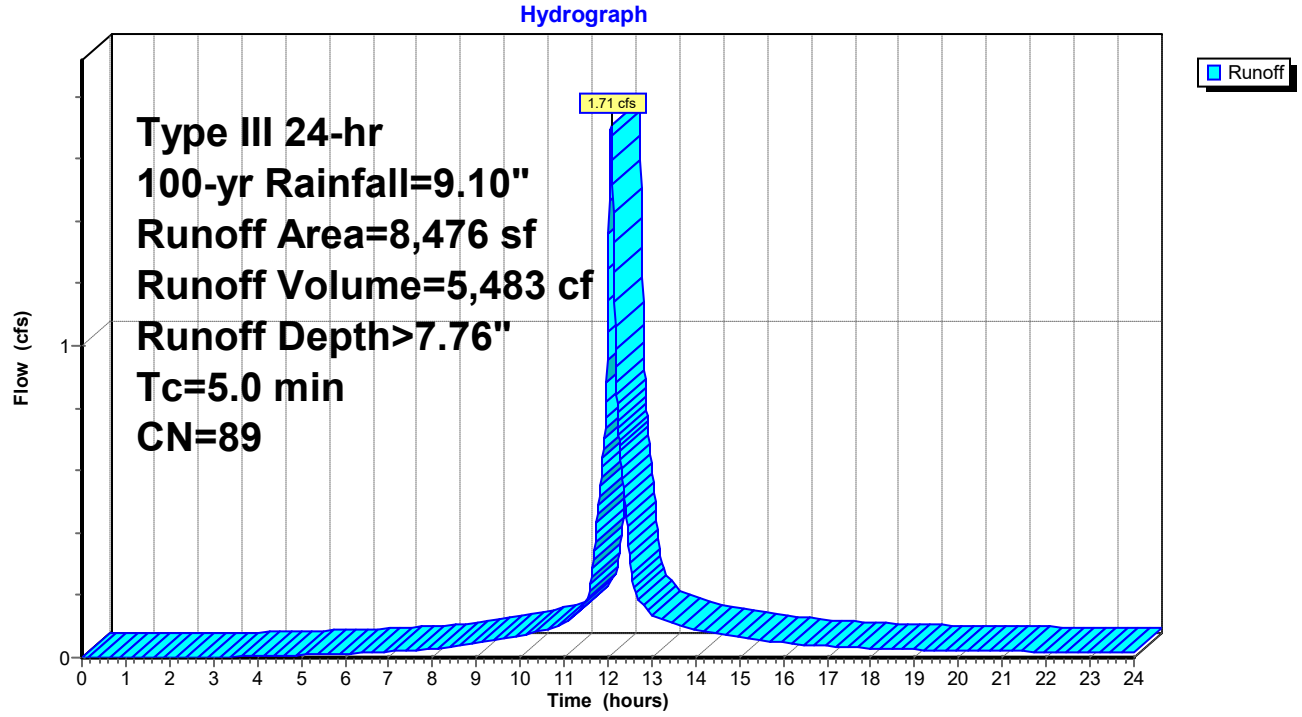
Runoff = 1.71 cfs @ 12.07 hrs, Volume= 5,483 cf, Depth> 7.76"
Routed to Pond 15P : Por Pvt-D1H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	5,649	98	Impervious
*	2,426	69	Lawn B
*	401	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	8,476	89	Weighted Average
	2,827		33.35% Pervious Area
	5,649		66.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D1H: WS-D1H



Summary for Subcatchment D2A: WS-D2A

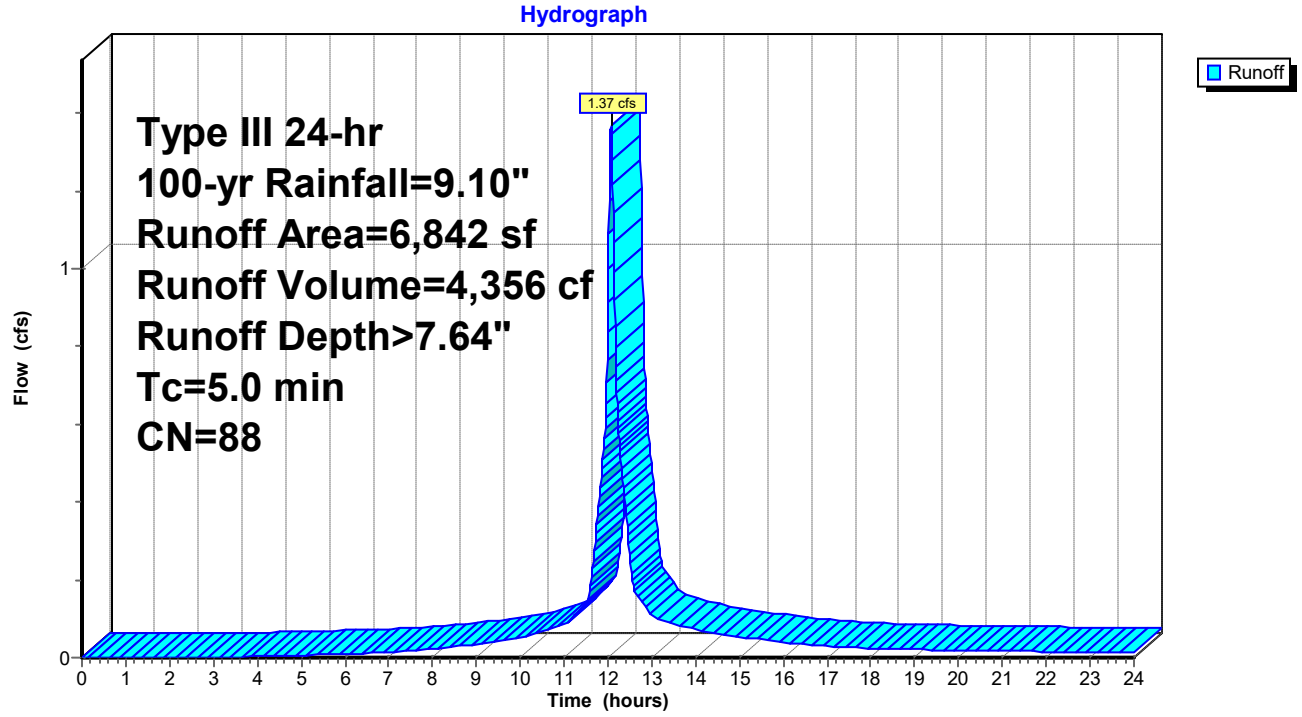
Runoff = 1.37 cfs @ 12.07 hrs, Volume= 4,356 cf, Depth> 7.64"
Routed to Pond 13P : Por Pvt-D2A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	4,404	98	Impervious
*	2,438	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	6,842	88	Weighted Average
	2,438		35.63% Pervious Area
	4,404		64.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2A: WS-D2A



Summary for Subcatchment D2B: WS-D2B

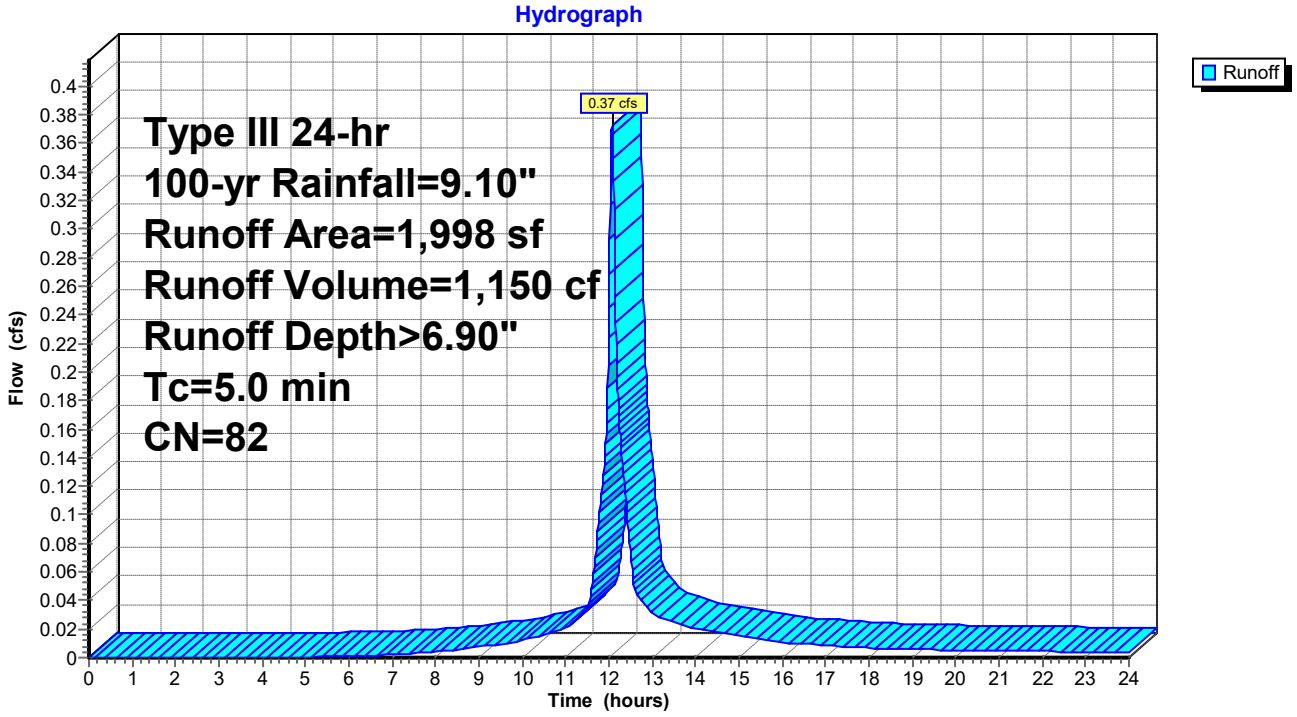
Runoff = 0.37 cfs @ 12.07 hrs, Volume= 1,150 cf, Depth> 6.90"
Routed to Pond 14P : Por Pvt-D2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	928	98	Impervious
*	1,070	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,998	82	Weighted Average
	1,070		53.55% Pervious Area
	928		46.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2B: WS-D2B



Summary for Subcatchment D2C: WS-D2C

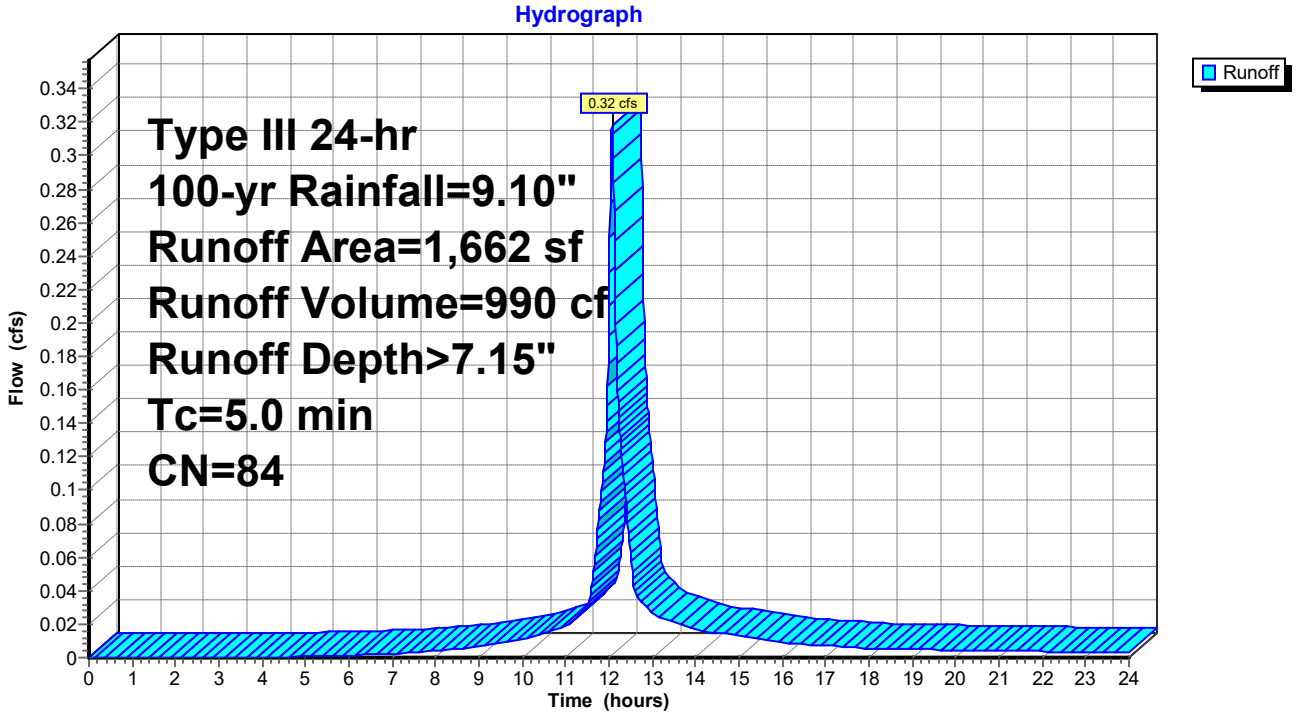
Runoff = 0.32 cfs @ 12.07 hrs, Volume= 990 cf, Depth> 7.15"
Routed to Pond 16P : Por Pvt-D2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	860	98	Impervious
*	802	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,662	84	Weighted Average
	802		48.26% Pervious Area
	860		51.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2C: WS-D2C



Summary for Subcatchment D2D: WS-D2D

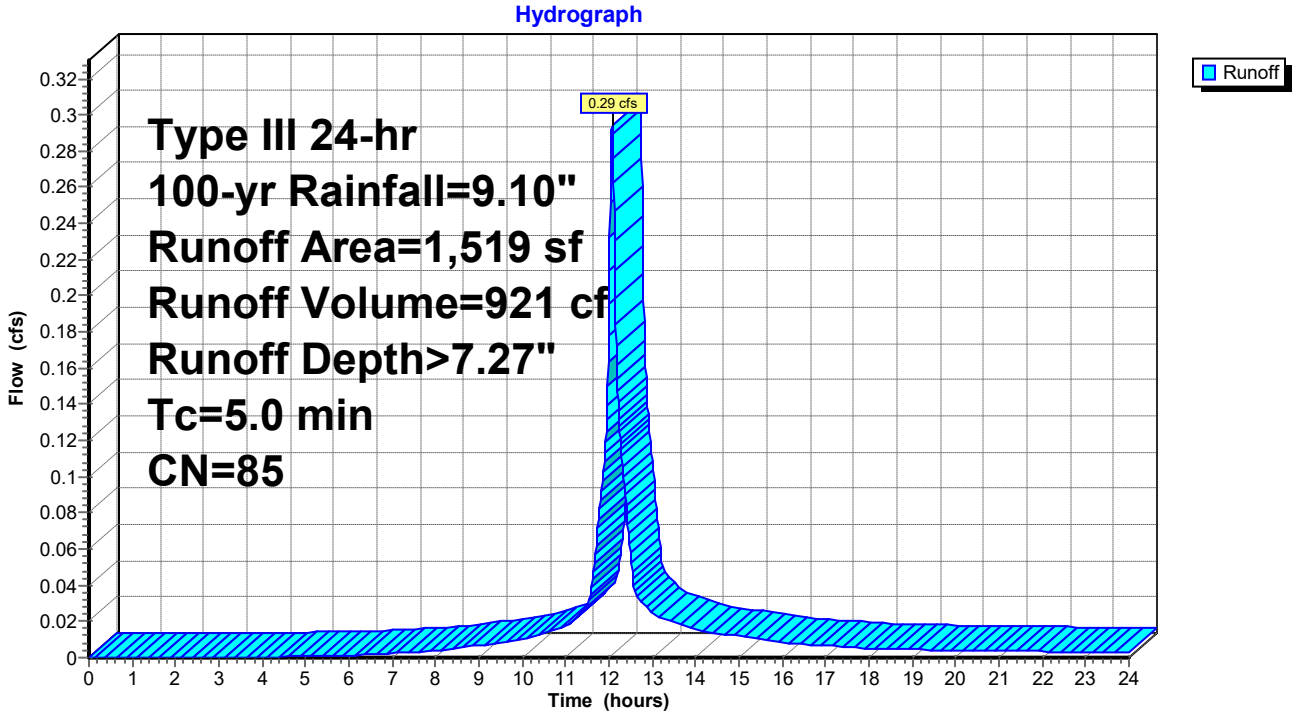
Runoff = 0.29 cfs @ 12.07 hrs, Volume= 921 cf, Depth> 7.27"
Routed to Pond 18P : Por Pvt-D2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	846	98	Impervious
*	673	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,519	85	Weighted Average
	673		44.31% Pervious Area
	846		55.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2D: WS-D2D



Summary for Subcatchment D2E: WS-D2E

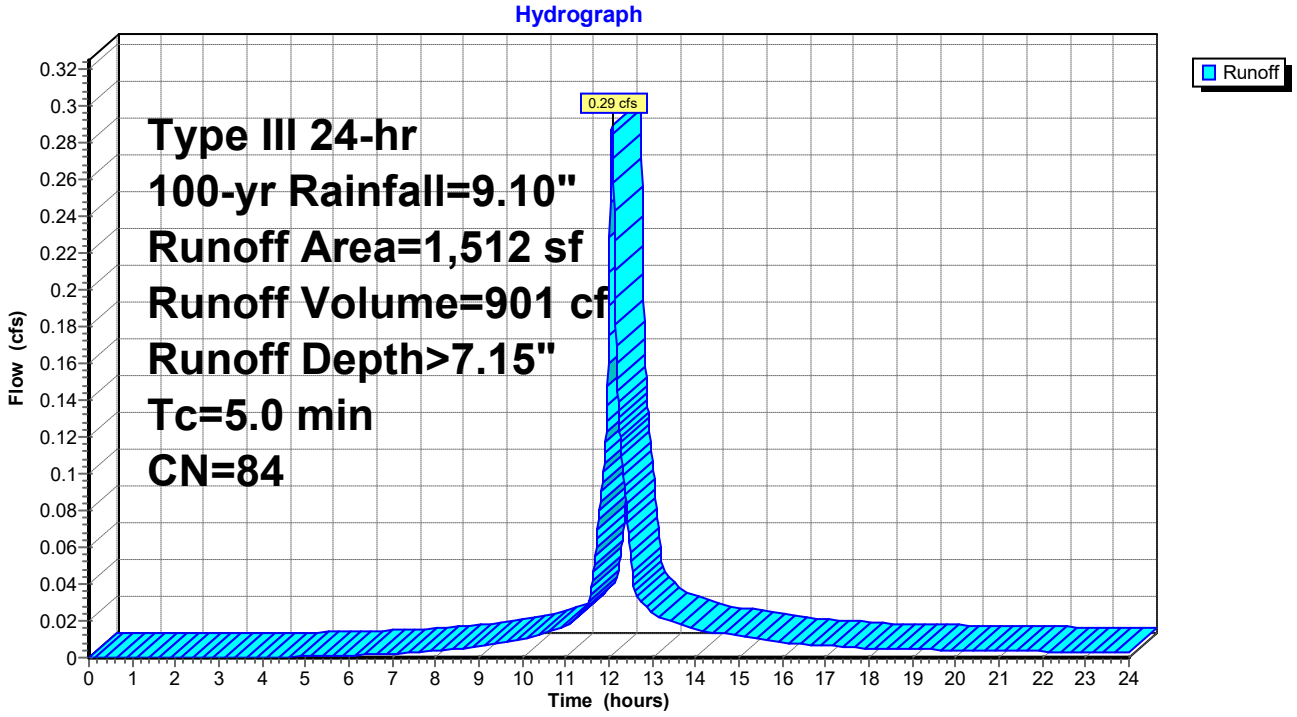
Runoff = 0.29 cfs @ 12.07 hrs, Volume= 901 cf, Depth> 7.15"
Routed to Pond 19P : Por Pvt-D2E

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	808	98	Impervious
*	704	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,512	84	Weighted Average
	704		46.56% Pervious Area
	808		53.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2E: WS-D2E



Summary for Subcatchment D2F: WS-D2F

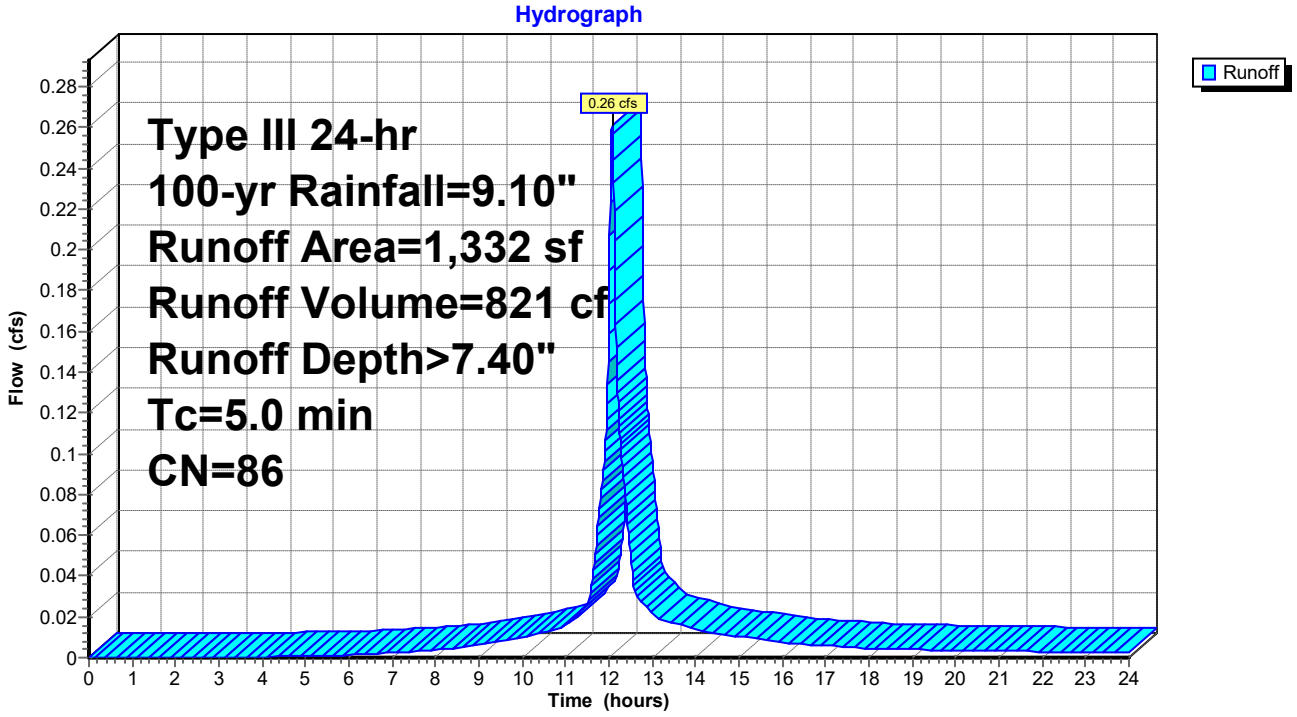
Runoff = 0.26 cfs @ 12.07 hrs, Volume= 821 cf, Depth> 7.40"
Routed to Pond 20P : Por Pvt-D2F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	800	98	Impervious
*	532	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	1,332	86	Weighted Average
	532		39.94% Pervious Area
	800		60.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2F: WS-D2F



Summary for Subcatchment D2G: WS-D2G

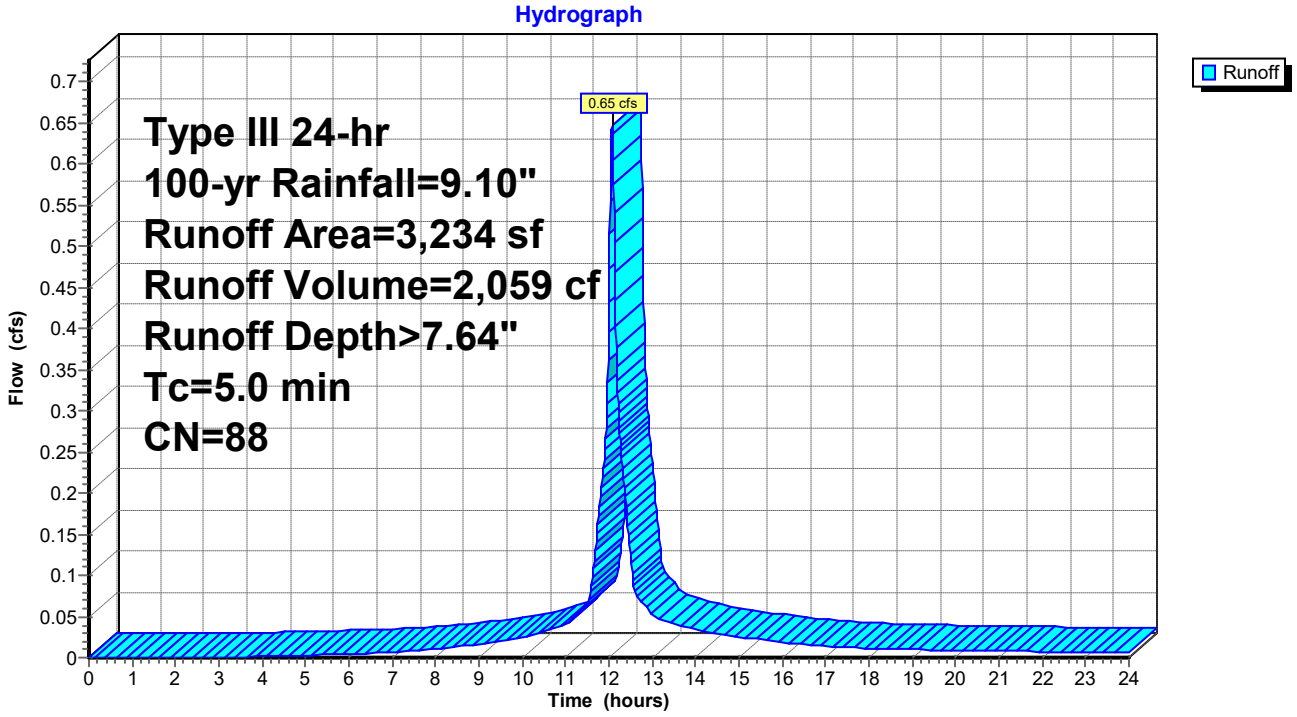
Runoff = 0.65 cfs @ 12.07 hrs, Volume= 2,059 cf, Depth> 7.64"
Routed to Pond 21P : Por Pvt-D2G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	1,833	98	Impervious
*	555	69	Lawn B
*	846	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	3,234	88	Weighted Average
	1,401		43.32% Pervious Area
	1,833		56.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D2G: WS-D2G



Summary for Subcatchment D3: WS-D3

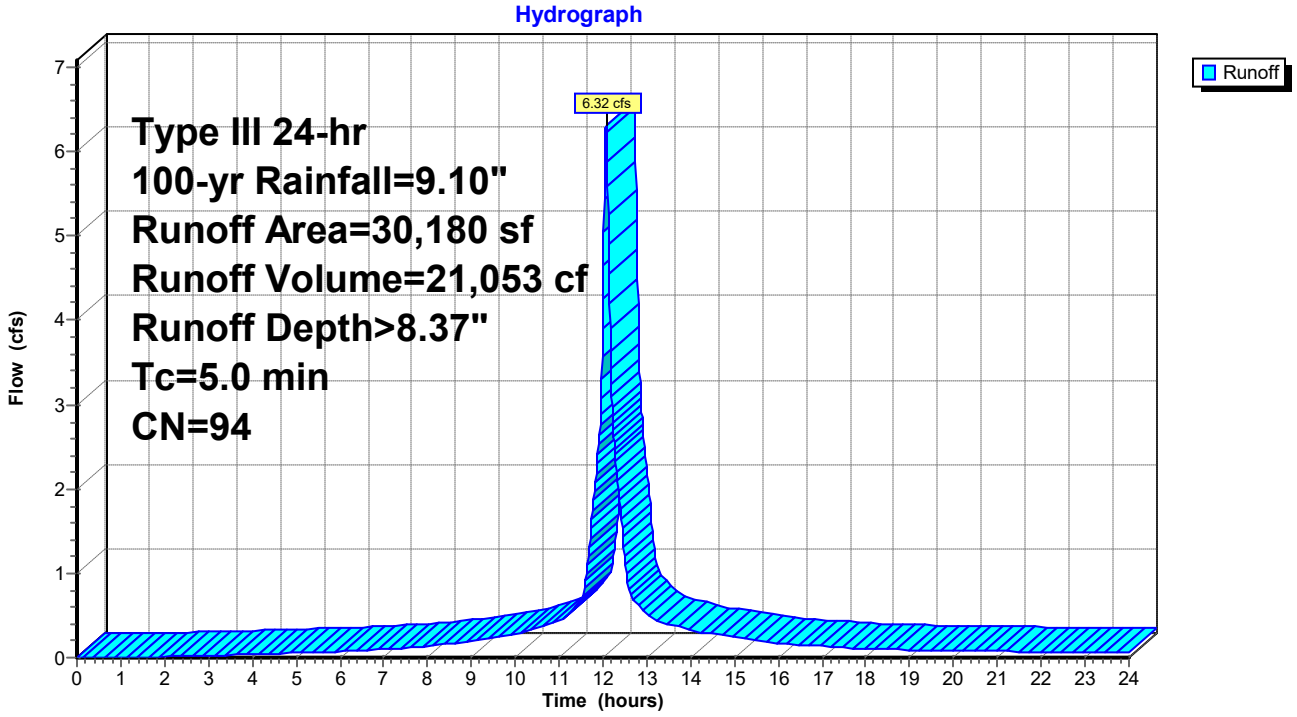
Runoff = 6.32 cfs @ 12.07 hrs, Volume= 21,053 cf, Depth> 8.37"
Routed to Pond PP03 : Por Pvt-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	23,042	98	Impervious
*	0	69	Lawn B
*	7,138	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	30,180	94	Weighted Average
	7,138		23.65% Pervious Area
	23,042		76.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D3: WS-D3



Summary for Subcatchment D4: WS-D4

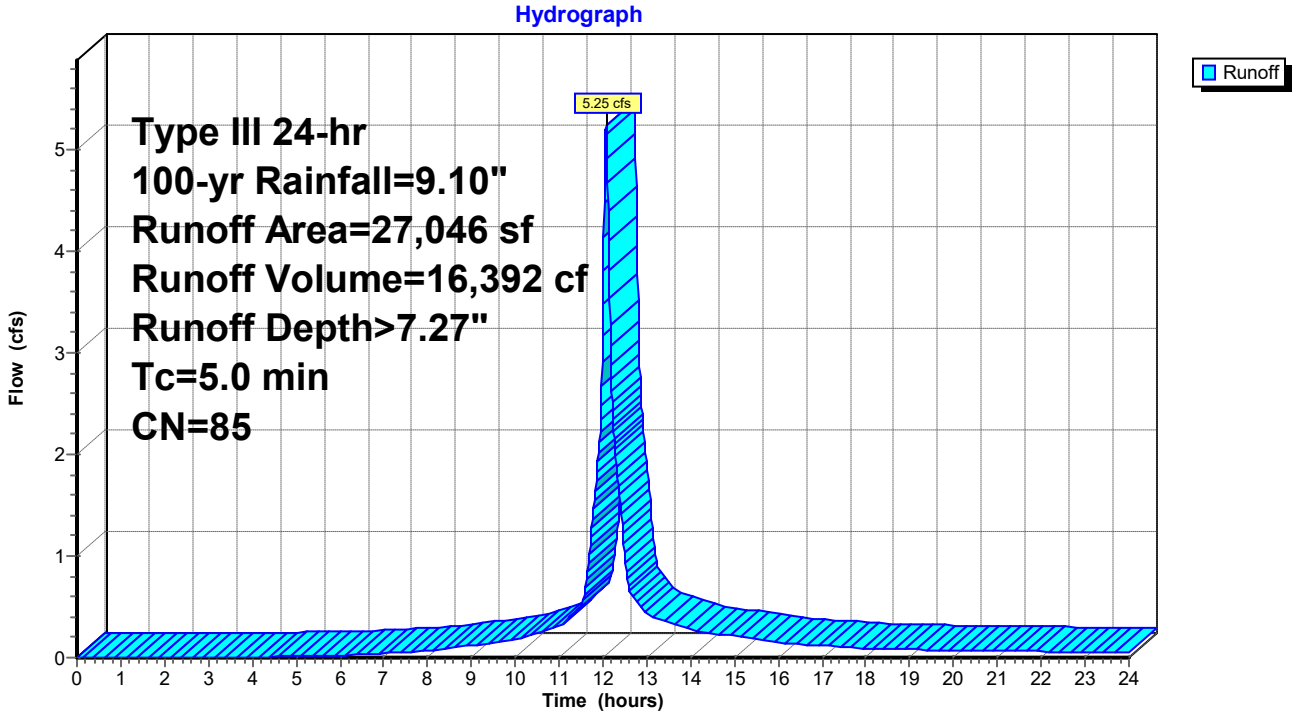
Runoff = 5.25 cfs @ 12.07 hrs, Volume= 16,392 cf, Depth> 7.27"
Routed to Pond PP07 : Por Pvt-07

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	14,753	98	Impervious
*	12,293	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	27,046	85	Weighted Average
	12,293		45.45% Pervious Area
	14,753		54.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D4: WS-D4



Summary for Subcatchment D5: WS-D5

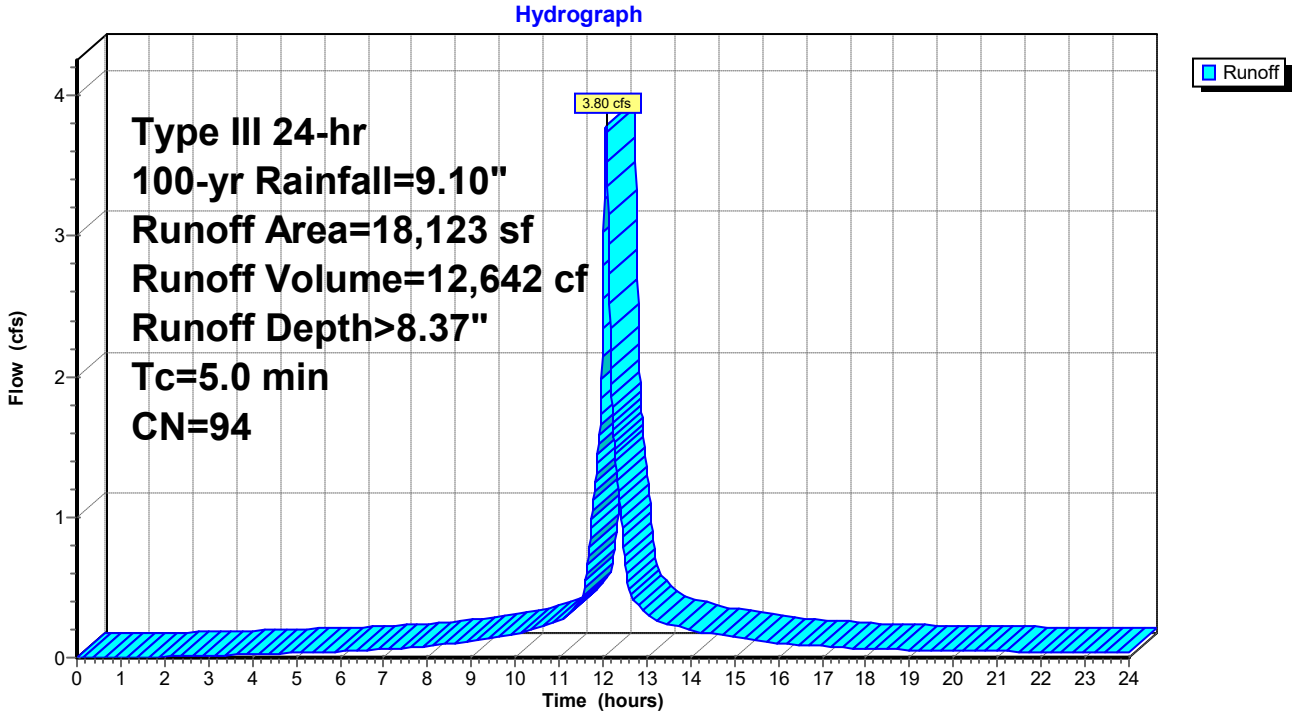
Runoff = 3.80 cfs @ 12.07 hrs, Volume= 12,642 cf, Depth> 8.37"
Routed to Pond PP02 : Por Pvt-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	14,849	98	Impervious
*	0	69	Lawn B
*	720	79	Lawn C
*	0	60	Forest B
*	2,554	73	Forest C
	18,123	94	Weighted Average
	3,274		18.07% Pervious Area
	14,849		81.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D5: WS-D5



Summary for Subcatchment D6: WS-D6

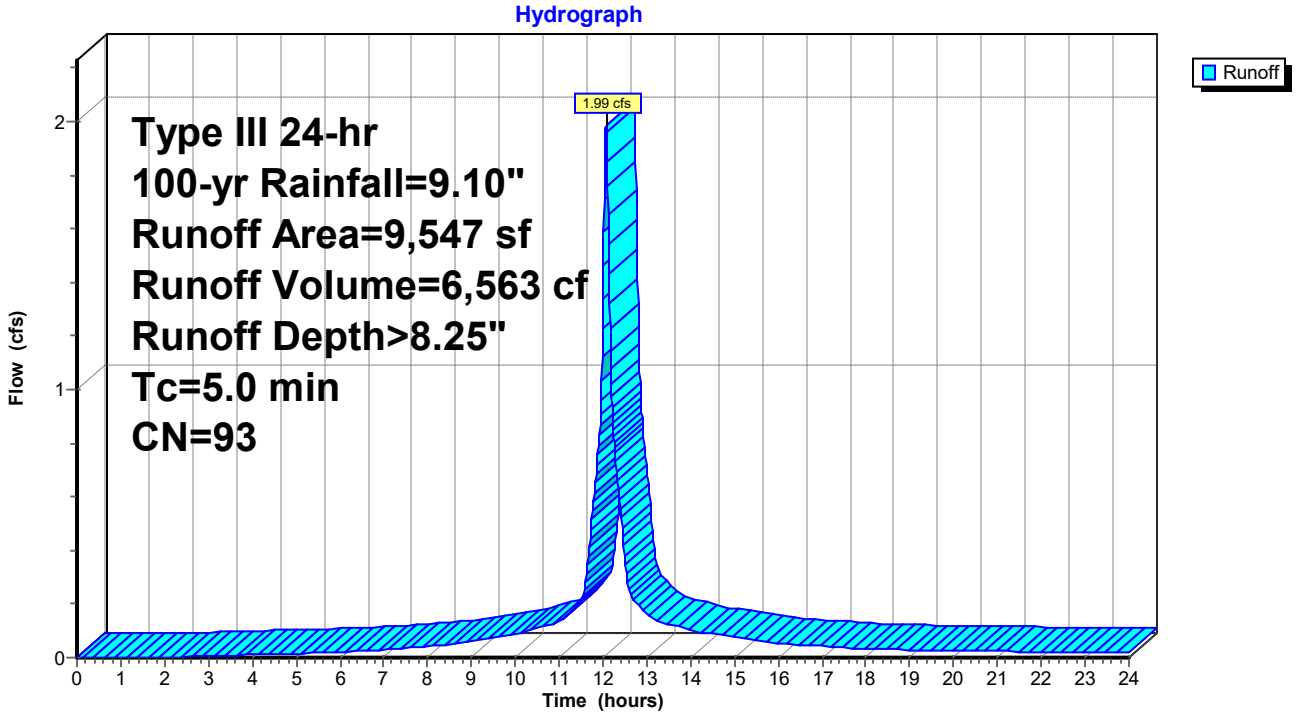
Runoff = 1.99 cfs @ 12.07 hrs, Volume= 6,563 cf, Depth> 8.25"
Routed to Pond PP04 : Por Pvt-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	6,988	98	Impervious
*	0	69	Lawn B
*	2,559	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	9,547	93	Weighted Average
	2,559		26.80% Pervious Area
	6,988		73.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D6: WS-D6



Summary for Subcatchment D7: WS-D7

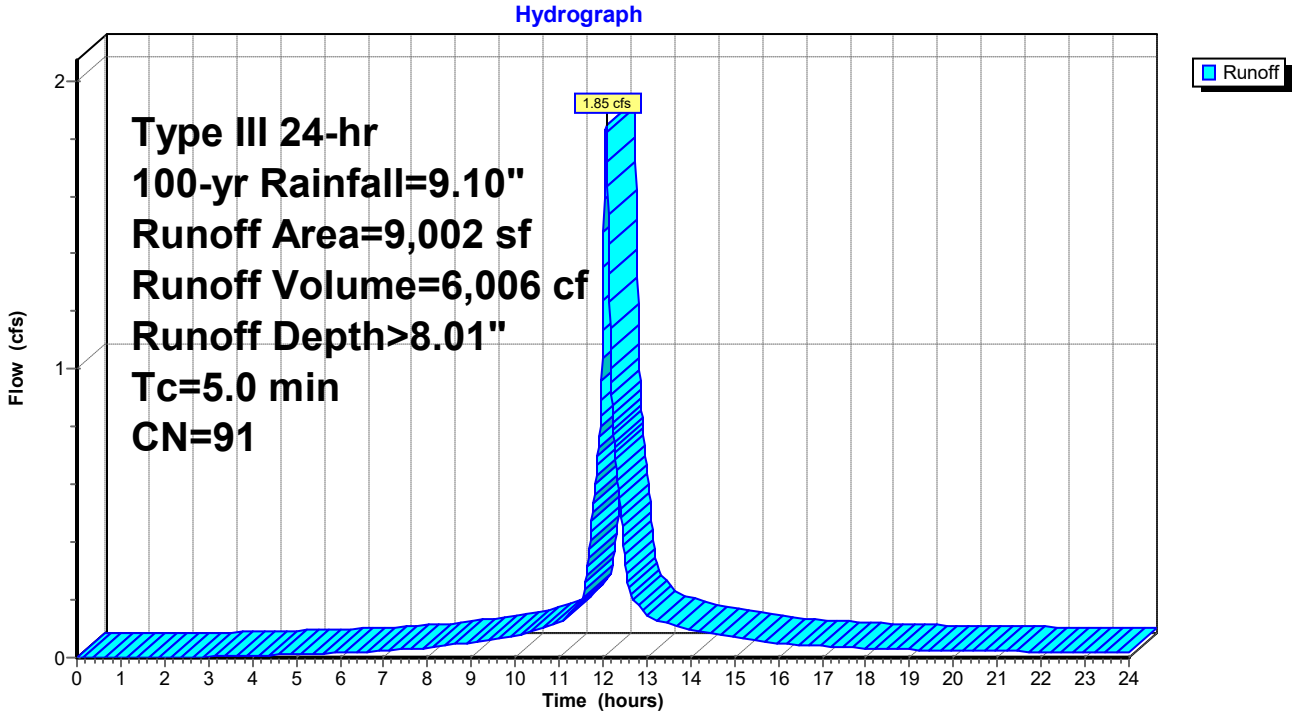
Runoff = 1.85 cfs @ 12.07 hrs, Volume= 6,006 cf, Depth> 8.01"
Routed to Pond PP05 : Por Pvt-05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	6,727	98	Impervious
*	1,674	69	Lawn B
*	601	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	9,002	91	Weighted Average
	2,275		25.27% Pervious Area
	6,727		74.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D7: WS-D7



Summary for Subcatchment D8: WS-D8

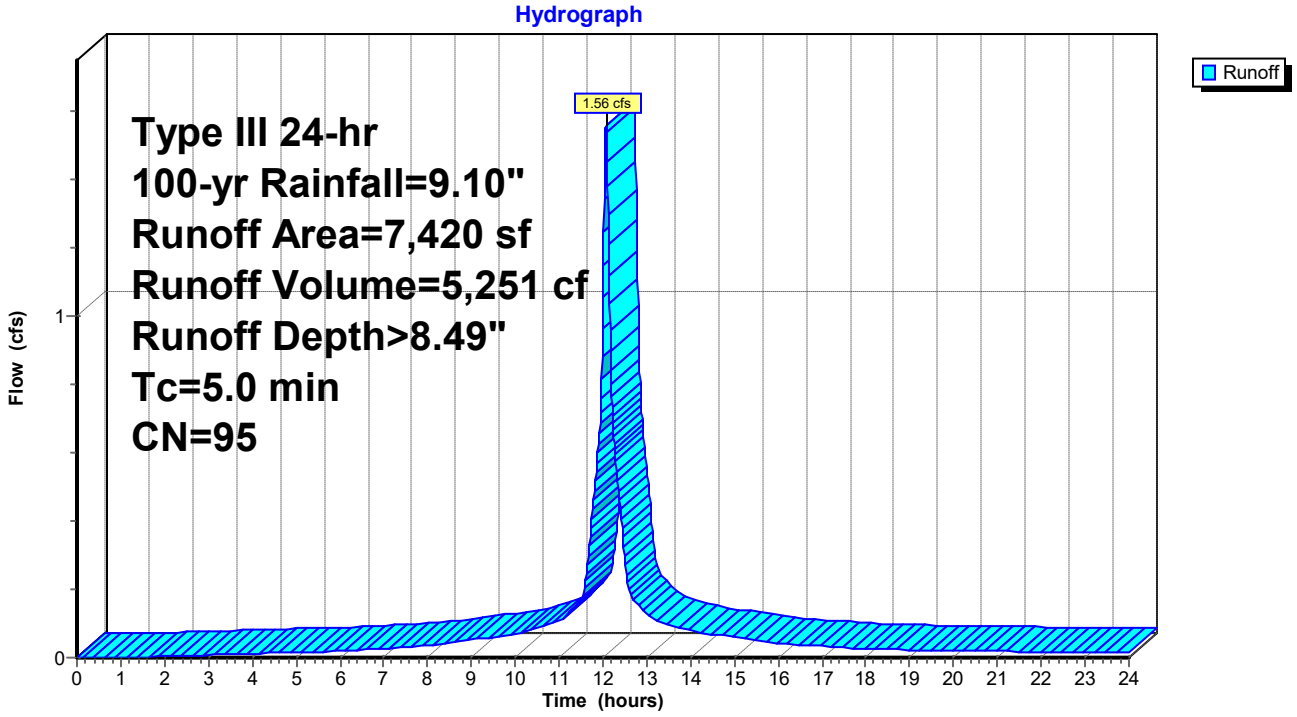
Runoff = 1.56 cfs @ 12.07 hrs, Volume= 5,251 cf, Depth> 8.49"
Routed to Pond PP06 : Por Pvt-06

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	6,549	98	Impervious
*	871	69	Lawn B
*	0	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	7,420	95	Weighted Average
	871		11.74% Pervious Area
	6,549		88.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment D8: WS-D8



Summary for Subcatchment E1: WS-E1

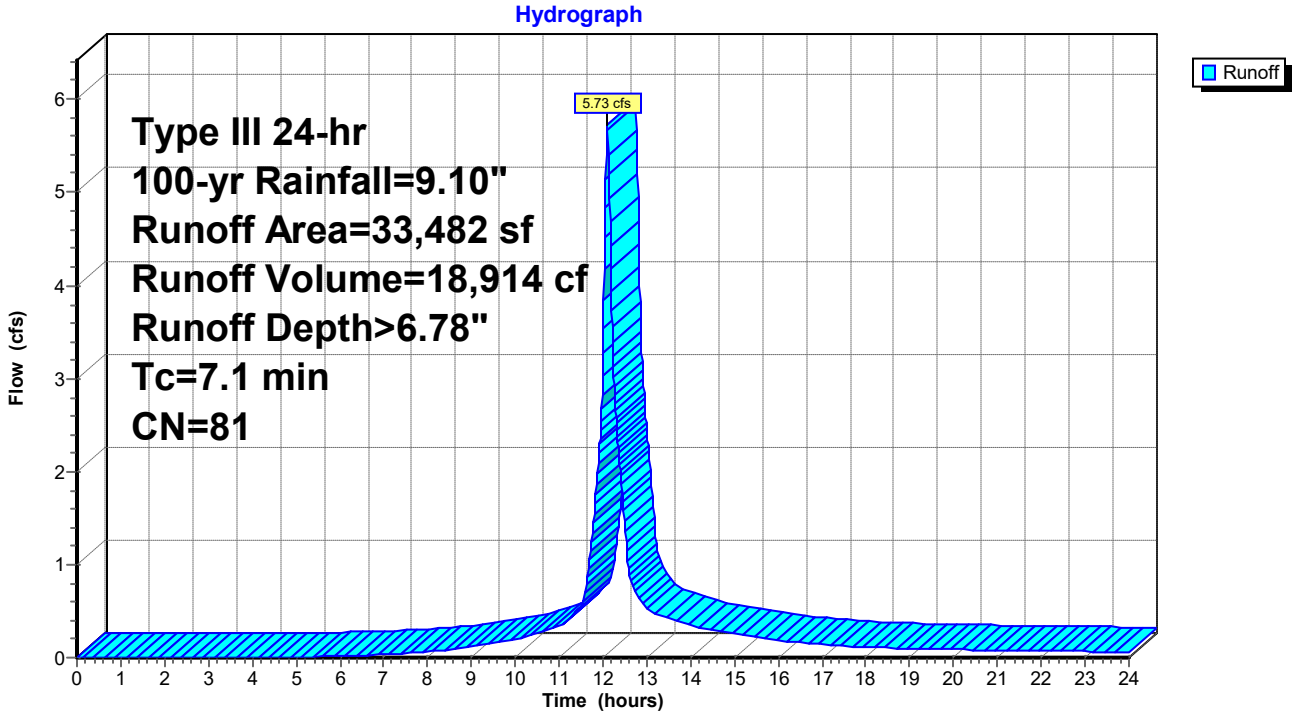
Runoff = 5.73 cfs @ 12.10 hrs, Volume= 18,914 cf, Depth> 6.78"
Routed to Pond UI02 : Und Inf 02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	10,193	98	Impervious
*	1,931	69	Lawn B
*	9,074	79	Lawn C
*	3,193	60	Forest B
*	9,091	73	Forest C
	33,482	81	Weighted Average
	23,289		69.56% Pervious Area
	10,193		30.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1					**Direct Entry,**

Subcatchment E1: WS-E1



Summary for Subcatchment E2: WS-E2

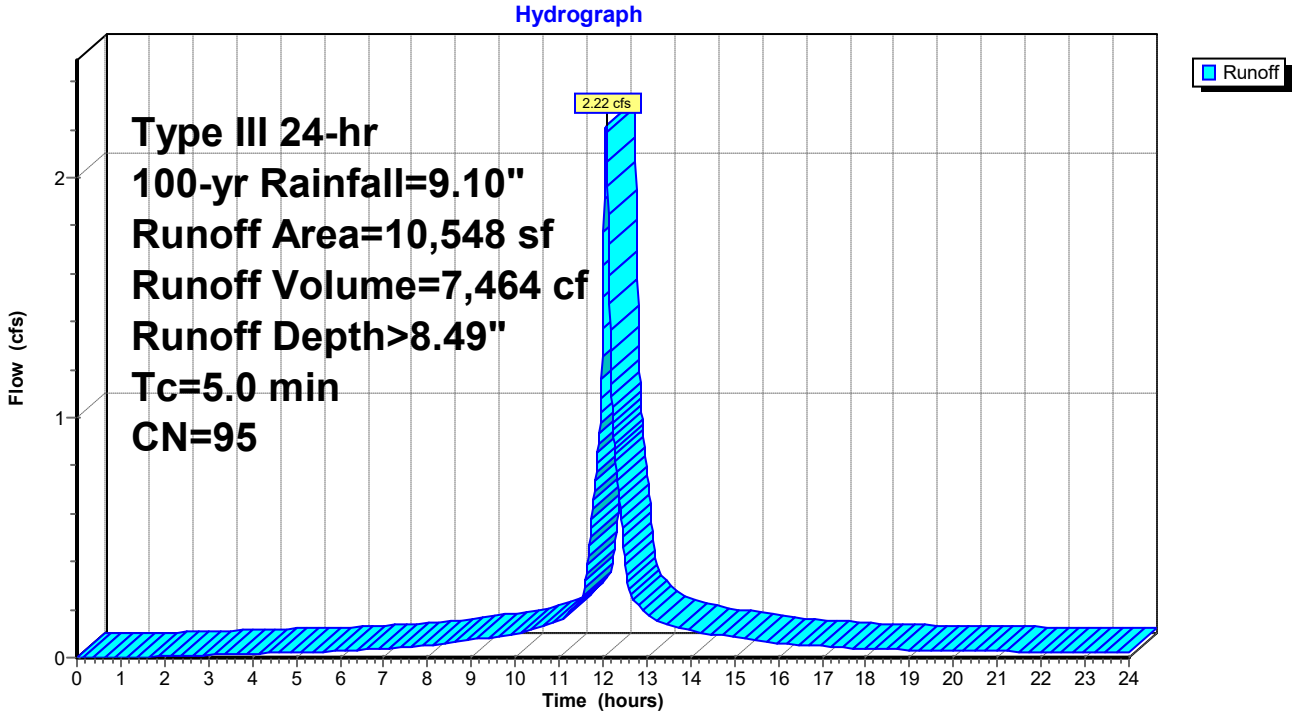
Runoff = 2.22 cfs @ 12.07 hrs, Volume= 7,464 cf, Depth> 8.49"
Routed to Pond RG04 : Rain Garden-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	8,740	98	Impervious
*	0	69	Lawn B
*	1,808	79	Lawn C
*	0	60	Forest B
*	0	73	Forest C
	10,548	95	Weighted Average
	1,808		17.14% Pervious Area
	8,740		82.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment E2: WS-E2



Summary for Subcatchment R4: Roof-04

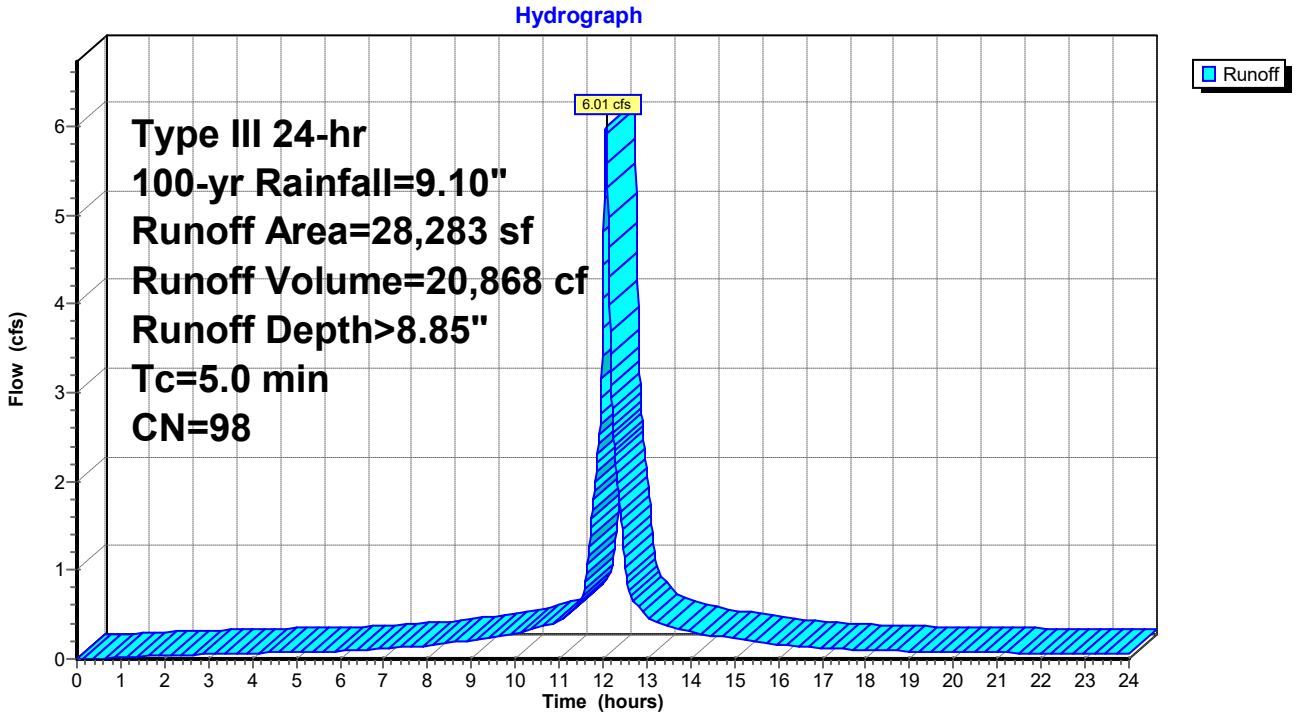
Runoff = 6.01 cfs @ 12.07 hrs, Volume= 20,868 cf, Depth> 8.85"
Routed to Pond UI01 : Und Inf 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	28,283	98	Impervious
	28,283		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment R4: Roof-04



Summary for Subcatchment R5: Roof-05

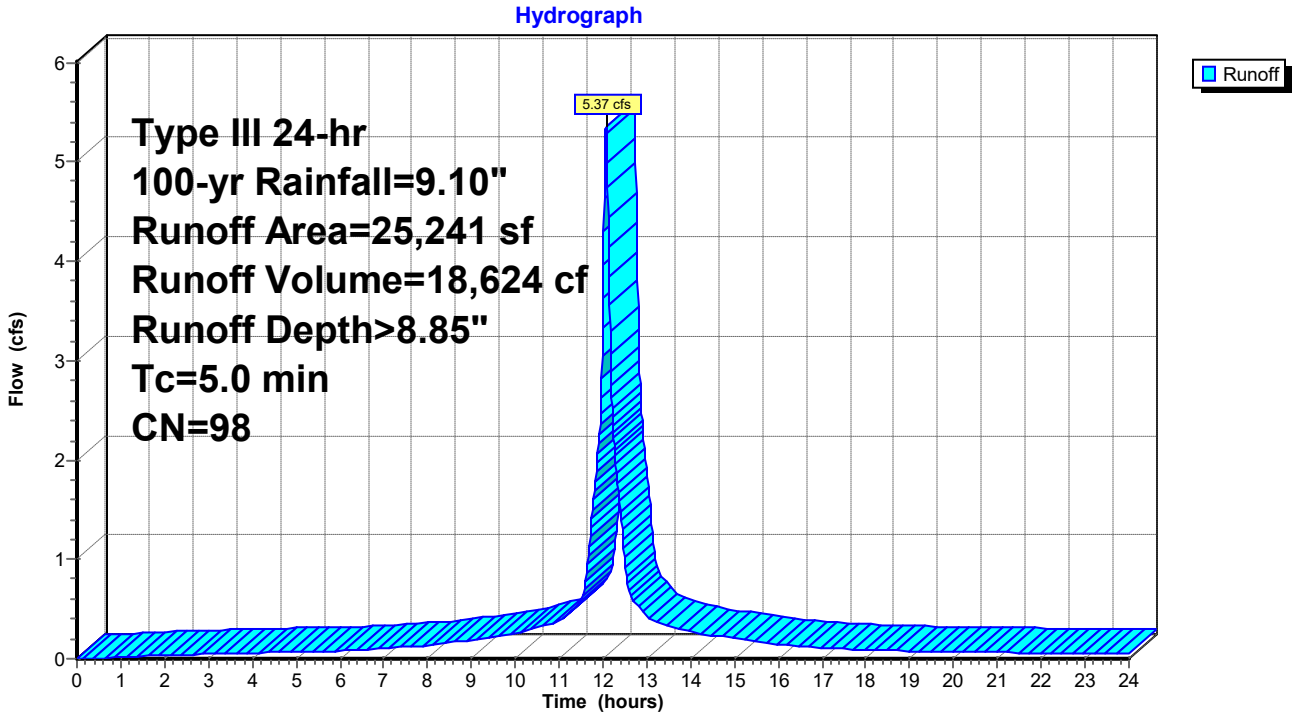
Runoff = 5.37 cfs @ 12.07 hrs, Volume= 18,624 cf, Depth> 8.85"
Routed to Pond UI01 : Und Inf 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.10"

	Area (sf)	CN	Description
*	25,241	98	Impervious
*	0	79	Lawn C
	25,241	98	Weighted Average
	25,241		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment R5: Roof-05



Summary for Pond 13P: Por Pvt-D2A

Porous Pavement in Parking Spaces Only

Inflow Area = 16,536 sf, 85.26% Impervious, Inflow Depth > 12.25" for 100-yr event
Inflow = 9.62 cfs @ 12.06 hrs, Volume= 16,885 cf
Outflow = 9.15 cfs @ 12.10 hrs, Volume= 14,652 cf, Atten= 5%, Lag= 2.6 min
Primary = 1.14 cfs @ 12.10 hrs, Volume= 9,513 cf
Routed to Pond DMH13 : DMH-13
Secondary = 8.01 cfs @ 12.10 hrs, Volume= 5,139 cf
Routed to Pond 14P : Por Pvt-D2B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 59.44' @ 12.10 hrs Surf.Area= 2,848 sf Storage= 5,078 cf

Plug-Flow detention time= 104.8 min calculated for 14,652 cf (87% of inflow)
Center-of-Mass det. time= 56.0 min (801.7 - 745.7)

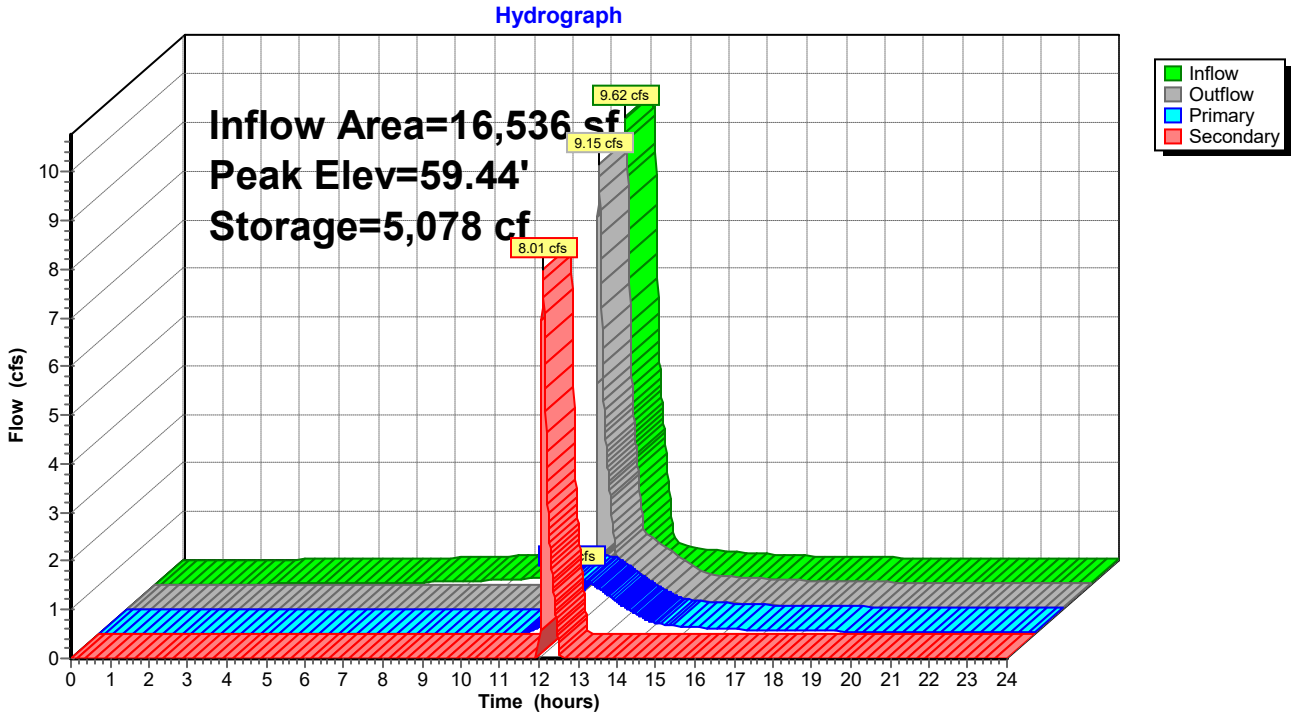
Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	5,683 cf	**20.00'W x 142.40'L x 5.00'H Porous Pavment** 14,240 cf Overall - 32 cf Embedded = 14,208 cf x 40.0% Voids
#2	56.84'	32 cf	**6.0" Round 6" underdrain** Inside #1 L= 162.0'
		5,715 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	56.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.84' / 56.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	59.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.14 cfs @ 12.10 hrs HW=59.44' TW=44.77' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.14 cfs @ 5.83 fps)

Secondary OutFlow Max=7.95 cfs @ 12.10 hrs HW=59.44' TW=57.35' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 7.95 cfs @ 1.48 fps)

Pond 13P: Por Pvt-D2A



Summary for Pond 14P: Por Pvt-D2B

Porous Pavement in Parking Spaces Only

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 1,998 sf, 46.45% Impervious, Inflow Depth > 37.77" for 100-yr event
Inflow = 8.35 cfs @ 12.10 hrs, Volume= 6,288 cf
Outflow = 9.82 cfs @ 12.11 hrs, Volume= 5,690 cf, Atten= 0%, Lag= 0.6 min
Primary = 1.15 cfs @ 12.11 hrs, Volume= 2,774 cf
Routed to Pond DMH13 : DMH-13
Secondary = 8.67 cfs @ 12.11 hrs, Volume= 2,916 cf
Routed to Pond 16P : Por Pvt-D2C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.46' @ 12.11 hrs Surf.Area= 796 sf Storage= 1,425 cf

Plug-Flow detention time= 28.1 min calculated for 5,688 cf (90% of inflow)
Center-of-Mass det. time= 11.8 min (754.4 - 742.6)

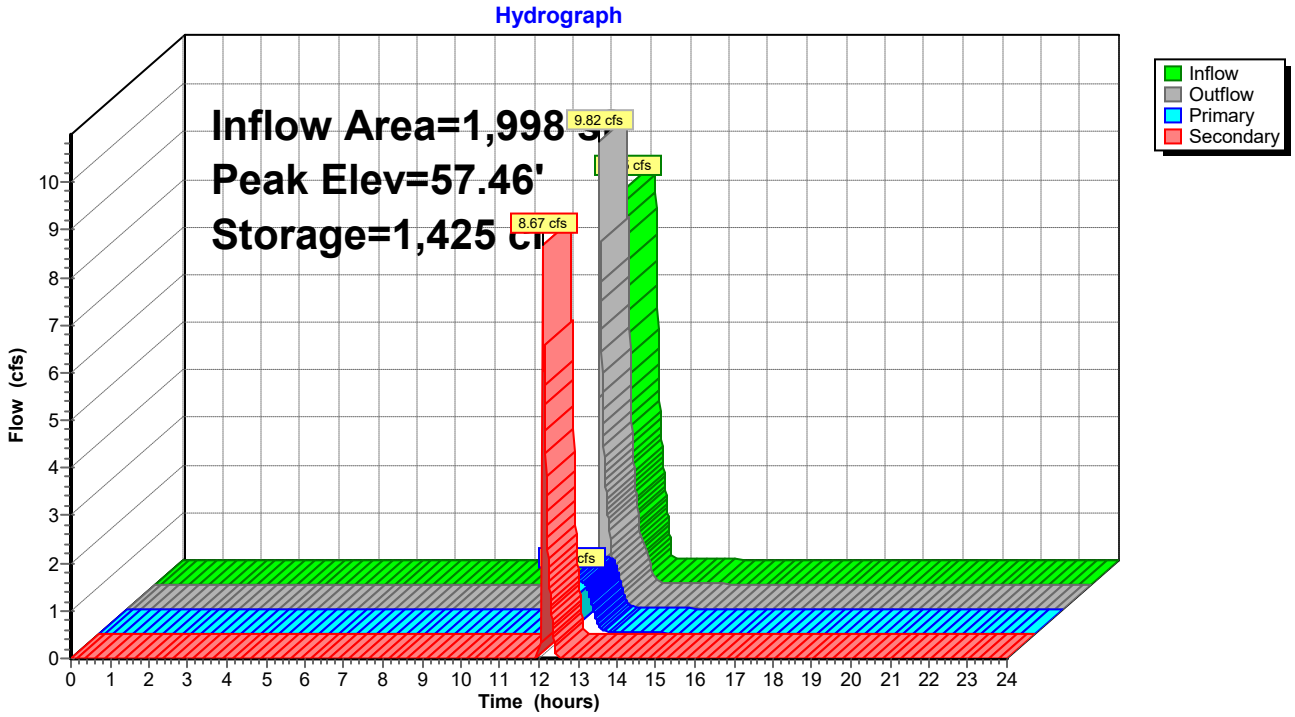
Volume	Invert	Avail.Storage	Storage Description
#1	53.00'	1,588 cf	**20.00'W x 39.80'L x 5.00'H Porous Pavment** 3,980 cf Overall - 11 cf Embedded = 3,969 cf x 40.0% Voids
#2	54.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 55.0'
		1,598 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	54.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 54.84' / 54.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	57.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.14 cfs @ 12.11 hrs HW=57.44' TW=44.85' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.14 cfs @ 5.83 fps)

Secondary OutFlow Max=8.09 cfs @ 12.11 hrs HW=57.44' TW=55.08' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 8.09 cfs @ 1.48 fps)

Pond 14P: Por Pvt-D2B



Summary for Pond 15P: Por Pvt-D1H

Porous Pavement in Parking Spaces Only

Inflow Area = 36,236 sf, 92.20% Impervious, Inflow Depth > 8.60" for 100-yr event
Inflow = 7.62 cfs @ 12.07 hrs, Volume= 25,965 cf
Outflow = 7.31 cfs @ 12.06 hrs, Volume= 23,039 cf, Atten= 4%, Lag= 0.0 min
Primary = 1.10 cfs @ 12.11 hrs, Volume= 17,664 cf
Routed to Pond YD33 : YD-33
Secondary = 6.23 cfs @ 12.06 hrs, Volume= 5,376 cf
Routed to Pond 13P : Por Pvt-D2A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 59.49' @ 12.11 hrs Surf.Area= 3,618 sf Storage= 6,516 cf

Plug-Flow detention time= 124.7 min calculated for 23,030 cf (89% of inflow)
Center-of-Mass det. time= 70.7 min (816.5 - 745.8)

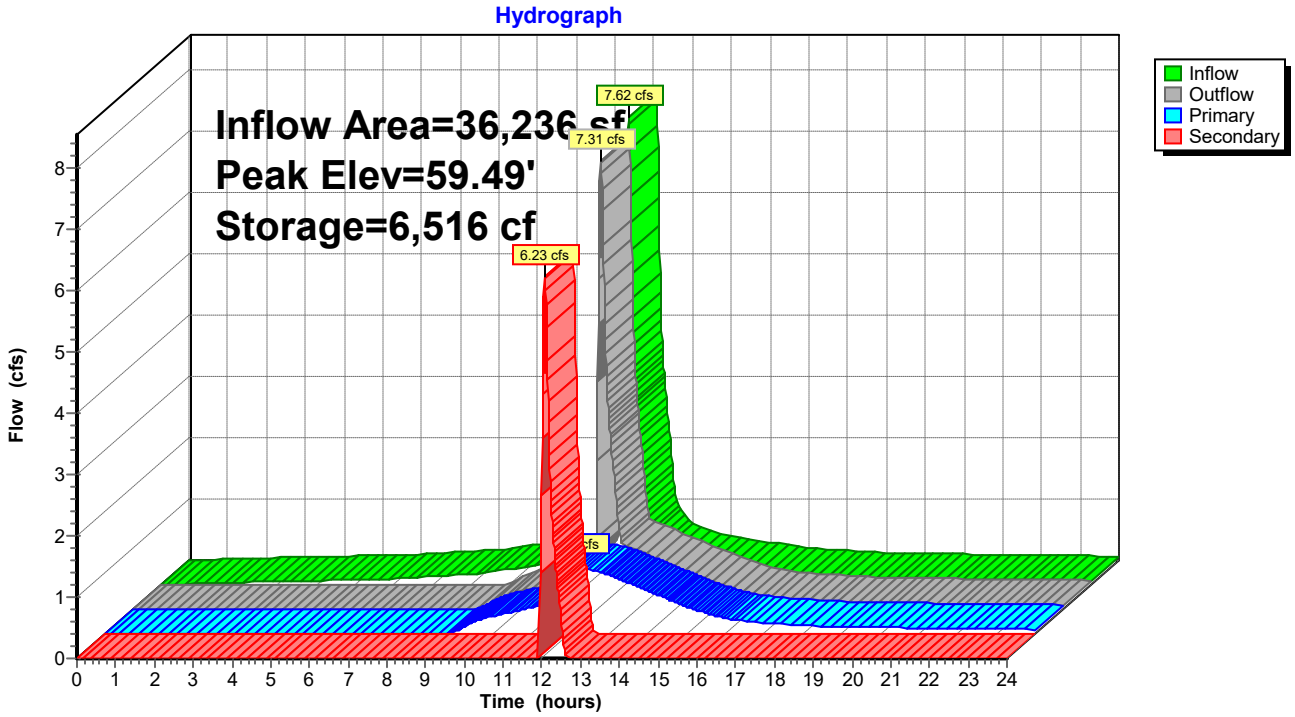
Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	7,220 cf	**20.00'W x 180.90'L x 5.00'H Porous Pavment** 18,090 cf Overall - 40 cf Embedded = 18,050 cf x 40.0% Voids
#2	56.84'	40 cf	**6.0" Round 6" underdrain** Inside #1 L= 204.0'
		7,260 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	56.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.84' / 56.67' S= 0.0567 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	59.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.10 cfs @ 12.11 hrs HW=59.49' TW=57.30' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.10 cfs @ 5.62 fps)

Secondary OutFlow Max=5.21 cfs @ 12.06 hrs HW=59.40' TW=59.28' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 5.21 cfs @ 1.14 fps)

Pond 15P: Por Pvt-D1H



Summary for Pond 16P: Por Pvt-D2C

Porous Pavement in Parking Spaces Only

Inflow Area = 6,166 sf, 86.99% Impervious, Inflow Depth > 14.07" for 100-yr event
Inflow = 9.79 cfs @ 12.11 hrs, Volume= 7,229 cf
Outflow = 8.88 cfs @ 12.12 hrs, Volume= 6,618 cf, Atten= 9%, Lag= 0.7 min
Primary = 1.14 cfs @ 12.12 hrs, Volume= 4,538 cf
Routed to Pond DMH13 : DMH-13
Secondary = 7.73 cfs @ 12.12 hrs, Volume= 2,080 cf
Routed to Pond 18P : Por Pvt-D2D

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 55.42' @ 12.12 hrs Surf.Area= 800 sf Storage= 1,422 cf

Plug-Flow detention time= 70.6 min calculated for 6,615 cf (92% of inflow)
Center-of-Mass det. time= 35.0 min (777.1 - 742.1)

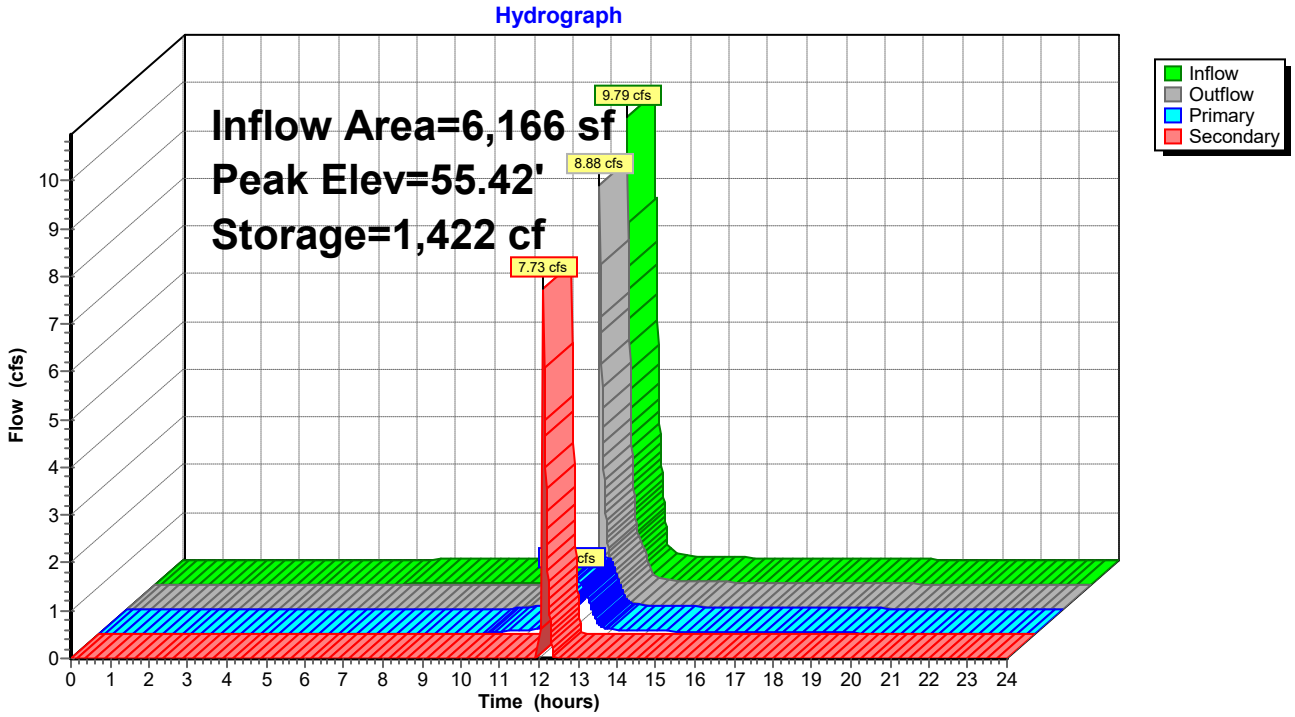
Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	52.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 55.0'
		1,606 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	52.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 52.84' / 52.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	55.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.14 cfs @ 12.12 hrs HW=55.42' TW=44.95' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.14 cfs @ 5.81 fps)

Secondary OutFlow Max=6.75 cfs @ 12.12 hrs HW=55.41' TW=52.80' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 6.75 cfs @ 1.39 fps)

Pond 16P: Por Pvt-D2C



Summary for Pond 18P: Por Pvt-D2D

Porous Pavement in Parking Spaces Only

Inflow Area = 6,023 sf, 88.83% Impervious, Inflow Depth > 12.60" for 100-yr event
Inflow = 8.75 cfs @ 12.12 hrs, Volume= 6,324 cf
Outflow = 8.46 cfs @ 12.14 hrs, Volume= 5,713 cf, Atten= 3%, Lag= 1.1 min
Primary = 1.14 cfs @ 12.14 hrs, Volume= 4,319 cf
Routed to Pond DMH13 : DMH-13
Secondary = 7.31 cfs @ 12.14 hrs, Volume= 1,394 cf
Routed to Pond 19P : Por Pvt-D2E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 53.43' @ 12.14 hrs Surf.Area= 800 sf Storage= 1,423 cf

Plug-Flow detention time= 80.9 min calculated for 5,710 cf (90% of inflow)
Center-of-Mass det. time= 40.1 min (782.7 - 742.6)

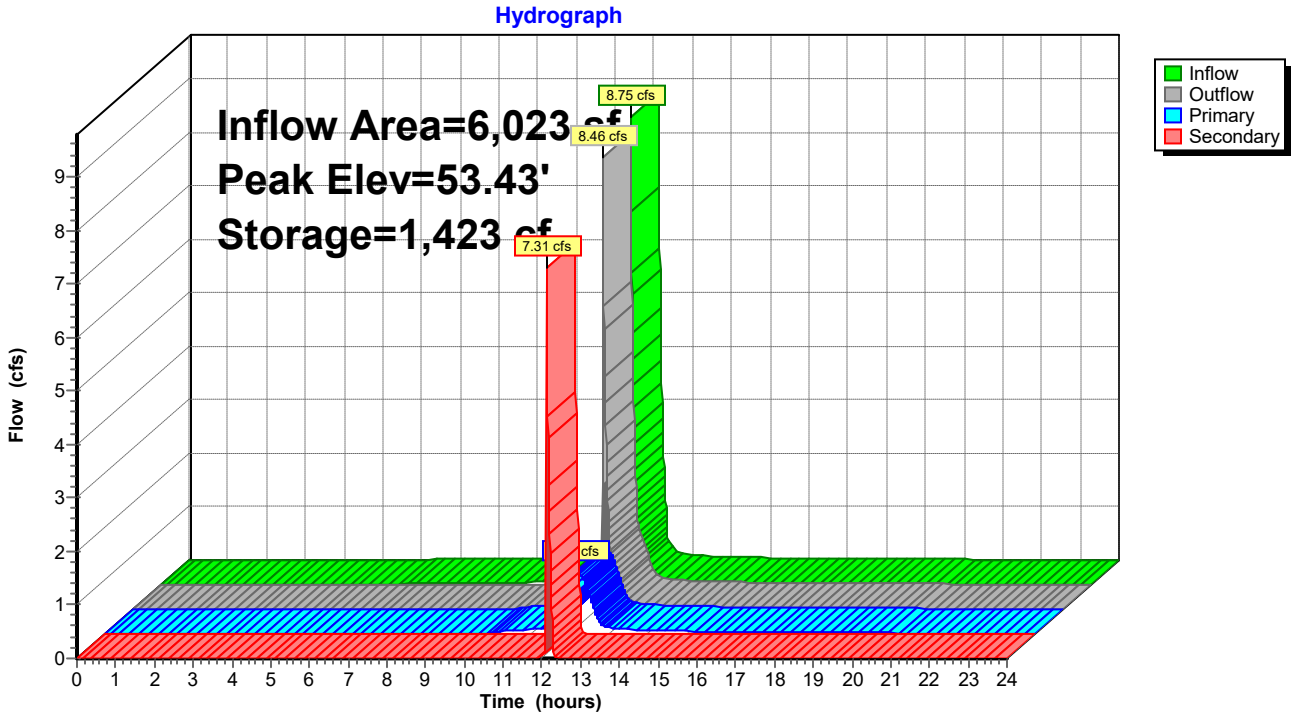
Volume	Invert	Avail.Storage	Storage Description
#1	49.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	50.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 54.0'
		1,606 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	50.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.84' / 50.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	53.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.14 cfs @ 12.14 hrs HW=53.41' TW=45.20' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.14 cfs @ 5.79 fps)

Secondary OutFlow Max=6.61 cfs @ 12.14 hrs HW=53.41' TW=50.83' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 6.61 cfs @ 1.38 fps)

Pond 18P: Por Pvt-D2D



Summary for Pond 19P: Por Pvt-D2E

Porous Pavement in Parking Spaces Only

Inflow Area = 6,016 sf, 88.30% Impervious, Inflow Depth > 11.21" for 100-yr event
Inflow = 8.20 cfs @ 12.14 hrs, Volume= 5,618 cf
Outflow = 6.13 cfs @ 12.16 hrs, Volume= 4,992 cf, Atten= 25%, Lag= 1.2 min
Primary = 1.13 cfs @ 12.16 hrs, Volume= 4,179 cf
Routed to Pond DMH13 : DMH-13
Secondary = 5.01 cfs @ 12.16 hrs, Volume= 813 cf
Routed to Pond 20P : Por Pvt-D2F

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 51.37' @ 12.16 hrs Surf.Area= 819 sf Storage= 1,438 cf

Plug-Flow detention time= 93.3 min calculated for 4,992 cf (89% of inflow)
Center-of-Mass det. time= 46.2 min (790.5 - 744.3)

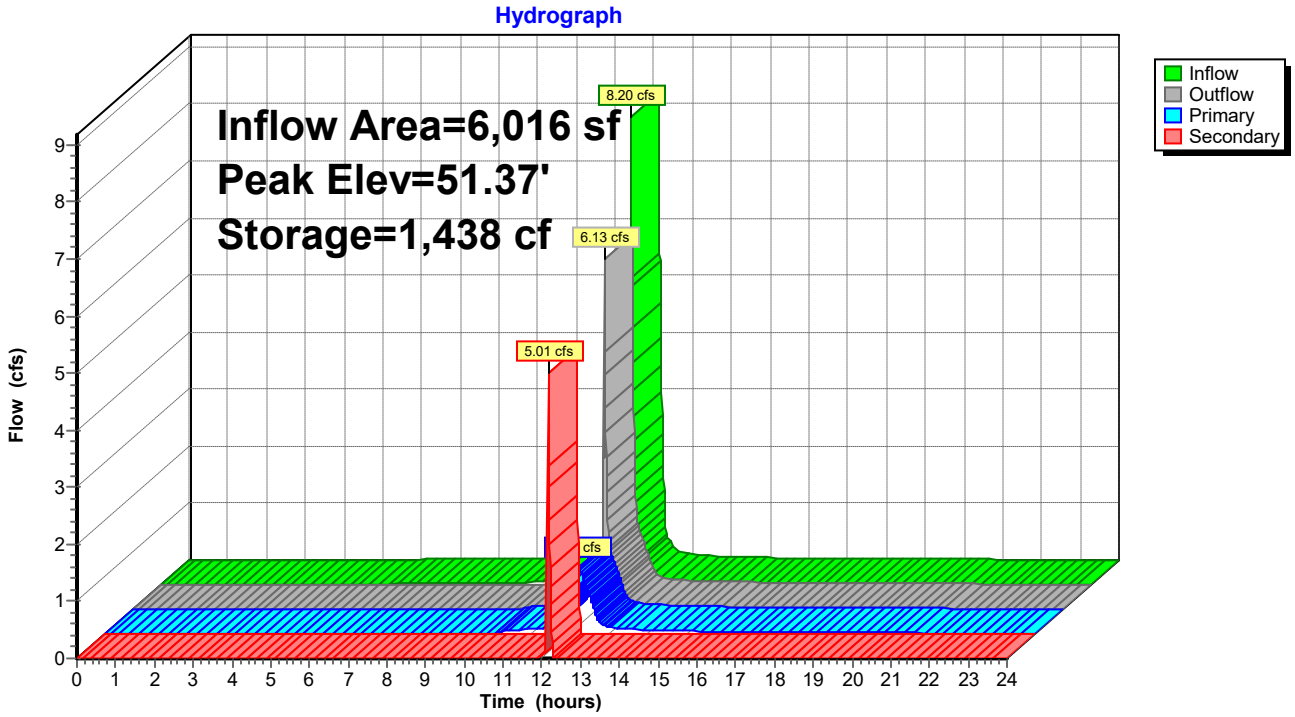
Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	1,634 cf	**20.00'W x 40.95'L x 5.00'H Porous Pavment** 4,095 cf Overall - 11 cf Embedded = 4,084 cf x 40.0% Voids
#2	48.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 54.0'
		1,644 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 48.84' / 48.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	51.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.12 cfs @ 12.16 hrs HW=51.36' TW=45.37' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.12 cfs @ 5.73 fps)

Secondary OutFlow Max=4.62 cfs @ 12.16 hrs HW=51.36' TW=48.71' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 4.62 cfs @ 1.22 fps)

Pond 19P: Por Pvt-D2E



Summary for Pond 20P: Por Pvt-D2F

Porous Pavement in Parking Spaces Only

Inflow Area = 5,836 sf, 90.88% Impervious, Inflow Depth > 10.19" for 100-yr event
Inflow = 5.75 cfs @ 12.16 hrs, Volume= 4,958 cf
Outflow = 3.46 cfs @ 12.19 hrs, Volume= 4,347 cf, Atten= 40%, Lag= 1.6 min
Primary = 1.11 cfs @ 12.19 hrs, Volume= 4,032 cf
Routed to Pond DMH13 : DMH-13
Secondary = 2.35 cfs @ 12.19 hrs, Volume= 315 cf
Routed to Pond 21P : Por Pvt-D2G

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 49.29' @ 12.19 hrs Surf.Area= 800 sf Storage= 1,380 cf

Plug-Flow detention time= 104.9 min calculated for 4,347 cf (88% of inflow)
Center-of-Mass det. time= 52.2 min (796.6 - 744.4)

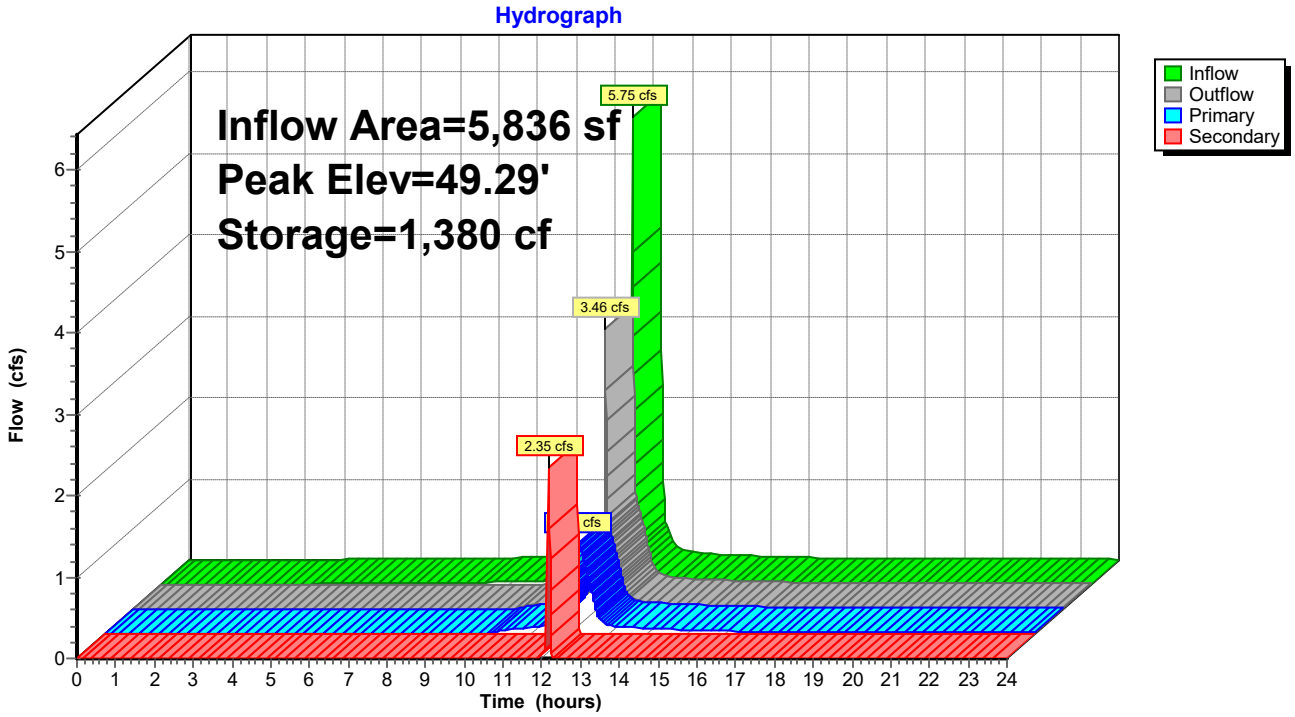
Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	1,596 cf	**20.00'W x 40.00'L x 5.00'H Porous Pavment** 4,000 cf Overall - 11 cf Embedded = 3,989 cf x 40.0% Voids
#2	46.84'	11 cf	**6.0" Round 6" underdrain** Inside #1 L= 57.0'
		1,607 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	46.84'	**6.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.84' / 46.54' S= 0.1000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Secondary	49.17'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.11 cfs @ 12.19 hrs HW=49.29' TW=45.49' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.11 cfs @ 5.64 fps)

Secondary OutFlow Max=2.28 cfs @ 12.19 hrs HW=49.29' TW=44.53' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 2.28 cfs @ 0.96 fps)

Pond 20P: Por Pvt-D2F



Summary for Pond 21P: Por Pvt-D2G

Porous Pavement in Parking Spaces Only

Inflow Area = 3,234 sf, 56.68% Impervious, Inflow Depth > 8.81" for 100-yr event
Inflow = 2.69 cfs @ 12.19 hrs, Volume= 2,374 cf
Outflow = 0.67 cfs @ 12.24 hrs, Volume= 1,606 cf, Atten= 75%, Lag= 2.8 min
Primary = 0.67 cfs @ 12.24 hrs, Volume= 1,606 cf
Routed to Link Sub A : SUB A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 44.90' @ 12.24 hrs Surf.Area= 1,016 sf Storage= 1,195 cf

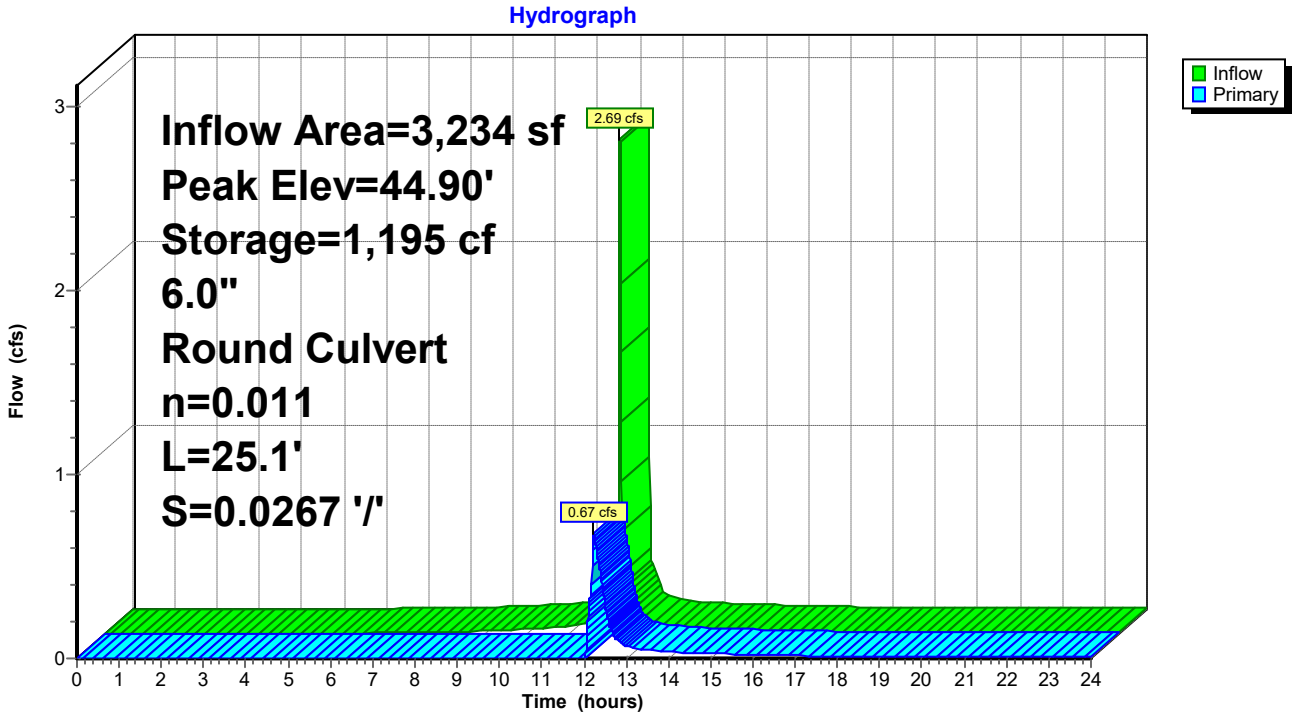
Plug-Flow detention time= 157.5 min calculated for 1,606 cf (68% of inflow)
Center-of-Mass det. time= 74.1 min (844.9 - 770.8)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	2,021 cf	**20.00'W x 50.80'L x 5.00'H Porous Pavment** 5,080 cf Overall - 27 cf Embedded = 5,053 cf x 40.0% Voids
#2	43.84'	27 cf	**6.0" Round 6" underdrain** Inside #1 L= 138.0'
		2,048 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	43.84'	**6.0" Round Culvert** L= 25.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.84' / 43.17' S= 0.0267 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf

Primary OutFlow Max=0.67 cfs @ 12.24 hrs HW=44.90' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.67 cfs @ 3.41 fps)

Pond 21P: Por Pvt-D2G



Summary for Pond DB01: Detention-01

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 60,955 sf, 0.00% Impervious, Inflow Depth > 4.34" for 100-yr event
Inflow = 4.94 cfs @ 12.21 hrs, Volume= 22,023 cf
Outflow = 3.79 cfs @ 12.39 hrs, Volume= 22,023 cf, Atten= 23%, Lag= 10.9 min
Primary = 3.79 cfs @ 12.39 hrs, Volume= 22,023 cf
Routed to Pond DMH13 : DMH-13

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 48.91' @ 12.39 hrs Surf.Area= 1,948 sf Storage= 1,535 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 2.5 min (846.5 - 843.9)

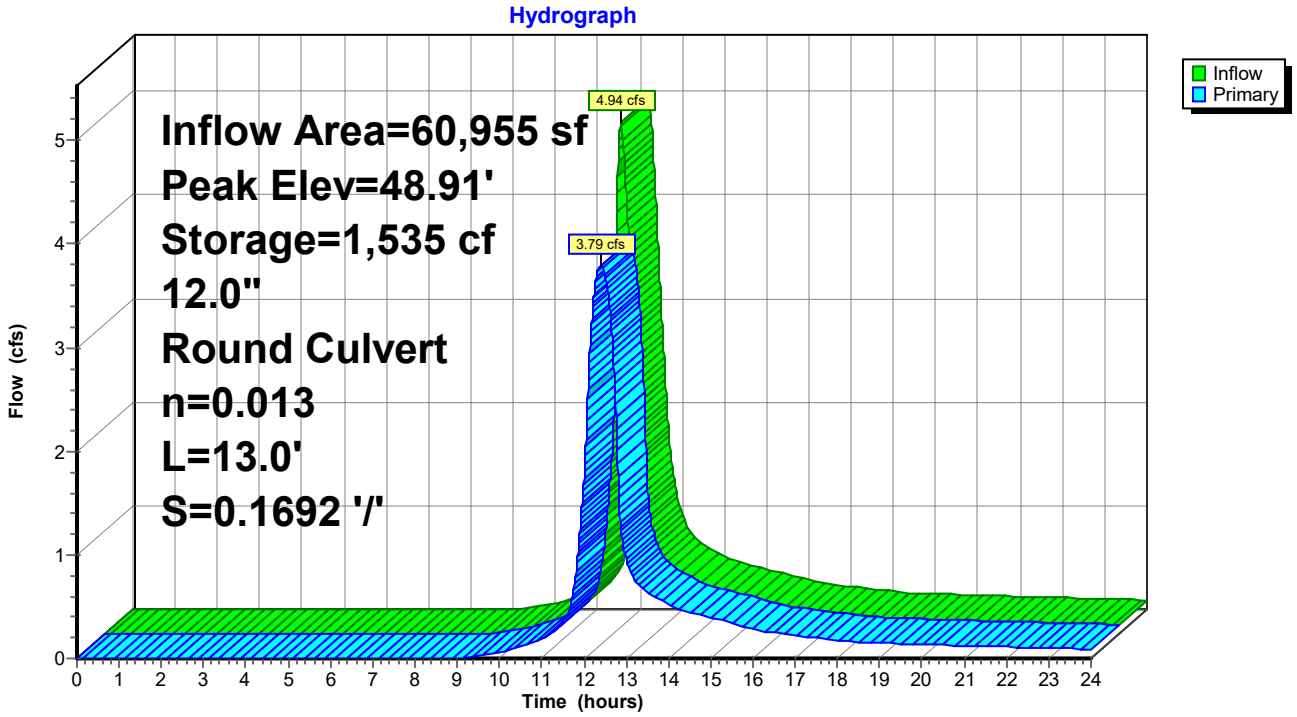
Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	1,719 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
47.00	128	0	0
48.00	614	371	371
49.00	2,082	1,348	1,719

Device	Routing	Invert	Outlet Devices
#1	Primary	46.80'	**12.0" Round Culvert** L= 13.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.80' / 44.60' S= 0.1692 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.79 cfs @ 12.39 hrs HW=48.91' TW=45.38' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.79 cfs @ 4.82 fps)

Pond DB01: Detention-01



Summary for Pond DB02: Detention-02

Inflow Area = 10,676 sf, 0.00% Impervious, Inflow Depth > 6.15" for 100-yr event
Inflow = 1.25 cfs @ 12.24 hrs, Volume= 5,470 cf
Outflow = 1.01 cfs @ 12.37 hrs, Volume= 4,895 cf, Atten= 19%, Lag= 7.7 min
Primary = 1.01 cfs @ 12.37 hrs, Volume= 4,895 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 44.02' @ 12.37 hrs Surf.Area= 1,829 sf Storage= 1,289 cf

Plug-Flow detention time= 88.0 min calculated for 4,893 cf (89% of inflow)
Center-of-Mass det. time= 38.8 min (854.5 - 815.7)

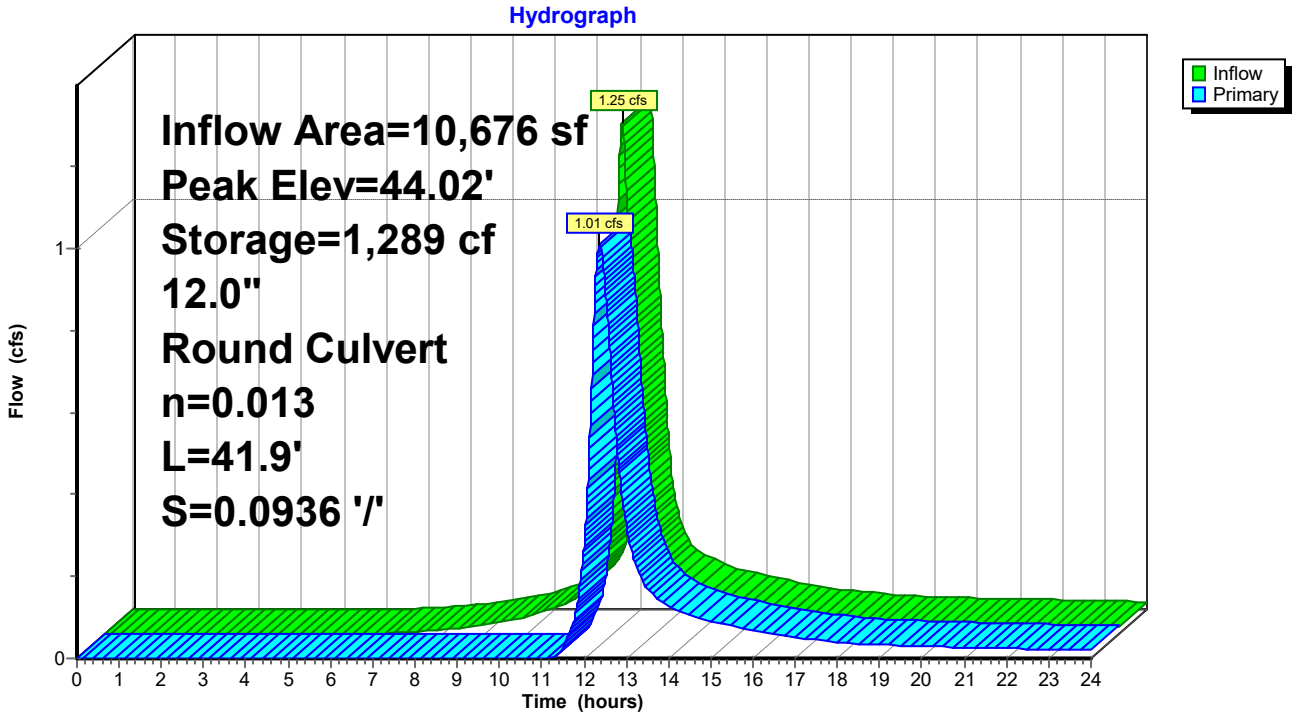
Volume	Invert	Avail.Storage	Storage Description
#1	43.00'	3,637 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.00	703	0	0
44.00	1,807	1,255	1,255
45.00	2,956	2,382	3,637

Device	Routing	Invert	Outlet Devices
#1	Primary	43.50'	**12.0" Round Culvert** L= 41.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.50' / 39.58' S= 0.0936 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.01 cfs @ 12.37 hrs HW=44.02' TW=40.61' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.01 cfs @ 2.45 fps)

Pond DB02: Detention-02



Summary for Pond DB03: Detention-03

Inflow Area = 13,682 sf, 0.00% Impervious, Inflow Depth > 5.91" for 100-yr event
Inflow = 1.73 cfs @ 12.18 hrs, Volume= 6,734 cf
Outflow = 1.29 cfs @ 12.30 hrs, Volume= 6,044 cf, Atten= 25%, Lag= 7.5 min
Primary = 1.29 cfs @ 12.30 hrs, Volume= 6,044 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.10' @ 12.30 hrs Surf.Area= 2,123 sf Storage= 1,649 cf

Plug-Flow detention time= 86.6 min calculated for 6,041 cf (90% of inflow)
Center-of-Mass det. time= 38.0 min (854.1 - 816.1)

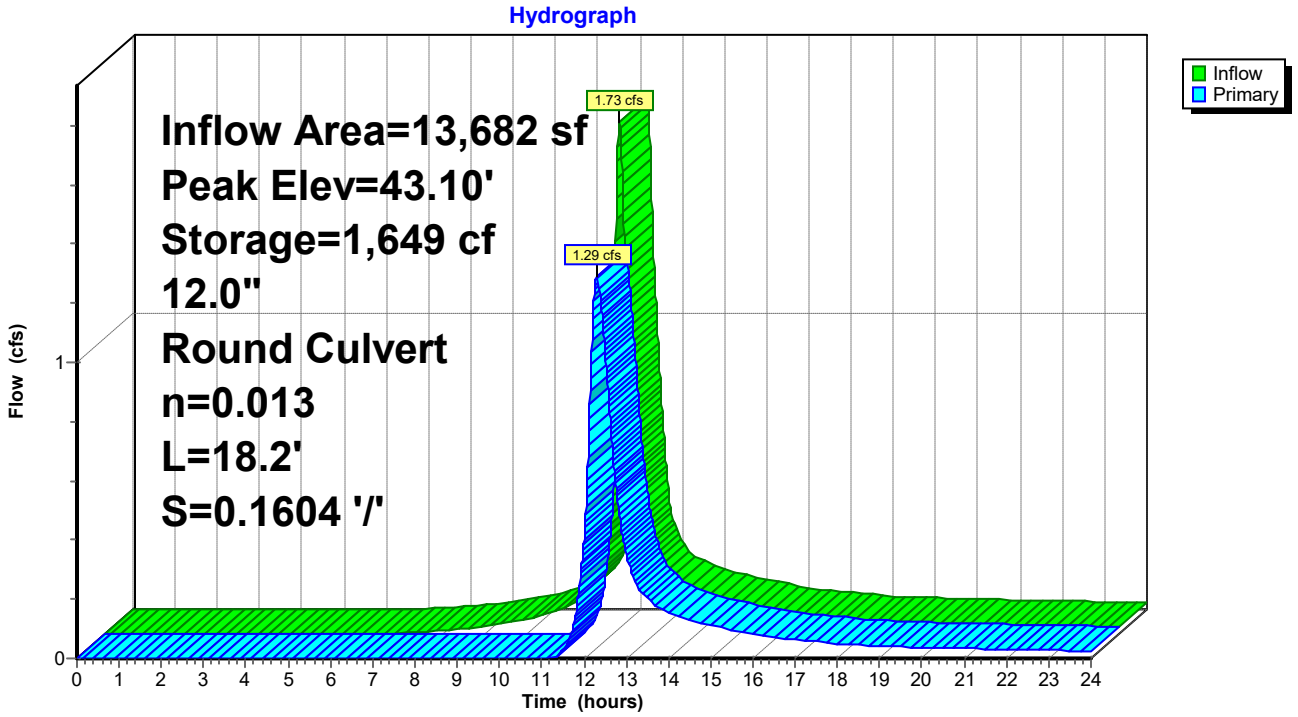
Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	12,357 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	870	0	0
43.00	2,022	1,446	1,446
44.00	3,054	2,538	3,984
45.00	4,148	3,601	7,585
46.00	5,395	4,772	12,357

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	**12.0" Round Culvert** L= 18.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 39.58' S= 0.1604 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.29 cfs @ 12.30 hrs HW=43.10' TW=40.70' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.29 cfs @ 2.63 fps)

Pond DB03: Detention-03



Summary for Pond DMH13: DMH-13

[57] Hint: Peaked at 45.58' (Flood elevation advised)

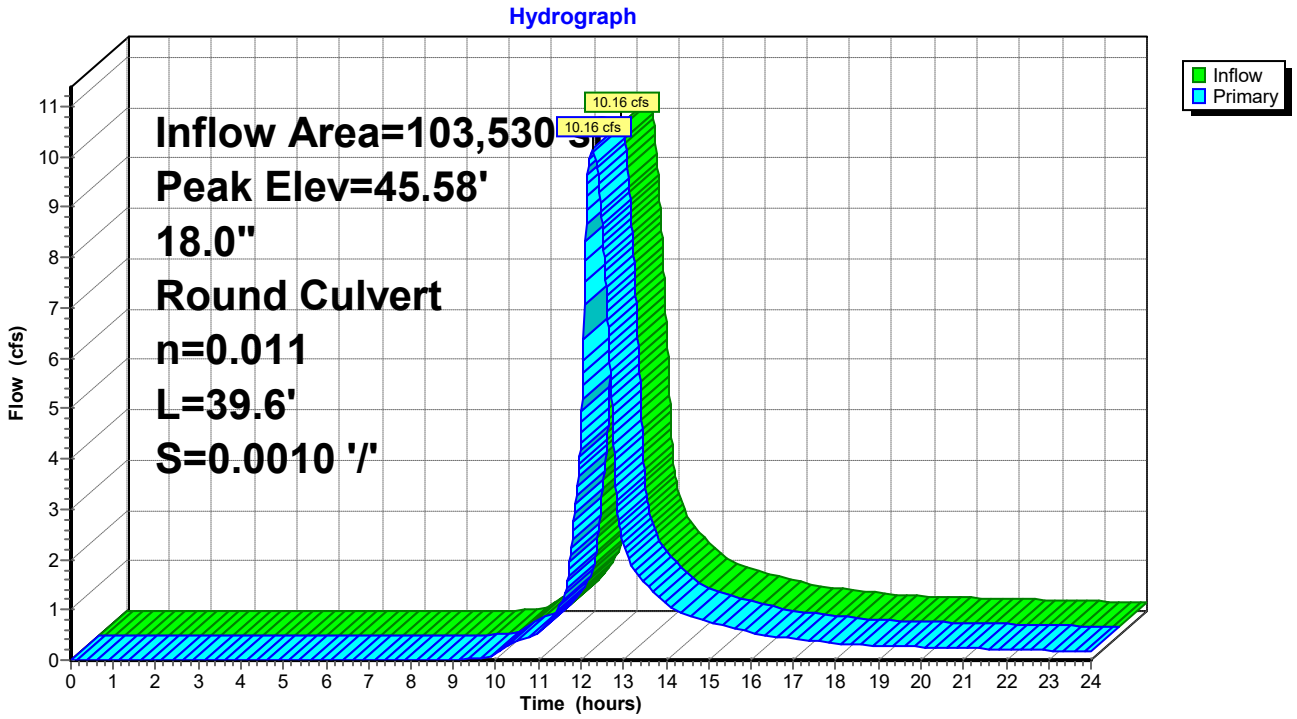
Inflow Area = 103,530 sf, 35.12% Impervious, Inflow Depth > 5.96" for 100-yr event
Inflow = 10.16 cfs @ 12.28 hrs, Volume= 51,378 cf
Outflow = 10.16 cfs @ 12.28 hrs, Volume= 51,378 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.16 cfs @ 12.28 hrs, Volume= 51,378 cf
Routed to Link Sub A : SUB A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 45.58' @ 12.28 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.54'	**18.0" Round Culvert** L= 39.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.54' / 42.50' S= 0.0010 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf

Primary OutFlow Max=10.16 cfs @ 12.28 hrs HW=45.58' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 10.16 cfs @ 5.75 fps)

Pond DMH13: DMH-13



Summary for Pond DMH8: DMH-08

[57] Hint: Peaked at 41.00' (Flood elevation advised)

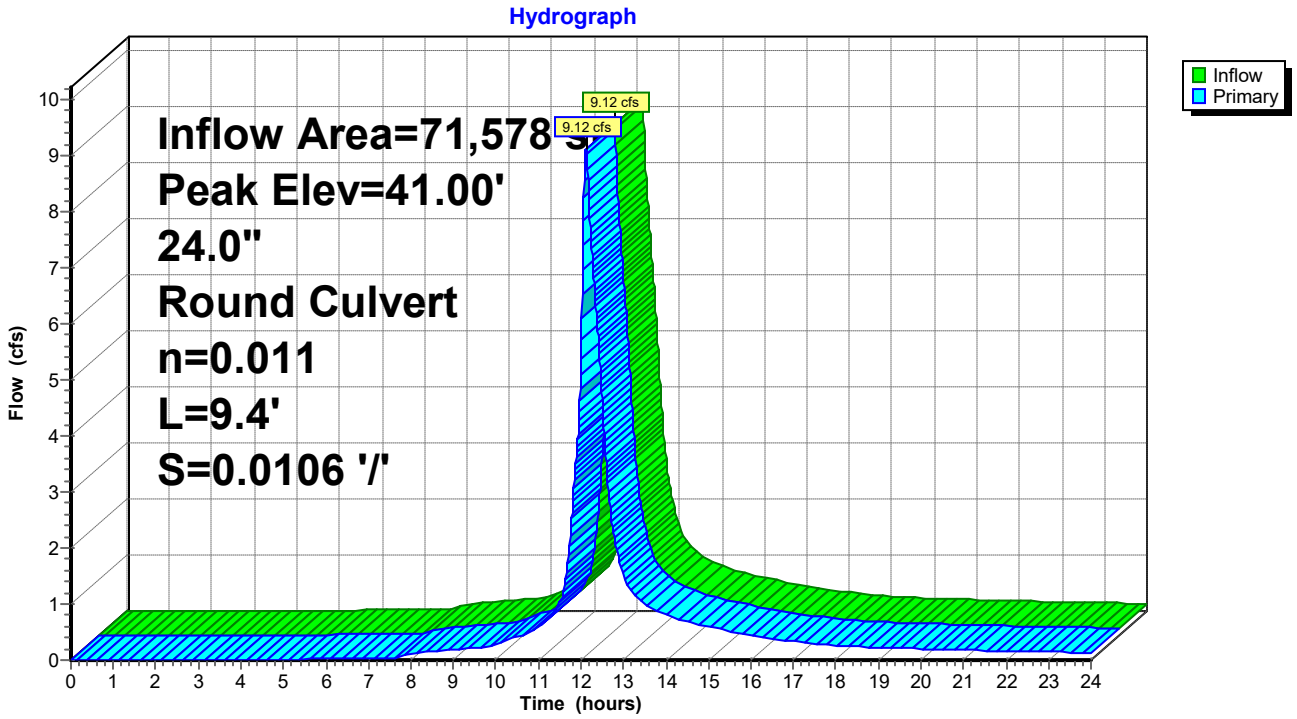
Inflow Area = 71,578 sf, 52.12% Impervious, Inflow Depth > 6.87" for 100-yr event
Inflow = 9.12 cfs @ 12.12 hrs, Volume= 40,966 cf
Outflow = 9.12 cfs @ 12.12 hrs, Volume= 40,966 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.12 cfs @ 12.12 hrs, Volume= 40,966 cf
Routed to Link 2 : Pipe 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.00' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.25'	**24.0" Round Culvert** L= 9.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.25' / 39.15' S= 0.0106 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=9.12 cfs @ 12.12 hrs HW=40.99' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 9.12 cfs @ 4.19 fps)

Pond DMH8: DMH-08



Summary for Pond PP02: Por Pvt-02

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 18,123 sf, 81.93% Impervious, Inflow Depth > 8.37" for 100-yr event
Inflow = 3.80 cfs @ 12.07 hrs, Volume= 12,642 cf
Outflow = 3.20 cfs @ 12.10 hrs, Volume= 11,905 cf, Atten= 16%, Lag= 1.9 min
Primary = 3.20 cfs @ 12.10 hrs, Volume= 11,905 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.25' @ 12.12 hrs Surf.Area= 1,476 sf Storage= 1,457 cf

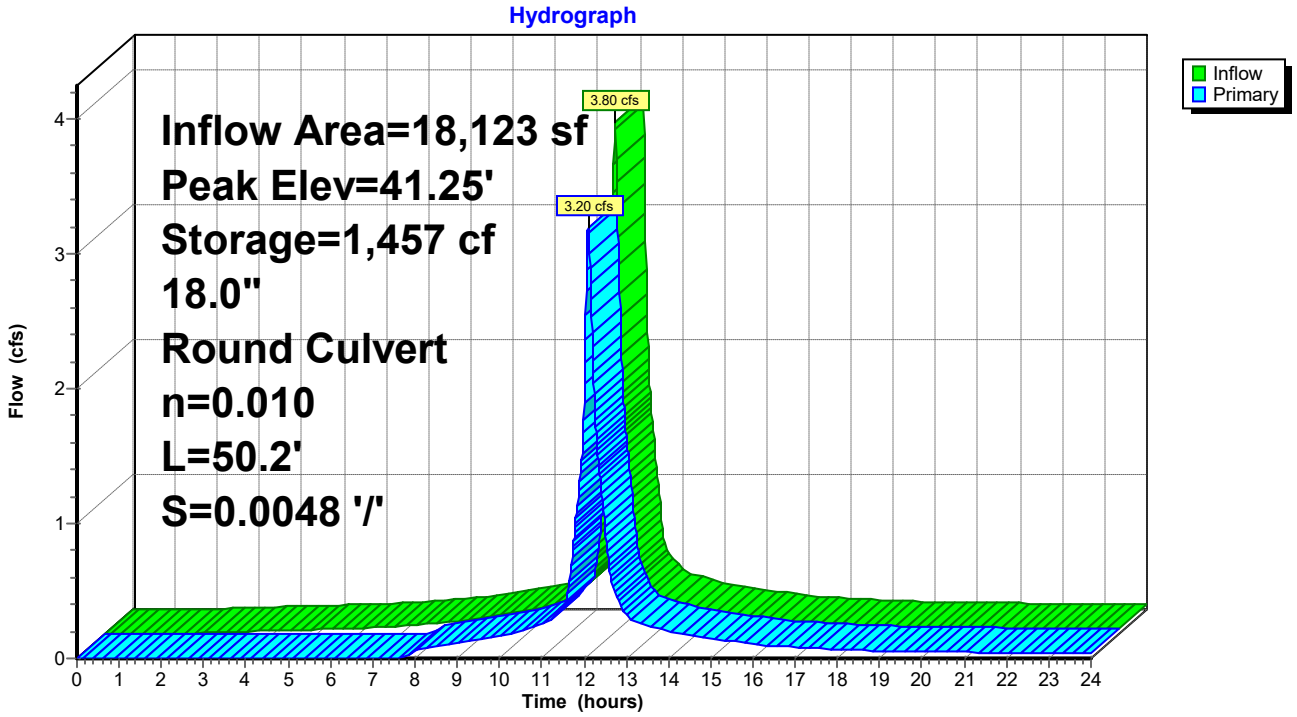
Plug-Flow detention time= 62.9 min calculated for 11,900 cf (94% of inflow)
Center-of-Mass det. time= 30.4 min (787.5 - 757.1)

Volume	Invert	Avail.Storage	Storage Description
#1	38.80'	2,946 cf	**18.00'W x 82.00'L x 5.00'H Porous Pavment** 7,380 cf Overall - 14 cf Embedded = 7,366 cf x 40.0% Voids
#2	40.64'	14 cf	**6.0" Round 6" underdrain** Inside #1 L= 72.0'
		2,960 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	39.96'	**18.0" Round Culvert** L= 50.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.96' / 39.72' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.08 cfs @ 12.10 hrs HW=41.24' TW=40.98' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.08 cfs @ 1.92 fps)

Pond PP02: Por Pvt-02



Summary for Pond PP03: Por Pvt-03

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 30,180 sf, 76.35% Impervious, Inflow Depth > 8.37" for 100-yr event
Inflow = 6.32 cfs @ 12.07 hrs, Volume= 21,053 cf
Outflow = 4.05 cfs @ 12.15 hrs, Volume= 19,591 cf, Atten= 36%, Lag= 5.1 min
Primary = 4.05 cfs @ 12.15 hrs, Volume= 19,591 cf
Routed to Link 3 : Pipe 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.68' @ 12.15 hrs Surf.Area= 2,484 sf Storage= 3,674 cf

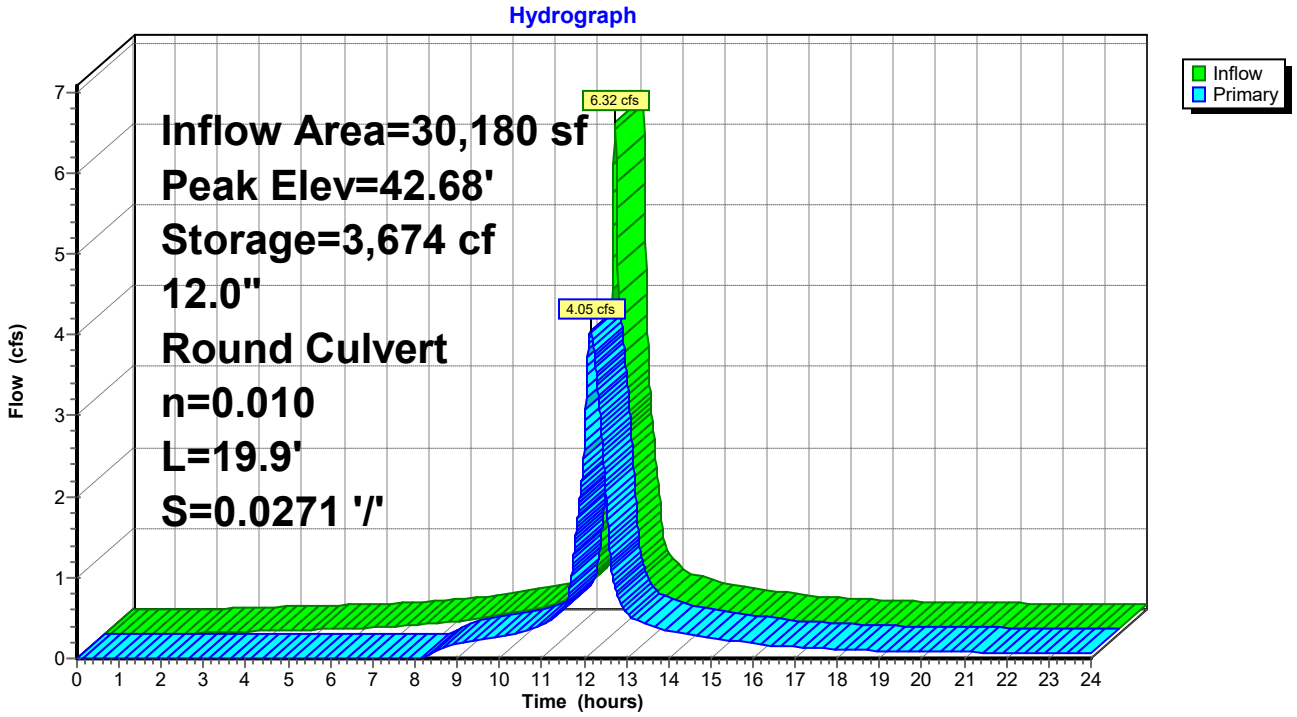
Plug-Flow detention time= 74.7 min calculated for 19,583 cf (93% of inflow)
Center-of-Mass det. time= 37.2 min (794.3 - 757.1)

Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	4,958 cf	**18.00'W x 138.00'L x 5.00'H Porous Pavment** 12,420 cf Overall - 24 cf Embedded = 12,396 cf x 40.0% Voids
#2	40.34'	24 cf	**6.0" Round 6" underdrain** Inside #1 L= 124.0'
		4,983 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.34'	**12.0" Round Culvert** L= 19.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.34' / 39.80' S= 0.0271 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.05 cfs @ 12.15 hrs HW=42.68' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 4.05 cfs @ 5.16 fps)

Pond PP03: Por Pvt-03



Summary for Pond PP04: Por Pvt-04

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 9,547 sf, 73.20% Impervious, Inflow Depth > 8.25" for 100-yr event
Inflow = 1.99 cfs @ 12.07 hrs, Volume= 6,563 cf
Outflow = 1.77 cfs @ 12.11 hrs, Volume= 5,748 cf, Atten= 11%, Lag= 2.3 min
Primary = 1.77 cfs @ 12.11 hrs, Volume= 5,748 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.85' @ 12.11 hrs Surf.Area= 1,296 sf Storage= 1,227 cf

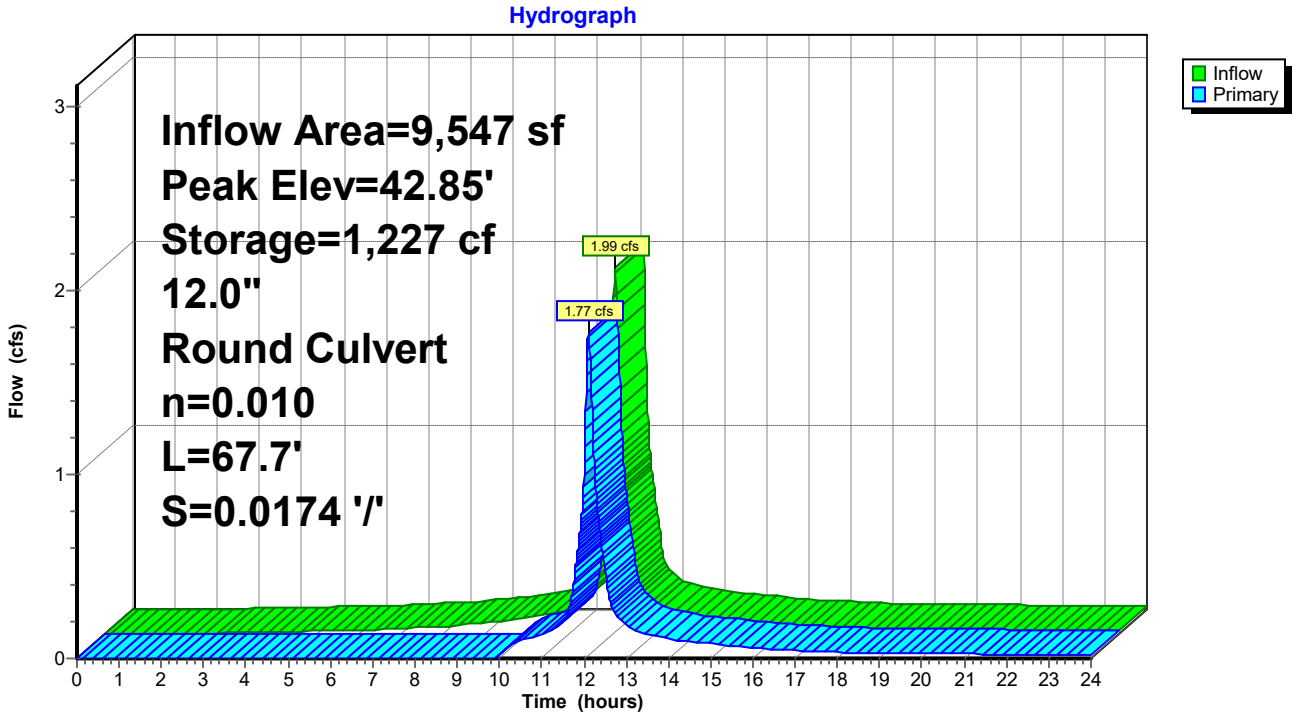
Plug-Flow detention time= 105.1 min calculated for 5,746 cf (88% of inflow)
Center-of-Mass det. time= 48.5 min (809.3 - 760.8)

Volume	Invert	Avail.Storage	Storage Description
#1	40.50'	2,587 cf	**18.00'W x 72.00'L x 5.00'H Porous Pavment** 6,480 cf Overall - 13 cf Embedded = 6,467 cf x 40.0% Voids
#2	42.00'	13 cf	**6.0" Round 6" underdrain** Inside #1 L= 68.0'
		2,600 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	**12.0" Round Culvert** L= 67.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.00' / 40.82' S= 0.0174 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.77 cfs @ 12.11 hrs HW=42.85' TW=40.99' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.77 cfs @ 2.48 fps)

Pond PP04: Por Pvt-04



Summary for Pond PP05: Por Pvt-05

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 9,002 sf, 74.73% Impervious, Inflow Depth > 8.01" for 100-yr event
Inflow = 1.85 cfs @ 12.07 hrs, Volume= 6,006 cf
Outflow = 1.62 cfs @ 12.11 hrs, Volume= 5,091 cf, Atten= 13%, Lag= 2.5 min
Primary = 1.62 cfs @ 12.11 hrs, Volume= 5,091 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 44.55' @ 12.11 hrs Surf.Area= 1,457 sf Storage= 1,349 cf

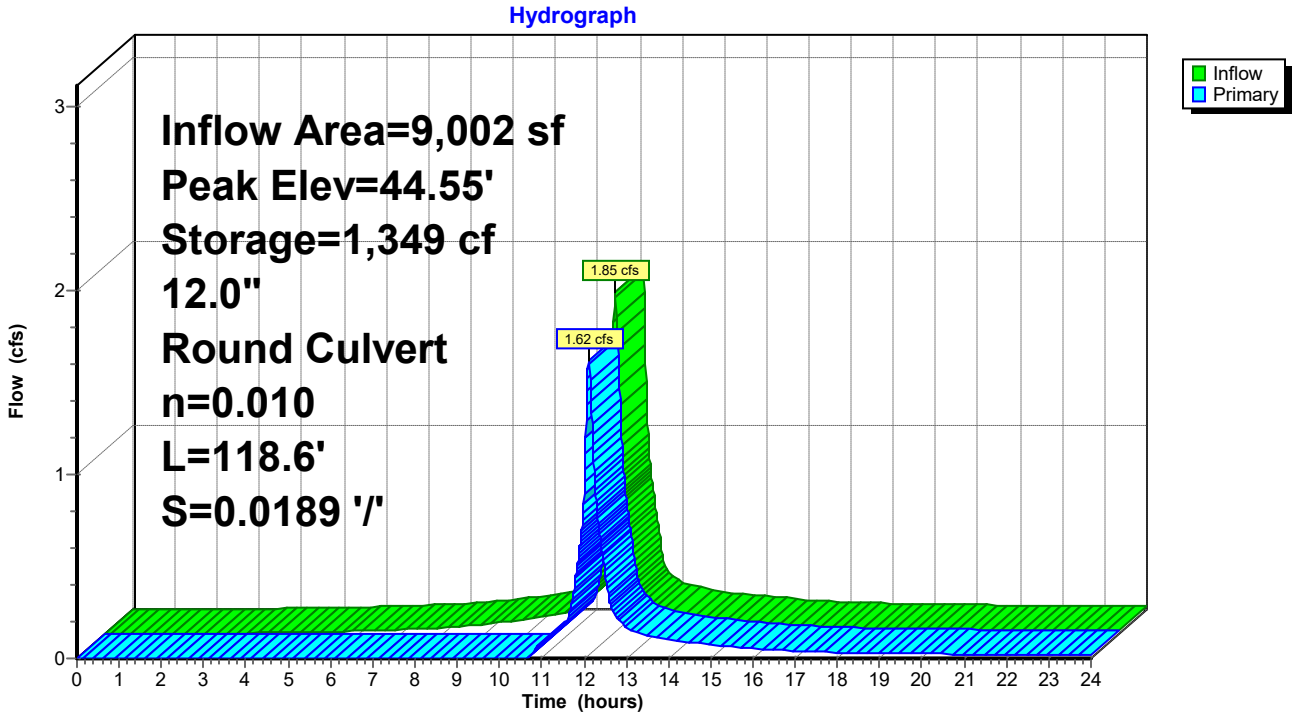
Plug-Flow detention time= 116.8 min calculated for 5,091 cf (85% of inflow)
Center-of-Mass det. time= 52.6 min (820.3 - 767.7)

Volume	Invert	Avail.Storage	Storage Description
#1	42.25'	2,909 cf	**18.00'W x 80.97'L x 5.00'H Porous Pavment** 7,287 cf Overall - 15 cf Embedded = 7,272 cf x 40.0% Voids
#2	43.75'	15 cf	**6.0" Round 6" underdrain** Inside #1 L= 77.0'
		2,924 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	43.75'	**12.0" Round Culvert** L= 118.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 43.75' / 41.51' S= 0.0189 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.61 cfs @ 12.11 hrs HW=44.55' TW=40.99' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.61 cfs @ 2.40 fps)

Pond PP05: Por Pvt-05



Summary for Pond PP06: Por Pvt-06

Only Main Driveway and Parking Area to be Porous Pavement

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 7,420 sf, 88.26% Impervious, Inflow Depth > 8.49" for 100-yr event
Inflow = 1.56 cfs @ 12.07 hrs, Volume= 5,251 cf
Outflow = 1.56 cfs @ 12.07 hrs, Volume= 5,251 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.56 cfs @ 12.07 hrs, Volume= 5,251 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 42.25' @ 12.07 hrs Surf.Area= 1,298 sf Storage= 0 cf

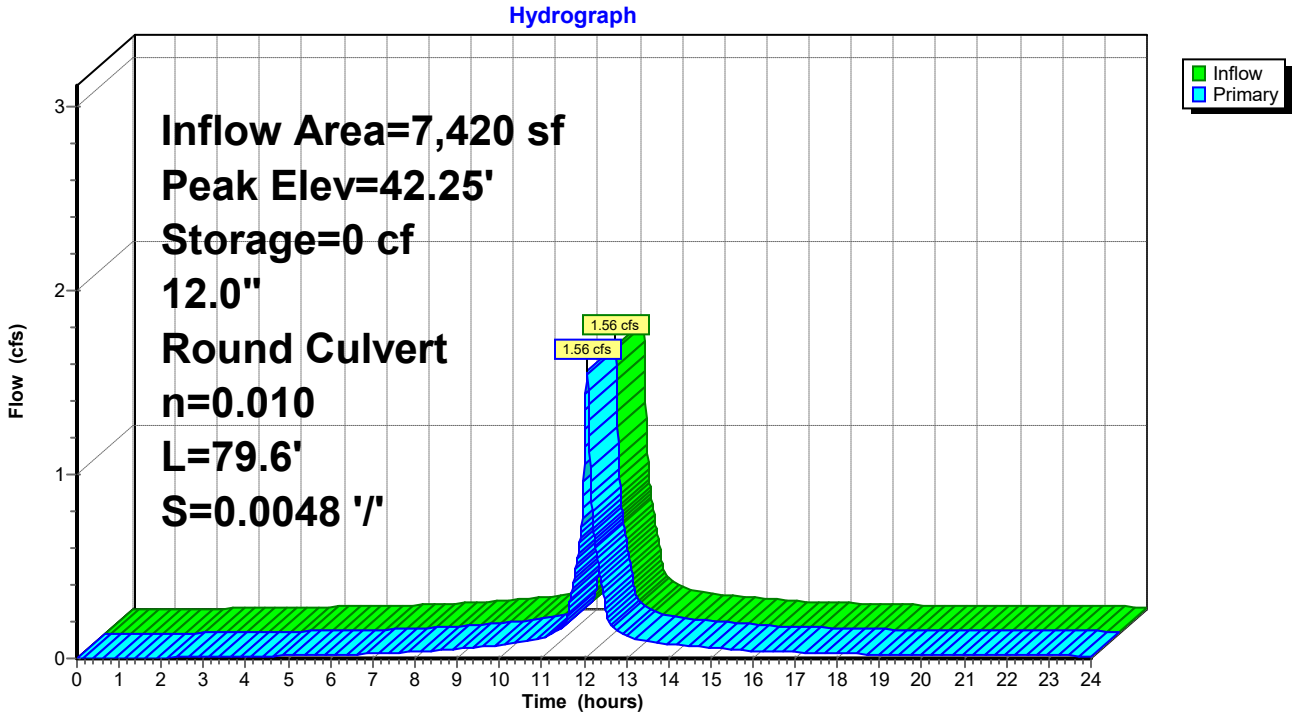
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (753.0 - 753.0)

Volume	Invert	Avail.Storage	Storage Description
#1	42.25'	2,590 cf	**18.00'W x 72.10'L x 5.00'H Porous Pavment** 6,489 cf Overall - 14 cf Embedded = 6,475 cf x 40.0% Voids
#2	43.75'	14 cf	**6.0" Round 6" underdrain** Inside #1 L= 69.0'
		2,604 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.94'	**12.0" Round Culvert** L= 79.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.94' / 40.56' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.69 cfs @ 12.07 hrs HW=42.25' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.69 cfs @ 3.42 fps)

Pond PP06: Por Pvt-06



Summary for Pond PP07: Por Pvt-07

Only Main Driveway and Parking Area to be Porous Pavement

Inflow Area = 27,046 sf, 54.55% Impervious, Inflow Depth > 7.27" for 100-yr event
Inflow = 5.25 cfs @ 12.07 hrs, Volume= 16,392 cf
Outflow = 3.06 cfs @ 12.17 hrs, Volume= 14,887 cf, Atten= 42%, Lag= 5.9 min
Primary = 3.06 cfs @ 12.17 hrs, Volume= 14,887 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.65' @ 12.17 hrs Surf.Area= 4,085 sf Storage= 3,873 cf

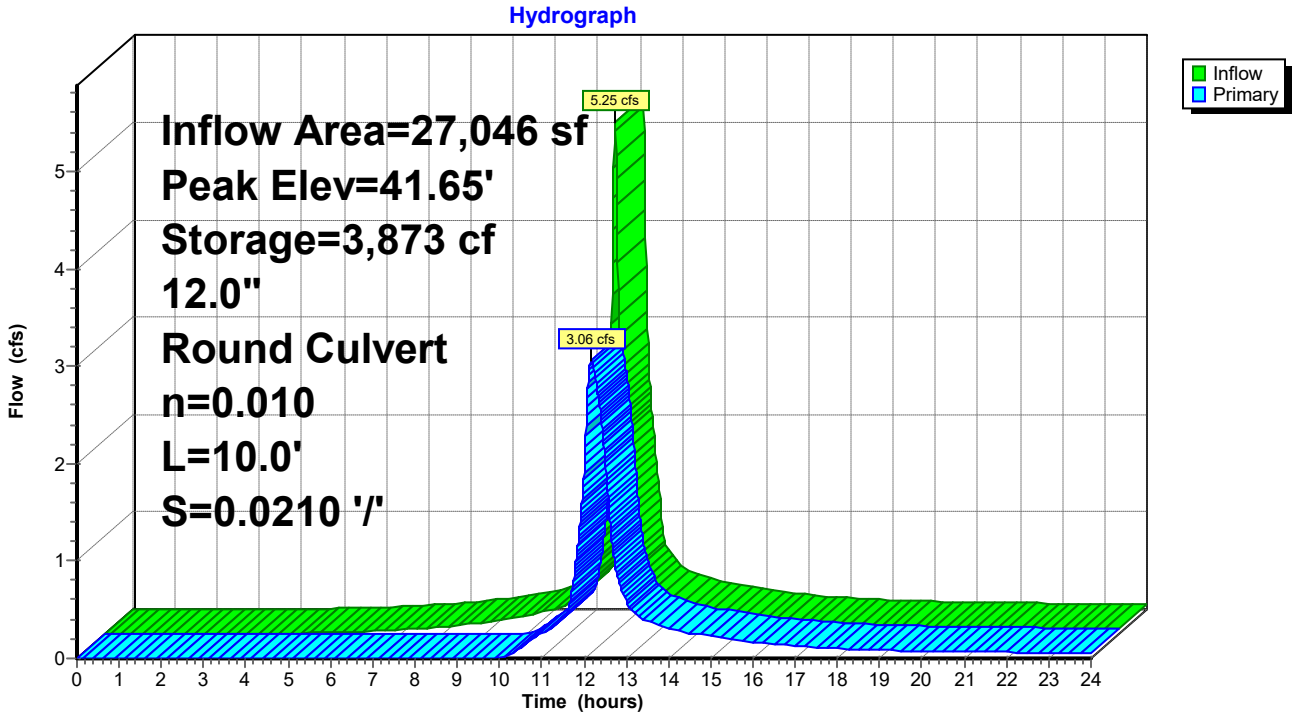
Plug-Flow detention time= 85.7 min calculated for 14,887 cf (91% of inflow)
Center-of-Mass det. time= 40.2 min (825.0 - 784.8)

Volume	Invert	Avail.Storage	Storage Description
#1	39.30'	8,152 cf	**18.00'W x 226.97'L x 5.00'H Porous Pavment** 20,427 cf Overall - 46 cf Embedded = 20,381 cf x 40.0% Voids
#2	41.14'	46 cf	**6.0" Round 6" underdrain** Inside #1 L= 236.0'
		8,199 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	40.10'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.10' / 39.89' S= 0.0210 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.06 cfs @ 12.17 hrs HW=41.65' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.06 cfs @ 3.90 fps)

Pond PP07: Por Pvt-07



Summary for Pond RG03: Rain Garden-03

Inflow Area = 5,425 sf, 57.01% Impervious, Inflow Depth > 7.88" for 100-yr event
Inflow = 1.01 cfs @ 12.10 hrs, Volume= 3,563 cf
Outflow = 0.63 cfs @ 12.22 hrs, Volume= 3,042 cf, Atten= 38%, Lag= 6.7 min
Primary = 0.63 cfs @ 12.22 hrs, Volume= 3,042 cf
Routed to Link 2 : Pipe 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 41.36' @ 12.22 hrs Surf.Area= 4,664 sf Storage= 1,076 cf

Plug-Flow detention time= 122.2 min calculated for 3,042 cf (85% of inflow)
Center-of-Mass det. time= 59.8 min (832.7 - 772.9)

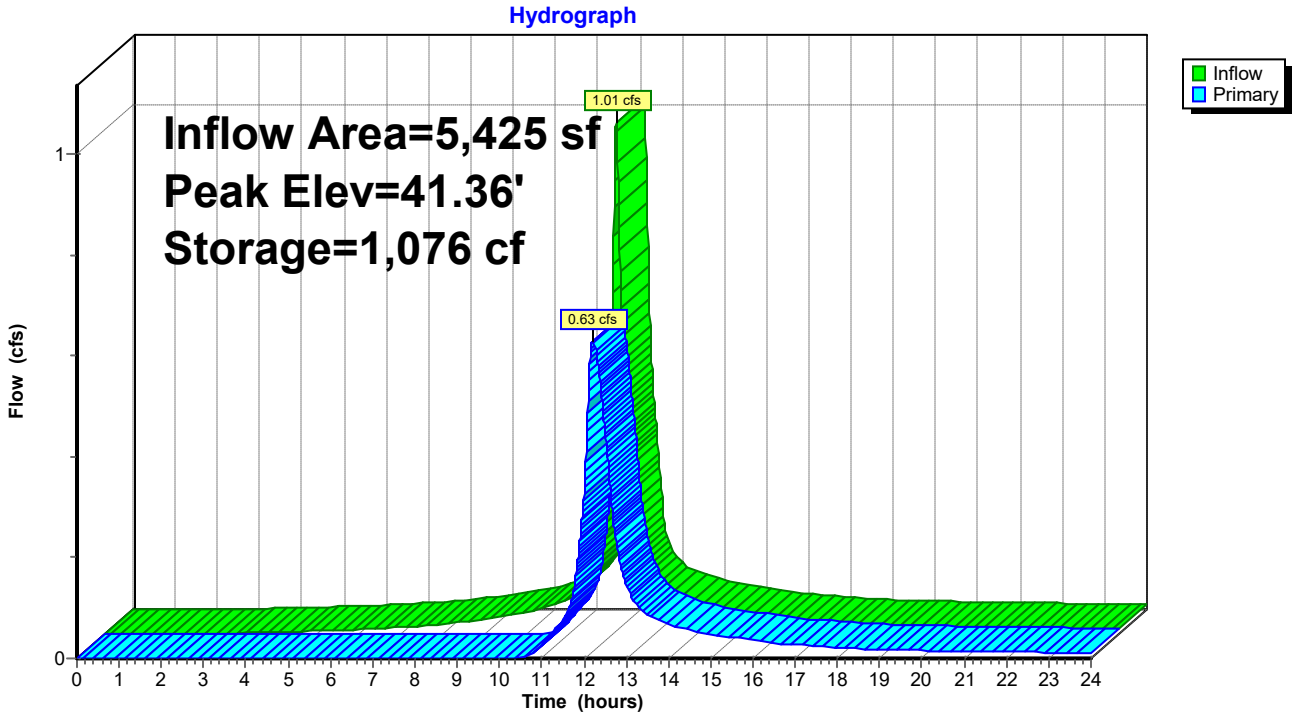
Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	1,867 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	43.67'	115 cf	**18.00'W x 129.55'L x 0.33'H Mulch** 770 cf Overall x 15.0% Voids
#3	41.17'	1,749 cf	**18.00'W x 129.55'L x 2.50'H Greenwich Soil Mix** 5,830 cf Overall x 30.0% Voids
#4	40.17'	928 cf	**18.00'W x 129.55'L x 1.00'H Crushed Stone** 2,332 cf Overall - 12 cf Embedded = 2,320 cf x 40.0% Voids
#5	40.67'	12 cf	**6.0" Round 6" underdrain** Inside #4 L= 62.0'
		4,671 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	1,402	0	0
45.00	2,332	1,867	1,867

Device	Routing	Invert	Outlet Devices
#1	Primary	39.77'	**12.0" Round Culvert** L= 9.9' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.77' / 39.67' S= 0.0101 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	44.50'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	40.67'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.63 cfs @ 12.22 hrs HW=41.36' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.63 cfs of 3.12 cfs potential flow)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.63 cfs @ 3.21 fps)

Pond RG03: Rain Garden-03



Summary for Pond RG04: Rain Garden-04

Inflow Area = 10,548 sf, 82.86% Impervious, Inflow Depth > 8.49" for 100-yr event
Inflow = 2.22 cfs @ 12.07 hrs, Volume= 7,464 cf
Outflow = 1.40 cfs @ 12.17 hrs, Volume= 7,285 cf, Atten= 37%, Lag= 6.0 min
Primary = 1.40 cfs @ 12.17 hrs, Volume= 7,285 cf
Routed to Pond DMH8 : DMH-08

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.16' @ 12.16 hrs Surf.Area= 1,542 sf Storage= 893 cf

Plug-Flow detention time= 33.6 min calculated for 7,282 cf (98% of inflow)
Center-of-Mass det. time= 18.5 min (771.5 - 753.0)

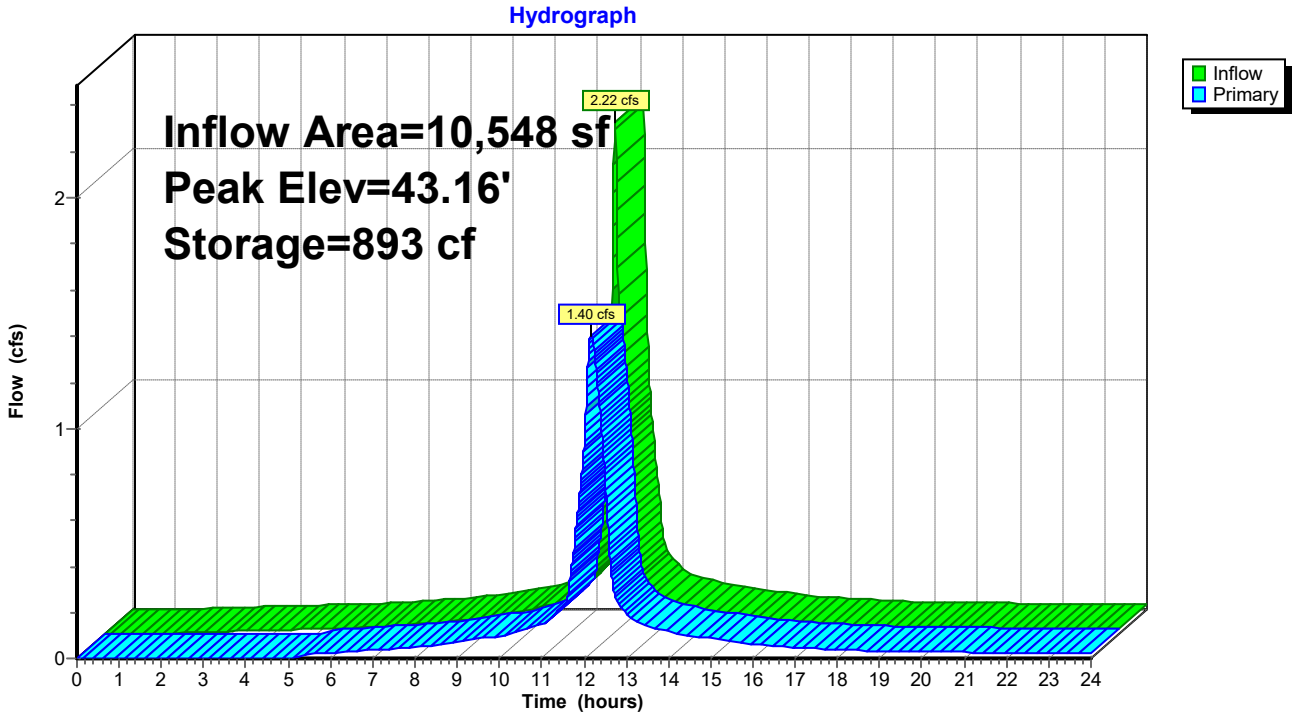
Volume	Invert	Avail.Storage	Storage Description
#1	43.50'	233 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	43.17'	38 cf	**11.00'W x 70.10'L x 0.33'H Mulch** 254 cf Overall x 15.0% Voids
#3	40.67'	578 cf	**11.00'W x 70.10'L x 2.50'H Greenwich Soil Mix** 1,928 cf Overall x 30.0% Voids
#4	39.67'	303 cf	**11.00'W x 70.09'L x 1.00'H Crushed Stone** 771 cf Overall - 14 cf Embedded = 757 cf x 40.0% Voids
#5	40.17'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		1,166 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.50	162	0	0
44.00	771	233	233

Device	Routing	Invert	Outlet Devices
#1	Device 2	43.50'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	40.17'	**12.0" Round Culvert** L= 8.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.17' / 39.96' S= 0.0239 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	40.17'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.41 cfs @ 12.17 hrs HW=43.15' TW=40.93' (Dynamic Tailwater)
└**2=Culvert** (Passes 1.41 cfs of 5.63 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 1.41 cfs @ 7.17 fps)

Pond RG04: Rain Garden-04



Summary for Pond RG06: Rain Garden-06

Inflow Area = 4,026 sf, 70.89% Impervious, Inflow Depth > 7.88" for 100-yr event
Inflow = 0.82 cfs @ 12.07 hrs, Volume= 2,645 cf
Outflow = 0.75 cfs @ 12.10 hrs, Volume= 2,597 cf, Atten= 9%, Lag= 2.0 min
Primary = 0.75 cfs @ 12.10 hrs, Volume= 2,597 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.88' @ 12.10 hrs Surf.Area= 632 sf Storage= 154 cf

Plug-Flow detention time= 23.0 min calculated for 2,596 cf (98% of inflow)
Center-of-Mass det. time= 11.6 min (782.5 - 770.8)

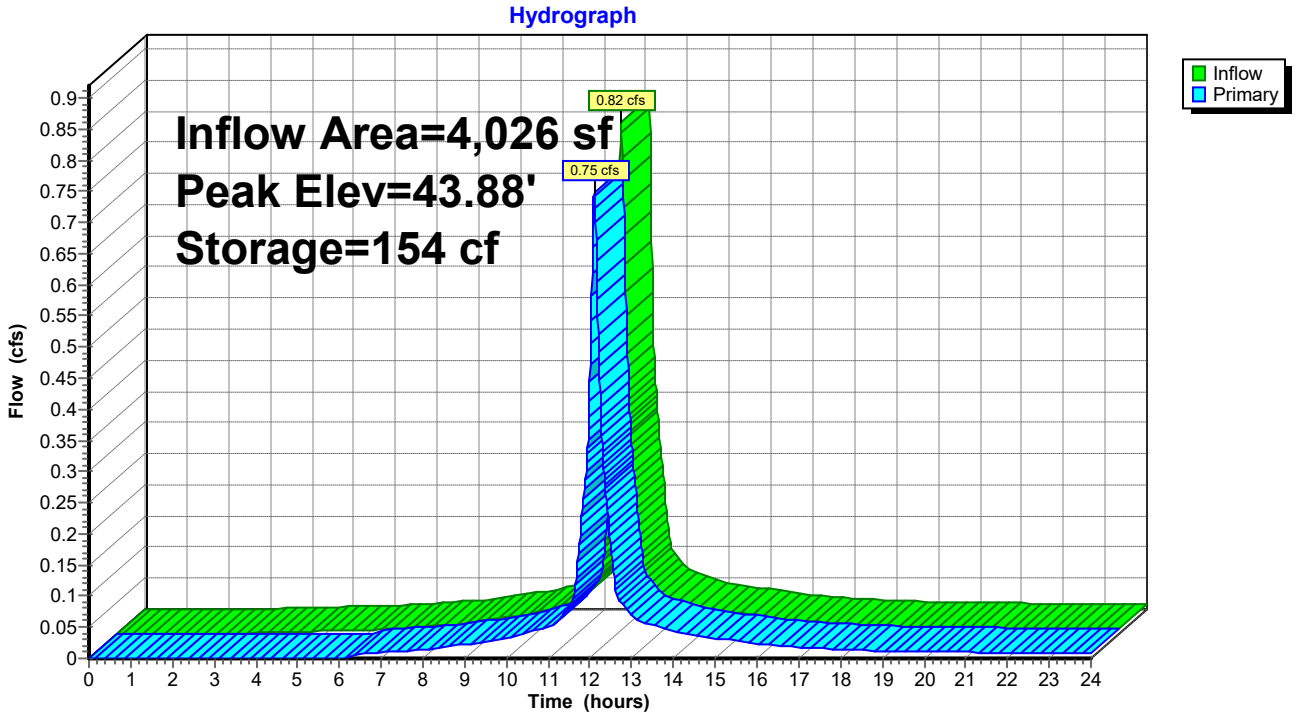
Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	117 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	46.17'	16 cf	**15.00'W x 21.07'L x 0.33'H Mulch** 104 cf Overall x 15.0% Voids
#3	43.67'	237 cf	**15.00'W x 21.07'L x 2.50'H Greenwich Soil Mix** 790 cf Overall x 30.0% Voids
#4	42.67'	121 cf	**15.00'W x 21.07'L x 1.00'H Crushed Stone** 316 cf Overall - 14 cf Embedded = 302 cf x 40.0% Voids
#5	43.00'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		504 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	151	0	0
47.00	316	117	117

Device	Routing	Invert	Outlet Devices
#1	Device 2	46.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	40.18'	**12.0" Round Culvert** L= 91.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.18' / 40.10' S= 0.0009 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	43.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.75 cfs @ 12.10 hrs HW=43.88' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.75 cfs of 5.02 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.75 cfs @ 3.81 fps)

Pond RG06: Rain Garden-06



Summary for Pond RG07: Rain Garden-07

Inflow Area = 4,109 sf, 58.46% Impervious, Inflow Depth > 7.40" for 100-yr event
Inflow = 0.81 cfs @ 12.07 hrs, Volume= 2,532 cf
Outflow = 0.74 cfs @ 12.10 hrs, Volume= 2,486 cf, Atten= 8%, Lag= 2.0 min
Primary = 0.74 cfs @ 12.10 hrs, Volume= 2,486 cf
Routed to Link 4 : Pipe 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.86' @ 12.10 hrs Surf.Area= 610 sf Storage= 148 cf

Plug-Flow detention time= 22.0 min calculated for 2,485 cf (98% of inflow)
Center-of-Mass det. time= 10.7 min (792.8 - 782.2)

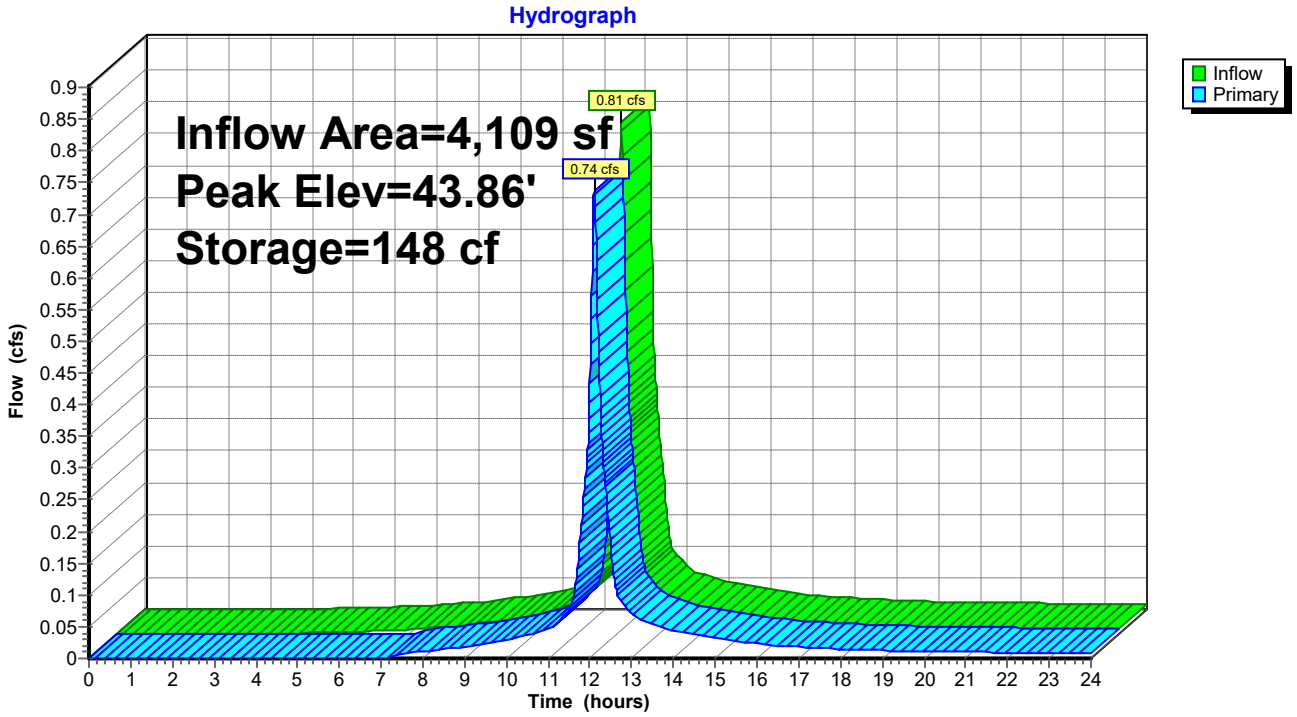
Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	112 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	46.17'	15 cf	**15.00'W x 20.33'L x 0.33'H Mulch** 101 cf Overall x 15.0% Voids
#3	43.67'	229 cf	**15.00'W x 20.33'L x 2.50'H Greenwich Soil Mix** 762 cf Overall x 30.0% Voids
#4	42.67'	116 cf	**15.00'W x 20.33'L x 1.00'H Crushed Stone** 305 cf Overall - 14 cf Embedded = 291 cf x 40.0% Voids
#5	43.00'	14 cf	**6.0" Round 6" underdrain** Inside #4 L= 70.0'
		486 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	144	0	0
47.00	305	112	112

Device	Routing	Invert	Outlet Devices
#1	Device 2	46.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	42.00'	**12.0" Round Culvert** L= 85.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.00' / 40.10' S= 0.0222 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	43.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.74 cfs @ 12.10 hrs HW=43.86' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.74 cfs of 4.41 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.74 cfs @ 3.76 fps)

Pond RG07: Rain Garden-07



Summary for Pond UI01: Und Inf 01

Inflow Area = 53,524 sf,100.00% Impervious, Inflow Depth > 8.85" for 100-yr event
Inflow = 11.38 cfs @ 12.07 hrs, Volume= 39,492 cf
Outflow = 7.70 cfs @ 12.15 hrs, Volume= 28,983 cf, Atten= 32%, Lag= 5.0 min
Primary = 7.70 cfs @ 12.15 hrs, Volume= 28,983 cf
Routed to Link 3 : Pipe 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 45.32' @ 12.15 hrs Surf.Area= 5,205 sf Storage= 16,780 cf

Plug-Flow detention time= 194.1 min calculated for 28,971 cf (73% of inflow)
Center-of-Mass det. time= 103.6 min (841.9 - 738.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	39.50'	5,260 cf	**40.50'W x 127.59'L x 4.75'H Field A** 24,545 cf Overall - 11,394 cf Embedded = 13,151 cf x 40.0% Voids
#2A	40.00'	11,394 cf	**ADS_StormTech MC-3500 d +Cap** x 102 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 102 Chambers in 6 Rows Cap Storage= 14.9 cf x 2 x 6 rows = 178.8 cf
#3	41.98'	264 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder** x 3
		16,918 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.98'	**15.0" Round Culvert** L= 36.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.98' / 41.53' S= 0.0123 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=7.56 cfs @ 12.15 hrs HW=45.23' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 7.56 cfs @ 6.16 fps)

Pond UI01: Und Inf 01 - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= 14.9 cf x 2 x 6 rows = 178.8 cf

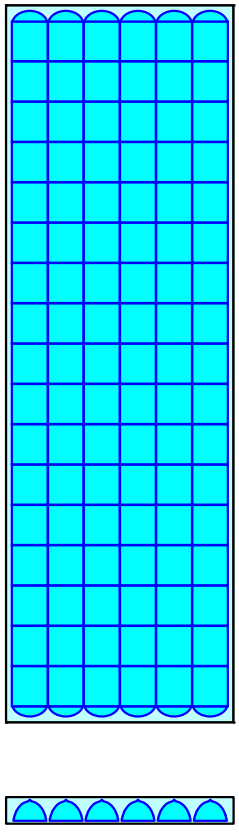
17 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 125.59' Row Length +12.0" End Stone x 2 = 127.59' Base Length
6 Rows x 77.0" Wide + 12.0" Side Stone x 2 = 40.50' Base Width
6.0" Stone Base + 45.0" Chamber Height + 6.0" Stone Cover = 4.75' Field Height

102 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 6 Rows = 11,393.9 cf Chamber Storage

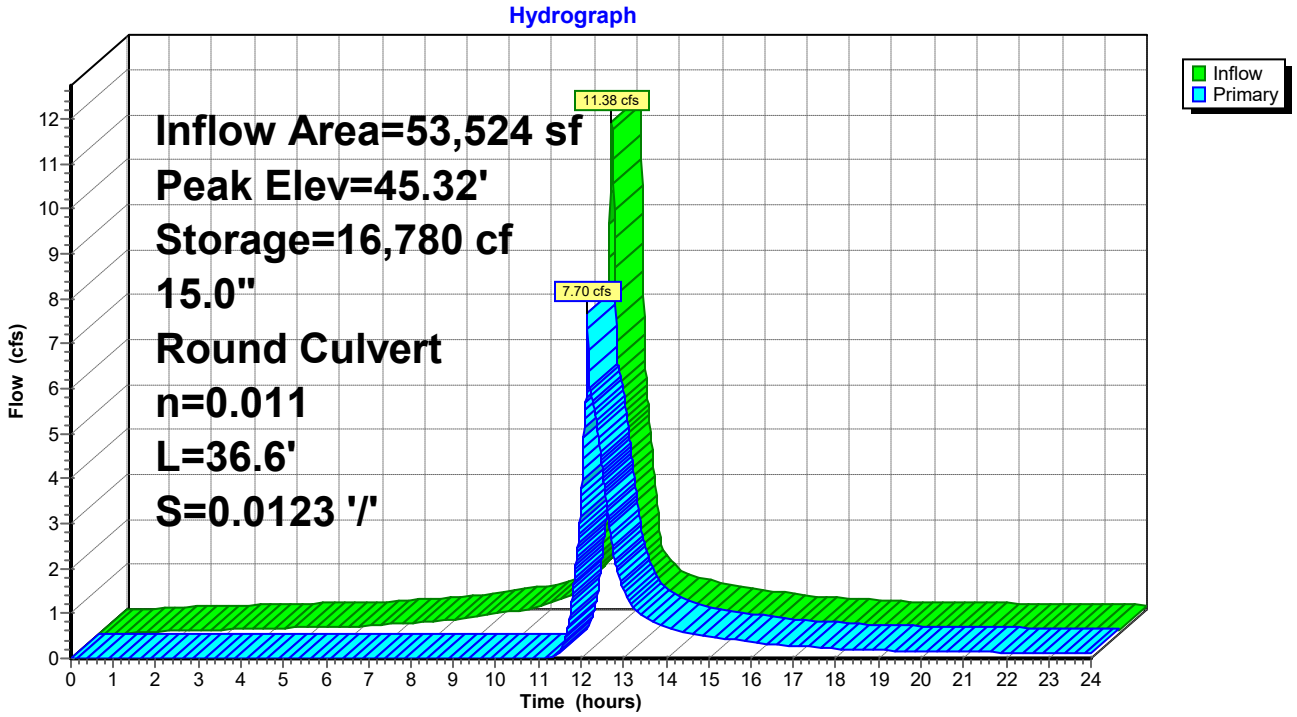
24,545.1 cf Field - 11,393.9 cf Chambers = 13,151.2 cf Stone x 40.0% Voids = 5,260.5 cf Stone Storage

Chamber Storage + Stone Storage = 16,654.4 cf = 0.382 af
Overall Storage Efficiency = 67.9%
Overall System Size = 127.59' x 40.50' x 4.75'

102 Chambers
909.1 cy Field
487.1 cy Stone



Pond UI01: Und Inf 01



Summary for Pond UI02: Und Inf 02

Inflow Area = 33,482 sf, 30.44% Impervious, Inflow Depth > 6.78" for 100-yr event
Inflow = 5.73 cfs @ 12.10 hrs, Volume= 18,914 cf
Outflow = 4.71 cfs @ 12.16 hrs, Volume= 18,442 cf, Atten= 18%, Lag= 3.6 min
Primary = 4.71 cfs @ 12.16 hrs, Volume= 18,442 cf
Routed to Link 1 : Pipe 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 44.49' @ 12.16 hrs Surf.Area= 558 sf Storage= 1,600 cf

Plug-Flow detention time= 27.0 min calculated for 18,435 cf (97% of inflow)
Center-of-Mass det. time= 12.2 min (808.4 - 796.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	39.97'	697 cf	**6.50'W x 82.00'L x 5.50'H Field A** 2,932 cf Overall - 1,188 cf Embedded = 1,743 cf x 40.0% Voids
#2A	40.47'	992 cf	**ADS N-12 48"** x 4 Inside #1 Inside= 47.7"W x 47.7"H => 12.40 sf x 20.00'L = 248.0 cf Outside= 54.0"W x 54.0"H => 14.86 sf x 20.00'L = 297.1 cf
#3	39.97'	144 cf	**4.00'D x 5.73'H Vertical Cone/Cylinder** x 2
		1,833 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 22.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 41.38' S= 0.0054 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=4.71 cfs @ 12.16 hrs HW=44.49' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 4.71 cfs @ 6.00 fps)

Pond UI02: Und Inf 02 - Chamber Wizard Field A

Chamber Model = ADS N-12 48" (ADS N-12® Pipe)
Inside= 47.7"W x 47.7"H => 12.40 sf x 20.00'L = 248.0 cf
Outside= 54.0"W x 54.0"H => 14.86 sf x 20.00'L = 297.1 cf

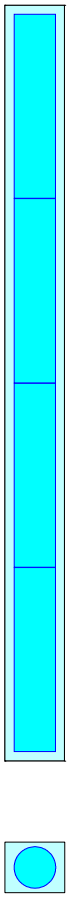
4 Chambers/Row x 20.00' Long = 80.00' Row Length +12.0" End Stone x 2 = 82.00' Base Length
1 Rows x 54.0" Wide + 12.0" Side Stone x 2 = 6.50' Base Width
6.0" Stone Base + 54.0" Chamber Height + 6.0" Stone Cover = 5.50' Field Height

4 Chambers x 248.0 cf = 992.0 cf Chamber Storage
4 Chambers x 297.1 cf = 1,188.4 cf Displacement

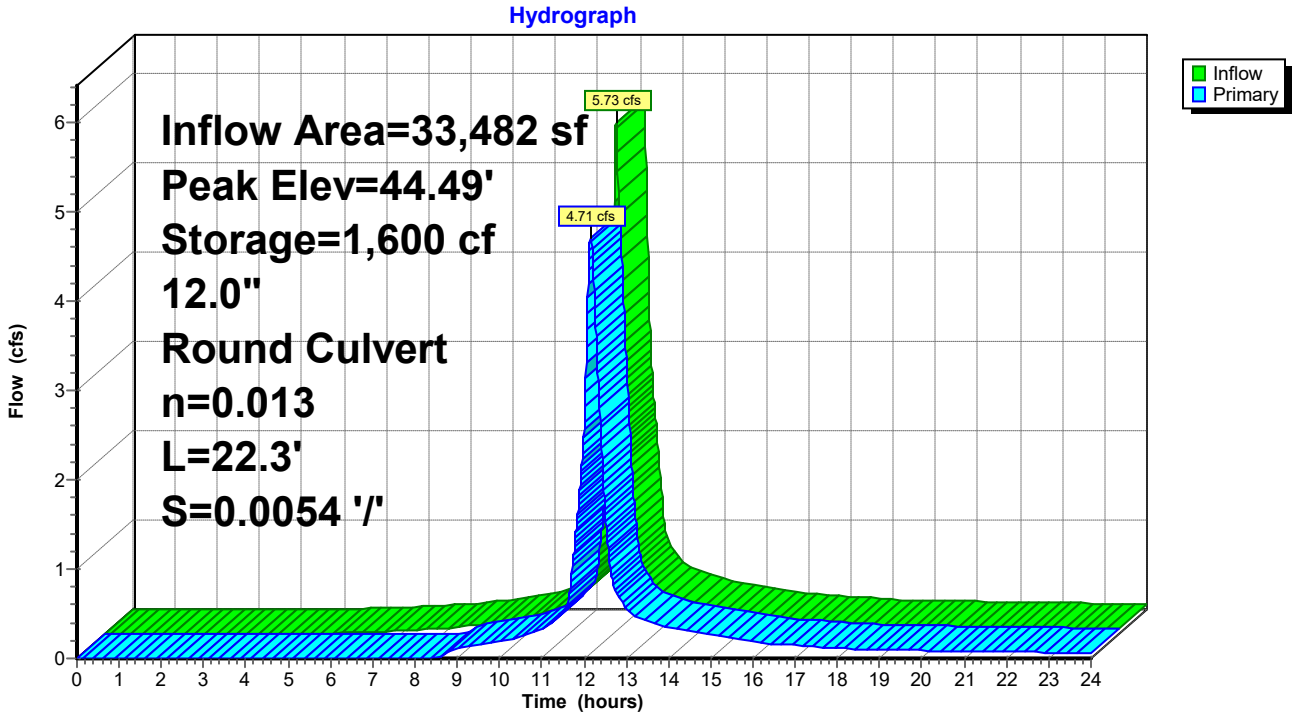
2,931.6 cf Field - 1,188.4 cf Chambers = 1,743.2 cf Stone x 40.0% Voids = 697.3 cf Stone Storage

Chamber Storage + Stone Storage = 1,689.3 cf = 0.039 af
Overall Storage Efficiency = 57.6%
Overall System Size = 82.00' x 6.50' x 5.50'

4 Chambers
108.6 cy Field
64.6 cy Stone



Pond UI02: Und Inf 02



Summary for Pond YD3: YD-03

[57] Hint: Peaked at 47.16' (Flood elevation advised)

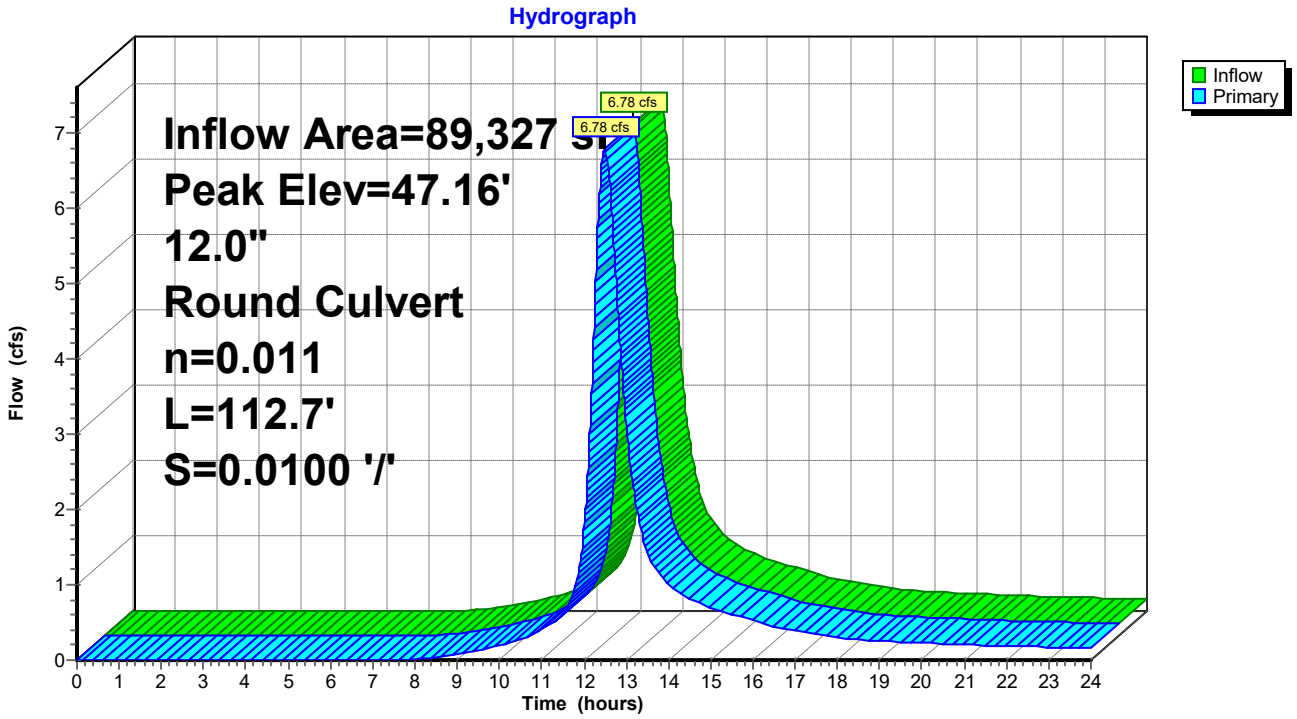
Inflow Area = 89,327 sf, 1.78% Impervious, Inflow Depth > 5.38" for 100-yr event
Inflow = 6.78 cfs @ 12.49 hrs, Volume= 40,078 cf
Outflow = 6.78 cfs @ 12.49 hrs, Volume= 40,078 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.78 cfs @ 12.49 hrs, Volume= 40,078 cf
Routed to Link Sub B : SUB B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 47.16' @ 12.49 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 112.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 40.37' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=6.78 cfs @ 12.49 hrs HW=47.16' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 6.78 cfs @ 8.64 fps)

Pond YD3: YD-03



Summary for Pond YD33: YD-33

[57] Hint: Peaked at 57.30' (Flood elevation advised)

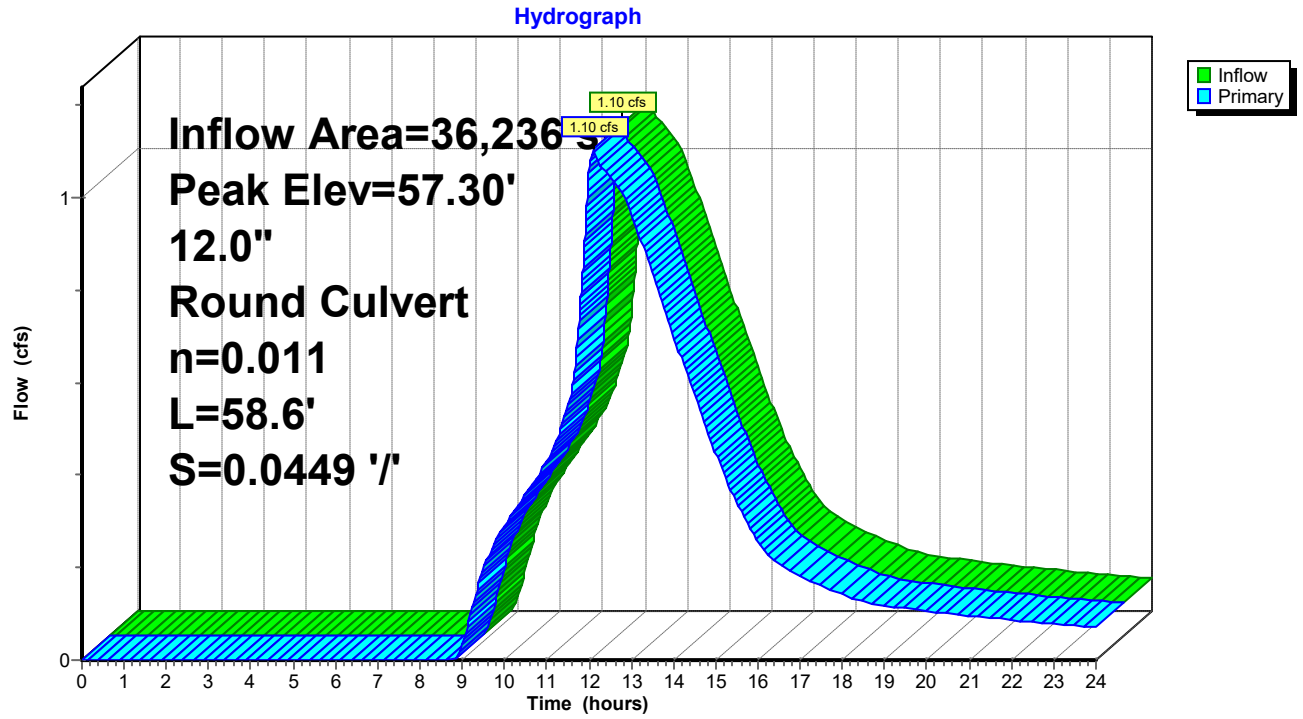
Inflow Area = 36,236 sf, 92.20% Impervious, Inflow Depth > 5.85" for 100-yr event
Inflow = 1.10 cfs @ 12.11 hrs, Volume= 17,664 cf
Outflow = 1.10 cfs @ 12.11 hrs, Volume= 17,664 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.10 cfs @ 12.11 hrs, Volume= 17,664 cf
Routed to Link SUB D1 : D1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.30' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	56.67'	**12.0" Round Culvert** L= 58.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.67' / 54.04' S= 0.0449 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.10 cfs @ 12.11 hrs HW=57.30' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.10 cfs @ 2.13 fps)

Pond YD33: YD-33



Summary for Pond YD40: YD-40

[57] Hint: Peaked at 43.93' (Flood elevation advised)

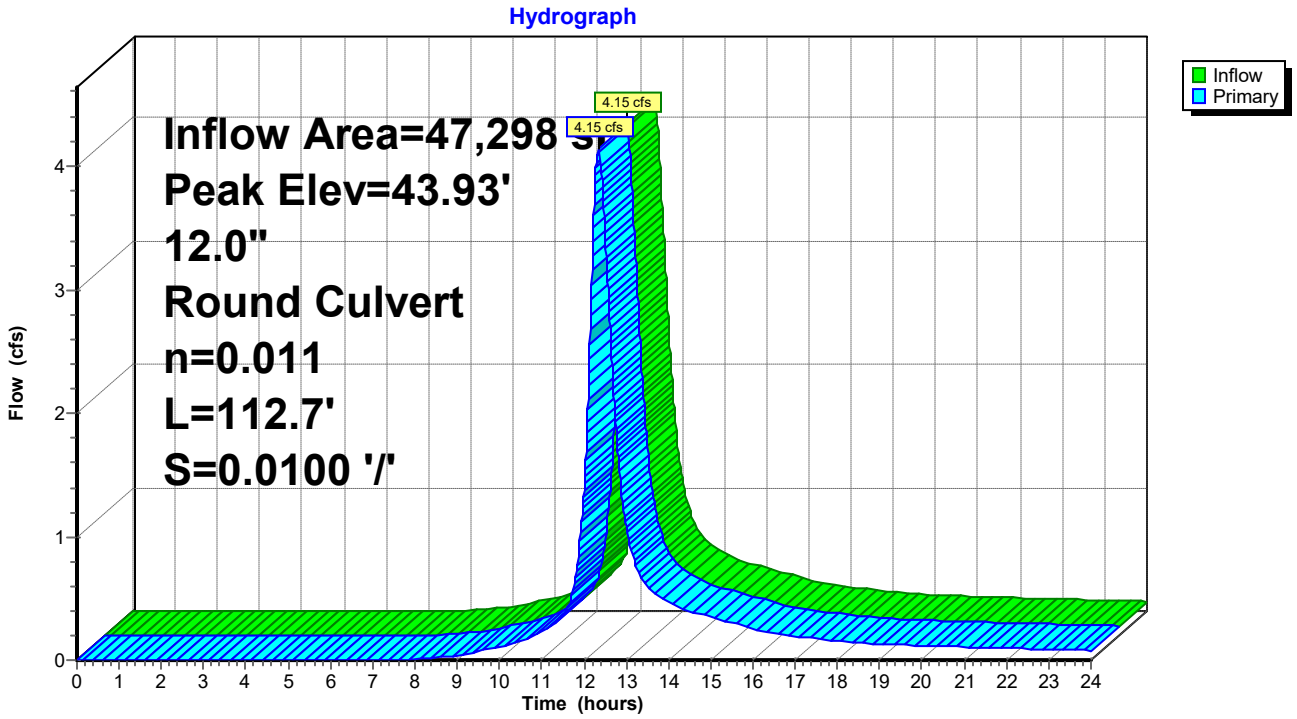
Inflow Area = 47,298 sf, 5.26% Impervious, Inflow Depth > 5.27" for 100-yr event
Inflow = 4.15 cfs @ 12.34 hrs, Volume= 20,781 cf
Outflow = 4.15 cfs @ 12.34 hrs, Volume= 20,781 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.15 cfs @ 12.34 hrs, Volume= 20,781 cf
Routed to Link Sub B : SUB B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 43.93' @ 12.34 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**12.0" Round Culvert** L= 112.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.50' / 40.37' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=4.15 cfs @ 12.34 hrs HW=43.93' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.15 cfs @ 5.28 fps)

Pond YD40: YD-40

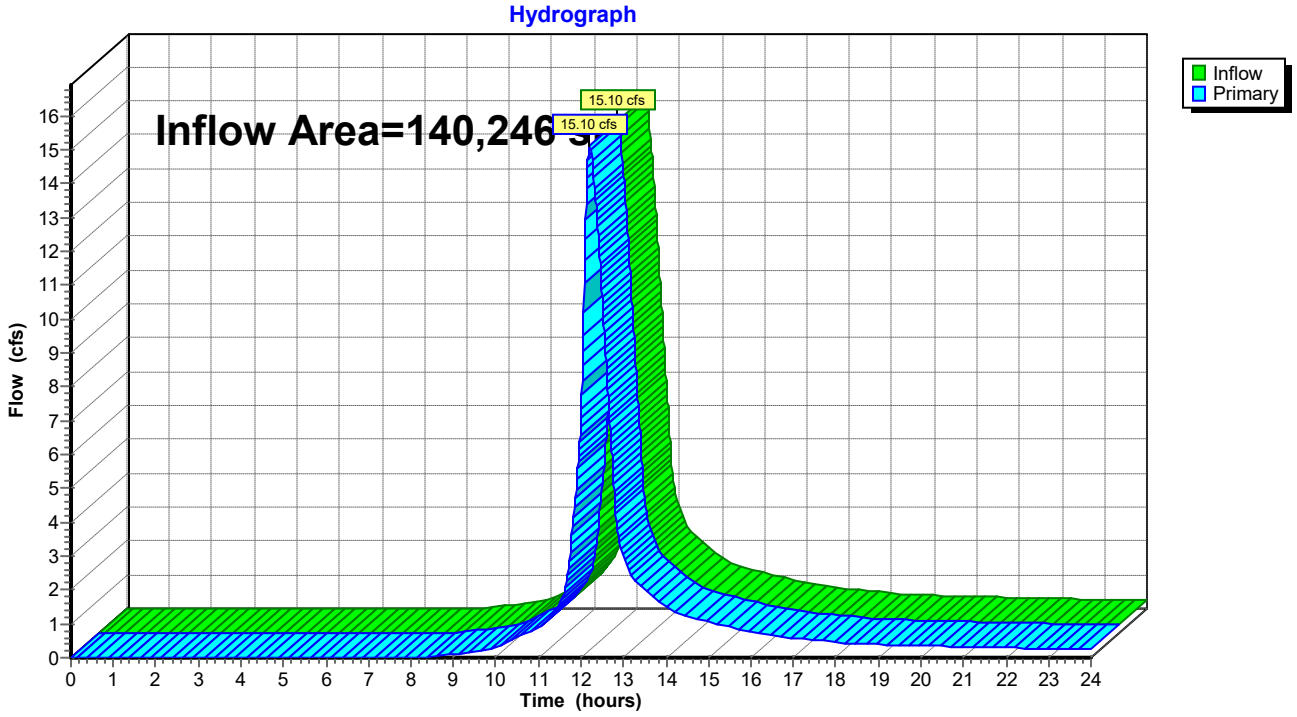


Summary for Link 1: Pipe 1

Inflow Area = 140,246 sf, 34.50% Impervious, Inflow Depth > 6.11" for 100-yr event
Inflow = 15.10 cfs @ 12.20 hrs, Volume= 71,426 cf
Primary = 15.10 cfs @ 12.20 hrs, Volume= 71,426 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 2 : Pipe 2

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1: Pipe 1

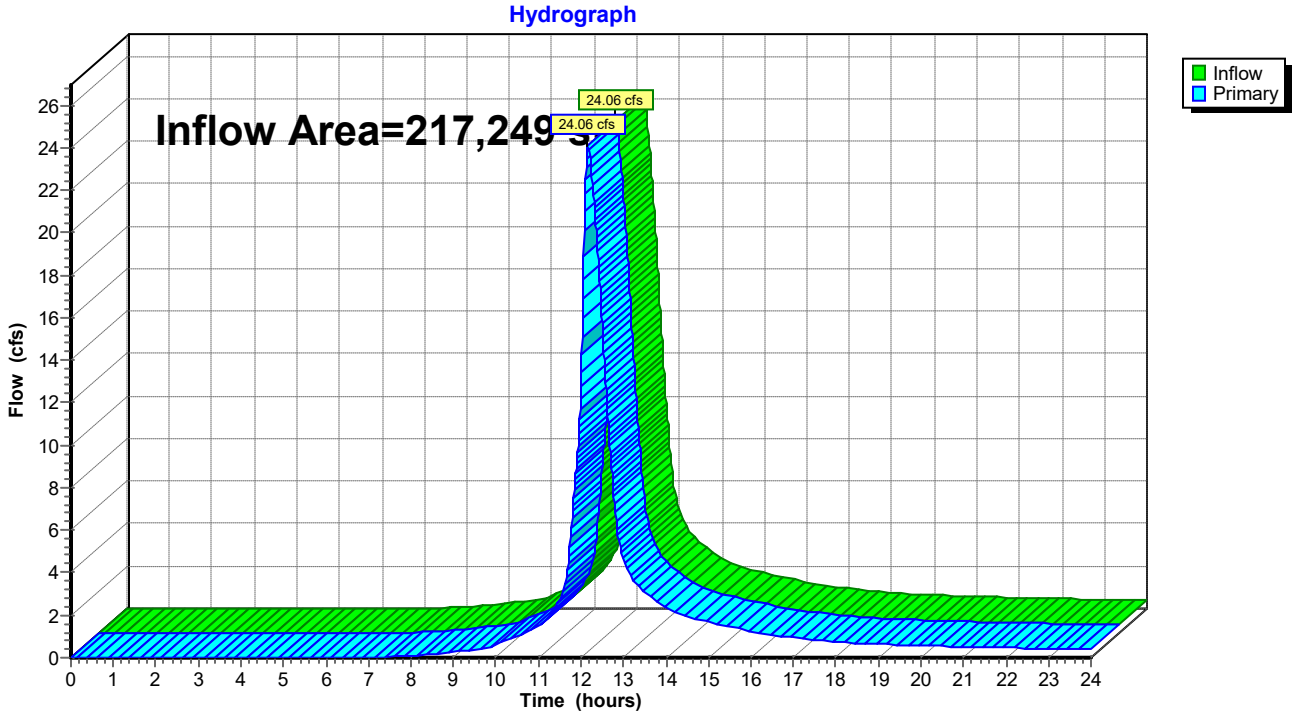


Summary for Link 2: Pipe 2

Inflow Area = 217,249 sf, 40.87% Impervious, Inflow Depth > 6.38" for 100-yr event
Inflow = 24.06 cfs @ 12.16 hrs, Volume= 115,434 cf
Primary = 24.06 cfs @ 12.16 hrs, Volume= 115,434 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3 : Pipe 3

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 2: Pipe 2

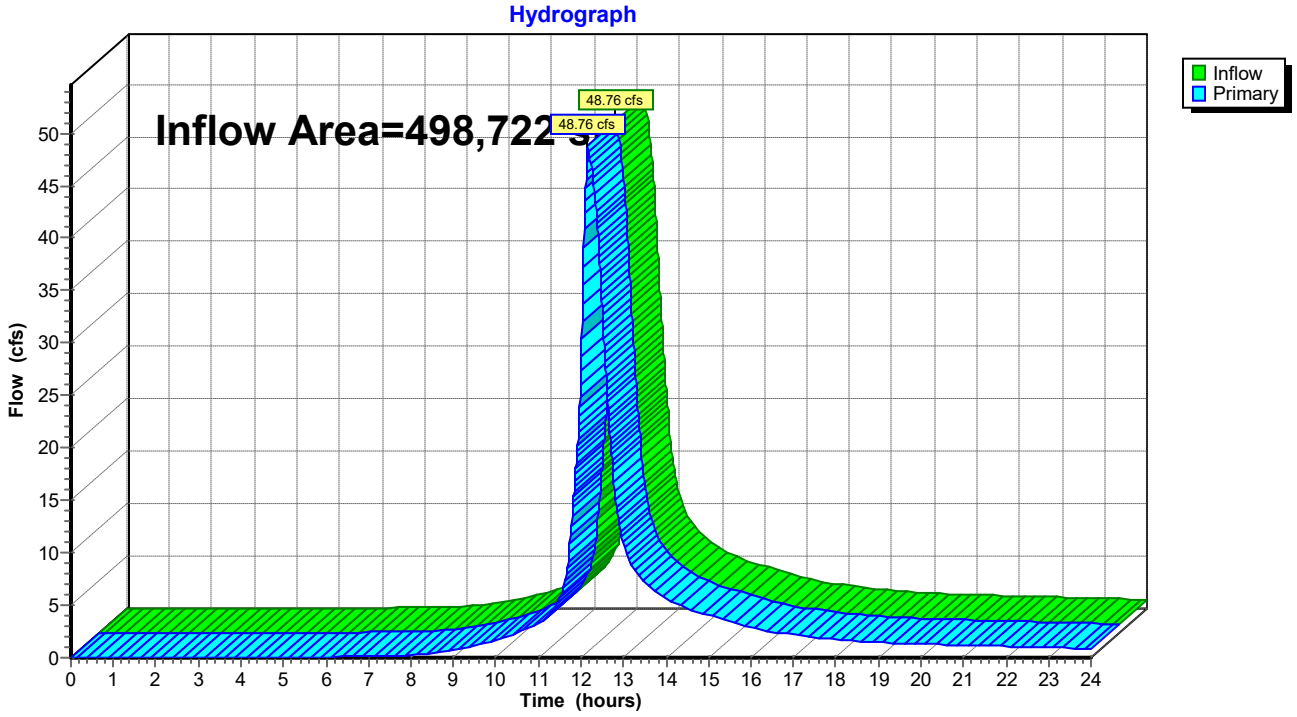


Summary for Link 3: Pipe 3

Inflow Area = 498,722 sf, 46.58% Impervious, Inflow Depth > 6.16" for 100-yr event
Inflow = 48.76 cfs @ 12.15 hrs, Volume= 255,898 cf
Primary = 48.76 cfs @ 12.15 hrs, Volume= 255,898 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4 : Pipe 4

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 3: Pipe 3

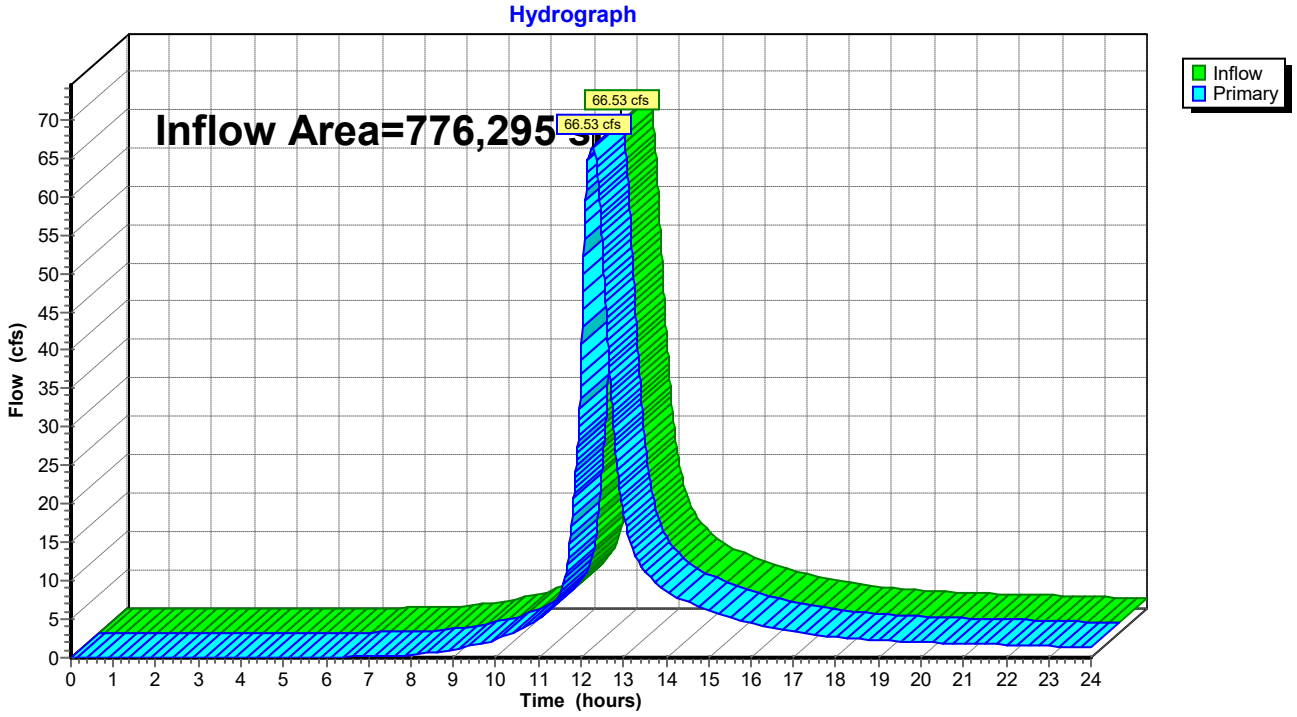


Summary for Link 4: Pipe 4

Inflow Area = 776,295 sf, 34.75% Impervious, Inflow Depth > 6.01" for 100-yr event
Inflow = 66.53 cfs @ 12.28 hrs, Volume= 388,529 cf
Primary = 66.53 cfs @ 12.28 hrs, Volume= 388,529 cf, Atten= 0%, Lag= 0.0 min
Routed to Link A : POC-A

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 4: Pipe 4

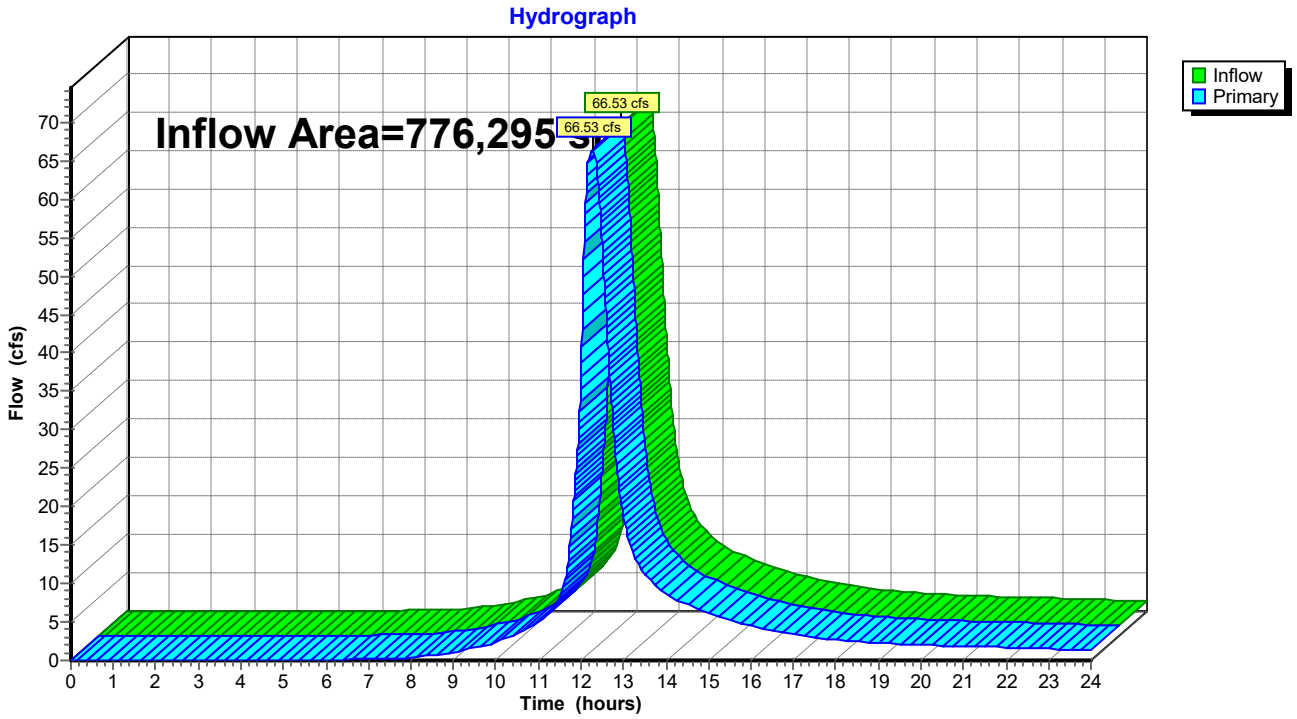


Summary for Link A: POC-A

Inflow Area = 776,295 sf, 34.75% Impervious, Inflow Depth > 6.01" for 100-yr event
Inflow = 66.53 cfs @ 12.28 hrs, Volume= 388,529 cf
Primary = 66.53 cfs @ 12.28 hrs, Volume= 388,529 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link A: POC-A

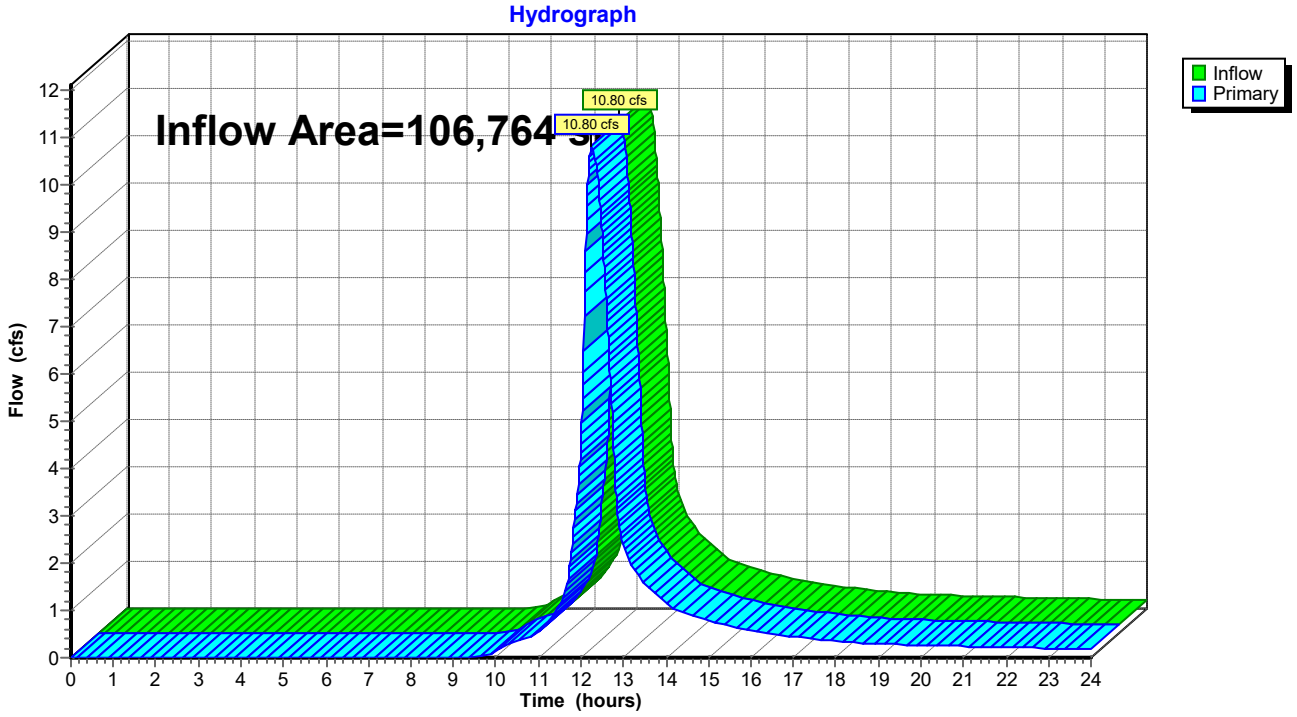


Summary for Link Sub A: SUB A

Inflow Area = 106,764 sf, 35.77% Impervious, Inflow Depth > 5.96" for 100-yr event
Inflow = 10.80 cfs @ 12.26 hrs, Volume= 52,984 cf
Primary = 10.80 cfs @ 12.26 hrs, Volume= 52,984 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 1 : Pipe 1

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Sub A: SUB A

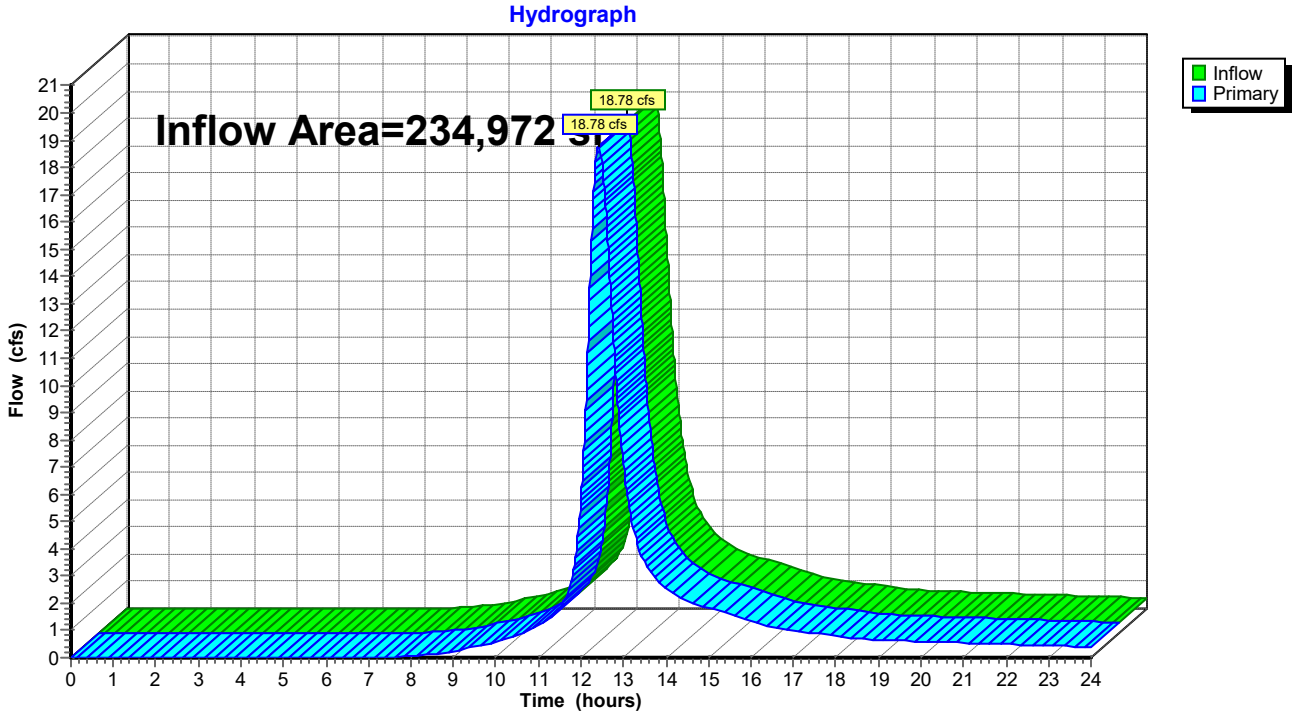


Summary for Link Sub B: SUB B

Inflow Area = 234,972 sf, 4.63% Impervious, Inflow Depth > 5.49" for 100-yr event
Inflow = 18.78 cfs @ 12.41 hrs, Volume= 107,410 cf
Primary = 18.78 cfs @ 12.41 hrs, Volume= 107,410 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 4 : Pipe 4

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link Sub B: SUB B

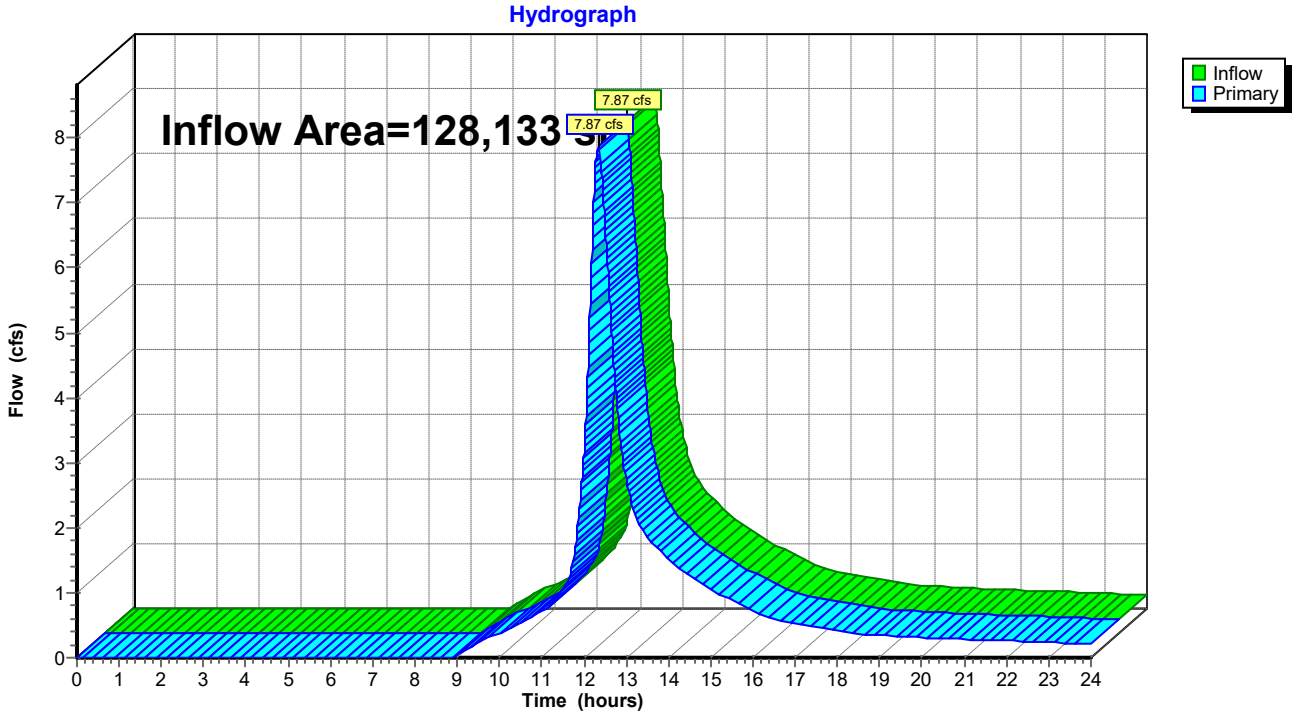


Summary for Link SUB D1: D1

Inflow Area = 128,133 sf, 28.03% Impervious, Inflow Depth > 4.81" for 100-yr event
Inflow = 7.87 cfs @ 12.34 hrs, Volume= 51,392 cf
Primary = 7.87 cfs @ 12.34 hrs, Volume= 51,392 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 3 : Pipe 3

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link SUB D1: D1

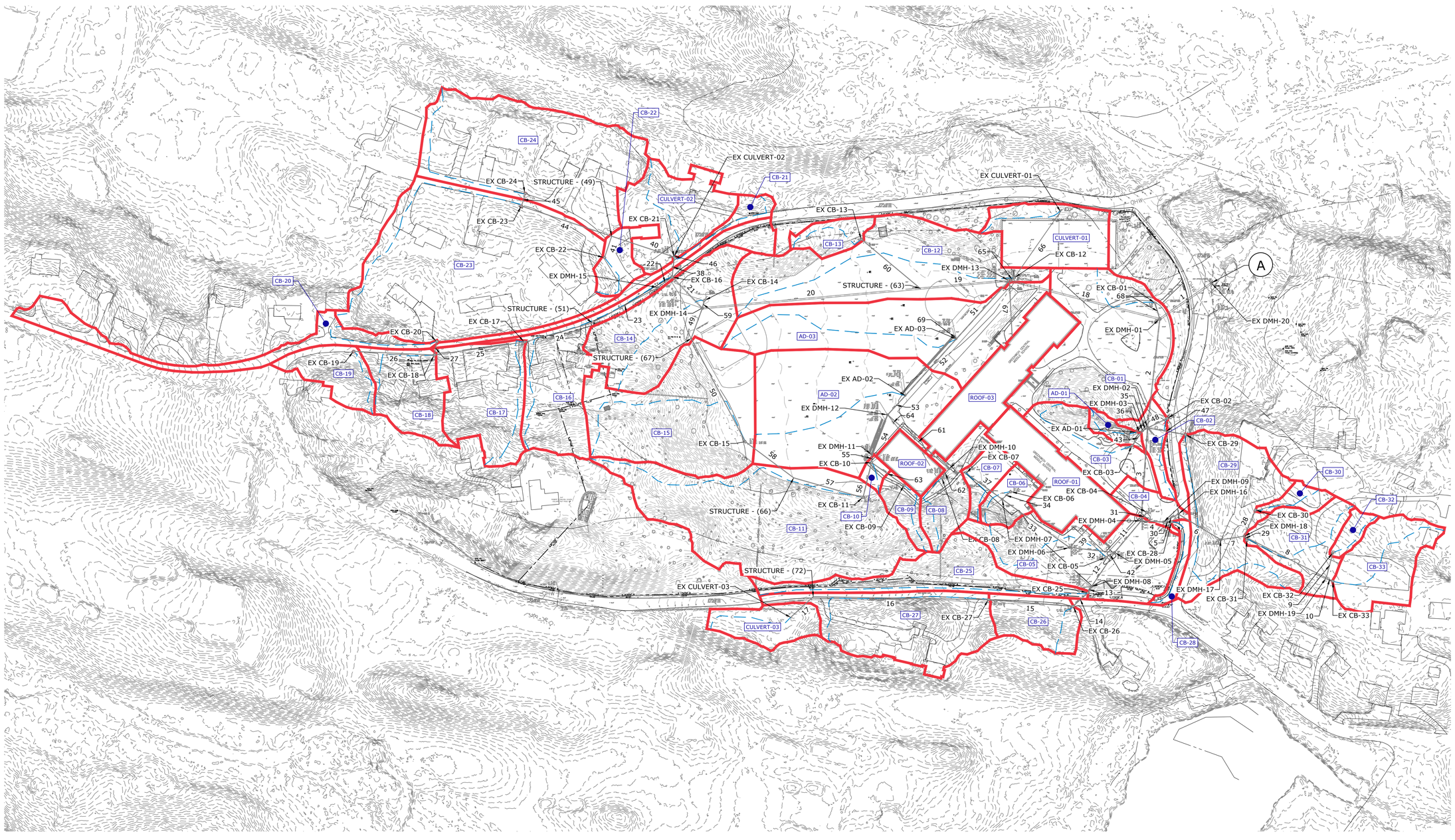


LEGEND

WATERSHED BOUNDARY

Tc LINE

DESIGN POINT (A)



0 100' 200'

SCALE: 1" = 100'

Tighe&Bond

GREENWICH CENTRAL MIDDLE SCHOOL

Greenwich, CT

MARK	DATE	DESCRIPTION

PROJECT NO:	G5068-003
DATE:	09/26/2023
FILE:	G5068-003-EX-HYDRAULIC.dwg
DRAWN BY:	PAR
DESIGNED/CHECKED BY:	APW
APPROVED BY:	JWB

EXISTING HYDRAULIC ANALYSIS

SCALE: AS SHOWN

WM-01

Last Saved: 4/4/2024
Plotted On:Apr 09, 2024-4:06pm By: EGoldberg
Tighe & Bond: J:\G\G5068 Greenwich Public Schools\003 Central Middle School\Design\Stormwater\Design Development\Phase 1\Storm Sewers\G5068-003-EX-HYDRAULIC.dwg

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-01**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.873	98	85.527
Wooded - Group B	0.381	60	22.868
Landscaped and Lawns - Group B	0.381	69	26.262
	1.634		134.657

Weighted CN: 82

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	83	0.043	8.9

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.026	3.28	99	0.5

Total Tc = 9.4

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-02**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.028	98	2.722
Wooded - Group B	0.002	60	0.120
Landscaped and Lawns - Group B	0.165	69	11.378
	0.195		14.220

Weighted CN: 73

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	181	0.049	15.8

Total Tc = 15.8

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-03**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.325	98	31.816
Wooded - Group B	0.100	60	6.007
Landscaped and Lawns - Group B	0.142	69	9.799
	0.567		47.622

Weighted CN: 84

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	58	0.26	4.9

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.016	2.57	213	1.4

Total Tc = 6.3

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-04**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.165	98	16.162
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.038	69	2.644
	0.203		18.806

Weighted CN: 93

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Total Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-05**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.497	98	48.706
Wooded - Group B	0.229	60	13.740
Landscaped and Lawns - Group B	0.527	69	36.363
	1.253		98.809

Weighted CN: 79

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	130	0.17	11.1
Segment B - C	0.24	65	0.12	4.9
Segment C - D	0.015	143	0.02	2.0

Total Tc = 18.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-06**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.152	98	14.848
Wooded - Group B	0.066	60	3.937
Landscaped and Lawns - Group B	0.016	69	1.093
	0.233		19.878

Weighted CN: 85

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	58	0.54	3.7

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment C - D	paved	0.012	2.23	41	0.3

Total Tc = 4.0
Total Tc (min.)= 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-07**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.137	98	13.440
Wooded - Group B	0.033	60	2.000
Landscaped and Lawns - Group B	0.024	69	1.646
	0.194		17.086

Weighted CN: 88

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	68	0.4	4.7

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.023	3.08	56	0.3

Total Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-08**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.072	98	7.044
Wooded - Group B	0.202	60	12.099
Landscaped and Lawns - Group B	0.140	69	9.655
	0.413		28.798

Weighted CN: 70

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	117	0.38	7.4

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.023	3.08	67	0.4

Total Tc = 7.7

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-09**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.011	98	1.125
Wooded - Group B	0.139	60	8.314
Landscaped and Lawns - Group C	0.047	79	3.743
	0.197		13.182

Weighted CN: 67

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	116	0.38	7.3

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.023	3.08	47	0.3

Total Tc = 7.6

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-10**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.008	98	0.756
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group C	0.055	79	4.378
	0.063		5.134

Weighted CN: 81

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.2	47	0.04	5.0

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.013	2.32	22	0.2

Total Tc = 5.2

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-11**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.000	98	0.000
Wooded - Group B	2.312	60	138.744
Landscaped and Lawns - Group C	0.199	79	15.706
	2.511		154.449

Weighted CN: 62

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	300	0.13	24.1

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	unpaved	0.23	7.74	87	0.2
Segment C - D	unpaved	0.011	1.69	228	2.2

Total Tc = 26.5

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-12**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.007	98	0.729
Wooded - Group C	0.518	73	37.814
Landscaped and Lawns - Group C	1.293	79	102.169
	1.819		140.711

Weighted CN: 77

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	300	0.01	44.7

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	unpaved	0.005	1.14	329	4.8

Total Tc = 49.5

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-13**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.000	98	0.000
Wooded - Group B	0.091	60	5.470
Wooded - Group C	0.091	73	6.656
Landscaped and Lawns - Group C	0.036	79	2.844
	0.218		14.970

Weighted CN: 69

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	180	0.09	18.5

Total Tc = 18.5

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-14**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.000	98	0.000
Wooded - Group B	0.877	60	52.623
Landscaped and Lawns - Group C	0.319	79	25.189
	1.196		77.812

Weighted CN: 65

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	278	0.149	21.5

Total Tc = 21.5

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-15**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.000	98	0.000
Wooded - Group B	1.080	60	64.815
Landscaped and Lawns - Group C	0.659	79	52.048
	1.739		116.864

Weighted CN: 67

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	300	0.143	23.2

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	unpaved	0.096	5.00	173	0.6

Total Tc = 23.8

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-16**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.315	98	30.831
Wooded - Group B	0.293	60	17.581
Landscaped and Lawns - Group B	0.524	69	36.138
	1.131		84.550

Weighted CN: 75

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	93	0.183	8.2
Segment B - C	0.24	97	0.119	6.7

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment C - D	paved	0.07	5.38	374	1.2

Total Tc = 16.1

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-17**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.185	98	18.133
Wooded - Group B	0.084	60	5.021
Landscaped and Lawns - Group B	0.629	69	43.397
	0.898		66.551

Weighted CN: 74

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	62	0.137	4.4
Segment B - C	0.4	85	0.218	7.1
Segment C - D	0.24	99	0.116	6.9

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment D - E	paved	0.13	7.33	69	0.2

Total Tc = 18.6

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-18**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.186	98	18.219
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.410	69	28.256
	0.595		46.474

Weighted CN: 78

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	87	0.34	4.0

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.05	4.55	129	0.5

Total Tc = 4.5
Total Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-19**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.066	98	6.515
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.325	69	22.428
	0.392		28.944

Weighted CN: 74

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	153	0.239	7.3

Total Tc = 7.3

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-20**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.358	98	35.047
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.224	69	15.454
	0.582		50.501

Weighted CN: 87

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	39	0.14	3.0

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.029	3.46	228	1.1

Total Tc = 4.1
Total Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-21**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.215	98	21.049
Wooded - Group B	0.054	60	3.248
Landscaped and Lawns - Group B	0.031	69	2.172
	0.300		26.468

Weighted CN: 88

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	39	0.179	4.1

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.03	3.52	222	1.1

Total Tc = 5.2

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-22**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.126	98	12.374
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.125	69	8.658
	0.252		21.032

Weighted CN: 84

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	68	0.11	5.2

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.016	2.57	63	0.4

Total Tc = 5.6

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-23**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.681	98	66.773
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	2.490	69	171.839
	3.172		238.613

Weighted CN: 75

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	241	0.106	14.6

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.024	3.15	324	1.7

Total Tc = 16.3

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-24**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.445	98	43.639
Wooded - Group B	0.138	60	8.309
Landscaped and Lawns - Group B	1.499	69	103.410
	2.082		155.357

Weighted CN: 75

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	182	0.091	12.4

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.008	1.82	212	1.9

Total Tc = 14.3

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-25**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.184	98	18.032
Wooded - Group B	0.471	60	28.260
Landscaped and Lawns - Group B	0.149	69	10.281
	0.804		56.573

Weighted CN: 70

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	300	0.043	2.7

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.009	1.93	325	2.8

Total Tc = 5.5

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-26**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.049	98	4.794
Wooded - Group B	0.347	60	20.809
Landscaped and Lawns - Group B	0.024	69	1.665
	0.420		27.268

Weighted CN: 65

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	111	0.163	9.9

Total Tc = 9.9

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-27**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.436	98	42.680
Wooded - Group B	0.413	60	24.763
Landscaped and Lawns - Group B	0.353	69	24.381
	1.202		91.825

Weighted CN: 76

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	52	0.298	4.3

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.054	4.72	377	1.3

Total Tc = 5.6

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-28**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.096	98	9.406
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.016	69	1.109
	0.112		10.515

Weighted CN: 94

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	217	0.025	2.6

Total Tc = 2.6
Total Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-29**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.370	98	36.255
Wooded - Group B	0.265	60	15.871
Landscaped and Lawns - Group B	0.670	69	46.249
	1.305		98.374

Weighted CN: 75

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	228	0.107	13.9

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.034	3.75	304	1.4

Total Tc = 15.2

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-30**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.057	98	5.613
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.068	69	4.678
	0.125		10.291

Weighted CN: 82

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	83	0.035	9.7
Segment B - C	0.015	18	0.067	0.2
Segment C - D	0.24	80	0.1	6.2

Total Tc = 16.1

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-31**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.282	98	27.611
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.317	69	21.875
	0.599		49.487

Weighted CN: 83

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	114	0.082	8.9

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.058	4.90	170	0.6

Total Tc = 9.5

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-32**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.106	98	10.388
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.000	69	0.000
	0.106		10.388

Weighted CN: 98

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	126	0.094	9.1

Total Tc = 9.1

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-33**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.225	98	22.030
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.442	69	30.523
	0.667		52.552

Weighted CN: 79

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	163	0.071	12.5

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.038	3.96	134	0.6

Total Tc = 13.1

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-AD-01**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.037	98	3.611
Wooded - Group B	0.038	60	2.292
Landscaped and Lawns - Group B	0.031	69	2.143
	0.106		8.046

Weighted CN: 76

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	57	0.405	4.0

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.024	3.15	76	0.4

Total Tc = 4.5
Total Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-AD-02**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.019	98	1.910
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group C	1.982	79	156.578
	2.001		158.488

Weighted CN: 79

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	300	0.011	43.0

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	unpaved	0.022	2.39	37	0.3

Total Tc = 43.2

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-AD-03**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.074	98	7.256
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group C	1.628	79	128.594
	1.702		135.850

Weighted CN: 80

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	300	0.01	44.7

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.008	1.82	235	2.2

Total Tc = 46.8

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CULVERT-01**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.516	98	50.611
Wooded - Group B	0.176	60	10.576
Landscaped and Lawns - Group B	0.024	69	1.652
	0.717		62.839

Weighted CN: 88

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	183	0.067	21.1

Total Tc = 21.1

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CULVERT-02**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.094	98	9.190
Wooded - Group B	0.245	60	14.729
Landscaped and Lawns - Group B	0.470	69	32.396
	0.809		56.315

Weighted CN: 70

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	238	0.079	24.4

Total Tc = 24.4

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CULVERT-03**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.000	98	0.000
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.371	69	25.585
	0.371		25.585

Weighted CN: 69

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	193	0.023	33.8

Total Tc = 33.8

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-ROOF-01**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.734	98	71.936
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.000	69	0.000
	0.734		71.936

Weighted CN: 98

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Total Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-ROOF-02**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.222	98	21.715
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.000	69	0.000
	0.222		21.715

Weighted CN: 98

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Total Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-ROOF-03**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.788	98	77.266
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.000	69	0.000
	0.788		77.266

Weighted CN: 98

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Total Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Description

File Name ..... GCMS - Existing SSA 4-2-2024.SPF

Project Options

Flow Units ..... CFS
Elevation Type ..... Elevation
Hydrology Method ..... SCS TR-55
Time of Concentration (TOC) Method ..... User-Defined
Link Routing Method ..... Kinematic Wave
Enable Overflow Ponding at Nodes ..... YES
Skip Steady State Analysis Time Periods ... NO

Analysis Options

Start Analysis On ..... Apr 03, 2024 00:00:00
End Analysis On ..... Apr 04, 2024 00:00:00
Start Reporting On ..... Apr 03, 2024 00:00:00
Antecedent Dry Days ..... 0 days
Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss
Reporting Time Step ..... 0 00:05:00 days hh:mm:ss
Routing Time Step ..... 30 seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	42
Nodes	69
Junctions	32
Outfalls	1
Flow Diversions	0
Inlets	36
Storage Nodes	0
Links	69
Channels	0
Pipes	69
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	25yr	Cumulative	inches	Connecticut	Fairfield	25	6.40	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-EX AD-01	0.11	484.00	75.90	6.40	3.72	0.39	0.42	0 00:05:00
2	Sub-EX AD-02	2.00	484.00	79.18	6.40	4.06	8.12	4.61	0 00:43:12
3	Sub-EX AD-03	1.70	484.00	79.83	6.40	4.13	7.02	3.82	0 00:46:48
4	Sub-EX CB-01	1.64	484.00	82.39	6.40	4.40	7.19	6.85	0 00:09:24
5	Sub-EX CB-02	0.20	484.00	73.07	6.40	3.43	0.67	0.56	0 00:15:48
6	Sub-EX CB-03	0.57	484.00	84.04	6.40	4.58	2.59	2.59	0 00:06:18
7	Sub-EX CB-04	0.20	484.00	92.57	6.40	5.53	1.12	1.06	0 00:05:00
8	Sub-EX CB-05	1.25	484.00	78.86	6.40	4.02	5.04	4.13	0 00:18:00
9	Sub-EX CB-06	0.23	484.00	85.30	6.40	4.71	1.10	1.11	0 00:05:00
10	Sub-EX CB-07	0.19	484.00	87.95	6.40	5.01	0.97	0.94	0 00:05:00
11	Sub-EX CB-08	0.41	484.00	69.65	6.40	3.09	1.28	1.29	0 00:07:42
12	Sub-EX CB-09	0.20	484.00	66.65	6.40	2.80	0.55	0.56	0 00:07:36
13	Sub-EX CB-10	0.06	484.00	81.41	6.40	4.29	0.27	0.28	0 00:05:12
14	Sub-EX CB-11	2.51	484.00	61.51	6.40	2.32	5.84	3.99	0 00:26:30
15	Sub-EX CB-12	1.82	484.00	77.36	6.40	3.87	7.03	3.72	0 00:49:30
16	Sub-EX CB-13	0.22	484.00	68.56	6.40	2.99	0.65	0.52	0 00:18:30
17	Sub-EX CB-14	1.20	484.00	65.07	6.40	2.65	3.17	2.40	0 00:21:30
18	Sub-EX CB-15	1.74	484.00	67.20	6.40	2.86	4.96	3.64	0 00:23:48
19	Sub-EX CB-16	1.13	484.00	74.74	6.40	3.60	4.07	3.47	0 00:16:06
20	Sub-EX CB-17	0.90	484.00	74.13	6.40	3.54	3.18	2.57	0 00:18:36
21	Sub-EX CB-18	0.60	484.00	78.05	6.40	3.94	2.35	2.42	0 00:05:00
22	Sub-EX CB-19	0.39	484.00	73.90	6.40	3.51	1.37	1.39	0 00:07:18
23	Sub-EX CB-20	0.58	484.00	86.84	6.40	4.88	2.84	2.81	0 00:05:00
24	Sub-EX CB-21	0.30	484.00	88.16	6.40	5.03	1.51	1.48	0 00:05:12
25	Sub-EX CB-22	0.25	484.00	83.56	6.40	4.52	1.14	1.13	0 00:05:36
26	Sub-EX CB-23	3.17	484.00	75.23	6.40	3.65	11.57	9.79	0 00:16:18
27	Sub-EX CB-24	2.08	484.00	74.60	6.40	3.59	7.46	6.57	0 00:14:18
28	Sub-EX CB-26	0.42	484.00	64.95	6.40	2.64	1.11	1.07	0 00:09:54
29	Sub-EX CB-27	1.20	484.00	76.43	6.40	3.77	4.53	4.68	0 00:05:36
30	Sub-EX CB-28	0.11	484.00	93.86	6.40	5.67	0.64	0.61	0 00:05:00
31	Sub-EX CB-29	1.31	484.00	75.39	6.40	3.67	4.78	4.14	0 00:15:12
32	Sub-EX CB-30	0.13	484.00	82.22	6.40	4.38	0.55	0.47	0 00:16:06
33	Sub-EX CB-31	0.60	484.00	82.65	6.40	4.43	2.65	2.54	0 00:09:30
34	Sub-EX CB-32	0.11	484.00	98.00	6.40	6.16	0.65	0.56	0 00:09:06
35	Sub-EX CB-33	0.67	484.00	78.78	6.40	4.02	2.68	2.40	0 00:13:06
36	Sub-EX CULVERT-01	0.72	484.00	87.69	6.40	4.98	3.56	2.68	0 00:21:06
37	Sub-EX CULVERT-02	0.81	484.00	69.64	6.40	3.09	2.50	1.82	0 00:24:24
38	Sub-EX CULVERT-03	0.37	484.00	69.00	6.40	3.03	1.12	0.71	0 00:33:47
39	Sub-EX ROOF-01	0.73	484.00	98.00	6.40	6.16	4.52	3.97	0 00:05:00
40	Sub-EX ROOF-02	0.22	484.00	98.00	6.40	6.16	1.37	1.21	0 00:05:00
41	Sub-EX ROOF-03	0.79	484.00	98.00	6.40	6.16	4.85	4.24	0 00:05:00
42	Sub-EX-CB-25	0.80	484.00	70.36	6.40	3.16	2.54	2.66	0 00:05:30

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	EX CULVERT-01	Junction	44.70	51.00	44.70	51.00	0.00	2.67	51.00	0.00	0.00	0 12:20	0.58	43.00
2	EX CULVERT-02	Junction	45.17	48.12	45.17	48.12	0.00	1.79	45.41	0.00	2.71	0 00:00	0.00	0.00
3	EX CULVERT-03	Junction	74.59	79.80	74.59	79.80	0.00	0.71	74.81	0.00	4.99	0 00:00	0.00	0.00
4	EX DMH-01	Junction	34.39	44.16	34.39	44.16	0.00	43.37	37.39	0.00	6.77	0 00:00	0.00	0.00
5	EX DMH-02	Junction	39.48	49.28	39.48	49.28	0.00	21.31	49.28	0.00	0.00	0 12:15	2.55	32.00
6	EX DMH-03	Junction	44.74	50.79	44.74	50.79	0.00	2.95	48.44	0.00	2.35	0 00:00	0.00	0.00
7	EX DMH-04	Junction	42.74	52.39	42.74	52.39	0.00	19.36	52.39	0.00	0.00	0 12:13	1.07	22.00
8	EX DMH-05	Junction	45.24	51.33	45.24	51.33	0.00	13.05	51.33	0.00	0.00	0 12:15	0.12	12.00
9	EX DMH-06	Junction	45.59	50.99	45.59	50.99	0.00	5.41	50.99	0.00	0.00	0 12:12	1.16	44.00
10	EX DMH-07	Junction	46.45	51.35	46.45	51.35	0.00	2.03	48.63	0.00	2.72	0 00:00	0.00	0.00
11	EX DMH-08	Junction	49.80	53.44	49.80	53.44	0.00	8.39	53.44	0.00	0.00	0 12:10	0.11	10.00
12	EX DMH-09	Junction	50.38	54.43	50.38	54.43	0.00	6.20	51.05	0.00	3.38	0 00:00	0.00	0.00
13	EX DMH-10	Junction	39.98	43.18	39.98	43.18	0.00	1.23	40.59	0.00	2.59	0 00:00	0.00	0.00
14	EX DMH-11	Junction	39.72	42.99	39.72	42.99	0.00	3.90	42.99	0.00	0.00	0 12:11	0.00	6.00
15	EX DMH-12	Junction	39.45	42.67	39.45	42.67	0.00	0.00	40.53	0.00	2.14	0 00:00	0.00	0.00
16	EX DMH-13	Junction	37.33	47.50	37.33	47.50	0.00	23.01	39.73	0.00	7.77	0 00:00	0.00	0.00
17	EX DMH-14	Junction	40.50	45.67	40.50	45.67	0.00	14.55	42.31	0.00	3.36	0 00:00	0.00	0.00
18	EX DMH-15	Junction	47.34	49.46	47.34	49.46	0.00	4.18	49.46	0.00	0.00	0 12:30	1.40	58.00
19	EX DMH-16	Junction	51.42	55.52	51.42	55.52	0.00	5.78	52.15	0.00	3.37	0 00:00	0.00	0.00
20	EX DMH-17	Junction	59.48	65.68	59.48	65.68	0.00	5.78	60.01	0.00	5.67	0 00:00	0.00	0.00
21	EX DMH-18	Junction	67.60	71.75	67.60	71.75	0.00	5.78	68.08	0.00	3.67	0 00:00	0.00	0.00
22	EX DMH-19	Junction	75.00	79.50	75.00	79.50	0.00	2.95	75.43	0.00	4.07	0 00:00	0.00	0.00
23	EX ROOF-01	Junction	47.11	54.06	47.11	54.06	0.00	3.96	54.06	0.00	0.00	0 12:10	0.06	10.00
24	EX ROOF-02	Junction	40.80	42.80	40.80	42.80	0.00	1.20	42.80	0.00	0.00	0 12:10	0.03	11.00
25	EX ROOF-03	Junction	44.00	48.20	44.00	48.20	0.00	4.23	44.48	0.00	3.72	0 00:00	0.00	0.00
26	NodeSTMLink-69	Junction	36.92	41.67	36.92	41.67	0.00	1.80	39.29	0.00	2.38	0 00:00	0.00	0.00
27	Structure - (49)	Junction	44.35	47.16	44.35	47.16	0.00	2.84	47.16	0.00	0.00	0 12:10	0.66	134.00
28	Structure - (51)	Junction	54.00	58.20	54.00	58.20	0.00	5.17	58.20	0.00	0.00	0 12:25	0.45	31.00
29	Structure - (63)	Junction	38.35	41.87	38.35	41.87	0.00	14.93	40.72	0.00	1.15	0 00:00	0.00	0.00
30	Structure - (66)	Junction	41.64	45.00	41.64	45.00	0.00	4.67	45.00	0.00	0.00	0 12:45	0.34	45.00
31	Structure - (67)	Junction	41.95	46.00	41.95	46.00	0.00	3.09	46.00	0.00	0.00	0 12:24	0.01	15.00
32	Structure - (72)	Junction	72.65	79.80	72.65	79.80	0.00	0.71	72.87	0.00	6.93	0 00:00	0.00	0.00
33	Out-1Pipe - (05)	Outfall	33.20					43.36	34.78					

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
1	1	Pipe	EX DMH-01	Out-1Pipe - (05)	132.32	34.39	33.20	0.9000	42.000	0.0120	43.36	103.36	0.42	10.27	1.58	0.45	0.00	Calculated
2	2	Pipe	EX DMH-02	EX DMH-01	230.59	39.48	35.89	1.5600	18.000	0.0120	15.12	14.20	1.07	9.40	1.50	1.00	29.00	SURCHARGED
3	3	Pipe	EX DMH-04	EX DMH-02	196.29	42.74	39.68	1.5600	18.000	0.0120	14.99	14.21	1.06	9.35	1.50	1.00	18.00	SURCHARGED
4	4	Pipe	EX DMH-09	EX DMH-04	47.23	50.38	47.64	5.8000	15.000	0.0120	6.20	16.86	0.37	12.67	0.52	0.42	0.00	Calculated
5	5	Pipe	EX DMH-16	EX DMH-09	35.46	51.42	50.43	2.7900	15.000	0.0120	5.78	11.69	0.49	9.49	0.62	0.50	0.00	Calculated
6	6	Pipe	EX DMH-17	EX DMH-16	104.10	59.48	51.62	7.5500	12.000	0.0120	5.78	10.61	0.55	13.79	0.53	0.53	0.00	Calculated
7	7	Pipe	EX DMH-18	EX DMH-17	49.77	67.60	59.58	16.1200	12.000	0.0120	5.78	15.49	0.37	18.27	0.42	0.42	0.00	Calculated
8	8	Pipe	EX DMH-19	EX DMH-18	193.77	75.00	67.60	3.8200	12.000	0.0120	2.91	7.54	0.39	9.06	0.43	0.43	0.00	Calculated
9	9	Pipe	EX CB-32	EX DMH-19	54.57	77.70	75.00	4.9500	12.000	0.0120	0.54	8.59	0.06	6.10	0.17	0.17	0.00	Calculated
10	10	Pipe	EX CB-33	EX DMH-19	15.61	76.00	75.00	6.4100	12.000	0.0120	2.43	9.77	0.25	10.30	0.34	0.34	0.00	Calculated
11	11	Pipe	EX DMH-05	EX DMH-04	86.68	45.24	42.84	2.7700	15.000	0.0120	12.53	11.64	1.08	10.93	1.25	1.00	3.00	SURCHARGED
12	12	Pipe	EX DMH-08	EX DMH-05	86.87	49.80	46.89	3.3500	12.000	0.0120	7.61	7.06	1.08	10.39	1.00	1.00	5.00	SURCHARGED
13	13	Pipe	EX CB-25	EX DMH-08	15.07	56.31	50.50	38.5500	12.000	0.0120	8.39	23.96	0.35	27.79	0.41	0.41	0.00	Calculated
14	14	Pipe	EX CB-26	EX CB-25	42.01	58.26	56.46	4.2800	12.000	0.0120	5.82	7.99	0.73	11.09	0.63	0.63	0.00	Calculated
15	15	Pipe	EX CB-27	EX CB-26	178.13	61.52	58.61	1.6300	12.000	0.0120	4.85	4.93	0.98	7.20	0.80	0.80	0.00	Calculated
16	16	Pipe	Structure - (72)	EX CB-27	368.98	72.65	61.57	3.0000	12.000	0.0120	0.71	6.69	0.11	5.56	0.22	0.22	0.00	Calculated
17	17	Pipe	EX CULVERT-03	Structure - (72)	64.50	74.59	72.65	3.0100	12.000	0.0120	0.71	6.69	0.11	5.55	0.22	0.22	0.00	Calculated
18	18	Pipe	EX DMH-13	EX DMH-01	326.74	37.33	34.39	0.9000	36.000	0.0120	22.99	68.54	0.34	8.74	1.19	0.40	0.00	Calculated
19	19	Pipe	Structure - (63)	EX DMH-13	187.69	38.35	37.48	0.4700	36.000	0.0120	14.81	49.27	0.30	6.12	1.13	0.38	0.00	Calculated
20	20	Pipe	EX DMH-14	Structure - (63)	460.64	40.50	38.35	0.4700	36.000	0.0120	14.41	49.33	0.29	6.11	1.10	0.37	0.00	Calculated
21	21	Pipe	EX CB-16	EX DMH-14	91.26	42.48	40.65	2.0100	18.000	0.0120	9.61	16.11	0.60	9.51	0.83	0.56	0.00	Calculated
22	22	Pipe	EX DMH-15	EX CB-16	37.67	47.34	46.96	1.0100	10.000	0.0150	2.01	1.91	1.05	4.04	0.83	1.00	55.00	SURCHARGED
23	23	Pipe	Structure - (51)	EX DMH-15	157.00	54.00	47.34	4.2400	10.000	0.0150	4.18	3.91	1.07	8.34	0.83	1.00	28.00	SURCHARGED
24	24	Pipe	EX CB-17	Structure - (51)	147.62	60.27	54.00	4.2500	10.000	0.0120	5.17	4.89	1.06	10.45	0.83	1.00	21.00	SURCHARGED
25	25	Pipe	EX CB-18	EX CB-17	191.60	67.91	60.27	3.9900	10.000	0.0120	4.96	4.74	1.05	10.21	0.83	1.00	11.00	SURCHARGED
26	26	Pipe	EX CB-19	EX CB-18	169.89	72.15	67.91	2.5000	10.000	0.0120	1.33	3.75	0.35	6.30	0.34	0.41	0.00	Calculated
27	28	Pipe	EX CB-30	EX DMH-18	60.12	72.50	67.60	8.1500	12.000	0.0120	0.46	11.02	0.04	6.98	0.14	0.14	0.00	Calculated
28	29	Pipe	EX CB-31	EX DMH-18	10.66	67.80	67.60	1.8800	12.000	0.0120	2.42	5.29	0.46	6.58	0.47	0.48	0.00	Calculated
29	30	Pipe	EX CB-28	EX DMH-09	16.77	51.31	50.43	5.2500	15.000	0.0120	0.60	16.03	0.04	6.24	0.17	0.13	0.00	Calculated
30	31	Pipe	EX CB-04	EX DMH-04	21.87	49.36	48.54	3.7500	15.000	0.0120	1.06	13.55	0.08	6.58	0.24	0.19	0.00	Calculated
31	32	Pipe	EX DMH-06	EX DMH-05	95.28	45.59	45.59	0.0000	12.000	0.0120	1.84	1.73	1.07	2.59	1.00	1.00	40.00	SURCHARGED
32	33	Pipe	EX DMH-07	EX DMH-06	174.37	46.45	45.64	0.4600	12.000	0.0120	2.02	2.63	0.77	3.73	0.66	0.66	0.00	Calculated
33	34	Pipe	EX CB-06	EX DMH-07	24.00	48.80	48.27	2.2100	8.000	0.0120	1.10	1.95	0.57	5.74	0.36	0.54	0.00	Calculated
34	35	Pipe	EX DMH-03	EX DMH-02	11.74	44.74	44.73	0.0900	15.000	0.0120	2.94	3.13	0.94	2.90	0.96	0.77	0.00	Calculated
35	36	Pipe	EX AD-01	EX DMH-03	14.75	48.99	48.27	4.8800	8.000	0.0120	0.41	2.89	0.14	5.88	0.17	0.26	0.00	Calculated
36	37	Pipe	EX CB-07	EX DMH-07	94.03	47.02	46.55	0.5000	12.000	0.0120	0.93	2.73	0.34	3.15	0.40	0.40	0.00	Calculated
37	38	Pipe	EX CB-21	EX CB-16	42.25	44.12	42.48	3.8800	12.000	0.0120	4.30	7.60	0.57	9.97	0.54	0.54	0.00	Calculated
38	39	Pipe	EX ROOF-01	EX DMH-06	56.38	47.11	45.99	1.9900	10.000	0.0120	3.50	3.35	1.05	7.08	0.83	1.00	7.00	SURCHARGED
39	40	Pipe	Structure - (49)	EX CB-21	138.80	44.35	44.12	0.1700	12.000	0.0120	1.85	1.73	1.07	2.58	1.00	1.00	124.00	SURCHARGED
40	41	Pipe	EX CB-22	Structure - (49)	47.44	46.96	44.35	5.5000	12.000	0.0120	1.11	9.05	0.12	7.82	0.24	0.24	0.00	Calculated
41	42	Pipe	EX CB-05	EX DMH-05	20.71	46.08	45.24	4.0600	12.000	0.0120	4.03	7.77	0.52	9.98	0.51	0.51	0.00	Calculated
42	43	Pipe	EX CB-03	EX DMH-03	38.89	45.23	44.67	1.4400	15.000	0.0120	2.53	7.86	0.32	5.70	0.49	0.39	0.00	Calculated
43	44	Pipe	EX CB-23	Structure - (49)	200.02	44.71	44.35	0.1800	12.000	0.0120	1.87	1.73	1.08	2.59	1.00	1.00	117.00	SURCHARGED
44	45	Pipe	EX CB-24	EX CB-23	28.17	44.76	44.71	0.1800	12.000	0.0120	1.83	1.73	1.06	2.53	1.00	1.00	48.00	SURCHARGED
45	46	Pipe	EX CULVERT-02	EX CB-21	3.82	45.17	44.67	13.0800	12.000	0.0120	1.79	13.96	0.13	12.23	0.24	0.24	0.00	Calculated
46	47	Pipe	EX CB-29	EX DMH-02	81.18	45.55	42.43	3.8400	12.000	0.0120	4.10	7.57	0.54	9.82	0.52	0.52	0.00	Calculated
47	48	Pipe	EX CB-02	EX DMH-02	46.12	42.91	42.23	1.4700	15.000	0.0120	0.55	8.50	0.07	3.89	0.22	0.17	0.00	Calculated
48	49	Pipe	Structure - (67)	EX DMH-14	67.62	41.95	41.55	0.5900	12.000	0.0120	2.76	2.97	0.93	5.68	0.85	0.85	0.00	Calculated
49	50	Pipe	EX CB-15	Structure - (67)	245.57	43.35	41.95	0.5700	12.000	0.0120	3.09	2.91	1.06	9.53	0.45	0.82	0.00	> CAPACITY
50	51	Pipe	EX AD-03	EX DMH-13	165.91	38.33	37.43	0.5400	15.000	0.0120	5.49	5.15	1.07	4.90	1.25	1.00	60.00	SURCHARGED
51	52	Pipe	EX AD-02	EX AD-03	160.56	38.94	38.38	0.3500	15.000	0.0120	4.41	4.13	1.07	3.92	1.19	0.95	0.00	> CAPACITY
52	53	Pipe	EX DMH-12	EX AD-02	54.85	39.45	39.24	0.3800	12.000	0.0120	0.00	2.39	0.00	0.00	0.00	0.00	0.00	Calculated
53	54	Pipe	EX DMH-11	EX DMH-12	89.77	39.72	39.40	0.3600	15.000	0.0120	3.99	3.84	1.04	3.63	1.14	0.91	0.00	> CAPACITY
54	55	Pipe	EX CB-10	EX DMH-11	17.13	39.79	39.72	0.4100	15.000	0.0120	3.90	4.47	0.87	4.11	0.90	0.72	0.00	Calculated
55	56	Pipe	EX CB-11	EX CB-10	75.89	40.38	39.89	0.6500	12.000	0.0120	3.34	3.10	1.08	4.80	1.00	1.00	65.00	SURCHARGED
56	57	Pipe	Structure - (66)	EX CB-11	151.52	41.64	40.38	0.8300	12.000	0.0120	3.71	3.52	1.05	6.24	0.82	1.00	1.00	SURCHARGED

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
57	58	Pipe	EX CB-15	Structure - (66)	126.97	42.70	41.64	0.8300	12.000	0.0120	4.67	4.48	1.04	14.48	0.33	1.00	19.00	SURCHARGED
58	60	Pipe	EX CB-13	Structure - (63)	161.99	40.70	40.35	0.2200	12.000	0.0120	0.52	1.79	0.29	2.01	0.37	0.37	0.00	Calculated
59	61	Pipe	EX DMH-10	EX DMH-12	172.10	39.98	39.55	0.2500	12.000	0.0120	1.22	1.93	0.63	2.61	0.57	0.58	0.00	Calculated
60	62	Pipe	EX CB-08	EX DMH-10	24.54	40.39	40.18	0.8600	12.000	0.0120	1.23	3.57	0.34	4.13	0.40	0.40	0.00	Calculated
61	63	Pipe	EX CB-09	EX CB-10	83.27	40.46	39.84	0.7400	12.000	0.0120	0.53	3.33	0.16	3.10	0.27	0.27	0.00	Calculated
62	64	Pipe	EX ROOF-02	EX DMH-12	40.32	40.80	39.85	2.3600	6.000	0.0120	1.00	0.93	1.07	5.46	0.50	1.00	9.00	SURCHARGED
63	65	Pipe	EX CB-12	EX DMH-13	20.55	39.59	39.23	1.7500	6.000	0.0120	0.86	0.80	1.07	4.73	0.50	1.00	151.00	SURCHARGED
64	66	Pipe	EX CULVERT-01	EX CB-12	160.88	44.70	39.59	3.1800	6.000	0.0120	1.15	1.08	1.06	6.47	0.50	1.00	39.00	SURCHARGED
65	67	Pipe	EX ROOF-03	EX DMH-13	119.10	44.00	37.38	5.5600	12.000	0.0120	4.22	9.10	0.46	11.37	0.48	0.48	0.00	Calculated
66	68	Pipe	EX CB-01	EX DMH-01	35.21	39.95	36.39	10.1100	12.000	0.0120	6.55	12.27	0.53	15.86	0.52	0.52	0.00	Calculated
67	69	Pipe	NodeSTMLink-69	EX AD-03	8.00	38.92	38.78	1.7500	15.000	0.0120	1.88	9.26	0.20	6.01	0.37	0.30	0.00	Calculated
68	Pipe - (46)	Pipe	EX CB-20	EX CB-18	29.11	68.49	67.91	1.9900	10.000	0.0120	2.80	3.35	0.84	6.88	0.58	0.70	0.00	Calculated
69	Pipe - (57)	Pipe	EX CB-14	EX DMH-14	16.77	41.38	41.00	2.2700	12.000	0.0120	2.39	5.81	0.41	7.03	0.45	0.45	0.00	Calculated

Inlet Summary

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft²)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)
1	EX AD-01	FHWA HEC-22 GENERIC	N/A	On Sag	1	48.99	50.35	48.99	10.00	0.41	N/A	N/A	N/A	7.00	2.61	50.41
2	EX AD-02	FHWA HEC-22 GENERIC	N/A	On Sag	1	38.94	41.64	38.94	10.00	4.60	N/A	N/A	N/A	7.00	19.64	42.04
3	EX AD-03	FHWA HEC-22 GENERIC	N/A	On Sag	1	38.33	41.58	38.33	10.00	3.80	N/A	N/A	N/A	7.00	17.21	41.93
4	EX CB-01	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.95	43.15	39.95	10.00	6.52	N/A	N/A	N/A	7.00	22.42	43.61
5	EX CB-02	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.91	46.16	42.91	10.00	0.56	N/A	N/A	N/A	7.00	2.77	46.23
6	EX CB-03	FHWA HEC-22 GENERIC	N/A	On Sag	1	45.23	50.58	45.23	10.00	2.54	N/A	N/A	N/A	7.00	11.74	50.82
7	EX CB-04	FHWA HEC-22 GENERIC	N/A	On Sag	1	49.36	52.56	49.36	10.00	1.06	N/A	N/A	N/A	7.00	6.32	52.70
8	EX CB-05	FHWA HEC-22 GENERIC	N/A	On Sag	1	46.08	49.28	46.08	10.00	4.02	N/A	N/A	N/A	7.00	16.11	49.61
9	EX CB-06	FHWA HEC-22 GENERIC	N/A	On Sag	1	48.27	50.17	48.27	10.00	1.10	N/A	N/A	N/A	7.00	6.51	50.31
10	EX CB-07	FHWA HEC-22 GENERIC	N/A	On Sag	1	47.02	48.85	47.02	10.00	0.93	N/A	N/A	N/A	7.00	5.77	48.98
11	EX CB-08	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.39	42.44	40.39	10.00	1.23	N/A	N/A	N/A	7.00	7.02	42.59
12	EX CB-09	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.46	42.23	40.46	10.00	0.53	N/A	N/A	N/A	7.00	2.71	42.29
13	EX CB-10	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.79	42.76	39.79	10.00	0.28	N/A	N/A	N/A	7.00	2.11	42.81
14	EX CB-11	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.38	43.38	40.38	10.00	3.99	N/A	N/A	N/A	7.00	16.02	43.71
15	EX CB-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.59	51.00	39.59	10.00	3.71	N/A	N/A	N/A	7.00	15.24	51.31
16	EX CB-13	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.70	43.70	40.70	10.00	0.52	N/A	N/A	N/A	7.00	2.69	43.76
17	EX CB-14	FHWA HEC-22 GENERIC	N/A	On Sag	1	41.38	44.38	41.38	10.00	2.39	N/A	N/A	N/A	7.00	11.23	44.61
18	EX CB-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	43.35	45.35	43.35	10.00	3.57	N/A	N/A	N/A	7.00	14.84	45.66
19	EX CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.48	48.52	42.48	10.00	3.41	N/A	N/A	N/A	7.00	14.37	48.90
20	EX CB-17	FHWA HEC-22 GENERIC	N/A	On Sag	1	60.27	66.63	60.27	10.00	2.54	N/A	N/A	N/A	7.00	11.71	66.87
21	EX CB-18	FHWA HEC-22 GENERIC	N/A	On Sag	1	67.91	70.91	67.91	10.00	2.38	N/A	N/A	N/A	7.00	11.21	71.14
22	EX CB-19	FHWA HEC-22 GENERIC	N/A	On Sag	1	72.15	75.35	72.15	10.00	1.33	N/A	N/A	N/A	7.00	7.44	75.51
23	EX CB-20	FHWA HEC-22 GENERIC	N/A	On Sag	1	68.49	70.22	68.49	10.00	2.79	N/A	N/A	N/A	7.00	12.50	70.48
24	EX CB-21	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.12	48.12	44.12	10.00	1.47	N/A	N/A	N/A	7.00	7.98	48.29
25	EX CB-22	FHWA HEC-22 GENERIC	N/A	On Sag	1	46.96	49.96	46.96	10.00	1.12	N/A	N/A	N/A	7.00	6.57	50.10
26	EX CB-23	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.71	47.30	44.71	10.00	9.63	N/A	N/A	N/A	7.00	29.22	47.89
27	EX CB-24	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.76	47.76	44.76	10.00	6.55	N/A	N/A	N/A	7.00	22.49	48.22
28	EX CB-25	FHWA HEC-22 GENERIC	N/A	On Sag	1	56.31	60.41	56.31	10.00	2.58	N/A	N/A	N/A	7.00	11.85	60.66
29	EX CB-26	FHWA HEC-22 GENERIC	N/A	On Sag	1	58.26	60.86	58.26	10.00	1.04	N/A	N/A	N/A	7.00	6.23	61.08
30	EX CB-27	FHWA HEC-22 GENERIC	N/A	On Sag	1	61.52	63.57	61.52	10.00	4.58	N/A	N/A	N/A	7.00	17.61	63.93
31	EX CB-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	51.31	54.56	51.31	10.00	0.60	N/A	N/A	N/A	7.00	2.87	54.63
32	EX CB-29	FHWA HEC-22 GENERIC	N/A	On Sag	1	45.55	48.30	45.55	10.00	4.11	N/A	N/A	N/A	7.00	16.35	48.64
33	EX CB-30	FHWA HEC-22 GENERIC	N/A	On Sag	1	72.50	75.50	72.50	10.00	0.47	N/A	N/A	N/A	7.00	2.58	75.56
34	EX CB-31	FHWA HEC-22 GENERIC	N/A	On Sag	1	67.80	70.80	67.80	10.00	2.42	N/A	N/A	N/A	7.00	11.32	71.04
35	EX CB-32	FHWA HEC-22 GENERIC	N/A	On Sag	1	77.70	80.70	77.70	10.00	0.55	N/A	N/A	N/A	7.00	5.38	80.87
36	EX CB-33	FHWA HEC-22 GENERIC	N/A	On Sag	1	76.00	79.40	76.00	10.00	2.40	N/A	N/A	N/A	7.00	11.27	79.64

Subbasin Hydrology

Subbasin : Sub-EX AD-01

Input Data

Area (ac)	0.11
Peak Rate Factor	484.00
Weighted Curve Number	75.90
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.04	-	98.00
-	0.04	-	60.00
-	0.03	-	69.00
Composite Area & Weighted CN	0.11		75.90

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.72
Peak Runoff (cfs)	0.42
Weighted Curve Number	75.90
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX AD-02

Input Data

Area (ac)	2.00
Peak Rate Factor	484.00
Weighted Curve Number	79.18
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.02	-	98.00
-	1.98	-	79.00
Composite Area & Weighted CN	2.00		79.18

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.06
Peak Runoff (cfs)	4.61
Weighted Curve Number	79.18
Time of Concentration (days hh:mm:ss)	0 00:43:12

Subbasin : Sub-EX AD-03

Input Data

Area (ac)	1.70
Peak Rate Factor	484.00
Weighted Curve Number	79.83
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.07	-	98.00
-	1.63	-	79.00
Composite Area & Weighted CN	1.70		79.83

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.13
Peak Runoff (cfs)	3.82
Weighted Curve Number	79.83
Time of Concentration (days hh:mm:ss)	0 00:46:48

Subbasin : Sub-EX CB-01

Input Data

Area (ac)	1.64
Peak Rate Factor	484.00
Weighted Curve Number	82.39
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.87	-	98.00
-	0.38	-	60.00
-	0.38	-	69.00
Composite Area & Weighted CN	1.63		82.39

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.40
Peak Runoff (cfs)	6.85
Weighted Curve Number	82.39
Time of Concentration (days hh:mm:ss)	0 00:09:24

Subbasin : Sub-EX CB-02

Input Data

Area (ac)	0.20
Peak Rate Factor	484.00
Weighted Curve Number	73.07
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.03	-	98.00
-	0.00	-	60.00
-	0.17	-	69.00
Composite Area & Weighted CN	0.20		73.07

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.43
Peak Runoff (cfs)	0.56
Weighted Curve Number	73.07
Time of Concentration (days hh:mm:ss)	0 00:15:48

Subbasin : Sub-EX CB-03

Input Data

Area (ac)	0.57
Peak Rate Factor	484.00
Weighted Curve Number	84.04
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.33	-	98.00
-	0.10	-	60.00
-	0.14	-	69.00
Composite Area & Weighted CN	0.57		84.04

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.58
Peak Runoff (cfs)	2.59
Weighted Curve Number	84.04
Time of Concentration (days hh:mm:ss)	0 00:06:18

Subbasin : Sub-EX CB-04

Input Data

Area (ac)	0.20
Peak Rate Factor	484.00
Weighted Curve Number	92.57
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.17	-	98.00
-	0.04	-	69.00
Composite Area & Weighted CN	0.21		92.57

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	5.53
Peak Runoff (cfs)	1.06
Weighted Curve Number	92.57
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX CB-05

Input Data

Area (ac)	1.25
Peak Rate Factor	484.00
Weighted Curve Number	78.86
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.50	-	98.00
-	0.23	-	60.00
-	0.53	-	69.00
Composite Area & Weighted CN	1.26		78.86

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.02
Peak Runoff (cfs)	4.13
Weighted Curve Number	78.86
Time of Concentration (days hh:mm:ss)	0 00:18:00

Subbasin : Sub-EX CB-06

Input Data

Area (ac)	0.23
Peak Rate Factor	484.00
Weighted Curve Number	85.30
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.15	-	98.00
-	0.07	-	60.00
-	0.02	-	69.00
Composite Area & Weighted CN	0.24		85.30

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.71
Peak Runoff (cfs)	1.11
Weighted Curve Number	85.30
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX CB-07

Input Data

Area (ac)	0.19
Peak Rate Factor	484.00
Weighted Curve Number	87.95
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.14	-	98.00
-	0.03	-	60.00
-	0.02	-	69.00
Composite Area & Weighted CN	0.19		87.95

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	5.01
Peak Runoff (cfs)	0.94
Weighted Curve Number	87.95
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX CB-08

Input Data

Area (ac)	0.41
Peak Rate Factor	484.00
Weighted Curve Number	69.65
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.07	-	98.00
-	0.20	-	60.00
-	0.14	-	69.00
Composite Area & Weighted CN	0.41		69.65

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.09
Peak Runoff (cfs)	1.29
Weighted Curve Number	69.65
Time of Concentration (days hh:mm:ss)	0 00:07:42

Subbasin : Sub-EX CB-09

Input Data

Area (ac)	0.20
Peak Rate Factor	484.00
Weighted Curve Number	66.65
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.01	-	98.00
-	0.14	B	60.00
-	0.05	C	79.00
Composite Area & Weighted CN	0.20		66.65

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	2.80
Peak Runoff (cfs)	0.56
Weighted Curve Number	66.65
Time of Concentration (days hh:mm:ss)	0 00:07:36

Subbasin : Sub-EX CB-10

Input Data

Area (ac)	0.06
Peak Rate Factor	484.00
Weighted Curve Number	81.41
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.01	-	98.00
-	0.06	C	79.00
Composite Area & Weighted CN	0.07		81.41

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.29
Peak Runoff (cfs)	0.28
Weighted Curve Number	81.41
Time of Concentration (days hh:mm:ss)	0 00:05:12

Subbasin : Sub-EX CB-11

Input Data

Area (ac)	2.51
Peak Rate Factor	484.00
Weighted Curve Number	61.51
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	2.31	B	60.00
-	0.20	C	79.00
Composite Area & Weighted CN	2.51		61.51

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	2.32
Peak Runoff (cfs)	3.99
Weighted Curve Number	61.51
Time of Concentration (days hh:mm:ss)	0 00:26:30

Subbasin : Sub-EX CB-12

Input Data

Area (ac)	1.82
Peak Rate Factor	484.00
Weighted Curve Number	77.36
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.01	-	98.00
-	0.52	C	73.00
-	1.29	C	79.00
Composite Area & Weighted CN	1.82		77.36

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.87
Peak Runoff (cfs)	3.72
Weighted Curve Number	77.36
Time of Concentration (days hh:mm:ss)	0 00:49:30

Subbasin : Sub-EX CB-13

Input Data

Area (ac)	0.22
Peak Rate Factor	484.00
Weighted Curve Number	68.56
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.09	B	60.00
-	0.09	C	73.00
-	0.04	C	79.00
Composite Area & Weighted CN	0.22		68.56

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	2.99
Peak Runoff (cfs)	0.52
Weighted Curve Number	68.56
Time of Concentration (days hh:mm:ss)	0 00:18:30

Subbasin : Sub-EX CB-14

Input Data

Area (ac)	1.20
Peak Rate Factor	484.00
Weighted Curve Number	65.07
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.88	B	60.00
-	0.32	C	79.00
Composite Area & Weighted CN	1.20		65.07

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	2.65
Peak Runoff (cfs)	2.40
Weighted Curve Number	65.07
Time of Concentration (days hh:mm:ss)	0 00:21:30

Subbasin : Sub-EX CB-15

Input Data

Area (ac)	1.74
Peak Rate Factor	484.00
Weighted Curve Number	67.20
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	1.08	B	60.00
-	0.66	C	79.00
Composite Area & Weighted CN	1.74		67.20

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	2.86
Peak Runoff (cfs)	3.64
Weighted Curve Number	67.20
Time of Concentration (days hh:mm:ss)	0 00:23:48

Subbasin : Sub-EX CB-16

Input Data

Area (ac)	1.13
Peak Rate Factor	484.00
Weighted Curve Number	74.74
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.32	-	98.00
-	0.29	-	60.00
-	0.52	B	69.00
Composite Area & Weighted CN	1.13		74.74

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.60
Peak Runoff (cfs)	3.47
Weighted Curve Number	74.74
Time of Concentration (days hh:mm:ss)	0 00:16:06

Subbasin : Sub-EX CB-17

Input Data

Area (ac)	0.90
Peak Rate Factor	484.00
Weighted Curve Number	74.13
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.19	-	98.00
-	0.08	-	60.00
-	0.63	-	69.00
Composite Area & Weighted CN	0.90		74.13

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.54
Peak Runoff (cfs)	2.57
Weighted Curve Number	74.13
Time of Concentration (days hh:mm:ss)	0 00:18:36

Subbasin : Sub-EX CB-18

Input Data

Area (ac)	0.60
Peak Rate Factor	484.00
Weighted Curve Number	78.05
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.19	-	98.00
-	0.41	-	69.00
Composite Area & Weighted CN	0.60		78.05

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.94
Peak Runoff (cfs)	2.42
Weighted Curve Number	78.05
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX CB-19

Input Data

Area (ac)	0.39
Peak Rate Factor	484.00
Weighted Curve Number	73.90
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.07	-	98.00
-	0.33	-	69.00
Composite Area & Weighted CN	0.40		73.90

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.51
Peak Runoff (cfs)	1.39
Weighted Curve Number	73.90
Time of Concentration (days hh:mm:ss)	0 00:07:18

Subbasin : Sub-EX CB-20

Input Data

Area (ac)	0.58
Peak Rate Factor	484.00
Weighted Curve Number	86.84
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.36	-	98.00
-	0.22	-	69.00
Composite Area & Weighted CN	0.58		86.84

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.88
Peak Runoff (cfs)	2.81
Weighted Curve Number	86.84
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX CB-21

Input Data

Area (ac)	0.30
Peak Rate Factor	484.00
Weighted Curve Number	88.16
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.22	-	98.00
-	0.05	-	60.00
-	0.03	-	69.00
Composite Area & Weighted CN	0.30		88.16

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	5.03
Peak Runoff (cfs)	1.48
Weighted Curve Number	88.16
Time of Concentration (days hh:mm:ss)	0 00:05:12

Subbasin : Sub-EX CB-22

Input Data

Area (ac)	0.25
Peak Rate Factor	484.00
Weighted Curve Number	83.56
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.13	-	98.00
-	0.13	-	69.00
Composite Area & Weighted CN	0.26		83.56

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.52
Peak Runoff (cfs)	1.13
Weighted Curve Number	83.56
Time of Concentration (days hh:mm:ss)	0 00:05:36

Subbasin : Sub-EX CB-23

Input Data

Area (ac)	3.17
Peak Rate Factor	484.00
Weighted Curve Number	75.23
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.68	-	98.00
-	2.49	-	69.00
Composite Area & Weighted CN	3.17		75.23

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.65
Peak Runoff (cfs)	9.79
Weighted Curve Number	75.23
Time of Concentration (days hh:mm:ss)	0 00:16:18

Subbasin : Sub-EX CB-24

Input Data

Area (ac)	2.08
Peak Rate Factor	484.00
Weighted Curve Number	74.60
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.45	-	98.00
-	0.14	-	60.00
-	1.50	-	69.00
Composite Area & Weighted CN	2.09		74.60

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.59
Peak Runoff (cfs)	6.57
Weighted Curve Number	74.60
Time of Concentration (days hh:mm:ss)	0 00:14:18

Subbasin : Sub-EX CB-26

Input Data

Area (ac)	0.42
Peak Rate Factor	484.00
Weighted Curve Number	64.95
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.05	-	98.00
-	0.35	-	60.00
-	0.02	-	69.00
Composite Area & Weighted CN	0.42		64.95

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	2.64
Peak Runoff (cfs)	1.07
Weighted Curve Number	64.95
Time of Concentration (days hh:mm:ss)	0 00:09:54

Subbasin : Sub-EX CB-27

Input Data

Area (ac)	1.20
Peak Rate Factor	484.00
Weighted Curve Number	76.43
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.44	-	98.00
-	0.41	-	60.00
-	0.35	-	69.00
Composite Area & Weighted CN	1.20		76.43

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.77
Peak Runoff (cfs)	4.68
Weighted Curve Number	76.43
Time of Concentration (days hh:mm:ss)	0 00:05:36

Subbasin : Sub-EX CB-28

Input Data

Area (ac)	0.11
Peak Rate Factor	484.00
Weighted Curve Number	93.86
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.10	-	98.00
-	0.02	-	69.00
Composite Area & Weighted CN	0.12		93.86

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	5.67
Peak Runoff (cfs)	0.61
Weighted Curve Number	93.86
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX CB-29

Input Data

Area (ac)	1.31
Peak Rate Factor	484.00
Weighted Curve Number	75.39
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.37	-	98.00
-	0.27	-	60.00
-	0.67	-	69.00
Composite Area & Weighted CN	1.31		75.39

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.67
Peak Runoff (cfs)	4.14
Weighted Curve Number	75.39
Time of Concentration (days hh:mm:ss)	0 00:15:12

Subbasin : Sub-EX CB-30

Input Data

Area (ac)	0.13
Peak Rate Factor	484.00
Weighted Curve Number	82.22
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.06	-	98.00
-	0.07	-	69.00
Composite Area & Weighted CN	0.13		82.22

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.38
Peak Runoff (cfs)	0.47
Weighted Curve Number	82.22
Time of Concentration (days hh:mm:ss)	0 00:16:06

Subbasin : Sub-EX CB-31

Input Data

Area (ac)	0.60
Peak Rate Factor	484.00
Weighted Curve Number	82.65
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.28	-	98.00
-	0.32	-	69.00
Composite Area & Weighted CN	0.60		82.65

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.43
Peak Runoff (cfs)	2.54
Weighted Curve Number	82.65
Time of Concentration (days hh:mm:ss)	0 00:09:30

Subbasin : Sub-EX CB-32

Input Data

Area (ac)	0.11
Peak Rate Factor	484.00
Weighted Curve Number	98.00
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.11	-	98.00
Composite Area & Weighted CN	0.11		98.00

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	6.16
Peak Runoff (cfs)	0.56
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:09:06

Subbasin : Sub-EX CB-33

Input Data

Area (ac)	0.67
Peak Rate Factor	484.00
Weighted Curve Number	78.78
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.23	-	98.00
-	0.44	-	69.00
Composite Area & Weighted CN	0.67		78.78

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.02
Peak Runoff (cfs)	2.40
Weighted Curve Number	78.78
Time of Concentration (days hh:mm:ss)	0 00:13:06

Subbasin : Sub-EX CULVERT-01

Input Data

Area (ac)	0.72
Peak Rate Factor	484.00
Weighted Curve Number	87.69
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.52	-	98.00
-	0.18	-	60.00
-	0.02	-	69.00
Composite Area & Weighted CN	0.72		87.69

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.98
Peak Runoff (cfs)	2.68
Weighted Curve Number	87.69
Time of Concentration (days hh:mm:ss)	0 00:21:06

Subbasin : Sub-EX CULVERT-02

Input Data

Area (ac)	0.81
Peak Rate Factor	484.00
Weighted Curve Number	69.64
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.09	-	98.00
-	0.25	-	60.00
-	0.47	-	69.00
Composite Area & Weighted CN	0.81		69.64

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.09
Peak Runoff (cfs)	1.82
Weighted Curve Number	69.64
Time of Concentration (days hh:mm:ss)	0 00:24:24

Subbasin : Sub-EX CULVERT-03

Input Data

Area (ac)	0.37
Peak Rate Factor	484.00
Weighted Curve Number	69.00
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.37	-	69.00
Composite Area & Weighted CN	0.37		69.00

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.03
Peak Runoff (cfs)	0.71
Weighted Curve Number	69.00
Time of Concentration (days hh:mm:ss)	0 00:33:48

Subbasin : Sub-EX ROOF-01

Input Data

Area (ac)	0.73
Peak Rate Factor	484.00
Weighted Curve Number	98.00
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.73	-	98.00
Composite Area & Weighted CN	0.73		98.00

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	6.16
Peak Runoff (cfs)	3.97
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX ROOF-02

Input Data

Area (ac)	0.22
Peak Rate Factor	484.00
Weighted Curve Number	98.00
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.22	-	98.00
Composite Area & Weighted CN	0.22		98.00

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	6.16
Peak Runoff (cfs)	1.21
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX ROOF-03

Input Data

Area (ac)	0.79
Peak Rate Factor	484.00
Weighted Curve Number	98.00
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.79	-	98.00
Composite Area & Weighted CN	0.79		98.00

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	6.16
Peak Runoff (cfs)	4.24
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX-CB-25

Input Data

Area (ac)	0.80
Peak Rate Factor	484.00
Weighted Curve Number	70.36
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.18	-	98.00
-	0.47	-	60.00
-	0.15	-	69.00
Composite Area & Weighted CN	0.80		70.36

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.16
Peak Runoff (cfs)	2.66
Weighted Curve Number	70.36
Time of Concentration (days hh:mm:ss)	0 00:05:30

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft²)	Minimum Pipe Cover (in)
1	EX CULVERT-01	44.70	51.00	6.30	44.70	0.00	51.00	0.00	0.00	0.00
2	EX CULVERT-02	45.17	48.12	2.95	45.17	0.00	48.12	0.00	0.00	0.00
3	EX CULVERT-03	74.59	79.80	5.21	74.59	0.00	79.80	0.00	0.00	0.00
4	EX DMH-01	34.39	44.16	9.77	34.39	0.00	44.16	0.00	0.00	0.00
5	EX DMH-02	39.48	49.28	9.80	39.48	0.00	49.28	0.00	0.00	0.00
6	EX DMH-03	44.74	50.79	6.05	44.74	0.00	50.79	0.00	0.00	0.00
7	EX DMH-04	42.74	52.39	9.65	42.74	0.00	52.39	0.00	0.00	0.00
8	EX DMH-05	45.24	51.33	6.09	45.24	0.00	51.33	0.00	0.00	0.00
9	EX DMH-06	45.59	50.99	5.40	45.59	0.00	50.99	0.00	0.00	0.00
10	EX DMH-07	46.45	51.35	4.90	46.45	0.00	51.35	0.00	0.00	0.00
11	EX DMH-08	49.80	53.44	3.64	49.80	0.00	53.44	0.00	0.00	0.00
12	EX DMH-09	50.38	54.43	4.05	50.38	0.00	54.43	0.00	0.00	0.00
13	EX DMH-10	39.98	43.18	3.20	39.98	0.00	43.18	0.00	0.00	0.00
14	EX DMH-11	39.72	42.99	3.27	39.72	0.00	42.99	0.00	0.00	0.00
15	EX DMH-12	39.45	42.67	3.22	39.45	0.00	42.67	0.00	0.00	0.00
16	EX DMH-13	37.33	47.50	10.17	37.33	0.00	47.50	0.00	0.00	0.00
17	EX DMH-14	40.50	45.67	5.17	40.50	0.00	45.67	0.00	0.00	0.00
18	EX DMH-15	47.34	49.46	2.12	47.34	0.00	49.46	0.00	0.00	0.00
19	EX DMH-16	51.42	55.52	4.10	51.42	0.00	55.52	0.00	0.00	0.00
20	EX DMH-17	59.48	65.68	6.20	59.48	0.00	65.68	0.00	0.00	0.00
21	EX DMH-18	67.60	71.75	4.15	67.60	0.00	71.75	0.00	0.00	0.00
22	EX DMH-19	75.00	79.50	4.50	75.00	0.00	79.50	0.00	0.00	0.00
23	EX ROOF-01	47.11	54.06	6.95	47.11	0.00	54.06	0.00	0.00	0.00
24	EX ROOF-02	40.80	42.80	2.00	40.80	0.00	42.80	0.00	0.00	0.00
25	EX ROOF-03	44.00	48.20	4.20	44.00	0.00	48.20	0.00	0.00	0.00
26	NodeSTMLink-69	36.92	41.67	4.75	36.92	0.00	41.67	0.00	0.00	0.00
27	Structure - (49)	44.35	47.16	2.81	44.35	0.00	47.16	0.00	0.00	0.00
28	Structure - (51)	54.00	58.20	4.20	54.00	0.00	58.20	0.00	0.00	0.00
29	Structure - (63)	38.35	41.87	3.52	38.35	0.00	41.87	0.00	0.00	0.00
30	Structure - (66)	41.64	45.00	3.36	41.64	0.00	45.00	0.00	0.00	0.00
31	Structure - (67)	41.95	46.00	4.05	41.95	0.00	46.00	0.00	0.00	0.00
32	Structure - (72)	72.65	79.80	7.15	72.65	0.00	79.80	0.00	0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	EX CULVERT-01	2.67	2.67	51.00	6.30	0.00	0.00	44.97	0.27	0 12:01	0 12:20	0.58	43.00
2	EX CULVERT-02	1.79	1.79	45.41	0.24	0.00	2.71	45.21	0.04	0 12:25	0 00:00	0.00	0.00
3	EX CULVERT-03	0.71	0.71	74.81	0.22	0.00	4.99	74.63	0.04	0 12:30	0 00:00	0.00	0.00
4	EX DMH-01	43.37	0.00	37.39	3.00	0.00	6.77	36.48	2.09	0 12:03	0 00:00	0.00	0.00
5	EX DMH-02	21.31	0.00	49.28	9.80	0.00	0.00	44.94	5.46	0 12:01	0 12:15	2.55	32.00
6	EX DMH-03	2.95	0.00	48.44	3.70	0.00	2.35	48.29	3.55	0 12:10	0 00:00	0.00	0.00
7	EX DMH-04	19.36	0.00	52.39	9.65	0.00	0.00	48.64	5.90	0 12:04	0 12:13	1.07	22.00
8	EX DMH-05	13.05	0.00	51.33	6.09	0.00	0.00	47.03	1.79	0 12:07	0 12:15	0.12	12.00
9	EX DMH-06	5.41	0.00	50.99	5.40	0.00	0.00	46.24	0.65	0 11:48	0 12:12	1.16	44.00
10	EX DMH-07	2.03	0.00	48.63	2.18	0.00	2.72	48.32	1.87	0 12:10	0 00:00	0.00	0.00
11	EX DMH-08	8.39	0.00	53.44	3.64	0.00	0.00	50.58	0.78	0 12:06	0 12:10	0.11	10.00
12	EX DMH-09	6.20	0.00	51.05	0.67	0.00	3.38	50.53	0.15	0 12:15	0 00:00	0.00	0.00
13	EX DMH-10	1.23	0.00	40.59	0.61	0.00	2.59	40.24	0.26	0 12:10	0 00:00	0.00	0.00
14	EX DMH-11	3.90	0.00	42.99	3.27	0.00	0.00	39.98	0.26	0 12:09	0 12:11	0.00	6.00
15	EX DMH-12	0.00	0.00	40.53	1.08	0.00	2.14	39.94	0.49	0 12:14	0 00:00	0.00	0.00
16	EX DMH-13	23.01	0.00	39.73	2.40	0.00	7.77	39.41	2.08	0 11:45	0 00:00	0.00	0.00
17	EX DMH-14	14.55	0.00	42.31	1.81	0.00	3.36	41.66	1.16	0 12:20	0 00:00	0.00	0.00
18	EX DMH-15	4.18	0.00	49.46	2.12	0.00	0.00	47.57	0.23	0 11:48	0 12:30	1.40	58.00
19	EX DMH-16	5.78	0.00	52.15	0.73	0.00	3.37	51.70	0.28	0 12:15	0 00:00	0.00	0.00
20	EX DMH-17	5.78	0.00	60.01	0.53	0.00	5.67	59.65	0.17	0 12:15	0 00:00	0.00	0.00
21	EX DMH-18	5.78	0.00	68.08	0.48	0.00	3.67	67.67	0.07	0 12:13	0 00:00	0.00	0.00
22	EX DMH-19	2.95	0.00	75.43	0.43	0.00	4.07	75.07	0.07	0 12:15	0 00:00	0.00	0.00
23	EX ROOF-01	3.96	3.96	54.06	6.95	0.00	0.00	47.26	0.15	0 12:04	0 12:10	0.06	10.00
24	EX ROOF-02	1.20	1.20	42.80	2.00	0.00	0.00	40.88	0.08	0 12:03	0 12:10	0.03	11.00
25	EX ROOF-03	4.23	4.23	44.48	0.48	0.00	3.72	44.08	0.08	0 12:10	0 00:00	0.00	0.00
26	NodeSTMLink-69	1.80	1.80	39.29	2.37	0.00	2.38	39.29	2.37	0 00:00	0 00:00	0.00	0.00
27	Structure - (49)	2.84	0.00	47.16	2.81	0.00	0.00	44.84	0.49	0 11:38	0 12:10	0.66	134.00
28	Structure - (51)	5.17	0.00	58.20	4.20	0.00	0.00	54.20	0.20	0 12:01	0 12:25	0.45	31.00
29	Structure - (63)	14.93	0.00	40.72	2.37	0.00	1.15	40.40	2.05	0 12:21	0 00:00	0.00	0.00
30	Structure - (66)	4.67	0.00	45.00	3.36	0.00	0.00	41.89	0.25	0 12:06	0 12:45	0.34	45.00
31	Structure - (67)	3.09	0.00	46.00	4.05	0.00	0.00	42.09	0.14	0 12:17	0 12:24	0.01	15.00
32	Structure - (72)	0.71	0.00	72.87	0.22	0.00	6.93	72.69	0.04	0 12:30	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	1	132.32	34.39	0.00	33.20	0.00	1.19	0.9000	CIRCULAR	42.000	42.000	0.0120	0.5000	0.5000	0.0000	0.00	No
2	2	230.59	39.48	0.00	35.89	1.50	3.59	1.5600	CIRCULAR	18.000	18.000	0.0120	0.5000	0.5000	0.0000	0.00	No
3	3	196.29	42.74	0.00	39.68	0.20	3.06	1.5600	CIRCULAR	18.000	18.000	0.0120	0.5000	0.5000	0.0000	0.00	No
4	4	47.23	50.38	0.00	47.64	4.90	2.74	5.8000	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
5	5	35.46	51.42	0.00	50.43	0.05	0.99	2.7900	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
6	6	104.10	59.48	0.00	51.62	0.20	7.86	7.5500	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
7	7	49.77	67.60	0.00	59.58	0.10	8.02	16.1200	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
8	8	193.77	75.00	0.00	67.60	0.00	7.40	3.8200	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
9	9	54.57	77.70	0.00	75.00	0.00	2.70	4.9500	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
10	10	15.61	76.00	0.00	75.00	0.00	1.00	6.4100	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
11	11	86.68	45.24	0.00	42.84	0.10	2.40	2.7700	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
12	12	86.87	49.80	0.00	46.89	1.65	2.91	3.3500	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
13	13	15.07	56.31	0.00	50.50	0.70	5.81	38.5500	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
14	14	42.01	58.26	0.00	56.46	0.15	1.80	4.2800	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
15	15	178.13	61.52	0.00	58.61	0.35	2.91	1.6300	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
16	16	368.98	72.65	0.00	61.57	0.05	11.08	3.0000	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
17	17	64.50	74.59	0.00	72.65	0.00	1.94	3.0100	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
18	18	326.74	37.33	0.00	34.39	0.00	2.94	0.9000	CIRCULAR	36.000	36.000	0.0120	0.5000	0.5000	0.0000	0.00	No
19	19	187.69	38.35	0.00	37.48	0.15	0.87	0.4700	CIRCULAR	36.000	36.000	0.0120	0.5000	0.5000	0.0000	0.00	No
20	20	460.64	40.50	0.00	38.35	0.00	2.15	0.4700	CIRCULAR	36.000	36.000	0.0120	0.5000	0.5000	0.0000	0.00	No
21	21	91.26	42.48	0.00	40.65	0.15	1.83	2.0100	CIRCULAR	18.000	18.000	0.0120	0.5000	0.5000	0.0000	0.00	No
22	22	37.67	47.34	0.00	46.96	4.48	0.38	1.0100	CIRCULAR	9.960	9.960	0.0150	0.5000	0.5000	0.0000	0.00	No
23	23	157.00	54.00	0.00	47.34	0.00	6.66	4.2400	CIRCULAR	9.960	9.960	0.0150	0.5000	0.5000	0.0000	0.00	No
24	24	147.62	60.27	0.00	54.00	0.00	6.27	4.2500	CIRCULAR	9.960	9.960	0.0120	0.5000	0.5000	0.0000	0.00	No
25	25	191.60	67.91	0.00	60.27	0.00	7.64	3.9900	CIRCULAR	9.960	9.960	0.0120	0.5000	0.5000	0.0000	0.00	No
26	26	169.89	72.15	0.00	67.91	0.00	4.24	2.5000	CIRCULAR	9.960	9.960	0.0120	0.5000	0.5000	0.0000	0.00	No
27	28	60.12	72.50	0.00	67.60	0.00	4.90	8.1500	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
28	29	10.66	67.80	0.00	67.60	0.00	0.20	1.8800	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
29	30	16.77	51.31	0.00	50.43	0.05	0.88	5.2500	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
30	31	21.87	49.36	0.00	48.54	5.80	0.82	3.7500	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
31	32	95.28	45.59	0.00	45.59	0.35	0.00	0.0000	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
32	33	174.37	46.45	0.00	45.64	0.05	0.81	0.4600	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
33	34	24.00	48.80	0.53	48.27	1.82	0.53	2.2100	CIRCULAR	8.040	8.040	0.0120	0.5000	0.5000	0.0000	0.00	No
34	35	11.74	44.74	0.00	44.73	5.25	0.01	0.0900	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
35	36	14.75	48.99	0.00	48.27	3.53	0.72	4.8800	CIRCULAR	8.040	8.040	0.0120	0.5000	0.5000	0.0000	0.00	No
36	37	94.03	47.02	0.00	46.55	0.10	0.47	0.5000	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
37	38	42.25	44.12	0.00	42.48	0.00	1.64	3.8800	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
38	39	56.38	47.11	0.00	45.99	0.40	1.12	1.9900	CIRCULAR	9.960	9.960	0.0120	0.5000	0.5000	0.0000	0.00	No
39	40	138.80	44.35	0.00	44.12	0.00	0.23	0.1700	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
40	41	47.44	46.96	0.00	44.35	0.00	2.61	5.5000	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
41	42	20.71	46.08	0.00	45.24	0.00	0.84	4.0600	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
42	43	38.89	45.23	0.00	44.67	-0.07	0.56	1.4400	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
43	44	200.02	44.71	0.00	44.35	0.00	0.36	0.1800	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
44	45	28.17	44.76	0.00	44.71	0.00	0.05	0.1800	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
45	46	3.82	45.17	0.00	44.67	0.55	0.50	13.0800	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
46	47	81.18	45.55	0.00	42.43	2.95	3.12	3.8400	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
47	48	46.12	42.91	0.00	42.23	2.75	0.68	1.4700	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
48	49	67.62	41.95	0.00	41.55	1.05	0.40	0.5900	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
49	50	245.57	43.35	0.00	41.95	0.00	1.40	0.5700	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
50	51	165.91	38.33	0.00	37.43	0.10	0.90	0.5400	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
51	52	160.56	38.94	0.00	38.38	0.05	0.56	0.3500	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
52	53	54.85	39.45	0.00	39.24	0.30	0.21	0.3800	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
53	54	89.77	39.72	0.00	39.40	-0.05	0.32	0.3600	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
54	55	17.13	39.79	0.00	39.72	0.00	0.07	0.4100	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
55	56	75.89	40.38	0.00	39.89	0.10	0.49	0.6500	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
56	57	151.52	41.64	0.00	40.38	0.00	1.26	0.8300	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
57	58	126.97	42.70	-0.65	41.64	0.00	1.06	0.8300	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
58	60	161.99	40.70	0.00	40.35	2.00	0.35	0.2200	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
59	61	172.10	39.98	0.00	39.55	0.10	0.43	0.2500	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
60	62	24.54	40.39	0.00	40.18	0.20	0.21	0.8600	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
61	63	83.27	40.46	0.00	39.84	0.05	0.62	0.7400	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
62	64	40.32	40.80	0.00	39.85	0.40	0.95	2.3600	CIRCULAR	6.000	6.000	0.0120	0.5000	0.5000	0.0000	0.00	No
63	65	20.55	39.59	0.00	39.23	1.90	0.36	1.7500	CIRCULAR	6.000	6.000	0.0120	0.5000	0.5000	0.0000	0.00	No
64	66	160.88	44.70	0.00	39.59	0.00	5.11	3.1800	CIRCULAR	6.000	6.000	0.0120	0.5000	0.5000	0.0000	0.00	No
65	67	119.10	44.00	0.00	37.38	0.05	6.62	5.5600	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
66	68	35.21	39.95	0.00	36.39	2.00	3.56	10.1100	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
67	69	8.00	38.92	2.00	38.78	0.45	0.14	1.7500	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
68	Pipe - (46)	29.11	68.49	0.00	67.91	0.00	0.58	1.9900	CIRCULAR	9.960	9.960	0.0120	0.5000	0.5000	0.0000	0.00	No
69	Pipe - (57)	16.77	41.38	0.00	41.00	0.50	0.38	2.2700	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No

No. of Barrels
1
1
1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	1	43.36	0 12:15	103.36	0.42	10.27	0.21	1.58	0.45	0.00		Calculated
2	2	15.12	0 12:31	14.20	1.07	9.40	0.41	1.50	1.00	29.00		SURCHARGED
3	3	14.99	0 12:23	14.21	1.06	9.35	0.35	1.50	1.00	18.00		SURCHARGED
4	4	6.20	0 12:15	16.86	0.37	12.67	0.06	0.52	0.42	0.00		Calculated
5	5	5.78	0 12:15	11.69	0.49	9.49	0.06	0.62	0.50	0.00		Calculated
6	6	5.78	0 12:15	10.61	0.55	13.79	0.13	0.53	0.53	0.00		Calculated
7	7	5.78	0 12:15	15.49	0.37	18.27	0.05	0.42	0.42	0.00		Calculated
8	8	2.91	0 12:15	7.54	0.39	9.06	0.36	0.43	0.43	0.00		Calculated
9	9	0.54	0 12:10	8.59	0.06	6.10	0.15	0.17	0.17	0.00		Calculated
10	10	2.43	0 12:15	9.77	0.25	10.30	0.03	0.34	0.34	0.00		Calculated
11	11	12.53	0 12:16	11.64	1.08	10.93	0.13	1.25	1.00	3.00		SURCHARGED
12	12	7.61	0 12:13	7.06	1.08	10.39	0.14	1.00	1.00	5.00		SURCHARGED
13	13	8.39	0 12:10	23.96	0.35	27.79	0.01	0.41	0.41	0.00		Calculated
14	14	5.82	0 12:10	7.99	0.73	11.09	0.06	0.63	0.63	0.00		Calculated
15	15	4.85	0 12:10	4.93	0.98	7.20	0.41	0.80	0.80	0.00		Calculated
16	16	0.71	0 12:31	6.69	0.11	5.56	1.11	0.22	0.22	0.00		Calculated
17	17	0.71	0 12:30	6.69	0.11	5.55	0.19	0.22	0.22	0.00		Calculated
18	18	22.99	0 12:17	68.54	0.34	8.74	0.62	1.19	0.40	0.00		Calculated
19	19	14.81	0 12:21	49.27	0.30	6.12	0.51	1.13	0.38	0.00		Calculated
20	20	14.41	0 12:21	49.33	0.29	6.11	1.26	1.10	0.37	0.00		Calculated
21	21	9.61	0 12:15	16.11	0.60	9.51	0.16	0.83	0.56	0.00		Calculated
22	22	2.01	0 12:44	1.91	1.05	4.04	0.16	0.83	1.00	55.00		SURCHARGED
23	23	4.18	0 12:30	3.91	1.07	8.34	0.31	0.83	1.00	28.00		SURCHARGED
24	24	5.17	0 12:24	4.89	1.06	10.45	0.24	0.83	1.00	21.00		SURCHARGED
25	25	4.96	0 12:04	4.74	1.05	10.21	0.31	0.83	1.00	11.00		SURCHARGED
26	26	1.33	0 12:10	3.75	0.35	6.30	0.45	0.34	0.41	0.00		Calculated
27	28	0.46	0 12:15	11.02	0.04	6.98	0.14	0.14	0.14	0.00		Calculated
28	29	2.42	0 12:13	5.29	0.46	6.58	0.03	0.47	0.48	0.00		Calculated
29	30	0.60	0 12:10	16.03	0.04	6.24	0.04	0.17	0.13	0.00		Calculated
30	31	1.06	0 12:10	13.55	0.08	6.58	0.06	0.24	0.19	0.00		Calculated
31	32	1.84	0 11:50	1.73	1.07	2.59	0.61	1.00	1.00	40.00		SURCHARGED
32	33	2.02	0 12:10	2.63	0.77	3.73	0.78	0.66	0.66	0.00		Calculated
33	34	1.10	0 12:10	1.95	0.57	5.74	0.07	0.36	0.54	0.00		Calculated
34	35	2.94	0 12:10	3.13	0.94	2.90	0.07	0.96	0.77	0.00		Calculated
35	36	0.41	0 12:10	2.89	0.14	5.88	0.04	0.17	0.26	0.00		Calculated
36	37	0.93	0 12:10	2.73	0.34	3.15	0.50	0.40	0.40	0.00		Calculated
37	38	4.30	0 12:15	7.60	0.57	9.97	0.07	0.54	0.54	0.00		Calculated
38	39	3.50	0 12:12	3.35	1.05	7.08	0.13	0.83	1.00	7.00		SURCHARGED
39	40	1.85	0 11:42	1.73	1.07	2.58	0.90	1.00	1.00	124.00		SURCHARGED
40	41	1.11	0 12:10	9.05	0.12	7.82	0.10	0.24	0.24	0.00		Calculated
41	42	4.03	0 12:19	7.77	0.52	9.98	0.03	0.51	0.51	0.00		Calculated
42	43	2.53	0 12:10	7.86	0.32	5.70	0.11	0.49	0.39	0.00		Calculated
43	44	1.87	0 13:41	1.73	1.08	2.59	1.29	1.00	1.00	117.00		SURCHARGED
44	45	1.83	0 12:43	1.73	1.06	2.53	0.19	1.00	1.00	48.00		SURCHARGED
45	46	1.79	0 12:25	13.96	0.13	12.23	0.01	0.24	0.24	0.00		Calculated
46	47	4.10	0 12:15	7.57	0.54	9.82	0.14	0.52	0.52	0.00		Calculated
47	48	0.55	0 12:15	8.50	0.07	3.89	0.20	0.22	0.17	0.00		Calculated
48	49	2.76	0 12:20	2.97	0.93	5.68	0.20	0.85	0.85	0.00		Calculated
49	50	3.09	0 12:24	2.91	1.06	9.53	0.43	0.45	0.82	0.00		> CAPACITY
50	51	5.49	0 12:12	5.15	1.07	4.90	0.56	1.25	1.00	60.00		SURCHARGED
51	52	4.41	0 12:35	4.13	1.07	3.92	0.68	1.19	0.95	0.00		> CAPACITY
52	53	0.00	0 00:00	2.39	0.00	0.00		0.00	0.00	0.00		Calculated
53	54	3.99	0 12:14	3.84	1.04	3.63	0.41	1.14	0.91	0.00		> CAPACITY
54	55	3.90	0 12:10	4.47	0.87	4.11	0.07	0.90	0.72	0.00		Calculated
55	56	3.34	0 13:04	3.10	1.08	4.80	0.26	1.00	1.00	65.00		SURCHARGED
56	57	3.71	0 12:13	3.52	1.05	6.24	0.40	0.82	1.00	1.00		SURCHARGED
57	58	4.67	0 12:45	4.48	1.04	14.48	0.15	0.33	1.00	19.00		SURCHARGED
58	60	0.52	0 12:21	1.79	0.29	2.01	1.34	0.37	0.37	0.00		Calculated
59	61	1.22	0 12:11	1.93	0.63	2.61	1.10	0.57	0.58	0.00		Calculated
60	62	1.23	0 12:10	3.57	0.34	4.13	0.10	0.40	0.40	0.00		Calculated
61	63	0.53	0 12:10	3.33	0.16	3.10	0.45	0.27	0.27	0.00		Calculated
62	64	1.00	0 12:13	0.93	1.07	5.46	0.12	0.50	1.00	9.00		SURCHARGED
63	65	0.86	0 14:16	0.80	1.07	4.73	0.07	0.50	1.00	151.00		SURCHARGED
64	66	1.15	0 12:03	1.08	1.06	6.47	0.41	0.50	1.00	39.00		SURCHARGED
65	67	4.22	0 12:10	9.10	0.46	11.37	0.17	0.48	0.48	0.00		Calculated
66	68	6.55	0 12:12	12.27	0.53	15.86	0.04	0.52	0.52	0.00		Calculated
67	69	1.88	0 00:01	9.26	0.20	6.01	0.02	0.37	0.30	0.00		Calculated
68	Pipe - (46)	2.80	0 12:10	3.35	0.84	6.88	0.07	0.58	0.70	0.00		Calculated
69	Pipe - (57)	2.39	0 12:20	5.81	0.41	7.03	0.04	0.45	0.45	0.00		Calculated

Inlet Input

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft^2)	Grate Clogging Factor (%)
1	EX AD-01	FHWA HEC-22 GENERIC	N/A	On Sag	1	48.99	50.35	1.36	48.99	0.00	10.00	0.00
2	EX AD-02	FHWA HEC-22 GENERIC	N/A	On Sag	1	38.94	41.64	2.70	38.94	0.00	10.00	0.00
3	EX AD-03	FHWA HEC-22 GENERIC	N/A	On Sag	1	38.33	41.58	3.25	38.33	0.00	10.00	0.00
4	EX CB-01	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.95	43.15	3.20	39.95	0.00	10.00	0.00
5	EX CB-02	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.91	46.16	3.25	42.91	0.00	10.00	0.00
6	EX CB-03	FHWA HEC-22 GENERIC	N/A	On Sag	1	45.23	50.58	5.35	45.23	0.00	10.00	0.00
7	EX CB-04	FHWA HEC-22 GENERIC	N/A	On Sag	1	49.36	52.56	3.20	49.36	0.00	10.00	0.00
8	EX CB-05	FHWA HEC-22 GENERIC	N/A	On Sag	1	46.08	49.28	3.20	46.08	0.00	10.00	0.00
9	EX CB-06	FHWA HEC-22 GENERIC	N/A	On Sag	1	48.27	50.17	1.90	48.27	0.00	10.00	0.00
10	EX CB-07	FHWA HEC-22 GENERIC	N/A	On Sag	1	47.02	48.85	1.83	47.02	0.00	10.00	0.00
11	EX CB-08	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.39	42.44	2.05	40.39	0.00	10.00	0.00
12	EX CB-09	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.46	42.23	1.77	40.46	0.00	10.00	0.00
13	EX CB-10	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.79	42.76	2.97	39.79	0.00	10.00	0.00
14	EX CB-11	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.38	43.38	3.00	40.38	0.00	10.00	0.00
15	EX CB-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.59	51.00	11.41	39.59	0.00	10.00	0.00
16	EX CB-13	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.70	43.70	3.00	40.70	0.00	10.00	0.00
17	EX CB-14	FHWA HEC-22 GENERIC	N/A	On Sag	1	41.38	44.38	3.00	41.38	0.00	10.00	0.00
18	EX CB-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	43.35	45.35	2.00	43.35	0.00	10.00	0.00
19	EX CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.48	48.52	6.04	42.48	0.00	10.00	0.00
20	EX CB-17	FHWA HEC-22 GENERIC	N/A	On Sag	1	60.27	66.63	6.36	60.27	0.00	10.00	0.00
21	EX CB-18	FHWA HEC-22 GENERIC	N/A	On Sag	1	67.91	70.91	3.00	67.91	0.00	10.00	0.00
22	EX CB-19	FHWA HEC-22 GENERIC	N/A	On Sag	1	72.15	75.35	3.20	72.15	0.00	10.00	0.00
23	EX CB-20	FHWA HEC-22 GENERIC	N/A	On Sag	1	68.49	70.22	1.73	68.49	0.00	10.00	0.00
24	EX CB-21	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.12	48.12	4.00	44.12	0.00	10.00	0.00
25	EX CB-22	FHWA HEC-22 GENERIC	N/A	On Sag	1	46.96	49.96	3.00	46.96	0.00	10.00	0.00
26	EX CB-23	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.71	47.30	2.59	44.71	0.00	10.00	0.00
27	EX CB-24	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.76	47.76	3.00	44.76	0.00	10.00	0.00
28	EX CB-25	FHWA HEC-22 GENERIC	N/A	On Sag	1	56.31	60.41	4.10	56.31	0.00	10.00	0.00
29	EX CB-26	FHWA HEC-22 GENERIC	N/A	On Sag	1	58.26	60.86	2.60	58.26	0.00	10.00	0.00
30	EX CB-27	FHWA HEC-22 GENERIC	N/A	On Sag	1	61.52	63.57	2.05	61.52	0.00	10.00	0.00
31	EX CB-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	51.31	54.56	3.25	51.31	0.00	10.00	0.00
32	EX CB-29	FHWA HEC-22 GENERIC	N/A	On Sag	1	45.55	48.30	2.75	45.55	0.00	10.00	0.00
33	EX CB-30	FHWA HEC-22 GENERIC	N/A	On Sag	1	72.50	75.50	3.00	72.50	0.00	10.00	0.00
34	EX CB-31	FHWA HEC-22 GENERIC	N/A	On Sag	1	67.80	70.80	3.00	67.80	0.00	10.00	0.00
35	EX CB-32	FHWA HEC-22 GENERIC	N/A	On Sag	1	77.70	80.70	3.00	77.70	0.00	10.00	0.00
36	EX CB-33	FHWA HEC-22 GENERIC	N/A	On Sag	1	76.00	79.40	3.40	76.00	0.00	10.00	0.00

Roadway & Gutter Input

SN	Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1	EX AD-01	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
2	EX AD-02	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
3	EX AD-03	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
4	EX CB-01	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
5	EX CB-02	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
6	EX CB-03	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
7	EX CB-04	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
8	EX CB-05	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
9	EX CB-06	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
10	EX CB-07	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
11	EX CB-08	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
12	EX CB-09	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
13	EX CB-10	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
14	EX CB-11	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
15	EX CB-12	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
16	EX CB-13	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
17	EX CB-14	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
18	EX CB-15	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
19	EX CB-16	N/A	0.0200	0.0130	0.0500	2.00	0.0656	7.00
20	EX CB-17	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
21	EX CB-18	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
22	EX CB-19	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
23	EX CB-20	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
24	EX CB-21	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
25	EX CB-22	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
26	EX CB-23	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
27	EX CB-24	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
28	EX CB-25	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
29	EX CB-26	N/A	0.0200	0.0130	0.0500	2.00	0.0656	7.00
30	EX CB-27	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
31	EX CB-28	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
32	EX CB-29	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
33	EX CB-30	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
34	EX CB-31	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
35	EX CB-32	N/A	0.0200	0.0130	0.0200	2.00	0.0656	7.00
36	EX CB-33	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00

Inlet Results

SN	Element ID	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Max Depth Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	EX AD-01	0.41	0.41	N/A	N/A	N/A	2.61	50.41	0.06	0 12:10	0.00	0.00
2	EX AD-02	4.60	4.60	N/A	N/A	N/A	19.64	42.04	0.40	0 12:26	0.00	0.00
3	EX AD-03	3.80	3.80	N/A	N/A	N/A	17.21	41.93	0.35	0 12:10	0.00	0.00
4	EX CB-01	6.52	6.52	N/A	N/A	N/A	22.42	43.61	0.46	0 12:14	0.00	0.00
5	EX CB-02	0.56	0.56	N/A	N/A	N/A	2.77	46.23	0.07	0 12:15	0.00	0.00
6	EX CB-03	2.54	2.54	N/A	N/A	N/A	11.74	50.82	0.24	0 12:10	0.00	0.00
7	EX CB-04	1.06	1.06	N/A	N/A	N/A	6.32	52.70	0.14	0 12:10	0.00	0.00
8	EX CB-05	4.02	4.02	N/A	N/A	N/A	16.11	49.61	0.33	0 12:19	0.00	0.00
9	EX CB-06	1.10	1.10	N/A	N/A	N/A	6.51	50.31	0.14	0 12:10	0.00	0.00
10	EX CB-07	0.93	0.93	N/A	N/A	N/A	5.77	48.98	0.13	0 12:10	0.00	0.00
11	EX CB-08	1.23	1.23	N/A	N/A	N/A	7.02	42.59	0.15	0 12:10	0.00	0.00
12	EX CB-09	0.53	0.53	N/A	N/A	N/A	2.71	42.29	0.06	0 12:10	0.00	0.00
13	EX CB-10	0.28	0.28	N/A	N/A	N/A	2.11	42.81	0.05	0 12:01	0.00	0.00
14	EX CB-11	3.99	3.99	N/A	N/A	N/A	16.02	43.71	0.33	0 11:58	0.00	0.00
15	EX CB-12	3.71	3.71	N/A	N/A	N/A	15.24	51.31	0.31	0 11:41	0.00	0.00
16	EX CB-13	0.52	0.52	N/A	N/A	N/A	2.69	43.76	0.06	0 12:20	0.00	0.00
17	EX CB-14	2.39	2.39	N/A	N/A	N/A	11.23	44.61	0.23	0 12:20	0.00	0.00
18	EX CB-15	3.57	3.57	N/A	N/A	N/A	14.84	45.66	0.31	0 11:58	0.00	0.00
19	EX CB-16	3.41	3.41	N/A	N/A	N/A	14.37	48.90	0.38	0 11:49	0.00	0.00
20	EX CB-17	2.54	2.54	N/A	N/A	N/A	11.71	66.87	0.24	0 12:02	0.00	0.00
21	EX CB-18	2.38	2.38	N/A	N/A	N/A	11.21	71.14	0.23	0 12:03	0.00	0.00
22	EX CB-19	1.33	1.33	N/A	N/A	N/A	7.44	75.51	0.16	0 12:10	0.00	0.00
23	EX CB-20	2.79	2.79	N/A	N/A	N/A	12.50	70.48	0.26	0 12:10	0.00	0.00
24	EX CB-21	1.47	1.47	N/A	N/A	N/A	7.98	48.29	0.17	0 11:43	0.00	0.00
25	EX CB-22	1.12	1.12	N/A	N/A	N/A	6.57	50.10	0.14	0 12:10	0.00	0.00
26	EX CB-23	9.63	9.63	N/A	N/A	N/A	29.22	47.89	0.59	0 11:40	0.00	0.00
27	EX CB-24	6.55	6.55	N/A	N/A	N/A	22.49	48.22	0.46	0 11:55	0.00	0.00
28	EX CB-25	2.58	2.58	N/A	N/A	N/A	11.85	60.66	0.25	0 12:10	0.00	0.00
29	EX CB-26	1.04	1.04	N/A	N/A	N/A	6.23	61.08	0.22	0 12:10	0.00	0.00
30	EX CB-27	4.58	4.58	N/A	N/A	N/A	17.61	63.93	0.36	0 12:10	0.00	0.00
31	EX CB-28	0.60	0.60	N/A	N/A	N/A	2.87	54.63	0.07	0 12:10	0.00	0.00
32	EX CB-29	4.11	4.11	N/A	N/A	N/A	16.35	48.64	0.34	0 12:15	0.00	0.00
33	EX CB-30	0.47	0.47	N/A	N/A	N/A	2.58	75.56	0.06	0 12:15	0.00	0.00
34	EX CB-31	2.42	2.42	N/A	N/A	N/A	11.32	71.04	0.24	0 12:13	0.00	0.00
35	EX CB-32	0.55	0.55	N/A	N/A	N/A	5.38	80.87	0.17	0 12:10	0.00	0.00
36	EX CB-33	2.40	2.40	N/A	N/A	N/A	11.27	79.64	0.24	0 12:15	0.00	0.00

Project Description

File Name ..... GCMS - Existing SSA 100yr 4-5-2024.SPF

Project Options

Flow Units ..... CFS
Elevation Type ..... Elevation
Hydrology Method ..... SCS TR-20
Time of Concentration (TOC) Method ..... User-Defined
Link Routing Method ..... Kinematic Wave
Enable Overflow Ponding at Nodes ..... YES
Skip Steady State Analysis Time Periods ... NO

Analysis Options

Start Analysis On ..... Apr 03, 2024 00:00:00
End Analysis On ..... Apr 04, 2024 00:00:00
Start Reporting On ..... Apr 03, 2024 00:00:00
Antecedent Dry Days ..... 0 days
Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss
Reporting Time Step ..... 0 00:05:00 days hh:mm:ss
Routing Time Step ..... 30 seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	42
Nodes	69
Junctions	32
Outfalls	1
Flow Diversions	0
Inlets	36
Storage Nodes	0
Links	69
Channels	0
Pipes	69
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	100yr	Cumulative	inches	Connecticut	Fairfield	100	9.10	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-EX AD-01	0.11	484.00	75.90	9.10	6.15	0.65	0.68	0 00:05:00
2	Sub-EX AD-02	2.00	484.00	79.18	9.10	6.56	13.13	7.37	0 00:43:12
3	Sub-EX AD-03	1.70	484.00	79.83	9.10	6.64	11.30	6.07	0 00:46:48
4	Sub-EX CB-01	1.64	484.00	82.39	9.10	6.96	11.38	10.60	0 00:09:24
5	Sub-EX CB-02	0.20	484.00	73.07	9.10	5.80	1.13	0.95	0 00:15:48
6	Sub-EX CB-03	0.57	484.00	84.04	9.10	7.16	4.06	3.94	0 00:06:18
7	Sub-EX CB-04	0.20	484.00	92.57	9.10	8.20	1.67	1.54	0 00:05:00
8	Sub-EX CB-05	1.25	484.00	78.86	9.10	6.52	8.17	6.60	0 00:18:00
9	Sub-EX CB-06	0.23	484.00	85.30	9.10	7.32	1.71	1.68	0 00:05:00
10	Sub-EX CB-07	0.19	484.00	87.95	9.10	7.64	1.48	1.40	0 00:05:00
11	Sub-EX CB-08	0.41	484.00	69.65	9.10	5.38	2.23	2.24	0 00:07:42
12	Sub-EX CB-09	0.20	484.00	66.65	9.10	5.01	0.99	1.00	0 00:07:36
13	Sub-EX CB-10	0.06	484.00	81.41	9.10	6.83	0.43	0.43	0 00:05:12
14	Sub-EX CB-11	2.51	484.00	61.51	9.10	4.37	10.97	7.73	0 00:26:30
15	Sub-EX CB-12	1.82	484.00	77.36	9.10	6.34	11.52	6.04	0 00:49:30
16	Sub-EX CB-13	0.22	484.00	68.56	9.10	5.24	1.14	0.93	0 00:18:30
17	Sub-EX CB-14	1.20	484.00	65.07	9.10	4.81	5.75	4.42	0 00:21:30
18	Sub-EX CB-15	1.74	484.00	67.20	9.10	5.08	8.83	6.54	0 00:23:48
19	Sub-EX CB-16	1.13	484.00	74.74	9.10	6.01	6.81	5.76	0 00:16:06
20	Sub-EX CB-17	0.90	484.00	74.13	9.10	5.94	5.33	4.30	0 00:18:36
21	Sub-EX CB-18	0.60	484.00	78.05	9.10	6.42	3.83	3.85	0 00:05:00
22	Sub-EX CB-19	0.39	484.00	73.90	9.10	5.91	2.31	2.30	0 00:07:18
23	Sub-EX CB-20	0.58	484.00	86.84	9.10	7.50	4.37	4.19	0 00:05:00
24	Sub-EX CB-21	0.30	484.00	88.16	9.10	7.67	2.30	2.19	0 00:05:12
25	Sub-EX CB-22	0.25	484.00	83.56	9.10	7.10	1.78	1.73	0 00:05:36
26	Sub-EX CB-23	3.17	484.00	75.23	9.10	6.07	19.26	16.15	0 00:16:18
27	Sub-EX CB-24	2.08	484.00	74.60	9.10	6.00	12.48	10.91	0 00:14:18
28	Sub-EX CB-26	0.42	484.00	64.95	9.10	4.79	2.01	1.95	0 00:09:54
29	Sub-EX CB-27	1.20	484.00	76.43	9.10	6.22	7.48	7.55	0 00:05:36
30	Sub-EX CB-28	0.11	484.00	93.86	9.10	8.36	0.94	0.87	0 00:05:00
31	Sub-EX CB-29	1.31	484.00	75.39	9.10	6.09	7.95	6.82	0 00:15:12
32	Sub-EX CB-30	0.13	484.00	82.22	9.10	6.93	0.87	0.73	0 00:16:06
33	Sub-EX CB-31	0.60	484.00	82.65	9.10	6.99	4.19	3.91	0 00:09:30
34	Sub-EX CB-32	0.11	484.00	98.00	9.10	8.86	0.94	0.80	0 00:09:06
35	Sub-EX CB-33	0.67	484.00	78.78	9.10	6.51	4.34	3.84	0 00:13:06
36	Sub-EX CULVERT-01	0.72	484.00	87.69	9.10	7.61	5.45	4.01	0 00:21:06
37	Sub-EX CULVERT-02	0.81	484.00	69.64	9.10	5.38	4.35	3.18	0 00:24:24
38	Sub-EX CULVERT-03	0.37	484.00	69.00	9.10	5.30	1.97	1.26	0 00:33:47
39	Sub-EX ROOF-01	0.73	484.00	98.00	9.10	8.86	6.50	5.65	0 00:05:00
40	Sub-EX ROOF-02	0.22	484.00	98.00	9.10	8.86	1.97	1.72	0 00:05:00
41	Sub-EX ROOF-03	0.79	484.00	98.00	9.10	8.86	6.98	6.04	0 00:05:00
42	Sub-EX-CB-25	0.80	484.00	70.36	9.10	5.47	4.40	4.54	0 00:05:30

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	EX CULVERT-01	Junction	44.70	51.00	44.70	51.00	0.00	3.99	51.00	0.00	0.00	0 12:20	1.31	58.00
2	EX CULVERT-02	Junction	45.17	48.12	45.17	48.12	0.00	3.14	45.49	0.00	2.63	0 00:00	0.00	0.00
3	EX CULVERT-03	Junction	74.59	79.80	74.59	79.80	0.00	1.25	74.88	0.00	4.92	0 00:00	0.00	0.00
4	EX DMH-01	Junction	34.39	44.16	34.39	44.16	0.00	55.04	37.39	0.00	6.77	0 00:00	0.00	0.00
5	EX DMH-02	Junction	39.48	49.28	39.48	49.28	0.00	25.03	49.28	0.00	0.00	0 12:15	5.25	49.00
6	EX DMH-03	Junction	44.74	50.79	44.74	50.79	0.00	4.55	50.79	0.00	0.00	0 12:10	0.20	16.00
7	EX DMH-04	Junction	42.74	52.39	42.74	52.39	0.00	22.43	52.39	0.00	0.00	0 12:11	2.99	38.00
8	EX DMH-05	Junction	45.24	51.33	45.24	51.33	0.00	15.23	51.33	0.00	0.00	0 12:19	1.08	30.00
9	EX DMH-06	Junction	45.59	50.99	45.59	50.99	0.00	6.17	50.99	0.00	0.00	0 12:08	2.01	56.00
10	EX DMH-07	Junction	46.45	51.35	46.45	51.35	0.00	3.04	51.35	0.00	0.00	0 12:10	0.04	9.00
11	EX DMH-08	Junction	49.80	53.44	49.80	53.44	0.00	11.18	53.44	0.00	0.00	0 12:10	1.03	27.00
12	EX DMH-09	Junction	50.38	54.43	50.38	54.43	0.00	9.57	51.25	0.00	3.18	0 00:00	0.00	0.00
13	EX DMH-10	Junction	39.98	43.18	39.98	43.18	0.00	2.16	43.18	0.00	0.00	0 12:10	0.02	9.00
14	EX DMH-11	Junction	39.72	42.99	39.72	42.99	0.00	4.53	42.99	0.00	0.00	0 12:11	0.13	23.00
15	EX DMH-12	Junction	39.45	42.67	39.45	42.67	0.00	0.00	40.70	0.00	1.97	0 00:00	0.00	0.00
16	EX DMH-13	Junction	37.33	47.50	37.33	47.50	0.00	31.00	39.73	0.00	7.77	0 00:00	0.00	0.00
17	EX DMH-14	Junction	40.50	45.67	40.50	45.67	0.00	20.60	42.40	0.00	3.27	0 00:00	0.00	0.00
18	EX DMH-15	Junction	47.34	49.46	47.34	49.46	0.00	4.07	49.46	0.00	0.00	0 12:39	2.04	83.00
19	EX DMH-16	Junction	51.42	55.52	51.42	55.52	0.00	8.96	52.33	0.00	3.19	0 00:00	0.00	0.00
20	EX DMH-17	Junction	59.48	65.68	59.48	65.68	0.00	8.96	60.19	0.00	5.49	0 00:00	0.00	0.00
21	EX DMH-18	Junction	67.60	71.75	67.60	71.75	0.00	8.97	68.22	0.00	3.53	0 00:00	0.00	0.00
22	EX DMH-19	Junction	75.00	79.50	75.00	79.50	0.00	4.57	75.56	0.00	3.94	0 00:00	0.00	0.00
23	EX ROOF-01	Junction	47.11	54.06	47.11	54.06	0.00	5.64	54.06	0.00	0.00	0 12:10	0.38	18.00
24	EX ROOF-02	Junction	40.80	42.80	40.80	42.80	0.00	1.72	42.80	0.00	0.00	0 12:10	0.14	19.00
25	EX ROOF-03	Junction	44.00	48.20	44.00	48.20	0.00	6.03	44.59	0.00	3.61	0 00:00	0.00	0.00
26	NodeSTMLink-69	Junction	36.92	41.67	36.92	41.67	0.00	1.80	39.29	0.00	2.38	0 00:00	0.00	0.00
27	Structure - (49)	Junction	44.35	47.16	44.35	47.16	0.00	3.44	47.16	0.00	0.00	0 12:10	1.25	256.00
28	Structure - (51)	Junction	54.00	58.20	54.00	58.20	0.00	5.16	58.20	0.00	0.00	0 12:34	0.72	49.00
29	Structure - (63)	Junction	38.35	41.87	38.35	41.87	0.00	21.49	40.85	0.00	1.02	0 00:00	0.00	0.00
30	Structure - (66)	Junction	41.64	45.00	41.64	45.00	0.00	4.65	45.00	0.00	0.00	0 11:59	0.52	70.00
31	Structure - (67)	Junction	41.95	46.00	41.95	46.00	0.00	3.14	46.00	0.00	0.00	0 12:10	0.01	10.00
32	Structure - (72)	Junction	72.65	79.80	72.65	79.80	0.00	1.25	72.94	0.00	6.86	0 00:00	0.00	0.00
33	Out-1Pipe - (05)	Outfall	33.20					55.04	35.02					

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
1	1	Pipe	EX DMH-01	Out-1Pipe - (05)	132.32	34.39	33.20	0.9000	42.000	0.0120	55.04	103.36	0.53	10.91	1.82	0.52	0.00	Calculated
2	2	Pipe	EX DMH-02	EX DMH-01	230.59	39.48	35.89	1.5600	18.000	0.0120	15.11	14.20	1.06	9.38	1.50	1.00	45.00	SURCHARGED
3	3	Pipe	EX DMH-04	EX DMH-02	196.29	42.74	39.68	1.5600	18.000	0.0120	15.15	14.21	1.07	9.38	1.50	1.00	33.00	SURCHARGED
4	4	Pipe	EX DMH-09	EX DMH-04	47.23	50.38	47.64	5.8000	15.000	0.0120	9.57	16.86	0.57	14.16	0.67	0.54	0.00	Calculated
5	5	Pipe	EX DMH-16	EX DMH-09	35.46	51.42	50.43	2.7900	15.000	0.0120	8.96	11.69	0.77	10.50	0.82	0.66	0.00	Calculated
6	6	Pipe	EX DMH-17	EX DMH-16	104.10	59.48	51.62	7.5500	12.000	0.0120	8.96	10.61	0.85	15.14	0.71	0.71	0.00	Calculated
7	7	Pipe	EX DMH-18	EX DMH-17	49.77	67.60	59.58	16.1200	12.000	0.0120	8.96	15.49	0.58	20.42	0.55	0.55	0.00	Calculated
8	8	Pipe	EX DMH-19	EX DMH-18	193.77	75.00	67.60	3.8200	12.000	0.0120	4.55	7.54	0.60	10.08	0.56	0.56	0.00	Calculated
9	9	Pipe	EX CB-32	EX DMH-19	54.57	77.70	75.00	4.9500	12.000	0.0120	0.78	8.59	0.09	6.80	0.20	0.20	0.00	Calculated
10	10	Pipe	EX CB-33	EX DMH-19	15.61	76.00	75.00	6.4100	12.000	0.0120	3.83	9.77	0.39	11.68	0.43	0.43	0.00	Calculated
11	11	Pipe	EX DMH-05	EX DMH-04	86.68	45.24	42.84	2.7700	15.000	0.0120	12.53	11.64	1.08	10.96	1.25	1.00	22.00	SURCHARGED
12	12	Pipe	EX DMH-08	EX DMH-05	86.87	49.80	46.89	3.3500	12.000	0.0120	7.58	7.06	1.07	10.35	1.00	1.00	24.00	SURCHARGED
13	13	Pipe	EX CB-25	EX DMH-08	15.07	56.31	50.50	38.5500	12.000	0.0120	11.18	23.96	0.47	29.98	0.48	0.48	0.00	Calculated
14	14	Pipe	EX CB-26	EX CB-25	42.01	58.26	56.46	4.2800	12.000	0.0120	6.82	7.99	0.85	11.42	0.71	0.71	0.00	Calculated
15	15	Pipe	EX CB-27	EX CB-26	178.13	61.52	58.61	1.6300	12.000	0.0120	5.25	4.93	1.06	7.32	1.00	1.00	16.00	SURCHARGED
16	16	Pipe	Structure - (72)	EX CB-27	368.98	72.65	61.57	3.0000	12.000	0.0120	1.25	6.69	0.19	6.54	0.29	0.29	0.00	Calculated
17	17	Pipe	EX CULVERT-03	Structure - (72)	64.50	74.59	72.65	3.0100	12.000	0.0120	1.25	6.69	0.19	6.52	0.29	0.29	0.00	Calculated
18	18	Pipe	EX DMH-13	EX DMH-01	326.74	37.33	34.39	0.9000	36.000	0.0120	30.99	68.54	0.45	9.46	1.41	0.47	0.00	Calculated
19	19	Pipe	Structure - (63)	EX DMH-13	187.69	38.35	37.48	0.4700	36.000	0.0120	21.47	49.27	0.44	6.73	1.38	0.46	0.00	Calculated
20	20	Pipe	EX DMH-14	Structure - (63)	460.64	40.50	38.35	0.4700	36.000	0.0120	20.59	49.33	0.42	6.68	1.35	0.45	0.00	Calculated
21	21	Pipe	EX CB-16	EX DMH-14	91.26	42.48	40.65	2.0100	18.000	0.0120	13.54	16.11	0.84	10.21	1.05	0.70	0.00	Calculated
22	22	Pipe	EX DMH-15	EX CB-16	37.67	47.34	46.96	1.0100	10.000	0.0150	2.04	1.91	1.07	4.03	0.83	1.00	78.00	SURCHARGED
23	23	Pipe	Structure - (51)	EX DMH-15	157.00	54.00	47.34	4.2400	10.000	0.0150	4.07	3.91	1.04	8.38	0.83	1.00	46.00	SURCHARGED
24	24	Pipe	EX CB-17	Structure - (51)	147.62	60.27	54.00	4.2500	10.000	0.0120	5.16	4.89	1.05	10.39	0.83	1.00	37.00	SURCHARGED
25	25	Pipe	EX CB-18	EX CB-17	191.60	67.91	60.27	3.9900	10.000	0.0120	5.02	4.74	1.06	10.12	0.83	1.00	21.00	SURCHARGED
26	26	Pipe	EX CB-19	EX CB-18	169.89	72.15	67.91	2.5000	10.000	0.0120	2.22	3.75	0.59	7.21	0.46	0.55	0.00	Calculated
27	28	Pipe	EX CB-30	EX DMH-18	60.12	72.50	67.60	8.1500	12.000	0.0120	0.73	11.02	0.07	7.92	0.17	0.17	0.00	Calculated
28	29	Pipe	EX CB-31	EX DMH-18	10.66	67.80	67.60	1.8800	12.000	0.0120	3.74	5.29	0.71	7.30	0.62	0.62	0.00	Calculated
29	30	Pipe	EX CB-28	EX DMH-09	16.77	51.31	50.43	5.2500	15.000	0.0120	0.87	16.03	0.05	6.97	0.20	0.16	0.00	Calculated
30	31	Pipe	EX CB-04	EX DMH-04	21.87	49.36	48.54	3.7500	15.000	0.0120	1.53	13.55	0.11	7.32	0.28	0.23	0.00	Calculated
31	32	Pipe	EX DMH-06	EX DMH-05	95.28	45.59	45.59	0.0000	12.000	0.0120	1.83	1.73	1.06	2.59	1.00	1.00	52.00	SURCHARGED
32	33	Pipe	EX DMH-07	EX DMH-06	174.37	46.45	45.64	0.4600	12.000	0.0120	2.82	2.63	1.07	4.00	1.00	1.00	3.00	SURCHARGED
33	34	Pipe	EX CB-06	EX DMH-07	24.00	48.80	48.27	2.2100	8.000	0.0120	1.67	1.95	0.86	6.26	0.48	0.71	0.00	Calculated
34	35	Pipe	EX DMH-03	EX DMH-02	11.74	44.74	44.73	0.0900	15.000	0.0120	3.30	3.13	1.06	2.94	1.25	1.00	13.00	SURCHARGED
35	36	Pipe	EX AD-01	EX DMH-03	14.75	48.99	48.27	4.8800	8.000	0.0120	0.67	2.89	0.23	6.76	0.22	0.33	0.00	Calculated
36	37	Pipe	EX CB-07	EX DMH-07	94.03	47.02	46.55	0.5000	12.000	0.0120	1.38	2.73	0.50	3.50	0.50	0.50	0.00	Calculated
37	38	Pipe	EX CB-21	EX CB-16	42.25	44.12	42.48	3.8800	12.000	0.0120	5.97	7.60	0.79	10.72	0.67	0.67	0.00	Calculated
38	39	Pipe	EX ROOF-01	EX DMH-06	56.38	47.11	45.99	1.9900	10.000	0.0120	3.55	3.35	1.06	7.09	0.83	1.00	15.00	SURCHARGED
39	40	Pipe	Structure - (49)	EX CB-21	138.80	44.35	44.12	0.1700	12.000	0.0120	1.87	1.73	1.08	2.58	1.00	1.00	234.00	SURCHARGED
40	41	Pipe	EX CB-22	Structure - (49)	47.44	46.96	44.35	5.5000	12.000	0.0120	1.71	9.05	0.19	8.84	0.29	0.29	0.00	Calculated
41	42	Pipe	EX CB-05	EX DMH-05	20.71	46.08	45.24	4.0600	12.000	0.0120	6.44	7.77	0.83	11.05	0.69	0.70	0.00	Calculated
42	43	Pipe	EX CB-03	EX DMH-03	38.89	45.23	44.67	1.4400	15.000	0.0120	3.88	7.86	0.49	6.37	0.62	0.50	0.00	Calculated
43	44	Pipe	EX CB-23	Structure - (49)	200.02	44.71	44.35	0.1800	12.000	0.0120	1.87	1.73	1.08	2.59	1.00	1.00	225.00	SURCHARGED
44	45	Pipe	EX CB-24	EX CB-23	28.17	44.76	44.71	0.1800	12.000	0.0120	1.86	1.73	1.08	2.54	1.00	1.00	68.00	SURCHARGED
45	46	Pipe	EX CULVERT-02	EX CB-21	3.82	45.17	44.67	13.0800	12.000	0.0120	3.14	13.96	0.22	14.35	0.32	0.32	0.00	Calculated
46	47	Pipe	EX CB-29	EX DMH-02	81.18	45.55	42.43	3.8400	12.000	0.0120	6.76	7.57	0.89	10.90	0.74	0.74	0.00	Calculated
47	48	Pipe	EX CB-02	EX DMH-02	46.12	42.91	42.23	1.4700	15.000	0.0120	0.94	8.50	0.11	4.56	0.28	0.22	0.00	Calculated
48	49	Pipe	Structure - (67)	EX DMH-14	67.62	41.95	41.55	0.5900	12.000	0.0120	3.05	2.97	1.03	5.69	0.86	0.91	0.00	> CAPACITY
49	50	Pipe	EX CB-15	Structure - (67)	245.57	43.35	41.95	0.5700	12.000	0.0120	3.14	2.91	1.08	9.53	0.51	1.00	11.00	SURCHARGED
50	51	Pipe	EX AD-03	EX DMH-13	165.91	38.33	37.43	0.5400	15.000	0.0120	5.48	5.15	1.06	4.89	1.25	1.00	86.00	SURCHARGED
51	52	Pipe	EX AD-02	EX AD-03	160.56	38.94	38.38	0.3500	15.000	0.0120	4.44	4.13	1.07	3.95	1.25	1.00	43.00	SURCHARGED
52	53	Pipe	EX DMH-12	EX AD-02	54.85	39.45	39.24	0.3800	12.000	0.0120	0.00	2.39	0.00	0.00	0.00	0.00	0.00	Calculated
53	54	Pipe	EX DMH-11	EX DMH-12	89.77	39.72	39.40	0.3600	15.000	0.0120	4.10	3.84	1.07	3.63	1.25	1.00	13.00	SURCHARGED
54	55	Pipe	EX CB-10	EX DMH-11	17.13	39.79	39.72	0.4100	15.000	0.0120	4.53	4.47	1.01	4.19	1.02	0.91	0.00	> CAPACITY
55	56	Pipe	EX CB-11	EX CB-10	75.89	40.38	39.89	0.6500	12.000	0.0120	3.31	3.10	1.07	4.82	1.00	1.00	111.00	SURCHARGED
56	57	Pipe	Structure - (66)	EX CB-11	151.52	41.64	40.38	0.8300	12.000	0.0120	3.74	3.52	1.06	6.25	0.82	0.95	0.00	> CAPACITY

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
57	58	Pipe	EX CB-15	Structure - (66)	126.97	42.70	41.64	0.8300	12.000	0.0120	4.65	4.48	1.04	14.48	0.34	1.00	30.00	SURCHARGED
58	60	Pipe	EX CB-13	Structure - (63)	161.99	40.70	40.35	0.2200	12.000	0.0120	0.91	1.79	0.51	2.32	0.50	0.50	0.00	Calculated
59	61	Pipe	EX DMH-10	EX DMH-12	172.10	39.98	39.55	0.2500	12.000	0.0120	2.06	1.93	1.07	2.90	0.93	0.94	0.00	> CAPACITY
60	62	Pipe	EX CB-08	EX DMH-10	24.54	40.39	40.18	0.8600	12.000	0.0120	2.16	3.57	0.61	4.75	0.56	0.56	0.00	Calculated
61	63	Pipe	EX CB-09	EX CB-10	83.27	40.46	39.84	0.7400	12.000	0.0120	0.95	3.33	0.29	3.66	0.36	0.37	0.00	Calculated
62	64	Pipe	EX ROOF-02	EX DMH-12	40.32	40.80	39.85	2.3600	6.000	0.0120	0.99	0.93	1.06	5.48	0.50	1.00	17.00	SURCHARGED
63	65	Pipe	EX CB-12	EX DMH-13	20.55	39.59	39.23	1.7500	6.000	0.0120	0.87	0.80	1.08	4.72	0.50	1.00	258.00	SURCHARGED
64	66	Pipe	EX CULVERT-01	EX CB-12	160.88	44.70	39.59	3.1800	6.000	0.0120	1.16	1.08	1.07	6.42	0.50	1.00	54.00	SURCHARGED
65	67	Pipe	EX ROOF-03	EX DMH-13	119.10	44.00	37.38	5.5600	12.000	0.0120	6.01	9.10	0.66	12.38	0.59	0.59	0.00	Calculated
66	68	Pipe	EX CB-01	EX DMH-01	35.21	39.95	36.39	10.1100	12.000	0.0120	10.17	12.27	0.83	17.46	0.69	0.69	0.00	Calculated
67	69	Pipe	NodeSTMLink-69	EX AD-03	8.00	38.92	38.78	1.7500	15.000	0.0120	1.88	9.26	0.20	6.01	0.37	0.30	0.00	Calculated
68	Pipe - (46)	Pipe	EX CB-20	EX CB-18	29.11	68.49	67.91	1.9900	10.000	0.0120	3.59	3.35	1.07	7.06	0.83	1.00	8.00	SURCHARGED
69	Pipe - (57)	Pipe	EX CB-14	EX DMH-14	16.77	41.38	41.00	2.2700	12.000	0.0120	4.42	5.81	0.76	8.14	0.65	0.65	0.00	Calculated

Inlet Summary

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft²)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)
1	EX AD-01	FHWA HEC-22 GENERIC	N/A	On Sag	1	48.99	50.35	48.99	10.00	0.67	N/A	N/A	N/A	7.00	5.09	50.46
2	EX AD-02	FHWA HEC-22 GENERIC	N/A	On Sag	1	38.94	41.64	38.94	10.00	7.34	N/A	N/A	N/A	7.00	27.00	42.19
3	EX AD-03	FHWA HEC-22 GENERIC	N/A	On Sag	1	38.33	41.58	38.33	10.00	6.07	N/A	N/A	N/A	7.00	23.71	42.06
4	EX CB-01	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.95	43.15	39.95	10.00	10.14	N/A	N/A	N/A	7.00	30.26	43.77
5	EX CB-02	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.91	46.16	42.91	10.00	0.94	N/A	N/A	N/A	7.00	5.79	46.29
6	EX CB-03	FHWA HEC-22 GENERIC	N/A	On Sag	1	45.23	50.58	45.23	10.00	3.89	N/A	N/A	N/A	7.00	15.74	50.90
7	EX CB-04	FHWA HEC-22 GENERIC	N/A	On Sag	1	49.36	52.56	49.36	10.00	1.54	N/A	N/A	N/A	7.00	8.23	52.73
8	EX CB-05	FHWA HEC-22 GENERIC	N/A	On Sag	1	46.08	49.28	46.08	10.00	6.40	N/A	N/A	N/A	7.00	22.14	49.73
9	EX CB-06	FHWA HEC-22 GENERIC	N/A	On Sag	1	48.27	50.17	48.27	10.00	1.67	N/A	N/A	N/A	7.00	8.74	50.35
10	EX CB-07	FHWA HEC-22 GENERIC	N/A	On Sag	1	47.02	48.85	47.02	10.00	1.39	N/A	N/A	N/A	7.00	7.68	49.01
11	EX CB-08	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.39	42.44	40.39	10.00	2.15	N/A	N/A	N/A	7.00	10.44	42.66
12	EX CB-09	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.46	42.23	40.46	10.00	0.96	N/A	N/A	N/A	7.00	5.87	42.36
13	EX CB-10	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.79	42.76	39.79	10.00	0.43	N/A	N/A	N/A	7.00	2.49	42.82
14	EX CB-11	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.38	43.38	40.38	10.00	7.70	N/A	N/A	N/A	7.00	25.12	43.89
15	EX CB-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.59	51.00	39.59	10.00	6.02	N/A	N/A	N/A	7.00	21.22	51.43
16	EX CB-13	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.70	43.70	40.70	10.00	0.91	N/A	N/A	N/A	7.00	5.67	43.82
17	EX CB-14	FHWA HEC-22 GENERIC	N/A	On Sag	1	41.38	44.38	41.38	10.00	4.42	N/A	N/A	N/A	7.00	17.19	44.73
18	EX CB-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	43.35	45.35	43.35	10.00	6.47	N/A	N/A	N/A	7.00	22.30	45.81
19	EX CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.48	48.52	42.48	10.00	5.68	N/A	N/A	N/A	7.00	20.41	49.02
20	EX CB-17	FHWA HEC-22 GENERIC	N/A	On Sag	1	60.27	66.63	60.27	10.00	4.22	N/A	N/A	N/A	7.00	16.63	66.97
21	EX CB-18	FHWA HEC-22 GENERIC	N/A	On Sag	1	67.91	70.91	67.91	10.00	3.82	N/A	N/A	N/A	7.00	15.53	71.23
22	EX CB-19	FHWA HEC-22 GENERIC	N/A	On Sag	1	72.15	75.35	72.15	10.00	2.23	N/A	N/A	N/A	7.00	10.71	75.57
23	EX CB-20	FHWA HEC-22 GENERIC	N/A	On Sag	1	68.49	70.22	68.49	10.00	4.17	N/A	N/A	N/A	7.00	16.52	70.56
24	EX CB-21	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.12	48.12	44.12	10.00	2.18	N/A	N/A	N/A	7.00	10.54	48.34
25	EX CB-22	FHWA HEC-22 GENERIC	N/A	On Sag	1	46.96	49.96	46.96	10.00	1.71	N/A	N/A	N/A	7.00	8.90	50.15
26	EX CB-23	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.71	47.30	44.71	10.00	15.97	N/A	N/A	N/A	7.00	41.16	48.13
27	EX CB-24	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.76	47.76	44.76	10.00	10.89	N/A	N/A	N/A	7.00	31.76	48.41
28	EX CB-25	FHWA HEC-22 GENERIC	N/A	On Sag	1	56.31	60.41	56.31	10.00	4.45	N/A	N/A	N/A	7.00	17.27	60.77
29	EX CB-26	FHWA HEC-22 GENERIC	N/A	On Sag	1	58.26	60.86	58.26	10.00	1.89	N/A	N/A	N/A	7.00	9.52	61.14
30	EX CB-27	FHWA HEC-22 GENERIC	N/A	On Sag	1	61.52	63.57	61.52	10.00	7.45	N/A	N/A	N/A	7.00	24.55	64.07
31	EX CB-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	51.31	54.56	51.31	10.00	0.87	N/A	N/A	N/A	7.00	5.48	54.68
32	EX CB-29	FHWA HEC-22 GENERIC	N/A	On Sag	1	45.55	48.30	45.55	10.00	6.79	N/A	N/A	N/A	7.00	23.04	48.77
33	EX CB-30	FHWA HEC-22 GENERIC	N/A	On Sag	1	72.50	75.50	72.50	10.00	0.73	N/A	N/A	N/A	7.00	4.81	75.61
34	EX CB-31	FHWA HEC-22 GENERIC	N/A	On Sag	1	67.80	70.80	67.80	10.00	3.74	N/A	N/A	N/A	7.00	15.31	71.12
35	EX CB-32	FHWA HEC-22 GENERIC	N/A	On Sag	1	77.70	80.70	77.70	10.00	0.78	N/A	N/A	N/A	7.00	6.54	80.89
36	EX CB-33	FHWA HEC-22 GENERIC	N/A	On Sag	1	76.00	79.40	76.00	10.00	3.83	N/A	N/A	N/A	7.00	15.57	79.72

Subbasin Hydrology

Subbasin : Sub-EX AD-01

Input Data

Area (ac)	0.11
Peak Rate Factor	484.00
Weighted Curve Number	75.90
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.04	-	98.00
-	0.04	-	60.00
-	0.03	-	69.00
Composite Area & Weighted CN	0.11		75.90

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.15
Peak Runoff (cfs)	0.68
Weighted Curve Number	75.90
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX AD-02

Input Data

Area (ac)	2.00
Peak Rate Factor	484.00
Weighted Curve Number	79.18
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.02	-	98.00
-	1.98	-	79.00
Composite Area & Weighted CN	2.00		79.18

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.56
Peak Runoff (cfs)	7.37
Weighted Curve Number	79.18
Time of Concentration (days hh:mm:ss)	0 00:43:12

Subbasin : Sub-EX AD-03

Input Data

Area (ac)	1.70
Peak Rate Factor	484.00
Weighted Curve Number	79.83
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.07	-	98.00
-	1.63	-	79.00
Composite Area & Weighted CN	1.70		79.83

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.64
Peak Runoff (cfs)	6.07
Weighted Curve Number	79.83
Time of Concentration (days hh:mm:ss)	0 00:46:48

Subbasin : Sub-EX CB-01

Input Data

Area (ac)	1.64
Peak Rate Factor	484.00
Weighted Curve Number	82.39
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.87	-	98.00
-	0.38	-	60.00
-	0.38	-	69.00
Composite Area & Weighted CN	1.63		82.39

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.96
Peak Runoff (cfs)	10.60
Weighted Curve Number	82.39
Time of Concentration (days hh:mm:ss)	0 00:09:24

Subbasin : Sub-EX CB-02

Input Data

Area (ac)	0.20
Peak Rate Factor	484.00
Weighted Curve Number	73.07
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.03	-	98.00
-	0.00	-	60.00
-	0.17	-	69.00
Composite Area & Weighted CN	0.20		73.07

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	5.80
Peak Runoff (cfs)	0.95
Weighted Curve Number	73.07
Time of Concentration (days hh:mm:ss)	0 00:15:48

Subbasin : Sub-EX CB-03

Input Data

Area (ac)	0.57
Peak Rate Factor	484.00
Weighted Curve Number	84.04
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.33	-	98.00
-	0.10	-	60.00
-	0.14	-	69.00
Composite Area & Weighted CN	0.57		84.04

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	7.16
Peak Runoff (cfs)	3.94
Weighted Curve Number	84.04
Time of Concentration (days hh:mm:ss)	0 00:06:18

Subbasin : Sub-EX CB-04

Input Data

Area (ac)	0.20
Peak Rate Factor	484.00
Weighted Curve Number	92.57
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.17	-	98.00
-	0.04	-	69.00
Composite Area & Weighted CN	0.21		92.57

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	8.20
Peak Runoff (cfs)	1.54
Weighted Curve Number	92.57
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX CB-05

Input Data

Area (ac)	1.25
Peak Rate Factor	484.00
Weighted Curve Number	78.86
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.50	-	98.00
-	0.23	-	60.00
-	0.53	-	69.00
Composite Area & Weighted CN	1.26		78.86

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.52
Peak Runoff (cfs)	6.60
Weighted Curve Number	78.86
Time of Concentration (days hh:mm:ss)	0 00:18:00

Subbasin : Sub-EX CB-06

Input Data

Area (ac)	0.23
Peak Rate Factor	484.00
Weighted Curve Number	85.30
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.15	-	98.00
-	0.07	-	60.00
-	0.02	-	69.00
Composite Area & Weighted CN	0.24		85.30

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	7.32
Peak Runoff (cfs)	1.68
Weighted Curve Number	85.30
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX CB-07

Input Data

Area (ac)	0.19
Peak Rate Factor	484.00
Weighted Curve Number	87.95
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.14	-	98.00
-	0.03	-	60.00
-	0.02	-	69.00
Composite Area & Weighted CN	0.19		87.95

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	7.64
Peak Runoff (cfs)	1.40
Weighted Curve Number	87.95
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX CB-08

Input Data

Area (ac)	0.41
Peak Rate Factor	484.00
Weighted Curve Number	69.65
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.07	-	98.00
-	0.20	-	60.00
-	0.14	-	69.00
Composite Area & Weighted CN	0.41		69.65

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	5.38
Peak Runoff (cfs)	2.24
Weighted Curve Number	69.65
Time of Concentration (days hh:mm:ss)	0 00:07:42

Subbasin : Sub-EX CB-09

Input Data

Area (ac)	0.20
Peak Rate Factor	484.00
Weighted Curve Number	66.65
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.01	-	98.00
-	0.14	B	60.00
-	0.05	C	79.00
Composite Area & Weighted CN	0.20		66.65

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	5.01
Peak Runoff (cfs)	1.00
Weighted Curve Number	66.65
Time of Concentration (days hh:mm:ss)	0 00:07:36

Subbasin : Sub-EX CB-10

Input Data

Area (ac)	0.06
Peak Rate Factor	484.00
Weighted Curve Number	81.41
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.01	-	98.00
-	0.06	C	79.00
Composite Area & Weighted CN	0.07		81.41

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.83
Peak Runoff (cfs)	0.43
Weighted Curve Number	81.41
Time of Concentration (days hh:mm:ss)	0 00:05:12

Subbasin : Sub-EX CB-11

Input Data

Area (ac)	2.51
Peak Rate Factor	484.00
Weighted Curve Number	61.51
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	2.31	B	60.00
-	0.20	C	79.00
Composite Area & Weighted CN	2.51		61.51

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	4.37
Peak Runoff (cfs)	7.73
Weighted Curve Number	61.51
Time of Concentration (days hh:mm:ss)	0 00:26:30

Subbasin : Sub-EX CB-12

Input Data

Area (ac)	1.82
Peak Rate Factor	484.00
Weighted Curve Number	77.36
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.01	-	98.00
-	0.52	C	73.00
-	1.29	C	79.00
Composite Area & Weighted CN	1.82		77.36

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.34
Peak Runoff (cfs)	6.04
Weighted Curve Number	77.36
Time of Concentration (days hh:mm:ss)	0 00:49:30

Subbasin : Sub-EX CB-13

Input Data

Area (ac)	0.22
Peak Rate Factor	484.00
Weighted Curve Number	68.56
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.09	B	60.00
-	0.09	C	73.00
-	0.04	C	79.00
Composite Area & Weighted CN	0.22		68.56

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	5.24
Peak Runoff (cfs)	0.93
Weighted Curve Number	68.56
Time of Concentration (days hh:mm:ss)	0 00:18:30

Subbasin : Sub-EX CB-14

Input Data

Area (ac)	1.20
Peak Rate Factor	484.00
Weighted Curve Number	65.07
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.88	B	60.00
-	0.32	C	79.00
Composite Area & Weighted CN	1.20		65.07

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	4.81
Peak Runoff (cfs)	4.42
Weighted Curve Number	65.07
Time of Concentration (days hh:mm:ss)	0 00:21:30

Subbasin : Sub-EX CB-15

Input Data

Area (ac)	1.74
Peak Rate Factor	484.00
Weighted Curve Number	67.20
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	1.08	B	60.00
-	0.66	C	79.00
Composite Area & Weighted CN	1.74		67.20

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	5.08
Peak Runoff (cfs)	6.54
Weighted Curve Number	67.20
Time of Concentration (days hh:mm:ss)	0 00:23:48

Subbasin : Sub-EX CB-16

Input Data

Area (ac)	1.13
Peak Rate Factor	484.00
Weighted Curve Number	74.74
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.32	-	98.00
-	0.29	-	60.00
-	0.52	B	69.00
Composite Area & Weighted CN	1.13		74.74

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.01
Peak Runoff (cfs)	5.76
Weighted Curve Number	74.74
Time of Concentration (days hh:mm:ss)	0 00:16:06

Subbasin : Sub-EX CB-17

Input Data

Area (ac)	0.90
Peak Rate Factor	484.00
Weighted Curve Number	74.13
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.19	-	98.00
-	0.08	-	60.00
-	0.63	-	69.00
Composite Area & Weighted CN	0.90		74.13

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	5.94
Peak Runoff (cfs)	4.30
Weighted Curve Number	74.13
Time of Concentration (days hh:mm:ss)	0 00:18:36

Subbasin : Sub-EX CB-18

Input Data

Area (ac)	0.60
Peak Rate Factor	484.00
Weighted Curve Number	78.05
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.19	-	98.00
-	0.41	-	69.00
Composite Area & Weighted CN	0.60		78.05

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.42
Peak Runoff (cfs)	3.85
Weighted Curve Number	78.05
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX CB-19

Input Data

Area (ac)	0.39
Peak Rate Factor	484.00
Weighted Curve Number	73.90
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.07	-	98.00
-	0.33	-	69.00
Composite Area & Weighted CN	0.40		73.90

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	5.91
Peak Runoff (cfs)	2.30
Weighted Curve Number	73.90
Time of Concentration (days hh:mm:ss)	0 00:07:18

Subbasin : Sub-EX CB-20

Input Data

Area (ac)	0.58
Peak Rate Factor	484.00
Weighted Curve Number	86.84
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.36	-	98.00
-	0.22	-	69.00
Composite Area & Weighted CN	0.58		86.84

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	7.50
Peak Runoff (cfs)	4.19
Weighted Curve Number	86.84
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX CB-21

Input Data

Area (ac)	0.30
Peak Rate Factor	484.00
Weighted Curve Number	88.16
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.22	-	98.00
-	0.05	-	60.00
-	0.03	-	69.00
Composite Area & Weighted CN	0.30		88.16

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	7.67
Peak Runoff (cfs)	2.19
Weighted Curve Number	88.16
Time of Concentration (days hh:mm:ss)	0 00:05:12

Subbasin : Sub-EX CB-22

Input Data

Area (ac)	0.25
Peak Rate Factor	484.00
Weighted Curve Number	83.56
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.13	-	98.00
-	0.13	-	69.00
Composite Area & Weighted CN	0.26		83.56

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	7.10
Peak Runoff (cfs)	1.73
Weighted Curve Number	83.56
Time of Concentration (days hh:mm:ss)	0 00:05:36

Subbasin : Sub-EX CB-23

Input Data

Area (ac)	3.17
Peak Rate Factor	484.00
Weighted Curve Number	75.23
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.68	-	98.00
-	2.49	-	69.00
Composite Area & Weighted CN	3.17		75.23

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.07
Peak Runoff (cfs)	16.15
Weighted Curve Number	75.23
Time of Concentration (days hh:mm:ss)	0 00:16:18

Subbasin : Sub-EX CB-24

Input Data

Area (ac)	2.08
Peak Rate Factor	484.00
Weighted Curve Number	74.60
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.45	-	98.00
-	0.14	-	60.00
-	1.50	-	69.00
Composite Area & Weighted CN	2.09		74.60

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.00
Peak Runoff (cfs)	10.91
Weighted Curve Number	74.60
Time of Concentration (days hh:mm:ss)	0 00:14:18

Subbasin : Sub-EX CB-26

Input Data

Area (ac)	0.42
Peak Rate Factor	484.00
Weighted Curve Number	64.95
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.05	-	98.00
-	0.35	-	60.00
-	0.02	-	69.00
Composite Area & Weighted CN	0.42		64.95

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	4.79
Peak Runoff (cfs)	1.95
Weighted Curve Number	64.95
Time of Concentration (days hh:mm:ss)	0 00:09:54

Subbasin : Sub-EX CB-27

Input Data

Area (ac)	1.20
Peak Rate Factor	484.00
Weighted Curve Number	76.43
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.44	-	98.00
-	0.41	-	60.00
-	0.35	-	69.00
Composite Area & Weighted CN	1.20		76.43

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.22
Peak Runoff (cfs)	7.55
Weighted Curve Number	76.43
Time of Concentration (days hh:mm:ss)	0 00:05:36

Subbasin : Sub-EX CB-28

Input Data

Area (ac)	0.11
Peak Rate Factor	484.00
Weighted Curve Number	93.86
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.10	-	98.00
-	0.02	-	69.00
Composite Area & Weighted CN	0.12		93.86

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	8.36
Peak Runoff (cfs)	0.87
Weighted Curve Number	93.86
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX CB-29

Input Data

Area (ac)	1.31
Peak Rate Factor	484.00
Weighted Curve Number	75.39
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.37	-	98.00
-	0.27	-	60.00
-	0.67	-	69.00
Composite Area & Weighted CN	1.31		75.39

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.09
Peak Runoff (cfs)	6.82
Weighted Curve Number	75.39
Time of Concentration (days hh:mm:ss)	0 00:15:12

Subbasin : Sub-EX CB-30

Input Data

Area (ac)	0.13
Peak Rate Factor	484.00
Weighted Curve Number	82.22
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.06	-	98.00
-	0.07	-	69.00
Composite Area & Weighted CN	0.13		82.22

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.93
Peak Runoff (cfs)	0.73
Weighted Curve Number	82.22
Time of Concentration (days hh:mm:ss)	0 00:16:06

Subbasin : Sub-EX CB-31

Input Data

Area (ac)	0.60
Peak Rate Factor	484.00
Weighted Curve Number	82.65
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.28	-	98.00
-	0.32	-	69.00
Composite Area & Weighted CN	0.60		82.65

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.99
Peak Runoff (cfs)	3.91
Weighted Curve Number	82.65
Time of Concentration (days hh:mm:ss)	0 00:09:30

Subbasin : Sub-EX CB-32

Input Data

Area (ac)	0.11
Peak Rate Factor	484.00
Weighted Curve Number	98.00
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.11	-	98.00
Composite Area & Weighted CN	0.11		98.00

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	8.86
Peak Runoff (cfs)	0.80
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:09:06

Subbasin : Sub-EX CB-33

Input Data

Area (ac)	0.67
Peak Rate Factor	484.00
Weighted Curve Number	78.78
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.23	-	98.00
-	0.44	-	69.00
Composite Area & Weighted CN	0.67		78.78

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	6.51
Peak Runoff (cfs)	3.84
Weighted Curve Number	78.78
Time of Concentration (days hh:mm:ss)	0 00:13:06

Subbasin : Sub-EX CULVERT-01

Input Data

Area (ac)	0.72
Peak Rate Factor	484.00
Weighted Curve Number	87.69
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.52	-	98.00
-	0.18	-	60.00
-	0.02	-	69.00
Composite Area & Weighted CN	0.72		87.69

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	7.61
Peak Runoff (cfs)	4.01
Weighted Curve Number	87.69
Time of Concentration (days hh:mm:ss)	0 00:21:06

Subbasin : Sub-EX CULVERT-02

Input Data

Area (ac)	0.81
Peak Rate Factor	484.00
Weighted Curve Number	69.64
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.09	-	98.00
-	0.25	-	60.00
-	0.47	-	69.00
Composite Area & Weighted CN	0.81		69.64

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	5.38
Peak Runoff (cfs)	3.18
Weighted Curve Number	69.64
Time of Concentration (days hh:mm:ss)	0 00:24:24

Subbasin : Sub-EX CULVERT-03

Input Data

Area (ac)	0.37
Peak Rate Factor	484.00
Weighted Curve Number	69.00
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.37	-	69.00
Composite Area & Weighted CN	0.37		69.00

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	5.30
Peak Runoff (cfs)	1.26
Weighted Curve Number	69.00
Time of Concentration (days hh:mm:ss)	0 00:33:48

Subbasin : Sub-EX ROOF-01

Input Data

Area (ac)	0.73
Peak Rate Factor	484.00
Weighted Curve Number	98.00
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.73	-	98.00
Composite Area & Weighted CN	0.73		98.00

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	8.86
Peak Runoff (cfs)	5.65
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX ROOF-02

Input Data

Area (ac)	0.22
Peak Rate Factor	484.00
Weighted Curve Number	98.00
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.22	-	98.00
Composite Area & Weighted CN	0.22		98.00

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	8.86
Peak Runoff (cfs)	1.72
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX ROOF-03

Input Data

Area (ac)	0.79
Peak Rate Factor	484.00
Weighted Curve Number	98.00
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.79	-	98.00
Composite Area & Weighted CN	0.79		98.00

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	8.86
Peak Runoff (cfs)	6.04
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX-CB-25

Input Data

Area (ac)	0.80
Peak Rate Factor	484.00
Weighted Curve Number	70.36
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.18	-	98.00
-	0.47	-	60.00
-	0.15	-	69.00
Composite Area & Weighted CN	0.80		70.36

Subbasin Runoff Results

Total Rainfall (in)	9.10
Total Runoff (in)	5.47
Peak Runoff (cfs)	4.54
Weighted Curve Number	70.36
Time of Concentration (days hh:mm:ss)	0 00:05:30

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft²)	Minimum Pipe Cover (in)
1	EX CULVERT-01	44.70	51.00	6.30	44.70	0.00	51.00	0.00	0.00	69.60
2	EX CULVERT-02	45.17	48.12	2.95	45.17	0.00	48.12	0.00	0.00	23.40
3	EX CULVERT-03	74.59	79.80	5.21	74.59	0.00	79.80	0.00	0.00	50.52
4	EX DMH-01	34.39	44.16	9.77	34.39	0.00	44.16	0.00	0.00	75.24
5	EX DMH-02	39.48	49.28	9.80	39.48	0.00	49.28	0.00	0.00	39.60
6	EX DMH-03	44.74	50.79	6.05	44.74	0.00	50.79	0.00	0.00	22.24
7	EX DMH-04	42.74	52.39	9.65	42.74	0.00	52.39	0.00	0.00	31.20
8	EX DMH-05	45.24	51.33	6.09	45.24	0.00	51.33	0.00	0.00	41.28
9	EX DMH-06	45.59	50.99	5.40	45.59	0.00	50.99	0.00	0.00	50.00
10	EX DMH-07	46.45	51.35	4.90	46.45	0.00	51.35	0.00	0.00	28.96
11	EX DMH-08	49.80	53.44	3.64	49.80	0.00	53.44	0.00	0.00	23.28
12	EX DMH-09	50.38	54.43	4.05	50.38	0.00	54.43	0.00	0.00	33.00
13	EX DMH-10	39.98	43.18	3.20	39.98	0.00	43.18	0.00	0.00	24.00
14	EX DMH-11	39.72	42.99	3.27	39.72	0.00	42.99	0.00	0.00	24.24
15	EX DMH-12	39.45	42.67	3.22	39.45	0.00	42.67	0.00	0.00	24.24
16	EX DMH-13	37.33	47.50	10.17	37.33	0.00	47.50	0.00	0.00	84.24
17	EX DMH-14	40.50	45.67	5.17	40.50	0.00	45.67	0.00	0.00	26.04
18	EX DMH-15	47.34	49.46	2.12	47.34	0.00	49.46	0.00	0.00	15.44
19	EX DMH-16	51.42	55.52	4.10	51.42	0.00	55.52	0.00	0.00	34.20
20	EX DMH-17	59.48	65.68	6.20	59.48	0.00	65.68	0.00	0.00	61.20
21	EX DMH-18	67.60	71.75	4.15	67.60	0.00	71.75	0.00	0.00	37.80
22	EX DMH-19	75.00	79.50	4.50	75.00	0.00	79.50	0.00	0.00	42.00
23	EX ROOF-01	47.11	54.06	6.95	47.11	0.00	54.06	0.00	0.00	73.40
24	EX ROOF-02	40.80	42.80	2.00	40.80	0.00	42.80	0.00	0.00	18.00
25	EX ROOF-03	44.00	48.20	4.20	44.00	0.00	48.20	0.00	0.00	38.40
26	NodeSTMLink-69	36.92	41.67	4.75	36.92	0.00	41.67	0.00	0.00	18.00
27	Structure - (49)	44.35	47.16	2.81	44.35	0.00	47.16	0.00	0.00	21.72
28	Structure - (51)	54.00	58.20	4.20	54.00	0.00	58.20	0.00	0.00	40.40
29	Structure - (63)	38.35	41.87	3.52	38.35	0.00	41.87	0.00	0.00	6.20
30	Structure - (66)	41.64	45.00	3.36	41.64	0.00	45.00	0.00	0.00	28.32
31	Structure - (67)	41.95	46.00	4.05	41.95	0.00	46.00	0.00	0.00	36.60
32	Structure - (72)	72.65	79.80	7.15	72.65	0.00	79.80	0.00	0.00	73.80

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	EX CULVERT-01	3.99	3.99	51.00	6.30	0.00	0.00	45.05	0.35	0 11:54	0 12:20	1.31	58.00
2	EX CULVERT-02	3.14	3.14	45.49	0.32	0.00	2.63	45.22	0.05	0 12:20	0 00:00	0.00	0.00
3	EX CULVERT-03	1.25	1.25	74.88	0.29	0.00	4.92	74.64	0.05	0 12:30	0 00:00	0.00	0.00
4	EX DMH-01	55.04	0.00	37.39	3.00	0.00	6.77	36.51	2.12	0 11:55	0 00:00	0.00	0.00
5	EX DMH-02	25.03	0.00	49.28	9.80	0.00	0.00	45.01	5.53	0 11:52	0 12:15	5.25	49.00
6	EX DMH-03	4.55	0.00	50.79	6.05	0.00	0.00	48.33	3.59	0 12:03	0 12:10	0.20	16.00
7	EX DMH-04	22.43	0.00	52.39	9.65	0.00	0.00	48.68	5.94	0 11:58	0 12:11	2.99	38.00
8	EX DMH-05	15.23	0.00	51.33	6.09	0.00	0.00	47.11	1.87	0 12:02	0 12:19	1.08	30.00
9	EX DMH-06	6.17	0.00	50.99	5.40	0.00	0.00	46.29	0.70	0 11:42	0 12:08	2.01	56.00
10	EX DMH-07	3.04	0.00	51.35	4.90	0.00	0.00	48.35	1.90	0 12:04	0 12:10	0.04	9.00
11	EX DMH-08	11.18	0.00	53.44	3.64	0.00	0.00	50.63	0.83	0 12:01	0 12:10	1.03	27.00
12	EX DMH-09	9.57	0.00	51.25	0.87	0.00	3.18	50.55	0.17	0 12:15	0 00:00	0.00	0.00
13	EX DMH-10	2.16	0.00	43.18	3.20	0.00	0.00	40.27	0.29	0 12:08	0 12:10	0.02	9.00
14	EX DMH-11	4.53	0.00	42.99	3.27	0.00	0.00	40.08	0.36	0 12:01	0 12:11	0.13	23.00
15	EX DMH-12	0.00	0.00	40.70	1.25	0.00	1.97	39.99	0.54	0 12:06	0 00:00	0.00	0.00
16	EX DMH-13	31.00	0.00	39.73	2.40	0.00	7.77	39.45	2.12	0 11:06	0 00:00	0.00	0.00
17	EX DMH-14	20.60	0.00	42.40	1.90	0.00	3.27	41.70	1.20	0 12:37	0 00:00	0.00	0.00
18	EX DMH-15	4.07	0.00	49.46	2.12	0.00	0.00	47.65	0.31	0 11:39	0 12:39	2.04	83.00
19	EX DMH-16	8.96	0.00	52.33	0.91	0.00	3.19	51.72	0.30	0 12:15	0 00:00	0.00	0.00
20	EX DMH-17	8.96	0.00	60.19	0.71	0.00	5.49	59.67	0.19	0 12:15	0 00:00	0.00	0.00
21	EX DMH-18	8.97	0.00	68.22	0.62	0.00	3.53	67.69	0.09	0 12:10	0 00:00	0.00	0.00
22	EX DMH-19	4.57	0.00	75.56	0.56	0.00	3.94	75.09	0.09	0 12:15	0 00:00	0.00	0.00
23	EX ROOF-01	5.64	5.64	54.06	6.95	0.00	0.00	47.32	0.21	0 12:01	0 12:10	0.38	18.00
24	EX ROOF-02	1.72	1.72	42.80	2.00	0.00	0.00	40.90	0.10	0 12:00	0 12:10	0.14	19.00
25	EX ROOF-03	6.03	6.03	44.59	0.59	0.00	3.61	44.10	0.10	0 12:10	0 00:00	0.00	0.00
26	NodeSTMLink-69	1.80	1.80	39.29	2.37	0.00	2.38	39.29	2.37	0 00:00	0 00:00	0.00	0.00
27	Structure - (49)	3.44	0.00	47.16	2.81	0.00	0.00	45.09	0.74	0 11:01	0 12:10	1.25	256.00
28	Structure - (51)	5.16	0.00	58.20	4.20	0.00	0.00	54.28	0.28	0 11:51	0 12:34	0.72	49.00
29	Structure - (63)	21.49	0.00	40.85	2.50	0.00	1.02	40.43	2.08	0 12:21	0 00:00	0.00	0.00
30	Structure - (66)	4.65	0.00	45.00	3.36	0.00	0.00	41.99	0.35	0 11:56	0 11:59	0.52	70.00
31	Structure - (67)	3.14	0.00	46.00	4.05	0.00	0.00	42.12	0.17	0 12:08	0 12:10	0.01	10.00
32	Structure - (72)	1.25	0.00	72.94	0.29	0.00	6.86	72.70	0.05	0 12:30	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	1	132.32	34.39	0.00	33.20	0.00	1.19	0.9000	CIRCULAR	42.000	42.000	0.0120	0.5000	0.5000	0.0000	0.00	No
2	2	230.59	39.48	0.00	35.89	1.50	3.59	1.5600	CIRCULAR	18.000	18.000	0.0120	0.5000	0.5000	0.0000	0.00	No
3	3	196.29	42.74	0.00	39.68	0.20	3.06	1.5600	CIRCULAR	18.000	18.000	0.0120	0.5000	0.5000	0.0000	0.00	No
4	4	47.23	50.38	0.00	47.64	4.90	2.74	5.8000	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
5	5	35.46	51.42	0.00	50.43	0.05	0.99	2.7900	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
6	6	104.10	59.48	0.00	51.62	0.20	7.86	7.5500	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
7	7	49.77	67.60	0.00	59.58	0.10	8.02	16.1200	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
8	8	193.77	75.00	0.00	67.60	0.00	7.40	3.8200	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
9	9	54.57	77.70	0.00	75.00	0.00	2.70	4.9500	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
10	10	15.61	76.00	0.00	75.00	0.00	1.00	6.4100	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
11	11	86.68	45.24	0.00	42.84	0.10	2.40	2.7700	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
12	12	86.87	49.80	0.00	46.89	1.65	2.91	3.3500	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
13	13	15.07	56.31	0.00	50.50	0.70	5.81	38.5500	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
14	14	42.01	58.26	0.00	56.46	0.15	1.80	4.2800	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
15	15	178.13	61.52	0.00	58.61	0.35	2.91	1.6300	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
16	16	368.98	72.65	0.00	61.57	0.05	11.08	3.0000	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
17	17	64.50	74.59	0.00	72.65	0.00	1.94	3.0100	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
18	18	326.74	37.33	0.00	34.39	0.00	2.94	0.9000	CIRCULAR	36.000	36.000	0.0120	0.5000	0.5000	0.0000	0.00	No
19	19	187.69	38.35	0.00	37.48	0.15	0.87	0.4700	CIRCULAR	36.000	36.000	0.0120	0.5000	0.5000	0.0000	0.00	No
20	20	460.64	40.50	0.00	38.35	0.00	2.15	0.4700	CIRCULAR	36.000	36.000	0.0120	0.5000	0.5000	0.0000	0.00	No
21	21	91.26	42.48	0.00	40.65	0.15	1.83	2.0100	CIRCULAR	18.000	18.000	0.0120	0.5000	0.5000	0.0000	0.00	No
22	22	37.67	47.34	0.00	46.96	4.48	0.38	1.0100	CIRCULAR	9.960	9.960	0.0150	0.5000	0.5000	0.0000	0.00	No
23	23	157.00	54.00	0.00	47.34	0.00	6.66	4.2400	CIRCULAR	9.960	9.960	0.0150	0.5000	0.5000	0.0000	0.00	No
24	24	147.62	60.27	0.00	54.00	0.00	6.27	4.2500	CIRCULAR	9.960	9.960	0.0120	0.5000	0.5000	0.0000	0.00	No
25	25	191.60	67.91	0.00	60.27	0.00	7.64	3.9900	CIRCULAR	9.960	9.960	0.0120	0.5000	0.5000	0.0000	0.00	No
26	26	169.89	72.15	0.00	67.91	0.00	4.24	2.5000	CIRCULAR	9.960	9.960	0.0120	0.5000	0.5000	0.0000	0.00	No
27	28	60.12	72.50	0.00	67.60	0.00	4.90	8.1500	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
28	29	10.66	67.80	0.00	67.60	0.00	0.20	1.8800	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
29	30	16.77	51.31	0.00	50.43	0.05	0.88	5.2500	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
30	31	21.87	49.36	0.00	48.54	5.80	0.82	3.7500	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
31	32	95.28	45.59	0.00	45.59	0.35	0.00	0.0000	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
32	33	174.37	46.45	0.00	45.64	0.05	0.81	0.4600	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
33	34	24.00	48.80	0.53	48.27	1.82	0.53	2.2100	CIRCULAR	8.040	8.040	0.0120	0.5000	0.5000	0.0000	0.00	No
34	35	11.74	44.74	0.00	44.73	5.25	0.01	0.0900	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
35	36	14.75	48.99	0.00	48.27	3.53	0.72	4.8800	CIRCULAR	8.040	8.040	0.0120	0.5000	0.5000	0.0000	0.00	No
36	37	94.03	47.02	0.00	46.55	0.10	0.47	0.5000	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
37	38	42.25	44.12	0.00	42.48	0.00	1.64	3.8800	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
38	39	56.38	47.11	0.00	45.99	0.40	1.12	1.9900	CIRCULAR	9.960	9.960	0.0120	0.5000	0.5000	0.0000	0.00	No
39	40	138.80	44.35	0.00	44.12	0.00	0.23	0.1700	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
40	41	47.44	46.96	0.00	44.35	0.00	2.61	5.5000	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
41	42	20.71	46.08	0.00	45.24	0.00	0.84	4.0600	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
42	43	38.89	45.23	0.00	44.67	-0.07	0.56	1.4400	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
43	44	200.02	44.71	0.00	44.35	0.00	0.36	0.1800	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
44	45	28.17	44.76	0.00	44.71	0.00	0.05	0.1800	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
45	46	3.82	45.17	0.00	44.67	0.55	0.50	13.0800	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
46	47	81.18	45.55	0.00	42.43	2.95	3.12	3.8400	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
47	48	46.12	42.91	0.00	42.23	2.75	0.68	1.4700	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
48	49	67.62	41.95	0.00	41.55	1.05	0.40	0.5900	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
49	50	245.57	43.35	0.00	41.95	0.00	1.40	0.5700	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
50	51	165.91	38.33	0.00	37.43	0.10	0.90	0.5400	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
51	52	160.56	38.94	0.00	38.38	0.05	0.56	0.3500	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
52	53	54.85	39.45	0.00	39.24	0.30	0.21	0.3800	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
53	54	89.77	39.72	0.00	39.40	-0.05	0.32	0.3600	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
54	55	17.13	39.79	0.00	39.72	0.00	0.07	0.4100	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
55	56	75.89	40.38	0.00	39.89	0.10	0.49	0.6500	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
56	57	151.52	41.64	0.00	40.38	0.00	1.26	0.8300	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
57	58	126.97	42.70	-0.65	41.64	0.00	1.06	0.8300	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
58	60	161.99	40.70	0.00	40.35	2.00	0.35	0.2200	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
59	61	172.10	39.98	0.00	39.55	0.10	0.43	0.2500	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
60	62	24.54	40.39	0.00	40.18	0.20	0.21	0.8600	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
61	63	83.27	40.46	0.00	39.84	0.05	0.62	0.7400	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
62	64	40.32	40.80	0.00	39.85	0.40	0.95	2.3600	CIRCULAR	6.000	6.000	0.0120	0.5000	0.5000	0.0000	0.00	No
63	65	20.55	39.59	0.00	39.23	1.90	0.36	1.7500	CIRCULAR	6.000	6.000	0.0120	0.5000	0.5000	0.0000	0.00	No
64	66	160.88	44.70	0.00	39.59	0.00	5.11	3.1800	CIRCULAR	6.000	6.000	0.0120	0.5000	0.5000	0.0000	0.00	No
65	67	119.10	44.00	0.00	37.38	0.05	6.62	5.5600	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
66	68	35.21	39.95	0.00	36.39	2.00	3.56	10.1100	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No
67	69	8.00	38.92	2.00	38.78	0.45	0.14	1.7500	CIRCULAR	15.000	15.000	0.0120	0.5000	0.5000	0.0000	0.00	No
68	Pipe - (46)	29.11	68.49	0.00	67.91	0.00	0.58	1.9900	CIRCULAR	9.960	9.960	0.0120	0.5000	0.5000	0.0000	0.00	No
69	Pipe - (57)	16.77	41.38	0.00	41.00	0.50	0.38	2.2700	CIRCULAR	12.000	12.000	0.0120	0.5000	0.5000	0.0000	0.00	No

No. of Barrels
1
1
1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	1	55.04	0 12:15	103.36	0.53	10.91	0.20	1.82	0.52	0.00		Calculated
2	2	15.11	0 12:39	14.20	1.06	9.38	0.41	1.50	1.00	45.00		SURCHARGED
3	3	15.15	0 12:33	14.21	1.07	9.38	0.35	1.50	1.00	33.00		SURCHARGED
4	4	9.57	0 12:15	16.86	0.57	14.16	0.06	0.67	0.54	0.00		Calculated
5	5	8.96	0 12:15	11.69	0.77	10.50	0.06	0.82	0.66	0.00		Calculated
6	6	8.96	0 12:15	10.61	0.85	15.14	0.11	0.71	0.71	0.00		Calculated
7	7	8.96	0 12:15	15.49	0.58	20.42	0.04	0.55	0.55	0.00		Calculated
8	8	4.55	0 12:15	7.54	0.60	10.08	0.32	0.56	0.56	0.00		Calculated
9	9	0.78	0 12:10	8.59	0.09	6.80	0.13	0.20	0.20	0.00		Calculated
10	10	3.83	0 12:15	9.77	0.39	11.68	0.02	0.43	0.43	0.00		Calculated
11	11	12.53	0 12:07	11.64	1.08	10.96	0.13	1.25	1.00	22.00		SURCHARGED
12	12	7.58	0 12:25	7.06	1.07	10.35	0.14	1.00	1.00	24.00		SURCHARGED
13	13	11.18	0 12:10	23.96	0.47	29.98	0.01	0.48	0.48	0.00		Calculated
14	14	6.82	0 12:15	7.99	0.85	11.42	0.06	0.71	0.71	0.00		Calculated
15	15	5.25	0 12:19	4.93	1.06	7.32	0.41	1.00	1.00	16.00		SURCHARGED
16	16	1.25	0 12:30	6.69	0.19	6.54	0.94	0.29	0.29	0.00		Calculated
17	17	1.25	0 12:30	6.69	0.19	6.52	0.16	0.29	0.29	0.00		Calculated
18	18	30.99	0 12:16	68.54	0.45	9.46	0.58	1.41	0.47	0.00		Calculated
19	19	21.47	0 12:21	49.27	0.44	6.73	0.46	1.38	0.46	0.00		Calculated
20	20	20.59	0 12:20	49.33	0.42	6.68	1.15	1.35	0.45	0.00		Calculated
21	21	13.54	0 12:15	16.11	0.84	10.21	0.15	1.05	0.70	0.00		Calculated
22	22	2.04	0 12:59	1.91	1.07	4.03	0.16	0.83	1.00	78.00		SURCHARGED
23	23	4.07	0 12:38	3.91	1.04	8.38	0.31	0.83	1.00	46.00		SURCHARGED
24	24	5.16	0 12:34	4.89	1.05	10.39	0.24	0.83	1.00	37.00		SURCHARGED
25	25	5.02	0 12:22	4.74	1.06	10.12	0.32	0.83	1.00	21.00		SURCHARGED
26	26	2.22	0 12:10	3.75	0.59	7.21	0.39	0.46	0.55	0.00		Calculated
27	28	0.73	0 12:15	11.02	0.07	7.92	0.13	0.17	0.17	0.00		Calculated
28	29	3.74	0 12:10	5.29	0.71	7.30	0.02	0.62	0.62	0.00		Calculated
29	30	0.87	0 12:10	16.03	0.05	6.97	0.04	0.20	0.16	0.00		Calculated
30	31	1.53	0 12:10	13.55	0.11	7.32	0.05	0.28	0.23	0.00		Calculated
31	32	1.83	0 12:36	1.73	1.06	2.59	0.61	1.00	1.00	52.00		SURCHARGED
32	33	2.82	0 12:08	2.63	1.07	4.00	0.73	1.00	1.00	3.00		SURCHARGED
33	34	1.67	0 12:10	1.95	0.86	6.26	0.06	0.48	0.71	0.00		Calculated
34	35	3.30	0 12:03	3.13	1.06	2.94	0.07	1.25	1.00	13.00		SURCHARGED
35	36	0.67	0 12:10	2.89	0.23	6.76	0.04	0.22	0.33	0.00		Calculated
36	37	1.38	0 12:10	2.73	0.50	3.50	0.45	0.50	0.50	0.00		Calculated
37	38	5.97	0 12:16	7.60	0.79	10.72	0.07	0.67	0.67	0.00		Calculated
38	39	3.55	0 12:01	3.35	1.06	7.09	0.13	0.83	1.00	15.00		SURCHARGED
39	40	1.87	0 11:15	1.73	1.08	2.58	0.90	1.00	1.00	234.00		SURCHARGED
40	41	1.71	0 12:10	9.05	0.19	8.84	0.09	0.29	0.29	0.00		Calculated
41	42	6.44	0 12:19	7.77	0.83	11.05	0.03	0.69	0.70	0.00		Calculated
42	43	3.88	0 12:10	7.86	0.49	6.37	0.10	0.62	0.50	0.00		Calculated
43	44	1.87	0 11:17	1.73	1.08	2.59	1.29	1.00	1.00	225.00		SURCHARGED
44	45	1.86	0 12:55	1.73	1.08	2.54	0.18	1.00	1.00	68.00		SURCHARGED
45	46	3.14	0 12:20	13.96	0.22	14.35	0.00	0.32	0.32	0.00		Calculated
46	47	6.76	0 12:15	7.57	0.89	10.90	0.12	0.74	0.74	0.00		Calculated
47	48	0.94	0 12:15	8.50	0.11	4.56	0.17	0.28	0.22	0.00		Calculated
48	49	3.05	0 12:37	2.97	1.03	5.69	0.20	0.86	0.91	0.00		> CAPACITY
49	50	3.14	0 12:10	2.91	1.08	9.53	0.43	0.51	1.00	11.00		SURCHARGED
50	51	5.48	0 13:30	5.15	1.06	4.89	0.57	1.25	1.00	86.00		SURCHARGED
51	52	4.44	0 12:16	4.13	1.07	3.95	0.68	1.25	1.00	43.00		SURCHARGED
52	53	0.00	0 00:00	2.39	0.00	0.00		0.00	0.00	0.00		Calculated
53	54	4.10	0 12:19	3.84	1.07	3.63	0.41	1.25	1.00	13.00		SURCHARGED
54	55	4.53	0 12:11	4.47	1.01	4.19	0.07	1.02	0.91	0.00		> CAPACITY
55	56	3.31	0 13:48	3.10	1.07	4.82	0.26	1.00	1.00	111.00		SURCHARGED
56	57	3.74	0 12:58	3.52	1.06	6.25	0.40	0.82	0.95	0.00		> CAPACITY
57	58	4.65	0 11:58	4.48	1.04	14.48	0.15	0.34	1.00	30.00		SURCHARGED
58	60	0.91	0 12:21	1.79	0.51	2.32	1.16	0.50	0.50	0.00		Calculated
59	61	2.06	0 12:16	1.93	1.07	2.90	0.99	0.93	0.94	0.00		> CAPACITY
60	62	2.16	0 12:10	3.57	0.61	4.75	0.09	0.56	0.56	0.00		Calculated
61	63	0.95	0 12:10	3.33	0.29	3.66	0.38	0.36	0.37	0.00		Calculated
62	64	0.99	0 12:18	0.93	1.06	5.48	0.12	0.50	1.00	17.00		SURCHARGED
63	65	0.87	0 15:24	0.80	1.08	4.72	0.07	0.50	1.00	258.00		SURCHARGED
64	66	1.16	0 12:50	1.08	1.07	6.42	0.42	0.50	1.00	54.00		SURCHARGED
65	67	6.01	0 12:10	9.10	0.66	12.38	0.16	0.59	0.59	0.00		Calculated
66	68	10.17	0 12:10	12.27	0.83	17.46	0.03	0.69	0.69	0.00		Calculated
67	69	1.88	0 00:01	9.26	0.20	6.01	0.02	0.37	0.30	0.00		Calculated
68	Pipe - (46)	3.59	0 12:12	3.35	1.07	7.06	0.07	0.83	1.00	8.00		SURCHARGED
69	Pipe - (57)	4.42	0 12:20	5.81	0.76	8.14	0.03	0.65	0.65	0.00		Calculated

Inlet Input

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft^2)	Grate Clogging Factor (%)
1	EX AD-01	FHWA HEC-22 GENERIC	N/A	On Sag	1	48.99	50.35	1.36	48.99	0.00	10.00	0.00
2	EX AD-02	FHWA HEC-22 GENERIC	N/A	On Sag	1	38.94	41.64	2.70	38.94	0.00	10.00	0.00
3	EX AD-03	FHWA HEC-22 GENERIC	N/A	On Sag	1	38.33	41.58	3.25	38.33	0.00	10.00	0.00
4	EX CB-01	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.95	43.15	3.20	39.95	0.00	10.00	0.00
5	EX CB-02	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.91	46.16	3.25	42.91	0.00	10.00	0.00
6	EX CB-03	FHWA HEC-22 GENERIC	N/A	On Sag	1	45.23	50.58	5.35	45.23	0.00	10.00	0.00
7	EX CB-04	FHWA HEC-22 GENERIC	N/A	On Sag	1	49.36	52.56	3.20	49.36	0.00	10.00	0.00
8	EX CB-05	FHWA HEC-22 GENERIC	N/A	On Sag	1	46.08	49.28	3.20	46.08	0.00	10.00	0.00
9	EX CB-06	FHWA HEC-22 GENERIC	N/A	On Sag	1	48.27	50.17	1.90	48.27	0.00	10.00	0.00
10	EX CB-07	FHWA HEC-22 GENERIC	N/A	On Sag	1	47.02	48.85	1.83	47.02	0.00	10.00	0.00
11	EX CB-08	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.39	42.44	2.05	40.39	0.00	10.00	0.00
12	EX CB-09	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.46	42.23	1.77	40.46	0.00	10.00	0.00
13	EX CB-10	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.79	42.76	2.97	39.79	0.00	10.00	0.00
14	EX CB-11	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.38	43.38	3.00	40.38	0.00	10.00	0.00
15	EX CB-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.59	51.00	11.41	39.59	0.00	10.00	0.00
16	EX CB-13	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.70	43.70	3.00	40.70	0.00	10.00	0.00
17	EX CB-14	FHWA HEC-22 GENERIC	N/A	On Sag	1	41.38	44.38	3.00	41.38	0.00	10.00	0.00
18	EX CB-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	43.35	45.35	2.00	43.35	0.00	10.00	0.00
19	EX CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.48	48.52	6.04	42.48	0.00	10.00	0.00
20	EX CB-17	FHWA HEC-22 GENERIC	N/A	On Sag	1	60.27	66.63	6.36	60.27	0.00	10.00	0.00
21	EX CB-18	FHWA HEC-22 GENERIC	N/A	On Sag	1	67.91	70.91	3.00	67.91	0.00	10.00	0.00
22	EX CB-19	FHWA HEC-22 GENERIC	N/A	On Sag	1	72.15	75.35	3.20	72.15	0.00	10.00	0.00
23	EX CB-20	FHWA HEC-22 GENERIC	N/A	On Sag	1	68.49	70.22	1.73	68.49	0.00	10.00	0.00
24	EX CB-21	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.12	48.12	4.00	44.12	0.00	10.00	0.00
25	EX CB-22	FHWA HEC-22 GENERIC	N/A	On Sag	1	46.96	49.96	3.00	46.96	0.00	10.00	0.00
26	EX CB-23	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.71	47.30	2.59	44.71	0.00	10.00	0.00
27	EX CB-24	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.76	47.76	3.00	44.76	0.00	10.00	0.00
28	EX CB-25	FHWA HEC-22 GENERIC	N/A	On Sag	1	56.31	60.41	4.10	56.31	0.00	10.00	0.00
29	EX CB-26	FHWA HEC-22 GENERIC	N/A	On Sag	1	58.26	60.86	2.60	58.26	0.00	10.00	0.00
30	EX CB-27	FHWA HEC-22 GENERIC	N/A	On Sag	1	61.52	63.57	2.05	61.52	0.00	10.00	0.00
31	EX CB-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	51.31	54.56	3.25	51.31	0.00	10.00	0.00
32	EX CB-29	FHWA HEC-22 GENERIC	N/A	On Sag	1	45.55	48.30	2.75	45.55	0.00	10.00	0.00
33	EX CB-30	FHWA HEC-22 GENERIC	N/A	On Sag	1	72.50	75.50	3.00	72.50	0.00	10.00	0.00
34	EX CB-31	FHWA HEC-22 GENERIC	N/A	On Sag	1	67.80	70.80	3.00	67.80	0.00	10.00	0.00
35	EX CB-32	FHWA HEC-22 GENERIC	N/A	On Sag	1	77.70	80.70	3.00	77.70	0.00	10.00	0.00
36	EX CB-33	FHWA HEC-22 GENERIC	N/A	On Sag	1	76.00	79.40	3.40	76.00	0.00	10.00	0.00

Roadway & Gutter Input

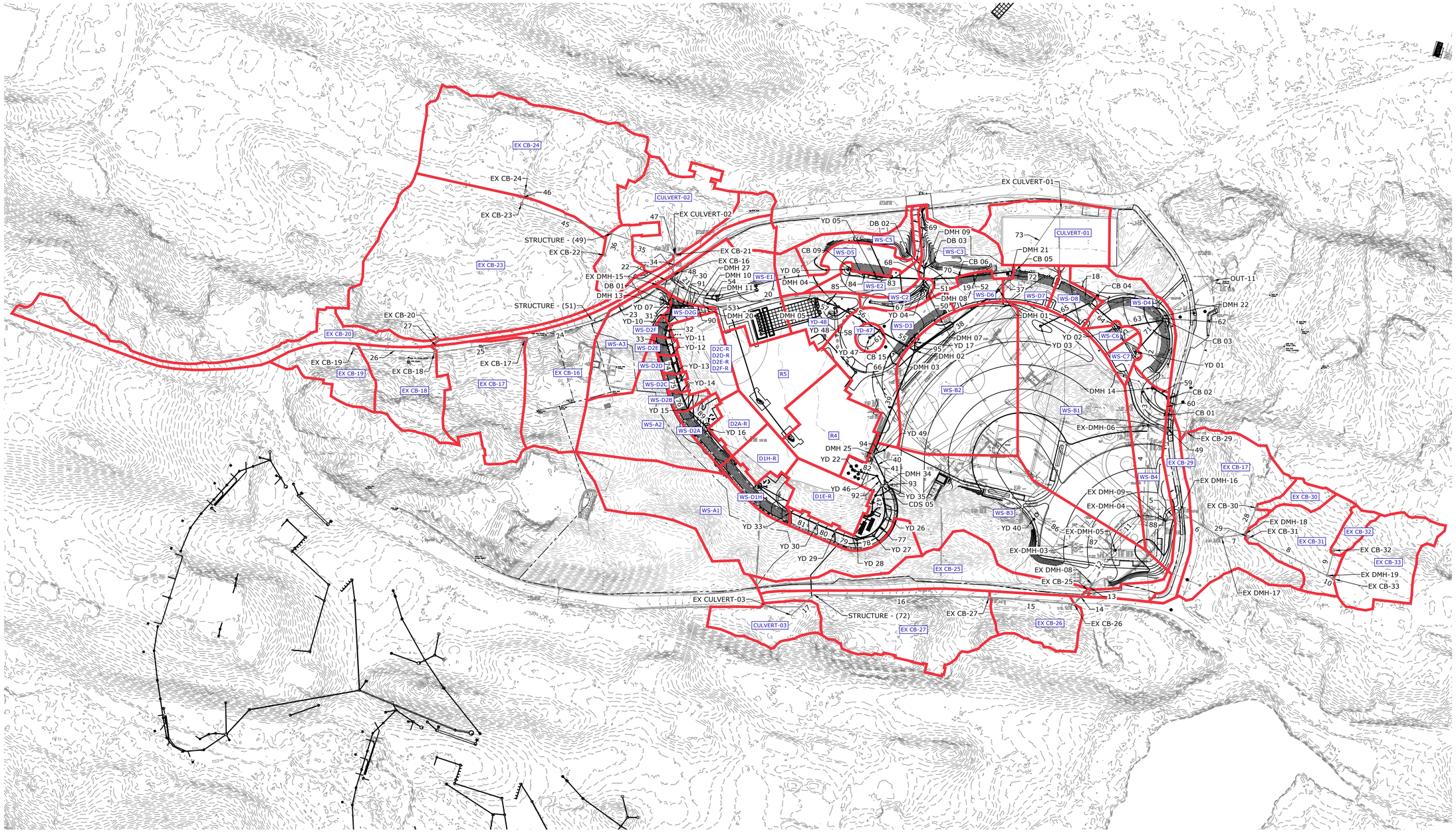
SN	Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1	EX AD-01	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
2	EX AD-02	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
3	EX AD-03	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
4	EX CB-01	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
5	EX CB-02	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
6	EX CB-03	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
7	EX CB-04	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
8	EX CB-05	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
9	EX CB-06	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
10	EX CB-07	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
11	EX CB-08	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
12	EX CB-09	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
13	EX CB-10	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
14	EX CB-11	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
15	EX CB-12	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
16	EX CB-13	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
17	EX CB-14	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
18	EX CB-15	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
19	EX CB-16	N/A	0.0200	0.0130	0.0500	2.00	0.0656	7.00
20	EX CB-17	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
21	EX CB-18	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
22	EX CB-19	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
23	EX CB-20	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
24	EX CB-21	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
25	EX CB-22	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
26	EX CB-23	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
27	EX CB-24	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
28	EX CB-25	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
29	EX CB-26	N/A	0.0200	0.0130	0.0500	2.00	0.0656	7.00
30	EX CB-27	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
31	EX CB-28	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
32	EX CB-29	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
33	EX CB-30	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
34	EX CB-31	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
35	EX CB-32	N/A	0.0200	0.0130	0.0200	2.00	0.0656	7.00
36	EX CB-33	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00

Inlet Results

SN	Element ID	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Max Depth Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	EX AD-01	0.67	0.67	N/A	N/A	N/A	5.09	50.46	0.11	0 12:10	0.00	0.00
2	EX AD-02	7.34	7.34	N/A	N/A	N/A	27.00	42.19	0.55	0 12:14	0.00	0.00
3	EX AD-03	6.07	6.07	N/A	N/A	N/A	23.71	42.06	0.48	0 12:17	0.00	0.00
4	EX CB-01	10.14	10.14	N/A	N/A	N/A	30.26	43.77	0.62	0 12:10	0.00	0.00
5	EX CB-02	0.94	0.94	N/A	N/A	N/A	5.79	46.29	0.13	0 12:15	0.00	0.00
6	EX CB-03	3.89	3.89	N/A	N/A	N/A	15.74	50.90	0.32	0 12:10	0.00	0.00
7	EX CB-04	1.54	1.54	N/A	N/A	N/A	8.23	52.73	0.17	0 12:10	0.00	0.00
8	EX CB-05	6.40	6.40	N/A	N/A	N/A	22.14	49.73	0.45	0 12:19	0.00	0.00
9	EX CB-06	1.67	1.67	N/A	N/A	N/A	8.74	50.35	0.18	0 12:10	0.00	0.00
10	EX CB-07	1.39	1.39	N/A	N/A	N/A	7.68	49.01	0.16	0 12:10	0.00	0.00
11	EX CB-08	2.15	2.15	N/A	N/A	N/A	10.44	42.66	0.22	0 12:10	0.00	0.00
12	EX CB-09	0.96	0.96	N/A	N/A	N/A	5.87	42.36	0.13	0 12:10	0.00	0.00
13	EX CB-10	0.43	0.43	N/A	N/A	N/A	2.49	42.82	0.06	0 12:10	0.00	0.00
14	EX CB-11	7.70	7.70	N/A	N/A	N/A	25.12	43.89	0.51	0 11:44	0.00	0.00
15	EX CB-12	6.02	6.02	N/A	N/A	N/A	21.22	51.43	0.43	0 10:57	0.00	0.00
16	EX CB-13	0.91	0.91	N/A	N/A	N/A	5.67	43.82	0.12	0 12:19	0.00	0.00
17	EX CB-14	4.42	4.42	N/A	N/A	N/A	17.19	44.73	0.35	0 12:20	0.00	0.00
18	EX CB-15	6.47	6.47	N/A	N/A	N/A	22.30	45.81	0.46	0 11:46	0.00	0.00
19	EX CB-16	5.68	5.68	N/A	N/A	N/A	20.41	49.02	0.50	0 11:41	0.00	0.00
20	EX CB-17	4.22	4.22	N/A	N/A	N/A	16.63	66.97	0.34	0 11:55	0.00	0.00
21	EX CB-18	3.82	3.82	N/A	N/A	N/A	15.53	71.23	0.32	0 11:59	0.00	0.00
22	EX CB-19	2.23	2.23	N/A	N/A	N/A	10.71	75.57	0.22	0 12:10	0.00	0.00
23	EX CB-20	4.17	4.17	N/A	N/A	N/A	16.52	70.56	0.34	0 12:04	0.00	0.00
24	EX CB-21	2.18	2.18	N/A	N/A	N/A	10.54	48.34	0.22	0 11:16	0.00	0.00
25	EX CB-22	1.71	1.71	N/A	N/A	N/A	8.90	50.15	0.19	0 12:10	0.00	0.00
26	EX CB-23	15.97	15.97	N/A	N/A	N/A	41.16	48.13	0.83	0 11:06	0.00	0.00
27	EX CB-24	10.89	10.89	N/A	N/A	N/A	31.76	48.41	0.65	0 11:46	0.00	0.00
28	EX CB-25	4.45	4.45	N/A	N/A	N/A	17.27	60.77	0.36	0 12:15	0.00	0.00
29	EX CB-26	1.89	1.89	N/A	N/A	N/A	9.52	61.14	0.28	0 12:03	0.00	0.00
30	EX CB-27	7.45	7.45	N/A	N/A	N/A	24.55	64.07	0.50	0 12:02	0.00	0.00
31	EX CB-28	0.87	0.87	N/A	N/A	N/A	5.48	54.68	0.12	0 12:10	0.00	0.00
32	EX CB-29	6.79	6.79	N/A	N/A	N/A	23.04	48.77	0.47	0 12:15	0.00	0.00
33	EX CB-30	0.73	0.73	N/A	N/A	N/A	4.81	75.61	0.11	0 12:15	0.00	0.00
34	EX CB-31	3.74	3.74	N/A	N/A	N/A	15.31	71.12	0.32	0 12:10	0.00	0.00
35	EX CB-32	0.78	0.78	N/A	N/A	N/A	6.54	80.89	0.19	0 12:10	0.00	0.00
36	EX CB-33	3.83	3.83	N/A	N/A	N/A	15.57	79.72	0.32	0 12:15	0.00	0.00

LEGEND

WATERSHED BOUNDARY



0 100' 200'

SCALE: 1" = 100'

Tighe&Bond

GREENWICH CENTRAL MIDDLE SCHOOL

Greenwich, CT

MARK	DATE	DESCRIPTION

PROJECT NO:	G5068-003
DATE:	09/26/2023
FILE:	G5068-003-PR-HYDRAULIC.dwg
DRAWN BY:	PAR
DESIGNED/CHECKED BY:	APW
APPROVED BY:	JWB

PROPOSED HYDRAULIC ANALYSIS

SCALE: AS SHOWN

WM-04

Last Saved: 4/10/2024
Plotted On: Apr 10, 2024 - 1:14pm By: PAReady
File: K:\Civil\G5068 Greenwich Public Schools\003 Central Middle School\Design\Stormwater\Schematic\Stormwater\G5068-003-PR-HYDRAULIC.dwg

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-16**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.315	98	30.831
Wooded - Group B	0.293	60	17.581
Landscaped and Lawns - Group B	0.524	69	36.138
	1.131		84.550

Weighted CN: 75

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	93	0.183	8.2
Segment B - C	0.24	97	0.119	6.7

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment C - D	paved	0.07	5.38	374	1.2

Total Tc = 16.1

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-17**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.185	98	18.133
Wooded - Group B	0.084	60	5.021
Landscaped and Lawns - Group B	0.629	69	43.397
	0.898		66.551

Weighted CN: 74

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	62	0.137	4.4
Segment B - C	0.4	85	0.218	7.1
Segment C - D	0.24	99	0.116	6.9

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment D - E	paved	0.13	7.33	69	0.2

Total Tc = 18.6

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-18**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.186	98	18.219
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.410	69	28.256
	0.595		46.474

Weighted CN: 78

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	87	0.34	4.0

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.05	4.55	129	0.5

Total Tc = 4.5
Total Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-19**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.066	98	6.515
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.325	69	22.428
	0.392		28.944

Weighted CN: 74

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	153	0.239	7.3

Total Tc = 7.3

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-20**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.358	98	35.047
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.224	69	15.454
	0.582		50.501

Weighted CN: 87

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	39	0.14	3.0

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.029	3.46	228	1.1

Total Tc = 4.1
Total Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-21**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.215	98	21.049
Wooded - Group B	0.054	60	3.248
Landscaped and Lawns - Group B	0.031	69	2.172
	0.300		26.468

Weighted CN: 88

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	39	0.179	4.1

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.03	3.52	222	1.1

Total Tc = 5.2

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-22**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.126	98	12.374
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.125	69	8.658
	0.252		21.032

Weighted CN: 84

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	68	0.11	5.2

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.016	2.57	63	0.4

Total Tc = 5.6

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-23**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.681	98	66.773
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	2.490	69	171.839
	3.172		238.613

Weighted CN: 75

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	241	0.106	14.6

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.024	3.15	324	1.7

Total Tc = 16.3

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-24**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.000	98	0.000
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.000	69	0.000
	0.000		0.000

Weighted CN: #DIV/0!

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	182	0.091	12.4

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.008	1.82	212	1.9

Total Tc = 14.3

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-25**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.184	98	18.032
Wooded - Group B	0.471	60	28.260
Landscaped and Lawns - Group B	0.149	69	10.281
	0.804		56.573

Weighted CN: 70

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	300	0.043	2.7

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.009	1.93	325	2.8

Total Tc = 5.5

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-26**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.000	98	0.000
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.000	69	0.000
	0.000		0.000

Weighted CN: #DIV/0!

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	111	0.163	9.9

Total Tc = 9.9

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-27**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.436	98	42.680
Wooded - Group B	0.413	60	24.763
Landscaped and Lawns - Group B	0.353	69	24.381
	1.202		91.825

Weighted CN: 76

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	52	0.298	4.3

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.054	4.72	377	1.3

Total Tc = 5.6

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-28**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.096	98	9.406
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.016	69	1.109
	0.112		10.515

Weighted CN: 94

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	217	0.025	2.6

Total Tc = 2.6
Total Tc (min.) = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-29**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.370	98	36.255
Wooded - Group B	0.265	60	15.871
Landscaped and Lawns - Group B	0.670	69	46.249
	1.305		98.374

Weighted CN: 75

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	228	0.107	13.9

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.034	3.75	304	1.4

Total Tc = 15.2

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-30**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.057	98	5.613
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.068	69	4.678
	0.125		10.291

Weighted CN: 82

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	83	0.035	9.7
Segment B - C	0.015	18	0.067	0.2
Segment C - D	0.24	80	0.1	6.2

Total Tc = 16.1

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-31**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.282	98	27.611
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.317	69	21.875
	0.599		49.487

Weighted CN: 83

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	114	0.082	8.9

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.058	4.90	170	0.6

Total Tc = 9.5

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CB-32**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.106	98	10.388
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.000	69	0.000
	0.106		10.388

Weighted CN: 98

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	126	0.094	9.1

Total Tc = 9.1

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CB-33**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.225	98	22.030
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.442	69	30.523
	0.667		52.552

Weighted CN: 79

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	163	0.071	12.5

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	paved	0.038	3.96	134	0.6

Total Tc = 13.1

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CULVERT-01**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.516	98	50.611
Wooded - Group B	0.176	60	10.576
Landscaped and Lawns - Group B	0.024	69	1.652
	0.717		62.839

Weighted CN: 88

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	183	0.067	21.1

Total Tc = 21.1

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **EX-CULVERT-02**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.094	98	9.190
Wooded - Group B	0.245	60	14.729
Landscaped and Lawns - Group B	0.470	69	32.396
	0.809		56.315

Weighted CN: 70

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	238	0.079	24.4

Total Tc = 24.4

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX-CULVERT-03**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.000	98	0.000
Wooded - Group B	0.000	60	0.000
Landscaped and Lawns - Group B	0.371	69	25.585
	0.371		25.585

Weighted CN: 69

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	193	0.023	33.8

Total Tc = 33.8

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **YD-03**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.036	98	3.57
Landscaped and Lawns - Group B	2.014	69	138.98
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.000	60	0.00
Wooded - Group C	0.000	73	0.00
	2.051		142.555

Weighted CN: 70

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	300	0.02	33.8

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	unpaved	0.01	1.61	202	2.1

Total Tc = 35.9

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **YD-35**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.058	98	5.64
Landscaped and Lawns - Group B	0.211	69	14.57
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	1.841	60	110.46
Wooded - Group C	0.000	73	0.00
	2.110		130.668

Weighted CN: 62

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	300	0.133	23.9

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	unpaved	0.11	5.35	9	0.0

Total Tc = 23.9

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **PAR** Date: **September 25, 2023**

Designation: **YD-40**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.057	98	5.60
Landscaped and Lawns - Group B	0.840	69	57.99
Landscaped and Lawns - Group C	0.000	79	0.00
Wooded - Group B	0.188	60	11.29
Wooded - Group C	0.000	73	0.00
	1.086		74.883

Weighted CN: 69

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	218	0.023	24.8

Total Tc = 24.8

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **YD-49**
Location:

Cover Type	Area, ac	CN	A x CN
Impervious	0.432	98	42.36
Landscaped and Lawns - Group B	0.472	69	32.58
Landscaped and Lawns - Group C	0.031	79	2.43
Wooded - Group B	0.138	60	8.26
Wooded - Group C	0.000	73	0.02
	1.073		85.643

Weighted CN: 80

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	189	0.021	22.9
Segment B - C	0.015	46	0.011	1.0

Total Tc = 24.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Project Description

File Name ..... GCMS - SSA 4-9-2024_REV.SPF
Description .....
GCMS - SSA 4-9-2024_REV.SPF

Project Options

Flow Units ..... CFS
Elevation Type ..... Elevation
Hydrology Method ..... SCS TR-55
Time of Concentration (TOC) Method ..... User-Defined
Link Routing Method ..... Kinematic Wave
Enable Overflow Ponding at Nodes ..... YES
Skip Steady State Analysis Time Periods ... NO

Analysis Options

Start Analysis On	Apr 09, 2024	00:00:00
End Analysis On	Apr 10, 2024	00:00:00
Start Reporting On	Apr 09, 2024	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	10	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins.....	24
Nodes.....	94
Junctions	41
Outfalls	1
Flow Diversions	0
Inlets	52
Storage Nodes	0
Links.....	93
Channels	0
Pipes	93
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	25YR	Cumulative	inches	Connecticut	Fairfield	25	6.40	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-EX CB-17	0.90	484.00	74.13	6.40	3.54	3.18	2.57	0 00:18:36
2	Sub-EX CB-18	0.60	484.00	78.05	6.40	3.94	2.35	2.42	0 00:05:00
3	Sub-EX CB-19	0.39	484.00	73.90	6.40	3.51	1.37	1.39	0 00:07:18
4	Sub-EX CB-20	0.58	484.00	86.84	6.40	4.88	2.84	2.81	0 00:05:00
5	Sub-EX CB-21	0.30	484.00	88.16	6.40	5.03	1.51	1.48	0 00:05:12
6	Sub-EX CB-22	0.25	484.00	87.20	6.40	4.92	1.24	1.20	0 00:05:36
7	Sub-EX CB-23	3.17	484.00	75.23	6.40	3.65	11.57	9.79	0 00:16:18
8	Sub-EX CB-24	2.08	484.00	74.60	6.40	3.59	7.46	6.57	0 00:14:18
9	Sub-EX CB-25	0.80	484.00	70.36	6.40	3.16	2.54	2.66	0 00:05:30
10	Sub-EX CB-26	0.42	484.00	64.95	6.40	2.64	1.11	1.07	0 00:09:54
11	Sub-EX CB-27	1.20	484.00	76.43	6.40	3.77	4.53	4.68	0 00:05:36
12	Sub-EX CB-29	1.31	484.00	75.39	6.40	3.67	4.78	4.14	0 00:15:12
13	Sub-EX CB-30	0.13	484.00	82.22	6.40	4.38	0.55	0.47	0 00:16:06
14	Sub-EX CB-31	0.60	484.00	82.65	6.40	4.43	2.65	2.54	0 00:09:30
15	Sub-EX CB-32	0.11	484.00	98.00	6.40	6.16	0.65	0.56	0 00:09:06
16	Sub-EX CB-33	0.67	484.00	78.78	6.40	4.02	2.68	2.40	0 00:13:06
17	Sub-EX CULVERT-01	0.72	484.00	87.69	6.40	4.98	3.56	2.68	0 00:21:06
18	Sub-EX CULVERT-02	0.81	484.00	69.64	6.40	3.09	2.50	1.82	0 00:24:24
19	Sub-EX CULVERT-03	0.37	484.00	69.00	6.40	3.03	1.12	0.71	0 00:33:47
20	Sub-EX-CB-16	1.13	484.00	74.74	6.40	3.60	4.07	3.47	0 00:16:06
21	Sub-YD 03	2.05	484.00	70.00	6.40	3.13	6.41	3.96	0 00:35:54
22	Sub-YD 35	2.11	484.00	62.00	6.40	2.37	4.99	3.57	0 00:23:54
23	Sub-YD 40	1.09	484.00	69.00	6.40	3.03	3.29	2.39	0 00:24:48
24	Sub-YD 49	0.79	484.00	78.00	6.40	3.93	3.09	2.28	0 00:24:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	CDS-05	Junction	42.88	46.54	42.88	46.54	0.00	3.30	43.67	0.00	2.87	0 00:00	0.00	0.00
2	DB 02	Junction	43.50	46.00	43.50	46.00	0.00	0.53	43.65	0.00	2.35	0 00:00	0.00	0.00
3	DB 03	Junction	42.50	46.00	42.50	46.00	0.00	0.65	42.65	0.00	3.35	0 00:00	0.00	0.00
4	DB01	Junction	46.80	49.00	46.80	49.00	0.00	2.39	47.06	0.00	1.94	0 00:00	0.00	0.00
5	DMH 02	Junction	39.57	45.10	39.57	45.10	0.00	21.33	41.54	0.00	3.56	0 00:00	0.00	0.00
6	DMH 04	Junction	41.54	44.81	41.54	44.81	0.00	4.99	42.45	0.00	2.36	0 00:00	0.00	0.00
7	DMH 05	Junction	41.98	45.50	41.98	45.50	0.00	3.50	42.64	0.00	2.86	0 00:00	0.00	0.00
8	DMH 07	Junction	38.34	46.35	38.34	46.35	0.00	26.76	40.13	0.00	6.22	0 00:00	0.00	0.00
9	DMH 08	Junction	39.25	46.30	39.25	46.30	0.00	6.83	41.32	0.00	4.98	0 00:00	0.00	0.00
10	DMH 09	Junction	39.58	47.80	39.58	47.80	0.00	1.31	39.98	0.00	7.82	0 00:00	0.00	0.00
11	DMH 10	Junction	41.36	46.10	41.36	46.10	0.00	3.49	42.21	0.00	3.89	0 00:00	0.00	0.00
12	DMH 11	Junction	41.50	47.27	41.50	47.27	0.00	3.15	42.27	0.00	5.00	0 00:00	0.00	0.00
13	DMH 13	Junction	43.54	48.60	43.54	48.60	0.00	6.39	44.84	0.00	3.76	0 00:00	0.00	0.00
14	DMH 14	Junction	39.20	46.50	39.20	46.50	0.00	8.21	46.50	0.00	0.00	0 11:55	1.56	73.00
15	DMH 21	Junction	37.33	47.50	37.33	47.50	0.00	48.09	39.29	0.00	8.21	0 00:00	0.00	0.00
16	DMH 22	Junction	34.39	44.05	34.39	44.35	0.00	61.98	40.56	0.00	3.49	0 00:00	0.00	0.00
17	DMH 25	Junction	41.95	46.25	41.95	46.25	0.00	9.00	43.62	0.00	2.63	0 00:00	0.00	0.00
18	DMH 32	Junction	37.85	47.10	37.85	47.10	0.00	21.32	39.53	0.00	7.57	0 00:00	0.00	0.00
19	DMH 33	Junction	40.80	45.10	40.80	45.10	0.00	5.86	41.74	0.00	3.36	0 00:00	0.00	0.00
20	DMH 34	Junction	42.82	46.54	42.82	46.54	0.00	6.80	43.94	0.00	2.60	0 00:00	0.00	0.00
21	DMH-20	Junction	40.50	46.50	40.50	46.50	0.00	19.54	43.06	0.00	3.44	0 00:00	0.00	0.00
22	DMH-27	Junction	43.12	46.90	43.12	46.90	0.00	6.44	44.01	0.00	2.89	0 00:00	0.00	0.00
23	EX CULVERT-01	Junction	44.45	51.00	44.45	51.00	0.00	0.50	44.64	0.00	6.36	0 00:00	0.00	0.00
24	EX CULVERT-02	Junction	45.17	48.12	45.17	48.12	0.00	0.00	45.17	0.00	2.95	0 00:00	0.00	0.00
25	EX CULVERT-03	Junction	74.59	79.80	74.59	79.80	0.00	0.00	74.59	0.00	5.21	0 00:00	0.00	0.00
26	EX DMH-08	Junction	49.80	53.44	49.80	53.44	0.00	8.09	53.44	0.00	0.00	0 12:10	0.79	37.00
27	EX DMH-15	Junction	47.26	49.46	47.26	49.46	0.00	7.73	49.46	0.00	0.00	0 12:10	1.12	31.00
28	EX DMH-16	Junction	51.42	55.52	51.42	55.52	0.00	5.77	52.18	0.00	3.34	0 00:00	0.00	0.00
29	EX DMH-17	Junction	59.48	65.68	59.48	65.68	0.00	5.78	60.04	0.00	5.64	0 00:00	0.00	0.00
30	EX DMH-18	Junction	67.60	71.75	67.60	71.75	0.00	5.78	68.10	0.00	3.65	0 00:00	0.00	0.00
31	EX DMH-19	Junction	75.00	79.50	75.00	79.50	0.00	2.92	75.45	0.00	4.05	0 00:00	0.00	0.00
32	EX-DMH-03	Junction	45.59	51.20	45.59	51.20	0.00	2.36	51.20	0.00	0.00	0 12:25	0.21	27.00
33	EX-DMH-04	Junction	42.74	53.90	42.74	53.90	0.00	12.83	48.14	0.00	5.76	0 00:00	0.00	0.00
34	EX-DMH-05	Junction	45.24	56.50	45.24	56.50	0.00	7.42	56.50	0.00	0.00	0 12:34	0.09	27.00
35	EX-DMH-06	Junction	39.48	49.10	39.48	49.10	0.00	16.93	49.10	0.00	0.00	0 12:15	5.30	58.00
36	EX-DMH-09	Junction	50.43	55.54	50.43	55.54	0.00	5.77	51.05	0.00	4.49	0 00:00	0.00	0.00
37	Structure - (49)	Junction	44.35	47.16	44.35	47.16	0.00	2.79	47.16	0.00	0.00	0 12:10	0.73	149.00
38	Structure - (72)	Junction	72.65	79.80	72.65	79.80	0.00	5.04	73.34	0.00	6.46	0 00:00	0.00	0.00
39	Structure - (74)	Junction	39.17	51.00	39.17	51.00	0.00	0.50	39.36	0.00	11.64	0 00:00	0.00	0.00
40	Structure-(51)	Junction	53.92	58.20	53.92	58.20	0.00	7.88	58.20	0.00	0.00	0 12:10	0.02	9.00
41	YD 05	Junction	39.72	44.00	39.72	44.00	0.00	3.43	40.45	0.00	3.55	0 00:00	0.00	0.00
42	Out-11	Outfall	33.20					61.97	35.26					

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	1	Pipe	DMH 22	Out-11	132.32	34.39	33.20	0.9000	42.000	0.0130	61.97	95.41	0.65	10.55	2.05	0.59	0.00	Calculated
2	2	Pipe	DMH 14	DMH 22	151.20	39.20	38.66	0.3600	18.000	0.0130	6.79	6.28	1.08	4.18	1.50	1.00	69.00	SURCHARGED
3	3	Pipe	EX-DMH-06	DMH 14	84.48	39.48	39.20	0.3300	18.000	0.0130	6.53	6.05	1.08	4.02	1.50	1.00	55.00	SURCHARGED
4	4	Pipe	EX-DMH-04	EX-DMH-06	172.59	42.74	39.68	1.7700	18.000	0.0130	12.82	13.99	0.92	9.07	1.13	0.75	0.00	Calculated
5	5	Pipe	EX DMH-16	EX-DMH-09	30.66	51.42	50.43	3.2300	15.000	0.0130	5.77	11.61	0.50	9.44	0.62	0.50	0.00	Calculated
6	6	Pipe	EX DMH-17	EX DMH-16	106.65	59.48	51.62	7.3700	12.000	0.0130	5.77	9.67	0.60	12.86	0.56	0.56	0.00	Calculated
7	7	Pipe	EX DMH-18	EX DMH-17	49.77	67.60	59.58	16.1100	12.000	0.0130	5.78	14.30	0.40	17.25	0.44	0.44	0.00	Calculated
8	8	Pipe	EX DMH-19	EX DMH-18	193.78	75.00	67.60	3.8200	12.000	0.0130	2.92	6.96	0.42	8.50	0.45	0.45	0.00	Calculated
9	9	Pipe	EX CB-32	EX DMH-19	54.57	77.70	75.00	4.9500	12.000	0.0130	0.55	7.93	0.07	5.80	0.18	0.18	0.00	Calculated
10	10	Pipe	EX CB-33	EX DMH-19	15.61	76.00	75.00	6.4100	12.000	0.0130	2.40	9.02	0.27	9.71	0.35	0.35	0.00	Calculated
11	11	Pipe	EX-DMH-05	EX-DMH-04	64.18	45.24	42.84	3.7400	12.000	0.0130	7.21	6.89	1.05	10.16	0.92	0.93	0.00	> CAPACITY
12	12	Pipe	EX DMH-08	EX-DMH-05	122.99	49.80	46.89	2.3700	12.000	0.0130	5.87	5.48	1.07	8.16	1.00	1.00	32.00	SURCHARGED
13	13	Pipe	EX CB-25	EX DMH-08	27.32	56.31	50.50	21.2700	12.000	0.0130	8.09	16.43	0.49	20.83	0.50	0.50	0.00	Calculated
14	14	Pipe	EX CB-26	EX CB-25	42.02	58.26	56.46	4.2800	12.000	0.0130	5.59	7.37	0.76	10.33	0.65	0.65	0.00	Calculated
15	15	Pipe	EX CB-27	EX CB-26	178.14	61.52	58.61	1.6300	12.000	0.0130	4.92	4.55	1.08	6.80	1.00	1.00	33.00	SURCHARGED
16	16	Pipe	Structure - (72)	EX CB-27	368.97	72.65	61.57	3.0000	12.000	0.0130	5.03	6.17	0.81	8.77	0.68	0.69	0.00	Calculated
17	17	Pipe	EX CULVERT-03	Structure - (72)	64.50	74.59	72.65	3.0100	12.000	0.0130	0.00	6.18	0.00	0.00	0.00	0.00	0.00	Calculated
18	18	Pipe	DMH 21	DMH 22	326.74	37.33	34.39	0.9000	36.000	0.0130	48.08	63.27	0.76	9.85	1.95	0.65	0.00	Calculated
19	19	Pipe	DMH 07	DMH 21	176.15	38.34	37.48	0.4900	36.000	0.0130	26.75	46.60	0.57	6.82	1.63	0.54	0.00	Calculated
20	20	Pipe	DMH-20	DMH 07	464.70	40.50	38.34	0.4600	36.000	0.0130	19.52	45.47	0.43	6.19	1.37	0.46	0.00	Calculated
21	21	Pipe	EX-CB-16	DMH-20	90.70	42.48	40.65	2.0200	18.000	0.0130	9.98	14.92	0.67	9.05	0.90	0.60	0.00	Calculated
22	22	Pipe	EX DMH-15	EX-CB-16	31.83	47.26	46.88	1.1900	12.000	0.0130	4.19	3.89	1.08	5.74	1.00	1.00	29.00	SURCHARGED
23	23	Pipe	Structure-(51)	EX DMH-15	156.86	53.92	47.26	4.2500	12.000	0.0130	7.73	7.34	1.05	10.93	0.93	0.93	0.00	> CAPACITY
24	24	Pipe	EX CB-17	Structure-(51)	147.62	60.19	53.92	4.2500	12.000	0.0130	7.88	7.34	1.07	10.89	0.95	1.00	4.00	SURCHARGED
25	25	Pipe	EX CB-18	EX CB-17	191.61	67.83	60.19	3.9900	12.000	0.0130	6.46	7.11	0.91	10.29	0.75	0.75	0.00	Calculated
26	26	Pipe	EX CB-19	EX CB-18	169.89	72.07	67.83	2.5000	12.000	0.0130	1.32	5.63	0.24	5.86	0.33	0.33	0.00	Calculated
27	27	Pipe	EX CB-20	EX CB-18	29.11	68.41	67.83	1.9900	12.000	0.0130	2.78	5.03	0.55	6.56	0.53	0.53	0.00	Calculated
28	28	Pipe	EX CB-30	EX DMH-18	60.11	72.50	67.60	8.1500	12.000	0.0130	0.47	10.17	0.05	6.60	0.15	0.15	0.00	Calculated
29	29	Pipe	EX CB-31	EX DMH-18	10.66	67.80	67.60	1.8800	12.000	0.0130	2.42	4.88	0.50	6.20	0.50	0.50	0.00	Calculated
30	30	Pipe	DMH 13	DMH-27	49.96	43.54	43.12	0.8400	18.000	0.0130	6.38	9.63	0.66	5.84	0.89	0.60	0.00	Calculated
31	31	Pipe	YD 10	DMH 13	38.40	46.04	44.37	4.3500	15.000	0.0130	4.02	13.47	0.30	9.58	0.46	0.37	0.00	Calculated
32	32	Pipe	YD 11	YD 10	38.39	48.04	46.04	5.2100	15.000	0.0130	3.44	14.74	0.23	9.82	0.41	0.33	0.00	Calculated
33	33	Pipe	YD 12	YD 11	39.40	50.04	48.04	5.0800	12.000	0.0130	2.82	8.03	0.35	9.38	0.41	0.41	0.00	Calculated
34	34	Pipe	EX CB-21	EX-CB-16	47.49	44.12	42.48	3.4500	12.000	0.0130	3.06	6.62	0.46	8.27	0.48	0.48	0.00	Calculated
35	35	Pipe	Structure - (49)	EX CB-21	138.80	44.35	44.12	0.1700	12.000	0.0130	1.72	1.59	1.08	2.38	1.00	1.00	142.00	SURCHARGED
36	36	Pipe	EX CB-22	Structure - (49)	47.44	46.96	44.35	5.5000	12.000	0.0130	1.20	8.36	0.14	7.56	0.26	0.26	0.00	Calculated
37	37	Pipe	DMH 32	DMH 21	28.80	37.89	37.62	0.9400	24.000	0.0130	21.32	21.90	0.97	7.94	1.59	0.80	0.00	Calculated
38	38	Pipe	DMH 02	DMH 32	213.80	39.80	37.89	0.8900	24.000	0.0130	21.32	21.38	1.00	7.77	1.63	0.82	0.00	Calculated
39	39	Pipe	DMH 25	DMH 02	230.90	42.50	40.42	0.9000	18.000	0.0130	9.01	9.97	0.90	6.40	1.12	0.74	0.00	Calculated
40	40	Pipe	DMH 34	DMH 25	62.70	42.82	42.50	0.5100	18.000	0.0130	6.79	7.50	0.91	4.81	1.12	0.75	0.00	Calculated
41	41	Pipe	CDS-05	DMH 34	11.40	42.88	42.82	0.5300	15.000	0.0130	3.27	4.69	0.70	4.14	0.77	0.62	0.00	Calculated
42	42	Pipe	YD 26	CDS-05	65.26	45.04	43.16	2.8800	12.000	0.0130	3.11	6.05	0.51	7.90	0.50	0.51	0.00	Calculated
43	45	Pipe	EX CB-23	Structure - (49)	200.02	44.71	44.35	0.1800	12.000	0.0130	1.72	1.59	1.08	2.39	1.00	1.00	132.00	SURCHARGED
44	46	Pipe	EX CB-24	EX CB-23	28.17	44.76	44.71	0.1800	12.000	0.0130	1.70	1.59	1.07	2.37	1.00	1.00	50.00	SURCHARGED
45	47	Pipe	EX CULVERT-02	EX CB-21	3.83	45.17	44.67	13.0700	12.000	0.0130	0.00	12.88	0.00	0.00	0.00	0.00	0.00	Calculated
46	48	Pipe	DB01	DMH 13	16.48	46.80	43.54	19.7800	12.000	0.0130	2.62	15.85	0.17	15.39	0.26	0.27	0.00	Calculated
47	49	Pipe	EX CB-29	EX-DMH-06	56.67	45.55	43.34	3.9000	12.000	0.0130	4.11	7.04	0.58	9.30	0.55	0.55	0.00	Calculated
48	50	Pipe	DMH 08	DMH 07	14.44	39.25	39.15	0.6900	24.000	0.0130	6.83	18.82	0.36	5.51	0.83	0.42	0.00	Calculated
49	51	Pipe	CB 06	DMH 08	71.23	42.00	40.82	1.6600	12.000	0.0130	2.31	4.59	0.50	5.86	0.50	0.50	0.00	Calculated
50	52	Pipe	CB 05	CB 06	121.68	43.75	42.00	1.4400	12.000	0.0130	1.09	4.27	0.26	4.59	0.34	0.34	0.00	Calculated
51	53	Pipe	DMH 10	DMH-20	11.80	41.36	41.00	3.0500	12.000	0.0130	3.30	6.22	0.53	8.16	0.50	0.53	0.00	Calculated
52	54	Pipe	DMH 11	DMH 10	22.30	41.50	41.36	0.6500	12.000	0.0110	3.49	3.38	1.03	5.13	0.76	0.81	0.00	> CAPACITY
53	55	Pipe	DMH 33	DMH 02	81.10	40.80	39.99	1.0000	15.000	0.0130	5.86	6.46	0.91	5.96	0.93	0.75	0.00	Calculated
54	56	Pipe	DMH 04	DMH 33	95.50	41.54	40.80	0.7700	15.000	0.0130	4.81	5.69	0.85	5.20	0.88	0.71	0.00	Calculated
55	57	Pipe	DMH 05	DMH 04	44.30	41.98	41.54	0.9900	15.000	0.0130	3.50	6.44	0.54	5.36	0.66	0.53	0.00	Calculated
56	58	Pipe	YD 48	DMH 04	4.30	41.58	41.54	0.9300	12.000	0.0130	1.57	3.44	0.46	4.29	0.43	0.47	0.00	Calculated

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
57	59	Pipe	CB 02	DMH 14	33.77	40.96	40.60	1.0700	12.000	0.0130	1.87	3.68	0.51	4.91	0.47	0.49	0.00	Calculated
58	60	Pipe	CB 01	CB 02	18.68	41.29	40.96	1.7700	12.000	0.0130	1.92	4.74	0.40	5.74	0.41	0.45	0.00	Calculated
59	61	Pipe	YD 47	DMH 33	21.50	40.91	40.80	0.5100	12.000	0.0130	1.12	2.55	0.44	3.34	0.45	0.45	0.00	Calculated
60	62	Pipe	CB 03	DMH 22	5.80	40.10	39.89	3.6200	18.000	0.0130	8.26	19.99	0.41	10.77	0.67	0.45	0.00	Calculated
61	63	Pipe	YD 02	CB 03	91.70	40.56	40.10	0.5000	18.000	0.0130	5.56	7.44	0.75	4.62	0.96	0.64	0.00	Calculated
62	64	Pipe	CB 04	YD 02	75.60	40.94	40.56	0.5000	18.000	0.0130	5.04	7.45	0.68	4.53	0.90	0.60	0.00	Calculated
63	65	Pipe	YD 03	CB 04	112.70	41.50	40.94	0.5000	15.000	0.0130	3.96	4.55	0.87	4.19	0.90	0.72	0.00	Calculated
64	66	Pipe	CB 15	YD-17	6.09	40.34	40.24	1.6400	12.000	0.0130	3.63	4.57	0.79	6.50	0.60	0.67	0.00	Calculated
65	67	Pipe	YD 04	DMH 07	8.37	39.77	39.77	0.0000	12.000	0.0130	0.44	1.59	0.28	1.80	0.35	0.36	0.00	Calculated
66	68	Pipe	DMH 09	DMH 08	23.12	39.58	39.39	0.8200	15.000	0.0130	1.28	5.86	0.22	3.98	0.38	0.31	0.00	Calculated
67	69	Pipe	DB 02	DMH 09	45.41	43.50	39.58	8.6300	12.000	0.0130	0.56	10.47	0.05	7.27	0.15	0.16	0.00	Calculated
68	70	Pipe	DB 03	DMH 09	21.65	42.50	39.58	13.4900	12.000	0.0130	0.74	13.08	0.06	9.46	0.15	0.16	0.00	Calculated
69	71	Pipe	YD 01	CB 03	93.64	42.00	40.10	2.0300	12.000	0.0130	0.50	5.08	0.10	4.12	0.21	0.21	0.00	Calculated
70	72	Pipe	Structure - (74)	DMH 21	20.55	39.17	38.50	3.2600	12.000	0.0130	0.50	6.43	0.08	4.87	0.19	0.19	0.00	Calculated
71	73	Pipe	EX CULVERT-01	Structure - (74)	160.88	44.45	39.17	3.2800	12.000	0.0130	0.50	6.45	0.08	4.88	0.19	0.19	0.00	Calculated
72	74	Pipe	YD 13	YD 12	40.31	52.04	50.04	4.9600	12.000	0.0130	2.23	7.94	0.28	8.69	0.36	0.36	0.00	Calculated
73	75	Pipe	YD 14	YD 13	39.39	54.04	52.04	5.0800	12.000	0.0130	1.62	8.03	0.20	8.14	0.30	0.30	0.00	Calculated
74	76	Pipe	YD 15	YD 14	39.80	55.54	54.04	3.7700	12.000	0.0130	1.22	6.92	0.18	6.86	0.27	0.28	0.00	Calculated
75	77	Pipe	YD 27	YD 26	49.54	47.04	45.04	4.0400	12.000	0.0130	1.10	7.16	0.15	6.74	0.26	0.26	0.00	Calculated
76	78	Pipe	YD 28	YD 27	36.39	49.04	47.04	5.5000	12.000	0.0130	1.13	8.35	0.14	7.58	0.24	0.24	0.00	Calculated
77	79	Pipe	YD 29	YD 28	49.51	51.04	49.04	4.0400	12.000	0.0130	1.11	7.16	0.16	6.67	0.26	0.26	0.00	Calculated
78	80	Pipe	YD 30	YD 29	40.04	54.04	51.04	7.4900	12.000	0.0130	1.09	9.75	0.11	8.39	0.22	0.23	0.00	Calculated
79	81	Pipe	YD 33	YD 30	61.53	56.67	54.04	4.2700	12.000	0.0130	1.14	7.37	0.16	7.24	0.26	0.26	0.00	Calculated
80	82	Pipe	YD 22	YD-46	40.55	43.51	43.29	0.5400	12.000	0.0130	0.10	2.62	0.04	1.61	0.13	0.13	0.00	Calculated
81	83	Pipe	YD 05	DMH 08	98.93	39.72	39.25	0.4800	18.000	0.0130	3.35	7.24	0.46	4.02	0.72	0.48	0.00	Calculated
82	84	Pipe	CB 09	YD 05	50.20	39.96	39.72	0.4800	18.000	0.0130	3.43	7.26	0.47	4.21	0.71	0.48	0.00	Calculated
83	85	Pipe	YD 06	CB 09	12.34	40.17	39.96	1.7000	12.000	0.0130	1.25	4.65	0.27	5.00	0.33	0.36	0.00	Calculated
84	86	Pipe	YD 40	EX-DMH-03	97.83	46.08	45.64	0.4500	12.000	0.0130	2.36	2.39	0.99	3.49	0.81	0.81	0.00	Calculated
85	87	Pipe	EX-DMH-03	EX-DMH-05	109.61	45.59	45.59	0.0000	12.000	0.0130	1.72	1.59	1.08	2.41	1.00	1.00	24.00	SURCHARGED
86	88	Pipe	EX-DMH-09	EX-DMH-04	39.68	50.43	47.64	7.0300	15.000	0.0130	5.77	17.13	0.34	12.59	0.50	0.40	0.00	Calculated
87	89	Pipe	YD16	YD 15	30.29	57.50	55.54	6.4700	12.000	0.0130	1.20	9.06	0.13	8.16	0.24	0.25	0.00	Calculated
88	90	Pipe	DMH-27	DMH-20	14.39	43.12	42.50	4.3100	18.000	0.0130	6.44	21.81	0.30	10.73	0.56	0.37	0.00	Calculated
89	91	Pipe	YD-07	DMH-27	6.90	43.84	43.17	9.7100	6.000	0.0130	0.07	1.75	0.04	4.36	0.06	0.13	0.00	Calculated
90	92	Pipe	YD-46	CDS-05	30.10	43.29	42.88	1.3600	12.000	0.0130	0.20	4.16	0.05	2.73	0.15	0.15	0.00	Calculated
91	93	Pipe	YD-35	DMH 34	5.20	43.00	42.87	2.5000	12.000	0.0130	3.54	5.63	0.63	7.57	0.58	0.58	0.00	Calculated
92	94	Pipe	YD-49	DMH 25	6.73	42.57	42.50	1.0400	12.000	0.0130	2.26	3.63	0.62	4.87	0.57	0.57	0.00	Calculated
93	95	Pipe	YD-17	DMH 02	7.19	40.24	39.90	4.7300	12.000	0.0130	7.60	7.75	0.98	11.28	0.70	0.80	0.00	Calculated

Inlet Summary

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft²)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)
1	CB 01	FHWA HEC-22 GENERIC	N/A	On Sag	1	41.29	47.00	41.29	10.00	1.68	N/A	N/A	N/A	7.00	9.78	47.21
2	CB 02	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.96	45.00	40.96	10.00	0.00	N/A	N/A	N/A	7.00	1.00	45.03
3	CB 03	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.10	44.30	40.10	10.00	2.20	N/A	N/A	N/A	7.00	12.54	44.56
4	CB 04	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.94	47.25	0.00	10.00	1.09	N/A	N/A	N/A	7.00	7.66	47.41
5	CB 05	FHWA HEC-22 GENERIC	N/A	On Sag	1	43.75	47.25	43.75	10.00	1.09	N/A	N/A	N/A	7.00	7.66	47.41
6	CB 06	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.00	45.50	42.00	10.00	1.21	N/A	N/A	N/A	7.00	8.25	45.68
7	CB 09	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.96	43.80	39.96	10.00	2.25	N/A	N/A	N/A	7.00	12.74	44.06
8	CB 15	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.34	43.00	40.34	10.00	3.06	N/A	N/A	N/A	7.00	15.75	43.33
9	EX CB-17	FHWA HEC-22 GENERIC	N/A	On Sag	1	60.19	66.63	60.19	10.00	2.54	N/A	N/A	N/A	7.00	13.84	66.92
10	EX CB-18	FHWA HEC-22 GENERIC	N/A	On Sag	1	67.83	70.91	67.83	10.00	2.38	N/A	N/A	N/A	7.00	13.26	71.19
11	EX CB-19	FHWA HEC-22 GENERIC	N/A	On Sag	1	72.07	75.35	72.07	10.00	1.33	N/A	N/A	N/A	7.00	8.82	75.54
12	EX CB-20	FHWA HEC-22 GENERIC	N/A	On Sag	1	68.41	70.22	68.41	10.00	2.79	N/A	N/A	N/A	7.00	14.77	70.53
13	EX CB-21	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.12	48.12	44.12	10.00	1.47	N/A	N/A	N/A	7.00	9.45	48.32
14	EX CB-22	FHWA HEC-22 GENERIC	N/A	On Sag	1	46.96	49.96	46.96	10.00	1.19	N/A	N/A	N/A	7.00	8.17	50.13
15	EX CB-23	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.71	47.30	44.71	10.00	9.63	N/A	N/A	N/A	7.00	144.91	50.21
16	EX CB-24	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.76	47.76	44.76	10.00	6.55	N/A	N/A	N/A	7.00	26.51	48.30
17	EX CB-25	FHWA HEC-22 GENERIC	N/A	On Sag	1	56.31	60.41	56.31	10.00	2.58	N/A	N/A	N/A	7.00	14.01	60.70
18	EX CB-26	FHWA HEC-22 GENERIC	N/A	On Sag	1	58.26	60.86	58.26	10.00	1.04	N/A	N/A	N/A	7.00	7.41	61.02
19	EX CB-27	FHWA HEC-22 GENERIC	N/A	On Sag	1	61.52	63.57	61.52	10.00	4.58	N/A	N/A	N/A	7.00	20.77	64.00
20	EX CB-29	FHWA HEC-22 GENERIC	N/A	On Sag	1	45.55	48.30	45.55	10.00	4.11	N/A	N/A	N/A	7.00	19.29	48.70
21	EX CB-30	FHWA HEC-22 GENERIC	N/A	On Sag	1	72.50	75.50	72.50	10.00	0.47	N/A	N/A	N/A	7.00	2.85	75.57
22	EX CB-31	FHWA HEC-22 GENERIC	N/A	On Sag	1	67.80	70.80	67.80	10.00	2.42	N/A	N/A	N/A	7.00	13.39	71.08
23	EX CB-32	FHWA HEC-22 GENERIC	N/A	On Sag	1	77.70	80.70	77.70	10.00	0.55	N/A	N/A	N/A	7.00	4.64	80.80
24	EX CB-33	FHWA HEC-22 GENERIC	N/A	On Sag	1	76.00	79.40	76.00	10.00	2.40	N/A	N/A	N/A	7.00	13.32	79.68
25	EX-CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.48	49.00	42.48	10.00	3.41	N/A	N/A	N/A	7.00	16.36	49.43
26	YD 01	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.00	46.00	42.00	10.00	0.50	N/A	N/A	N/A	7.00	2.94	46.07
27	YD 02	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.56	46.00	40.56	10.00	0.52	N/A	N/A	N/A	7.00	2.99	46.07
28	YD 03	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.50	45.50	39.50	10.00	3.95	N/A	N/A	N/A	7.00	17.69	45.86
29	YD 04	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.77	44.50	39.77	10.00	0.42	N/A	N/A	N/A	7.00	2.73	44.56
30	YD 06	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.17	43.50	40.17	10.00	1.09	N/A	N/A	N/A	7.00	7.66	43.66
31	YD 10	FHWA HEC-22 GENERIC	N/A	On Sag	1	46.04	50.00	46.04	10.00	0.59	N/A	N/A	N/A	7.00	4.92	50.11
32	YD 11	FHWA HEC-22 GENERIC	N/A	On Sag	1	48.04	52.00	48.04	10.00	0.60	N/A	N/A	N/A	7.00	4.98	52.11
33	YD 12	FHWA HEC-22 GENERIC	N/A	On Sag	1	50.04	54.00	50.04	10.00	0.60	N/A	N/A	N/A	7.00	4.98	54.11
34	YD 13	FHWA HEC-22 GENERIC	N/A	On Sag	1	52.04	56.00	52.04	10.00	0.61	N/A	N/A	N/A	7.00	5.04	56.11
35	YD 14	FHWA HEC-22 GENERIC	N/A	On Sag	1	54.04	58.00	54.04	10.00	0.46	N/A	N/A	N/A	7.00	2.84	58.07
36	YD 15	FHWA HEC-22 GENERIC	N/A	On Sag	1	55.54	60.00	55.54	10.00	0.00	N/A	N/A	N/A	7.00	1.00	60.03
37	YD 22	FHWA HEC-22 GENERIC	N/A	On Sag	1	43.51	46.50	43.51	10.00	0.10	N/A	N/A	N/A	7.00	1.66	46.54
38	YD 26	FHWA HEC-22 GENERIC	N/A	On Sag	1	45.04	48.70	45.04	10.00	1.99	N/A	N/A	N/A	7.00	11.70	48.94
39	YD 27	FHWA HEC-22 GENERIC	N/A	On Sag	1	47.04	51.00	47.04	10.00	0.00	N/A	N/A	N/A	7.00	1.00	51.03
40	YD 28	FHWA HEC-22 GENERIC	N/A	On Sag	1	49.04	52.70	49.04	10.00	0.00	N/A	N/A	N/A	7.00	1.00	52.73
41	YD 29	FHWA HEC-22 GENERIC	N/A	On Sag	1	51.04	55.00	51.04	10.00	0.00	N/A	N/A	N/A	7.00	1.00	55.03
42	YD 30	FHWA HEC-22 GENERIC	N/A	On Sag	1	54.04	57.00	54.04	10.00	0.00	N/A	N/A	N/A	7.00	1.00	57.03
43	YD 33	FHWA HEC-22 GENERIC	N/A	On Sag	1	56.67	60.00	56.67	10.00	1.07	N/A	N/A	N/A	7.00	7.56	60.16
44	YD 40	FHWA HEC-22 GENERIC	N/A	On Sag	1	46.08	50.00	46.08	10.00	2.36	N/A	N/A	N/A	7.00	13.15	50.27
45	YD 47	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.81	44.12	40.81	10.00	1.05	N/A	N/A	N/A	7.00	7.46	44.28
46	YD 48	FHWA HEC-22 GENERIC	N/A	On Sag	1	41.58	44.89	41.58	10.00	1.31	N/A	N/A	N/A	7.00	8.73	45.07
47	YD-07	FHWA HEC-22 GENERIC	N/A	On Sag	1	43.84	47.30	43.84	10.00	0.06	N/A	N/A	N/A	7.00	1.47	47.34
48	YD16	FHWA HEC-22 GENERIC	N/A	On Sag	1	57.50	61.50	57.50	10.00	1.10	N/A	N/A	N/A	7.00	7.71	61.66
49	YD-17	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.24	44.00	40.24	10.00	3.40	N/A	N/A	N/A	7.00	16.93	44.35
50	YD-35	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.92	46.50	42.92	10.00	3.54	N/A	N/A	N/A	7.00	17.40	46.86
51	YD-46	FHWA HEC-22 GENERIC	N/A	On Sag	1	43.29	46.50	43.29	10.00	0.10	N/A	N/A	N/A	7.00	1.66	46.54
52	YD-49	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.25	46.25	42.25	10.00	2.26	N/A	N/A	N/A	7.00	12.78	46.52

Subbasin Hydrology

Subbasin : Sub-EX CB-17

Input Data

Area (ac)	0.90
Peak Rate Factor	484.00
Weighted Curve Number	74.13
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.18	-	98.00
-	0.08	-	60.00
-	0.63	-	69.00
Composite Area & Weighted CN	0.89		74.13

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.54
Peak Runoff (cfs)	2.57
Weighted Curve Number	74.13
Time of Concentration (days hh:mm:ss)	0 00:18:36

Subbasin : Sub-EX CB-18

Input Data

Area (ac)	0.60
Peak Rate Factor	484.00
Weighted Curve Number	78.05
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.19	-	98.00
-	0.41	-	69.00
Composite Area & Weighted CN	0.60		78.05

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.94
Peak Runoff (cfs)	2.42
Weighted Curve Number	78.05
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX CB-19

Input Data

Area (ac)	0.39
Peak Rate Factor	484.00
Weighted Curve Number	73.90
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.07	-	98.00
-	0.32	-	69.00
Composite Area & Weighted CN	0.39		73.90

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.51
Peak Runoff (cfs)	1.39
Weighted Curve Number	73.90
Time of Concentration (days hh:mm:ss)	0 00:07:18

Subbasin : Sub-EX CB-20

Input Data

Area (ac)	0.58
Peak Rate Factor	484.00
Weighted Curve Number	86.84
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.36	-	98.00
-	0.22	-	69.00
Composite Area & Weighted CN	0.58		86.84

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.88
Peak Runoff (cfs)	2.81
Weighted Curve Number	86.84
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : Sub-EX CB-21

Input Data

Area (ac)	0.30
Peak Rate Factor	484.00
Weighted Curve Number	88.16
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.22	-	98.00
-	0.05	-	60.00
-	0.03	-	69.00
Composite Area & Weighted CN	0.30		88.16

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	5.03
Peak Runoff (cfs)	1.48
Weighted Curve Number	88.16
Time of Concentration (days hh:mm:ss)	0 00:05:12

Subbasin : Sub-EX CB-22

Input Data

Area (ac)	0.25
Peak Rate Factor	484.00
Weighted Curve Number	87.20
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.13	-	98.00
-	0.07	-	69.00
Composite Area & Weighted CN	0.20		87.20

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.92
Peak Runoff (cfs)	1.20
Weighted Curve Number	87.20
Time of Concentration (days hh:mm:ss)	0 00:05:36

Subbasin : Sub-EX CB-23

Input Data

Area (ac)	3.17
Peak Rate Factor	484.00
Weighted Curve Number	75.23
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.68	-	98.00
-	2.49	-	69.00
Composite Area & Weighted CN	3.17		75.23

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.65
Peak Runoff (cfs)	9.79
Weighted Curve Number	75.23
Time of Concentration (days hh:mm:ss)	0 00:16:18

Subbasin : Sub-EX CB-24

Input Data

Area (ac)	2.08
Peak Rate Factor	484.00
Weighted Curve Number	74.60
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.45	-	98.00
-	0.14	-	60.00
-	1.50	-	69.00
Composite Area & Weighted CN	2.09		74.60

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.59
Peak Runoff (cfs)	6.57
Weighted Curve Number	74.60
Time of Concentration (days hh:mm:ss)	0 00:14:18

Subbasin : Sub-EX CB-25

Input Data

Area (ac)	0.80
Peak Rate Factor	484.00
Weighted Curve Number	70.36
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.18	-	98.00
-	0.47	-	60.00
-	0.15	-	69.00
Composite Area & Weighted CN	0.80		70.36

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.16
Peak Runoff (cfs)	2.66
Weighted Curve Number	70.36
Time of Concentration (days hh:mm:ss)	0 00:05:30

Subbasin : Sub-EX CB-26

Input Data

Area (ac)	0.42
Peak Rate Factor	484.00
Weighted Curve Number	64.95
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.05	-	98.00
-	0.35	-	60.00
-	0.02	-	69.00
Composite Area & Weighted CN	0.42		64.95

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	2.64
Peak Runoff (cfs)	1.07
Weighted Curve Number	64.95
Time of Concentration (days hh:mm:ss)	0 00:09:54

Subbasin : Sub-EX CB-27

Input Data

Area (ac)	1.20
Peak Rate Factor	484.00
Weighted Curve Number	76.43
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.44	-	98.00
-	0.41	-	60.00
-	0.35	-	69.00
Composite Area & Weighted CN	1.20		76.43

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.77
Peak Runoff (cfs)	4.68
Weighted Curve Number	76.43
Time of Concentration (days hh:mm:ss)	0 00:05:36

Subbasin : Sub-EX CB-29

Input Data

Area (ac)	1.31
Peak Rate Factor	484.00
Weighted Curve Number	75.39
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.37	-	98.00
-	0.27	-	60.00
-	0.67	-	69.00
Composite Area & Weighted CN	1.31		75.39

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.67
Peak Runoff (cfs)	4.14
Weighted Curve Number	75.39
Time of Concentration (days hh:mm:ss)	0 00:15:12

Subbasin : Sub-EX CB-30

Input Data

Area (ac)	0.13
Peak Rate Factor	484.00
Weighted Curve Number	82.22
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.06	-	98.00
-	0.07	-	69.00
Composite Area & Weighted CN	0.13		82.22

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.38
Peak Runoff (cfs)	0.47
Weighted Curve Number	82.22
Time of Concentration (days hh:mm:ss)	0 00:16:06

Subbasin : Sub-EX CB-31

Input Data

Area (ac)	0.60
Peak Rate Factor	484.00
Weighted Curve Number	82.65
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.28	-	98.00
-	0.32	-	69.00
Composite Area & Weighted CN	0.60		82.65

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.43
Peak Runoff (cfs)	2.54
Weighted Curve Number	82.65
Time of Concentration (days hh:mm:ss)	0 00:09:30

Subbasin : Sub-EX CB-32

Input Data

Area (ac)	0.11
Peak Rate Factor	484.00
Weighted Curve Number	98.00
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.11	-	98.00
Composite Area & Weighted CN	0.11		98.00

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	6.16
Peak Runoff (cfs)	0.56
Weighted Curve Number	98.00
Time of Concentration (days hh:mm:ss)	0 00:09:06

Subbasin : Sub-EX CB-33

Input Data

Area (ac)	0.67
Peak Rate Factor	484.00
Weighted Curve Number	78.78
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.23	-	98.00
-	0.44	-	69.00
Composite Area & Weighted CN	0.67		78.78

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.02
Peak Runoff (cfs)	2.40
Weighted Curve Number	78.78
Time of Concentration (days hh:mm:ss)	0 00:13:06

Subbasin : Sub-EX CULVERT-01

Input Data

Area (ac)	0.72
Peak Rate Factor	484.00
Weighted Curve Number	87.69
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.52	-	98.00
-	0.18	-	60.00
-	0.02	-	69.00
Composite Area & Weighted CN	0.72		87.69

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	4.98
Peak Runoff (cfs)	2.68
Weighted Curve Number	87.69
Time of Concentration (days hh:mm:ss)	0 00:21:06

Subbasin : Sub-EX CULVERT-02

Input Data

Area (ac)	0.81
Peak Rate Factor	484.00
Weighted Curve Number	69.64
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.09	-	98.00
-	0.25	-	60.00
-	0.47	-	69.00
Composite Area & Weighted CN	0.81		69.64

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.09
Peak Runoff (cfs)	1.82
Weighted Curve Number	69.64
Time of Concentration (days hh:mm:ss)	0 00:24:24

Subbasin : Sub-EX CULVERT-03

Input Data

Area (ac)	0.37
Peak Rate Factor	484.00
Weighted Curve Number	69.00
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.37	-	69.00
Composite Area & Weighted CN	0.37		69.00

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.03
Peak Runoff (cfs)	0.71
Weighted Curve Number	69.00
Time of Concentration (days hh:mm:ss)	0 00:33:48

Subbasin : Sub-EX-CB-16

Input Data

Area (ac)	1.13
Peak Rate Factor	484.00
Weighted Curve Number	74.74
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.32	-	98.00
-	0.29	-	60.00
-	0.52	-	69.00
Composite Area & Weighted CN	1.13		74.74

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.60
Peak Runoff (cfs)	3.47
Weighted Curve Number	74.74
Time of Concentration (days hh:mm:ss)	0 00:16:06

Subbasin : Sub-YD 03

Input Data

Area (ac)	2.05
Peak Rate Factor	484.00
Weighted Curve Number	70.00
Rain Gage ID	

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	2.05	-	70.00
Composite Area & Weighted CN	2.05		70.00

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.13
Peak Runoff (cfs)	3.96
Weighted Curve Number	70.00
Time of Concentration (days hh:mm:ss)	0 00:35:54

Subbasin : Sub-YD 35

Input Data

Area (ac)	2.11
Peak Rate Factor	484.00
Weighted Curve Number	62.00
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	2.11	-	62.00
Composite Area & Weighted CN	2.11		62.00

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	2.37
Peak Runoff (cfs)	3.57
Weighted Curve Number	62.00
Time of Concentration (days hh:mm:ss)	0 00:23:54

Subbasin : Sub-YD 40

Input Data

Area (ac)	1.09
Peak Rate Factor	484.00
Weighted Curve Number	69.00
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	1.09	-	69.00
Composite Area & Weighted CN	1.09		69.00

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.03
Peak Runoff (cfs)	2.39
Weighted Curve Number	69.00
Time of Concentration (days hh:mm:ss)	0 00:24:48

Subbasin : Sub-YD 49

Input Data

Area (ac)	0.79
Peak Rate Factor	484.00
Weighted Curve Number	78.00
Rain Gage ID	*

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	0.79	-	78.00
Composite Area & Weighted CN	0.79		78.00

Subbasin Runoff Results

Total Rainfall (in)	6.40
Total Runoff (in)	3.93
Peak Runoff (cfs)	2.28
Weighted Curve Number	78.00
Time of Concentration (days hh:mm:ss)	0 00:24:00

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	CDS-05	42.88	46.54	3.66	42.88	0.00	46.54	0.00	0.00	0.00
2	DB 02	43.50	46.00	2.50	43.50	0.00	46.00	0.00	0.00	0.00
3	DB 03	42.50	46.00	3.50	42.50	0.00	46.00	0.00	0.00	0.00
4	DB01	46.80	49.00	2.20	46.80	0.00	49.00	0.00	0.00	0.00
5	DMH 02	39.57	45.10	5.53	39.57	0.00	45.10	0.00	0.00	0.00
6	DMH 04	41.54	44.81	3.27	41.54	0.00	44.81	0.00	0.00	0.00
7	DMH 05	41.98	45.50	3.52	41.98	0.00	45.50	0.00	0.00	0.00
8	DMH 07	38.34	46.35	8.01	38.34	0.00	46.35	0.00	0.00	0.00
9	DMH 08	39.25	46.30	7.05	39.25	0.00	46.30	0.00	0.00	0.00
10	DMH 09	39.58	47.80	8.22	39.58	0.00	47.80	0.00	0.00	0.00
11	DMH 10	41.36	46.10	4.74	41.36	0.00	46.10	0.00	0.00	0.00
12	DMH 11	41.50	47.27	5.77	41.50	0.00	47.27	0.00	0.00	0.00
13	DMH 13	43.54	48.60	5.06	43.54	0.00	48.60	0.00	0.00	0.00
14	DMH 14	39.20	46.50	7.30	39.20	0.00	46.50	0.00	0.00	0.00
15	DMH 21	37.33	47.50	10.17	37.33	0.00	47.50	0.00	0.00	0.00
16	DMH 22	34.39	44.05	9.66	34.39	0.00	44.35	0.30	0.00	0.00
17	DMH 25	41.95	46.25	4.30	41.95	0.00	46.25	0.00	0.00	0.00
18	DMH 32	37.85	47.10	9.25	37.85	0.00	47.10	0.00	0.00	0.00
19	DMH 33	40.80	45.10	4.30	40.80	0.00	45.10	0.00	0.00	0.00
20	DMH 34	42.82	46.54	3.72	42.82	0.00	46.54	0.00	0.00	0.00
21	DMH-20	40.50	46.50	6.00	40.50	0.00	46.50	0.00	0.00	0.00
22	DMH-27	43.12	46.90	3.78	43.12	0.00	46.90	0.00	0.00	0.00
23	EX CULVERT-01	44.45	51.00	6.55	44.45	0.00	51.00	0.00	0.00	0.00
24	EX CULVERT-02	45.17	48.12	2.95	45.17	0.00	48.12	0.00	0.00	0.00
25	EX CULVERT-03	74.59	79.80	5.21	74.59	0.00	79.80	0.00	0.00	0.00
26	EX DMH-08	49.80	53.44	3.64	49.80	0.00	53.44	0.00	0.00	0.00
27	EX DMH-15	47.26	49.46	2.20	47.26	0.00	49.46	0.00	0.00	0.00
28	EX DMH-16	51.42	55.52	4.10	51.42	0.00	55.52	0.00	0.00	0.00
29	EX DMH-17	59.48	65.68	6.20	59.48	0.00	65.68	0.00	0.00	0.00
30	EX DMH-18	67.60	71.75	4.15	67.60	0.00	71.75	0.00	0.00	0.00
31	EX DMH-19	75.00	79.50	4.50	75.00	0.00	79.50	0.00	0.00	0.00
32	EX-DMH-03	45.59	51.20	5.61	45.59	0.00	51.20	0.00	0.00	0.00
33	EX-DMH-04	42.74	53.90	11.16	42.74	0.00	53.90	0.00	0.00	0.00
34	EX-DMH-05	45.24	56.50	11.26	45.24	0.00	56.50	0.00	0.00	0.00
35	EX-DMH-06	39.48	49.10	9.62	39.48	0.00	49.10	0.00	0.00	0.00
36	EX-DMH-09	50.43	55.54	5.11	50.43	0.00	55.54	0.00	0.00	0.00
37	Structure - (49)	44.35	47.16	2.81	44.35	0.00	47.16	0.00	0.00	0.00
38	Structure - (72)	72.65	79.80	7.15	72.65	0.00	79.80	0.00	0.00	0.00
39	Structure - (74)	39.17	51.00	11.83	39.17	0.00	51.00	0.00	0.00	0.00
40	Structure-(51)	53.92	58.20	4.28	53.92	0.00	58.20	0.00	0.00	0.00
41	YD 05	39.72	44.00	4.28	39.72	0.00	44.00	0.00	0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	CDS-05	3.30	0.00	43.67	0.79	0.00	2.87	43.66	0.78	0 00:01	0 00:00	0.00	0.00
2	DB 02	0.53	0.53	43.65	0.15	0.00	2.35	43.65	0.15	0 00:00	0 00:00	0.00	0.00
3	DB 03	0.65	0.65	42.65	0.15	0.00	3.35	42.65	0.15	0 00:00	0 00:00	0.00	0.00
4	DB01	2.39	2.39	47.06	0.26	0.00	1.94	47.06	0.26	0 00:00	0 00:00	0.00	0.00
5	DMH 02	21.33	0.00	41.54	1.97	0.00	3.56	41.09	1.52	0 12:25	0 00:00	0.00	0.00
6	DMH 04	4.99	0.00	42.45	0.91	0.00	2.36	42.42	0.88	0 00:00	0 00:00	0.00	0.00
7	DMH 05	3.50	3.50	42.64	0.66	0.00	2.86	42.64	0.66	0 00:00	0 00:00	0.00	0.00
8	DMH 07	26.76	0.00	40.13	1.79	0.00	6.22	40.12	1.78	0 00:00	0 00:00	0.00	0.00
9	DMH 08	6.83	0.00	41.32	2.07	0.00	4.98	41.32	2.07	0 23:06	0 00:00	0.00	0.00
10	DMH 09	1.31	0.00	39.98	0.40	0.00	7.82	39.96	0.38	0 00:00	0 00:00	0.00	0.00
11	DMH 10	3.49	0.00	42.21	0.85	0.00	3.89	42.12	0.76	0 00:00	0 00:00	0.00	0.00
12	DMH 11	3.15	3.15	42.27	0.77	0.00	5.00	42.27	0.77	0 00:00	0 00:00	0.00	0.00
13	DMH 13	6.39	0.00	44.84	1.30	0.00	3.76	44.83	1.29	0 00:00	0 00:00	0.00	0.00
14	DMH 14	8.21	0.00	46.50	7.30	0.00	0.00	41.35	2.15	0 11:49	0 11:55	1.56	73.00
15	DMH 21	48.09	0.00	39.29	1.96	0.00	8.21	38.90	1.57	0 12:21	0 00:00	0.00	0.00
16	DMH 22	61.98	0.00	40.56	6.17	0.00	3.49	40.38	5.99	0 12:30	0 00:00	0.00	0.00
17	DMH 25	9.00	0.00	43.62	1.67	0.00	2.63	43.22	1.27	0 12:25	0 00:00	0.00	0.00
18	DMH 32	21.32	0.00	39.53	1.68	0.00	7.57	39.18	1.33	0 12:23	0 00:00	0.00	0.00
19	DMH 33	5.86	0.00	41.74	0.94	0.00	3.36	41.73	0.93	0 00:06	0 00:00	0.00	0.00
20	DMH 34	6.80	0.00	43.94	1.12	0.00	2.60	43.60	0.78	0 12:25	0 00:00	0.00	0.00
21	DMH-20	19.54	0.00	43.06	2.56	0.00	3.44	43.06	2.56	0 00:01	0 00:00	0.00	0.00
22	DMH-27	6.44	0.00	44.01	0.89	0.00	2.89	44.01	0.89	0 00:01	0 00:00	0.00	0.00
23	EX CULVERT-01	0.50	0.50	44.64	0.19	0.00	6.36	44.64	0.19	0 00:00	0 00:00	0.00	0.00
24	EX CULVERT-02	0.00	0.00	45.17	0.00	0.00	2.95	45.17	0.00	0 00:00	0 00:00	0.00	0.00
25	EX CULVERT-03	0.00	0.00	74.59	0.00	0.00	5.21	74.59	0.00	0 00:00	0 00:00	0.00	0.00
26	EX DMH-08	8.09	0.00	53.44	3.64	0.00	0.00	50.66	0.86	0 12:01	0 12:10	0.79	37.00
27	EX DMH-15	7.73	0.00	49.46	2.20	0.00	0.00	47.44	0.18	0 12:00	0 12:10	1.12	31.00
28	EX DMH-16	5.77	0.00	52.18	0.76	0.00	3.34	51.71	0.29	0 12:15	0 00:00	0.00	0.00
29	EX DMH-17	5.78	0.00	60.04	0.56	0.00	5.64	59.65	0.17	0 12:15	0 00:00	0.00	0.00
30	EX DMH-18	5.78	0.00	68.10	0.50	0.00	3.65	67.68	0.08	0 12:15	0 00:00	0.00	0.00
31	EX DMH-19	2.92	0.00	75.45	0.45	0.00	4.05	75.07	0.07	0 12:15	0 00:00	0.00	0.00
32	EX-DMH-03	2.36	0.00	51.20	5.61	0.00	0.00	45.84	0.25	0 12:12	0 12:25	0.21	27.00
33	EX-DMH-04	12.83	0.00	48.14	5.40	0.00	5.76	47.72	4.98	0 12:15	0 00:00	0.00	0.00
34	EX-DMH-05	7.42	0.00	56.50	11.26	0.00	0.00	47.22	1.98	0 12:11	0 12:34	0.09	27.00
35	EX-DMH-06	16.93	0.00	49.10	9.62	0.00	0.00	43.64	4.16	0 11:53	0 12:15	5.30	58.00
36	EX-DMH-09	5.77	0.00	51.05	0.62	0.00	4.49	50.53	0.10	0 12:15	0 00:00	0.00	0.00
37	Structure - (49)	2.79	0.00	47.16	2.81	0.00	0.00	44.87	0.52	0 11:35	0 12:10	0.73	149.00
38	Structure - (72)	5.04	5.04	73.34	0.69	0.00	6.46	72.76	0.11	0 12:20	0 00:00	0.00	0.00
39	Structure - (74)	0.50	0.00	39.36	0.19	0.00	11.64	39.36	0.19	0 00:09	0 00:00	0.00	0.00
40	Structure-(51)	7.88	0.00	58.20	4.28	0.00	0.00	54.05	0.13	0 12:07	0 12:10	0.02	9.00
41	YD 05	3.43	0.00	40.45	0.73	0.00	3.55	40.44	0.72	0 00:00	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	1	132.32	34.39	0.00	33.20	0.00	1.19	0.9000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	2	151.20	39.20	0.00	38.66	4.27	0.54	0.3600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	3	84.48	39.48	0.00	39.20	0.00	0.28	0.3300	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	4	172.59	42.74	0.00	39.68	0.20	3.06	1.7700	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5	5	30.66	51.42	0.00	50.43	0.00	0.99	3.2300	CIRCULAR	15.000	15.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6	6	106.65	59.48	0.00	51.62	0.20	7.86	7.3700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
7	7	49.77	67.60	0.00	59.58	0.10	8.02	16.1100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8	8	193.78	75.00	0.00	67.60	0.00	7.40	3.8200	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9	9	54.57	77.70	0.00	75.00	0.00	2.70	4.9500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10	10	15.61	76.00	0.00	75.00	0.00	1.00	6.4100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11	11	64.18	45.24	0.00	42.84	0.10	2.40	3.7400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12	12	122.99	49.80	0.00	46.89	1.65	2.91	2.3700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13	13	27.32	56.31	0.00	50.50	0.70	5.81	21.2700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14	14	42.02	58.26	0.00	56.46	0.15	1.80	4.2800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
15	15	178.14	61.52	0.00	58.61	0.35	2.91	1.6300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
16	16	368.97	72.65	0.00	61.57	0.05	11.08	3.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17	17	64.50	74.59	0.00	72.65	0.00	1.94	3.0100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18	18	326.74	37.33	0.00	34.39	0.00	2.94	0.9000	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19	19	176.15	38.34	0.00	37.48	0.15	0.86	0.4900	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20	20	464.70	40.50	0.00	38.34	0.00	2.16	0.4600	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21	21	90.70	42.48	0.00	40.65	0.15	1.83	2.0200	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22	22	31.83	47.26	0.00	46.88	4.40	0.38	1.1900	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23	23	156.86	53.92	0.00	47.26	0.00	6.66	4.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24	24	147.62	60.19	0.00	53.92	0.00	6.27	4.2500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
25	25	191.61	67.83	0.00	60.19	0.00	7.64	3.9900	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
26	26	169.89	72.07	0.00	67.83	0.00	4.24	2.5000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
27	27	29.11	68.41	0.00	67.83	0.00	0.58	1.9900	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
28	28	60.11	72.50	0.00	67.60	0.00	4.90	8.1500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
29	29	10.66	67.80	0.00	67.60	0.00	0.20	1.8800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
30	30	49.96	43.54	0.00	43.12	0.00	0.42	0.8400	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
31	31	38.40	46.04	0.00	44.37	0.83	1.67	4.3500	CIRCULAR	15.000	15.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
32	32	38.39	48.04	0.00	46.04	0.00	2.00	5.2100	CIRCULAR	15.000	15.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
33	33	39.40	50.04	0.00	48.04	0.00	2.00	5.0800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
34	34	47.49	44.12	0.00	42.48	0.00	1.64	3.4500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
35	35	138.80	44.35	0.00	44.12	0.00	0.23	0.1700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
36	36	47.44	46.96	0.00	44.35	0.00	2.61	5.5000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
37	37	28.80	37.89	0.04	37.62	0.29	0.27	0.9400	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
38	38	213.80	39.80	0.23	37.89	0.04	1.91	0.8900	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
39	39	230.90	42.50	0.55	40.42	0.85	2.08	0.9000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
40	40	62.70	42.82	0.00	42.50	0.55	0.32	0.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
41	41	11.40	42.88	0.00	42.82	0.00	0.06	0.5300	CIRCULAR	15.000	15.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
42	42	65.26	45.04	0.00	43.16	0.28	1.88	2.8800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
43	45	200.02	44.71	0.00	44.35	0.00	0.36	0.1800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
44	46	28.17	44.76	0.00	44.71	0.00	0.05	0.1800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
45	47	3.83	45.17	0.00	44.67	0.55	0.50	13.0700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
46	48	16.48	46.80	0.00	43.54	0.00	3.26	19.7800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
47	49	56.67	45.55	0.00	43.34	3.86	2.21	3.9000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
48	50	14.44	39.25	0.00	39.15	0.81	0.10	0.6900	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
49	51	71.23	42.00	0.00	40.82	1.57	1.18	1.6600	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
50	52	121.68	43.75	0.00	42.00	0.00	1.75	1.4400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
51	53	11.80	41.36	0.00	41.00	0.50	0.36	3.0500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
52	54	22.30	41.50	0.00	41.36	0.00	0.14	0.6500	CIRCULAR	12.000	12.000	0.0110	0.5000	0.5000	0.0000	0.00	No	1
53	55	81.10	40.80	0.00	39.99	0.42	0.81	1.0000	CIRCULAR	15.000	15.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
54	56	95.50	41.54	0.00	40.80	0.00	0.74	0.7700	CIRCULAR	15.000	15.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
55	57	44.30	41.98	0.00	41.54	0.00	0.44	0.9900	CIRCULAR	15.000	15.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
56	58	4.30	41.58	0.00	41.54	0.00	0.04	0.9300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
57	59	33.77	40.96	0.00	40.60	1.40	0.36	1.0700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
58	60	18.68	41.29	0.00	40.96	0.00	0.33	1.7700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
59	61	21.50	40.91	0.10	40.80	0.00	0.11	0.5100	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
60	62	5.80	40.10	0.00	39.89	5.50	0.21	3.6200	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
61	63	91.70	40.56	0.00	40.10	0.00	0.46	0.5000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
62	64	75.60	40.94	0.00	40.56	0.00	0.38	0.5000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
63	65	112.70	41.50	2.00	40.94	0.00	0.56	0.5000	CIRCULAR	15.000	15.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
64	66	6.09	40.34	0.00	40.24	0.00	0.10	1.6400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
65	67	8.37	39.77	0.00	39.77	1.43	0.00	0.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
66	68	23.12	39.58	0.00	39.39	0.14	0.19	0.8200	CIRCULAR	15.000	15.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
67	69	45.41	43.50	0.00	39.58	0.00	3.92	8.6300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
68	70	21.65	42.50	0.00	39.58	0.00	2.92	13.4900	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
69	71	93.64	42.00	0.00	40.10	0.00	1.90	2.0300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
70	72	20.55	39.17	0.00	38.50	1.17	0.67	3.2600	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
71	73	160.88	44.45	0.00	39.17	0.00	5.28	3.2800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
72	74	40.31	52.04	0.00	50.04	0.00	2.00	4.9600	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
73	75	39.39	54.04	0.00	52.04	0.00	2.00	5.0800	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
74	76	39.80	55.54	0.00	54.04	0.00	1.50	3.7700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
75	77	49.54	47.04	0.00	45.04	0.00	2.00	4.0400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
76	78	36.39	49.04	0.00	47.04	0.00	2.00	5.5000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
77	79	49.51	51.04	0.00	49.04	0.00	2.00	4.0400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
78	80	40.04	54.04	0.00	51.04	0.00	3.00	7.4900	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
79	81	61.53	56.67	0.00	54.04	0.00	2.63	4.2700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
80	82	40.55	43.51	0.00	43.29	0.00	0.22	0.5400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
81	83	98.93	39.72	0.00	39.25	0.00	0.47	0.4800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
82	84	50.20	39.96	0.00	39.72	0.00	0.24	0.4800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
83	85	12.34	40.17	0.00	39.96	0.00	0.21	1.7000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
84	86	97.83	46.08	0.00	45.64	0.05	0.44	0.4500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
85	87	109.61	45.59	0.00	45.59	0.35	0.00	0.0000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
86	88	39.68	50.43	0.00	47.64	4.90	2.79	7.0300	CIRCULAR	15.000	15.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
87	89	30.29	57.50	0.00	55.54	0.00	1.96	6.4700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
88	90	14.39	43.12	0.00	42.50	2.00	0.62	4.3100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
89	91	6.90	43.84	0.00	43.17	0.05	0.67	9.7100	CIRCULAR	6.000	6.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
90	92	30.10	43.29	0.00	42.88	0.00	0.41	1.3600	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
91	93	5.20	43.00	0.08	42.87	0.05	0.13	2.5000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
92	94	6.73	42.57	0.32	42.50	0.55	0.07	1.0400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
93	95	7.19	40.24	0.00	39.90	0.33	0.34	4.7300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	1	61.97	0 12:22	95.41	0.65	10.55	0.21	2.05	0.59	0.00		Calculated
2	2	6.79	0 11:52	6.28	1.08	4.18	0.60	1.50	1.00	69.00		SURCHARGED
3	3	6.53	0 11:55	6.05	1.08	4.02	0.35	1.50	1.00	55.00		SURCHARGED
4	4	12.82	0 12:15	13.99	0.92	9.07	0.32	1.13	0.75	0.00		Calculated
5	5	5.77	0 12:15	11.61	0.50	9.44	0.05	0.62	0.50	0.00		Calculated
6	6	5.77	0 12:15	9.67	0.60	12.86	0.14	0.56	0.56	0.00		Calculated
7	7	5.78	0 12:15	14.30	0.40	17.25	0.05	0.44	0.44	0.00		Calculated
8	8	2.92	0 12:15	6.96	0.42	8.50	0.38	0.45	0.45	0.00		Calculated
9	9	0.55	0 12:10	7.93	0.07	5.80	0.16	0.18	0.18	0.00		Calculated
10	10	2.40	0 12:15	9.02	0.27	9.71	0.03	0.35	0.35	0.00		Calculated
11	11	7.21	0 12:34	6.89	1.05	10.16	0.11	0.92	0.93	0.00		> CAPACITY
12	12	5.87	0 12:02	5.48	1.07	8.16	0.25	1.00	1.00	32.00		SURCHARGED
13	13	8.09	0 12:10	16.43	0.49	20.83	0.02	0.50	0.50	0.00		Calculated
14	14	5.59	0 12:14	7.37	0.76	10.33	0.07	0.65	0.65	0.00		Calculated
15	15	4.92	0 12:03	4.55	1.08	6.80	0.44	1.00	1.00	33.00		SURCHARGED
16	16	5.03	0 12:20	6.17	0.81	8.77	0.70	0.68	0.69	0.00		Calculated
17	17	0.00	0 00:00	6.18	0.00	0.00		0.00	0.00	0.00		Calculated
18	18	48.08	0 12:21	63.27	0.76	9.85	0.55	1.95	0.65	0.00		Calculated
19	19	26.75	0 12:16	46.60	0.57	6.82	0.43	1.63	0.54	0.00		Calculated
20	20	19.52	0 12:15	45.47	0.43	6.19	1.25	1.37	0.46	0.00		Calculated
21	21	9.98	0 12:15	14.92	0.67	9.05	0.17	0.90	0.60	0.00		Calculated
22	22	4.19	0 12:30	3.89	1.08	5.74	0.09	1.00	1.00	29.00		SURCHARGED
23	23	7.73	0 12:16	7.34	1.05	10.93	0.24	0.93	0.93	0.00		> CAPACITY
24	24	7.88	0 12:10	7.34	1.07	10.89	0.23	0.95	1.00	4.00		SURCHARGED
25	25	6.46	0 12:10	7.11	0.91	10.29	0.31	0.75	0.75	0.00		Calculated
26	26	1.32	0 12:10	5.63	0.24	5.86	0.48	0.33	0.33	0.00		Calculated
27	27	2.78	0 12:10	5.03	0.55	6.56	0.07	0.53	0.53	0.00		Calculated
28	28	0.47	0 12:15	10.17	0.05	6.60	0.15	0.15	0.15	0.00		Calculated
29	29	2.42	0 12:15	4.88	0.50	6.20	0.03	0.50	0.50	0.00		Calculated
30	30	6.38	0 00:01	9.63	0.66	5.84	0.14	0.89	0.60	0.00		Calculated
31	31	4.02	0 00:00	13.47	0.30	9.58	0.07	0.46	0.37	0.00		Calculated
32	32	3.44	0 00:00	14.74	0.23	9.82	0.07	0.41	0.33	0.00		Calculated
33	33	2.82	0 00:00	8.03	0.35	9.38	0.07	0.41	0.41	0.00		Calculated
34	34	3.06	0 12:10	6.62	0.46	8.27	0.10	0.48	0.48	0.00		Calculated
35	35	1.72	0 11:40	1.59	1.08	2.38	0.97	1.00	1.00	142.00		SURCHARGED
36	36	1.20	0 12:10	8.36	0.14	7.56	0.10	0.26	0.26	0.00		Calculated
37	37	21.32	0 12:25	21.90	0.97	7.94	0.06	1.59	0.80	0.00		Calculated
38	38	21.32	0 12:23	21.38	1.00	7.77	0.46	1.63	0.82	0.00		Calculated
39	39	9.01	0 12:25	9.97	0.90	6.40	0.60	1.12	0.74	0.00		Calculated
40	40	6.79	0 12:25	7.50	0.91	4.81	0.22	1.12	0.75	0.00		Calculated
41	41	3.27	0 00:01	4.69	0.70	4.14	0.05	0.77	0.62	0.00		Calculated
42	42	3.11	0 00:01	6.05	0.51	7.90	0.14	0.50	0.51	0.00		Calculated
43	45	1.72	0 11:42	1.59	1.08	2.39	1.39	1.00	1.00	132.00		SURCHARGED
44	46	1.70	0 11:55	1.59	1.07	2.37	0.20	1.00	1.00	50.00		SURCHARGED
45	47	0.00	0 00:00	12.88	0.00	0.00		0.00	0.00	0.00		Calculated
46	48	2.62	0 00:00	15.85	0.17	15.39	0.02	0.26	0.27	0.00		Calculated
47	49	4.11	0 12:15	7.04	0.58	9.30	0.10	0.55	0.55	0.00		Calculated
48	50	6.83	0 04:44	18.82	0.36	5.51	0.04	0.83	0.42	0.00		Calculated
49	51	2.31	0 23:06	4.59	0.50	5.86	0.20	0.50	0.50	0.00		Calculated
50	52	1.09	0 00:01	4.27	0.26	4.59	0.44	0.34	0.34	0.00		Calculated
51	53	3.30	0 00:00	6.22	0.53	8.16	0.02	0.50	0.53	0.00		Calculated
52	54	3.49	0 00:00	3.38	1.03	5.13	0.07	0.76	0.81	0.00		> CAPACITY
53	55	5.86	0 00:06	6.46	0.91	5.96	0.23	0.93	0.75	0.00		Calculated
54	56	4.81	0 00:08	5.69	0.85	5.20	0.31	0.88	0.71	0.00		Calculated
55	57	3.50	0 00:00	6.44	0.54	5.36	0.14	0.66	0.53	0.00		Calculated
56	58	1.57	0 00:00	3.44	0.46	4.29	0.02	0.43	0.47	0.00		Calculated
57	59	1.87	0 00:00	3.68	0.51	4.91	0.11	0.47	0.49	0.00		Calculated
58	60	1.92	0 00:00	4.74	0.40	5.74	0.05	0.41	0.45	0.00		Calculated
59	61	1.12	0 00:00	2.55	0.44	3.34	0.11	0.45	0.45	0.00		Calculated
60	62	8.26	0 12:30	19.99	0.41	10.77	0.01	0.67	0.45	0.00		Calculated
61	63	5.56	0 12:31	7.44	0.75	4.62	0.33	0.96	0.64	0.00		Calculated
62	64	5.04	0 12:31	7.45	0.68	4.53	0.28	0.90	0.60	0.00		Calculated
63	65	3.96	0 12:30	4.55	0.87	4.19	0.45	0.90	0.72	0.00		Calculated
64	66	3.63	0 00:00	4.57	0.79	6.50	0.02	0.60	0.67	0.00		Calculated
65	67	0.44	0 00:00	1.59	0.28	1.80	0.08	0.35	0.36	0.00		Calculated
66	68	1.28	0 00:00	5.86	0.22	3.98	0.10	0.38	0.31	0.00		Calculated
67	69	0.56	0 00:00	10.47	0.05	7.27	0.10	0.15	0.16	0.00		Calculated
68	70	0.74	0 00:00	13.08	0.06	9.46	0.04	0.15	0.16	0.00		Calculated
69	71	0.50	0 00:01	5.08	0.10	4.12	0.38	0.21	0.21	0.00		Calculated
70	72	0.50	0 00:09	6.43	0.08	4.87	0.07	0.19	0.19	0.00		Calculated
71	73	0.50	0 00:09	6.45	0.08	4.88	0.55	0.19	0.19	0.00		Calculated
72	74	2.23	0 00:00	7.94	0.28	8.69	0.08	0.36	0.36	0.00		Calculated
73	75	1.62	0 00:00	8.03	0.20	8.14	0.08	0.30	0.30	0.00		Calculated
74	76	1.22	0 00:00	6.92	0.18	6.86	0.10	0.27	0.28	0.00		Calculated
75	77	1.10	0 00:01	7.16	0.15	6.74	0.12	0.26	0.26	0.00		Calculated
76	78	1.13	0 00:00	8.35	0.14	7.58	0.08	0.24	0.24	0.00		Calculated
77	79	1.11	0 00:00	7.16	0.16	6.67	0.12	0.26	0.26	0.00		Calculated
78	80	1.09	0 00:00	9.75	0.11	8.39	0.08	0.22	0.23	0.00		Calculated
79	81	1.14	0 00:00	7.37	0.16	7.24	0.14	0.26	0.26	0.00		Calculated
80	82	0.10	0 00:02	2.62	0.04	1.61	0.42	0.13	0.13	0.00		Calculated
81	83	3.35	0 13:55	7.24	0.46	4.02	0.41	0.72	0.48	0.00		Calculated
82	84	3.43	0 00:00	7.26	0.47	4.21	0.20	0.71	0.48	0.00		Calculated
83	85	1.25	0 00:00	4.65	0.27	5.00	0.04	0.33	0.36	0.00		Calculated
84	86	2.36	0 12:25	2.39	0.99	3.49	0.47	0.81	0.81	0.00		Calculated
85	87	1.72	0 12:14	1.59	1.08	2.41	0.76	1.00	1.00	24.00		SURCHARGED
86	88	5.77	0 12:15	17.13	0.34	12.59	0.05	0.50	0.40	0.00		Calculated
87	89	1.20	0 00:00	9.06	0.13	8.16	0.06	0.24	0.25	0.00		Calculated

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
88	90	6.44	0 00:01	21.81	0.30	10.73	0.02	0.56	0.37	0.00		Calculated
89	91	0.07	0 00:00	1.75	0.04	4.36	0.03	0.06	0.13	0.00		Calculated
90	92	0.20	0 00:02	4.16	0.05	2.73	0.18	0.15	0.15	0.00		Calculated
91	93	3.54	0 12:25	5.63	0.63	7.57	0.01	0.58	0.58	0.00		Calculated
92	94	2.26	0 12:20	3.63	0.62	4.87	0.02	0.57	0.57	0.00		Calculated
93	95	7.60	0 00:00	7.75	0.98	11.28	0.01	0.70	0.80	0.00		Calculated

Inlet Input

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft^2)	Grate Clogging Factor (%)
1	CB 01	FHWA HEC-22 GENERIC	N/A	On Sag	1	41.29	47.00	5.71	41.29	0.00	10.00	0.00
2	CB 02	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.96	45.00	4.04	40.96	0.00	10.00	0.00
3	CB 03	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.10	44.30	4.20	40.10	0.00	10.00	0.00
4	CB 04	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.94	47.25	6.31	0.00	0.00	10.00	0.00
5	CB 05	FHWA HEC-22 GENERIC	N/A	On Sag	1	43.75	47.25	3.50	43.75	0.00	10.00	0.00
6	CB 06	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.00	45.50	3.50	42.00	0.00	10.00	0.00
7	CB 09	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.96	43.80	3.84	39.96	0.00	10.00	0.00
8	CB 15	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.34	43.00	2.66	40.34	0.00	10.00	0.00
9	EX CB-17	FHWA HEC-22 GENERIC	N/A	On Sag	1	60.19	66.63	6.44	60.19	0.00	10.00	0.00
10	EX CB-18	FHWA HEC-22 GENERIC	N/A	On Sag	1	67.83	70.91	3.08	67.83	0.00	10.00	0.00
11	EX CB-19	FHWA HEC-22 GENERIC	N/A	On Sag	1	72.07	75.35	3.28	72.07	0.00	10.00	0.00
12	EX CB-20	FHWA HEC-22 GENERIC	N/A	On Sag	1	68.41	70.22	1.81	68.41	0.00	10.00	0.00
13	EX CB-21	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.12	48.12	4.00	44.12	0.00	10.00	0.00
14	EX CB-22	FHWA HEC-22 GENERIC	N/A	On Sag	1	46.96	49.96	3.00	46.96	0.00	10.00	0.00
15	EX CB-23	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.71	47.30	2.59	44.71	0.00	10.00	0.00
16	EX CB-24	FHWA HEC-22 GENERIC	N/A	On Sag	1	44.76	47.76	3.00	44.76	0.00	10.00	0.00
17	EX CB-25	FHWA HEC-22 GENERIC	N/A	On Sag	1	56.31	60.41	4.10	56.31	0.00	10.00	0.00
18	EX CB-26	FHWA HEC-22 GENERIC	N/A	On Sag	1	58.26	60.86	2.60	58.26	0.00	10.00	0.00
19	EX CB-27	FHWA HEC-22 GENERIC	N/A	On Sag	1	61.52	63.57	2.05	61.52	0.00	10.00	0.00
20	EX CB-29	FHWA HEC-22 GENERIC	N/A	On Sag	1	45.55	48.30	2.75	45.55	0.00	10.00	0.00
21	EX CB-30	FHWA HEC-22 GENERIC	N/A	On Sag	1	72.50	75.50	3.00	72.50	0.00	10.00	0.00
22	EX CB-31	FHWA HEC-22 GENERIC	N/A	On Sag	1	67.80	70.80	3.00	67.80	0.00	10.00	0.00
23	EX CB-32	FHWA HEC-22 GENERIC	N/A	On Sag	1	77.70	80.70	3.00	77.70	0.00	10.00	0.00
24	EX CB-33	FHWA HEC-22 GENERIC	N/A	On Sag	1	76.00	79.40	3.40	76.00	0.00	10.00	0.00
25	EX-CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.48	49.00	6.52	42.48	0.00	10.00	0.00
26	YD 01	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.00	46.00	4.00	42.00	0.00	10.00	0.00
27	YD 02	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.56	46.00	5.44	40.56	0.00	10.00	0.00
28	YD 03	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.50	45.50	6.00	39.50	0.00	10.00	0.00
29	YD 04	FHWA HEC-22 GENERIC	N/A	On Sag	1	39.77	44.50	4.73	39.77	0.00	10.00	0.00
30	YD 06	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.17	43.50	3.33	40.17	0.00	10.00	0.00
31	YD 10	FHWA HEC-22 GENERIC	N/A	On Sag	1	46.04	50.00	3.96	46.04	0.00	10.00	0.00
32	YD 11	FHWA HEC-22 GENERIC	N/A	On Sag	1	48.04	52.00	3.96	48.04	0.00	10.00	0.00
33	YD 12	FHWA HEC-22 GENERIC	N/A	On Sag	1	50.04	54.00	3.96	50.04	0.00	10.00	0.00
34	YD 13	FHWA HEC-22 GENERIC	N/A	On Sag	1	52.04	56.00	3.96	52.04	0.00	10.00	0.00
35	YD 14	FHWA HEC-22 GENERIC	N/A	On Sag	1	54.04	58.00	3.96	54.04	0.00	10.00	0.00
36	YD 15	FHWA HEC-22 GENERIC	N/A	On Sag	1	55.54	60.00	4.46	55.54	0.00	10.00	0.00
37	YD 22	FHWA HEC-22 GENERIC	N/A	On Sag	1	43.51	46.50	2.99	43.51	0.00	10.00	0.00
38	YD 26	FHWA HEC-22 GENERIC	N/A	On Sag	1	45.04	48.70	3.66	45.04	0.00	10.00	0.00
39	YD 27	FHWA HEC-22 GENERIC	N/A	On Sag	1	47.04	51.00	3.96	47.04	0.00	10.00	0.00
40	YD 28	FHWA HEC-22 GENERIC	N/A	On Sag	1	49.04	52.70	3.66	49.04	0.00	10.00	0.00
41	YD 29	FHWA HEC-22 GENERIC	N/A	On Sag	1	51.04	55.00	3.96	51.04	0.00	10.00	0.00
42	YD 30	FHWA HEC-22 GENERIC	N/A	On Sag	1	54.04	57.00	2.96	54.04	0.00	10.00	0.00
43	YD 33	FHWA HEC-22 GENERIC	N/A	On Sag	1	56.67	60.00	3.33	56.67	0.00	10.00	0.00
44	YD 40	FHWA HEC-22 GENERIC	N/A	On Sag	1	46.08	50.00	3.92	46.08	0.00	10.00	0.00
45	YD 47	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.81	44.12	3.31	40.81	0.00	10.00	0.00
46	YD 48	FHWA HEC-22 GENERIC	N/A	On Sag	1	41.58	44.89	3.31	41.58	0.00	10.00	0.00
47	YD-07	FHWA HEC-22 GENERIC	N/A	On Sag	1	43.84	47.30	3.46	43.84	0.00	10.00	0.00
48	YD16	FHWA HEC-22 GENERIC	N/A	On Sag	1	57.50	61.50	4.00	57.50	0.00	10.00	0.00
49	YD-17	FHWA HEC-22 GENERIC	N/A	On Sag	1	40.24	44.00	3.76	40.24	0.00	10.00	0.00
50	YD-35	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.92	46.50	3.58	42.92	0.00	10.00	0.00
51	YD-46	FHWA HEC-22 GENERIC	N/A	On Sag	1	43.29	46.50	3.21	43.29	0.00	10.00	0.00
52	YD-49	FHWA HEC-22 GENERIC	N/A	On Sag	1	42.25	46.25	4.00	42.25	0.00	10.00	0.00

Roadway & Gutter Input

SN	Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1	CB 01	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
2	CB 02	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
3	CB 03	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
4	CB 04	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
5	CB 05	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
6	CB 06	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
7	CB 09	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
8	CB 15	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
9	EX CB-17	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
10	EX CB-18	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
11	EX CB-19	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
12	EX CB-20	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
13	EX CB-21	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
14	EX CB-22	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
15	EX CB-23	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
16	EX CB-24	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
17	EX CB-25	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
18	EX CB-26	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
19	EX CB-27	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
20	EX CB-29	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
21	EX CB-30	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
22	EX CB-31	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
23	EX CB-32	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
24	EX CB-33	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
25	EX-CB-16	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
26	YD 01	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
27	YD 02	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
28	YD 03	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
29	YD 04	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
30	YD 06	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
31	YD 10	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
32	YD 11	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
33	YD 12	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
34	YD 13	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
35	YD 14	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
36	YD 15	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
37	YD 22	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
38	YD 26	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
39	YD 27	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
40	YD 28	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
41	YD 29	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
42	YD 30	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
43	YD 33	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
44	YD 40	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
45	YD 47	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
46	YD 48	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
47	YD-07	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
48	YD16	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
49	YD-17	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
50	YD-35	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
51	YD-46	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00
52	YD-49	N/A	0.0200	0.0130	0.0500	2.00	0.0000	7.00

Inlet Results

SN	Element ID	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Max Depth Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	CB 01	1.68	1.68	N/A	N/A	N/A	9.78	47.21	0.21	0 00:00	0.00	0.00
2	CB 02	0.00	0.00	N/A	N/A	N/A	1.00	45.03	0.03	0 00:00	0.00	0.00
3	CB 03	2.20	2.20	N/A	N/A	N/A	12.54	44.56	0.26	0 12:31	0.00	0.00
4	CB 04	1.09	1.09	N/A	N/A	N/A	7.66	47.41	0.16	0 12:30	0.00	0.00
5	CB 05	1.09	1.09	N/A	N/A	N/A	7.66	47.41	0.16	0 00:00	0.00	0.00
6	CB 06	1.21	1.21	N/A	N/A	N/A	8.25	45.68	0.18	0 00:01	0.00	0.00
7	CB 09	2.25	2.25	N/A	N/A	N/A	12.74	44.06	0.26	0 00:00	0.00	0.00
8	CB 15	3.06	3.06	N/A	N/A	N/A	15.75	43.33	0.33	0 00:00	0.00	0.00
9	EX CB-17	2.54	2.54	N/A	N/A	N/A	13.84	66.92	0.29	0 12:07	0.00	0.00
10	EX CB-18	2.38	2.38	N/A	N/A	N/A	13.26	71.19	0.28	0 12:10	0.00	0.00
11	EX CB-19	1.33	1.33	N/A	N/A	N/A	8.82	75.54	0.19	0 12:10	0.00	0.00
12	EX CB-20	2.79	2.79	N/A	N/A	N/A	14.77	70.53	0.31	0 12:10	0.00	0.00
13	EX CB-21	1.47	1.47	N/A	N/A	N/A	9.45	48.32	0.20	0 11:41	0.00	0.00
14	EX CB-22	1.19	1.19	N/A	N/A	N/A	8.17	50.13	0.17	0 12:09	0.00	0.00
15	EX CB-23	9.63	9.63	N/A	N/A	N/A	144.91	50.21	2.91	0 11:37	0.00	0.00
16	EX CB-24	6.55	6.55	N/A	N/A	N/A	26.51	48.30	0.54	0 11:53	0.00	0.00
17	EX CB-25	2.58	2.58	N/A	N/A	N/A	14.01	60.70	0.29	0 12:14	0.00	0.00
18	EX CB-26	1.04	1.04	N/A	N/A	N/A	7.41	61.02	0.16	0 12:03	0.00	0.00
19	EX CB-27	4.58	4.58	N/A	N/A	N/A	20.77	64.00	0.43	0 12:02	0.00	0.00
20	EX CB-29	4.11	4.11	N/A	N/A	N/A	19.29	48.70	0.40	0 12:15	0.00	0.00
21	EX CB-30	0.47	0.47	N/A	N/A	N/A	2.85	75.57	0.07	0 12:15	0.00	0.00
22	EX CB-31	2.42	2.42	N/A	N/A	N/A	13.39	71.08	0.28	0 12:14	0.00	0.00
23	EX CB-32	0.55	0.55	N/A	N/A	N/A	4.64	80.80	0.10	0 12:10	0.00	0.00
24	EX CB-33	2.40	2.40	N/A	N/A	N/A	13.32	79.68	0.28	0 12:15	0.00	0.00
25	EX-CB-16	3.41	3.41	N/A	N/A	N/A	16.36	49.43	0.43	0 12:01	0.00	0.00
26	YD 01	0.50	0.50	N/A	N/A	N/A	2.94	46.07	0.07	0 00:00	0.00	0.00
27	YD 02	0.52	0.52	N/A	N/A	N/A	2.99	46.07	0.07	0 12:31	0.00	0.00
28	YD 03	3.95	3.95	N/A	N/A	N/A	17.69	45.86	0.36	0 12:30	0.00	0.00
29	YD 04	0.42	0.42	N/A	N/A	N/A	2.73	44.56	0.06	0 00:00	0.00	0.00
30	YD 06	1.09	1.09	N/A	N/A	N/A	7.66	43.66	0.16	0 00:00	0.00	0.00
31	YD 10	0.59	0.59	N/A	N/A	N/A	4.92	50.11	0.11	0 00:00	0.00	0.00
32	YD 11	0.60	0.60	N/A	N/A	N/A	4.98	52.11	0.11	0 00:00	0.00	0.00
33	YD 12	0.60	0.60	N/A	N/A	N/A	4.98	54.11	0.11	0 00:00	0.00	0.00
34	YD 13	0.61	0.61	N/A	N/A	N/A	5.04	56.11	0.11	0 00:00	0.00	0.00
35	YD 14	0.46	0.46	N/A	N/A	N/A	2.84	58.07	0.07	0 00:00	0.00	0.00
36	YD 15	0.00	0.00	N/A	N/A	N/A	1.00	60.03	0.03	0 00:00	0.00	0.00
37	YD 22	0.10	0.10	N/A	N/A	N/A	1.66	46.54	0.04	0 00:00	0.00	0.00
38	YD 26	1.99	1.99	N/A	N/A	N/A	11.70	48.94	0.24	0 00:01	0.00	0.00
39	YD 27	0.00	0.00	N/A	N/A	N/A	1.00	51.03	0.03	0 00:00	0.00	0.00
40	YD 28	0.00	0.00	N/A	N/A	N/A	1.00	52.73	0.03	0 00:00	0.00	0.00
41	YD 29	0.00	0.00	N/A	N/A	N/A	1.00	55.03	0.03	0 00:00	0.00	0.00
42	YD 30	0.00	0.00	N/A	N/A	N/A	1.00	57.03	0.03	0 00:00	0.00	0.00
43	YD 33	1.07	1.07	N/A	N/A	N/A	7.56	60.16	0.16	0 00:00	0.00	0.00
44	YD 40	2.36	2.36	N/A	N/A	N/A	13.15	50.27	0.27	0 12:24	0.00	0.00
45	YD 47	1.05	1.05	N/A	N/A	N/A	7.46	44.28	0.16	0 00:00	0.00	0.00
46	YD 48	1.31	1.31	N/A	N/A	N/A	8.73	45.07	0.18	0 00:00	0.00	0.00
47	YD-07	0.06	0.06	N/A	N/A	N/A	1.47	47.34	0.04	0 00:00	0.00	0.00
48	YD16	1.10	1.10	N/A	N/A	N/A	7.71	61.66	0.16	0 00:00	0.00	0.00
49	YD-17	3.40	3.40	N/A	N/A	N/A	16.93	44.35	0.35	0 00:00	0.00	0.00
50	YD-35	3.54	3.54	N/A	N/A	N/A	17.40	46.86	0.36	0 12:25	0.00	0.00
51	YD-46	0.10	0.10	N/A	N/A	N/A	1.66	46.54	0.04	0 00:02	0.00	0.00
52	YD-49	2.26	2.26	N/A	N/A	N/A	12.78	46.52	0.27	0 12:20	0.00	0.00

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Engineers | Environmental Specialists

Project Name:	**Greenwich Central Middle School**
Project Number:	**G-5068-003**
Project Location:	**Greenwich, CT**
Description:	**Runoff Reduction Volume**
Prepared By:	**EG** Checked By: **APW**
Date:	**Jaunary 5, 2024**

Runoff Reduction Volume - Provided LID BMP Volumes

Designation: **Point of Comparison A**
Location: LID BMP Only

Porous Pavement D1H =	2605	cf
Porous Pavement D2A =	2051	cf
Porous Pavement D2B =	573	cf
Porous Pavement D2C =	576	cf
Porous Pavement D2D =	576	cf
Porous Pavement D2E =	590	cf
Porous Pavement D2F =	576	cf
Porous Pavement D2G =	732	cf
Porous Pavement 02 =	1063	cf
Porous Pavement 03 =	1292	cf
Porous Pavement 04 =	778	cf
Porous Pavement 05 =	874	cf
Porous Pavement 06 =	934	cf
Porous Pavement 07 =	2942	cf
**Detention Basin 01 =	0	cf
**Detention Basin 02 =	490	cf
**Detention Basin 03 =	579	cf
*Rain Garden 03 =	1,854	cf
*Rain Garden 04 =	613	cf
*Rain Garden 06 =	251	cf
*Rain Garden 07 =	243	cf
Total BMP_A =	**20192**	**cf**
***Required WQV For LID BMP =**	**16014**	**cf**

*Rain Garden is designed with an underdrain. Storage provided above the finished surface (mulch layer) and the bioretention soil is used to determine water quality volume.

**Detention Basin only provides storage above finished surface.

***LID BMPs must treat a minimum of 60% of the total water quality volume of the site.

Runoff Reduction Volume Calculation from the Town of Greenwich Drainage Manual, dated February 2014.

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond
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INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-2

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Proprietary Separator	50%	1.00	0.50	0.50
Permeable Pavement	90%	0.50	0.45	0.05
		0.05	0.00	0.05
		0.05	0.00	0.05
		0.05	0.00	0.05

Project:
Prepared By: EG
Date: 1/5/2024

Total TSS Removal = 95%

Separate Form Needs to be Completed for Each Outlet or BMP Train

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

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INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-3

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Proprietary Separator	50%	1.00	0.50	0.50
Permeable Pavement	90%	0.50	0.45	0.05
		0.05	0.00	0.05
		0.05	0.00	0.05
		0.05	0.00	0.05

Project:
Prepared By: EG
Date: 1/5/2024

Total TSS Removal = 95%

Separate Form Needs to be Completed for Each Outlet or BMP Train

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

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INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-4

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Proprietary Separator	50%	1.00	0.50	0.50
Subsurface Structures	90%	0.50	0.45	0.05
		0.05	0.00	0.05
		0.05	0.00	0.05
		0.05	0.00	0.05

Project:
Prepared By: EG
Date: 1/5/2024

Total TSS Removal = 95%

Separate Form Needs to be Completed for Each Outlet or BMP Train

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond
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INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-5

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Deep Sump Catch Basin	25%	1.00	0.25	0.75
Subsurface Structures	90%	0.75	0.68	0.08
		0.08	0.00	0.08
		0.08	0.00	0.08
		0.08	0.00	0.08

Project:
Prepared By: EG
Date: 1/5/2024

Total TSS Removal = 93%

Separate Form Needs to be Completed for Each Outlet or BMP Train

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

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INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-6

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Proprietary Separator	**50%**	**1.00**	**0.50**	**0.50**
		0.50	**0.00**	**0.50**
		0.50	**0.00**	**0.50**
		0.50	**0.00**	**0.50**
		0.50	**0.00**	**0.50**

Project:
Prepared By: EG
Date: 1/5/2024

Total TSS Removal = **50%**

Separate Form Needs to be Completed for Each Outlet or BMP Train

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond
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INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-7

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Rain Garden	80%	1.00	0.80	0.20
		0.20	0.00	0.20
		0.20	0.00	0.20
		0.20	0.00	0.20
		0.20	0.00	0.20

Total TSS Removal = 80%

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
Prepared By: EG
Date: 1/5/2024

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond
Engineers | Environmental Specialists

INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-9

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Permeable Pavement	90%	1.00	0.90	0.10
Deep Sump Catch Basin	25%	0.10	0.03	0.08
		0.08	0.00	0.08
		0.08	0.00	0.08
		0.08	0.00	0.08

Project:
Prepared By: EG
Date: 1/5/2024

Total TSS Removal = 93%

Separate Form Needs to be Completed for Each Outlet or BMP Train

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond
Engineers | Environmental Specialists

INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-11

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Permeable Pavement	90%	1.00	0.90	0.10
Deep Sump Catch Basin	25%	0.10	0.03	0.08
		0.08	0.00	0.08
		0.08	0.00	0.08
		0.08	0.00	0.08

Project:
Prepared By: EG
Date: 1/5/2024

Total TSS Removal = 93%

Separate Form Needs to be Completed for Each Outlet or BMP Train

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond
Engineers | Environmental Specialists

INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-12

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Rain Garden	80%	1.00	0.80	0.20
		0.20	0.00	0.20
		0.20	0.00	0.20
		0.20	0.00	0.20
		0.20	0.00	0.20

Total TSS Removal = 80%

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
Prepared By: EG
Date: 1/5/2024

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond
Engineers | Environmental Specialists

INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-15

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Permeable Pavement	90%	1.00	0.90	0.10
Deep Sump Catch Basin	25%	0.10	0.03	0.08
		0.08	0.00	0.08
		0.08	0.00	0.08
		0.08	0.00	0.08

Project:
Prepared By: EG
Date: 1/5/2024

Total TSS Removal = 93%

Separate Form Needs to be Completed for Each Outlet or BMP Train

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond
Engineers | Environmental Specialists

INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-16

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Permeable Pavement	90%	1.00	0.90	0.10
Deep Sump Catch Basin	25%	0.10	0.03	0.08
		0.08	0.00	0.08
		0.08	0.00	0.08
		0.08	0.00	0.08

Project:
Prepared By: EG
Date: 1/5/2024

Total TSS Removal = 93%

Separate Form Needs to be Completed for Each Outlet or BMP Train

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond
Engineers | Environmental Specialists

INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-17

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Permeable Pavement	90%	1.00	0.90	0.10
Deep Sump Catch Basin	25%	0.10	0.03	0.08
		0.08	0.00	0.08
		0.08	0.00	0.08
		0.08	0.00	0.08

Project:
Prepared By: EG
Date: 1/5/2024

Total TSS Removal = 93%

Separate Form Needs to be Completed for Each Outlet or BMP Train

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond
Engineers | Environmental Specialists

INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-18

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Permeable Pavement	90%	1.00	0.90	0.10
Deep Sump Catch Basin	25%	0.10	0.03	0.08
		0.08	0.00	0.08
		0.08	0.00	0.08
		0.08	0.00	0.08

Project:
Prepared By: EG
Date: 1/5/2024

Total TSS Removal = 93%

Separate Form Needs to be Completed for Each Outlet or BMP Train

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond
Engineers | Environmental Specialists

INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-19

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Rain Garden	80%	1.00	0.80	0.20
		0.20	0.00	0.20
		0.20	0.00	0.20
		0.20	0.00	0.20
		0.20	0.00	0.20

Project:
Prepared By: EG
Date: 1/5/2024

Total TSS Removal = 80%

Separate Form Needs to be Completed for Each Outlet or BMP Train

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond
Engineers | Environmental Specialists

INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-20

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Rain Garden	80%	1.00	0.80	0.20
		0.20	0.00	0.20
		0.20	0.00	0.20
		0.20	0.00	0.20
		0.20	0.00	0.20

Total TSS Removal = 80%

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
Prepared By: EG
Date: 1/5/2024

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond
Engineers | Environmental Specialists

INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-21

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Deep Sump Catch Basin	25%	1.00	0.25	0.75
		0.75	0.00	0.75
		0.75	0.00	0.75
		0.75	0.00	0.75
		0.75	0.00	0.75

Project:
Prepared By: EG
Date: 1/5/2024

Total TSS Removal = 25%

Separate Form Needs to be Completed for Each Outlet or BMP Train

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond
Engineers | Environmental Specialists

INSTRUCTIONS:
1. Column A and B: See TSS removal efficiency table in Section 5 of the Greenwich Drainage Manual
2. Complete only highlighted cells

Location: WQA-22

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Deep Sump Catch Basin	25%	1.00	0.25	0.75
		0.75	0.00	0.75
		0.75	0.00	0.75
		0.75	0.00	0.75
		0.75	0.00	0.75

Project:
Prepared By: EG
Date: 1/5/2024

Total TSS Removal = 25%

Separate Form Needs to be Completed for Each Outlet or BMP Train

*Equals remaining load from previous BMP (E) which enters the BMP

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond

Total Suspended Solids (TSS) Removal - Summary
Point of Comparison A

Pipe 1

Catchment Area	BMP	TSS Removal Rate	Starting TSS Load	Amount Removed	Remaining Load	Area (ac)
WQA-2	Propietary Separator & Permeable Pavement	95%	1.00	0.95	0.05	0.877
WQA-3	Propietary Separator & Permeable Pavement	95%	1.00	0.95	0.05	0.767
WQA-5	Deep Sump Catch Basin & Subsurface Structure	93%	1.00	0.93	0.07	0.234
				Subtotal		1.878
				Weighted TSS Removal	0.95	
				Weighted TSS Removal For Pipe 1=	**0.95**	

Pipe 2

Catchment Area	BMP	TSS Removal Rate	Starting TSS Load	Amount Removed	Remaining Load	Area (ac)
WQA-7	Rain Garden	80%	1.00	0.80	0.20	0.071
WQA-11	Permeable Pavement & Deep Sump Catch Basin	93%	1.00	0.93	0.07	0.341
WQA-12	Rain Garden	80%	1.00	0.80	0.20	0.201
WQA-15	Permeable Pavement & Deep Sump Catch Basin	93%	1.00	0.93	0.07	0.160
WQA-16	Permeable Pavement & Deep Sump Catch Basin	93%	1.00	0.93	0.07	0.154
Other	Direct Connection	0%	1.00	0	1.00	0.112
				Subtotal		1.040
				Weighted TSS Removal	0.80	
				Weighted TSS Removal For Pipe 2=	**0.80**	

References:
2004 Connecticut Stormwater Quality Manual, Chapter 6
2012 Town of Greenwich Drainage Manual

Project No. G-5068-003
Date: 01/05/2024
Prepared By: EG

Greenwich Central Middle School
Greenwich, CT
TSS Removal Worksheet

Tighe&Bond

Pipe 3

Catchment Area	BMP	TSS Removal Rate	Starting TSS Load	Amount Removed	Remaining Load	Area (ac)
WQA-4	Propietary Separator & Subsurface Structure	95%	1.00	0.95	0.05	0.999
WQA-6	Propietary Separator & Subsurface Structure	95%	1.00	0.95	0.05	0.286
WQA-9	Permeable Pavement & Deep Sump Catch Basin	93%	1.00	0.93	0.07	0.529
Other	Direct Connection	0%	1.00	0	1.00	0.340
				Subtotal		2.154
				Weighted TSS Removal	0.80	
				Weighted TSS Removal For Pipe 3=	**0.80**	

Pipe 4

Catchment Area	BMP	TSS Removal Rate	Starting TSS Load	Amount Removed	Remaining Load	Area (ac)
WQA-17	Permeable Pavement & Deep Sump Catch Basin	93%	1.00	0.93	0.07	0.187
WQA-18	Permeable Pavement & Deep Sump Catch Basin	93%	1.00	0.93	0.07	0.339
WQA-19	Rain Garden	80%	1.00	0.80	0.20	0.066
WQA-20	Rain Garden	80%	1.00	0.80	0.20	0.055
WQA-21	Deep Sump Catch Basin	25%	1.00	0.25	0.75	0.031
WQA-22	Deep Sump Catch Basin	25%	1.00	0.25	0.75	0.097
				Subtotal		0.774
				Weighted TSS Removal	0.80	
				Weighted TSS Removal For Pipe 4=	**0.80**	

References:
2004 Connecticut Stormwater Quality Manual, Chapter 6
2012 Town of Greenwich Drainage Manual

StormTech MC-3500

102 unit underground infiltration located on the Southheast corner of the new school
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	9,498	cf	
K	=	Infiltration Rate	=	0.38	in/hr	50% field measured
A	=	Bottom Area	=	5,167	sf	

$\text{Time}_{drawdown}$ = 58.8 hours

The proposed retention volume will drawdown within 72 hours.

ADS N-12 48" Dia.

4 unit of 20 LF underground infiltration pipe storage located along the Eastern edge of the school.
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	369	cf	
K	=	Infiltration Rate	=	0.75	in/hr	50% field measured
A	=	Bottom Area	=	533	sf	

$\text{Time}_{drawdown}$ = 11.1 hours

The proposed retention volume will drawdown within 72 hours.

Rain Garden-03

Rain garden located along main driveway near school building.
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	1,854	cf	
K	=	Infiltration Rate	=	0.75	in/hr	50% field measured
A	=	Bottom Area	=	2,332	sf	

$\text{Time}_{drawdown}$ = 12.7 hours

The proposed retention volume will drawdown within 72 hours.

Rain Garden-04

Rain garden located near East parking area.
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	613	cf	
K	=	Infiltration Rate	=	1.50	in/hr	50% field measured
A	=	Bottom Area	=	771	sf	

$\text{Time}_{drawdown}$ = 6.4 hours

The proposed retention volume will drawdown within 72 hours.

Rain Garden-06

Rain garden located near Southern parking area, near school entrance.
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	251	cf	
K	=	Infiltration Rate	=	0.51	in/hr	50% field measured
A	=	Bottom Area	=	316	sf	

$\text{Time}_{drawdown}$ = 18.7 hours

The proposed retention volume will drawdown within 72 hours.

Rain Garden-07

Rain garden located near Southern parking area, near school entrance.
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	243	cf	
K	=	Infiltration Rate	=	0.51	in/hr	50% field measured
A	=	Bottom Area	=	305	sf	

$\text{Time}_{drawdown}$ = 18.7 hours

The proposed retention volume will drawdown within 72 hours.

Detention Basin-01

Bioretention basin along the Eastern edge of the main driveway
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	0	cf	
K	=	Infiltration Rate	=	0.51	in/hr	50% field measured
A	=	Bottom Area	=	2,082	sf	

$\text{Time}_{drawdown}$ = 0.0 hours

The proposed retention volume will drawdown within 72 hours.

Detention Basin-02

Bioretention basin along the Eastern edge of the main driveway
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	490	cf	
K	=	Infiltration Rate	=	0.38	in/hr	50% field measured
A	=	Bottom Area	=	2,956	sf	

$\text{Time}_{drawdown}$ = 5.3 hours

The proposed retention volume will drawdown within 72 hours.

Detention Basin-03

Bioretention basin along the Eastern edge of the main driveway
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	579	cf	
K	=	Infiltration Rate	=	0.38	in/hr	50% field measured
A	=	Bottom Area	=	5,395	sf	

$\text{Time}_{drawdown}$ = 3.4 hours

The proposed retention volume will drawdown within 72 hours.

Porous Pavement-D1H

Emergency path in the rear of the school
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	2,605	cf	
K	=	Infiltration Rate	=	0.51	in/hr	50% field measured
A	=	Bottom Area	=	3,618	sf	

$\text{Time}_{drawdown}$ = 16.9 hours

The proposed retention volume will drawdown within 72 hours.

Porous Pavement-D2A

Emergency path in the rear of the school
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	2,051	cf	
K	=	Infiltration Rate	=	0.51	in/hr	50% field measured
A	=	Bottom Area	=	2,848	sf	

$\text{Time}_{drawdown}$ = 16.9 hours

The proposed retention volume will drawdown within 72 hours.

Porous Pavement-D2B

Emergency path in the rear of the school
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	573	cf	
K	=	Infiltration Rate	=	0.51	in/hr	50% field measured
A	=	Bottom Area	=	796	sf	

$\text{Time}_{drawdown}$ = 16.9 hours

The proposed retention volume will drawdown within 72 hours.

Porous Pavement-D2C

Emergency path in the rear of the school
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	576	cf	
K	=	Infiltration Rate	=	0.51	in/hr	50% field measured
A	=	Bottom Area	=	800	sf	

$\text{Time}_{drawdown}$ = 16.9 hours

The proposed retention volume will drawdown within 72 hours.

Porous Pavement-D2D

Emergency path in the rear of the school
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	576	cf	
K	=	Infiltration Rate	=	0.51	in/hr	50% field measured
A	=	Bottom Area	=	800	sf	

$\text{Time}_{drawdown}$ = 16.9 hours

The proposed retention volume will drawdown within 72 hours.

Porous Pavement-D2E

Emergency path in the rear of the school
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	590	cf	
K	=	Infiltration Rate	=	0.51	in/hr	50% field measured
A	=	Bottom Area	=	819	sf	

$\text{Time}_{drawdown}$ = 17.0 hours

The proposed retention volume will drawdown within 72 hours.

Porous Pavement-D2F

Emergency path in the rear of the school
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	576	cf	
K	=	Infiltration Rate	=	0.51	in/hr	50% field measured
A	=	Bottom Area	=	800	sf	

$\text{Time}_{drawdown}$ = 16.9 hours

The proposed retention volume will drawdown within 72 hours.

Porous Pavement-D2G

Emergency path in the rear of the school
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	732	cf	
K	=	Infiltration Rate	=	0.51	in/hr	50% field measured
A	=	Bottom Area	=	1,016	sf	

$\text{Time}_{drawdown}$ = 17.0 hours

The proposed retention volume will drawdown within 72 hours.

Porous Pavement-02

Parking stall area along main driveway
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	1,063	cf	
K	=	Infiltration Rate	=	0.38	in/hr	50% field measured
A	=	Bottom Area	=	1,476	sf	

$\text{Time}_{drawdown}$ = 23.0 hours

The proposed retention volume will drawdown within 72 hours.

Porous Pavement-03

Parking stall area along main driveway
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	1,292	cf	
K	=	Infiltration Rate	=	0.75	in/hr	50% field measured
A	=	Bottom Area	=	2,484	sf	

$\text{Time}_{drawdown}$ = 8.3 hours

The proposed retention volume will drawdown within 72 hours.

Porous Pavement-04

Parking stall area along main driveway
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	778	cf	
K	=	Infiltration Rate	=	0.38	in/hr	50% field measured
A	=	Bottom Area	=	1,296	sf	

$\text{Time}_{drawdown}$ = 19.2 hours

The proposed retention volume will drawdown within 72 hours.

Porous Pavement-05

Parking stall area along main driveway
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	874	cf	
K	=	Infiltration Rate	=	0.38	in/hr	50% field measured
A	=	Bottom Area	=	1,457	sf	

$\text{Time}_{drawdown}$ = 19.2 hours

The proposed retention volume will drawdown within 72 hours.

Porous Pavement-06

Parking stall area along main driveway
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	779	cf	
K	=	Infiltration Rate	=	0.38	in/hr	50% field measured
A	=	Bottom Area	=	1,298	sf	

$\text{Time}_{drawdown}$ = 19.2 hours

The proposed retention volume will drawdown within 72 hours.

Porous Pavement-07

Parking stall area along main driveway
The Design Volume is the volume of runoff stored below the systems outlet.

$$\text{Time}_{drawdown} = \frac{DV}{K \times A}$$

DV	=	Design Volume	=	2,942	cf	
K	=	Infiltration Rate	=	0.38	in/hr	50% field measured
A	=	Bottom Area	=	4,085	sf	

$\text{Time}_{drawdown}$ = 23.0 hours

The proposed retention volume will drawdown within 72 hours.

BIORETENTION BASIN 02
DEEP SUMP CATCH BASIN 04
PERMEABLE PAVEMENT 02
DEEP SUMP CATCH BASIN 02
UNDERGROUND INFILTRATION 01
HYDRODYNAMIC SEPARATOR 04
UNDERGROUND INFILTRATION 02
DEEP SUMP CATCH BASIN 01
RAIN GARDEN 04
BIORETENTION BASIN 03
DEEP SUMP CATCH BASIN 05
PERMEABLE PAVEMENT 05
DEEP SUMP CATCH BASIN 07
PERMEABLE PAVEMENT 06
DEEP SUMP CATCH BASIN 08
PERMEABLE PAVEMENT 07
DEEP SUMP CATCH BASIN 09
PERMEABLE PAVEMENT 04
DEEP SUMP CATCH BASIN 06
RAIN GARDEN 03
PERMEABLE PAVEMENT 03
DEEP SUMP CATCH BASIN 03
RAIN GARDEN 06
RAIN GARDEN 07
DEEP SUMP CATCH BASIN 10
DEEP SUMP CATCH BASIN 11
HYDRODYNAMIC SEPARATOR 05
HYDRODYNAMIC SEPARATOR 01
HYDRODYNAMIC SEPARATOR 02
HYDRODYNAMIC SEPARATOR 03
POROUS PAVEMENT D2A
POROUS PAVEMENT D1H

WQA-5
WQA-11
WQA-12
WQA-7
WQA-9
WQA-15
WQA-16
WQA-17
WQA-18
WQA-19
WQA-20
WQA-21
WQA-22
WQA-2R
WQA-4A
WQA-4B
WQA-2
WQA-2R2
WQA-3R2
WQA-3
WQA-3R
WQA-6

N/F
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OF THE JUDITH T. BRAUNSTEIN
VOLUME 8112 PAGE 329

ANO A. & BRIAN E. STABILE
VOLUME 7290 PAGE 132

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ROBERT & RACHEL HOVEN
VOLUME 7507 PAGE 199

APPROX. LOCATION OF 8" WATER MAIN (PER RECORD MAP)

LEGEND

WATERSHED BOUNDARY

SCALE: 1" = 50'

GREENWICH CENTRAL MIDDLE SCHOOL GREENWICH, CT	
PROPOSED WATER QUALITY AREA MAP	
DATE: 09/27/2023	Tighe&Bond
SCALE: AS SHOWN	
FIGURE: WQA-01	

Plotted On: Apr 10, 2024-8:11am By: CSicher
P:\Jobs & Work\SVG\00456 Greenwich Public Schools\003 Central Middle School\Design\Stormwater\Design Development\Phase 1\SVG00456.003.XR.WQA-Phase 1.dwg

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, CT**
Description: **Proposed Groundwater Recharge Volume**

Groundwater Recharge Volume

Designation : **PR-WS-A**

Impervious area (I_B)	=	2.29	ac
Impervious area (I_C)	=	3.85	ac
Target Depth Factor* (F_B)	=	0.35	in
Target Depth Factor* (F_C)	=	0.25	in

1.3 Recharge Volume Calculations

1.3.1 Groundwater Recharge Volume

The required Groundwater Recharge Volume (GRV) equals a depth of runoff corresponding to the soil type times the impervious areas covering that soil type at the post-development site.

$$GRV = F \times I \quad \text{(B.1)}$$

where: GRV = required Groundwater Recharge Volume (cu ft or acre-feet)
F = target depth factor associated with each Hydrologic Soil Group (inches)
I = impervious area on the post-development site for new development projects or the net increase in impervious area for re-development projects

Attention must be given to ensure consistency in units. In particular, the target depth factors must be converted to feet.

Table B-3. Recharge Target Depth by Hydrologic Soil Group

NRCS Hydrologic Soil Group	Approximate Soil Texture	Target Depth Factor (F)
A	Gravels, sand, loamy sand or sandy loam	0.6 inch
B	Silty loam	0.35 inch
C	Sandy clay loam	0.25 inch
D	Clay, silty clay loam, sandy clay, silty clay	0.1 inch

When a site contains multiple Hydrologic Soil Groups, determine the required GRV for each impervious area by Hydrologic Soil Group and then add the volumes together.

Minimum Ground Water Recharge Volume

GRV_B =	$F_B \times I_B$	=	**0.067 ac-ft**
		=	**2,907 cf**
GRV_C =	$F_C \times I_C$	=	**0.080 ac-ft**
		=	**3,491 cf**
GRV =	$GRV_B + GRV_C$	=	**6,398 cf**
	GRV Provided	=	**18,143 cf**

* *From Table B-3. Recharge Target Depth by Hydroalogic Soil Group in the Town of Greenwich Drainage Manual, dated February 2014.*

** *Groundwater Recharge Volume Calculation from the Town of Greenwich Drainage Manual, dated February 2014.*

Tighe&Bond
Engineers | Environmental Specialists

Project Name: **Greenwich Central Middle School**
Project Number: **G5068-003**
Project Location: **Greenwich, Connecticut**
Description: **Water Quality Volume P-01**
Prepared By: **EG/ZNH** Date: **January 5, 2024**

Water Quality Volume Calculation Breakdown

Designation: **WQA-A**
Location: Point of Comparison A

Required Water Quality Volume (WQv)

Total Area in acres (A)	=	17.60	ac
Impervious Area in acres	=	5.96	ac
Percent of Impervious Area (%I)	=	0.34	
Percent of Landscaped Area B ($\%T_B$)	=	0.35	
Percent of Landscaped Area C ($\%T_C$)	=	0.09	
Percentage of Forested Area B ($\%F_B$)	=	0.20	
Percentage of Forested Area C ($\%F_C$)	=	0.03	
R_vI *	=	0.95	
$R_{v,B}T$ *	=	0.20	
$R_{v,C}T$ *		0.22	
$R_{v,B}F$ *	=	0.03	
$R_{v,C}F$ *		0.04	

Volumetric Runoff Coefficient (R)

$R = R_vI * \%I + \Sigma(R_vT * \%T) + \Sigma(R_vF * \%F)$ = 0.42

Required Water Quality Volume (WQv)

$$WQv = \frac{(1")(R)(A)}{12}$$ = 0.6127 ac-ft

Required WQv = **26690** **cf**
Provided WQv = **29904** **cf**

*RvI, RvT and RvF from Table 5-5 from the Town of Greenwich Drainage Manual dated February 2014

Notes: Calculated in accordance with the 2004 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Project Name: **Greenwich Central Middle School**
Project Number: **G-5068-003**
Project Location: **Greenwich, CT**
Description: **Water Quality Volume & Flow**
Prepared By: **EG/ZNH** Date: **January 5,**

Designation: **WQA-2R2 & WQA-3R2**

Required Water Quality Volume (WQV)

Total Area in acres (A)	=	0.445	
Impervious Area in acres	=	0.445	
Fraction of Impervious Area (%I)	=	1.00	
Fraction of Landscaped Area (%T)	=	0.00	
RvI*	=	0.95	
RvT*	=	0.20	
Volumetric Runoff Coeff, $R = R_v I * \%I + R_v T * \%T$	=	0.950	
WQV = (1")(R)(A)/12	=	**0.0352**	**ac*ft**
	=	**1533**	**cf**

*RvI and RvT from Table 5-5 from the Town of Greenwich Drainage Manual dated February 2014

Required Water Quality Flow (WQF)

WQv (ac*ft)	=	0.0352	
Drainage Area (ac)	=	0.445	
Q= WQV*12 / DA	=	**0.950**	**in**
Runoff Depth in inches (Q)	=	0.950	in
Design Precipitation in inches (P)	=	1	in
CN=1000/[10+5*P+10Q-10*(Q^2+1.25QP)$^{1/2}$]	=	**100**	**CN**

From table 4-1 in chapter 4, TR-55

I_a	=	**0.041**	**in**
I_a / P	=	**0.041**	

From Exhibit 4-111 in chapter 4, TR-55

q_u	=	**650**	**csm/in**
Unit peak discharge in csm/in (q_u)	=	650	
Area in square miles (A)	=	0.001	
Runoff Depth in inches (Q)	=	0.950	
WQF=q_u*A*Q	=	**0.429**	**cfs**
Provided WQF: Contech CDS 2020-5-c	=	**2.200**	**cfs**

Calculated in accordance with the 2004 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Project Name: **Greenwich Central Middle School**
Project Number: **G-5068-003**
Project Location: **Greenwich, CT**
Description: **Water Quality Volume & Flow**
Prepared By: **EG/ZNH** Date: **January 5,**

Designation: **WQA-2R**

Required Water Quality Volume (WQV)

Total Area in acres (A)	=	0.414	
Impervious Area in acres	=	0.414	
Fraction of Impervious Area (%I)	=	1.00	
Fraction of Landscaped Area (%T)	=	0.00	
RvI*	=	0.95	
RvT*	=	0.20	
Volumetric Runoff Coeff, $R = R_v I * \%I + R_v T * \%T$	=	0.950	
WQV = (1")(R)(A)/12	=	**0.0327**	**ac*ft**
	=	**1426**	**cf**

*RvI and RvT from Table 5-5 from the Town of Greenwich Drainage Manual dated February 2014

Required Water Quality Flow (WQF)

WQv (ac*ft)	=	0.0327	
Drainage Area (ac)	=	0.414	
Q= WQV*12 / DA	=	**0.950**	**in**
Runoff Depth in inches (Q)	=	0.950	in
Design Precipitation in inches (P)	=	1	in
CN=1000/[10+5*P+10Q-10*(Q^2+1.25QP)$^{1/2}$]	=	**100**	**CN**

From table 4-1 in chapter 4, TR-55

I_a	=	**0.041**	**in**
I_a / P	=	**0.041**	

From Exhibit 4-111 in chapter 4, TR-55

q_u	=	**650**	**csm/in**
Unit peak discharge in csm/in (q_u)	=	650	
Area in square miles (A)	=	0.001	
Runoff Depth in inches (Q)	=	0.950	
WQF=q_u*A*Q	=	**0.399**	**cfs**
Provided WQF: Contech CDS 2020-5-c	=	**2.200**	**cfs**

Calculated in accordance with the 2004 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Project Name: **Greenwich Central Middle School**
Project Number: **G-5068-003**
Project Location: **Greenwich, CT**
Description: **Water Quality Volume & Flow**
Prepared By: **EG/ZNH** Date: **January 5,**

Designation: **WQA-3R**

Required Water Quality Volume (WQV)

Total Area in acres (A)	=	0.415	
Impervious Area in acres	=	0.415	
Fraction of Impervious Area (%I)	=	1.00	
Fraction of Landscaped Area (%T)	=	0.00	
RvI*	=	0.95	
RvT*	=	0.20	
Volumetric Runoff Coeff, $R = R_v I * \%I + R_v T * \%T$	=	0.950	
WQV = (1")(R)(A)/12	=	**0.0329**	**ac*ft**
	=	**1432**	**cf**

*RvI and RvT from Table 5-5 from the Town of Greenwich Drainage Manual dated February 2014

Required Water Quality Flow (WQF)

WQv (ac*ft)	=	0.0329	
Drainage Area (ac)	=	0.415	
Q= WQV*12 / DA	=	**0.950**	**in**
Runoff Depth in inches (Q)	=	0.950	in
Design Precipitation in inches (P)	=	1	in
CN=1000/[10+5*P+10Q-10*(Q^2+1.25QP)$^{1/2}$]	=	**100**	**CN**

From table 4-1 in chapter 4, TR-55

I_a	=	**0.041**	**in**
I_a / P	=	**0.041**	

From Exhibit 4-111 in chapter 4, TR-55

q_u	=	**650**	**csm/in**
Unit peak discharge in csm/in (q_u)	=	650	
Area in square miles (A)	=	0.001	
Runoff Depth in inches (Q)	=	0.950	
WQF=q_u*A*Q	=	**0.401**	**cfs**
Provided WQF: Contech CDS 2020-5-c	=	**2.200**	**cfs**

Calculated in accordance with the 2004 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Project Name: **Greenwich Central Middle School**
Project Number: **G-5068-003**
Project Location: **Greenwich, CT**
Description: **Water Quality Volume & Flow**
Prepared By: **EG/ZNH** Date: **January 5,**

Designation: **WQA-4A & WQA-4B**

Required Water Quality Volume (WQV)

Total Area in acres (A)	=	1.229	
Impervious Area in acres	=	1.229	
Fraction of Impervious Area (%I)	=	1.00	
Fraction of Landscaped Area (%T)	=	0.00	
RvI*	=	0.95	
RvT*	=	0.20	
Volumetric Runoff Coeff, $R = R_v I * \%I + R_v T * \%T$	=	0.950	
WQV = (1")(R)(A)/12	=	**0.0973**	**ac*ft**
	=	**4237**	**cf**

*RvI and RvT from Table 5-5 from the Town of Greenwich Drainage Manual dated February 2014

Required Water Quality Flow (WQF)

WQv (ac*ft)	=	0.0973	
Drainage Area (ac)	=	1.229	
Q= WQV*12 / DA	=	**0.950**	**in**
Runoff Depth in inches (Q)	=	0.950	in
Design Precipitation in inches (P)	=	1	in
CN=1000/[10+5*P+10Q-10*(Q^2+1.25QP)$^{1/2}$]	=	**100**	**CN**

From table 4-1 in chapter 4, TR-55

I_a	=	**0.041**	**in**
I_a / P	=	**0.041**	

From Exhibit 4-111 in chapter 4, TR-55

q_u	=	**650**	**csm/in**
Unit peak discharge in csm/in (q_u)	=	650	
Area in square miles (A)	=	0.002	
Runoff Depth in inches (Q)	=	0.950	
WQF=q_u*A*Q	=	**1.185**	**cfs**
Provided WQF: Contech CDS 2020-5-c	=	**2.200**	**cfs**

Calculated in accordance with the 2004 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Project Name: **Greenwich Central Middle School**
Project Number: **G-5068-003**
Project Location: **Greenwich, CT**
Description: **Water Quality Volume & Flow**
Prepared By: **EG/ZNH** Date: **January 5,**

Designation: **WQA-6**

Required Water Quality Volume (WQV)

Total Area in acres (A)	=	0.340	
Impervious Area in acres	=	0.228	
Fraction of Impervious Area (%I)	=	0.67	
Fraction of Landscaped Area (%T)	=	0.33	
RvI*	=	0.95	
RvT*	=	0.20	
Volumetric Runoff Coeff, $R = R_v I * \%I + R_v T * \%T$	=	0.704	
WQV = (1")(R)(A)/12	=	**0.0199**	**ac*ft**
	=	**869**	**cf**

*RvI and RvT from Table 5-5 from the Town of Greenwich Drainage Manual dated February 2014

Required Water Quality Flow (WQF)

WQv (ac*ft)	=	0.0199	
Drainage Area (ac)	=	0.340	
Q= WQV*12 / DA	=	**0.704**	**in**
Runoff Depth in inches (Q)	=	0.704	in
Design Precipitation in inches (P)	=	1	in
CN=1000/[10+5*P+10Q-10*(Q^2+1.25QP)$^{1/2}$]	=	**97**	**CN**

From table 4-1 in chapter 4, TR-55

I_a	=	**0.062**	**in**
I_a / P	=	**0.062**	

From Exhibit 4-111 in chapter 4, TR-55

q_u	=	**650**	**csm/in**
Unit peak discharge in csm/in (q_u)	=	650	
Area in square miles (A)	=	0.001	
Runoff Depth in inches (Q)	=	0.704	
WQF=q_u*A*Q	=	**0.243**	**cfs**
Provided WQF: Contech CDS 2020-5-c	=	**2.200**	**cfs**

Calculated in accordance with the 2004 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

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APPENDIX E

Connecticut Department of
Energy & Environmental Protection
Bureau of Materials Management & Compliance Assurance
Water Permitting & Enforcement Division

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, issued 8/21/13, effective 10/1/13
Stormwater Monitoring Report

SITE INFORMATION

Permittee: _____

Mailing Address: _____

Business Phone: _____ ext.: _____ Fax: _____

Contact Person: _____ Title: _____

Site Name: _____

Site Address: _____

Receiving Water (name, basin): _____

Stormwater Permit No. GSN _____

SAMPLING INFORMATION (Submit a separate form for each outfall)

Outfall Designation: _____ Date/Time Collected: _____

Outfall Location(s) (lat/lon or map link): _____

Person Collecting Sample: _____

Storm Magnitude (inches): _____ Storm Duration (hours): _____

Size of Disturbed Area at any time: _____

MONITORING RESULTS

Sample #	Parameter	Method	Results (units)	Laboratory (if applicable)
1	Turbidity			
2	Turbidity			
3	Turbidity			
4	Turbidity			

(provide an attachment if more than 4 samples were taken for this outfall) Avg =

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: _____

Signature: _____ Date: _____

Please send completed form to:

DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
79 ELM STREET
HARTFORD, CT 06106-5127
ATTN: NEAL WILLIAMS

Tighe&Bond

APPENDIX F

Project Name: Greenwich Central Middle School

Stormwater Pollution Control Plan

Potential Spill Location Information

Spill cleanup equipment is kept

_____

(where)

And includes-

_____

(what; speedi-dri, brooms, etc.)

And all personal are instructed in its location and use.

Types of materials present on-site which could potentially spill and discharde to stormwater include:
1.
2.
3.
4.
5.
6.

Areas where spills may potentially occur and discharge to stormwater include:
1.
2.
3.
4.
5.
6.

Measures used to minimize the possibility of spills include:
1.
2.
3.
4.
5.
6.

Project Name: Greenwich Central Middle School

Stormwater Pollution Control Plan

Spill Incident Recording Form

A history of spills and/or leaks is shown below. (*Make additional copies of table if needed).*

Date (MM/DD/YY)	(check one)		Location (as indicated	Description				Response Procedures	Measures to prevent reoccurance
	Spill	Leak		Type of Material	Quantity	Source if Known	Reason		

Connecticut Department of Environmental Protection
Oil and Chemical Spill Response Division
Report of Petroleum or Chemical Product Discharge, Spillage or Release

1. When did the incident occur? Date___/___/___ Time
month/day/year

2. Where did the incident occur?

_____

_____

3. How did the incident occur? (describe the cause)

_____

_____

4. Under whose control was the hazardous material at the time of the incident?

Name: _____

Mailing & Street Address: _____

Town:_____ State: _____ Zip:_____ Phone:_____

5. Who is the owner of the property onto which the spill occurred?

_____

If this is a corporate property or jointly owned property, who represents the owner?

Corporate Property ☐ Jointly-owned property ☐

Name:_____

Mailing & Street address_____

Town:_____ State:____ Zip:_____ Phone:_____

6. When was the incident verbally reported to the Department of Environmental Protection?

Date___/___/___ Time ___:___
Month/day/year

7. Who reported the incident and whom were they representing?

Name:_____

Mailing & Street Address:_____

Town:_____ State: ____ Zip:_____ Phone:_____

8. What were the chemicals or petroleum products, etc. released, spilled or discharged? Give an exact description of each of the materials involved in the incident, including chemical names, percent concentrations, trade names, etc.

   If the chemicals are Extremely Hazardous substances or CERCLA hazardous substances they must be identified as such and include the reportable quantity (RQ). Please attach a Material Safety Data Sheet (MSDS) for each chemical involved.

   What were the quantities of hazardous materials that were released, spilled or discharged to each environmental medium (air, surface water, soil, and/or ground water)? [NOTE: Connecticut General Statutes requires the reporting of any amount of any substance or material released to the environment].

9. Did any of these hazardous materials travel beyond the property line? [NOTE: Materials that enter the ground water are considered to have gone beyond the property line.]

10. What actions were taken to respond to and contain the release, spill or discharge?

11. What actions are being taken to prevent reoccurrence of an incident of this type? (Attach additional sheets if necessary.)

12. Were there any injuries as a result of the incident? If so, list the names of injured individuals, their addresses, phone numbers and describe their injuries. (Attach additional sheets if necessary)

Name:_____

Mailing & Street Address:_____

Town:_____ State:_____ Zip:_____ Telephone:_____

13. What is the appropriate advice regarding medical attention necessary for exposed individuals?

14. Are there any known or anticipated health risks, acute or chronic, associated with the release of these hazardous materials or medical advice that should be communicated?

15. Was the incident completely cleaned up by the time this report was submitted? If not, what are the anticipated remedial actions and their duration?

16. CERTIFICATION: I hereby affirm that the foregoing statement is true to the best of my knowledge.

Signature Title Date

Print Name Telephone

Street Address/P.O. Box City/Town State & Zip

This form may be reproduced as long as it contains all of the information requested and is on an 81/2 X 11 sheet of white paper, black type format. For serious incidents the questions may be answered in narrative format which must include the preparer's affidavit.

Mail to:

State of Connecticut
Department of Environmental Protection
Bureau of Waste Management
Oil and Chemical Response Division
79 Elm Street
Hartford, CT 06106-5127
www.dep.state.ct.us

Phone: Routine calls (860) 424-3024
Emergency 24 hrs (860) 424-3338

Tighe&Bond

APPENDIX G

Project Name: Greenwich Central Middle School

Report Number:	Page:

Stormwater Pollution Control Plan

Inspection Report Form for Stabilization Measures

Project Phase:

□ Initial □ Intermediate □ Final

Inspector: _____ **Date:** _____

No. of Days Since Last Rainfall: _____ **Inches:** _____

Area	Date Last Disturbed	Date of Next Disturbance	Stabilized?	Stabilized With	Condition

Stabilization Notes:

Stabilization Key

CE = Construction Entrance	TV = Temporary Vegetation
PV = Permanent Vegetation	

To be performed by: _____ **On or before:** _____

Project Name: Greenwich Central Middle School

Report Number:	Page:

Stormwater Pollution Control Plan

Inspection Report Form for Structural Controls

Project Phase:

□ Initial □ Intermediate □ Final

Inspector: _____ **Date:** _____

No. of Days Since Last Rainfall: _____ **Inches:** _____

Control Location	In Place?	Condition	Sediment Depth	Washed Out/ Overtopped?

Structural Notes:

To be performed by: _____ **On or before:** _____

Project Name: Greenwich Central Middle School

Stormwater Pollution Control Plan

Required Changes Reporting Form

Report Number:	Page:

Project Phase:

□ Initial □ Intermediate □ Final

Inspector: _____ **Date:** _____

No. of Days Since Last Rainfall: _____ **Inches:** _____

Summary of Required Changes

Reasons for Change

To be performed by: _____ **On or before:** _____

Project Name: Greenwich Central Middle School

Stormwater Pollution Control Plan

Inspection Summary Form

Report Number:	Page:

Project Phase:

□ Initial □ Intermediate □ Final

Inspector: _____ **Date:** _____

No. of Days Since Last Rainfall: _____ **Inches:** _____

Comments

Maintenance and Other Actions Required (Not Noted Elsewhere):

To be performed by: _____ **On or before:** _____

Project Name: Greenwich Central Middle School

Stormwater Pollution Control Plan

Inspection Certification Form

Report Number:	Page:

This certification must be completed after each inspection to signify that the inspection has been properly completed and the site has been found to be in compliance with the Storm Water Pollution Control Plan.

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals resposnible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute.

Signed: _____

Name: _____

Title: _____

Company: _____

Address: _____

Telephone: _____

Date: _____

Project Name: Greenwich Central Middle School

Stormwater Pollution Control Plan

Sweeping Schedule and Reciepts

All parking areas, sidewalks, driveways and other impervious surfaces (except roofs) shall be swept clean of sand, litter and any other pollutants at least twice a year, once between November 14 and December 15 (after leaf fall) and once during the month of April (after snow melt) and at other times as may be necessary. The following table shall be completed by a member of the Pollution Prevention Team (PPT) after each sweeping. Reciepts shall be kept in a pocket accompanying the schedule sheets in this attachment

Date (MM/DD/YY)	Company/Person Sweeping	Supervising Team Member	Comments

Project Name: Greenwich Central Middle School

Stormwater Pollution Control Plan

Monthly Inspection Checklist for Year 20___

The site is inspected weekly for trash and debris. The table on this page is initialed each month by a member of the PPT. If any problems are observed, write "No" in the "OK?" column and note the problem and measures taken in the space in the following table. Make a new copy of this table for each new year.

Date (List Day	Initials	OK?	Problems Noted and Measures Taken
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			
Drainage Structures and outfalls were cleaned on _____ ___, _____ (Month, day, year)			

By

_____

(Company)

Project Name: Greenwich Central Middle School

Report Number:	Page:

Stormwater Pollution Control Plan

Weekly Inspection Checklist for Year 20___

The site is inspected weekly for trash and debris. The table on this page is initialed each week by a member of the PPT. If any problems are observed, write "No" in the "OK?" column and note the problem and measures taken in the space following the table. Make a new copy of this table for each new year

Date (MM/DD/YY)	Initials	OK?	Date (MM/DD/YY)	Initials	OK?	Date (MM/DD/YY)	Initials	OK?

Comments or problems and measures taken:

Project Name: Greenwich Central Middle School

Stormwater Pollution Control Plan

Comprehensive Annual Stormwater Evaluation and Inspection Report

Once a year, a member of the PPT shall conduct a Comprehensive Annual Stormwater Evaluation and Inspection of all aspects and provisions of the SWPCP. The following report is prepared and a copy maintained on site in the files of the facility. The Comprehensive Annual Stormwater Evaluation and Inspection Report is reviewed and signed by the same party who signed the registration or by their replacement of equivalent position.

Inspection:

Date of Inspection:

Reviewed By:

Update the PPT if necessary. PPT updated? [ ] Yes [ ] No

Review the SMP. Areas of SMP need to be updated? [ ] Yes [ ] No

Review the checklists within the SWPCP. Update the checklists, spill plan and maintenance practices as necessary. Changes to the checklists, spill plan or maintenance practices are noted here and in the appropriate section of the Plan. (Copy this sheet as necessary).

Additional Comments:

Tighe&Bond

APPENDIX H

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

Notice of Termination Form

Please complete and submit this form in accordance with the general permit (DEP-PED-GP-015) in order to ensure the proper handling of your termination. Print or type unless otherwise noted.

Note: Ensure that for commercial and industrial facilities, registrations under the *General Permit for the Discharge of Stormwater Associated with Industrial Activity* (DEP-PED-GP-014) or the *General Permit for the Discharge of Stormwater from Commercial Activities* (DEP-PED-GP-004) have been filed where applicable. For questions about the applicability of these general permits, please call the Department at 860-424-3018.

Part I: Registrant Information

1. Permit number: ***GSN***
2. Fill in the name of the registrant(s) as indicated on the registration certificate:

   Registrant:
3. Site Address:

   City/Town: State: Zip Code:
4. Date all storm drainage structures were cleaned of construction sediment:

   Date of Completion of Construction:

   Date of Last Inspection (must be at least three months after final stabilization pursuant to Section 6(b)(6)(D) of the general permit):
5. Check the post-construction activities at the site (check all that apply):

   ☐ Industrial ☐ Residential ☐ Commercial ☐ Capped Landfill

   ☐ Other (describe):

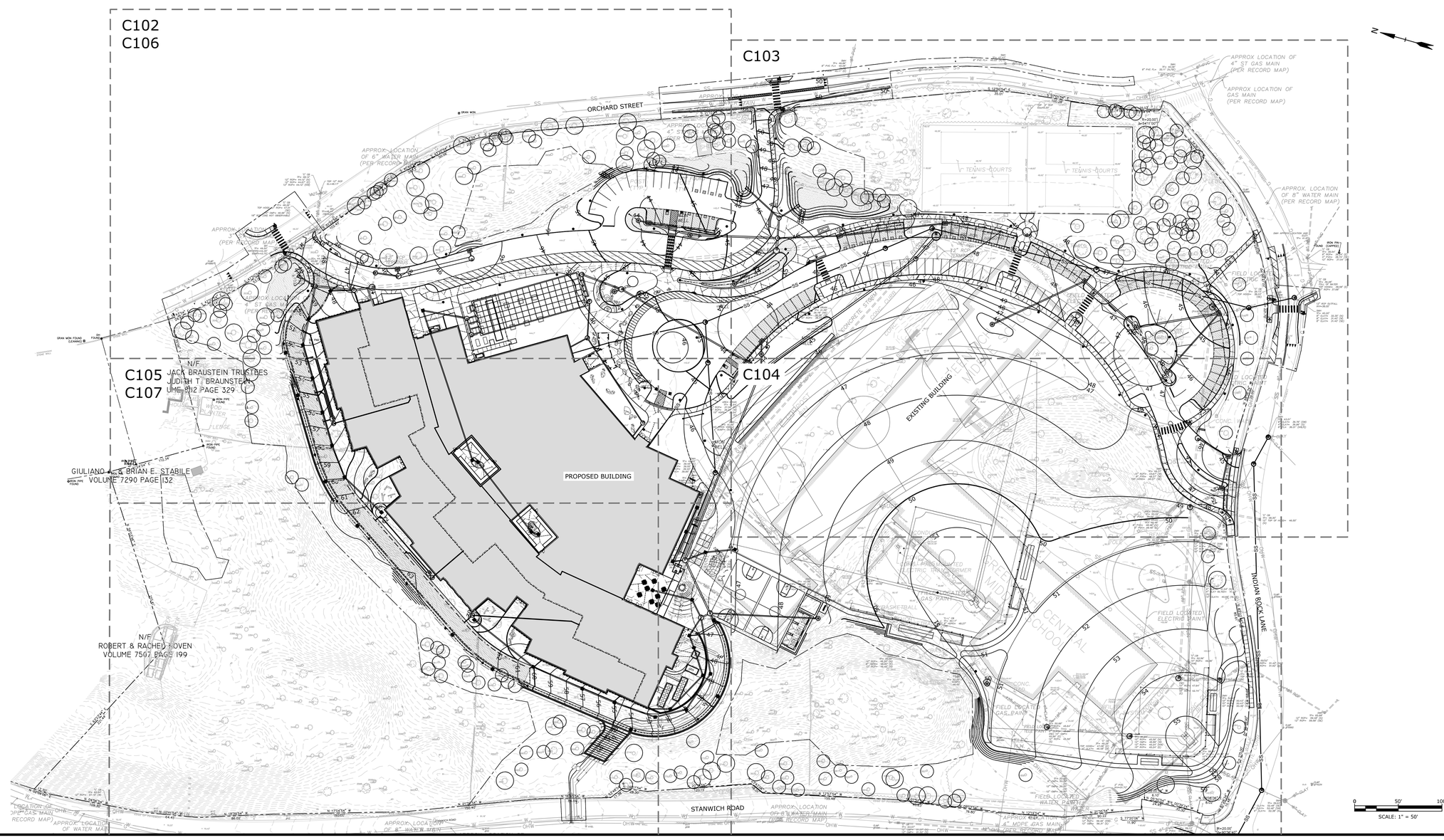
Part II: Certification

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

Signature of Permittee	Date
Name of Permittee (print or type)	Title (if applicable)

Note: Please submit this Notice of Termination Form to:

STORMWATER PERMIT COORDINATOR
BUREAU OF WATER MANAGEMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127



SITE STORMWATER NOTES

1. REFERENCE IS MADE TO PLAN ENTITLED "PROPERTY/ BOUNDARY & TOPOGRAPHIC SURVEY" PREPARED FOR GREENWICH CENTRAL MIDDLE SCHOOL. PREPARED BY MARTIN SURVEYING ASSOCIATES, LLC, DATED MAY 22, 2023.
2. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 - NAVD88.
3. THE CONTRACTOR SHALL COORDINATE/VERIFY THE EXACT SIZES, LOCATIONS, ELEVATIONS, OF ALL PROPOSED BUILDING UTILITY SERVICES WITH THE PROJECT MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS PRIOR TO ANY CONSTRUCTION OPERATIONS.
4. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK DONE BY THE RESPECTIVE UTILITY COMPANIES.
5. INSTALL CLEANOUT TO GRADE 5' OFF FACE OF BUILDING ON ALL ROOF LEADERS.
6. THE CONTRACTOR SHALL MAINTAIN EXISTING STORM SEWER FLOWS BY PUMPING OR OTHER MEANS APPROVED BY THE OWNER'S REPRESENTATIVE DURING CONSTRUCTION OF THE PROPOSED STORM SEWER IN LOCATIONS WHERE SEWERS ARE BEING INSTALLED, REPLACED OR RELOCATED.
7. ALL PROPOSED ROOF DRAINS FOR THE PROPOSED BUILDINGS SHALL BE CONNECTED TO THE PROPOSED STORM DRAINAGE SYSTEMS AS DEPICTED ON SHEETS C-102 - C-105. FINAL LOCATION OF THE PROPOSED ROOF DRAINS SHALL BE COORDINATED BETWEEN THE CONTRACTOR, THE ARCHITECT, AND THE PROJECT ENGINEER.
8. THE PROPOSED BUILDING FOOTING DRAINS SHALL DISCHARGE VIA GRAVITY TO GRADE AS DEPICTED ON SHEET SHEETS C-102 - C-105. THE CONTRACTOR SHALL VERIFY THE EXISTING PIPE INVERT IN THE FILED PRIOR TO START OF CONSTRUCTION.
9. MINIMUM COVER ON ALL PIPES SHALL BE TWO FEET (2') UNLESS OTHERWISE NOTED.
10. ALL PIPE SHALL BE INSTALLED STRAIGHT AND AT THE VERTICAL AND HORIZONTAL ALIGNMENT SHOWN. PIPES SHALL HAVE A UNIFORM SLOPE AS SPECIFIED.
11. ALL STORM PIPES AND FITTINGS SPECIFIED AS HDPE SHALL BE ADS N-12 WT (WATERTIGHT) PIPE AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, HILLIARD, OHIO, OR APPROVED EQUAL.
12. ALL STORM PIPE SPECIFIED AS POLY VINYL CHLORIDE PIPE (PVC) SHALL BE SDR 35 WITH RUBBER GASKETED JOINTS AND MEET THE REQUIREMENTS OF ASTM D3034 AND D3212.
13. INSTALL "FERNCO" STYLE SHIELDED COUPLINGS AT ALL LOCATIONS WHERE JOINING PIPES OF DIFFERENT MATERIALS AND/OR SIZES PER MANUFACTURER'S RECOMMENDATIONS. "FERNCO" STYLE SHIELDED COUPLINGS SHALL BE BANDED RUBBER (SHIELD COUPLINGS) GASKETED COUPLING TYPE WITH TYPE 316 S.S. HARDWARE AND OUTSIDE SHEER RING SHALL BE STRONG BACK SEWER COUPLING RC 5000 SERIES BY FERNCO, FLEX-SEAL ADJUSTABLE REPAIR COUPLING (ARC) BY MISSION RUBER COMPANY, OR APPROVED EQUAL.
14. ALL CATCH BASINS SHALL HAVE A FOUR-FOOT (4') SUMP WITH BELL TRAPS OR 90° PVC ELBOWS PER TOWN OF GREENWICH STANDARD DETAILS AND YARD DRAINS SHALL HAVE A TWO-FOOT (2') SUMP WITH BELL TRAPS OR 90° PVC ELBOWS.
15. THE LOCATIONS OF ITEMS NOT DIMENSIONED ON THE DRAWINGS SHALL BE FIELD STAKED BY THE CONTRACTOR AND THEIR LOCATIONS APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
16. THE CONTRACTOR SHALL ADJUST THE TOP OF FRAME/GRATE ELEVATIONS OF ALL EXISTING AND PROPOSED SANITARY/STORM/WATER MANHOLES, CATCH BASINS, AREA DRAINS, VALVE COVERS AND APPURTENANCES, WITHIN THE PROJECT LIMIT LINE TO MEET THE PROPOSED GRADES.
17. WHEN RAISING EXISTING CATCH BASINS AND MANHOLES TO FINISHED GRADE, CONTRACTOR SHALL NOT EXCEED THE MAXIMUM AMOUNT OF BRICK COURSES AS SHOWN ON THE DETAILS. CONTRACTOR SHALL RAISE STRUCTURE WITH STANDARD MANHOLE/CATCH BASIN COMPONENTS AS APPROVED BY THE ENGINEER.
18. THE MANHOLE FRAME AND COVER SHALL BE CENTERED ON THE PRECAST OPENING. UNDER NO CIRCUMSTANCES WILL AN OFFSET FRAME AND COVER BE ACCEPTABLE. PRIOR TO FINAL PAVING, THE CONTRACTOR SHALL CHECK ALL MANHOLE STRUCTURES TO ASSURE THE FRAME AND COVER IS CENTERED ON THE PRECAST OPENING. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL WORK REQUIRED TO CENTER FRAME AND COVER.
19. WHEN CONNECTING NEW PIPES TO EXISTING STRUCTURES SUCH AS MANHOLES AND CATCH BASINS, THE STRUCTURE SHALL BE COMPLETELY CLEANED OUT. THE HOLE MADE IN THE STRUCTURE SHALL BE MADE AS SMALL AS POSSIBLE. THE STRUCTURE SHALL BE REPAIRED TO MATCH ITS ORIGINAL TYPE OF CONSTRUCTION. THE JOINT BETWEEN THE STRUCTURE AND THE PIPE SHALL BE MADE WATERTIGHT BY UTILIZING AN A-LOK SYSTEM OR KOR-N-SEAL-BOOT CONNECTION.
20. UNDER NO CIRCUMSTANCES SHALL TRENCH WATER BE ALLOWED TO DRAIN OFF THROUGH SANITARY SEWER LINES.
21. ALL CRUSHED STONE SHALL BE GRADATION NO. 4 AS PER CT DOT FORM 818, ARTICLE M.01.01. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS, OR DISINTEGRATED PIECES OF MUD, DIRT OR OTHER DELETERIOUS MATERIAL.
22. THE STORM AND SANITARY SEWER SHALL BE ENCASED IN CONCRETE FOR A DISTANCE OF 10 FEET ON EITHER SIDE OF ANY INTERSECTION BETWEEN THE SANITARY SEWER AND STORM SEWER. WHERE CONCRETE ENCASEMENT IS REQUIRED, TEMPORARILY SUPPORT THE PIPES IN PLACE. USE SUFFICIENT CONCRETE TO ENCASE PIPING NOT LESS THAN 6 INCHES AT ALL POINTS. THE ENCASEMENT SHALL BE ADEQUATELY SUPPORTED WITH A STONE BASE AND SHALL BE KEYED INTO THE FOUNDATION WALL TO PREVENT DAMAGE FROM SETTLEMENT.
23. UNDERGROUND-TYPE PLASTIC LINE MARKER: MANUFACTURER'S STANDARD PERMANENT, BRIGHT-COLORED DETECTABLE TAPE, CONTINUOUS-PRINTED PLASTIC TAPE, INTENDED FOR DIRECT-BURIAL SERVICE; NOT LESS THAN 6" WIDE X 4 MILS THICK.
24. THE CONTRACTOR SHALL COMPLETE TWO CCTV INSPECTION PER SPECIFICATION 33 31 15 OF THE 36" RCP PIPE TO REMAIN. ONE INSPECTION SHALL OCCUR PRIOR TO OBTAINING THE ZONING/BUILDING PERMIT AND THE SECOND SHALL OCCUR ONCE CONSTRUCTION IS COMPLETE. THE CCTV INSPECTIONS SHALL BE FORWARDED TO THE ENGINEER-OF-RECORD AND THE GREENWICH ENGINEERING DEPARTMENT. THE COST FOR COMPLETING THE CCTV INSPECTIONS SHALL BE INCLUDED AT NO ADDITIONAL COST TO THE OWNER."

SITE DRAINAGE LEGEND

	EXISTING	PROPOSED
WORK LIMIT LINE		
PROPERTY LINE		
SETBACK LINE		
SAWCUT		
PROPOSED STORM SEWER		
PROPOSED AREA DRAIN		
PROPOSED STORM MANHOLE		D
PROPOSED RAIN GARDEN		
ROOF LEADER		RL
UNDER-DRAIN		
MINOR CONTOURS	115	191
MAJOR CONTOURS	120	190
SPOT ELEVATIONS	x 23.6	+337.5

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
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Drawn: EG/AC
Checked: APW/CJC

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
WEST
SOUTH

KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM #2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

OVERALL SITE STORMWATER MANAGEMENT PLAN

Date: 07/08/2024
Scale: 1" = 50'
Proj. Number: 22367.00
Drawing Number: C101

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FOR CONTINUATION SEE SHEET C103

DMH 02
60" DIA MH
RIM=44.9±
INV IN (12" HDPE)=40.11 E
INV IN (18" HDPE)=40.42 W
INV IN (15" RCP)=39.99 N
INV OUT (24" HDPE)=39.99 SE

230.0 LF 18" HDPE @ 0.90%

EXISTING BUILDING

YD-55
24" SQUARE YARD DRAIN WITH BEEHIVE GRATE
GRATE=45.4±
INV OUT (8" HDPE)=43.98 W
SUMP=41.98
27.4 LF 8" HDPE @ 0.50%

YD-54
24" SQUARE YARD DRAIN WITH BEEHIVE GRATE
GRATE=46.7±
INV IN (8" HDPE)=43.84 E
INV OUT (8" HDPE)=43.84 W
SUMP=41.84
34.4 LF 8" HDPE @ 0.50%

YD-53
24" SQUARE YARD DRAIN WITH BEEHIVE GRATE
GRATE=46.7±
INV IN (8" HDPE)=43.68 E
INV OUT (8" HDPE)=43.68 S
SUMP=41.68
10.0 LF 8" HDPE @ 0.50%

DMH 33
60" DIA MH
RIM=47.0±
INV IN (18" HDPE)=42.50 SW
INV IN (8" HDPE)=43.62 N
INV IN (12" HDPE)=42.90 SE
INV OUT (18" HDPE)=42.50 E
20.1 LF 12" HDPE @ 0.35% (PHASE II CONSTRUCTION)

YD 49
24" SQUARE YARD DRAIN WITH ADA GRATE
PHASE II CONSTRUCTION
GRATE=46.8±
INV IN (12" HDPE)=42.57 S
INV OUT (12" HDPE)=42.57 NW
SUMP=40.57

YD 51
24" SQUARE YARD DRAIN WITH ADA GRATE
PHASE II CONSTRUCTION
GRATE=46.9±
INV OUT (12" HDPE)=42.87 N
SUMP=40.87
30.5 LF 12" HDPE @ 1.00% (PHASE II CONSTRUCTION)

62.2 LF 18" HDPE @ 0.51%

YD 46
24" SQUARE YARD DRAIN
WITH ADA GRATE
GRATE=46.2±
INV IN (12" RCP)=43.29 N
INV OUT (12" HDPE)=43.29 SW
SUMP=41.29
18.1 LF 12" HDPE @ 0.50%

CDS-05
HYDRODYNAMIC SEPARATOR
CDS2020-5-C
MANUFACTURED BY CONTECH
OR APPROVED EQUAL
RIM=46.5±
INV IN (12" HDPE)=43.20 NE
INV IN (12" HDPE)=42.88 W
INV IN (12" HDPE)=42.88 SW
INV OUT (15" HDPE)=42.88 SE

YD 50
48" DIA YARD DRAIN WITH CIRCULAR GRATE
PHASE II CONSTRUCTION
GRATE=48.2±
INV OUT (12" HDPE)=44.08 N
SUMP=42.08

119.5 LF 12" HDPE @ 1.00%
PHASE II CONSTRUCTION

DMH 34
60" DIA MH
RIM=46.5±
INV IN (15" HDPE)=42.82 NW
INV IN (12" RCP)=42.87 SW
INV IN (12" HDPE)=42.87 S
INV OUT (18" HDPE)=42.82 NE
CONNECT TO RETAINING WALL UNDERDRAIN
INV=43.48

6.4 LF 15" HDPE @ 1.00%
5.2 LF 12" RCP @ 2.52%

5.2 LF 6" HDPE @ 1.19%

YD 35
24" SQUARE YARD DRAIN WITH ADA GRATE
GRATE=46.5±
INV IN (6" HDPE)=43.42 W
INV IN (6" HDPE)=43.42 S
INV OUT (12" RCP)=43.00 NE
SUMP=41.0

61.1 LF 12" HDPE @ 1.00%

YD 26
24" SQUARE YARD DRAIN
WITH ADA GRATE
GRATE=48.7±
INV IN (12" HDPE)=44.70 W
INV OUT (12" HDPE)=43.49 NE
SUMP=41.49

89 LF OF 6" PERFORATED HDPE
UNDERDRAIN @ 2.33%

46.4 LF 12" HDPE @ 5.09%

YD 36
24" SQUARE YARD DRAIN WITH BEEHIVE GRATE
GRATE=49.5±
INV IN (6" HDPE)=45.50 NW
INV OUT (6" HDPE)=45.50 E
SUMP=43.5

YD 27
24" SQUARE YARD DRAIN
WITH ADA GRATE
GRATE=51.0±
INV IN (12" HDPE)=47.04 NW
INV OUT (12" HDPE)=47.04 E
SUMP=45.04

110 LF OF 6" PERFORATED HDPE
UNDERDRAIN @ 2.25%

YD 40
48" DIA YARD DRAIN WITH CIRCULAR GRATE
GRATE=49.9±
INV OUT (12" HDPE)=46.08 S
SUMP=44.08

REPLACE EXISTING DMH WITH
60" DIA MH
RIM=48.0± (BURIED 1' BELOW
FINISHED FIELD GRADE)
INV IN= 42.43
INV IN=39.68
INV OUT=39.48

REPLACE EXISTING DMH WITH
60" DIA MH
RIM=53.1± (BURIED 1' BELOW
FINISHED FIELD GRADE)
INV IN= 42.84
INV IN=47.64
INV OUT=42.74

REPLACE EXISTING DMH WITH
60" DIA MH
RIM=53.1± (BURIED 1' BELOW
FINISHED FIELD GRADE)
INV IN= 45.59
INV IN=46.89
INV OUT=45.24

REPLACE EXISTING DMH WITH
60" DIA MH
RIM=51.2± (BURIED 1' BELOW
FINISHED FIELD GRADE)
INV IN=45.64
INV OUT=45.59

REPLACE EXISTING DMH WITH 48" DIA MH
RIM=53.9±
INV IN=50.43
INV OUT=50.38

STANWICH ROAD
INDIAN ROCK LANE
GREENWICH CENTRAL MIDDLE SCHOOL

FOR CONTINUATION SEE SHEET C105

SCALE: 1" = 20'

SLAM
The S/L/A/M Collaborative
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Glastonbury, CT 06033-4410
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APW

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
WEST
SOUTH

KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM #2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE STORMWATER MANAGEMENT PART PLAN

Date
07/08/2024
Scale
1" = 20'
Proj. Number
22367.00

Drawing Number
C104

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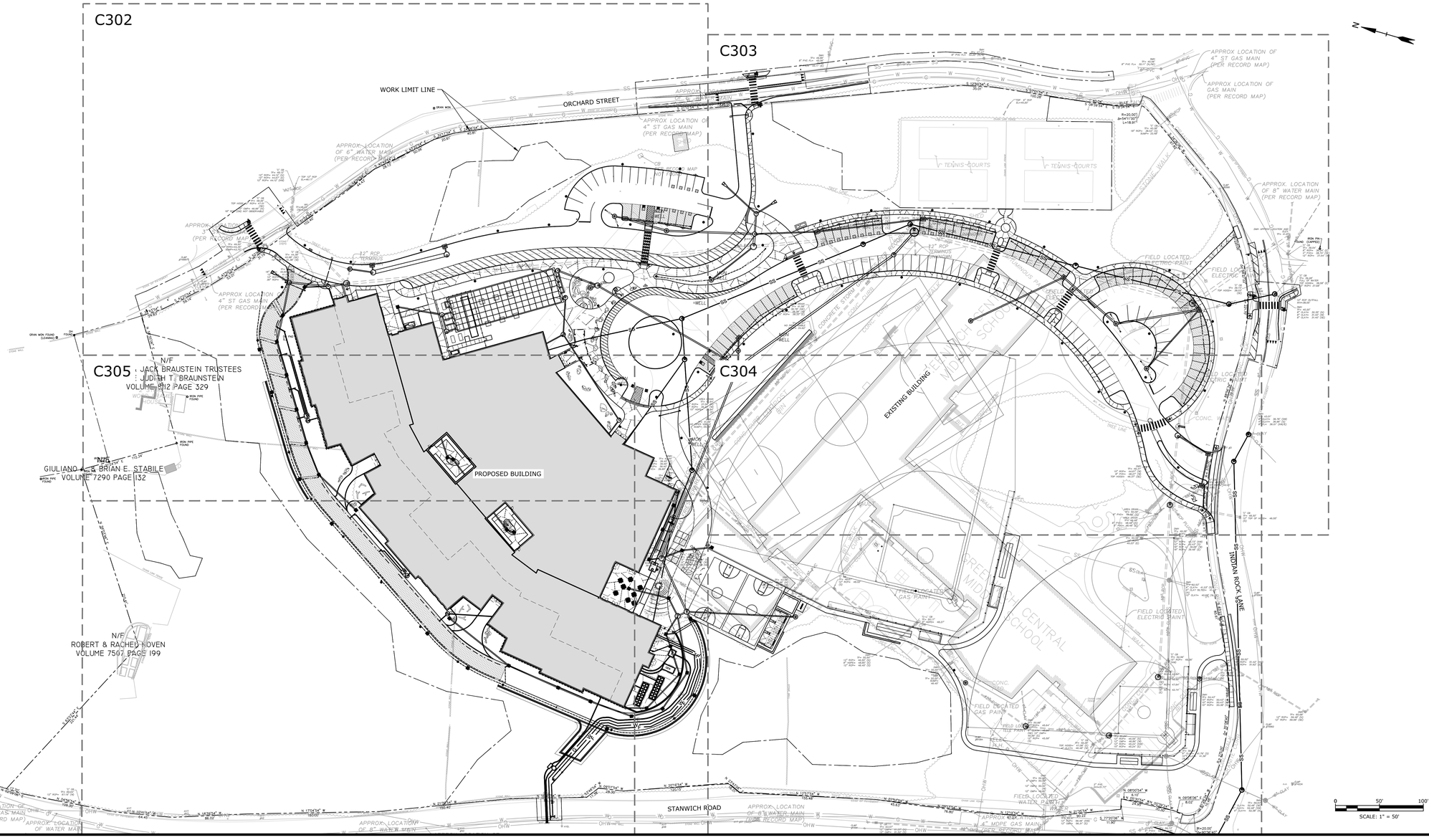

SITE UTILITY NOTES

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6. THE CONTRACTOR SHALL MAINTAIN EXISTING STORM SEWER FLOWS BY PUMPING OR OTHER MEANS APPROVED BY THE OWNER'S REPRESENTATIVE DURING CONSTRUCTION OF THE PROPOSED STORM SEWER IN LOCATIONS WHERE SEWERS ARE BEING INSTALLED, REPLACED OR RELOCATED.
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9. MINIMUM COVER ON ALL PIPES SHALL BE TWO FEET (2') UNLESS OTHERWISE NOTED.
10. ALL PIPE SHALL BE INSTALLED STRAIGHT AND AT THE VERTICAL AND HORIZONTAL ALIGNMENT SHOWN. PIPES SHALL HAVE A UNIFORM SLOPE AS SPECIFIED.
13. INSTALL "FERNCO" STYLE SHIELDED COUPLINGS AT ALL LOCATIONS WHERE JOINING PIPES OF DIFFERENT MATERIALS AND/OR SIZES PER MANUFACTURER'S RECOMMENDATIONS. "FERNCO" STYLE SHIELDED COUPLINGS SHALL BE BANDED RUBBER (SHIELD COUPLINGS) GASKETED COUPLING TYPE WITH TYPE 316 S.S. HARDWARE AND OUTSIDE SHEER RING SHALL BE STRONG BACK SEWER COUPLING RC 5000 SERIES BY FERNCO, FLEX-SEAL ADJUSTABLE REPAIR COUPLING (ARC) BY MISSION RUBER COMPANY, OR APPROVED EQUAL.
15. THE LOCATIONS OF ITEMS NOT DIMENSIONED ON THE DRAWINGS SHALL BE FIELD STAKED BY THE CONTRACTOR AND THEIR LOCATIONS APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
16. THE CONTRACTOR SHALL ADJUST THE TOP OF FRAME/GRATE ELEVATIONS OF ALL EXISTING AND PROPOSED SANITARY/STORM/WATER MANHOLES, CATCH BASINS, AREA DRAINS, VALVE COVERS AND APPURTENANCES, WITHIN THE PROJECT LIMIT LINE TO MEET THE PROPOSED GRADES.
17. WHEN RAISING EXISTING MANHOLES TO FINISHED GRADE, CONTRACTOR SHALL NOT EXCEED THE MAXIMUM AMOUNT OF BRICK COURSES AS SHOWN ON THE DETAILS. CONTRACTOR SHALL RAISE STRUCTURE WITH STANDARD MANHOLE COMPONENTS AS APPROVED BY THE ENGINEER.
18. THE MANHOLE FRAME AND COVER SHALL BE CENTERED ON THE PRECAST OPENING. UNDER NO CIRCUMSTANCES WILL AN OFFSET FRAME AND COVER BE ACCEPTABLE. PRIOR TO FINAL PAVING, THE CONTRACTOR SHALL CHECK ALL MANHOLE STRUCTURES TO ASSURE THE FRAME AND COVER IS CENTERED ON THE PRECAST OPENING. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL WORK REQUIRED TO CENTER FRAME AND COVER.
19. WHEN CONNECTING NEW PIPES TO EXISTING STRUCTURES SUCH AS MANHOLES, THE STRUCTURE SHALL BE COMPLETELY CLEANED OUT. THE HOLE MADE IN THE STRUCTURE SHALL BE MADE AS SMALL AS POSSIBLE. THE STRUCTURE SHALL BE REPAIRED TO MATCH ITS ORIGINAL TYPE OF CONSTRUCTION. THE JOINT BETWEEN THE STRUCTURE AND THE PIPE SHALL BE MADE WATERTIGHT BY UTILIZING AN A-LOK SYSTEM OR KOR-N-SEAL-BOOT CONNECTION.
20. THE CONTRACTOR SHALL MAINTAIN SANITARY SEWER FLOWS BY PUMPING OR OTHER MEANS APPROVED BY THE OWNER'S REPRESENTATIVE DURING CONSTRUCTION OF THE PROPOSED SANITARY SEWER IN LOCATIONS WHERE SEWERS ARE BEING INSTALLED, REPLACED OR RELOCATED.
21. UNDER NO CIRCUMSTANCES SHALL TRENCH WATER BE ALLOWED TO DRAIN OFF THROUGH SANITARY SEWER LINES.
22. ALL CRUSHED STONE SHALL BE GRADATION NO. 6 AS PER CT DOT FORM 818, ARTICLE M.01.01. STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES FREE FROM SOFT, THIN, ELONGATED, LAMINATED, FRIABLE, MICACEOUS, OR DISINTEGRATED PIECES OF MUD, DIRT OR OTHER DELETERIOUS MATERIAL.
23. THE STORM AND SANITARY SEWER SHALL BE ENCASED IN CONCRETE FOR A DISTANCE OF 10 FEET ON EITHER SIDE OF ANY INTERSECTION BETWEEN THE SANITARY SEWER AND STORM SEWER. WHERE CONCRETE ENCASEMENT IS REQUIRED, TEMPORARILY SUPPORT THE PIPES IN PLACE. USE SUFFICIENT CONCRETE TO ENCASE PIPING NOT LESS THAN 6 INCHES AT ALL POINTS. THE ENCASEMENT SHALL BE ADEQUATELY SUPPORTED WITH A STONE BASE AND SHALL BE KEYED INTO THE FOUNDATION WALL TO PREVENT DAMAGE FROM SETTLEMENT.
24. UTILITIES SHOWN ON THESE PLANS ARE "NOT GUARANTEED" TO BE COMPLETE OR CORRECT. PRIOR TO ANY SITE ACTIVITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF CLEARANCES OF PROPOSED UTILITIES FROM EXISTING UTILITIES. THIS VERIFICATION SHALL INCLUDE PHYSICAL OBSERVATION BY MEANS OF TEST PITS OF THE LOCATIONS OF AFFECTED UTILITIES. THE CONTRACTOR SHALL NOTIFY THE SITE ENGINEER IMMEDIATELY OF ANY CONFLICT.
25. EASEMENTS MAY BE REQUIRED IN FAVOR OF THE VARIOUS UTILITY COMPANIES.
26. ELECTRIC, TELEPHONE, AND CABLE SERVICES SHALL BE INSTALLED IN CONFORMANCE TO THE REQUIREMENTS OF THE GOVERNING UTILITY COMPANIES.
27. DOMESTIC WATER, FIRE PROTECTION SERVICES, AND ALL WATER MAIN TAPS SHALL CONFORM TO THE REQUIREMENTS OF THE AQUARION WATER COMPANY.
28. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL UTILITIES AS SHOWN ON THIS SHEET. THE CONTRACTOR SHALL WORK WITH THE UTILITY COMPANIES AND SITE ENGINEER TO ENSURE THE INSTALLATION IS IN CONFORMANCE TO THE REQUIREMENTS OF THE GOVERNING UTILITY COMPANY. ALL CONDUITS SHALL BE CONCRETE ENCASED AS MAY BE REQUIRED BY THE GOVERNING UTILITY COMPANY. PROPOSED ELECTRIC, TELEPHONE, CABLE, GAS AND WATER SERVICES ARE SHOWN FOR SCHEMATIC PURPOSES ONLY AND ARE SUBJECT TO CHANGE PENDING UTILITY COMPANY REVIEW. THESE UTILITIES SHALL BE DESIGNED BY OTHERS AND INSTALLED IN CONFORMANCE TO THE REQUIREMENTS OF THE GOVERNING UTILITY COMPANIES.
29. FOR INFORMATION ON THE PRIMARY ELECTRICAL WIRING AND THE SECONDARY ELECTRICAL CONDUITS, WIRING, AND MATERIALS - SEE PROJECT ELECTRICAL DRAWINGS.
30. THE CONTRACTOR MUST SUPPLY AND INSTALL DRAG LINES WITH ALL CONDUITS.
31. IN GENERAL, EACH UTILITY SHALL HAVE A MINIMUM HORIZONTAL CLEARANCE OF THREE FEET TO ANY OTHER UNDERGROUND UTILITY.
32. ALL UTILITIES ABANDONED SHALL BE CAPPED OR REMOVED IN ACCORDANCE WITH UTILITY COMPANIES' REQUIREMENTS.
33. DETECTABLE TAPE SHALL BE USED TO MARK PIPING LISTED BELOW. THE IDENTIFICATION TAPE SHALL BE BURIED AT LEAST 6-INCHES TO 10-INCHES BELOW FINAL GRADE BUT NO CLOSER THAN 12-INCHES TO THE BURIED UTILITY PIPING OR SERVICE.

ELECTRIC	RED	CAUTION ELECTRIC LINE BURIED BELOW
TELEPHONE & CONTROL	ORANGE	CAUTION TELEPHONE LINE BURIED BELOW
NATURAL GAS	YELLOW	CAUTION GAS LINE BURIED BELOW
WATER SYSTEMS	BLUE	CAUTION WATER LINE BURIED BELOW
FIRE PROTECTION SYSTEMS	BLUE	CAUTION FIRE LINE BURIED BELOW
SEWER SYSTEM	GREEN	CAUTION SEWER LINE BURIED BELOW
COMMUNICATION CONDUIT	ORANGE	CAUTION COMMUNICATION LINE BURIED BELOW

UNDERGROUND-TYPE PLASTIC LINE MARKER: MANUFACTURER'S STANDARD PERMANENT, BRIGHT-COLORED DETECTABLE TAPE, CONTINUOUS-PRINTED PLASTIC TAPE, INTENDED FOR DIRECT-BURIAL SERVICE; NOT LESS THAN 6" WIDE X 4 MILS THICK.

34. FOR ADDITIONAL INFORMATION, SEE DETAIL SHEETS.
35. ALL SANITARY SEWER MAINS AND LATERALS SHALL BE VIDEO RECORDED PER SEWER DIVISION PERMIT REQUIREMENTS AND PER SPECIFICATION 33 31 15. 1

SITE UTILITY LEGEND

	EXISTING	PROPOSED
WORK LIMIT LINE		
PROPERTY LINE		
SETBACK LINE		
SAWCUT		
WATER MAIN	W	W
FIRE SERVICE	f	f
WATER VALVE	WV	WV
OVERHEAD WIRES	oh	
UTILITY POLE		
SANITARY SEWER		
ELECTRIC		E
GAS SERVICE	G	G
GAS GATE VALVE	GV	
COMMUNICATION	UT	T-C
COMMUNICATION HANDHOLE	TELE.	

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EAST
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Number	Date	Issued For
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OVERALL SITE UTILITY PLAN

Date: 07/08/2024
Scale: 1" = 50'
Proj. Number: 22367.00
Drawing Number: C301

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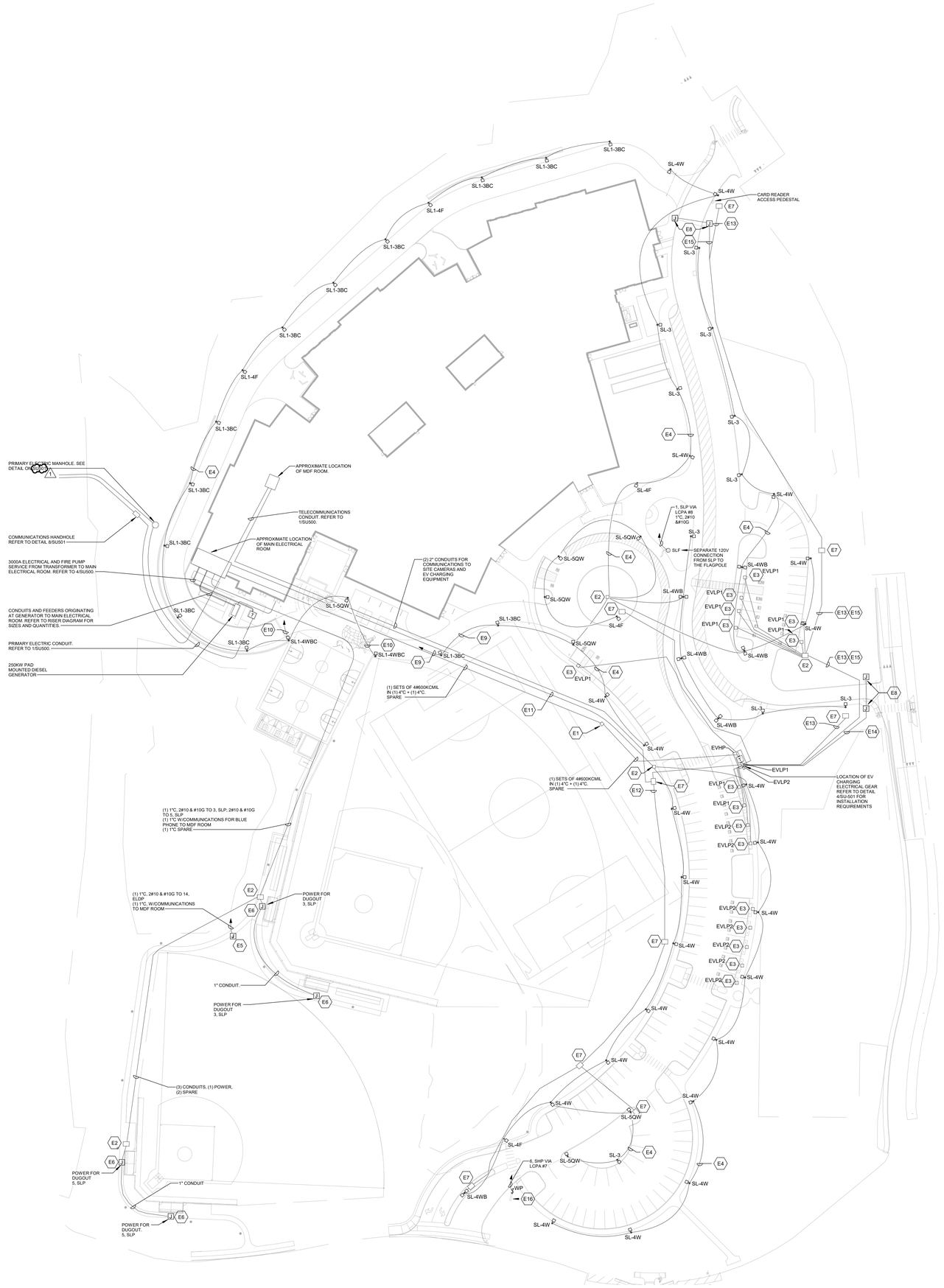

GENERAL SITE ELECTRICAL NOTES

1. REFER TO DRAWING E000 FOR SYMBOLS LIST.
2. COORDINATE SITE LIGHTING LOCATIONS WITH SITE LANDSCAPING PLANS.
3. REFER TO DRAWING SU500 & SU501 FOR SITE ELECTRICAL DETAILS.
4. REFER TO SU501 FOR LIGHT FIXTURE AND SITE POLE SCHEDULES.
5. WHERE UNDERGROUND UTILITIES ARE LIKELY TO BE ENCOUNTERED THE CONTRACTOR SHALL EXCAVATE BY HAND.
6. REFER TO LANDSCAPE & CIVIL SITE PLANS FOR FINAL LOCATIONS OF LIGHTING FIXTURES, FLAGPOLES AND OTHER SITE UTILITIES.
7. WHERE 277V & 120V CIRCUITS OCCUPY THE SAME HANDHOLE/RACEWAY, IDENTIFY NEUTRAL CONDUCTORS PER NEC.
8. PROVIDE CONDUIT PLUGS WITH 1/4" NYLON DRAG LINE ATTACHED IN ALL EMPTY CONDUITS.
9. EXISTING OVERHEAD UTILITIES NOT SHOWN. COORDINATE WITH UTILITY COMPANY AS REQUIRED.

UNDERGROUND UTILITY NOTE

THE CONTRACTOR IS TO BE FULLY RESPONSIBLE FOR CONTACTING THE LOCAL CABLE TELEVISION COMPANY, POWER COMPANY, TELEPHONE COMPANY, GAS COMPANY, WATER AND SEWER COMPANY AND ANY OTHER UTILITY COMPANY WITHIN THE AREA PRIOR TO PROCEEDING WITH ANY EXCAVATION. BY LAW, THE CONTRACTOR IS REQUIRED TO CALL BEFORE DOING ANY EXCAVATION, DIGGING HOLES OR DRIVING POSTS REGARDLESS OF WHETHER IT IS WITHIN THE STREET LINE OR ON PRIVATE PROPERTY. OBTAIN INFORMATION REGARDING THE EXISTENCE AND LOCATION OF ANY UNDERGROUND FACILITIES BY CALLING 811.

WATER PREVENTION MEASURES

1. PITCH ALL UNDERGROUND CONDUITS SUCH THAT THEY ARE ANGLED DOWNWARDS AWAY FROM THE BUILDING. CONDUITS SHALL NOT BE PITCHED DOWNWARDS TOWARD THE BUILDING, ALLOWING GROUND WATER TO ENTER BUILDING.
2. PROVIDE FOAM SEALANT FOR ALL ACTIVE ELECTRIC CONDUITS CONTAINING CONDUCTORS, EQUAL TO POLYWATER FST. LOCATE AT INTERIOR END OF EACH ACTIVE CONDUIT (AT EXTERIOR ENCLOSURE AND WHERE CONDUIT TERMINATES IN BUILDING). FOR SPARE CONDUITS WITHOUT CONDUCTORS, PROVIDE CAP AT EACH END.
3. ALL CONDUITS (ACTIVE AND SPARE) SHALL SWEEP UPWARD A MINIMUM OF 12" ABOVE THE BASE OF HANDHOLES OR OTHER EXTERIOR STRUCTURES.
4. COORDINATE SWEEP AT TRANSFORMER PADS WITH UTILITY COMPANY DETAILS AND STANDARDS.

ELECTRICAL SITE UTILITY KEY NOTES

- E1 FURNISH AND INSTALL A POLYMER CONCRETE HANDHOLE WITH SECURABLE STAMPED COVER IDENTIFYING "ELECTRICAL" THAT IS 36"X36"X24" WITH OPEN BOTTOM
- E2 FURNISH AND INSTALL A POLYMER CONCRETE HANDHOLE WITH SECURABLE STAMPED COVER IDENTIFYING "ELECTRICAL" THAT IS 18"X18"X24" WITH OPEN BOTTOM
- E3 EV CHARGING STATION - SHALL BE SINGLE PEDESTAL MOUNT FOR ADA PARKING SPACES AND DUAL PEDESTAL MOUNT FOR TANDEM CHARGING STATION LOCATIONS. EC SHALL PROVIDE AND INSTALL CHARGEPOINT #CPF25-L23-PD (SINGLE PORT) AND #CPF25-L23-PD-DUAL (DUAL-PORT). REFER TO DETAIL #3 / SU500 FOR THE CONCRETE BASE MOUNTING DETAIL.
- E4 1"C, 4#8 & 8 GND (TYPICAL 277V SITE LIGHTING)
- E5 EMERGENCY BLUE LIGHT COMMUNICATION STATION REFER TO DETAIL 7/SU500 FOR BASE AND MOUNTING DETAIL. PROVIDE AND INSTALL A CODE BLUE CORPORATION #CB-1S SERIES EMERGENCY PHONE TOWER. THE PROVIDED UNIT SHALL HAVE THE FOLLOWING FEATURES: LS2000 FULL DUPLEX SIP COMPATIBLE VOIP PHONE; BEACON/STROBE; SAFETY BLUE;
- E6 PROVIDE GFCI DUPLEX RECEPTACLE WITH IN-USE WEATHERPROOF COVER INSIDE NEMA 4X LOCKABLE ENCLOSURE, EQUAL TO HOFFMAN COMLINE, 12"X12"X6" IN ISZE. MOUNT ON SIDE OF DUGOUT, 42" ABOVE GRADE. PROVIDE 2#10+1#10G, 1"C
- E7 FURNISH AND INSTALL A POLYMER CONCRETE HANDHOLE WITH SECURABLE STAMPED COVER IDENTIFYING "COMMUNICATION" THAT IS 18"X18"X24" WITH OPEN BOTTOM
- E8 POWER FOR MOTORIZED GATE CONTROLLER
- E9 1"C, 4#8 & #8G (277V SITE LIGHTING) "SHP", 1,3 VIA LCPA #1, LCPA #2
- E10 1"C, 4#8 & #8G (277V SITE LIGHTING) "SHP", 2,4 VIA LCPA #3, LCPA #4
- E11 1"C, 4#8 & #8G (277V SITE LIGHTING) "SHP", 5,7 VIA LCPA #5, LCPA #6
- E12 (1) 2" CONDUIT FOR FUTURE COMMUNICATIONS (1) 1" C, 2#10 & #10G (SITE CAMERAS) "EVLP", 1
- E13 (1) 2" CONDUIT FOR FUTURE COMMUNICATIONS (1) 1" C, 2#10 & #10G (SITE CAMERAS) "EVLP", 2
- E14 1"C, 2#10 & #10G (MOTORIZED GATE CONTROLLER), "EVLP", 3
- E15 1"C, 2#10 & #10G (MOTORIZED GATE CONTROLLER), "EVLP", 4
- E16 PROVIDE 6'-0" RECESSED LINEAR LIGHT FIXTURE EACH SIDE OF MONUMENT AND ELECTRICAL BACKBOX WITH WEATHERPROOF SERVICE SWITCH. COORDINATE EXACT MOUNTING LOCATION WITH ARCHITECTURAL DETAILS.

1 MEP SITE UTILITY PLAN
1" = 45'-0"

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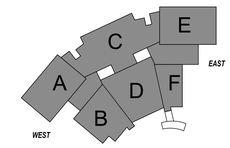
CES #2023095.00

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH


KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

MEP SITE UTILITY PLAN

Date: 07/08/2024
Scale: As indicated
Proj. Number: 22367.00
Drawing Number: SU100

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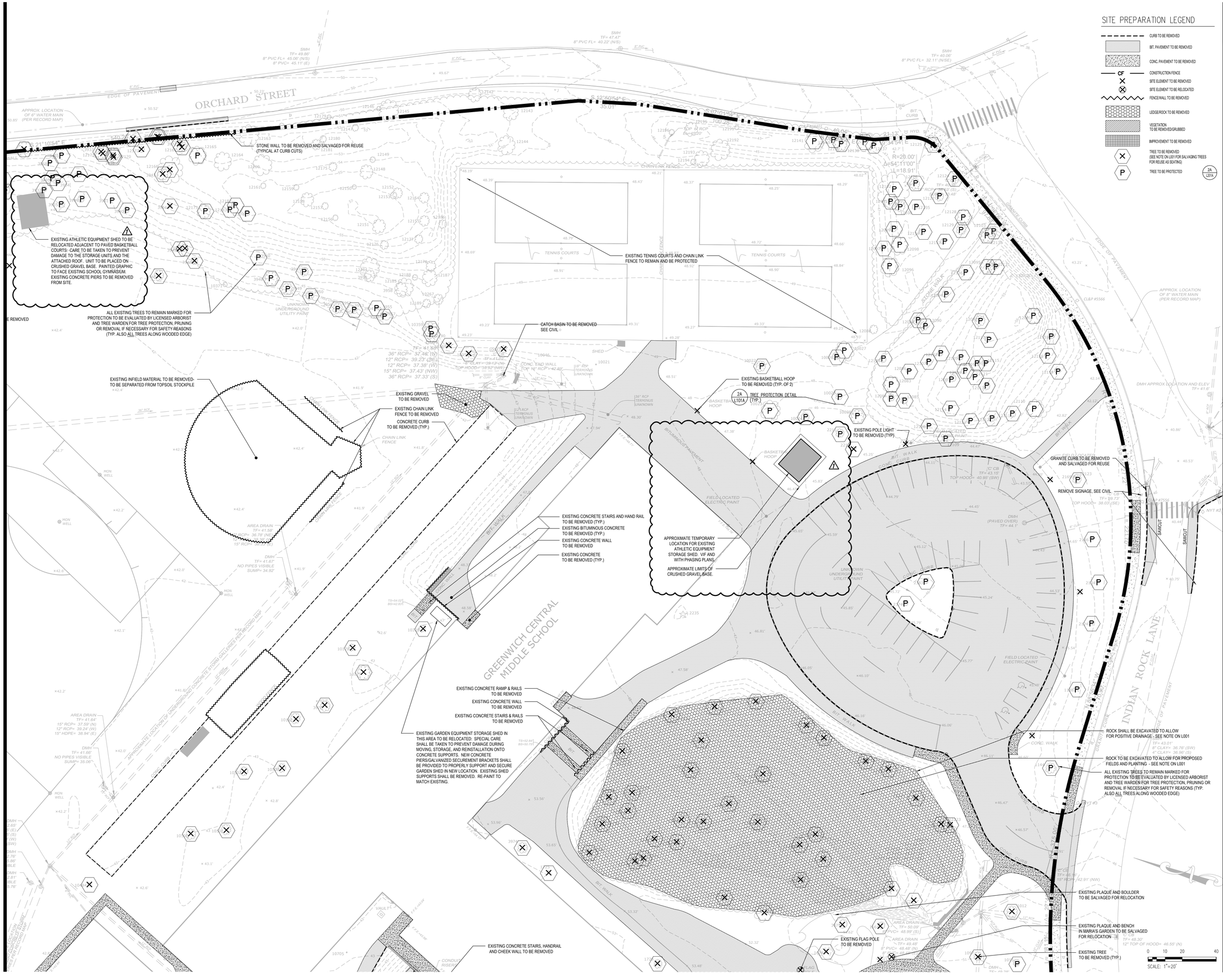
SITE PREPARATION LEGEND
CURB TO BE REMOVED
BIT. PAVEMENT TO BE REMOVED
CONC. PAVEMENT TO BE REMOVED
CF CONSTRUCTION FENCE
SITE ELEMENT TO BE REMOVED
SITE ELEMENT TO BE RELOCATED
FENCE/WALL TO BE REMOVED
LEDGE/ROCK TO BE REMOVED
VEGETATION TO BE REMOVED/GRUBBED
IMPROVEMENT TO BE REMOVED
TREE TO BE REMOVED (SEE NOTE ON L001 FOR SALVAGING TREES FOR REUSE AS SEATING)
TREE TO BE PROTECTED
2A L101A
ORCHARD STREET
EDGE OF PAVEMENT
APPROX. LOCATION OF 6" WATER MAIN (PER RECORD MAP)
STONE WALL TO BE REMOVED AND SALVAGED FOR REUSE (TYPICAL AT CURB CUTS)
EXISTING ATHLETIC EQUIPMENT SHED TO BE RELOCATED ADJACENT TO PAVED BASKETBALL COURTS: CARE TO BE TAKEN TO PREVENT DAMAGE TO THE STORAGE UNITS AND THE ATTACHED ROOF. UNIT TO BE PLACED ON CRUSHED GRAVEL BASE. PAINTED GRAPHIC TO FACE EXISTING SCHOOL GYMNASIUM. EXISTING CONCRETE PIERS TO BE REMOVED FROM SITE.
ALL EXISTING TREES TO REMAIN MARKED FOR PROTECTION TO BE EVALUATED BY LICENSED ARBORIST AND TREE WARDEN FOR TREE PROTECTION, PRUNING OR REMOVAL IF NECESSARY FOR SAFETY REASONS (TYP. ALSO ALL TREES ALONG WOODED EDGE)
EXISTING TENNIS COURTS AND CHAIN LINK FENCE TO REMAIN AND BE PROTECTED
CATCH BASIN TO BE REMOVED SEE CIVIL
EXISTING INFIELD MATERIAL TO BE REMOVED- TO BE SEPARATED FROM TOPSOIL STOCKPILE
EXISTING GRAVEL TO BE REMOVED
EXISTING CHAIN LINK FENCE TO BE REMOVED
CONCRETE CURB TO BE REMOVED (TYP.)
EXISTING BASKETBALL HOOP TO BE REMOVED (TYP. OF 2)
2A L101A TREE PROTECTION DETAIL (TYP.)
EXISTING POLE LIGHT TO BE REMOVED (TYP)
GRANITE CURB TO BE REMOVED AND SALVAGED FOR REUSE
REMOVE SIGNAGE, SEE CIVIL
EXISTING CONCRETE STAIRS AND HAND RAIL TO BE REMOVED (TYP.)
EXISTING BITUMINOUS CONCRETE TO BE REMOVED (TYP.)
EXISTING CONCRETE WALL TO BE REMOVED
EXISTING CONCRETE TO BE REMOVED (TYP.)
APPROXIMATE TEMPORARY LOCATION FOR EXISTING ATHLETIC EQUIPMENT STORAGE SHED. VIF AND WITH PHASING PLANS.
APPROXIMATE LIMITS OF CRUSHED GRAVEL BASE.
EXISTING CONCRETE RAMP & RAILS TO BE REMOVED
EXISTING CONCRETE WALL TO BE REMOVED
EXISTING CONCRETE STAIRS & RAILS TO BE REMOVED
EXISTING GARDEN EQUIPMENT STORAGE SHED IN THIS AREA TO BE RELOCATED: SPECIAL CARE SHALL BE TAKEN TO PREVENT DAMAGE DURING MOVING, STORAGE, AND REINSTALLATION ONTO CONCRETE SUPPORTS. NEW CONCRETE PIERS/GALVANIZED SECUREMENT BRACKETS SHALL BE PROVIDED TO PROPERLY SUPPORT AND SECURE GARDEN SHED IN NEW LOCATION. EXISTING SHED SUPPORTS SHALL BE REMOVED. RE-PAINT TO MATCH EXISTING.
EXISTING CONCRETE STAIRS, HANDRAIL AND CHEEK WALL TO BE REMOVED
ROCK SHALL BE EXCAVATED TO ALLOW FOR POSITIVE DRAINAGE - SEE NOTE ON L001
ROCK TO BE EXCAVATED TO ALLOW FOR PROPOSED FIELDS AND PLANTING - SEE NOTE ON L001
ALL EXISTING TREES TO REMAIN MARKED FOR PROTECTION TO BE EVALUATED BY LICENSED ARBORIST AND TREE WARDEN FOR TREE PROTECTION, PRUNING OR REMOVAL IF NECESSARY FOR SAFETY REASONS (TYP. ALSO ALL TREES ALONG WOODED EDGE)
EXISTING PLAQUE AND BOULDER TO BE SALVAGED FOR RELOCATION
EXISTING PLAQUE AND BENCH IN MARIA'S GARDEN TO BE SALVAGED FOR RELOCATION
EXISTING FLAG POLE TO BE REMOVED
EXISTING TREE TO BE REMOVED (TYP.)
SCALE: 1"=20'
GREENWICH CENTRAL MIDDLE SCHOOL
INDIAN ROCK LANE
TENNIS COURTS
BASKETBALL HOOP
BITUMINOUS WALK
CONC. WALK
STONE WALK
CHAIN LINK FENCE
GRANITE CURB
EDGE OF PAVEMENT
SAWCUT
FIELD LOCATED ELECTRIC PAINT
UNKNOWN UNDERGROUND UTILITY PAINT
APPROXIMATE LOCATION OF UNDERGROUND CONCRETE STORM DRAIN FROM RECORD MAP
DMH TF= 41.66' NO PIPES VISIBLE SUMP= 35.06'
DMH TF= 41.66' NO PIPES VISIBLE SUMP= 34.92'
AREA DRAIN TF= 41.58' 36.78' (N) 15" RCP
AREA DRAIN 15" RCP= 37.59' (N) 12" RCP= 39.24' (W) 15" HDPE= 38.94' (E)
SMH TF= 49.66' 8" PVC FL= 45.06' (N/S) 6" PVC= 45.11' (E)
SMH TF= 47.47' 8" PVC FL= 40.22' (N/S)
SMH TF= 40.06' 8" PVC FL= 32.11' (N/SE)
DMH (PAVED OVER) TF= 44.1'
'C' CB TF= 43.15' TOP HOOD= 40.98' (SW)
CB TF= 41.02' 36" RCP= 37.48' (N) 12" RCP= 39.23' (SE) 12" RCP= 37.38' (W) 15" RCP= 37.43' (NW) 36" RCP= 37.33' (S)
CONC. END WALL TOP 'N' RCP = 42.40'
18" RCP TERMINUS UNKNOWN
12" RCP TERMINUS UNKNOWN
36" RCP TERMINUS UNKNOWN
AREA DRAIN TF= 50.09' 8" PVC= 48.99' (S)
AREA DRAIN TF= 49.48' 8" PVC= 48.48' (N)
CB TF= 46.96' 18" RCP= 42.91' (NW)
DMH TF= 49.78'
CB TF= 48.30' 12" TOP OF HOOD= 46.55' (N)
CB TF= 43.01' 8" CLAY= 36.76' (SW)
CB TF= 41.02' 8" CLAY= 36.12' (SE)
CB TF= 99.73' TOP HOOD= 38.03' (SE)
CB TF= 97.55' 12" NYT #2
TOP OF R RCP Elv=1020'
R=20.00' Δ=54°11'00" L=18.91'
S 12°50'54" E 35.01'
N 21°10'54" E 540.72'
N 68°49'06" W 100.00'
S 21°10'54" W 540.72'
S 68°49'06" E 100.00'
APPROX. LOCATION OF 8" WATER MAIN (PER RECORD MAP)
APPROX. LOCATION OF 8" WATER MAIN (PER RECORD MAP)
DMH APPROX LOCATION AND ELEV TF= 41.6'
CL&P #5566
SHED
VAULT
CONDUIT RISER
MON WELL
LWC
BIT. CURB
HYD
CONC. WALK
BIT. WALK
CHAIN LINK FENCE
UNKNOWN UNDERGROUND UTILITY PAINT
FIELD LOCATED ELECTRIC PAINT
TOP HOOD= 40.95' (SW)
TOP HOOD= 38.03' (SE)
TOP HOOD= 46.55' (N)
TOP HOOD= 43.01' (SW)
TOP HOOD= 42.82' (SE)
TOP HOOD= 46.96' (NW)
TOP HOOD= 48.30' (N)
TOP HOOD= 43.15' (SW)
TOP HOOD= 40.98' (SE)
TOP HOOD= 46.96' (NW)
TOP HOOD= 48.30' (N)
TOP HOOD= 43.01' (SW)
TOP HOOD= 42.82

SITE LAYOUT LEGEND

- EJ — EXPANSION JOINT
- EJ1 — EXPANSION JOINT AT FROST PAD (3B L501)
- EJ2 — UNIT PAVER EXPANSION JOINT AT FROST PAD (3C L501)
- EJEX — EXPANSION JOINT AT EXISTING CONCRETE SIDEWALK (3A L501)
- CONTRACTION JOINT
- PAINTED TRAFFIC ARROWS
- PAINTED HANDICAP SYMBOL
- PARKING SPACE QUANTITY
- TREE GRATE
- HANDICAP RAMP TYPE A (1C L502)
- HANDICAP RAMP TYPE B (1D L502)
- HANDICAP RAMP TYPE D (1E L502)
- GC — GRANITE CURB (2E L501)
- F1 — FROST PAD (3B L501)
- F2 — RECESSED FROST PAD (3C L501)

SITE MATERIALS LEGEND

- 1A — BITUMINOUS CONCRETE (REGULAR DUTY) (1A L501)
- 1B — BITUMINOUS CONCRETE (HEAVY DUTY) (1B L501)
- 1C — POROUS BITUMINOUS CONCRETE (1C L501)
- 1D — BITUMINOUS CONCRETE (PEDESTRIAN) (5B L501)
- 2A — CONCRETE PAVEMENT (PEDESTRIAN) (2A L501)
- 2B — CONCRETE PAVEMENT (HEAVY DUTY) (2B L501)
- 2C — CONCRETE PAVERS (PEDESTRIAN) (1D L501)
- 2D — FIBER MULCH (3E L501)

1A BITUMINOUS PAVEMENT (TYP.) (REGULAR DUTY) L501
2A CONCRETE PAVEMENT (TYP.) (PEDESTRIAN) L501
1B BITUMINOUS PAVEMENT (TYP.) (HEAVY DUTY) L501
LIMITS OF MILLING & REPAVING FOR RUMBLE STRIP INSTALLATION, SEE CIVIL
APPROX. LOCATION OF 6" WATER MAIN (PER RECORD MAP)
EDGE OF PAVEMENT
STONE WALL
GRAN MON
ORCHARD STREET
SEE CIVIL
CONTRACT LIMIT LINE
SECURITY CARD READER (2E L503) SEE DETAIL
CONCRETE FOUNDATION FOR LIFT GATE (2D L503)
LIFT ARM GATES, SEE MEP
5E L502 TRAFFIC CONTROL SIGN (TYP.)
4B L502 FLAG POLE
5C L501 STEPPING STONE
2C L501 BOULDER (TYP.)
3E L503 LIVE EDGE WOOD BENCH
EV SPACES
SITE LIGHT (TYP)
RAISED CONCRETE PLANTERS (TYP OF 8, SEE DETAIL) AND FIBER MULCH (3E L501)
VINYL-COATED CHAIN LINK FENCE (SEE DETAIL) (3D L601)
DUST COLLECTOR
RAISED CONCRETE PLANTERS (SEE DETAIL) (3E L501)
RAISED PT WOOD COMPOST AREA TO MATCH EXISTING, PROVIDE SHOP DRAWINGS FOR APPROVAL
CHAIN LINK FENCE
RELOCATED GARDEN STORAGE SHED
EXISTING PLAQUE AND BOULDER TO BE SALVAGED FOR RELOCATION
PRIVACY FENCE AT DUST COLLECTOR SEE DETAIL (4E L504)
5D L502 SITE LIGHT FOOTING (TYP.)
1D L501 UNIT PAVERS ON SAND SETTING BED (SEE DETAIL)
1E L503 ELECTRONIC ENTRY STANCHION SEE DETAIL
2C L501 BOULDER SET IN CONCRETE PAVEMENT
1B L501 BITUMINOUS CONCRETE (TYP.) (HEAVY DUTY)
2B L502 TYPICAL VAN ACCESSIBLE PARKING SPACE
2B L501 CONCRETE PAVEMENT (HEAVY DUTY) TYP.
3B L502 VEHICULAR DOUBLE SWING GATE
BOULDER 2C L501
3B L502 VEHICULAR DOUBLE SWING GATE
1C L501 POROUS BITUMINOUS CONCRETE
N/F JUDITH T. & JACK BRAUSTEIN TRUSTEES OF THE JUDITH T. BRAUNSTEIN VOLUME 8112 PAGE 329
IRON PIPE FOUND
WOOD FENCE
WOOD PLANTER
LEDGE
PROPERTY LINE
CONTRACT LIMIT LINE
5A L501 STONE MULCH
1D L503 TYPICAL SEGMENTAL BLOCK RETAINING WALL
1C L501 POROUS BITUMINOUS CONCRETE
ALTERNATE 3: UNIT PAVERS IN LIEU OF CONCRETE PAVEMENT
WHITEBOARD, SEE ARCH
LIVE EDGE WOOD BENCH SHAPES VARY (3E L503 SEE DETAIL)
BOULDER TYP. 2C L501
IRON PIN FOUND
CONTRACT LIMIT LINE
SCALE: 1" = 20'
0 10 20 40

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Greenwich Public Schools

GREENWICH CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CT 06830

STATE PROJECT NO:057-0114 N

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE MATERIALS NORTHEAST

Date: 07/08/2024
Scale: 1" = 20'
Proj. Number: 22367.00
Drawing Number: L202A

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SITE LAYOUT LEGEND

EJ	EXPANSION JOINT	3B L501
EJ1	EXPANSION JOINT AT FROST PAD	3C L501
EJ2	UNIT PAVER EXPANSION JOINT AT FROST PAD	3A L501
EJ-EX	EXPANSION JOINT AT EXISTING CONCRETE SIDEWALK	
	CONTRACTION JOINT	
	PAINTED TRAFFIC ARROWS	
	PAINTED HANDICAP SYMBOL	
12	PARKING SPACE QUANTITY	
	TREE GRATE	
	HANDICAP RAMP TYPE A	1C L502
	HANDICAP RAMP TYPE B	1D L502
	HANDICAP RAMP TYPE D	1E L502
GC	GRANITE CURB	2E L501
F1	FROST PAD	3B L501
F2	RECESSED FROST PAD	3B L501

SITE MATERIALS LEGEND

1A	BITUMINOUS CONCRETE (REGULAR DUTY)	1A L501
1B	BITUMINOUS CONCRETE (HEAVY DUTY)	1B L501
1C	POROUS BITUMINOUS CONCRETE	1C L501
1D	BITUMINOUS CONCRETE (PEDESTRIAN)	5B L501
2A	CONCRETE PAVEMENT (PEDESTRIAN)	2A L501
2B	CONCRETE PAVEMENT (HEAVY DUTY)	2B L501
2C	CONCRETE PAVERS (PEDESTRIAN)	1D L501
2D	FIBER MULCH	3E L501

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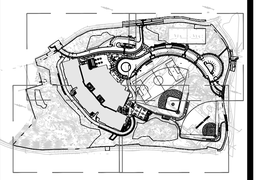
Greenwich Public Schools

GREENWICH CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CT 06830

STATE PROJECT NO:057-0114 N



Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE MATERIALS SOUTHWEST

Date
07/08/2024
Scale
1" = 20'
Proj. Number
22367.00

Drawing Number
L202C

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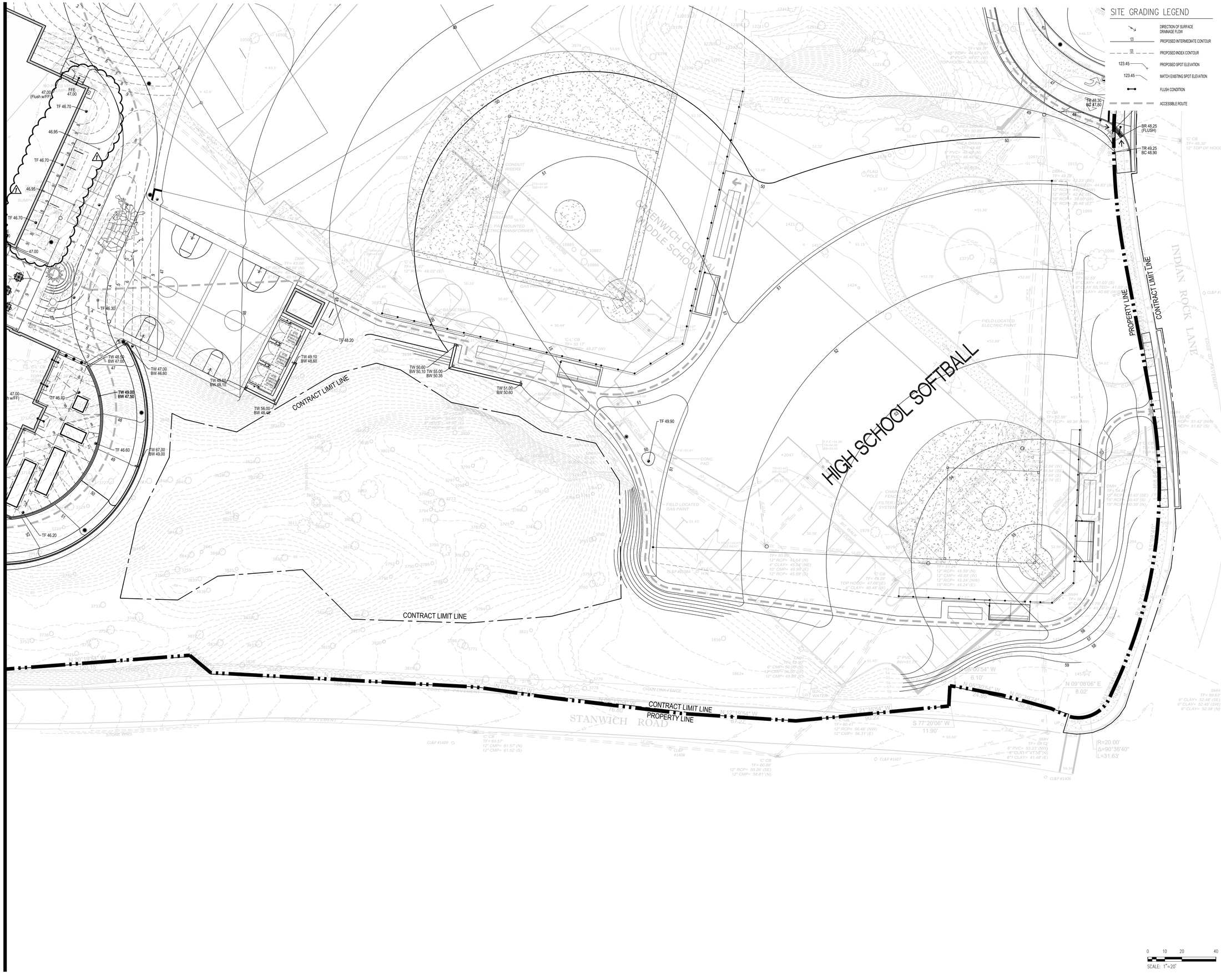

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Greenwich Public Schools

GREENWICH CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CT 06830

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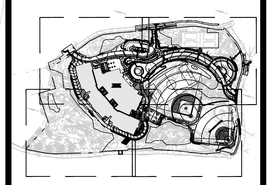

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE GRADING SOUTHWEST

Date
07/08/2024
Scale
1" = 20'
Proj. Number
22367.00

Drawing Number
L301C

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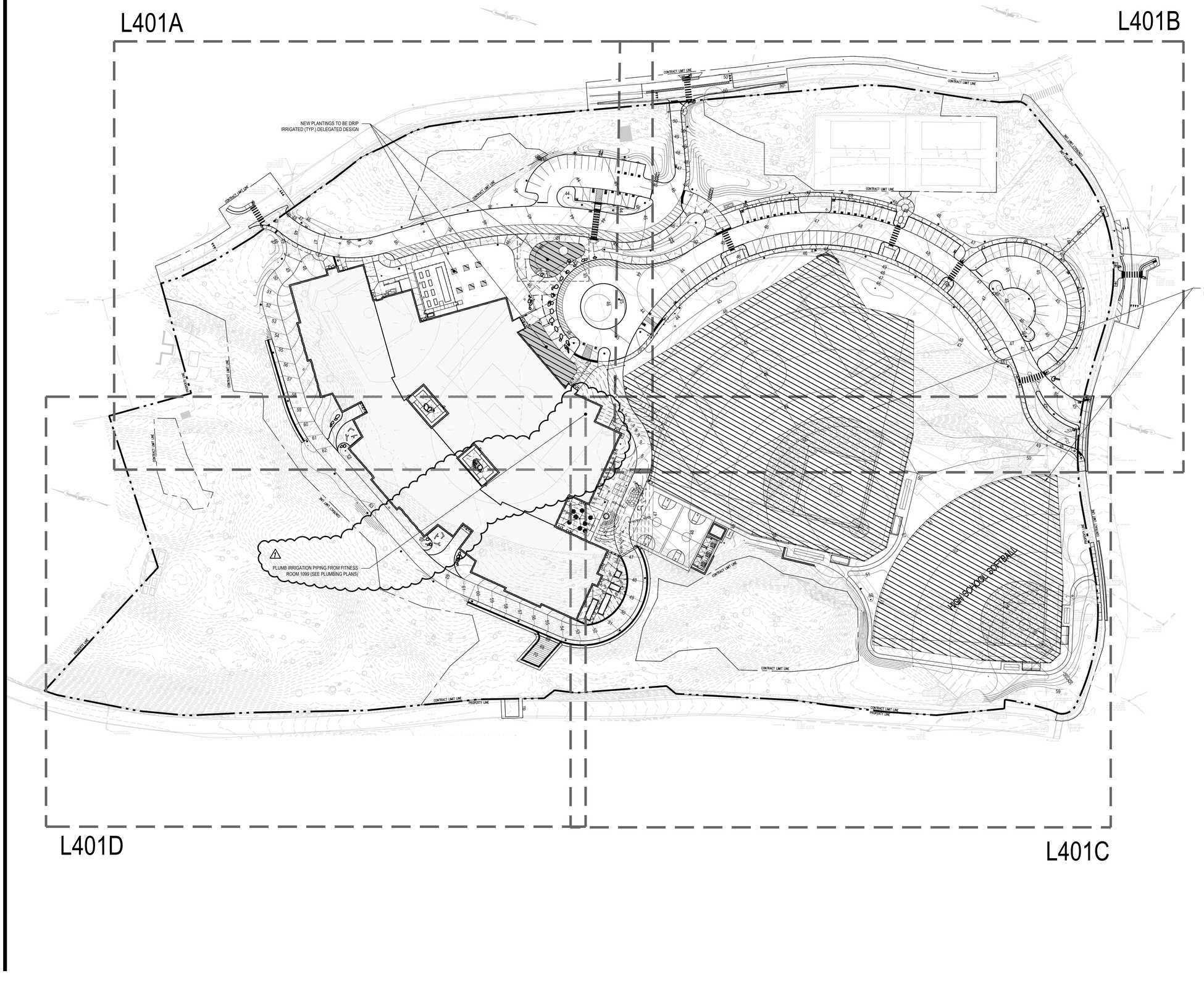
1 2 3 4 5

A B C D E

L401A L401B L401D L401C



SITE IRRIGATION LEGEND

- DRIP IRRIGATION
- SPRAY/IMPACT IRRIGATION
- SLEEVE LOCATION
- SLEEVE LOCATION AT WALL (SEE GRADING PLAN FOR EL)

SCALE: 1"=50'

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80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

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Checked: HWW

Greenwich Public Schools

GREENWICH CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CT 06830

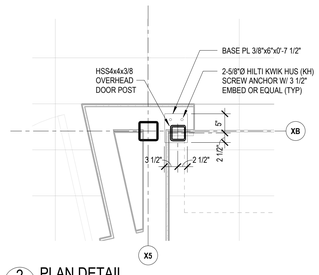
STATE PROJECT NO:057-0114 N

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

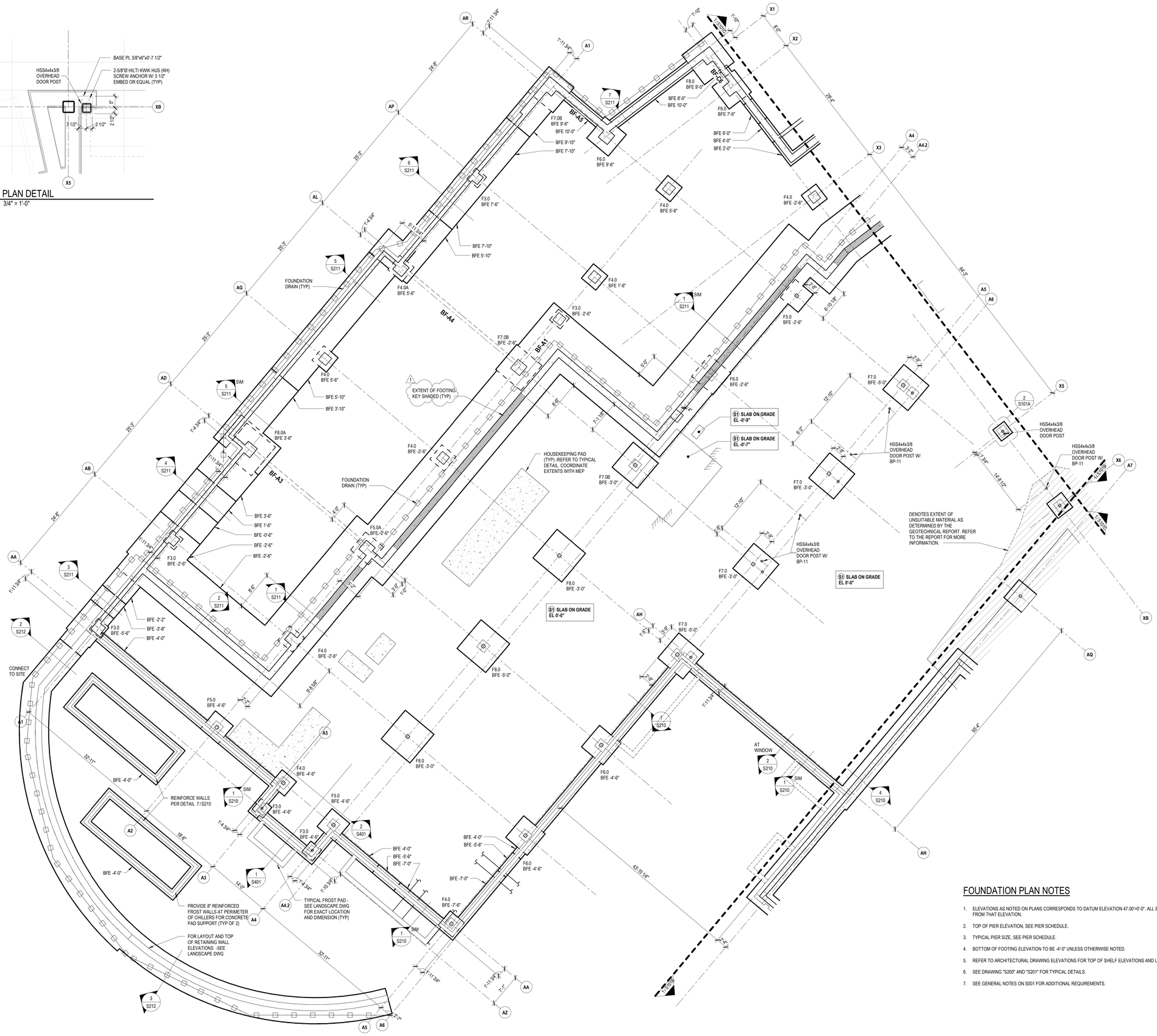
SITE IRRIGATION PLAN

Date: 07/08/2024
Scale: 1" = 50'
Proj. Number: 22367.00
Drawing Number: L404

P:\Projects\Proj\22\22367\40-Documentation\02-Drawings\4utoCAD\Site\L401 Site Planting.dwg October 15, 2024 - 3:47 PM



2 S101A PLAN DETAIL
3/4" = 1'-0"



FOUNDATION PLAN NOTES

1. ELEVATIONS AS NOTED ON PLANS CORRESPONDS TO DATUM ELEVATION 47.00"-0"-0". ALL ELEVATIONS ARE NOTED ±X'-X" FROM THAT ELEVATION.
2. TOP OF PIER ELEVATION, SEE PIER SCHEDULE.
3. TYPICAL PIER SIZE, SEE PIER SCHEDULE.
4. BOTTOM OF FOOTING ELEVATION TO BE -4'-0" UNLESS OTHERWISE NOTED.
5. REFER TO ARCHITECTURAL DRAWING ELEVATIONS FOR TOP OF SHELF ELEVATIONS AND LOCATIONS OF STEPS.
6. SEE DRAWING "S200" AND "S201" FOR TYPICAL DETAILS.
7. SEE GENERAL NOTES ON S001 FOR ADDITIONAL REQUIREMENTS.

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Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
SOUTH
WEST
A B C D E F

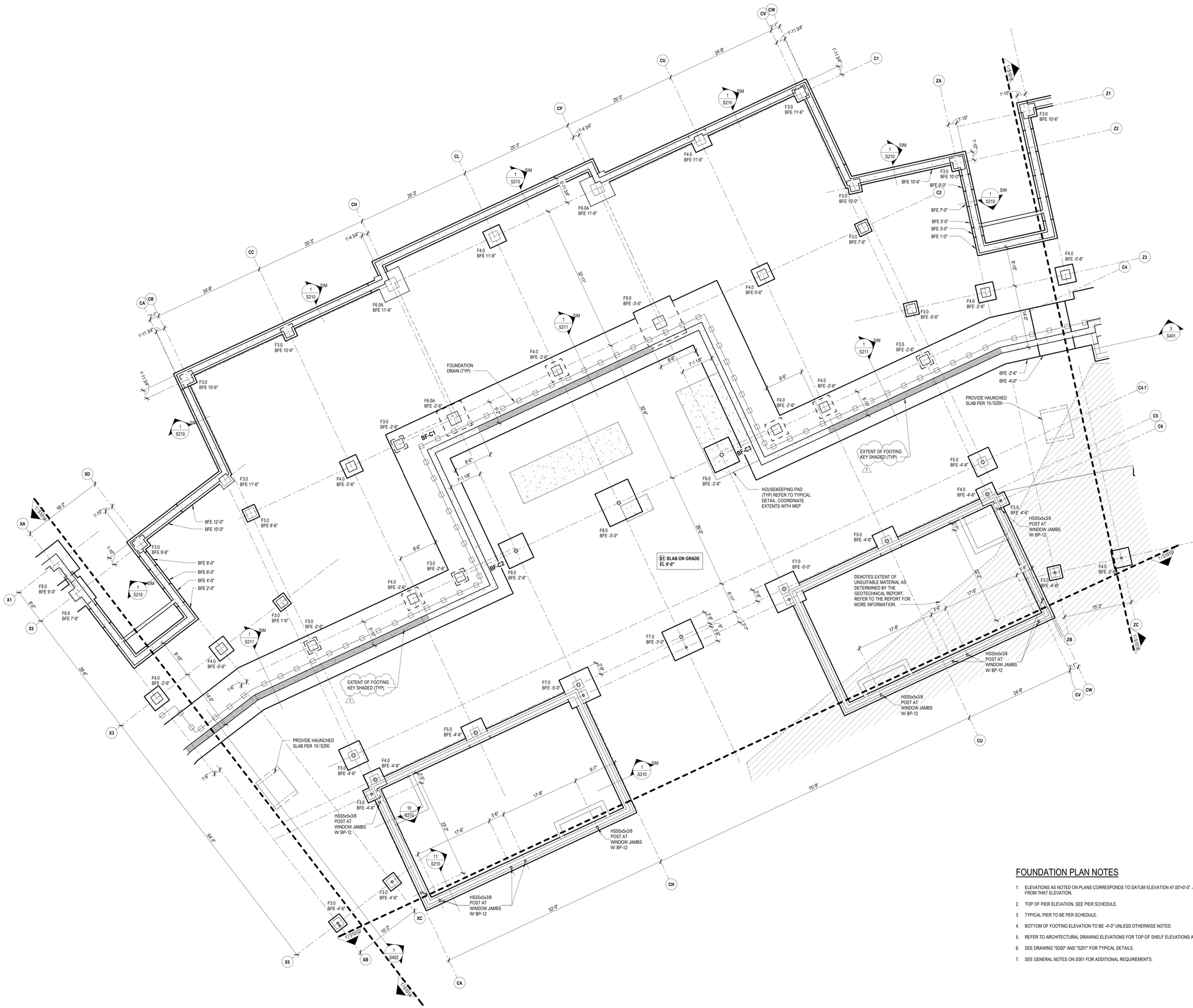
KEYPLAN

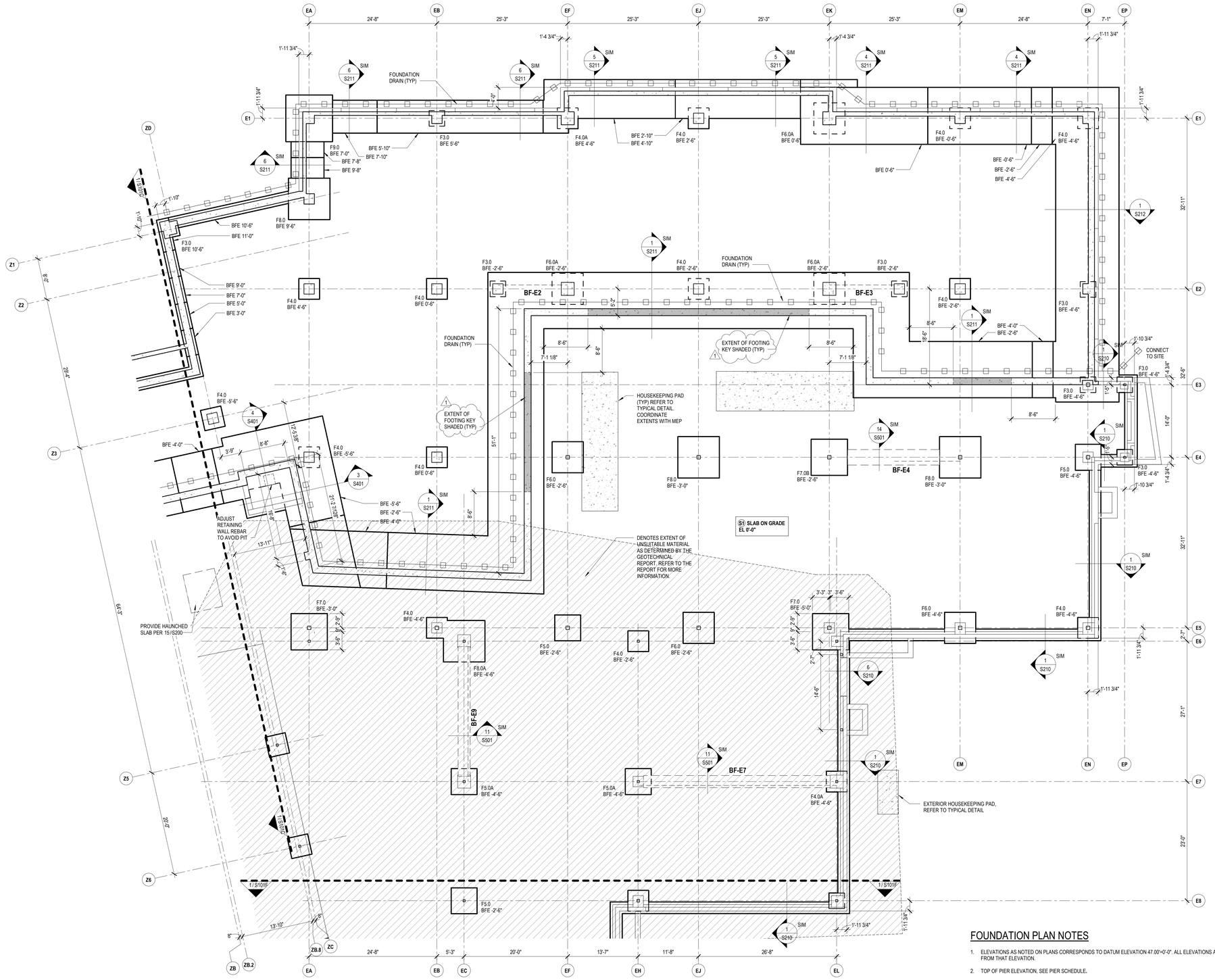
Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING / PERMIT
	07/08/2024	PHASE 2

FOUNDATION PLAN - PART A

Date 07/08/2024
Scale As indicated
Proj. Number 22367.00
Drawing Number S101A

Autodesk Docs://22367.00 - Greenwich Central Middle School/S_22367_GREENWICH_CENTRAL_MS_R22.rvt
October 16, 2024 9:28:49 AM


FOUNDATION DRAIN (TYP)
BF-C1
BF-C2
BF-C3
EXTENT OF FOOTING KEY SHADED (TYP)
PROVIDE HAUNCHED SLAB PER 15/S200
HOUSEKEEPING PAD (TYP) REFER TO TYPICAL DETAIL. COORDINATE EXTENTS WITH MEP
DENOTES EXTENT OF UNSUITABLE MATERIAL AS DETERMINED BY THE GEOTECHNICAL REPORT. REFER TO THE REPORT FOR MORE INFORMATION.
HSS5x5x3/8 POST AT WINDOW JAMBS W/ BP-12
S1 SLAB ON GRADE EL 0'-0"
EXTENT OF FOOTING KEY SHADED (TYP)
PROVIDE HAUNCHED SLAB PER 15/S200
HSS5x5x3/8 POST AT WINDOW JAMBS W/ BP-12
HSS5x5x3/8 POST AT WINDOW JAMBS W/ BP-12
HSS5x5x3/8 POST AT WINDOW JAMBS W/ BP-12
HSS5x5x3/8 POST AT WINDOW JAMBS W/ BP-12
HSS5x5x3/8 POST AT WINDOW JAMBS W/ BP-12
EXTENT OF FOOTING KEY SHADED (TYP)
PROVIDE HAUNCHED SLAB PER 15/S200
HSS5x5x3/8 POST AT WINDOW JAMBS W/ BP-12



FOUNDATION PLAN NOTES

1. ELEVATIONS AS NOTED ON PLANS CORRESPONDS TO DATUM ELEVATION 47.00'=0'-0". ALL ELEVATIONS ARE NOTED ±X'-X" FROM THAT ELEVATION.
2. TOP OF PIER ELEVATION, SEE PIER SCHEDULE.
3. TYPICAL PIER TO BE PER SCHEDULE
4. BOTTOM OF FOOTING ELEVATION TO BE -4'-0" UNLESS OTHERWISE NOTED.
5. REFER TO ARCHITECTURAL DRAWING ELEVATIONS FOR TOP OF SHELF ELEVATIONS AND LOCATIONS OF STEPS.
6. SEE DRAWING "S200" AND "S201" FOR TYPICAL DETAILS.
7. SEE GENERAL NOTES ON S001 FOR ADDITIONAL REQUIREMENTS.

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Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
WEST
SOUTH
A B C D E F

KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING / PERMIT
	07/08/2024	PHASE 2

FOUNDATION PLAN - PART E

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00

Drawing Number: S101E

Autodesk Docs://22367.00 - Greenwich Central Middle School/S_22367_GREENWICH_CENTRAL_MS_R22.rvt
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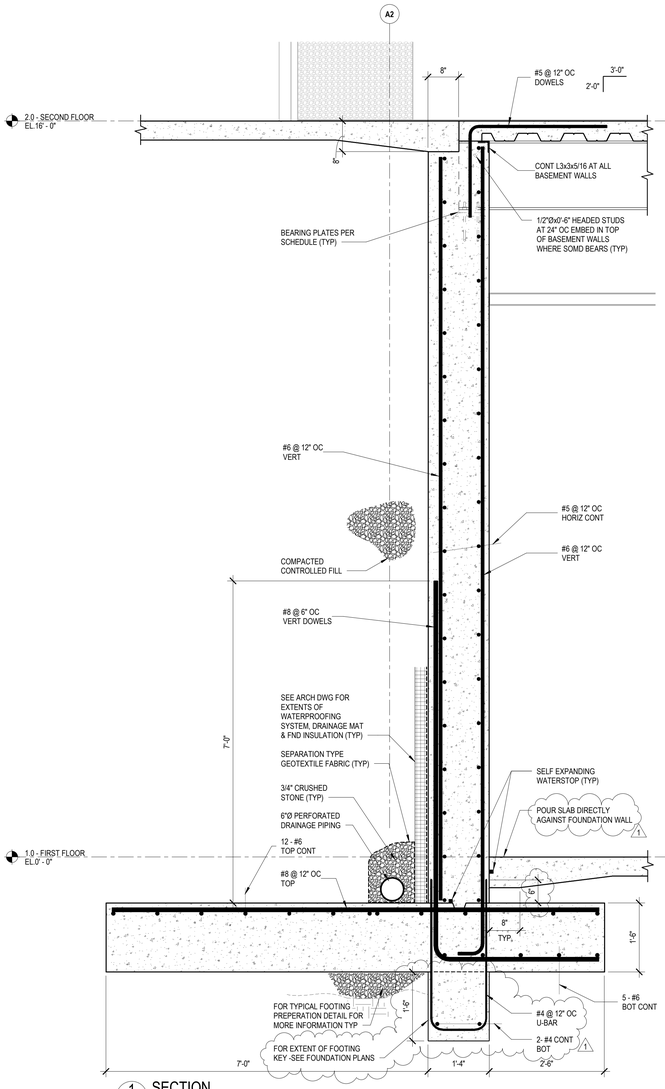
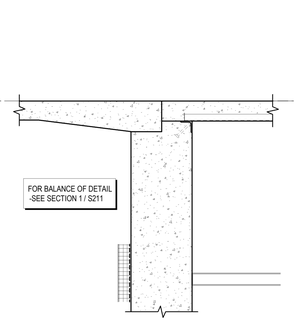
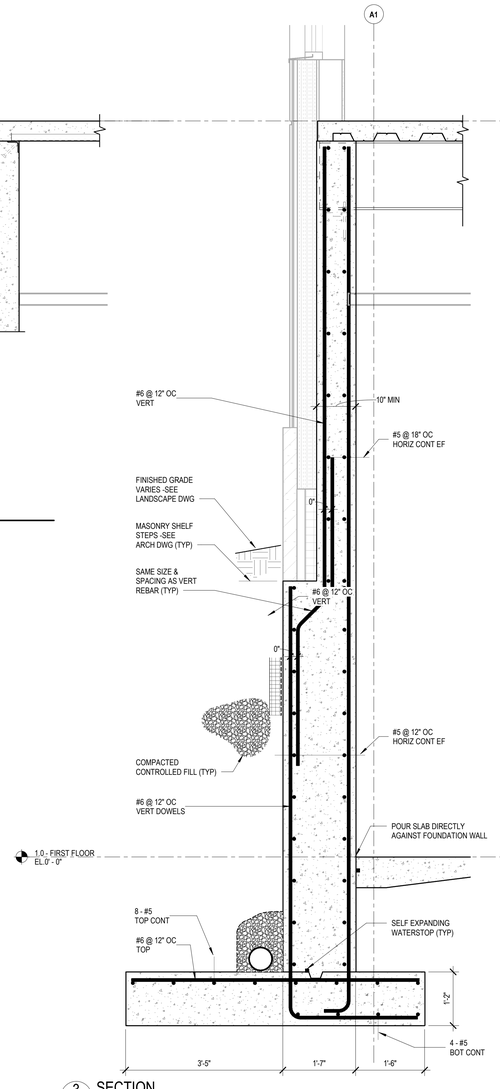


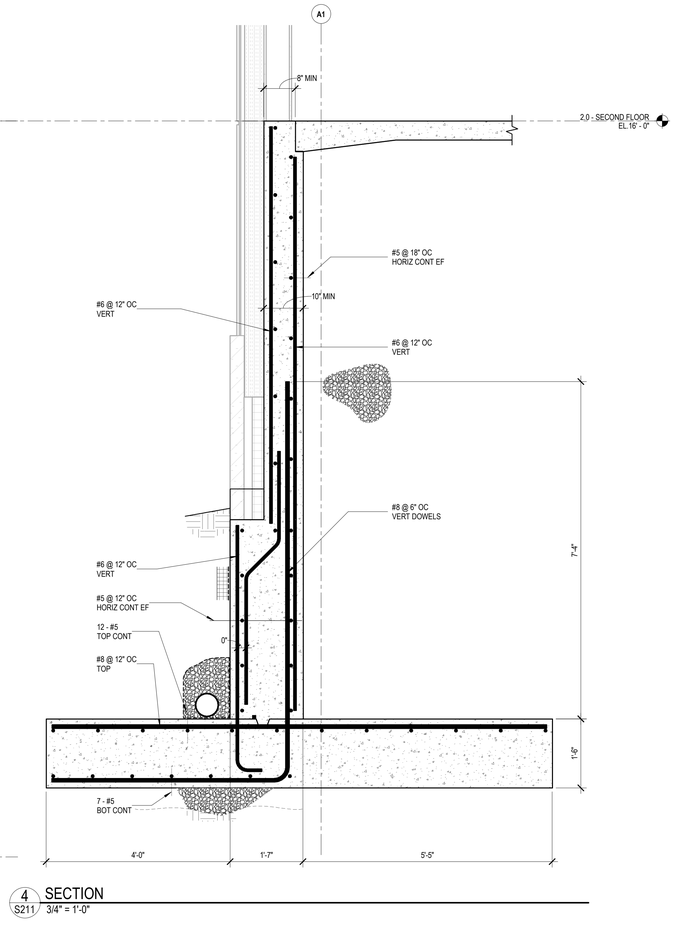
1 SECTION
S211 3/4" = 1'-0"



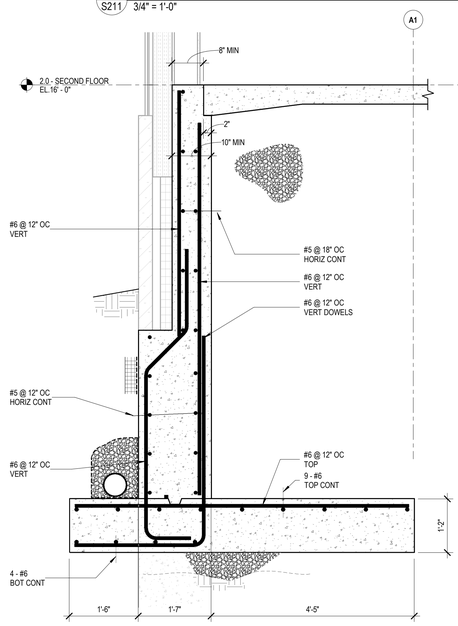
2 SECTION
S211 3/4" = 1'-0"



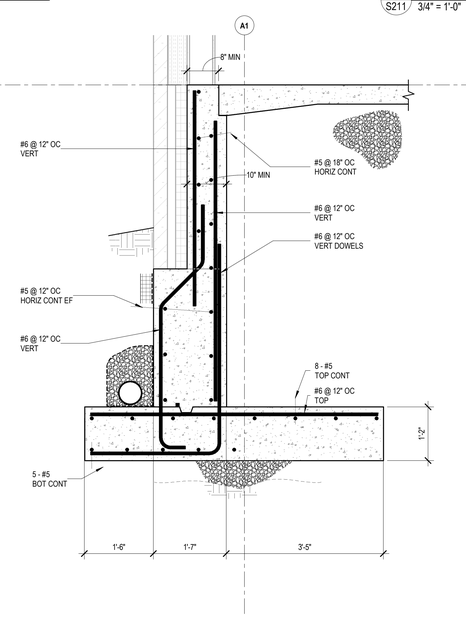
3 SECTION
S211 3/4" = 1'-0"



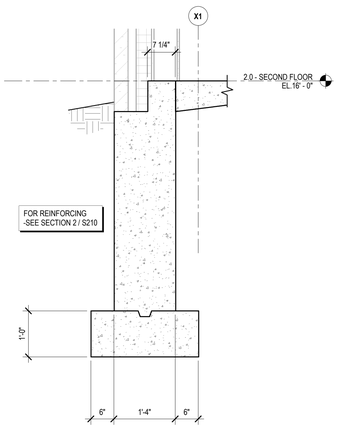
4 SECTION
S211 3/4" = 1'-0"



5 SECTION
S211 3/4" = 1'-0"



6 SECTION
S211 3/4" = 1'-0"



7 SECTION
S211 3/4" = 1'-0"

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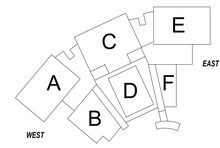
Greenwich Public Schools

Greenwich Central Middle School

**9 Indian Rock Lane,
Greenwich, CT 06830**

STATE PROJECT NO: 057-0114 N



KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING / PERMIT
	07/08/2024	PHASE 2

FOUNDATION DETAILS

Date
07/08/2024
Scale
3/4" = 1'-0"
Proj. Number
22367.00

Drawing Number
S211

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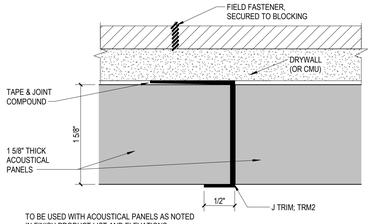
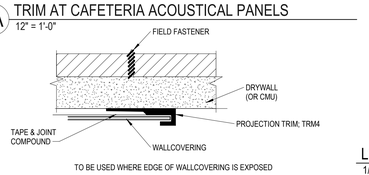
Autodesk Docs://22367.00 - Greenwich Central Middle School/S_22367_GREENWICH_CENTRAL_MS_R22.rvt
October 16, 2024 9:48:30 AM



TO BE USED WITH ACOUSTICAL PANELS AS NOTED IN FINISH PRODUCT LIST AND ELEVATIONS

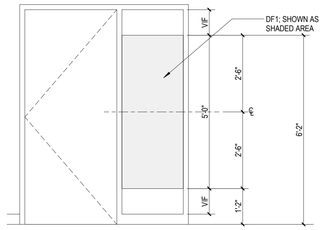
1A TRIM AT CAFETERIA ACOUSTICAL PANELS
1/2" = 1'-0"



TO BE USED WHERE EDGE OF WALLCOVERING IS EXPOSED

1B TYPICAL EXPOSED EDGE TRIM AT WALLCOVERING
1/2" = 1'-0"

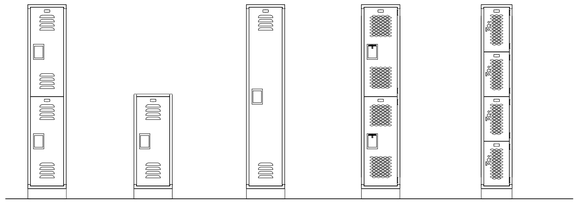
NOTE:
TYPICAL DECORATIVE FILM INSTALLATION AT SIDELITES. TO BE INSTALLED ON THE INTERIOR SIDE (NOT CORRIDOR SIDE) OF EACH ROOM, CENTERED VERTICALLY ON THE SIDELITE, DIMENSIONS TO BE V.I.F



1C TYPICAL DECORATIVE FILM INSTALL
1/2" = 1'-0"

LOCKER TYPE ELEVATION LEGEND:

NOTES:
PROVIDE 4" ZEE BASE AT ALL LOCKER LOCATIONS
PROVIDE FLAT TOPS AT ALL LOCKERS THROUGHOUT
REEFER TO ELEVATIONS FOR ACCENT PAINT COLOR DESIGNATIONS FOR 2ND FLOOR LOCKERS



TYPE: A
12"w X 18"d X 72"h
- DOUBLE TIER
- METAL LOCKER
(TYP. STUDENT)

TYPE: B
12"w X 18"d X 41"h
- SINGLE TIER
- S.S COUNTER ON TOP
(TYP. STUDENT)

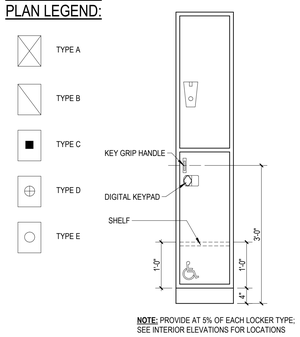
TYPE: C
18"w X 18"d X 72"h
- SINGLE TIER
- METAL LOCKER
(TYP. CUSTODIAN)

TYPE: D
12"w X 18"d X 72"h
- DOUBLE TIER
- METAL LOCKER
(P.E./ATHLETICS LOCKER RM.)

TYPE: E
12"w X 18"d X 72"h
- FOUR TIER
- METAL LOCKER
(P.E./ATHLETICS LOCKER RM.)

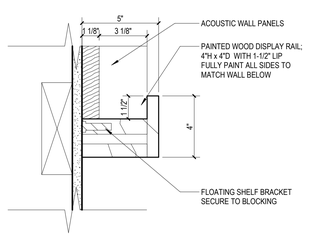
LOCKER TYPE LEGEND
1/2" = 1'-0"

LOCKER TYPE PLAN LEGEND:

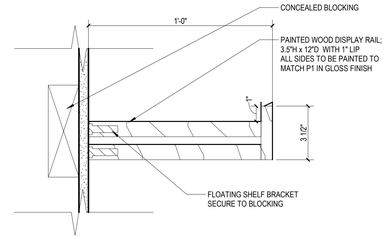


NOTE: PROVIDE AT 5% OF EACH LOCKER TYPE; SEE INTERIOR ELEVATIONS FOR LOCATIONS

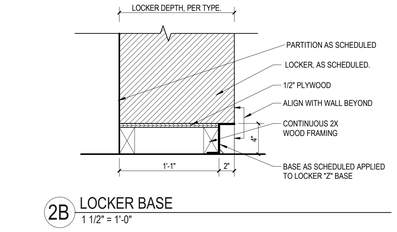
3A ADA LOCKER
3/4" = 1'-0"



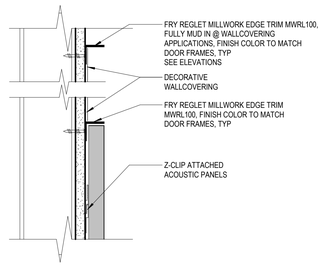
4A MILLWORK - WOOD RAIL
3" = 1'-0"



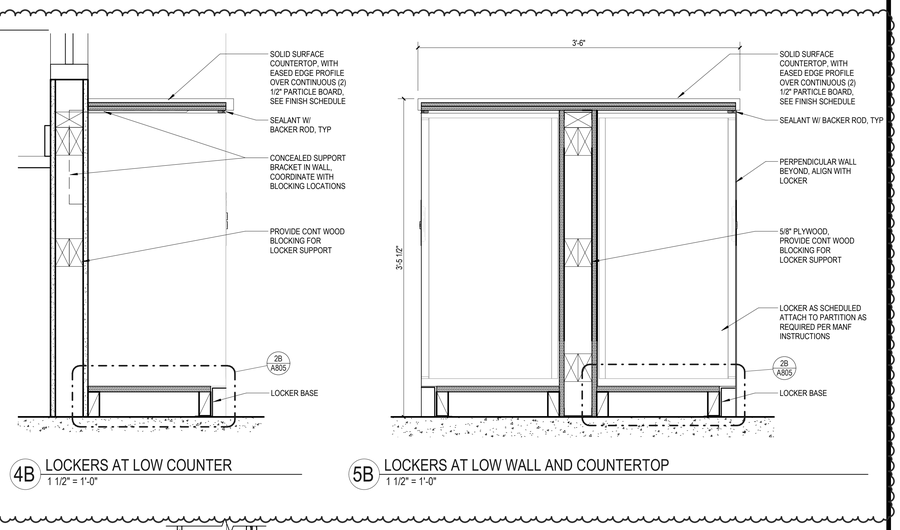
5A MILLWORK - DISPLAY SHELF
3" = 1'-0"



2B LOCKER BASE
1 1/2" = 1'-0"

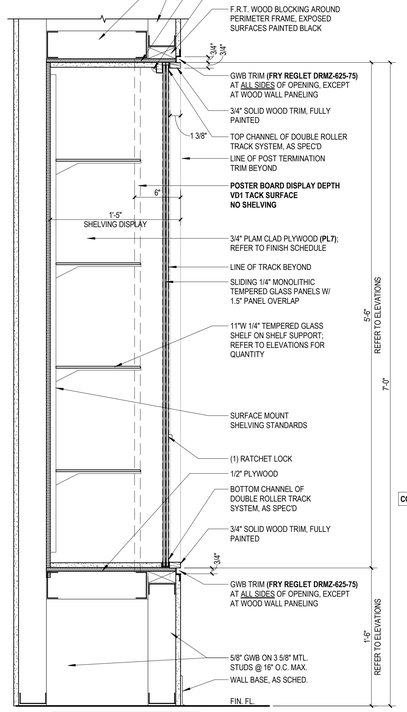


3B INT. DETAIL - ACOUSTIC WALL PANEL
3" = 1'-0"



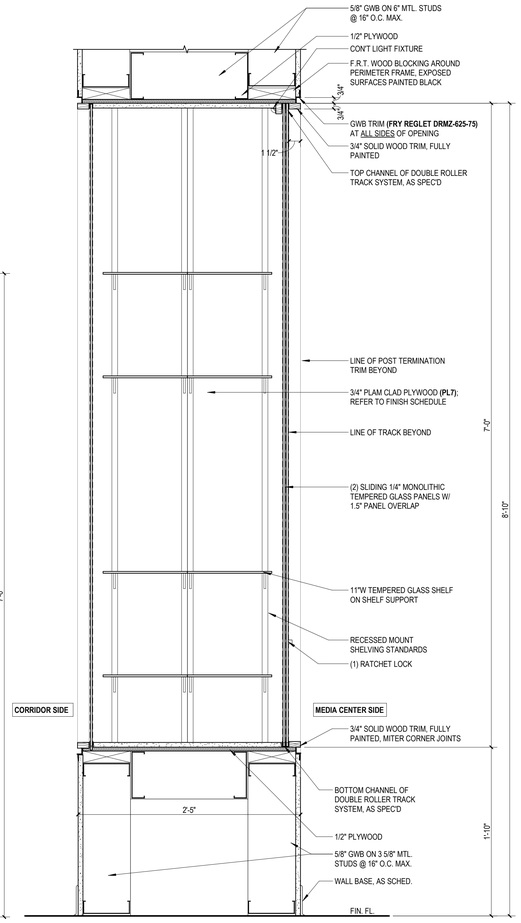
4B LOCKERS AT LOW COUNTER
1 1/2" = 1'-0"

5B LOCKERS AT LOW WALL AND COUNTERTOP
1 1/2" = 1'-0"

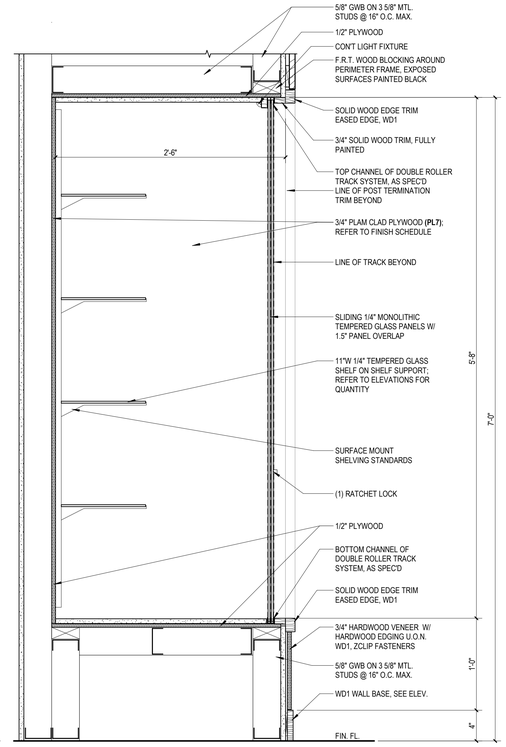


REFER TO ELEVATIONS ON A702 AND A804

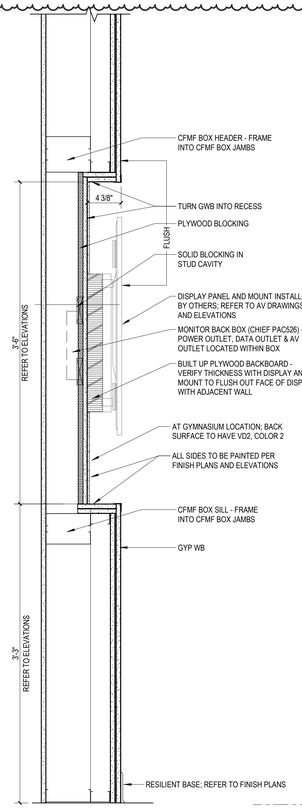
1E RECESSED DISPLAY CASE
1 1/2" = 1'-0"



2E RECESSED DISPLAY CASE DBL SIDED SECTION DETAIL
1 1/2" = 1'-0"



3E RECESSED DISPLAY CASE SINGLE SIDED
1 1/2" = 1'-0"



4E RECESSED MONITOR
1 1/2" = 1'-0"

5E BUILT-IN BENCH SEAT
1 1/2" = 1'-0"

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Checked: JZ

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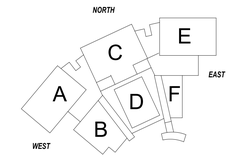

KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	PHASE 2

INTERIOR DETAILS

Date: 07/08/2024
Scale: As indicated
Proj. Number: 22367.00
Drawing Number: A805

10/16/2024 10:31:02 AM
Autodesk Docs://22367.00 - Greenwich Central Middle School/A_22367_GREENWICH_CENTRAL_MS_R22.rvt

FINISH PRODUCT LIST CONTAINED;

FINISH PRODUCT LIST

FINISH TYPE DIVISION	REFERENCE I.D.	MANUFACTURER	DESCRIPTION	SIZE	COLOR/PATTERN	TYPICAL LOCATION (refer to Finish Plans)	REMARKS	MANUFACTURER CONTACT INFORMATION
P - Interior Painting - Division 09 Section "Interior Painting"	P12	Benjamin Moore	SCUFF-X 486, high performance one coat latex, washable, scrub resistant, scuff resistant,anti-microbial, with Gennex color technology, satin finish		To match PPG 1151-5 Aqua Blue	Light Teal Accent Lacation Room, Left Pod Classroom Accent	Accent paint color at left classroom wing, accent color for lockers at center classroom wing	Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8541
	P13	Benjamin Moore	SCUFF-X 486, high performance one coat latex, washable, scrub resistant, scuff resistant,anti-microbial, with Gennex color technology, satin finish		To match PPG 1010-7 Zombie	Field at Auditorium, Stage, Media Production and upper portion of walls where there is exposed ceiling as noted in elevations		Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8541
	P14	Benjamin Moore	SCUFF-X 486, high performance one coat latex, washable, scrub resistant, scuff resistant,anti-microbial, with Gennex color technology, satin finish		To match PPG 1010-3 Solstice	BOH Utility room field color Wood Shop, Storage Rooms		Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8541
	P15	Benjamin Moore	Epoxy Semi-Gloss finish		To match PPG 1161-7 Brilliant Blue	Duct and Graphic Letters at Gym		Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8541
	P16	Benjamin Moore	Latex, Matte Finish		Super White	PGB painted ceilings, ceiling at stairs, exposed ceiling and all components unless otherwise noted on RCPs		Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8541
	P17	Sherwin Williams	Pro Industrial Waterborne Acrylic Dry Fall, Matte finish		Color to Match PPG Zombie 1010-7 (black)	Exposed ceilings at Stage, Learning Commons, Cafeteria, Wood Shop, Media Center, Fitness Center, and secondary vestibule.	To be used over cementitious fireproofing	Antoine Telford, PPG atelford@ppg.com, Mobile (917) 935-5059
	P18	Rosco	VIDEO PAINT, vinyl acrylic, matte finish		Chroma key Green 5711	Media Production accent wall		
	P19	Sherwin Williams	Firetex FX5090 Intumescent Paint, smooth paint-like finish, impact resistant		White	To be used at exposed columns	Will be painted to match the adjacent wall (accent colors at classroom door entries) or as otherwise noted on the finish plans	Heather R Bourgeois heather.r.bourgeois@sherwin.com, (617) 428-1408
	P20	Benjamin Moore	SCUFF-X 486, high performance one coat latex, washable, scrub resistant, scuff resistant,anti-microbial, with Gennex color technology, satin finish		TBD	Color to match Nicheha panels	At trim adjacent to panels	
VCG - Vinyl Custom Graphics - Division 09 Section "Wall Coverings"	VCG1	Level Digital Wallcovering	COM Custom Graphics, Mystical Substrate DD05, 20oz Commercial Grade Printable Type II Vinyl, Polycotton Woven Backing, Color to be Custom Selected from Level's Color Card	See finish plans and elevations for extent		Installed at Corridor to Auditorium		Nancy Royer, Surface Materials, nancyr@surfacematerials.com,
	VCG2	Level Digital Wallcovering	COM Custom Graphics, Mystical Substrate DD05, 20oz Commercial Grade Printable Type II Vinyl, Polycotton Woven Backing, Color to be Custom Selected from Level's Color Card	See finish plans and elevations for extent		Installed at Main Concourse /Corridors		Nancy Royer, Surface Materials, nancyr@surfacematerials.com,
	VCG3	Level Digital Wallcovering	COM Custom Graphics, Mystical Substrate DD05, 20oz Commercial Grade Printable Type II Vinyl, Polycotton Woven Backing, Color to be Custom Selected from Level's Color Card	See finish plans and elevations for extent		Installed at right pod learning commons		Nancy Royer, Surface Materials, nancyr@surfacematerials.com,
	VCG4	Level Digital Wallcovering	COM Custom Graphics, Mystical Substrate DD05, 20oz Commercial Grade Printable Type II Vinyl, Polycotton Woven Backing, Color to be Custom Selected from Level's Color Card	See finish plans and elevations for extent		Installed at middle pod learning commons		Nancy Royer, Surface Materials, nancyr@surfacematerials.com
	VCG5	Level Digital Wallcovering	COM Custom Graphics, Mystical Substrate DD05, 20oz Commercial Grade Printable Type II Vinyl, Polycotton Woven Backing, Color to be Custom Selected from Level's Color Card	See finish plans and elevations for extent		Installed at left pod learning commons		Nancy Royer, Surface Materials, nancyr@surfacematerials.com
	VCG6	Level Digital Wallcovering	COM Custom Graphics, Mystical Substrate DD05, 20oz Commercial Grade Printable Type II Vinyl, Polycotton Woven Backing, Color to be Custom Selected from Level's Color Card	See finish plans and elevations for extent	Gray and white custom design/ pattern	Corridor 2091		Nancy Royer, Surface Materials, nancyr@surfacematerials.com
	VCG7	Level Digital Wallcovering	COM Custom Graphics, Mystical Substrate DD05, 20oz Commercial Grade Printable Type II Vinyl, Polycotton Woven Backing, Color to be Custom Selected from Level's Color Card	See finish plans and elevations for extent	Gray and white custom pattern	Corridor 2054		Nancy Royer, Surface Materials, nancyr@surfacematerials.com
	VCG8	Level Digital Wallcovering	COM Custom Graphics, Mystical Substrate DD05, 20oz Commercial Grade Printable Type II Vinyl, Polycotton Woven Backing, Color to be Custom Selected from Level's Color Card	See finish plans and elevations for extent	Gray and white custom design/ pattern	Corridor 2091		Nancy Royer, Surface Materials, nancyr@surfacematerials.com
	VCG9	Level Digital Wallcovering	Thicket, LS2003 Customized colors, Mystical Substrate DD05, 20oz Commercial Grade Printable Type II Vinyl, Polycotton Woven Backing, Color to be Custom Selected from Level's Color Card	See finish plans and elevations for extent	Gray and white custom colors	Corridor 2001 and 2071		Nancy Royer, Surface Materials, nancyr@surfacematerials.com
WWP - Wood Wall Panel - Division 06 Section "Wood Panelding" and "Interior Wall Paneling"	WWP1		Solid maple (millwork), white, flat cut, clear finish (to match WD1)	Refer to elevations	Custom color, sample to be provided by architect	Auditorium Entry Lobbies at Display Cases, St upper portion of walls at serverry and at display area under main stairs, as noted on Finish Plans and Elevations		
	WWP2	Armstrong	Woodworks, Custom sizes, Wall installation, plain cut white maple veneer, including matching edge, Class A fire rating for walls.	Refer to elevations for custom sizes	Custom color, sample to be provided by architect	Proscinium, at Auditorium		
CEILINGS								
ADC - Acoustic Diffusion Ceilings - Division 09 Section "Fixed Sound Reflective Panels"	ADC1	USG	Geometrix 3D Metal Panels, Sound Reflectors, Mix of Wedge, Outside Wedge and Inside Wedge smooth aluminum, 9/16" DXL Grid, High Recycled Content of 80%, Class A Fire Rated	2' x 2' x 3.25"	Flat White with white grid	Music Rooms inset in APC3 grid as shown in RCP	Refer to RCP for Layout, installed in random directions	Cathy Murphy, cxmurphy@usg.com
	APC1	USG	Mars Ceiling Panels, 89136 High NRC, FLB Edge, .85 NRC, 35 CAC, 9/16" DXL Grid, 70% Recycled Content, Class A Fire Rated	24" x 48"	Flat White with white grid	Classrooms, Corridors, Offices, Open Areas, and as shown on the RCPs, and where indicated on RCPs	High NRC required for acoustics	Cathy Murphy, cxmurphy@usg.com
	APC2	USG	Mars Healthcare Ceiling Panels, 88983 High NRC, FLB Edge, .85 NRC, 35 CAC, 9/16" DXL Grid, 70% Recycled Content, Class A Fire Rated	24" x 48"	Flat White with white grid	Kitchen Servery and adjacent spaces, CulinaryFCS, Health Suite, and as noted on RCPs	High NRC required for acoustics	Cathy Murphy, cxmurphy@usg.com
	APC3	USG	Mars Ceiling Panels, 88136, High NRC, FLB Edge, .85 NRC, 35 CAC, 9/16" DXL Grid, 70% Recycled Content, Class A Fire Rated	24" x 24"	Flat White with white grid	In music classrooms to coordinate with ADC1	High NRC required for acoustics	Cathy Murphy, cxmurphy@usg.com
	APC4	USG	Mars Ceiling Panels, 89136, High NRC, FLB Edge, .85 NRC, 35 CAC, 9/16" DXL Grid, 70% Recycled Content, Class A Fire Rated	24" x 48"	Flat Black with Black grid	Theater Entry vestibules, Media Production		Cathy Murphy, cxmurphy@usg.com
PGB - Painted Gypsum Board Ceiling - Division 09 Section "Interior Painting"	PGB1	-	Painted Gypsum Board Ceiling, Latex Matte Finish	-	To be painted P16 in Latex Matte Finish	Throughout except where noted on RCP where accent colors are to be installed		-
SAC - Sound Absorbing Ceiling - Division 09 Section "Sound Absorbing Wall and Ceiling Units"	SAC1	Armstrong Ceilings	Tectum, 2" Sound Absorbing Ceiling Panels, Direct Mounting - C20, Bevel Edge Butt Panels, 0.80 NRC	2' x 4' x 2"	Painted to match P17 (black)	Wood Shop, mounted to deck	Refer to RCPs for Extent	Sandra Nieyn, Armstrong Ceilings, SNniesyn@armstrongceilings.com, (860) 490-5604
WWC - Wood Wallcovering - Division 09 Section "Wall Coverings"	WWC	Surface Materials	Sanfoot, Veneer wallcovering, maple, white, flat cut	.02mm thick	Clear finish	Installed on curved ceiling panels at auditorium	To wrap all side of suspended ceiling gyp panels - refer to RCPs	Nancy Royer, Surface Materials, nancyr@surfacematerials.com
CASEWORK								
PL - Plastic Laminate - Division 06 Section "Architectural Wood Casework"	PL1	Wilsonart	High Pressure Laminate, Matte Finish	-	Fusion Maple 7909-60	Cabinets/Casework as noted on finish Plans	Vertical Grain Orientation	Carla Donza, Connply, carla@connply.com, Mobile (860) 808-7640
	PL2	Formica	Thru-Color High Pressure Plastic Laminate, Writtable and Magnetic	-	Bright White	Doors at tall cabinets in art spaces, Family Consumer Science, OTPT, IT workroom and as noted on finish plans	Edging to be standard white	Jean Marie Remick, Formica, jeanmarie.bisson@formica.com, (617) 217-8146
	PL3	Wilsonart	High Pressure Laminate, Fine Velvet Finish	-	Pearl Alloy Linearly Finish 5057K-18	Toilet Room Valence, Fitness Room, Cafeteria and as noted on finish plans		Carla Donza, Connply, carla@connply.com, Mobile (860) 808-7640
	PL4	Arborite	High Pressure Laminate	-	Tatami Nezumi P124 CA	Cabinets at Wood Shop, Innovation Lab & Auditorium Control Desk		
	PL5	Wilsonart	High Pressure Laminate, Matte Finish	-	Fusion Maple 7909-60	Servery Equipment		Carla Donza, Connply, carla@connply.com, Mobile (860) 808-7640
	PL6	Wilsonart	High Pressure Laminate	-	Pearl Alloy Linearly Finish 5057K-18	Elevator walls		Carla Donza, Connply, carla@connply.com, Mobile (860) 808-7640
	PL7	Formica	Specialty High Pressure Plastic Laminate, Magnetic, Writable Whiteboard surface, stain-resistant		Crystal White	All sides of Interior of 3D display cases		Carla Donza, Connply, carla@connply.com, Mobile (860) 808-7640
SOSF - Solid Surface - Division 06 Section "Solid Surfacing Fabrications"	SOSF1	Durat	Solid Surface		D0700-02 White (with colorful specs)	Typical at Classroom, Admin areas, Health suite, Commons, Locker Tops and as noted on Finish Plans		Carla Donza, Connply, carla@connply.com, Mobile (860) 808-7640
	SOSF2	Durat	Solid Surface	-	D0040-02 medium Gray (with colorful specs)	Art Room, Fitness room, Family Consumer, Wood Shop and Innovation		Carla Donza, Connply, carla@connply.com, Mobile (860) 808-7640
	SOSF3	Formica	Solid Surface, Everform		Sea Glass 505	Multi-Person Bathroom counters		Jean Marie Remick, Formica, jeanmarie.bisson@formica.com, (617) 217-8146
	SOSF4	Corian	Solid Surface	-	Deep Cloud	Window Sills and Cane Detection at open stairs		Dennis Labonte, Atlantic Plywood, dennis.labonte@atlanticplywood.com (959) 599-1050

FINISH PRODUCT LIST

FINISH TYPE DIVISION	REFERENCE I.D.	MANUFACTURER	DESCRIPTION	SIZE	COLOR/PATTERN	TYPICAL LOCATION (refer to Finish Plans)	REMARKS	MANUFACTURER CONTACT INFORMATION
SOSF - Solid Surface - Division 06 Section "Solid Surfacing Fabrications"	SOSF5	Durcon	Epoxy		Graphite	Science Classrooms & Prep Spaces		Franklin Hunt, Durcon, fhunt@durcon.com, 512-595-8026
WD - Wood - Division 06 Section "Interior Architectural Woodwork"	WD1	-	Species: White Maple, Stain Grade, Plain Sliced	-		Doors, millwork at main entries and wood throughout		-
WS - Wood Stain - Division 09 "Painting"	WS1	-	Custom Color on WD1		To match PL1	General		-
VISUAL DISPAY								
VD - Visual Display - Division 10 Section "Visual Display Units"	VD1	Deko	Magnetic dry erase markerboard, optically clear, shatter proof, ghost free	Sizes; 72"w x 48"h at Media Center and Group Rooms 48"w x 84"h at Learning Commons	White	Media Center, 2nd Floor Learning Commons		James Bluhm, NS Surfaces, james.bluhm@nssurfaces.com, (414) 678-1312
	VD2	Forbo	Bulliten Board Rollgoods - unframed, direct glued, with	Sizes as Indicated on Elevations	Color 1; Mushroom Color 2 at Gym entrance; Blueberry	Backsplash at Admin, Security, Workrooms, back of 2D display case and as noted on plans and elevations	Exposed edge to have trim as indicated in detail _	Chuck Banik, Forbo, 860-830-9341, Charles.Banik@forbo.com
TB - Tackboard - Division 10 Section "Visual Display Units"	TB_	Forbo	Prefabricated framed tackboard utilizing Forbo cork with aluminum trim	48"H with Width As Indicated on Elevations		As noted on Finish Plans		Chris Riley, chris.riley@forbo.com, 860-830-9314
WB - Whiteboard - Division 10 Section "Visual Display Units"	WB_	Egan	Egan Versa Surface, Factory Prefabricated Porecliain Whiteboard, low luster finish surface ability to project on it, magnetic, stain and scratch resistant surface (including permanent marker), no ghosting, NO marker tray, Magnetic marker holder to be included.	Refer to schedule on sheet A911 for sizes. Standard height is 48" - width is indicated in tag.	White with Aluminum frame	At all teaching spaces, Learning Commons, Media Center, Admin Areas, Conf Rooms, where indicated on finish plans and elevations	Whiteboards are tagged on elevations and finish plans the first # indicates width the second height if not 48"h, R indicates there is to be a marker rail.	Kiera Tobin-Rosman, kiera@contractsources.com 617-951-2511
	WB_R	Egan	Egan Versa Surface, Factory Prefabricated Porecliain Whiteboard with Integrated full length marker tray rail, low luster finish surface ability to project on it, magnetic, stain and scratch resistant surface (including permanent marker), no ghosting, NO marker tray, The following room are to have staff lines for music; Choral, Band and Orchestra	Refer to schedule on sheet A911 for sizes. Standard height is 48" - width is indicated in tag.	White with Aluminum frame	At teachign wall all teaching spaces, Learning Commons, Media Center, Admin Areas, Conf Rooms, where indicated on finish plans and elevations	Whiteboards are tagged on elevations and finish plans the first # indicates width the second height if not 48"h, R indicates there is to be a marker rail	Kiera Tobin-Rosman, kiera@contractsources.com 617-951-2512
MISC.								
BTP - Bathroom Toilet Partition - Division 10 Section "Plastic Toilet Compartments"	BTP	Scranton Products	Hiney Hiders ,High density polyethylene (HDPE), waterproof, non-absorbent, and graffiti-resistant textured surface, Floor mounted overhead-braced toilet compartments, Recycled Content; Post Consumer: 100 percent	72"h	Blueberry, Orange peel texture	Multi-Person Bathroom		800-445-5148; Fax: 855-376-6161; Email: request info (info@scrantonproducts.com)
CC - Cubicle Curtain - Division 10 Section "CubicleCurtains and Track"	CC1	Architex	Rx 8001	72"w	Ocean Mist	Nurse Resting Rooms		Lisa Beltrandi, Architex, lisabeltrandi@architex-ih.com, (978) 886-2278
FR - Fabric - Division 06 Section "Architectural Wood Casework"	UPH1	Architex	24/7 Performance, Drizzle, 100% Vinyl, 200,000 double rubs, polyester backing	-	Ocean View	Seat at bench at Media Center		
	UPH2	Pallas	Structure Collection, Deflection, polyeser, Crypton finish, 105 double rubs, bleach cleanable	-	Lapis	Seats at Auditorium		
RS - Roller Shades - Division 12 Section "Window Shades"	RS1	Rollease Acmeda	Manual Roller Shades: Shade Cloth; Ambient Renew, 1% openness, 18.5 oz, 85% REPREVE® Recycled Polyester, PVC-free, must be same color on both sides, .5 NRC	refer to documents for window sizing	White Smoke	Typical at windows in all Occupied Rooms (teaching spaces, offices, etc.) including sidelits and windows to corridors, Conference Rooms, U.N.O. Refer to Finish Plans for Locations	Align breaks in shades with mullions when possible	
	RS2	Rollease Acmeda	Motorized Roller Shades: Shade Cloth; Ambient Renew, 1% openness, 18.5 oz, 85% REPREVE® Recycled Polyester, PVC-free, must be same color on both sides, .5 NRC	refer to documents for window sizing	White Smoke	At Gymnasium	Align breaks in shades with mullions when possible	
MR - Athletic Mirror - Division 08 Section "Mirrors"	MR1		6.0 mm annealed monolithic glass mirrors with safety vinyl backing in lieu of the specified Mirrorlite product. Install mirrors w/ horizontal mastic beads at 6" OC and T&B j-channels.			OTPT and Fitness Center		
TR - Metal Trim - Rerence Spec Section for Products Trim are used with (Tile, Wallcovering, Visual Display, Etc.)	TRM1	Fry Reglet	Wallcovering Trim Base and Termination WCTBT125-217	1/8" x 12'	Aluminum	At all exposed edge of wallcovering and wall protection roll goods	Refer to detail 1B/A805	Nancy Royer, Surface Materials, nancyr@surfacematerials.com, Mobile (203) 605-1441
	TRM2	Fry Reglet	J-Channel Lap	1/8" x 12'	Aluminum	Installed at acoustical panels in cafeteria where color changes	Refer to detail 1A/A805	Nancy Royer, Surface Materials, nancyr@surfacematerials.com, Mobile (203) 605-1441
	TRM3	Fry Reglet	DRMPET-375	1/8" x 12'	Aluminum	At all exposed edgge of tackboard rollgoods (VD2)	Rerer to detail 5D/A805	Nancy Royer, Surface Materials, nancyr@surfacematerials.com,
	TRM4	Schluter Systems	Quadec	As required	Aluminum	At all outer edged where tile meets tile		
	TRM5	Schluter Systems	Finec	As required	Aluminum	At all exposed edge of wall tile		

2 - FINISH NOTES

2.1 Related Documents

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

2.2 Summary

A. This Section contains finish nomenclature with regard to project finishes.
B. Related Sections are listed in the Finish Product List.
C. Finishes for purchased and prefinished items such as Visual Display Boards, Metal Lockers, Operable Partitions, Fire-protection Specialties, Postal Specialities, Unit Kitchens, Toilet Compartments, Toilet Accessories, Residential Appliances, Foodservice Equipment, Medical Equipment, Manufactured Casework and like items are specified in their respective Sections. Refer to Table of Contents.

2.3 Abbreviations

A. Abbreviations for specific finishes are listed in the Finish Product List. Other Abbreviations include:
ETR Existing to Remain
EXP Exposed
UON Unless Otherwise Noticed
NIC Not In Contract

2.4 General Notes Applicable to the Entire Project

GENERAL

1. NORTH IS AS INDICATED ON THE DRAWINGS
2. REFER TO FINISH PRODUCT LIST FOR DEFINITION OF MATERIALS AND SUBSTRATES.
3. REFER TO FINISH PLANS FOR LOCATIONS OF FINISHES BY ROOM.
4. REFER TO INTERIOR ELEVATIONS FOR LOCATION OF WALL TILE, WALLCOVERING, ACCENT PAINT LOCATIONS, WAINSCOT, WALL PROTECTION AND SPECIALTY DESIGNS.
5. REFER TO RELATED SPECIFICATION SECTION FOR SPECIFIC INFORMATION REGARDING PRODUCT INSTALLATION, HANDLING, MAINTENANCE, DATA REQUIREMENTS, SUBMITTALS AND OTHER PERTINENT INFORMATION.
6. IF ANY DISCREPANCIES OCCUR BETWEEN FINISH PRODUCT LIST, FINISH PLAN AND SPECIFICATIONS THE ARCHITECT AND/OR INTERIOR DESIGNER MUST BE CONSULTED REGARDING DIRECTION OF DESIGN INTENT PRIOR TO ORDERING AND INSTALLATION OF ANY OF THE PRODUCTS IN QUESTION.
7. REFER TO SPECIFICATIONS FOR ALTERNATE MANUFACTURERS.
8. IMAGE FOR DIGITAL WALL COVERINGS ARE TO BE SELECTED BY ARCHITECT. ARCHITECT TO WORK DIRECTLY WITH MANUFACTURER TO CUSTOMIZE IMAGE FOR DESIGN PURPOSES AS WELL AS REQUIREMENTS FOR SCALING IMAGE TO SIZE AS INDICATED ON INTERIOR ELEVATIONS. OWNER MUST APPROVE FINAL IMAGE PRIOR TO INSTALLATION.
9. WOOD STAIN COLORS ARE TO BE CUSTOM TO MATCH ARCHITECT'S SAMPLES. SAMPLES TO BE PROVIDED UPON REQUEST.
10. VENTS, GRILLES, ACCESS PANELS, PLUG STRIPS, CABINET UNIT HEATERS, FIRE EXTINGUISHER CABINETS, RADIATORS, ELECTRICAL PANEL BOARDS, DIFFUSERS (IN OCCUPIED AREAS) TO MATCH WALL /CEILING ON WHICH THEY ARE INSTALLED.

STAIRS / ELEVATORS

1. ENCLOSED STAIRS SHALL HAVE: STRINGER PAINTED P2, RAILINGS PAINTED TO MATCH P2, HANDRAILS PAINTED TO MATCH P2
2. STAIRS WITHIN AUDITORIUM SHALL BE: STRINGER; P2, RAILINGS: P2, HANDRAILS WITHIN AUDITORIUM SHALL BE: PAINTED TO MATCH P25.
3. ELEVATORS: FLOORING; RUBBER TILE TO MATCH RST1 (SAME AS USED AT STAIR LANDINGS), WALLS: WILSONART PLASTIC LAMINATE; SATIN STAINLESS 4830K-18

FLOORS

1. REFER TO A903 FOR FLOOR FINISH EXTENT OF FLOOR PATTERNS.
2. IN LOCATIONS WHERE THERE IS AN OPEN SPACE BELOW A MILLWORK COUNTER THE
3. FLOORING IS TO CONTINUE INTO THAT OPENING.
4. DIRECTION OF FLOORING INSTALLATION IS AS INDICATED ON FINISH PLANS WITH ARROWS. ARROWS INDICATE DIRECTION OF LINEAR PATTERN AND/OR DIRECTION OF LONGEST SIDE OF TILE.
5. FLOORING TRANSITIONS:
   A. AT TRANSITIONS BETWEEN CARPET AND OTHER FLOOR FINISHES, PROVIDE APPROPRIATE TRANSITION STRIP PER SPECIFICATIONS, TO BE APPROVED BY ARCHITECT.
   B. LOCATE TRANSITIONS IN FLOOR FINISH UNDER CENTERLINE OF DOOR UNO.
   C. REFER TO INTERIOR DETAIL SHEET A806 FOR EXTENT OF FLOORING TRANSITIONS.
   D. ALL TRANSITION STRIPS MUST MEET ADA REQUIREMENTS. REFER TO THRESHOLD TAGS ON FINISH PLANS FOR LOCATIONS OF TRANSITION TYPES
6. METAL TRANSITION STRIPS FINISH: BRUSHED STAINLESS STEEL
7. RUBBER TRANSITION STRIPS; TO BE SELECTED FROM MANUFACTURER'S FULL RANGE OF COLORS BY LOCATION TO COORDINATE WITH ADJACENT FLOORING.
8. CUT FLOOR TILE AS REQUIRED TO SLOPE TOWARDS FLOOR DRAINS.

WALLS

1. TYPICAL FIELD COLOR AT ALL WALLS TO BE P1 UNLESS OTHERWISE NOTED ON FINISH PRODUCT LIST, OR ON FINISH PLANS AND ELEVATIONS.
2. ALL COLUMNS ARE TO BE PAINTED. REFER TO FINISH PLANS FOR COLOR.
3. REFER TO ARCHITECTURAL FLOOR PLANS FOR LOCATION OF CORNER GUARDS.
4. USE EPOXY PAINT ON ALL WALLS AT WET AREAS; JANITOR CLOSETS, RECEIVING AREAS, OUTDOOR STORAGE AND AS INDICATED IN FINISH PRODUCT LIST & SPECS.
5. ALL WALLCOVERING, WALL PROTECTIONS AND TACKBOARDS THAT HAVE AN EXPOSED EDGE, NOT ENDING AT AN INSIDE CORNER, MUST HAVE A TRIM EDGE: REFER TO FINISH PRODUCT LIST FOR TYPES.
6. AT TILED WALL LOCATIONS ALL EXPOSED TILE EDGES AND OUTSIDE TILED CORNERS TO RECEIVE TRIM PIECE, REFER TO FINISH PRODUCT LIST FOR TYPE.
7. ALL WALLS OF SHOWERS TO BE TILED (FULL HEIGHT) ABOVE SHOWER BASE WITH METAL TRIM AT EXPOSED TILE EDGES (TR1).
8. WHERE COLUMNS ARE EXPOSED, TYPICAL WALL BASE, RB1 IS TO BE APPLIED.

BASE

1. PROVIDE RB1 AT ALL FLOORING LOCATIONS EXCEPT AT GYMNASIUM, STAGE AND BACK OF STAGE, WHERE VENTED BASE IS REQUIRED.
2. PROVIDE INTEGRAL COVE BASE AT ALL EPOXY FLOOR LOCATIONS.

CEILINGS

1. REFER TO REFLECTED CEILING PLANS FOR CEILING HEIGHTS AND EXTENT OF CEILING TYPES.
2. ALL EXPOSED CEILINGS TO BE PAINTED, INCLUDING PLUMBING, STRUCTURAL AND MECHANICAL. PAINT COLOR IS AS INDICATED ON FINISH PRODUCT LIST, CEILING PLANS AND ELEVATIONS.
3. GYP. CEILING IS TO BE PAINTED P16, UNLESS OTHERWISE NOTED AS AN ACCENT COLOR.
4. WHERE FIREPROOFING SPRAY IS LOCATED ON EXPOSED BEAMS IT IS TO BE PAINTED THE SAME COLOR AS THE ADJACENT WALL.

DOORS

1. ALL WOOD DOORS TO BE FINISH: WS1
2. ALL HM DOORS AND FRAMES TO BE PAINTED P2, UNO. HM PAINT FINISH SHALL BE SEMI-GLOSS, UNO.

CASEWORK

1. REFER TO CASEWORK FINISH TAGS ON FINISH PLANS.
2. LABORATORY CASEWORK: AS IDENTIFIED IN LABORATORY CASEWORK SPEC; WOOD CASEWORK: PLAIN SLICED VERTICAL MAPLE, CUSTOMIZED STAIN TO MATCH WS1, FRONT STYLE: CLASSIC, PULLS: ROUNDED, ALUMINUM/CHROME, DOOR HINGES: ALUMINUM/CHROME. WORKTOP SURFACE: SOSF5 PER FINISH PRODUCT LIST, FUME HOODS: METAL CASE BASE/SILL/SASH; WHITE
3. ALL WINDOW STOOLS TO BE SOSF4, UNLESS OTHERWISE NOTED.

Finishes for Miscellaneous Items

1. Toilet Compartments: Hiney Hiders, Color: Blueberry, Texture: Orange Peel
2. Display Cases: Metal Trim (Refer to details) PL1 where noted with glass front and shelves. Plastic Laminate back and side panels to match PL2
3. Fire Extinguisher Cabinets: Painted to match P1
4. Metal Lockers
   a. General Lockers: Basis of Design, Penco, Canvas 054, Interior and any exposed sides of locker to match exterior paint color.
   b. Color Accent Lockers at Right Side Classroom Pod: Custom Color to Match P10, interior of locker any exposed sides to match exterior paint color.
   c. Color Accent Lockers at Center Classroom Pod: Custom Color to Match P11, interior of locker any exposed sides to match exterior paint color.
   d. Color Accent Lockers at Left Side Classroom Pods: Custom Color to Match P12, interior of locker any exposed sides to match exterior paint color.
   e. Athletic Rooms: Basis of Design; Penco 052 Reflex Blue, To be selected from manufacturer's full range, interior of locker to match exterior paint color. Flat top and exposed sides to match exterior paint color.
   f. Custodial Room: Basis of Design; Penco 052 Reflex Blue, To be selected from manufacturer's full range, interior of locker to match exterior paint color. Flat top and exposed sides to match exterior paint color.
5. Dividing Curtain At Gym; Blue
6. Wall Pads At Gym: Blue
7. Telescopic Seating at Gym:
   A. Seats: Polymer, Basis of Design - Hussey Blue 301
   B. Railings, Understructure, Painted components: Black
   C. End Curtain: Blue to match seats
8. Residential Appliances: Gray Fingerprint Proof
9. Stage Drapes/Curtains: STC1 - KM Fabrics Prestige, Navy, Lining to be black, Travelers are to be black, Cyclorama at stage is to be White
10. Unit Ventilators: Painted to match P1
11. Convection Covers: Painted to match P1
12. Switch plate/Outlet Covers: White cover with white outlet face/switches at white walls, Stainless with gray outlet face/switches at walls with accent paint, wallcovering and other nonstandard treatment.
13. Exterior Signage:
   A. Color for "Central"; Blue to match P3
   B. Color for Address; TBD
14. Fixed Auditorium Seating:
   A. Molded polymer components,Basis of Design - Hussey, (Graphite).
   B. Metal components:Basis of Design - Hussey, Graphite
   C. Upholstery; Refer to UPH2 on Finish Product List
   D. End Panel: Tapered end panel to Match PL1
   E. Arm Caps: Polymer arms; Basis of Design - Hussey, Graphite

SLAM
The S/L/A/M Collaborative
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Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

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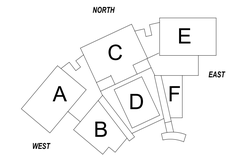
Drawn: AHS
Checked: JZ

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane, Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N



KEYPLAN

Number	Date	Issued For
1	10/16/2024 09/30/2024 07/08/2024	ADDENDUM NO. 2 BIDDING/ PERMIT PHASE 2

FINISH PRODUCT LIST -PART B AND FINISH NOTES

Date: 07/08/2024
Scale: 12" = 1'-0"
Proj. Number: 22367.00
Drawing Number: A911

Autodesk Docs://22367.00 - Greenwich Central Middle School/A_22367_GREENWICH_CENTRAL_MS_R22.rvt
10/16/2024 11:47:08 AM

BACKFLOW PREVENTION SCHEDULE

TAG	MANUFACTURER	MODEL #	HAZARD CLASS	DESCRIPTION	COMPONENTS AND ACCESSORIES	APPLICATION	APPLICABLE STANDARDS	REMARKS
BFP-4	WATTS	LF757DCDA	NON-HEALTH HAZARD	DOUBLE CHECK VALVE ASSEMBLIES: CAST COPPER SILICONE/EPOXY COATED CAST IRON/ BRONZE C89836/ STAINLESS STEEL/BODY, CONTINUOUS PRESSURE, TESTABLE	TWO CHECK VALVES, TWO SHUTOFF VALVES, FOUR TEST COCKS, STRAINER, AND RUBBER CHECK DISC	BACKSIPHONAGE & BACKPRESSURE, FIRE SPRINKLER SYSTEMS, FOOD PROCESSING, STEAM KETTLES SIZES 2-1/2"-10"	ASSE 1015 & NSF 61-G	#1

REMARKS:
1. INSTALL IN ACCORDANCE WITH THE WATER AUTHORITY REQUIREMENTS.

COMMERCIAL SPRINKLER HEAD SCHEDULE

SYMBOL	K-FACTOR	STANDARD (SR) OR QUICK RESPONSE (QR)	UPRIGHT	PENDENT	RECESSED	CONCEALED	HORIZONTAL SIDEWALL	WITH GUARD	ABOVE CEILING	DRY	INSTITUTIONAL	EXTENDED COVERAGE	UL-LISTED	FM-APPROVED	MANUFACTURER & MODEL	MAXIMUM LISTED COVERAGE AREA L x W (FT)	MINIMUM REQUIRED PRESSURE (PSI)	GENERAL LOCATION OF SPRINKLER HEADS (REFER TO DRAWINGS FOR ACTUAL LOCATIONS)	NOTE: *ALL FINISHES ARE SUBJECT TO APPROVAL BY ARCHITECT. FINISH*	CLASSIFICATION
◉	5.6	QR				○							○	○	VIKING MODEL# VK462	15 x 15	7 PSI	SPACES & CORRIDORS WITH HUNG CEILINGS	COVER PLATE FACTORY-PAINTED WHITE.	LIGHT & ORDINARY HAZARD
◉C	5.6	QR				○							○	○	VIKING MODEL# VK462	15 x 15	7 PSI	SPACES & CORRIDORS WITH CLOUD CEILINGS	COVER PLATE FACTORY-PAINTED TO MATCH COLOR OF CLOUD	LIGHT & ORDINARY HAZARD
●D	5.6	QR		○						○			○	○	VIKING MODEL# VK176	15 x 15	7 PSI	KITCHEN FREEZER & COOLER	BRASS	LIGHT & ORDINARY HAZARD
○	5.6	QR	○										○	○	VIKING MODEL# VK300	15 x 15	7 PSI	SPACES & CORRIDORS WITHOUT HUNG CEILINGS	BRASS	LIGHT & ORDINARY HAZARD
○A	5.6	QR	○						○				○	○	VIKING MODEL# VK300	15 x 15	7 PSI	SPACES & CORRIDORS WITH CLOUD CEILINGS	BRASS	LIGHT & ORDINARY HAZARD
⊠	5.6	QR	○					○					○	○	VIKING MODEL# VK300	15 x 15	7 PSI	SPACES & CORRIDORS WITHOUT HUNG CEILINGS	BRASS	LIGHT & ORDINARY HAZARD
⊠D	5.6	QR	○					○		○			○		VIKING MODEL# VK184	15 x 15	7 PSI	PARKING GARAGE	BRASS	LIGHT & ORDINARY HAZARD
⊠ITC	5.6	QR	○					○					○	○	VIKING MODEL# VK310 INTERMEDIATE TEMPERATURE RATING	15 x 15	7 PSI	SKYLIGHT	BRASS	LIGHT & ORDINARY HAZARD
▽	5.6	QR					○						○	○	VIKING MODEL# VK305	15 x 15	7 PSI	ELECTRICAL, MDF & IDF CLOSETS	BRASS	LIGHT & ORDINARY HAZARD
▽EC	8.0	QR					○					○	○	○	VIKING MODEL# VK630	28 x 14	15 PSI	VESTIBULES	BRASS	LIGHT & ORDINARY HAZARD
▽D	5.6	QR			○		○			○			○	○	VIKING MODEL# VK182	15 x 15	7 PSI	BELOW OVERHANGS	BRASS	LIGHT & ORDINARY HAZARD

NOTES:
1. ALL TYPES OF SPRINKLER HEADS SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDED SPRINKLER GUARDS IN MECHANICAL ROOMS, ELECTRICAL & TELECOM (I.T.) CLOSETS, UPS ROOMS AND ALL ROOMS WHERE SPRINKLERS MAY BE SUBJECT TO ACCIDENTAL DAMAGE.
3. ALL SPRINKLER HEADS THROUGHOUT SHALL BE OF ORDINARY TEMPERATURE RATING (135 - 170 DEG. F.), WITH THE FOLLOWING EXCEPTIONS:
   A. SPECIFIED IN TABLE BELOW AS INTERMEDIATE OR HIGH TEMPERATURE RATING.
   B. SPRINKLER HEADS LOCATED CLOSE TO KITCHEN EQUIPMENT, HEATERS, LOW-PRESSURE BLOW-OFF VALVE SHALL BE OF THE TEMPERATURE RATING AS REQUIRED BY APPLICABLE EDITION OF NFPA - 13, DRAWINGS, PREPARED BY THE FIRE PROTECTION CONTRACTOR SHALL BE COORDINATED WITH THE HVAC CONTRACTOR AND ALL HVAC EQUIPMENT WHICH CAN AFFECT THE RATING OF THE SPRINKLER HEADS. SPRINKLER HEADS SHALL BE CLEARLY IDENTIFIED ON THE SHOP DRAWINGS PRIOR TO SUBMISSION FOR APPROVAL.
4. ALL SPRINKLER HEAD SYMBOLS NOT SHOWN ON PLANS, REFER TO "GENERAL LOCATION" COLUMN FOR ESTIMATING.
5. SPRINKLER SELECTIONS ARE BASED ON PRODUCTS MANUFACTURED BY VIKING. RELIABLE AND/OR TYCO PRODUCTS SHALL BE CONSIDERED APPROVED EQUAL PRODUCTS AND ARE SUBJECT TO THE APPROVAL OF THE ENGINEER AND ARCHITECT.
6. SPRINKLER CONTRACTOR SHALL COORDINATE THE LOCATIONS OF SPRINKLER HEADS WITH STRUCTURAL ELEMENTS AND HVAC DUCTWORK.

FIRE PUMP SCHEDULE - ELECTRIC

SYMBOL	MANUFACTURER/ MODEL NUMBER	TYPE	LOCATION	SYSTEM SERVING	MEDIA	POWER	FLOW RATE (GPM)	HEAD (PSI)	PUMP EFF (%)	HP	RPM	WEIGHT LBS	REMARKS
FP-1	ARMSTRONG PUMP ES 5x4x11.5FM	ES	FIRE SERVICE ROOM	FIRE PROTECTION	W	460V 3PH	400	40	-	25	1800	655	1, 2
JP-1	ARMSTRONG PUMP 4700 VMS-01.11B	JP	FIRE SERVICE ROOM	FIRE PROTECTION	W	460V 3PH	7.5	115	-	1.5	3600	84	3

TYPE:
JP = JOCKEY PUMP
ES = END SUCTION

MEDIA:
W = WATER

REMARKS:
1. SOFT START
2. FIRETROL FP CONTROL WITH TRANSFER SWITCH. LED VISUAL INDICATOR, PUMP OPERATING, WEEKLY TEST TIMER, DIGITAL PRESSURE RECORDING, USB HOST CONTROLLER AND PORT.
3. JOCKEY CONTROLLER WITH MIN RUN TIMER, FIRETROL FIRE PUMP CONTROLLER, FUSED DISCONNECT SWITCH. JOCKEY PUMPS SHALL BE FURNISHED AND INSTALLED AS PART OF FIRE PUMP PACKAGE

GENERAL NOTES:
THE PUMP FURNISHED FOR FIRE PROTECTION SERVICE SHALL BE SUPPLIED WITH SPECIFIED DRIVERS, CONTROLS AND PUMP ACCESSORY ITEMS BY THE PUMP MANUFACTURER. THE PUMP DRIVER AND CONTROL SHALL BE FOR FIRE PROTECTION SERVICE. THE PUMPING EQUIPMENT SHALL BE INSTALLED AS RECOMMENDED IN THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 20, STANDARD FOR THE INSTALLATION OF CENTRIFUGAL FIRE PUMPS.

- THE FIRE PUMP SHALL BE DESIGNED TO DELIVER 1000 US GPM AT A TOTAL DIFFERENTIAL PRESSURE OF 105 PSI.
- THE FIRE PUMP SHALL ALSO BE CAPABLE OF DELIVERING NOT LESS THAN 150% OF RATED FLOW AT NOT LESS THAN 65% OF RATED HEAD.
- THE PUMP SHALL BE ARMSTRONG PUMP COMPANY AS SPECIFIED AND SHALL BE FURNISHED WITH DRIVER, CONTROLLERS AND ACCESSORIES AS INDICATED.
- PUMP MANUFACTURER SHALL HAVE UNIT RESPONSIBILITY FOR THE PROPER OPERATION OF THE COMPLETE UNIT ASSEMBLY AS INDICATED BY FIELD ACCEPTANCES TESTS.

HEAT TRACE SCHEDULE

SYMBOL	APPLICATION	MANUFACTURER/ MODEL NUMBER	PIPE SIZE	HEAT LOSS (W/FT)	AMBIENT TEMPERATURE (°F)	PIPE TEMPERATURE (°F)	INSULATION K-FACTOR BTU-IN/HR-FT²-°F	INSULATION THICKNESS	MAXIMUM ALLOWABLE CABLE LENGTH (FT)	ELECTRICAL DATA V/PH/A	NOTES
HT-3	FREEZE PROTECTION	RAYCHEM/ 0XLE2-CR	1"	5	0	40	0.224	1.5"	414	208V/20A	ALL

NOTES:
1. REFER TO FLOOR PLANS FOR PIPE SIZE.
2. PROVIDE SINGLE-POINT HEAT-TRACING CONTROL SYSTEM 465.
3. INSTALL PER MANUFACTURERS GUIDELINES.
4. REFER TO MANUFACTURER'S SUPPLIMENTS FOR PIPE HIGH LOW TEMPERATURE.
5. CABLE SHALL BE INSTALLED BY A LICENSED PLUMBING CONTRACTOR WITH FINAL ELECTRICAL CONNECTIONS PERFORMED BY THE ELECTRICAL SUBCONTRACTOR. INSTALLATION TRAINING PROVIDED BY AUTHORIZED MANUFACTURER'S REPRESENTATIVE MUST BE COMPLETED PRIOR TO WORK MOBILIZATION. SYSTEM MUST INCLUDE PIPE INSULATION THAT FOLLOWS MANUFACTURER'S INSTRUCTIONS FOR CORRECT PERFORMANCE.
6. THE HEATING CABLE IS PERMANENTLY SECURED TO METAL PIPES WITH GT-66 GLASS TAPE, OR TO PLASTIC PIPES USING AT-180 ALUMINUM TAPE.
7. ALL HEATING CABLE SPLICES OR TEES ARE MADE ABOVEGROUND. NO BURIED OR IN-CONDUIT SPLICES OR TEES ARE ALLOWED. THE POWER CONNECTION AND END SEAL ARE MADE IN UL LISTED AND CSA CERTIFIED JUNCTION BOXES ABOVE GRADE.
8. THE HEATING CABLE IS PROTECTED FROM THE PIPE TO THE POWER CONNECTION BOX IN UL LISTED AND CSA CERTIFIED CONDUIT (MINIMUM 2/4-INCH DIAMETER) SUITABLE FOR THE LOCATION.
9. CLOSED-CELL, WATERPROOF THERMAL INSULATION WITH FIRE-RETARDANT.
10. TEST INSTALLATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION, INCLUDING: RESISTANCE TESTING WITH 2500 VDC MEGOHMMETER AND CAPACITANCE TESTING.
11. PROVIDE DETAILED CIRCUIT LAYOUT WITH SUBMITTALS.
12. REGISTER INSTALLATION WITH MANUFACTURER FOR 10 YR WARRANTY.
13. PROVIDE SUPERVISED CONTROLLERS WITH ALARM RELAY CONNECTED TO THE FIRE CONTORL PANEL. REFER TO FIRE ALARM PLANS. MONITOR FOR HI ALARM, LOW ALARM, LOSS OF POWER, AND GFI TRIP.

1

PIPING LEGEND

SYMBOL	DESCRIPTION
FP-STP	STANDPIPE PIPING
FP-TH	FIRE PUMP TEST HEADER PIPING
FP-FDC	FIRE DEPARTMENT CONNECTION
FP-FDC	FIRE DEPARTMENT CONNECTION BELOW GROUND
FP-DRAIN	DRAIN PIPING
FP-WET	SPRINKLER MAIN (WET)
	PIPE RISE
	PIPE DROP
	PIPE TEE TOWARDS (UP IN PLAN)
	PIPE TEE AWAY (DOWN IN PLAN)
	PIPE DROP AND RUN
	DIRECTION OF FLOW
	BLIND FLANGE
	END CAP
	REDUCER (ECCENTRIC)
	REDUCER (CONCENTRIC)
	FLEXIBLE CONNECTION

VALVE AND SYMBOL LEGEND

SYMBOL	DESCRIPTION
	BALL VALVE
	BALL VALVE WITH HOSE BIBB, CAP & CHAIN (DRAIN VALVES)
	BUTTERFLY VALVE
	GATE VALVE
	OS&Y VALVE
	PRESSURE REDUCING VALVE
	CHECK VALVE
	STRAINER W/BALL VALVE, HOSE BIBB & CAP
	SAFETY RELIEF VALVE
	FLOW SWITCH
	PRESSURE GAUGE
	THERMOMETER
	DOUBLE CHECK VALVE ASSEMBLY
	ALARM BELL
	"WET" ALARM VALVE RISER
	ANGLE VALVE
	SIGHT GLASS
	FIRE DEPARTMENT CONNECTION
	FLUSH MOUNTED FIRE PUMP TEST HEADER
	POST MOUNTED FIRE DEPARTMENT CONNECTION
TS	TAMPER SWITCH
PS	PRESSURE SWITCH
ATS	AUTOMATIC TRANSFER SWITCH
FPC	FIRE PUMP CONTROLLER
JPC	JOCKEY PUMP CONTROLLER
HVC	HOSE VALVE CABINET

SPRINKLER SYSTEM NOTES

1. THESE GENERAL NOTES ARE APPLICABLE TO ALL FIRE PROTECTION DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL INTENT OF WORK, SEE DETAILS, RISERS, AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. THE DRAWINGS INDICATE A SUGGESTED SPRINKLER HEAD LAYOUT AND THAT EACH AREA IS COVERED BY SPRINKLER PROTECTION AS REQUIRED BY ALL APPLICABLE CT BUILDING AND FIRE CODES. THE SPRINKLER QUANTITIES SHALL NOT BE COUNTED AS A TAKE OFF OR AS EXACT LOCATIONS. EXACT SPACING, DENSITY, AND LOCATION REQUIREMENTS SHALL BE AS DICTATED BY NFPA 13. FINAL LOCATIONS OF SPRINKLER HEADS SHALL BE COORDINATED WITH THE ARCHITECT.
4. FLOW DATA PERFORMED ON 02/12/2024 AT A HYDRANT LOCATED AT STANWICH RD WAS RECORDED AS FOLLOWS:
   A. STATIC PRESSURE: 110 PSI
   B. RESIDUAL PRESSURE: 55 PSI
   C. FLOW RATE: 1095 GPM
5. THIS FLOW DATA SHALL BE USED AS A GUIDE BY THE CONTRACTOR. THE CONTRACTOR SHALL PERFORM AN ADDITIONAL FLOW TEST TO VERIFY THIS INFORMATION. INFORMATION FROM THE CONTRACTOR'S FLOW TEST SHALL BE USED FOR HYDRAULIC CALCULATIONS.
6. FIRE PROTECTION CONTRACTOR SHALL PROVIDE HYDRAULIC CALCULATIONS. HYDRAULIC CALCULATIONS SHALL INCLUDE A SAFETY FACTOR OF 10 %. COMBINED INSIDE AND OUTSIDE HOSE STREAM ALLOWANCE FOR HYDRAULIC CALCULATIONS SHALL BE 250 GPM.
7. THE CONTENT OF THESE DRAWINGS IS INTENDED TO SATISFY THE BUILDING CODE REQUIREMENTS FOR CONSTRUCTION DOCUMENTS. WHEN STAMPED AND SEALED BY THE ENGINEER OF RECORD, THEY ARE INTENDED TO BE USED AS PART OF THE BUILDING PERMIT APPLICATION ONLY.
8. FIRE SUPPRESSION SYSTEM SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVED PRIOR TO CONSTRUCTION. PROVIDE A COMPLETE SHOP DRAWING SUBMITTAL INCLUSIVE OF ALL INFORMATION REQUIRED BY STATE BUILDING CODE, NFPA 13 AND THE CONSTRUCTION DOCUMENTS.
9. PREPARE A COMPLETE RECORD SUBMITTAL INCLUSIVE OF ALL FIELD CHANGES AND ALL INFORMATION REQUIRED BY THE STATE BUILDING CODE AND CONSTRUCTION DOCUMENTS.
10. SHOP DRAWINGS AND RECORD DRAWING SUBMITTALS SHALL BE PREPARED BY THE CONTRACTORS QUALIFIED DESIGNER AND SHALL INDICATE THE DESIGNER'S NICET CERTIFICATION NUMBER OR PROFESSIONAL ENGINEERING SEAL AND SIGNATURE.
11. THE ENGINEER OF RECORD WILL NOT SIGN AND SEAL SHOP DRAWINGS OR RECORD DRAWINGS PREPARED BY THE CONTRACTOR. WHERE THE AUTHORITY HAVING JURISDUCTION REQUIRES SHOP DRAWING OR RECORD DRAWING SUBMITTALS TO BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, THE SUBMITTALS SHALL BE PREPARED BY A QUALIFIED PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR.
12. THE SHOP DRAWINGS, SUPPLEMENTAL CALCULATIONS AND MATERIAL SUBMITTALS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER OF RECORD PRIOR TO SUBMITTAL TO THE STATE DIVISION OF ENGINEERING AND BUILDINGS.
13. INSTALLATION OF SPRINKLERS SHALL BE BASED ON THE DESIGN CRITERIA BELOW

AREA	OCCUPANCY CLASSIFICATION	DENSITY (GPM/SF)	AREA OF APPLICATION (SF)
MECHANICAL ROOM	ORDINARY HAZARD GROUP 1	0.15	1500
STORAGE ROOMS	ORDINARY HAZARD GROUP 1	0.15	1500
STAGE	ORDINARY HAZARD GROUP 2	0.20	1500
WOOD SHOP	ORDINARY HAZARD GROUP 2	0.20	1500
REMAINDER OF THE BUILDING	LIGHT HAZARD	0.10	1500
KITCHEN	ORDINARY HAZARD GROUP 1	0.15	1500

FIRE PROTECTION ABBREVIATIONS

ABBREVIATION	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
ATS	AUTOMATIC TRANSFER SWITCH
CR	CORROSION RESISTANT
D	DRY
DCV	DOUBLE CHECK VALVE
EC	EXTENDED COVERAGE
ELEV	ELEVATION
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FD	FIRE DEPARTMENT
FDC	FIRE DEPARTMENT CONNECTION
FHV	FIRE HOSE VALVE
FP	FIRE PROTECTION
FPC	FIRE PUMP CONTROLLER
FPM	FEET PER MINUTE
FS	FLOW SWITCH
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HD	TOTAL DEVELOPED HEAD
HTC	HIGH TEMPERATURE CLASSIFICATION
HVC	HOSE VALVE CABINET
ITC	INTERMEDIATE TEMPERATURE CLASSIFICATION
JP	JOCKEY PUMP
JPC	JOCKEY PUMP CONTROLLER
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NTS	NOT TO SCALE
OS&Y	OUTSIDE SCREW AND YOLK
PA	PREACTION
PAC	PREACTION ALARM VALVE CABINET
PD	PRESSURE DROP
PIV	PRESSURE INDICATOR VALVE
PRV	PRESSURE REDUCING VALVE
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
RPM	REVOLUTIONS PER MINUTE
SS	SUPERVISORY SWITCH
TS	TAMPER SWITCH
TYP	TYPICAL
V	VOLTS
VEL	VELOCITY
WG	WIRE GUARD

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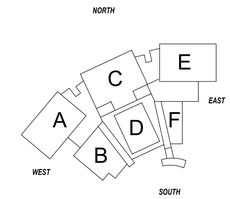

KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

FIRE PROTECTION ABBREVIATIONS, NOTES AND SYMBOLS

Date 07/08/2024
Scale As indicated
Proj. Number 22367.00
Drawing Number **FP000**

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KEYNOTES - FIRE PROTECTION

Key Value	Keynote Text
FP1	6" FP SERVICE FROM THE STREET. REFER TO FIRE SERVICE DETAIL.
FP2	ELECTRIC FIRE PUMP. REFER TO FIRE PUMP DETAIL.
FP5	PROVIDE UPRIGHT SPRINKLERS WITH GUARD BELOW STAIRWELL AND STAIR LANDINGS TO PROVIDE COMPLETE COVERAGE PER NFPA 13. SPRINKLERS TO BE SUPPLIED FROM MAIN ON EACH RESPECTIVE FLOOR.
FP6	PROVIDE UPRIGHT SPRINKLERS ABOVE CLOUD CEILING AND CONCEALED PENDANT SPRINKLERS IN CLOUD CEILING. TYPICAL FOR ALL SPRINKLERS IN CAFETERIA AREA. MATCH CONCEALED SPRINKLER PLATE WITH FINISH COLOR OF CLOUD CEILING.
FP14	FIRE PUMP TEST HEADER CONNECTION. REFER TO FIRE PUMP TEST HEADER DETAIL.
FP20	[illegible]
FP22	PROVIDE FLEXIBLE COUPLINGS WHERE PIPES CONNECT AT ANGLES NOT EQUAL TO 45 OR 90 DEGREES. PENETRATE WALLS AT 90 DEGREES WHENEVER POSSIBLE (TYPICAL).

1 FIRE PROTECTION FIRST FLOOR PLAN - A
1/8" = 1'-0"

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FIRE PROTECTION FIRST FLOOR PLAN - PART A

Date: 07/08/2024
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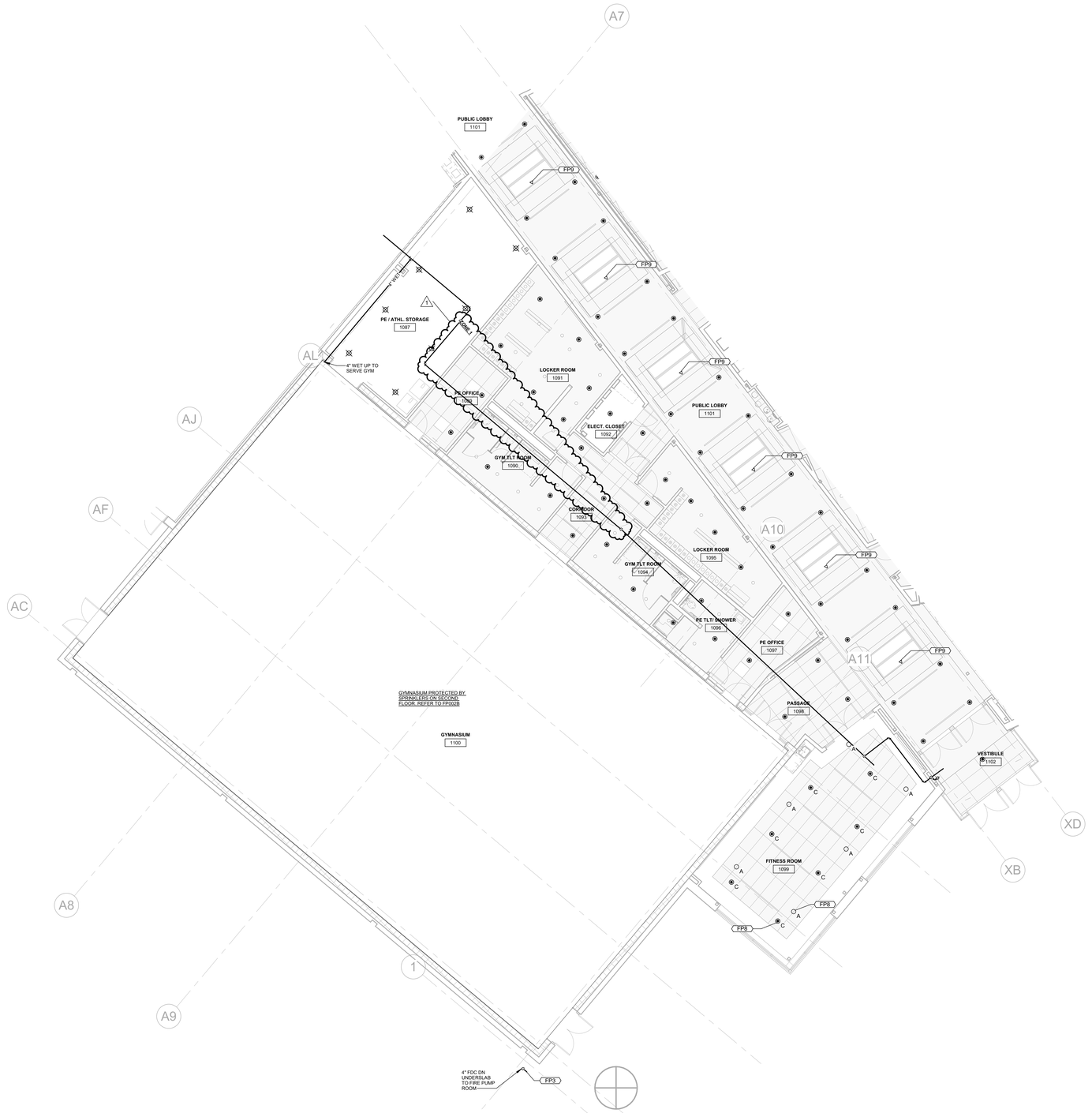

KEYNOTES - FIRE PROTECTION	
Key Value	Keynote Text
FP3	REFER TO GRADE MOUNTED FIRE DEPARTMENT CONNECTION.
FP8	PROVIDE UPRIGHT SPRINKLERS ABOVE CLOUD CEILING AND CONCEALED PENDANT SPRINKLERS IN CLOUD CEILING. TYPICAL FOR ALL SPRINKLERS IN FITNESS ROOM. MATCH CONCEALED SPRINKLER PLATE WITH FINISH COLOR OF CLOUD CEILING.
FP9	REFER TO #1/FP400 FOR SKYLIGHT SIDEWALL SPRINKLER HEAD. PROVIDE SPRINKLER HEAD WITH AN ITC RATING.

1 FIRE PROTECTION FIRST FLOOR PLAN - B
1/8" = 1'-0"

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	07/08/2024	PHASE 2

FIRE PROTECTION FIRST FLOOR PLAN - PART B

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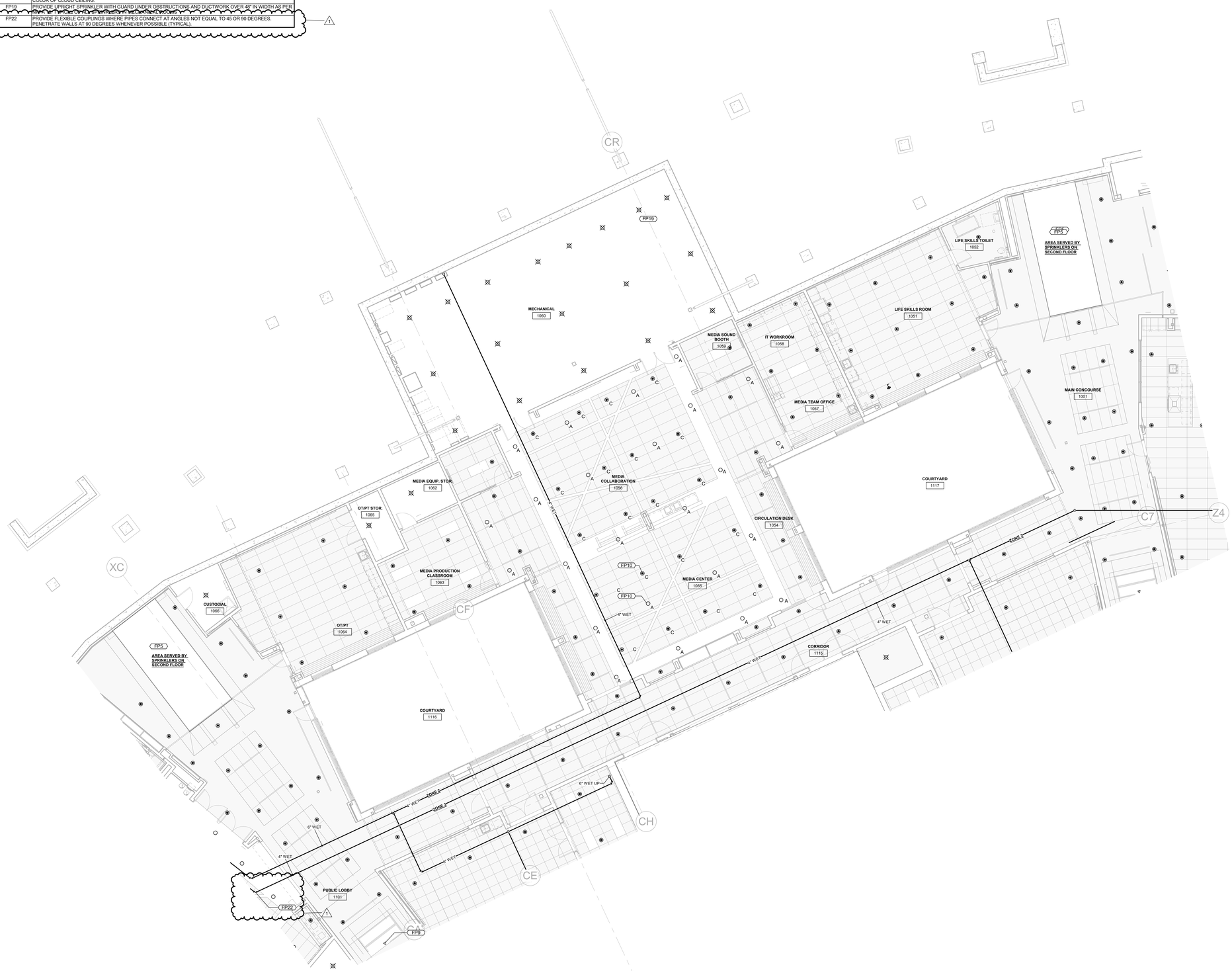
KEYNOTES - ELECTRICAL SITE UTILITY	
Key Value	Keynote Text
FP5	PROVIDE UPRIGHT SPRINKLERS WITH GUARD BELOW STAIRWELL AND STAIR LANDINGS TO PROVIDE COMPLETE COVERAGE PER NFPA 13. SPRINKLERS TO BE SUPPLIED FROM MAIN ON EACH RESPECTIVE FLOOR.
FP9	REFER TO #1/FP400 FOR SKYLIGHT SIDEWALL SPRINKLER HEAD. PROVIDE SPRINKLER HEAD WITH AN ITC RATING.
FP10	PROVIDE UPRIGHT SPRINKLERS ABOVE CLOUD CEILING AND CONCEALED PENDANT SPRINKLERS IN CLOUD CEILING. TYPICAL FOR ALL SPRINKLERS IN MEDIA CENTER. MATCH CONCEALED SPRINKLER PLATES WITH FINISH COLOR OF CLOUD CEILING.
FP19	PROVIDE UPRIGHT SPRINKLER WITH GUARD UNDER OBSTRUCTIONS AND DUCTWORK OVER 48" IN WIDTH AS PER NFPA 13. COORDINATE WITH MECHANICAL DUCTWORK.
FP22	PROVIDE FLEXIBLE COUPLINGS WHERE PIPES CONNECT AT ANGLES NOT EQUAL TO 45 OR 90 DEGREES. PENETRATE WALLS AT 90 DEGREES WHENEVER POSSIBLE (TYPICAL).



1 FIRE PROTECTION FIRST FLOOR PLAN - C
1/8" = 1'-0"

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FIRE PROTECTION FIRST FLOOR PLAN - PART C

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KEYNOTES - FIRE PROTECTION	
Key Value	Keynote Text
FP9	REFER TO #1/FP400 FOR SKYLIGHT SIDEWALL SPRINKLER HEAD. PROVIDE SPRINKLER HEAD WITH AN ITC RATING.
FP22	PROVIDE FLEXIBLE COUPLINGS WHERE PIPES CONNECT AT ANGLES NOT EQUAL TO 45 OR 90 DEGREES. PENETRATE WALLS AT 90 DEGREES WHENEVER POSSIBLE (TYPICAL).

1 FIRE PROTECTION FIRST FLOOR PLAN - D
1/8" = 1'-0"

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Greenwich Public Schools

Greenwich Central Middle School

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SOUTH
KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

FIRE PROTECTION FIRST FLOOR PLAN - PART D

Date 07/08/2024
Scale 1/8" = 1'-0"
Proj. Number 22367.00
Drawing Number FP101D

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10/16/2024 10:39:16 AM

2 FIRE PROTECTION FIRST FLOOR PLAN - F
1/8" = 1'-0"

KEYNOTES - FIRE PROTECTION

Key Value	Keynote Text
FP22	PROVIDE FLEXIBLE COUPLINGS WHERE PIPES CONNECT AT ANGLES NOT EQUAL TO 45 OR 90 DEGREES. PENETRATE WALLS AT 90 DEGREES WHENEVER POSSIBLE (TYPICAL).

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	07/08/2024	PHASE 2

FIRE PROTECTION FIRST FLOOR PLAN - PART F

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: FP101F

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KEYNOTES - FIRE PROTECTION	
Key Value	Keynote Text
FPS	PROVIDE UPRIGHT SPRINLKERS WITH GUARD BELOW STAIRWELL AND STAIR LANDINGS TO PROVIDE COMPLETE COVERAGE PER NFPA 13. SPRINKLERS TO BE SUPPLIED FROM MAIN ON EACH RESPECTIVE FLOOR.
FP12	PROVIDE UPRIGHT SPRINKLERS ABOVE CLOUD CEILING AND CONCEALED PENDANT SPRINKLERS IN CLOUD CEILING. TYPICAL FOR ALL SPRINKLERS IN COMMONS. MATCH CONCEALED SPRINKLER PLATE WITH FINISH OF CEILING BELOW.
FP22	PROVIDE FLEXIBLE COUPLINGS WHERE PIPES CONNECT AT ANGLES NOT EQUAL TO 45 OR 90 DEGREES. PENETRATE WALLS AT 90 DEGREES WHENEVER POSSIBLE (TYPICAL).

1 FIRE PROTECTION SECOND FLOOR PLAN - A
1/8" = 1'-0"

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	07/08/2024	PHASE 2

FIRE PROTECTION SECOND FLOOR PLAN - PART A

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: FP102A

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KEYNOTES - FIRE PROTECTION	
Key Value	Keynote Text
FP12	PROVIDE UPRIGHT SPRINKLERS ABOVE CLOUD CEILING AND CONCEALED PENDANT SPRINKLERS IN CLOUD CEILING. TYPICAL FOR ALL SPRINKLERS IN COMMONS. MATCH CONCEALED SPRINKLER PLATE WITH FINISH OF CEILING COLOR.
FP22	PROVIDE FLEXIBLE COUPLINGS WHERE PIPES CONNECT AT ANGLES NOT EQUAL TO 45 OR 90 DEGREES. PENETRATE WALLS AT 90 DEGREES WHENEVER POSSIBLE (TYPICAL)

1 FIRE PROTECTION SECOND FLOOR PLAN - C
1/8" = 1'-0"

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	07/08/2024	PHASE 2

FIRE PROTECTION SECOND FLOOR PLAN - PART C

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: FP102C

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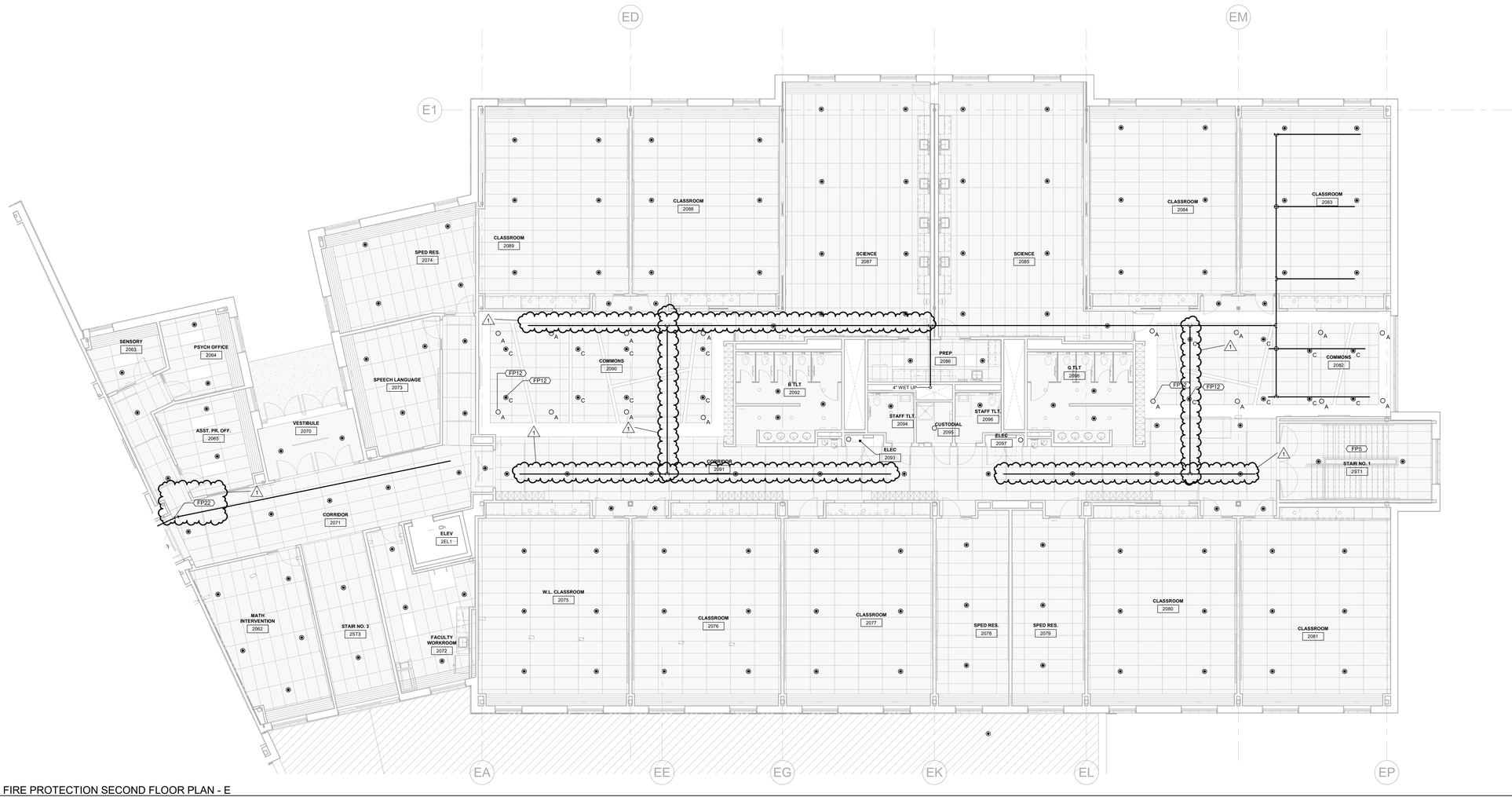

1 FIRE PROTECTION SECOND FLOOR PLAN - E
1/8" = 1'-0"

KEYNOTES - FIRE PROTECTION	
Key Value	Keynote Text
FP5	PROVIDE UPRIGHT SPRINLKERS WITH GUARD BELOW STAIRWELL AND STAIR LANDINGS TO PROVIDE COMPLETE COVERAGE PER NFPA 13. SPRINKLERS TO BE SUPPLIED FROM MAIN ON EACH RESPECTIVE FLOOR.
FP12	PROVIDE UPRIGHT SPRINKLERS ABOVE CLOUD CEILING AND CONCEALED PENDANT SPRINKLERS IN CLOUD CEILING. TYPICAL FOR ALL SPRINKLERS IN COMMONS. MATCH CONCEALED SPRINKLER PLATE WITH FINISH CEILING MATERIAL.
FP22	PROVIDE FLEXIBLE COUPLINGS WHERE PIPES CONNECT AT ANGLES NOT EQUAL TO 45 OR 90 DEGREES. PENETRATE WALLS AT 90 DEGREES WHENEVER POSSIBLE (TYPICAL).

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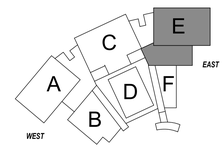

KEYPLAN

Number	Date	Issued For
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	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

FIRE PROTECTION SECOND FLOOR PLAN - PART E

Date
07/08/2024
Scale
1/8" = 1'-0"
Proj. Number
22367.00

Drawing Number
FP102E

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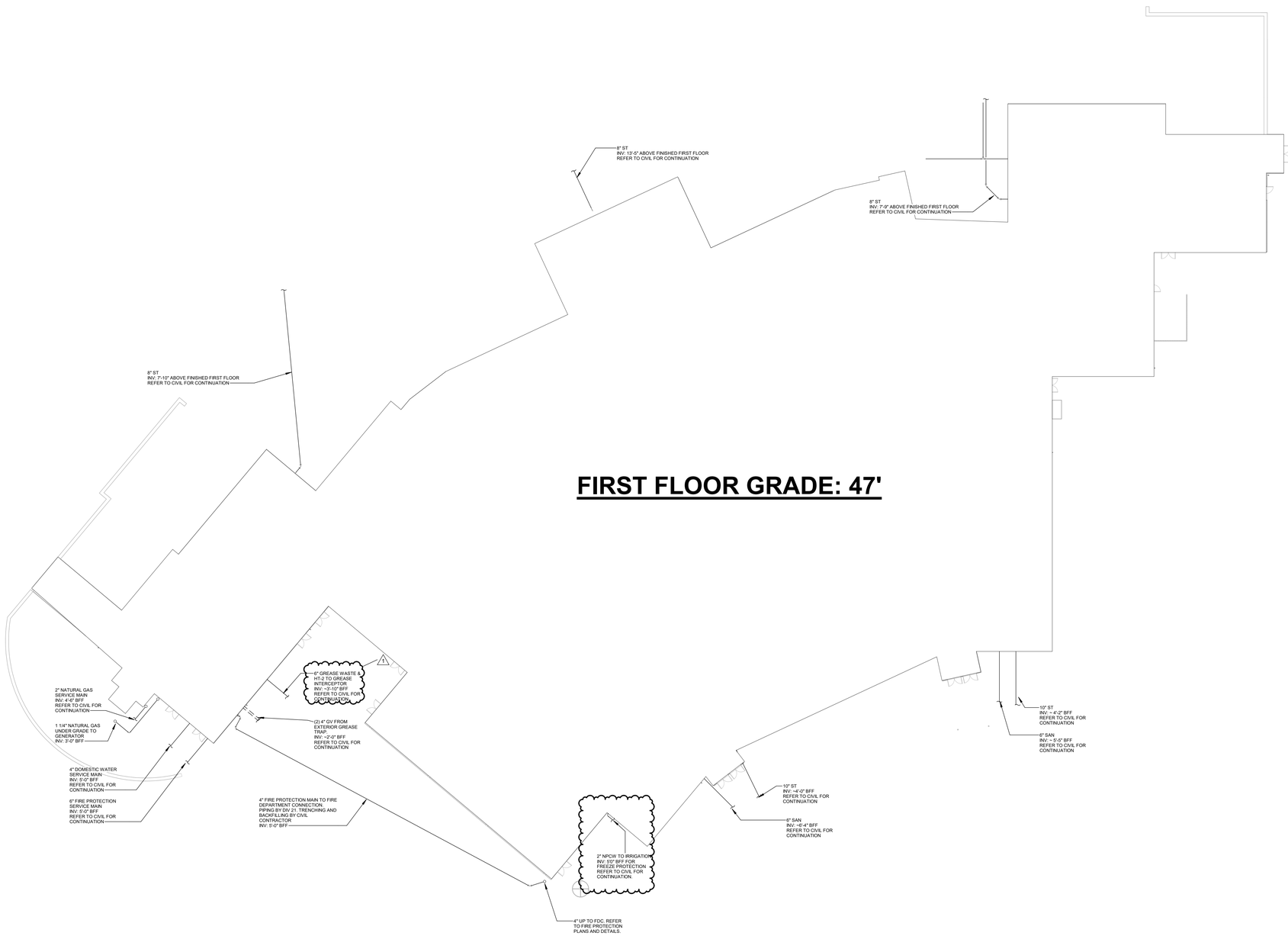

FIRST FLOOR GRADE: 47'

1 PLUMBING SITE UTILITY PLAN
1" = 20'-0"

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PLUMBING SITE UTILITY PLAN

Date: 07/08/2024
Scale: 1" = 20'-0"
Proj. Number: 22367.00
Drawing Number: PSU001

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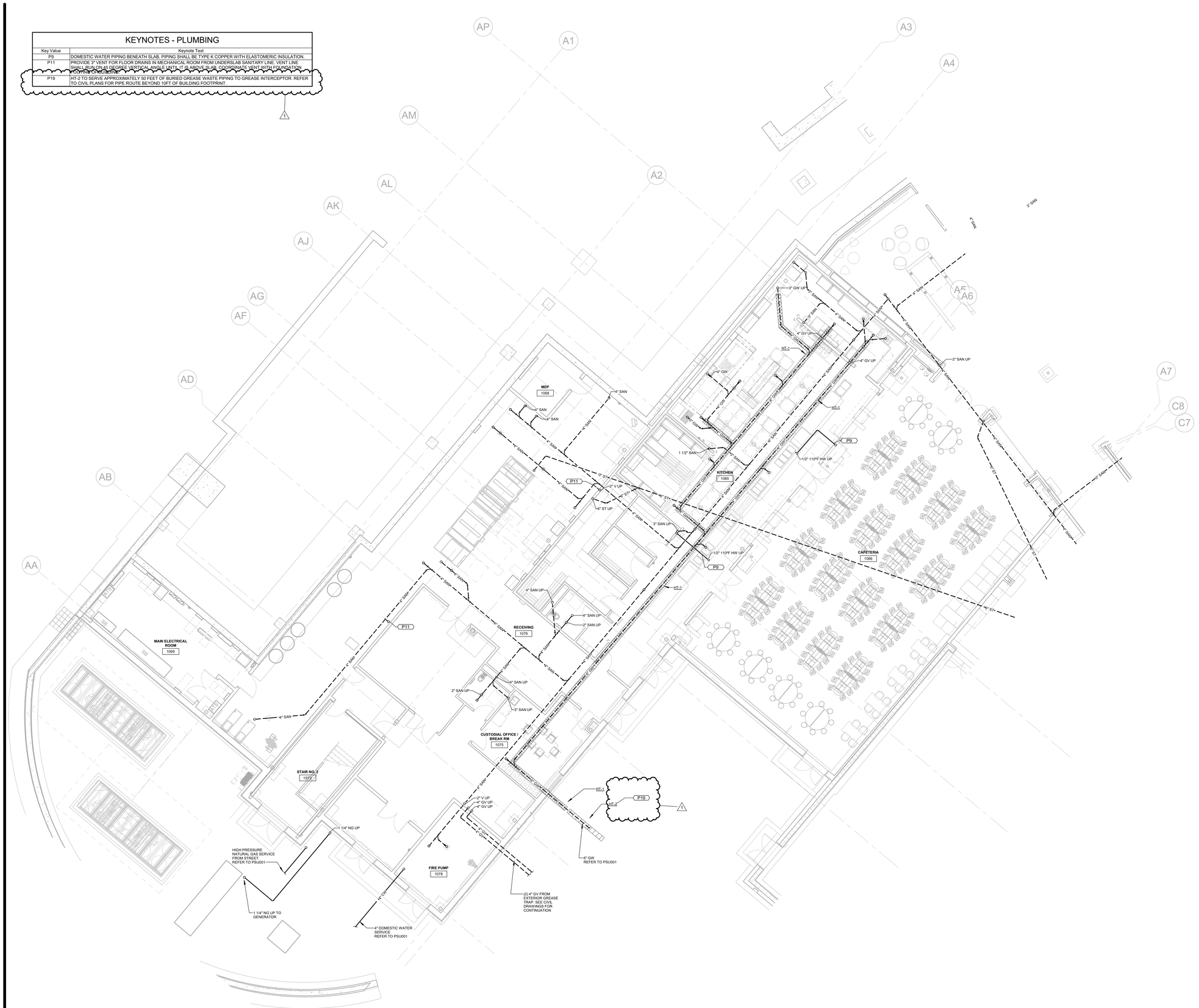
KEYNOTES - PLUMBING	
Key Value	Keynote Text
P9	DOMESTIC WATER PIPING BENEATH SLAB. PIPING SHALL BE TYPE K COPPER WITH ELASTOMERIC INSULATION.
P11	PROVIDE 3" VENT FOR FLOOR DRAINS IN MECHANICAL ROOM FROM UNDERSLAB SANITARY LINE. VENT LINE SHALL RUN ON 45 DEGREE VERTICAL ANGLE MITH IT ABOVE SLAB. COORDINATE VENT WITH FOUNDATION CONTRACTOR.
P19	HT-2 TO SERVE APPROXIMATELY 50 FEET OF BURIED GREASE WASTE PIPING TO GREASE INTERCEPTOR. REFER TO CIVIL PLANS FOR PIPE ROUTE BEYOND 10FT OF BUILDING FOOTPRINT.



1 PLUMBING FIRST FLOOR UNDERSLAB PLAN - A
1/8" = 1'-0"

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	07/08/2024	PHASE 2

PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART A

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: P100A

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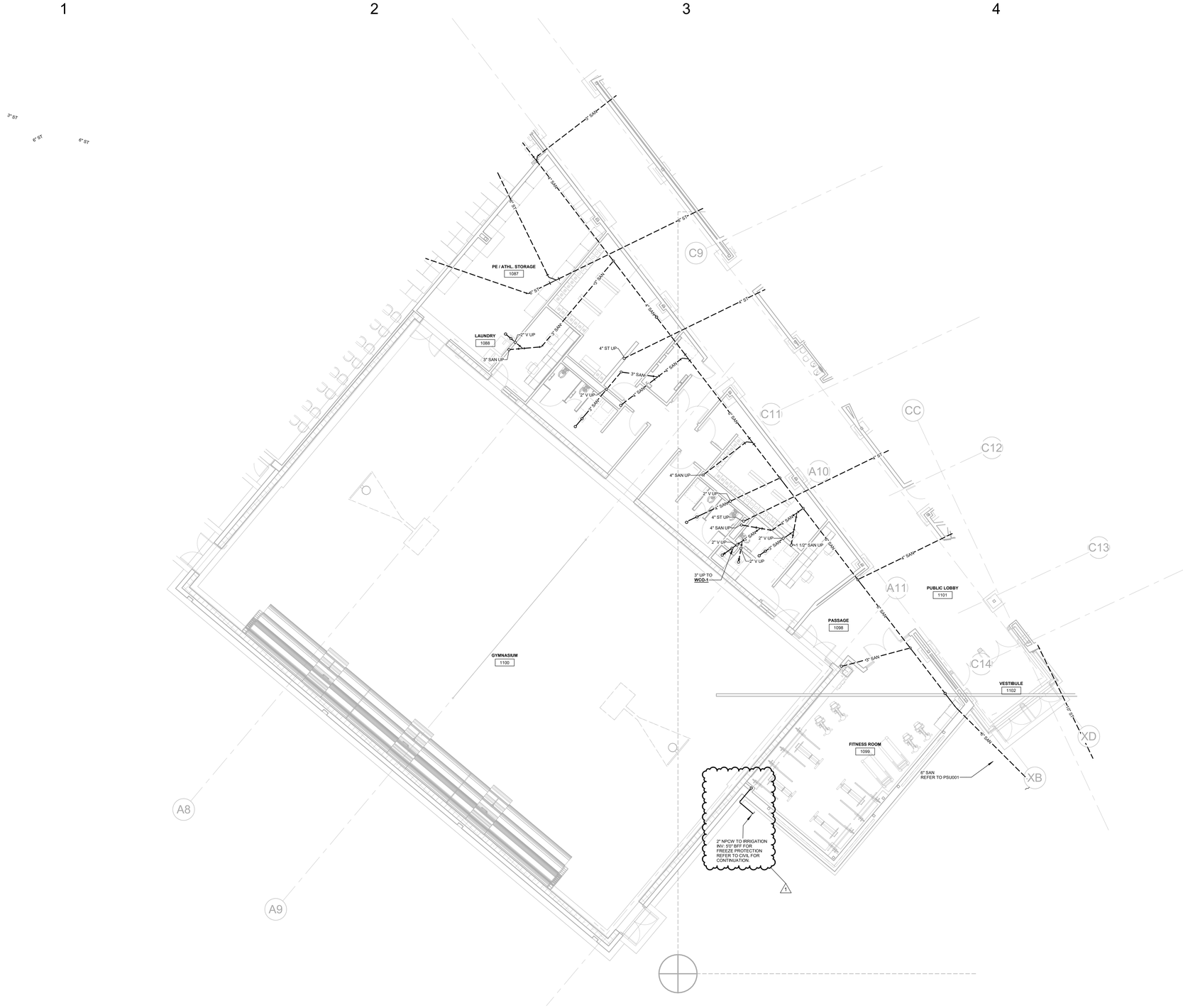

1 PLUMBING FIRST FLOOR UNDERSLAB PLAN - B
1/8" = 1'-0"

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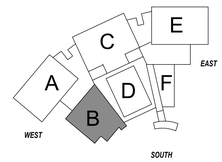

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Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART B

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: P100B

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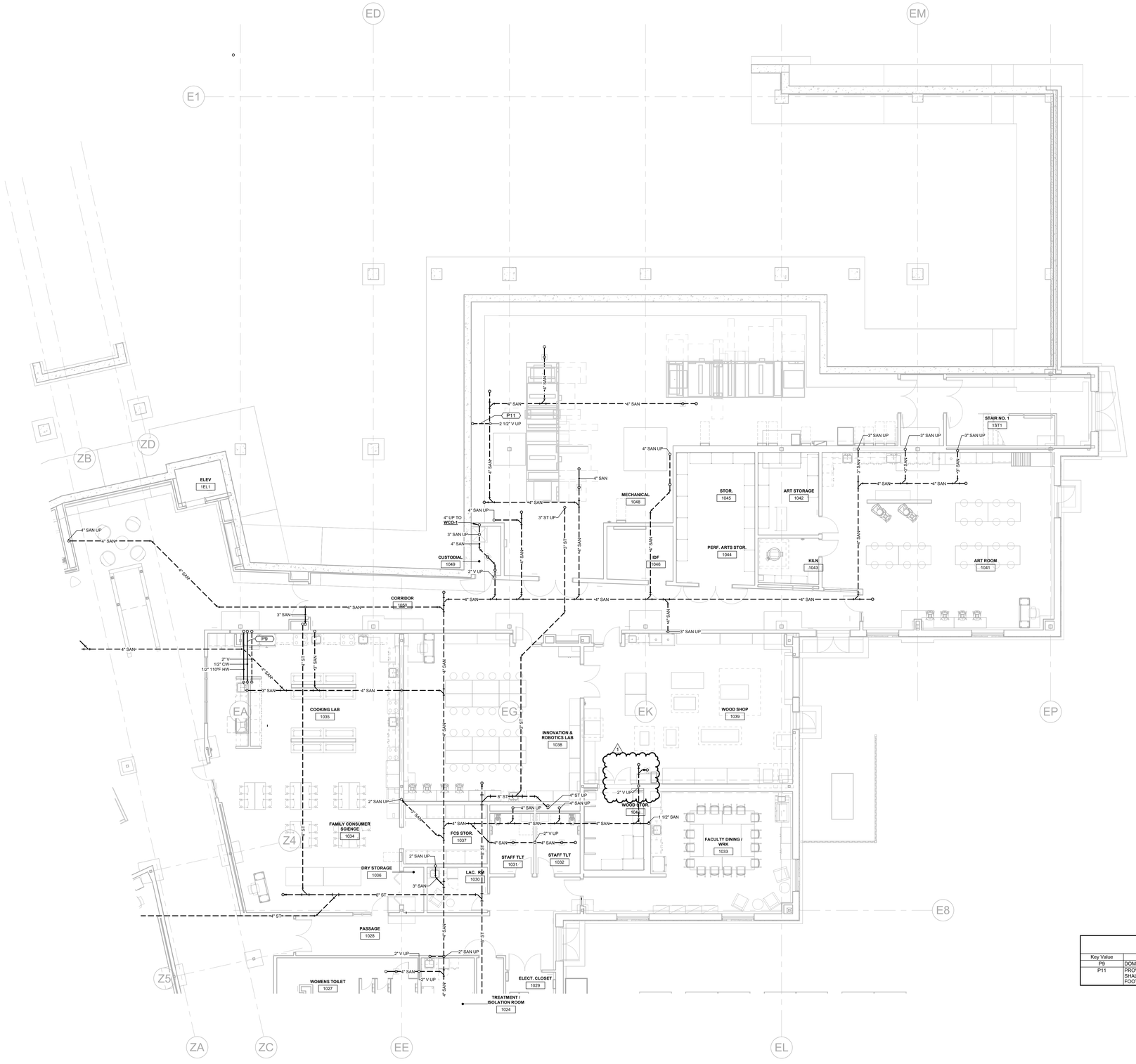

1 PLUMBING FIRST FLOOR UNDERSLAB PLAN - E
1/8" = 1'-0"

KEYNOTES - PLUMBING

Key Value	Keynote Text
P9	DOMESTIC WATER PIPING BENEATH SLAB. PIPING SHALL BE TYPE K COPPER WITH ELASTOMERIC INSULATION.
P11	PROVIDE 3" VENT FOR FLOOR DRAINS IN MECHANICAL ROOM FROM UNDERSLAB SANITARY LINE. VENT LINE SHALL RUN ON 45 DEGREE VERTICAL ANGLE UNTIL IT IS ABOVE SLAB. COORDINATE VENT WITH FOUNDATION FOOTING OF BUILDING.

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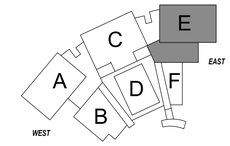

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	07/08/2024	PHASE 2

PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART E

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: P100E

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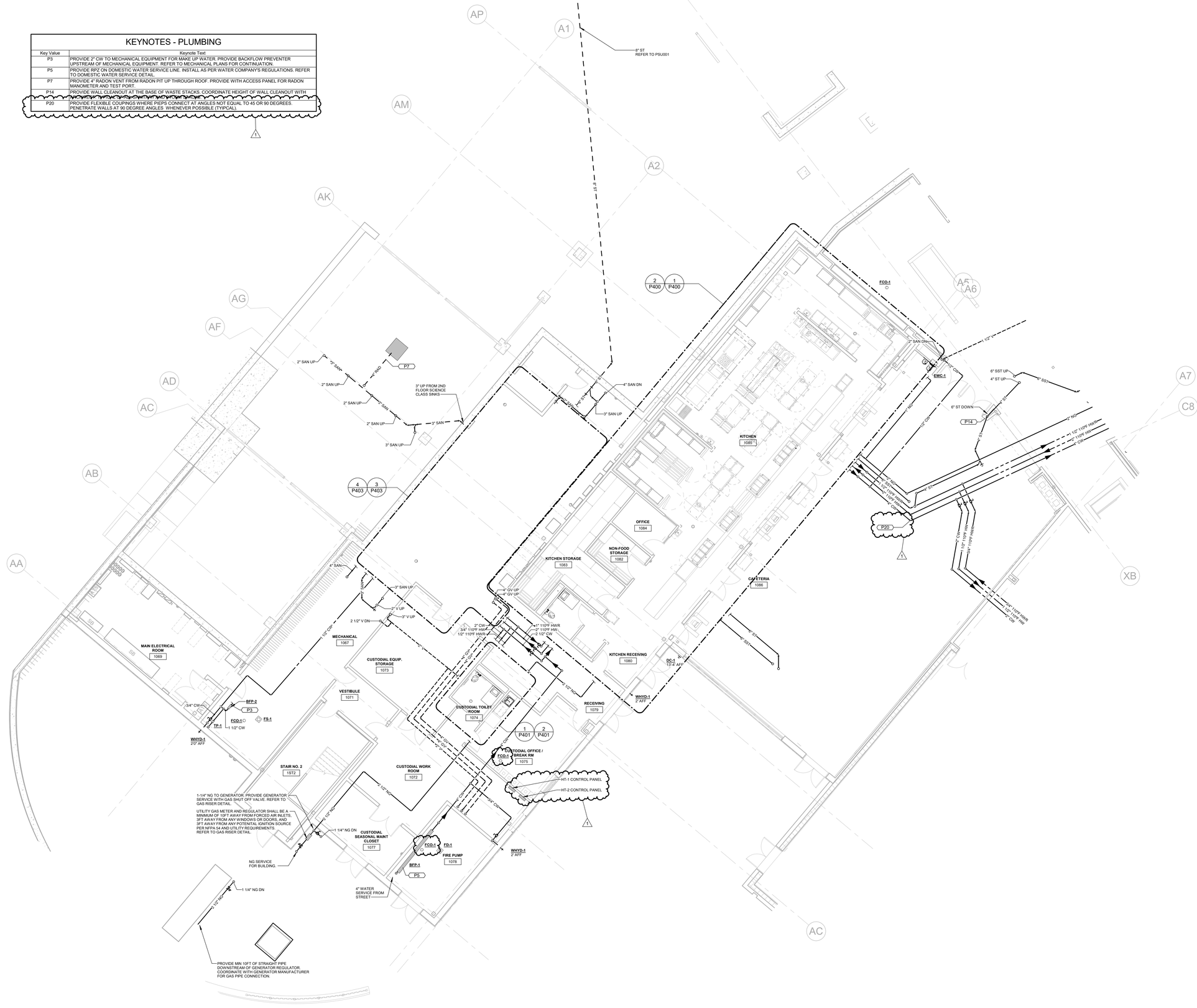
KEYNOTES - PLUMBING

Key Value	Keynote Text
P3	PROVIDE 2" CW TO MECHANICAL EQUIPMENT FOR MAKE UP WATER. PROVIDE BACKFLOW PREVENTER UPSTREAM OF MECHANICAL EQUIPMENT. REFER TO MECHANICAL PLANS FOR CONTINUATION.
P5	PROVIDE RPZ ON DOMESTIC WATER SERVICE LINE. INSTALL AS PER WATER COMPANY'S REGULATIONS. REFER TO DOMESTIC WATER SERVICE DETAIL.
P7	PROVIDE 4" RADON VENT FROM RADON PIT UP THROUGH ROOF. PROVIDE WITH ACCESS PANEL FOR RADON MANOMETER AND TEST PORT.
P14	PROVIDE WALL CLEANOUT AT THE BASE OF WASTE STACKS. COORDINATE HEIGHT OF WALL CLEANOUT WITH ARCHITECT. PROVIDE CLEANOUTS ON WALL AND FLOOR SURFACE.
P20	PROVIDE FLEXIBLE COUPINGS WHERE PIEPS CONNECT AT ANGLES NOT EQUAL TO 45 OR 90 DEGREES. PENETRATE WALLS AT 90 DEGREE ANGLES. WHENEVER POSSIBLE (TYPICAL).



1 PLUMBING FIRST FLOOR PLAN - A
1/8" = 1'-0"

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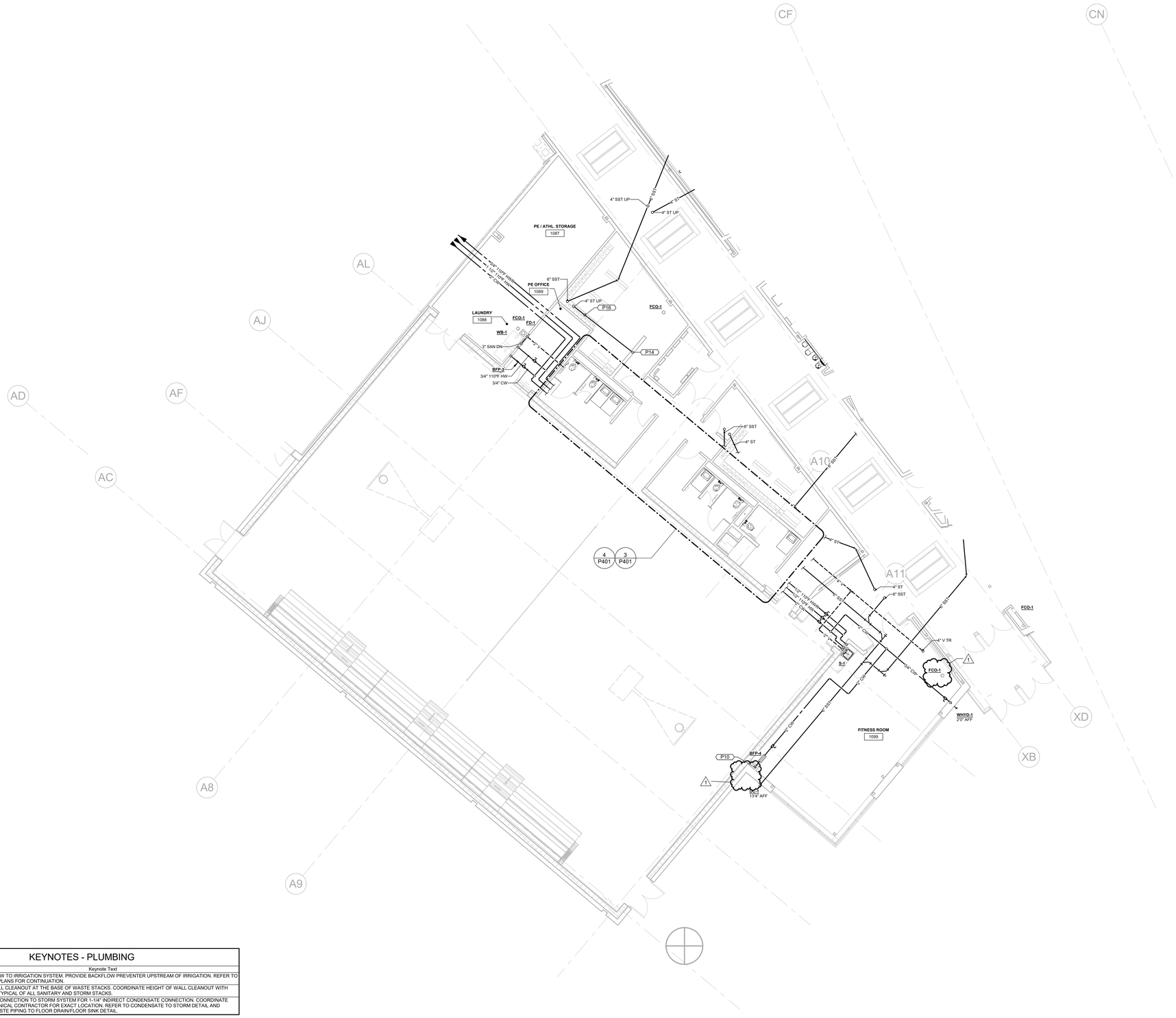
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CN
AL
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AD
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AC
A8
A9
A10
A11
XD
XB
PE / ATHL. STORAGE
1087
PE OFFICE
1089
LAUNDRY
1068
FITNESS ROOM
1099
4" SST UP
4" ST UP
6" SST
4" ST
P16
P14
P10
FCO-1
FD-1
WB-1
3" SAN DN
BFP-3
3/4" 110°F HW
3/4" CW
BFP-4
WHYD-1
2'0" AFF
S-1
4" V TR
4" V
4" SST
4" CW
4" SAN
4" SAN DN
4" ST
6" SST
4" V TR
4" CW
4" SAN
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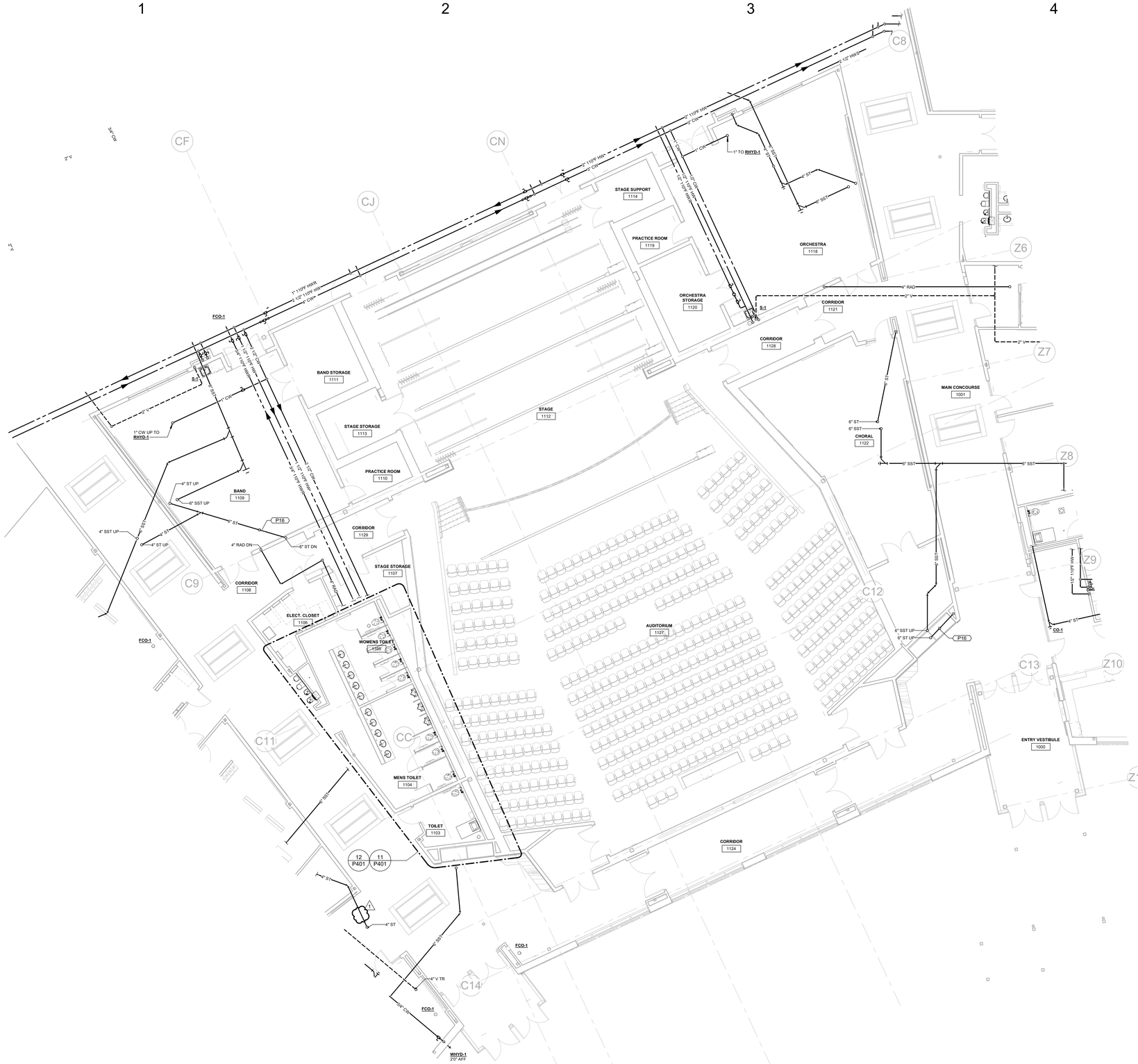
4" V
4" SST



1 PLUMBING FIRST FLOOR PLAN - D
1/8" = 1'-0"

KEYNOTES - PLUMBING

Key Value	Keynote Text
P2	PROVIDE SUPPLY, WASTE, AND VENT CONNECTIONS TO PLUMBING FIXTURES ACCORDING TO PLUMBING FIXTURE CONNECTION SCHEDULE.
P16	PROVIDE 3" CONNECTION TO STORM SYSTEM FOR 1-1/4" INDIRECT CONDENSATE CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION. REFER TO CONDENSATE TO STORM DETAIL AND INDIRECT WASTE PIPING TO FLOOR DRAIN/FLOOR SINK DETAIL.

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PLUMBING FIRST FLOOR PLAN - PART D

Date 07/08/2024
Scale 1/8" = 1'-0"
Proj. Number 22367.00
Drawing Number P101D

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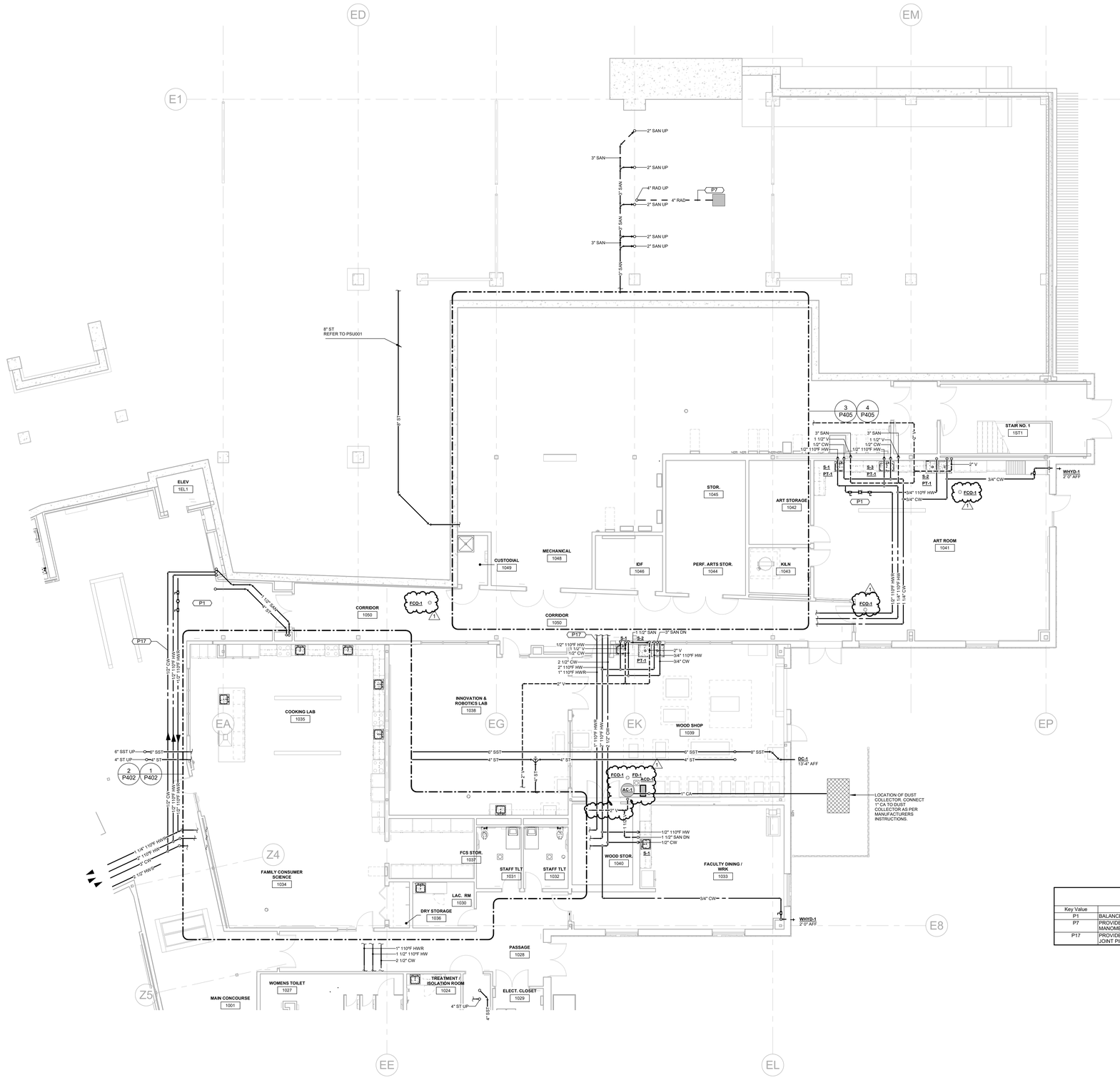

1 PLUMBING FIRST FLOOR PLAN - E
1/8" = 1'-0"

KEYNOTES - PLUMBING

Key Value	Keynote Text
P1	BALANCE VALVE LOCATED ABOVE ACCESSIBLE CEILING SET TO 0.5 GPM
P7	PROVIDE 4" RADON VENT FROM RADON PIT UP THROUGH ROOF. PROVIDE WITH ACCESS PANEL FOR RADON MANOMETER AND TEST PORT.
P17	PROVIDE EXPANSION COUPLINGS FOR PIPING PENETRATION EXPANSION JOINTS. REFER TYPICAL EXPANSION JOINT PIPING DETAIL.

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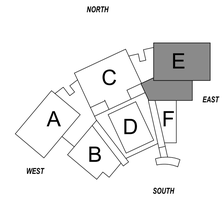

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PLUMBING FIRST FLOOR PLAN - PART E

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: P101E

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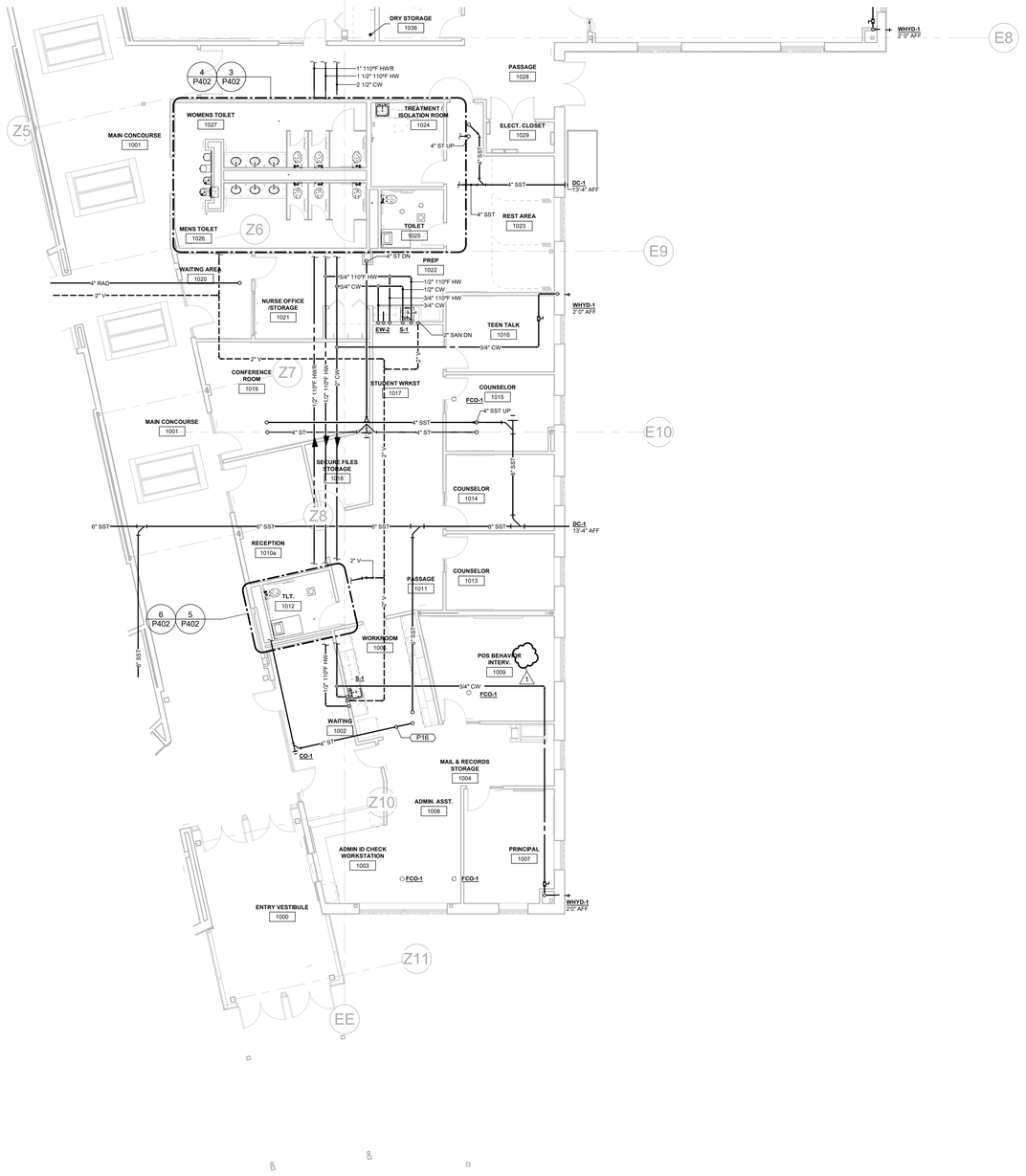

KEYNOTES - PLUMBING	
Key Value	Keynote Text
P16	PROVIDE 3" CONNECTION TO STORM SYSTEM FOR 1-1/4" INDIRECT CONDENSATE CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION. REFER TO CONDENSATE TO STORM DETAIL AND INDIRECT WASTE PIPING TO FLOOR DRAIN/FLOOR SINK DETAIL.

1 PLUMBING FIRST FLOOR PLAN - F
1/8" = 1'-0"

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Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
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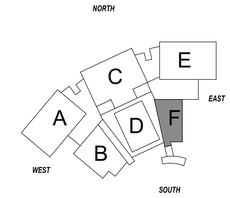
STATE PROJECT NO: 057-0114 N



KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

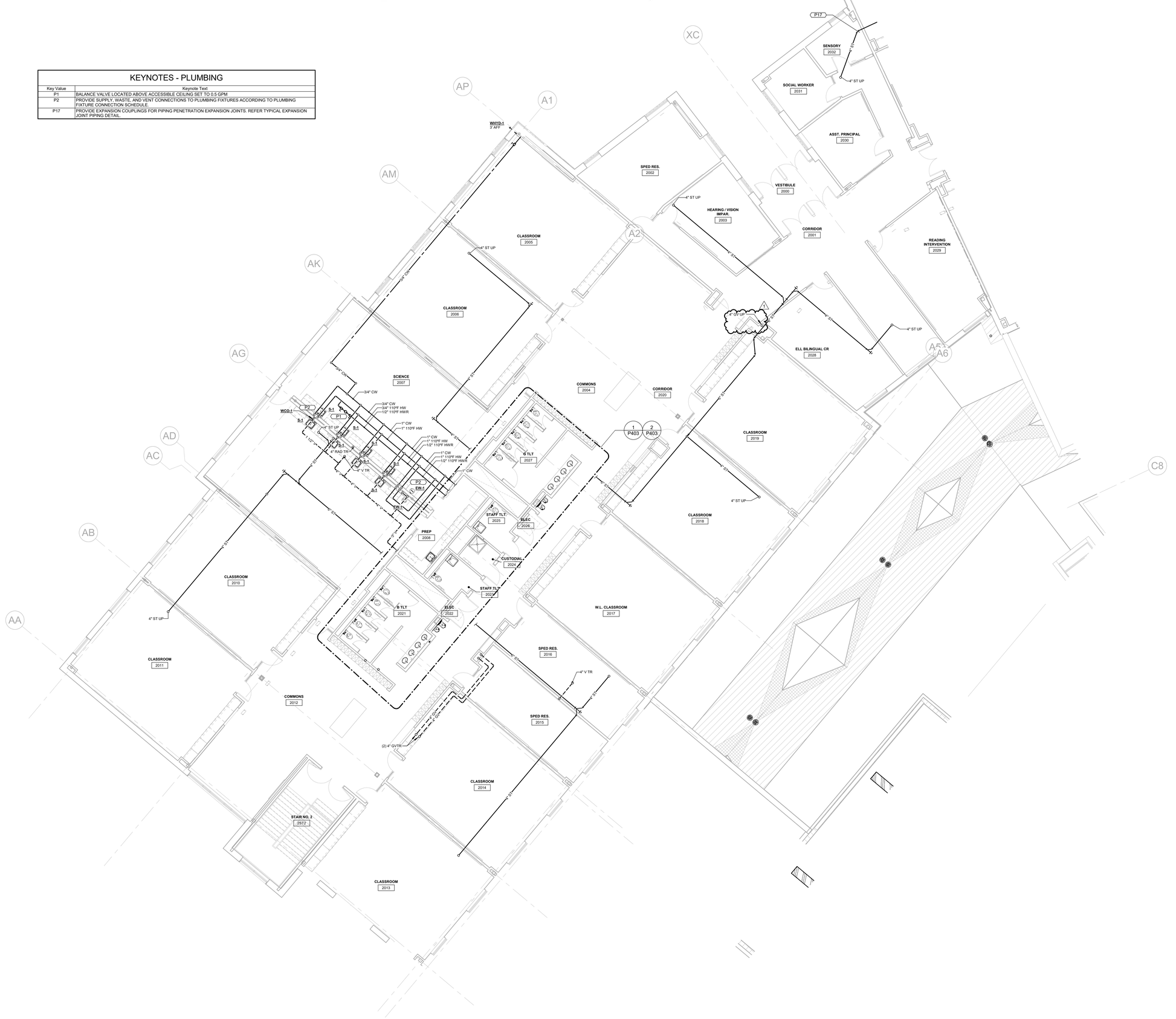
PLUMBING FIRST FLOOR PLAN - PART F

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: P101F

Autodesk Docs://22367.00 - Greenwich Central Middle School/R22-20230095-MEP Central - Greenwich Central Middle School.rvt
10/16/2024 10:32:49 AM

KEYNOTES - PLUMBING

Key Value	Keynote Text
P1	BALANCE VALVE LOCATED ABOVE ACCESSIBLE CEILING SET TO 0.5 GPM.
P2	PROVIDE SUPPLY, WASTE, AND VENT CONNECTIONS TO PLUMBING FIXTURES ACCORDING TO PLUMBING FIXTURE CONNECTION SCHEDULE.
P17	PROVIDE EXPANSION COUPLINGS FOR PIPING PENETRATION EXPANSION JOINTS. REFER TYPICAL EXPANSION JOINT PIPING DETAIL.



1 PLUMBING SECOND FLOOR PLAN - A
1/8" = 1'-0"

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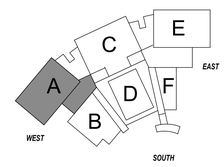
STATE PROJECT NO: 057-0114 N



KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

PLUMBING SECOND FLOOR PLAN -PART A

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00

Drawing Number: P102A

Autodesk Docs://22367.00 - Greenwich Central Middle School/R22-2023095-MEP Central - Greenwich Central Middle School.rvt
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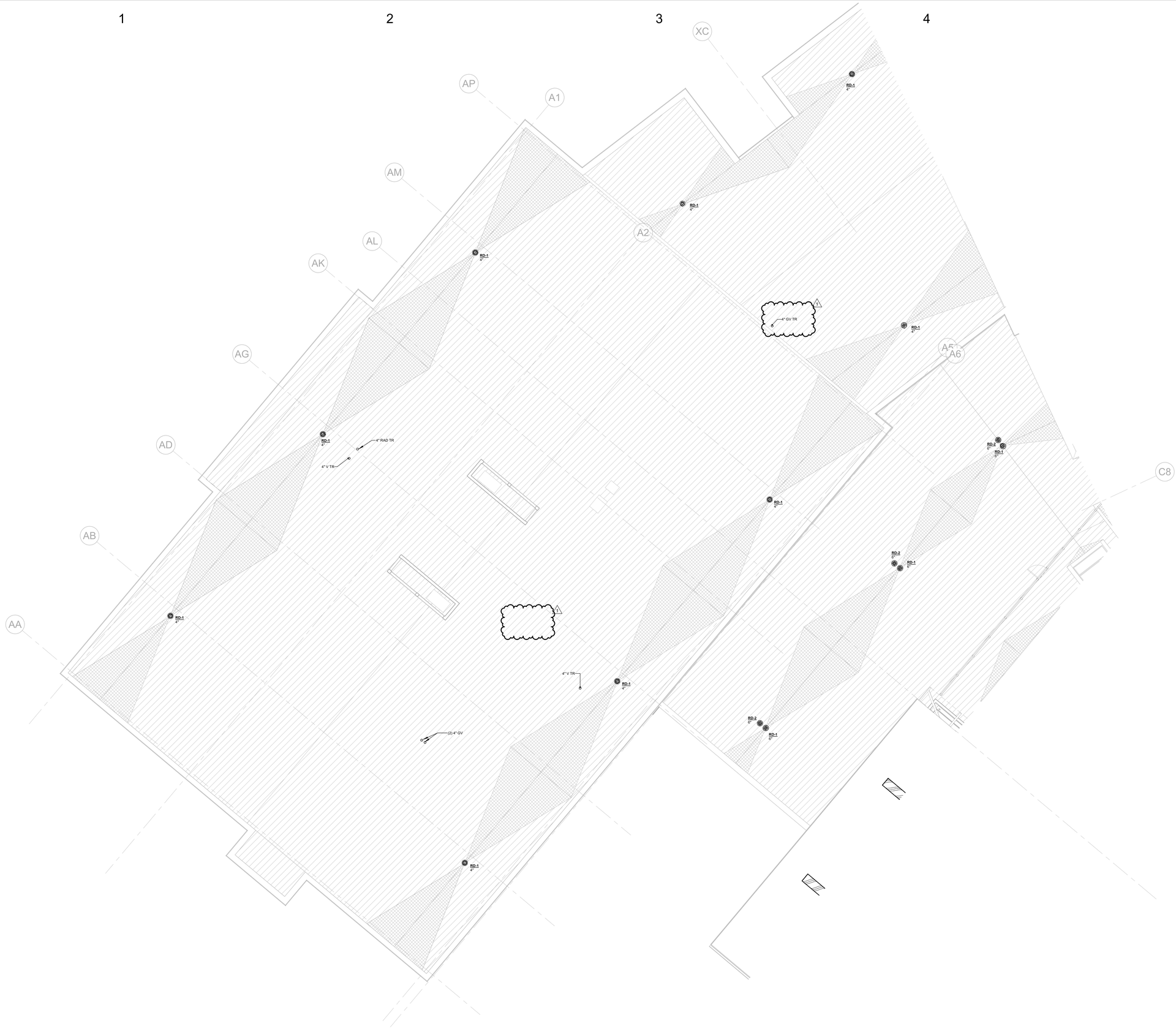

1 PLUMBING ROOF FLOOR PLAN - A
1/8" = 1'-0"

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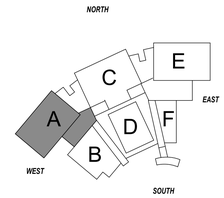

KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

PLUMBING ROOF PLAN - PART A

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00

Drawing Number: P103A

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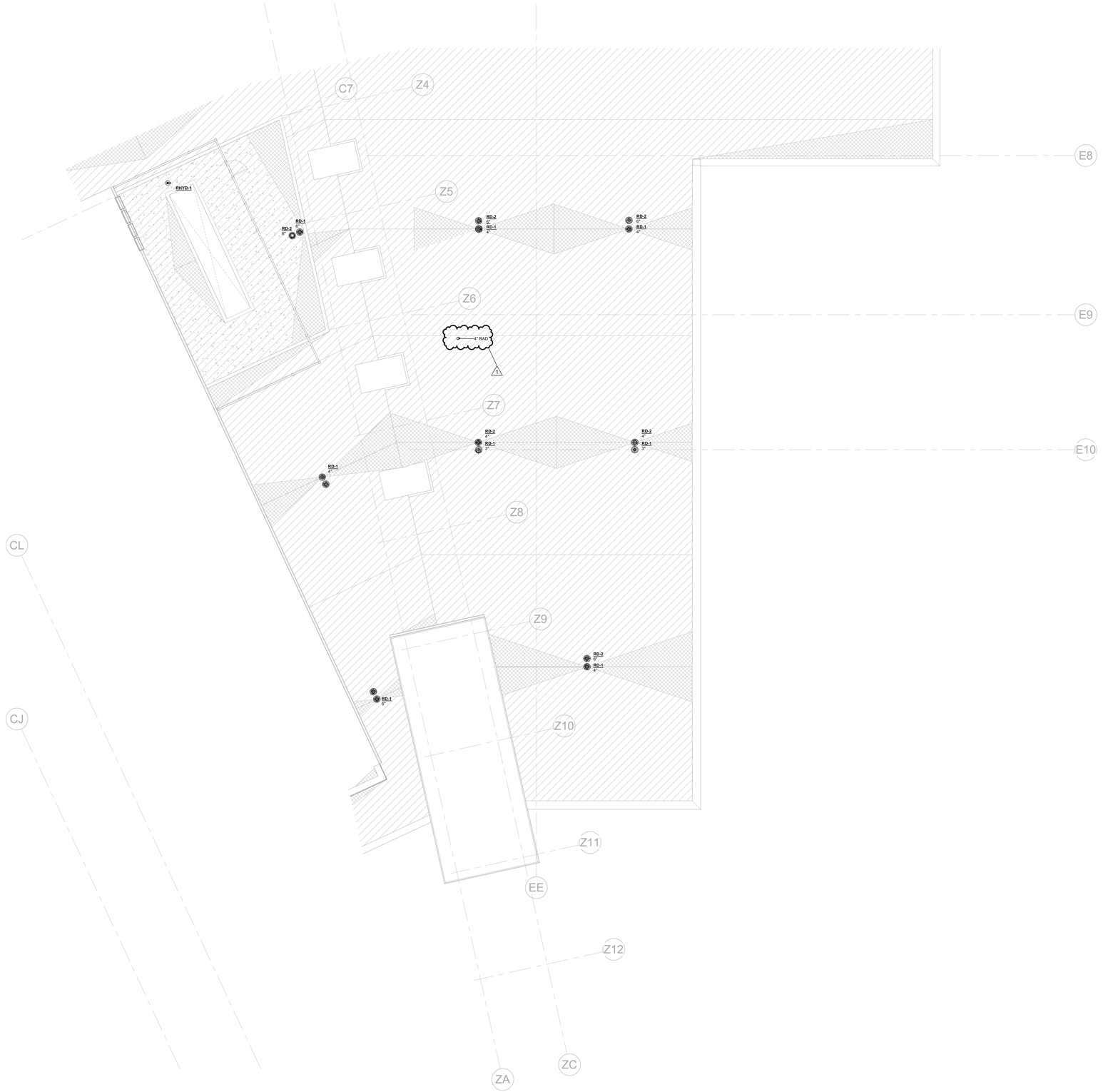

1 PLUMBING ROOF FLOOR PLAN - F
1/8" = 1'-0"

3"
1 1/2"
1"
3/4"
1/2"
3/8"
1/4"
1/8"
3/16"
3/32"
1/16"

A
B
C
D
E

1 2 3 4 5

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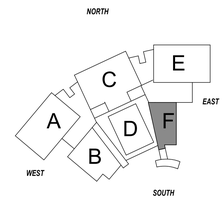


KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

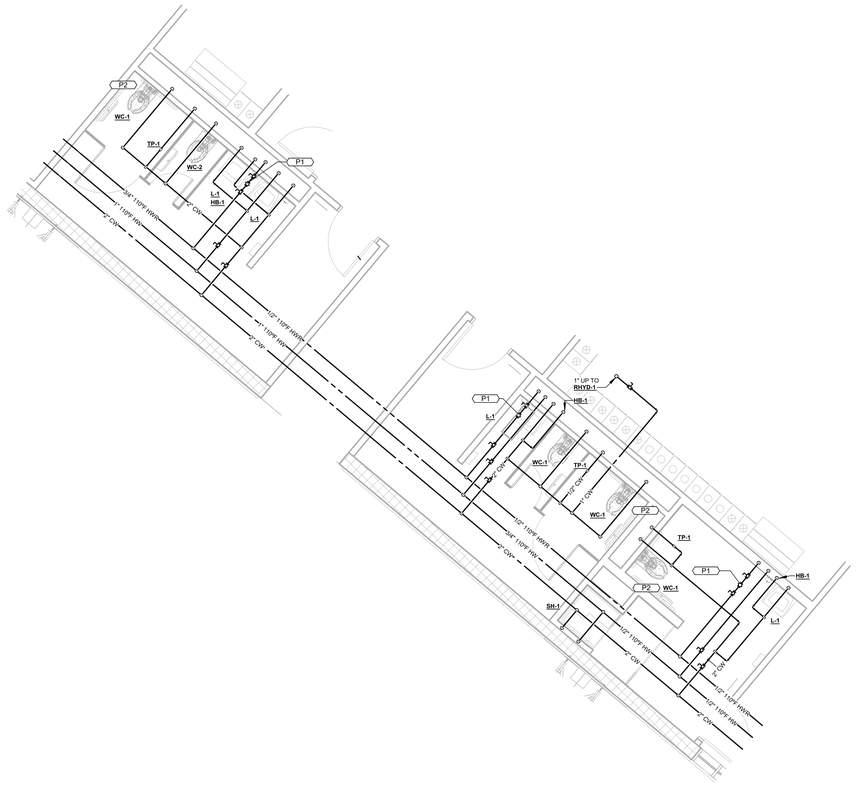
PLUMBING ROOF PLAN - PART F

Date
07/08/2024
Scale
1/8" = 1'-0"
Proj. Number
22367.00

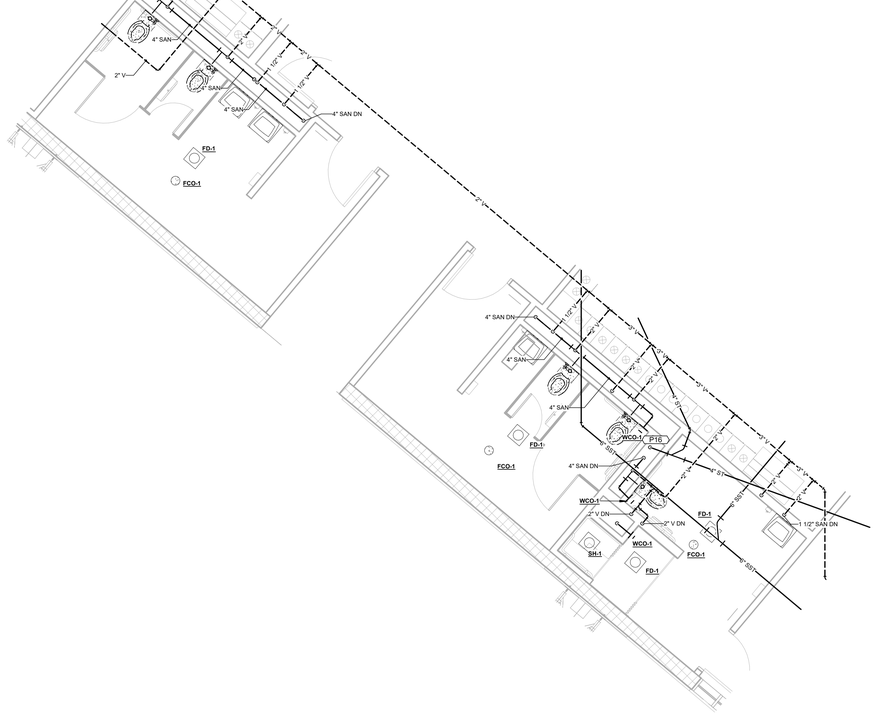
Drawing Number
P103F

Autodesk Docs://22367.00 - Greenwich Central Middle School/R22-2023095-MEP Central - Greenwich Central Middle School.rvt
10/16/2024 10:34:34 AM

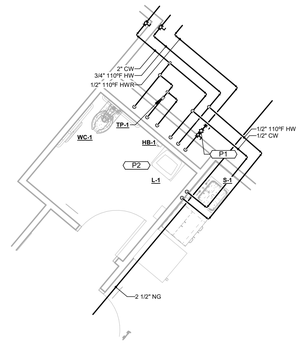
KEYNOTES - PLUMBING	
Key Value	Keynote Text
P1	BALANCE VALVE LOCATED ABOVE ACCESSIBLE CEILING SET TO 0.5 GPM
P2	PROVIDE SUPPLY, WASTE, AND VENT CONNECTIONS TO PLUMBING FIXTURES ACCORDING TO PLUMBING FIXTURE CONNECTION SCHEDULE.
P15	1" HW TO SERVE GROUP OF LAVS. REFER TO RECIRCULATION AT PUBLIC LAVATORIES DETAIL.
P16	PROVIDE 3" CONNECTION TO STORM SYSTEM FOR 1-1/4" INDIRECT CONDENSATE CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION. REFER TO CONDENSATE TO STORM DETAIL AND INDIRECT WASTE PIPING TO FLOOR DRAIN/FLOOR SINK DETAIL.



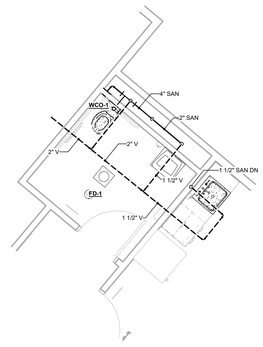
3 PLUMBING ENLARGED PLAN - 1B TOILET ROOMS SUPPLY
1/4" = 1'-0"



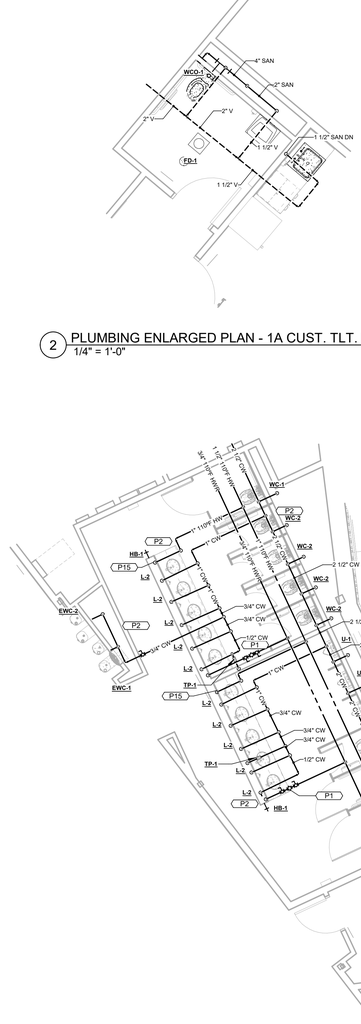
4 PLUMBING ENLARGED PLAN - 1B TOILET ROOMS WASTE & VENT
1/4" = 1'-0"



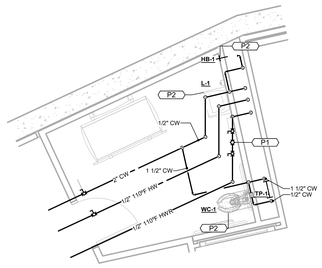
1 PLUMBING ENLARGED PLAN - 1A CUST. TLT. RM 1071 SUPPLY
1/4" = 1'-0"



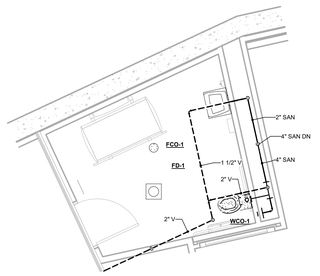
2 PLUMBING ENLARGED PLAN - 1A CUST. TLT. RM 1071 WASTE & VENT
1/4" = 1'-0"



11 PLUMBING ENLARGED PLAN - 1D TLT RMS 192/193/194 SUPPLY
3/16" = 1'-0"



9 PLUMBING ENLARGED PLAN - 1C LIFE SKILLS TLT 1051 SUPPLY
1/4" = 1'-0"



10 PLUMBING ENLARGED PLAN - 1C LIFE SKILLS TLT 1051 WASTE & VENT
1/4" = 1'-0"

12 PLUMBING ENLARGED PLAN - 1D TLT RMS 192/193/194 WASTE & VENT
3/16" = 1'-0"

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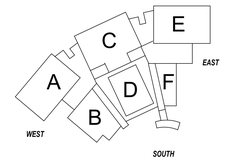
NORTH



KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

PLUMBING ENLARGED VIEWS

Date: 07/08/2024
Scale: As indicated
Proj. Number: 22367.00
Drawing Number: P401

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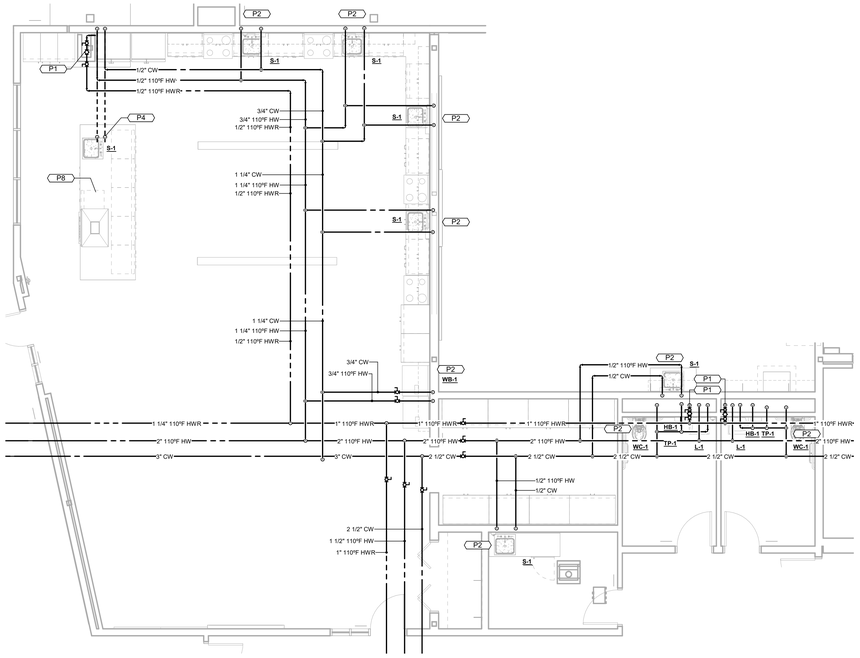
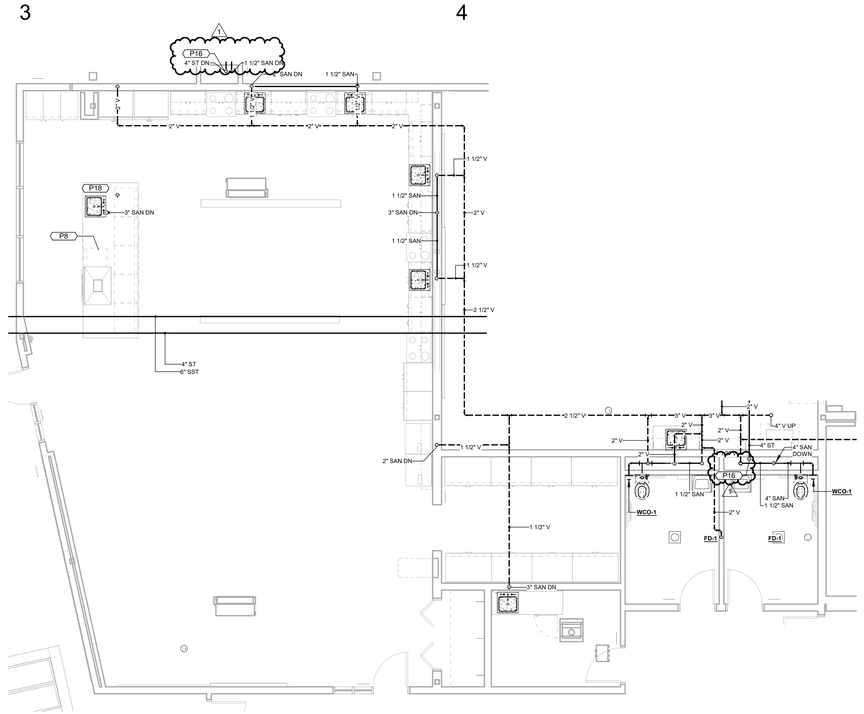
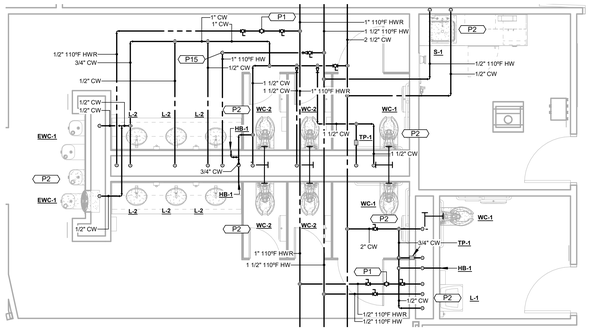
10/16/2024 10:35:38 AM



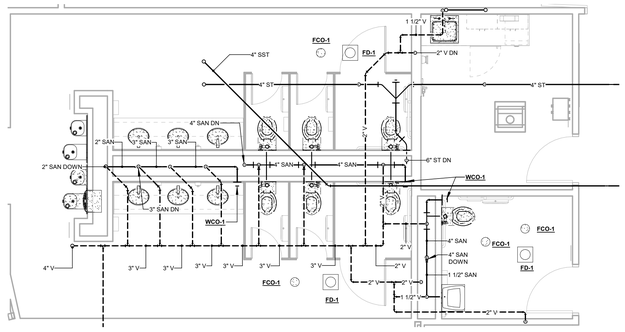
1 PLUMBING ENLARGED PLAN - 1E FAM CON SCI 1034 SUPPLY
3/16" = 1'-0"



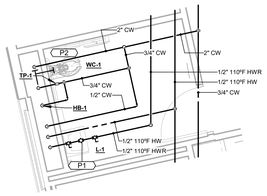
2 PLUMBING ENLARGED PLAN - 1E FAM CON SCI 1034 WASTE & VENT
3/16" = 1'-0"



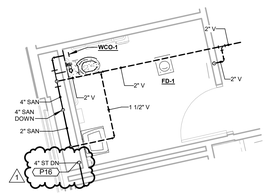
3 PLUMBING ENLARGED PLAN - 1F TLT ROOM 1026 SUPPLY
1/4" = 1'-0"



4 PLUMBING ENLARGED PLAN - 1F TLT ROOM 1026 WASTE & VENT
1/4" = 1'-0"



5 PLUMBING ENLARGED PLAN - 1F TLT RM 1012 SUPPLY
1/4" = 1'-0"



6 PLUMBING ENLARGED PLAN - 1F TLT RM 1012 WASTE & VENT
1/4" = 1'-0"

KEYNOTES - PLUMBING

Key Value	Keynote Text
P1	BALANCE VALVE LOCATED ABOVE ACCESSIBLE CEILING SET TO 0.5 GPM
P2	PROVIDE SUPPLY, WASTE, AND VENT CONNECTIONS TO PLUMBING FIXTURES ACCORDING TO PLUMBING FIXTURE CONNECTION SCHEDULE.
P4	ISLAND SINK SHALL BE CONNECTED TO CW AND HW THROUGH BELOW SLAB PIPING. VENT SHALL BE THROUGH A COMBINATION WASTE AND VENT WITH OTHER SINKS IN COOKING LAB. SEE SHEET P100E FOR PIPING.
P8	USE WATER SUPPLY FROM SINK TO FEED DISHWASHER. SANITARY FROM DISHWASHER SHALL DISCHARGE INTO SINK WASTE STACK. REFER TO PLUMBING FIXTURE CONNECTION SCHEDULE.
P15	1" HW TO SERVE GROUP OF LAVS. REFER TO RECIRCULATION AT PUBLIC LAVATORIES DETAIL.
P16	PROVIDE 3" CONNECTION TO STORM SYSTEM FOR 1-1/4" INDIRECT CONDENSATE CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION. REFER TO CONDENSATE TO STORM DETAIL AND INDIRECT WASTE PIPING TO FLOOR DRAIN/FLOOR SINK DETAIL.
P18	REFER TO ISLAND SINK DETAIL FOR VENTING SANITARY AND VENT PIPING.

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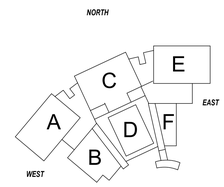

KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

PLUMBING ENLARGED VIEWS

Date 07/08/2024
Scale As indicated
Proj. Number 22367.00
Drawing Number P402

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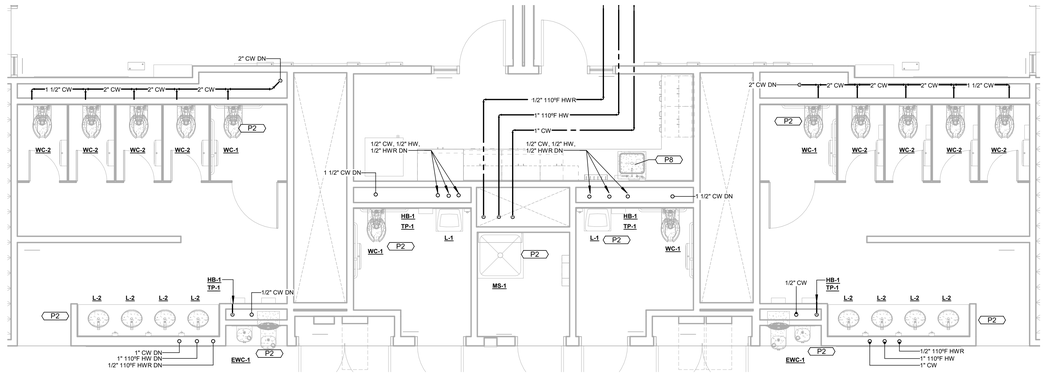
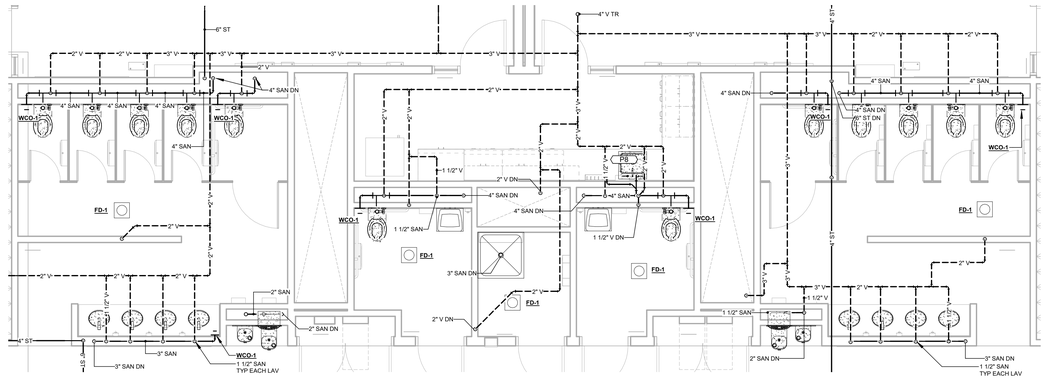
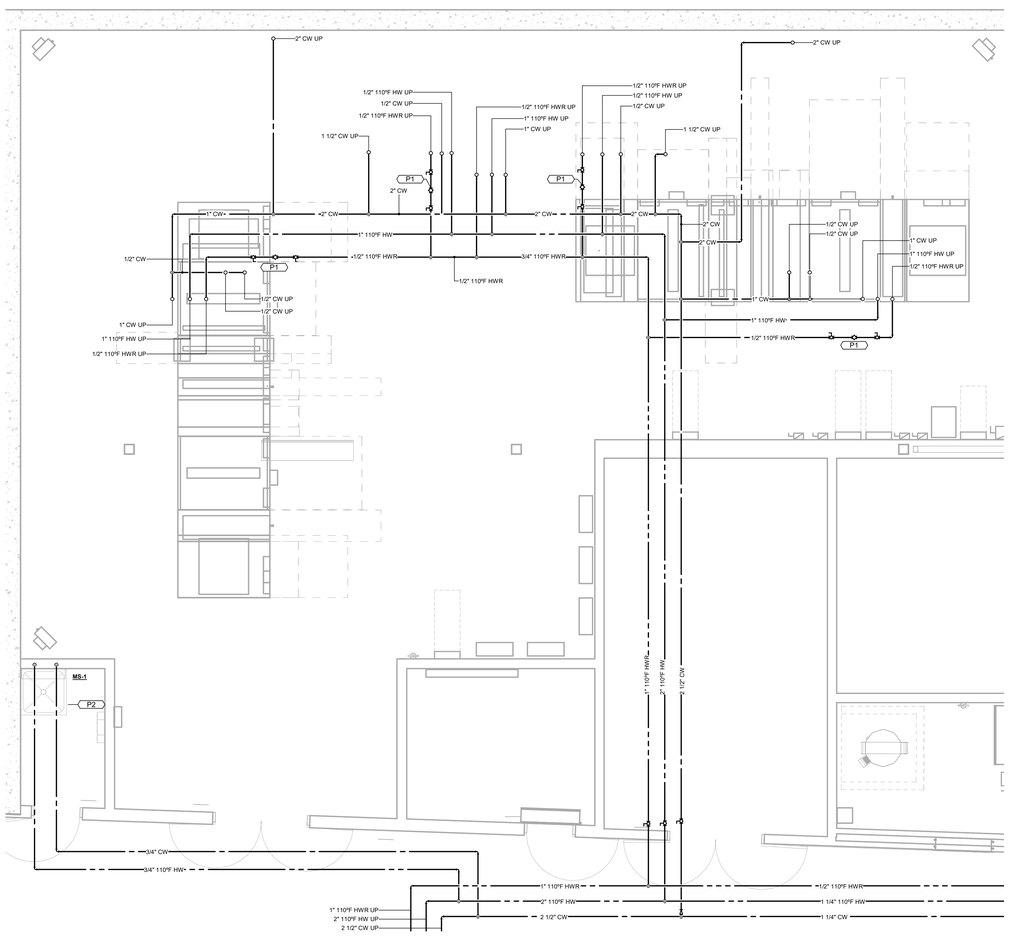
10/16/2024 10:35:57 AM



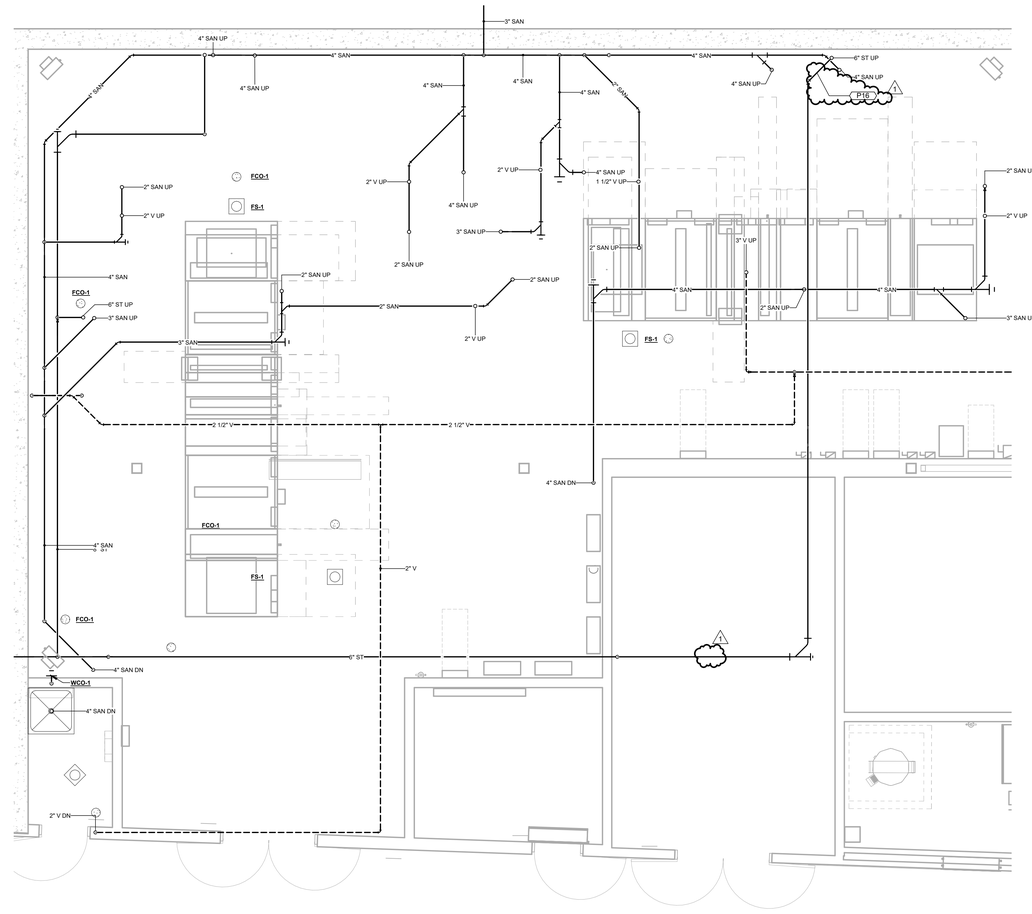
1 PLUMBING ENLARGED PLAN - 2E TLT ROOM SUPPLY
1/4" = 1'-0"



2 PLUMBING ENLARGED PLAN - 2E TLT ROOM WASTE & VENT
1/4" = 1'-0"



3 PLUMBING ENLARGED PLAN - 1E MECHANICAL ROOM SUPPLY
1/4" = 1'-0"



4 PLUMBING ENLARGED PLAN - 1E MECHANICAL ROOM WASTE & VENT
1/4" = 1'-0"

KEYNOTES - PLUMBING

Key Value	Keynote Text
P1	BALANCE VALVE LOCATED ABOVE ACCESSIBLE CEILING SET TO 0.5 GPM
P2	PROVIDE SUPPLY, WASTE, AND VENT CONNECTIONS TO PLUMBING FIXTURES ACCORDING TO PLUMBING FIXTURE CONNECTION SCHEDULE.
P8	USE WATER SUPPLY FROM SINK TO FEED DISHWASHER. SANITARY FROM DISHWASHER SHALL DISCHARGE INTO SINK WASTE STACK. REFER TO PLUMBING FIXTURE CONNECTION SCHEDULE.
P16	PROVIDE 3" CONNECTION TO STORM SYSTEM FOR 1-1/4" INDIRECT CONDENSATE CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION. REFER TO CONDENSATE TO STORM DETAIL AND INDIRECT WASTE PIPING TO FLOOR DRAIN/FLOOR SINK DETAIL.

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Greenwich Public Schools

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STATE PROJECT NO: 057-0114 N

NORTH
EAST
SOUTH
WEST
A B C D E F

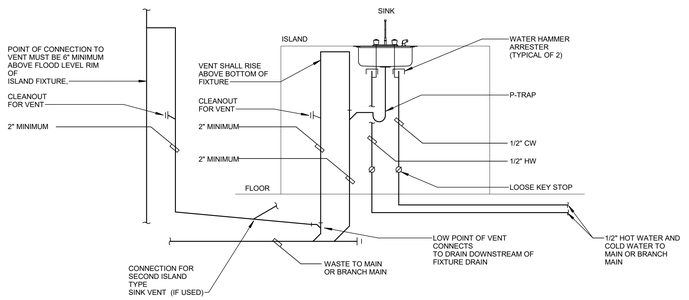
KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

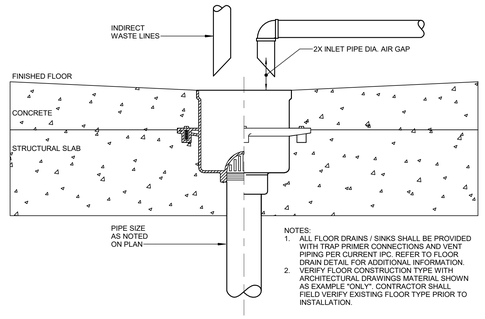
PLUMBING ENLARGED VIEWS

Date 07/08/2024
Scale 1/4" = 1'-0"
Proj. Number 22367.00
Drawing Number **P405**

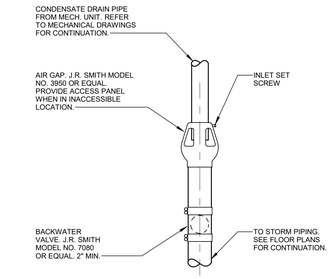
Autodesk Docs://22367.00 - Greenwich Central Middle School/R22-2023095-MEP Central - Greenwich Central Middle School.rvt
10/16/2024 10:36:45 AM



10 DETAIL ISLAND SINK
NTS



9 TYPICAL INDIRECT WASTE PIPING TO FROOR DRAIN/FLOOR SINK DETAIL
NTS



8 CONDENSATE TO STORM DETAIL
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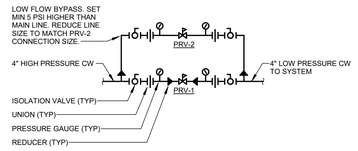

7 PRESSURE REDUCING VALVE STATION
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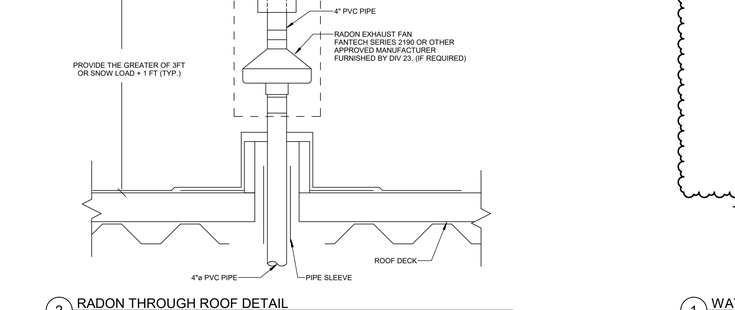
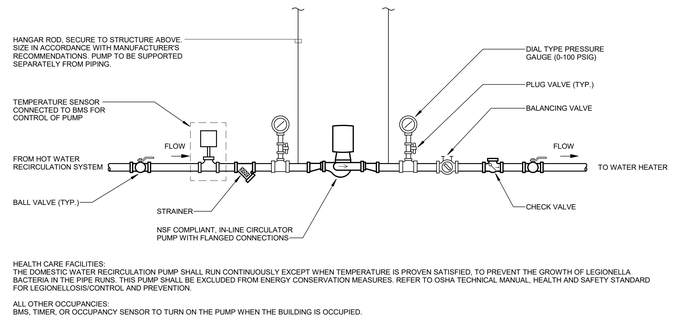


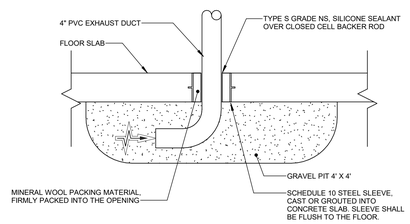
6 DOMESTIC WATER SERVICE DETAILS
NTS



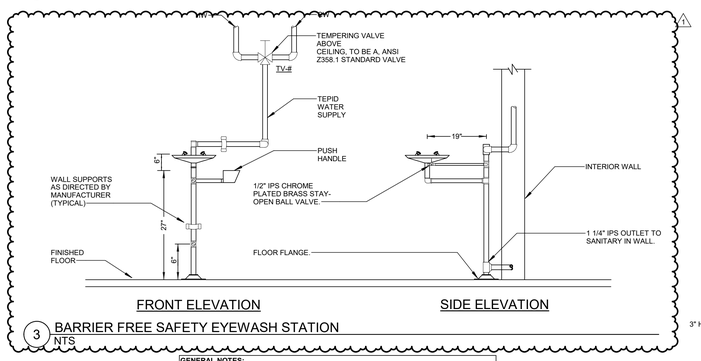
HEALTH CARE FACILITIES:
THE DOMESTIC WATER RECIRCULATION PUMP SHALL RUN CONTINUOUSLY EXCEPT WHEN TEMPERATURE IS PROVEN SATISFIED, TO PREVENT THE GROWTH OF LEGIONELLA BACTERIA IN THE PIPE RUNS. THIS PUMP SHALL BE EXCLUDED FROM ENERGY CONSERVATION MEASURES. REFER TO OSHA TECHNICAL MANUAL, HEALTH AND SAFETY STANDARD FOR LEGIONELLOSIS/CONTROL AND PREVENTION.

ALL OTHER OCCUPANCIES:
BMS, TIMER, OR OCCUPANCY SENSOR TO TURN ON THE PUMP WHEN THE BUILDING IS OCCUPIED.

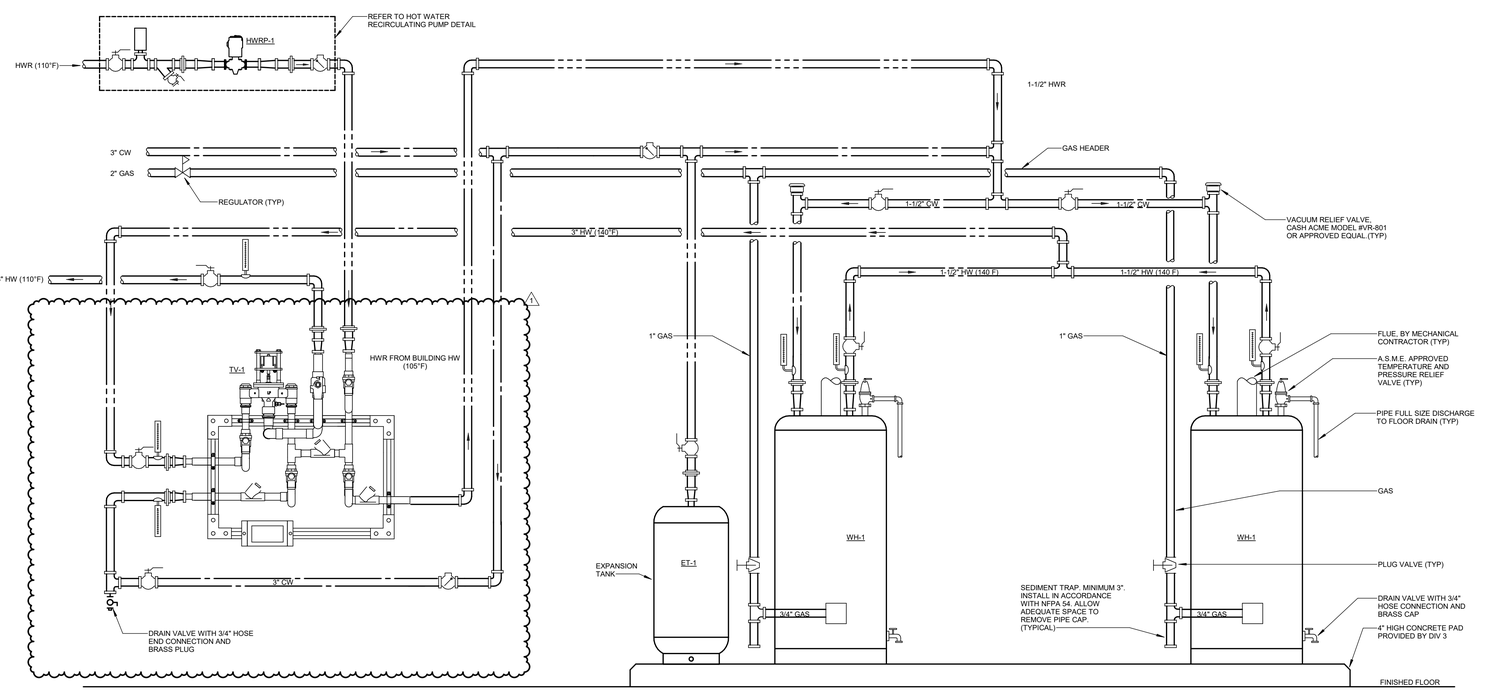
5 HOT WATER RECIRCULATING PUMP DETAIL
NTS



4 RADON COLLECTION TRENCH PENETRATION
NTS



3 BARRIER FREE SAFETY EYEWASH STATION
NTS



GENERAL NOTE:
1. CONTRACTOR MUST COORDINATE HOT WATER RECIRCULATION PIPING INSTALLATION PER THERMOSTATIC MIXING VALVE MANUFACTURERS INSTALLATION INSTRUCTION. HWR PIPING CONFIGURATION IS INDICATED FOR REFERENCE ONLY.
2. CONTRACTOR MUST COORDINATE EXPANSION TANK PIPING INSTALLATION PER EXPANSION TANK MANUFACTURERS INSTALLATION INSTRUCTION. EXPANSION TANK PIPING CONFIGURATION IS INDICATED FOR REFERENCE ONLY.

1 WATER HEATER DETAIL (DIGITAL MIXING VALVE)
1/8" = 1'-0"

GENERAL NOTES:
4"PVC RADON PIPE THROUGH ROOF PROVIDED BY DIVISION 22. DIVISION 23 PROVIDED ROOF CURB AND ALL OTHER ACCESSORIES INDICATED IN DETAIL. COORDINATE WITH DIVISION 22, 26 AND 31

2 RADON THROUGH ROOF DETAIL
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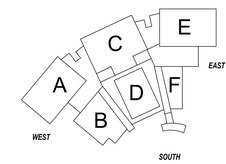
KEYPLAN



Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

PLUMBING DETAILS

Date 07/08/2024
Scale As indicated
Proj. Number 22367.00
Drawing Number P501

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BACKFLOW PREVENTION SCHEDULE

TAG	MANUFACTURER	MODEL #	HAZARD CLASS	DESCRIPTION	COMPONENTS AND ACCESSORIES	APPLICATION	APPLICABLE STANDARDS	REMARKS
BFP-1	WATTS	LF-957-FS	HEALTH HAZARD	REDUCED PRESSURE ZONE ASSEMBLIES: STAINLESS STEEL/EPOXY COATED DUCTILE IRON BODY, CONTINUOUS PRESSURE, TESTABLE, 250 GPM @ 8 PSI PRESSURE DROP	TWO ISOLATION VALVES, RELIEF VALVE, FOUR TEST COCKS, TWO BUTTERFLY VALVES, FLOOD SENSOR	MAIN SUPPLY LINE SIZES 2-1/2"-10"	ASSE 1013 & NSF 61-G	#1,2,4
BFP-2	WATTS	LF909	HEALTH HAZARD	REDUCED PRESSURE ZONE ASSEMBLIES: CAST COPPER SILICONE/BRONZE C89836/CAST BRONZE ASTM B 584 BODY, CONTINUOUS PRESSURE, TESTABLE, 25 GPM @ 10 PSI PRESSURE DROP	RELIEF VALVE, TWO CHECK VALVES, TWO QUARTER-TURN SHUTOFF BALL VALVES, FOUR TEST COCKS, AND STRAINER	BACKSIPHONAGE & BACKPRESSURE, MAKEUP WATER LINES TO MECHANICAL EQUIPMENT SIZES 3/4"-2"	ASSE 1013 & NSF 61-G & NSF 372	#1,2,4
BFP-3	WATTS	LF007	NON-HEALTH HAZARD	DOUBLE CHECK VALVE ASSEMBLIES: CAST COPPER SILICONE/EPOXY COATED CAST IRON/ BRONZE C89836/ STAINLESS STEEL/BODY, CONTINUOUS PRESSURE, TESTABLE, 5 GPM @ 5 PSI PRESSURE DROP	TWO CHECK VALVES, TWO SHUTOFF VALVES, FOUR TEST COCKS, STRAINER, AND RUBBER CHECK DISC	WASHER BOX, DISHWASHING MACHINE, STEAM KETTLES SIZES 1/2"-3"	ASSE 1015 & NSF 61-G	#4
BFP-4	WATTS	LF288A	NON-HEALTH HAZARD	ATMOSPHERIC VACUUM BREAKER: BRONZE/BRASS BODY, INTERMITTENT PRESSURE, 10 GPM @ 5 PSI PRESSURE DROP	DISK FLOAT WITH SILICONE DISK, AND UNION	IRRIGATION SYSTEM SIZES 1/4"-3"	ASSE 1001 & NSF 372	#3

REMARKS:
1. INCLUDE AIR GAP & INDIRECT WASTE LINE TO NEAREST FLOOR SINK OR FLOOR DRAIN.
2. PROVIDE WITH SENSOR FOR FLOOD DETECTION FROM RELIEF VALVE.
3. MOUNT 6" ABOVE HIGHEST POINT OF DOWN STREAM PIPING.
4. INSTALL IN ACCORDANCE WITH THE WATER AUTHORITY REQUIREMENTS.

PRESSURE REDUCING VALVE SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NUMBER	SIZE (IN)	MINIMUM FLOW (GPM)	DESIGN FLOW (GPM)	SYSTEM SERVED	INLET PRESSURE (PSI)	SET OUTLET PRESSURE (PSI)	MIN OUTLET PRESSURE (PSI)	REMARKS
PRV-1	WATTS #LF-M115	3"	13	250	MAIN SUPPLY	100 PSI	75 PSI	70 PSI	#1,2,3
PRV-2	WATTS #LF223-HP	1"	-	10	MAIN SUPPLY	100 PSI	80 PSI	75 psi	#1,2,3,4

REMARKS:
1. VALVE SHALL BE LEAD FREE CONSTRUCTION FOR DOMESTIC WATER USE
2. PROVIDE FLANGED CONNECTION FOR SIZES 2" AND LARGER
3. SINGLE CHAMBER FULL PORT
4. LOW FLOW PRV SHALL BE SET MIN 5 PSI HIGHER THAN HIGH FLOW PRV

AIR COMPRESSOR SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NUMBER	TYPE	LOCATION	SERVING	CAPACITY CFM AT PSIG	MAX PRESSURE PSIG	WEIGHT	CAPACITY GALLONS	ELEC DATA HP-VOLTS-PH	REMARKS
AC-1	INGERSOLL RAND #2475N5-P	RECIPROCATING AIR	WOOD SHOP	DUST COLLECTOR	17.2 CFM @ 90 PSI	175	597 LBS	80 VERTICAL	5/230V/3PH	#1,2,3,4,6

REMARKS:
1. ELECTRIC DRIVE
2. COMPLIANT TO OSHA AND UL STANDARDS
3. PROVIDE AIR DRYER
4. PROVIDE CONDENSATE SEPARATOR INGERSOLL RAND MODEL PSG-15

AIR DRYER SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NUMBER	TYPE	LOCATION	SERVING	CAPACITY CFM AT PSIG	MAX PRESSURE PSIG	WEIGHT	FLA	ELEC DATA KW-VOLTS-PH	REMARKS
ACD-1	INGERSOLL RAND #D59NC	CYCLING	WOOD SHOP	DUST COLLECTOR	35 CFM @ 100 PSI	175	77	-	1.2/120V/1PH	#1,2

REMARKS:
1. ELECTRIC DRIVE WITH POWER CORD
2. COMPLIANT TO OSHA AND UL STANDARDS

HEAT TRACE SCHEDULE

SYMBOL	APPLICATION	MANUFACTURER/ MODEL NUMBER	PIPE SIZE	HEAT LOSS (W/FT)	AMBIENT TEMPERATURE (°F)	PIPE TEMPERATURE (°F)	INSULATION K-FACTOR BTU-IN/HR-FT²-°F	INSULATION THICKNESS	MAXIMUM ALLOWABLE CABLE LENGTH (FT)	ELECTRICAL DATA V/PH/A	NOTES
HT-1	GREASE LIQUIDATION	RAYCHEM/ 12XLE2-CT	6"	12	50	110	0.224	2"	346	208V/30A	ALL
HT-2	GREASE LIQUIDATION	RAYCHEM/ 12XLE2-CT	6"	12	50	110	0.224	2"	346	208V/30A	ALL

NOTES:
1. PROVIDE SINGLE-POINT HEAT-TRACING CONTROL SYSTEM C910. REFER TO FLOOR PLANS FOR LOCATION.
2. INSTALL PER MANUFACTURERS GUIDELINES.
3. REFER TO FLOOR PLANS FOR PIPE SIZE.
4. REFER TO MANUFACTURERS GUIDELINES FOR PIPE INSULATION REQUIREMENTS.
5. CABLE SHALL BE INSTALLED BY A LICENSED PLUMBING CONTRATOR WITH FINAL ELECTRICAL CONNECTIONS PERFORMED BY THE ELECTRICAL SUBCONTRACTOR. INSTALLATION TRAINING PROVIDED BY AUTHORIZED MANUFACTURER'S REPRESENTATIVE MUST BE COMPLETED PRIOR TO WORK MOBILIZATION. SYSTEM MUST INCLUDE PIPE INSULATION THAT FOLLOWS MANUFACTURER'S INSTRUCTIONS FOR CORRECT PERFORMANCE.
6. THE HEATING CABLE IS PERMANENTLY SECURED TO METAL PIPES WITH GT-66 GLASS TAPE, OR TO PLASTIC PIPES USING AT-180 ALUMINUM TAPE.
7. THE HEATING CABLE MUST HAVE A FLOUROPOLYMER OUTER JACKET (-CT).
8. THE PIPELINE IS BURIED AT LEAST 2-FEET DEEP.
9. ALL HEATING CABLE SPLICES OR TEES ARE MADE ABOVEGROUND. NO BURIED OR IN-CONDUIT SPLICES OR TEES ARE ALLOWED. THE POWER CONNECTION AND END SEAL ARE MADE IN UL LISTED AND CSA CERTIFIED JUNCTION BOXES ABOVE GRADE.
10. THE HEATING CABLE IS PROTECTED FROM THE PIPE TO THE POWER CONNECTION BOX IN UL LISTED AND CSA CERTIFIED CONDUIT (MINIMUM 2/4-INCH DIAMETER) SUITABLE FOR THE LOCATION.
11. CLOSED-CELL, WATERPROOF THERMAL INSULATION WITH FIRE-RETARDANT.
12. TEST INSTALLATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION, INCLUDING: RESISTANCE TESTING WITH 2500 VDC MEGOHMMETER AND CAPACITANCE TESTING.
13. PROVIDE DETAILED CIRCUIT LAYOUT WITH SUBMITTALS.
14. REGISTER INSTALLATION WITH MANUFACTURER FOR 10 YR WARRANTY.

1

WATER HAMMER ARRESTOR SCHEDULE

MANUFACTURER/ MODEL NUMBER	SIZE N.P.T.	OVER ALL LENGTH	PRELOADED PSI (AIR)	FIXTURE UNITS	REMARKS
PPP MODEL #SC-500	1/2"	5"	60	1-11	ALL
PPP MODEL #SC-750	3/4"	6"	60	12-32	ALL
PPP MODEL# SC-1000	1"	6 3/4"	60	33-60	ALL
PPP MODEL# SC-1250	1 1/4"	8 3/4"	60	61-113	ALL
PPP MODEL# SC-1500	1 1/2"	10 1/4"	60	114-154	ALL
PPP MODEL# SC-2000	2"	10 7/8"	60	155-330	ALL

NOTES:
1. LOCATE WATER HAMMER ARRESTORS AS CLOSE AS POSSIBLE TO SHOCK SOURCE.
2. INSTALL PER ALL MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS.
3. LOCATE IN AN ACCESSIBLE LOCATION. PROVIDE ACCESS AS REQUIRED.
4. FIXTURE UNITS SHALL BE BASED ON THE LATEST ADOPTED VERSION OF THE INTERNATIONAL PLUMBING CODE.
5. WATER HAMMER ARRESTORS SHALL BE PROVIDED WHERE QUICK-CLOSING VALVES ARE UTILIZED.
6. PROVIDE WATER HAMMER ARRESTORS AT CLOTHES WASHING MACHINES
7. PROVIDE WATER HAMMER ARRESTORS PER GROUP OF WATER CLOSETS AND PER GROUP OF URINALS, WHERE GROUP DOES NOT EXIST PROVIDE WATER HAMMER ARRESTOR AT SINGLE WATER CLOSET.

PLUMBING FIXTURE CONNECTION SCHEDULE

FIXTURE TYPE	WASTE CONNECTION	VENT CONNECTION	COLD WATER CONNECTION	HOT WATER CONNECTION	TEMPID WATER
DRINKING FOUNTAIN (2 BOWL)	1 1/2" (2)	1 1/2" (2)	1/2" (2)	-	-
EMERGENCY EYEWASH	-	-	1/2"	1/2"	1/2"
JANITORS MOP BASIN	2"	1 1/2"	1/2"	1/2"	-
LAVATORY	1 1/2"	1 1/2"	1/2"	1/2"	-
SINK	1 1/2"	1 1/2"	1/2"	1/2"	-
UTILITY SINK	2	1 1/2"	3/4"	3/4"	-
URINAL	2"	1 1/2"	3/4"	-	-
WATER CLOSET (FLUSH VALVE)	4"	2"	1"	-	-
HOSE BIB (CW ONLY)	-	-	1/2"	-	-

NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR ALL PLUMBING FIXTURE MOUNTING HEIGHTS.
2. ALL PIPE TRAPS AT SINKS AND LAVATORIES SHALL BE CHROME PLATED BRASS.

PUMP SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NUMBER	TYPE	LOCATION	SYSTEM SERVED	CAPACITY	CAPACITY FT OF HEAD	FLUID TEMP (F°)	ELEC. DATA	REMARKS
HWRP-1	GRUNDFOS MAGNA MODEL # 32-120	IL	MECHANICAL ROOM	DOMESTIC HW RECIRC WH-1	21 GPM	32.0	110°F	115 V / 1/4 HP	1

NOTES:
IL = IN-LINE PUMP
SP = SUBMERSIBLE PUMP

REMARKS:
1. PUMP SHALL BE STAINLESS STEEL FOR DOMESTIC WATER USE

GAS FIRED WATER HEATER SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NUMBER	TYPE	LOCATION	FUEL TYPE	BTUH INPUT	STORAGE CAP. (GAL)	RECOVERY IN GPH AT 100°F RISE	ELEC. DATA VOLT-PH-AMP	REMARKS
WH-1	PVI CONQUEST 20L 100A-GCL	S	MECHANICAL ROOM	GAS	199,000	100	233	120V-1-5.0	ALL

REMARKS:
1. WATER HEATER SHALL BE PROVIDED WITH A MAXIMUM OF 14"W.C. GAS PRESSURE.
2. WATER HEATER SHALL BE PROVIDED WITH ELECTRONIC IGNITION.
3. PROVIDE WITH NEUTRALIZATION KIT.
4. PROVIDE WITH BAGNET CONNECTIVITY.

S= STORAGE

1

PLUMBING EXPANSION TANK SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NUMBER	TYPE/ CONFIG	LOCATION	TANK VOLUME (GAL)	MAX. ACCEPTANCE VOLUME (GAL)	SIZE (DIA x H)	REMARKS
PET-1	AMTROL MODEL ST-42VC-DD	D/V	MECHANICAL ROOM - AREA C	23.2	11.3	15 x 33	1

TYPE:
C = COMPRESSION
D = DIAPHRAGM

CONFIG:
H = HORIZONTAL
V = VERTICAL

REMARKS:
1. TANK SHALL BE ASME CONSTRUCTION

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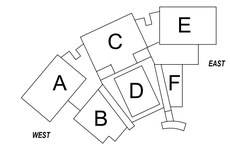
NORTH



KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

PLUMBING SCHEDULES AND DIAGRAMS

Date 07/08/2024
Scale 1/8" = 1'-0"
Proj. Number 22367.00

Drawing Number P601

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1 MECHANICAL DUCTWORK FIRST FLOOR PLAN - B
1/8" = 1'-0"

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EAST
WEST
SOUTH

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	07/08/2024	PHASE 2

MECHANICAL FIRST FLOOR PLAN - PART B

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: M101B

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1 MECHANICAL DUCTWORK FIRST FLOOR PLAN - C
1/8" = 1'-0"

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NORTH
EAST
WEST
SOUTH

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MECHANICAL FIRST FLOOR PLAN - PART C

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: M101C

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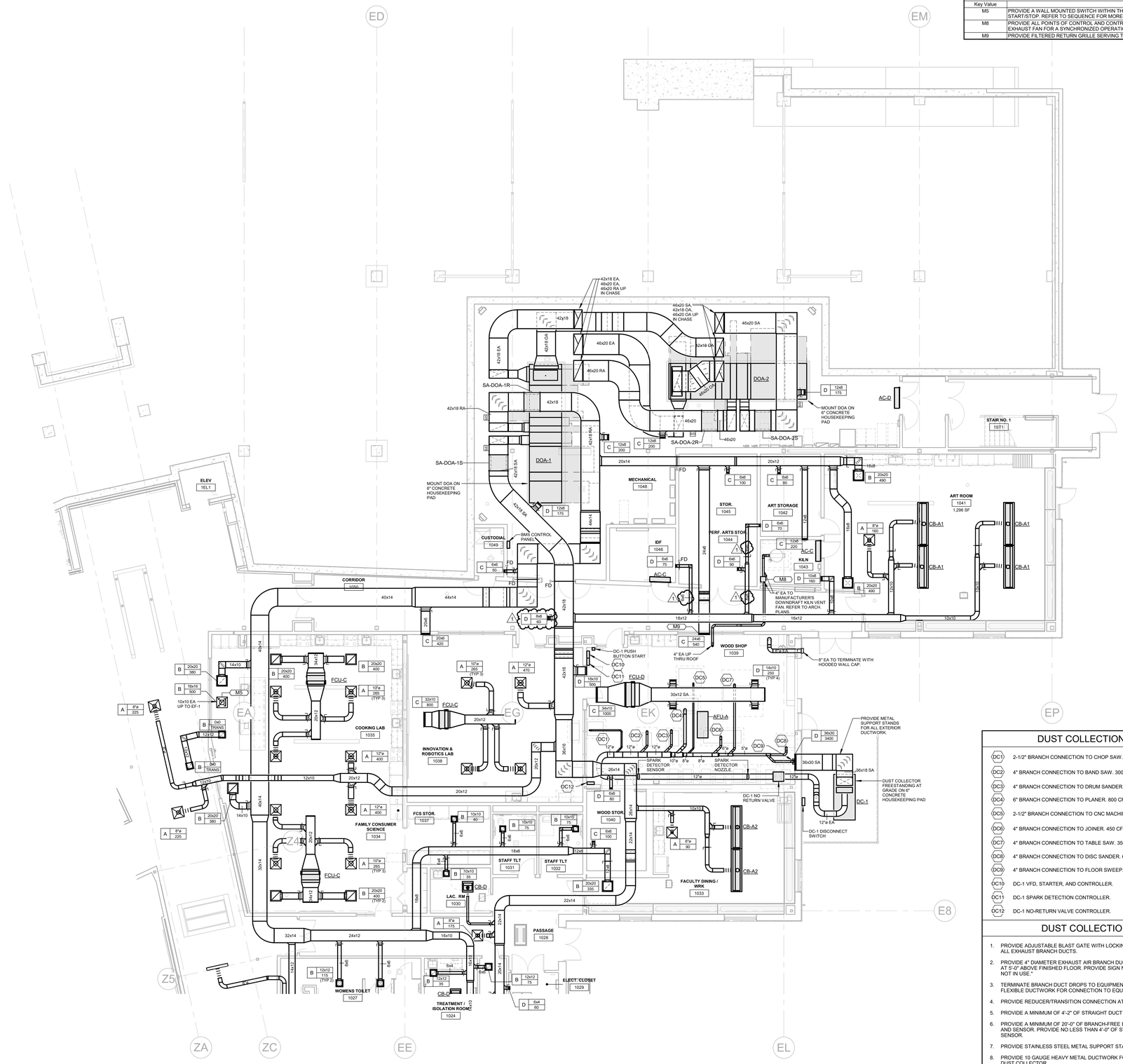
KEYNOTES - MECHANICAL	
Key Value	Keynote Text
M5	PROVIDE A WALL MOUNTED SWITCH WITHIN THE COOKING LAB CLASSROOM FOR EXHAUST FAN EF-1 START/STOP. REFER TO SEQUENCE FOR MORE INFORMATION.
M8	PROVIDE ALL POINTS OF CONTROL AND CONTROLS WIRING BETWEEN THE KILN CONTROLLER AND DOWNDRAFT EXHAUST FAN FOR A SYNCHRONIZED OPERATION.
M9	PROVIDE FILTERED RETURN GRILLE SERVING THE WOOD SHOP.



1 MECHANICAL DUCTWORK FIRST FLOOR PLAN - E
1/8" = 1'-0"

DUST COLLECTION EQUIP. KEY NOTES	
DC1	2-1/2" BRANCH CONNECTION TO CHOP SAW. 150 CFM
DC2	4" BRANCH CONNECTION TO BAND SAW. 300 CFM
DC3	4" BRANCH CONNECTION TO DRUM SANDER. 600 CFM
DC4	6" BRANCH CONNECTION TO PLANER. 800 CFM
DC5	2-1/2" BRANCH CONNECTION TO CNC MACHINE. 150 CFM
DC6	4" BRANCH CONNECTION TO JOINER. 450 CFM
DC7	4" BRANCH CONNECTION TO TABLE SAW. 350 CFM
DC8	4" BRANCH CONNECTION TO DISC SANDER. 600 CFM
DC9	4" BRANCH CONNECTION TO FLOOR SWEEP.
DC10	DC-1 VFD, STARTER, AND CONTROLLER.
DC11	DC-1 SPARK DETECTION CONTROLLER.
DC12	DC-1 NO-RETURN VALVE CONTROLLER.

DUST COLLECTION GENERAL NOTES

1. PROVIDE ADJUSTABLE BLAST GATE WITH LOCKING SCREW INSATLLED AT 8'-0" ABOVE FINISHED FLOOR IN ALL EXHAUST BRANCH DUCTS.
2. PROVIDE 4" DIAMETER EXHAUST AIR BRANCH DUCTS TO ALL FLOOR SWEEPS WITH BLAST GATE INSATLLED AT 5'-0" ABOVE FINISHED FLOOR. PROVIDE SIGN NEXT TO EACH ON WALL, "KEEP BLAST GATE CLOSED WHEN NOT IN USE."
3. TERMINATE BRANCH DUCT DROPS TO EQUIPMENT AT 5'-0" AFF. PROVIDE MAXIMUM 5'-0" OF HIGH PRESSURE FLEXIBLE DUCTWORK FOR CONNECTION TO EQUIPMENT.
4. PROVIDE REDUCER/TRANSITION CONNECTION AT EACH PIECE OF EQUIPMENT.
5. PROVIDE A MINIMUM OF 4'-2" OF STRAIGHT DUCT BEFORE AND AFTER THE NO RETURN VALVE.
6. PROVIDE A MINIMUM OF 20'-0" OF BRANCH-FREE DUCTWORK MAIN BETWEEN THE SPARK DETECTOR NOZZLE AND SENSOR. PROVIDE NO LESS THAN 4'-0" OF STRAIGHT DUCT RUN BEFORE AND AFTER THE NOZZLE AND SENSOR.
7. PROVIDE STAINLESS STEEL METAL SUPPORT STANDS FOR ALL EXTERIOR DUCTWORK AND EQUIPMENT.
8. PROVIDE 10 GAUGE HEAVY METAL DUCTWORK FOR ALL DUCTWORK BETWEEN THE NO RETURN VALVE AND DUST COLLECTOR.
9. COORDINATE FINAL DUST COLLECTION POINTS WITH APPROVED EQUIPMENT SHOP DRAWINGS, EXISTING EQUIPMENT CONNECTORS, AND FINAL EQUIPMENT LAYOUT APPROVED BY THE ARCHITECT AND OWNER. LOCATIONS AND ORIENTATIONS OF EQUIPMENT ARE SUBJECT TO CHANGE.
10. PROVIDE MANUFACTURER'S RECOMENDED HEPA FILTER ON THE RECIRCULATING DUCTWORK EXTERIOR OF THE BUILDING.

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Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
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STATE PROJECT NO: 057-0114 N

NORTH
EAST
WEST
SOUTH

KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

MECHANICAL FIRST FLOOR PLAN - PART E

Date: 07/08/2024
Scale: As indicated
Proj. Number: 22367.00
Drawing Number: M101E

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KEYNOTES - MECHANICAL	
Key Value	Keynote Text
M1	ROUTE CONDENSATE PIPING TO THE NEAREST STORM PIPE AND CONNECT WITH AN INDIRECT DRAIN CONNECTION. REFER TO PLUMBING PLANS FOR STORM PIPING COORDINATION AND INDIRECT CONNECTION DETAIL.
M3	PROVIDE CONDENSATE DRAIN AND TRAP, AND ROUTE DOA CONDENSATE PIPING TO THE NEAREST STORM PIPE LOCATED AT THE MECHANICAL ROOM FLOOR. PROVIDE AN INDIRECT PIPE CONNECTION TO THE STORM PIPE AND SIZE THE CONDENSATE PIPE AND TRAP PER THE MANUFACTURER'S REQUIREMENTS. REFER TO PLUMBING PLANS FOR STORM PIPING COORDINATION AND INDIRECT CONNECTION DETAIL.

1 MECHANICAL PIPING FIRST FLOOR PLAN - A
1/8" = 1'-0"

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KEYPLAN

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	07/08/2024	PHASE 2

MECHANICAL PIPING FIRST FLOOR PLAN - PART A

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: MP101A

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KEYNOTES - MECHANICAL	
Key Value	Keynote Text
M1	ROUTE CONDENSATE PIPING TO THE NEAREST STORM PIPE AND CONNECT WITH AN INDIRECT DRAIN CONNECTION. REFER TO PLUMBING PLANS FOR STORM PIPING COORDINATION AND INDIRECT CONNECTION DETAIL.

1 MECHANICAL PIPING FIRST FLOOR PLAN - B
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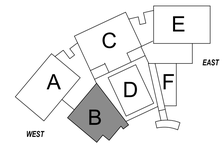

KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

MECHANICAL PIPING FIRST FLOOR PLAN - PART B

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: MP101B

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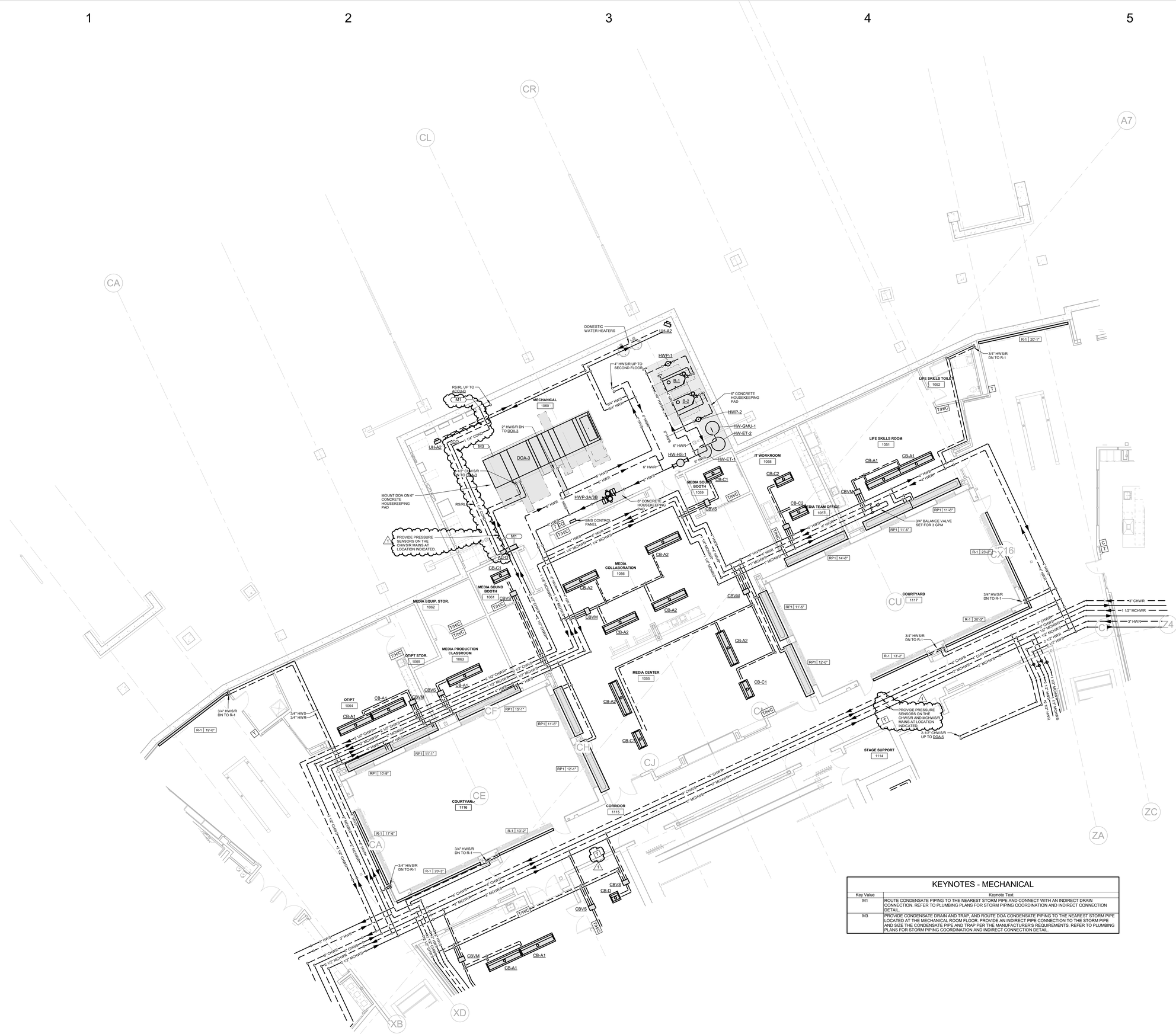

1 MECHANICAL PIPING FIRST FLOOR PLAN - C
1/8" = 1'-0"

KEYNOTES - MECHANICAL

Key Value	Keynote Text
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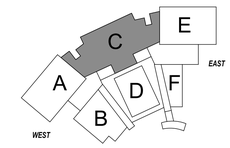

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Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

MECHANICAL PIPING FIRST FLOOR PLAN - PART C

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: MP101C

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KEYNOTES - MECHANICAL	
Key Value	Keynote Text
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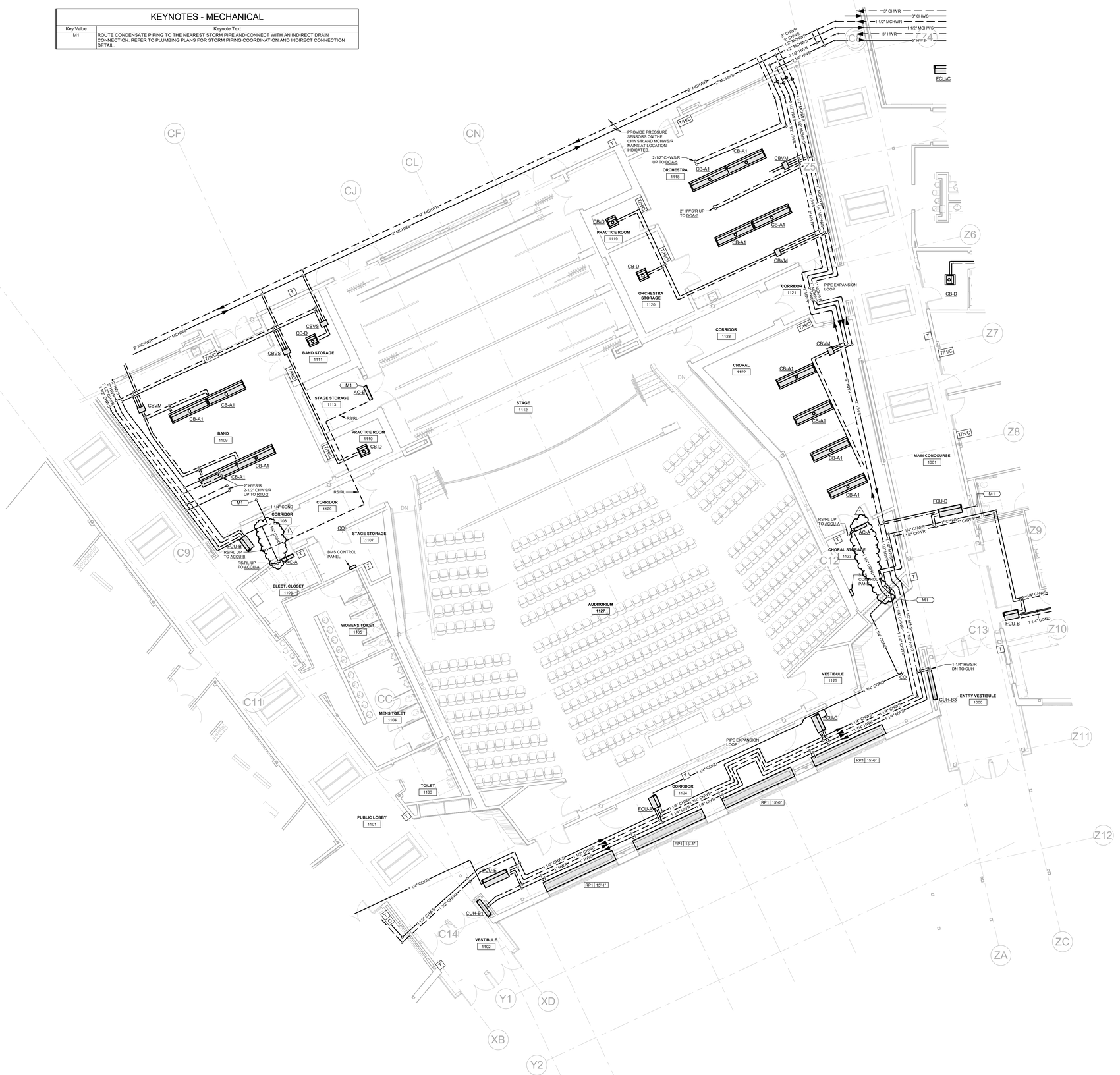

1 MECHANICAL PIPING FIRST FLOOR PLAN - D
1/8" = 1'-0"

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Number	Date	Issued For
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MECHANICAL PIPING FIRST FLOOR PLAN - PART D

Date: 07/08/2024
Scale: 1/8" = 1'-0"
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Drawing Number: MP101D

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KEYNOTES - MECHANICAL	
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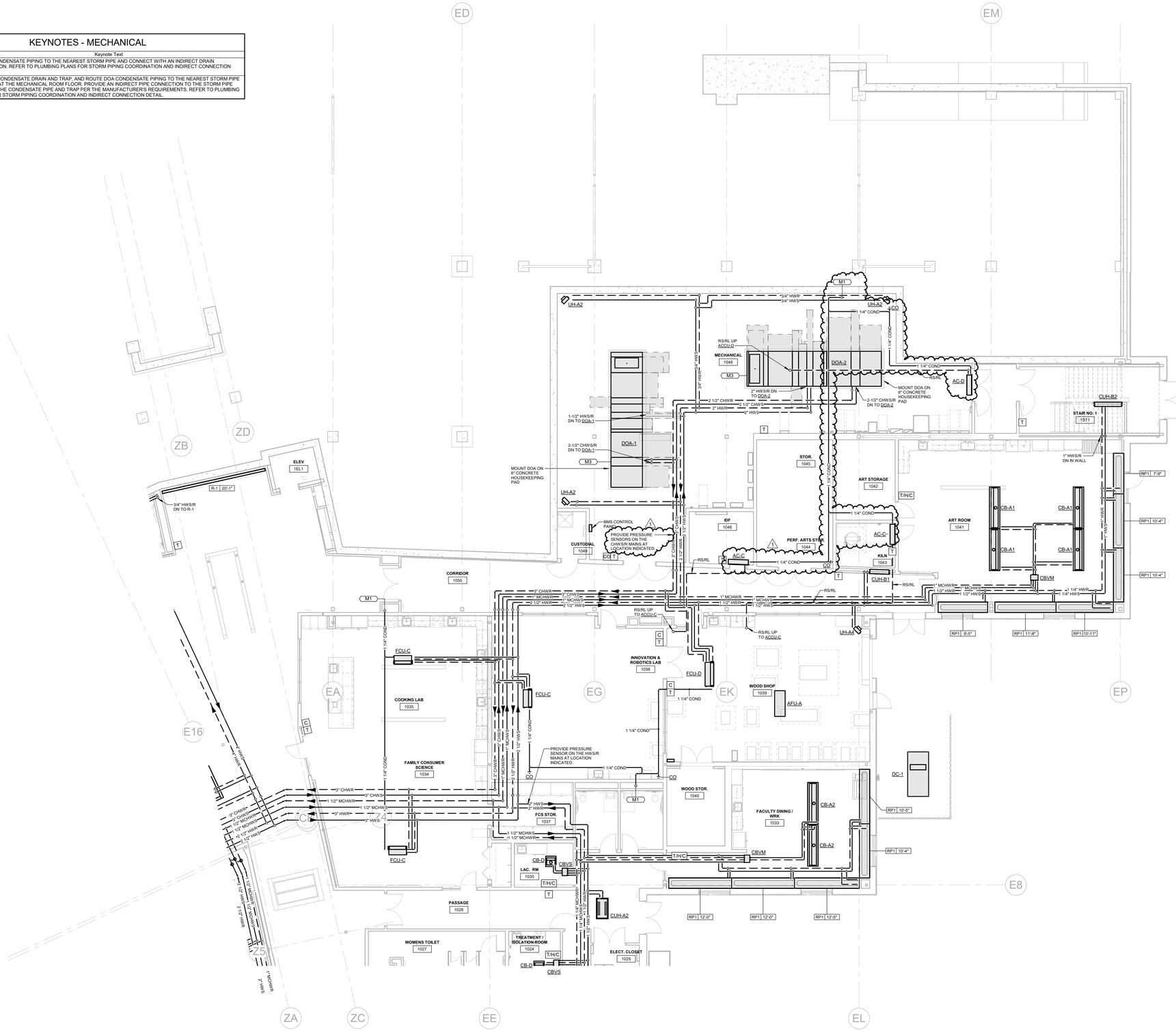

1 MECHANICAL PIPING FIRST FLOOR PLAN - E
1/8" = 1'-0"

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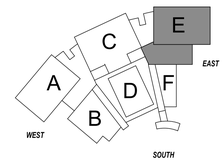

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MECHANICAL PIPING FIRST FLOOR PLAN - PART E

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00

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1 MECHANICAL PIPING SECOND FLOOR PLAN - A
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MECHANICAL PIPING SECOND FLOOR PLAN - PART A

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00

Drawing Number: MP102A

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1 MECHANICAL PIPING SECOND FLOOR PLAN - C
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MECHANICAL PIPING SECOND FLOOR PLAN - PART C

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: MP102C

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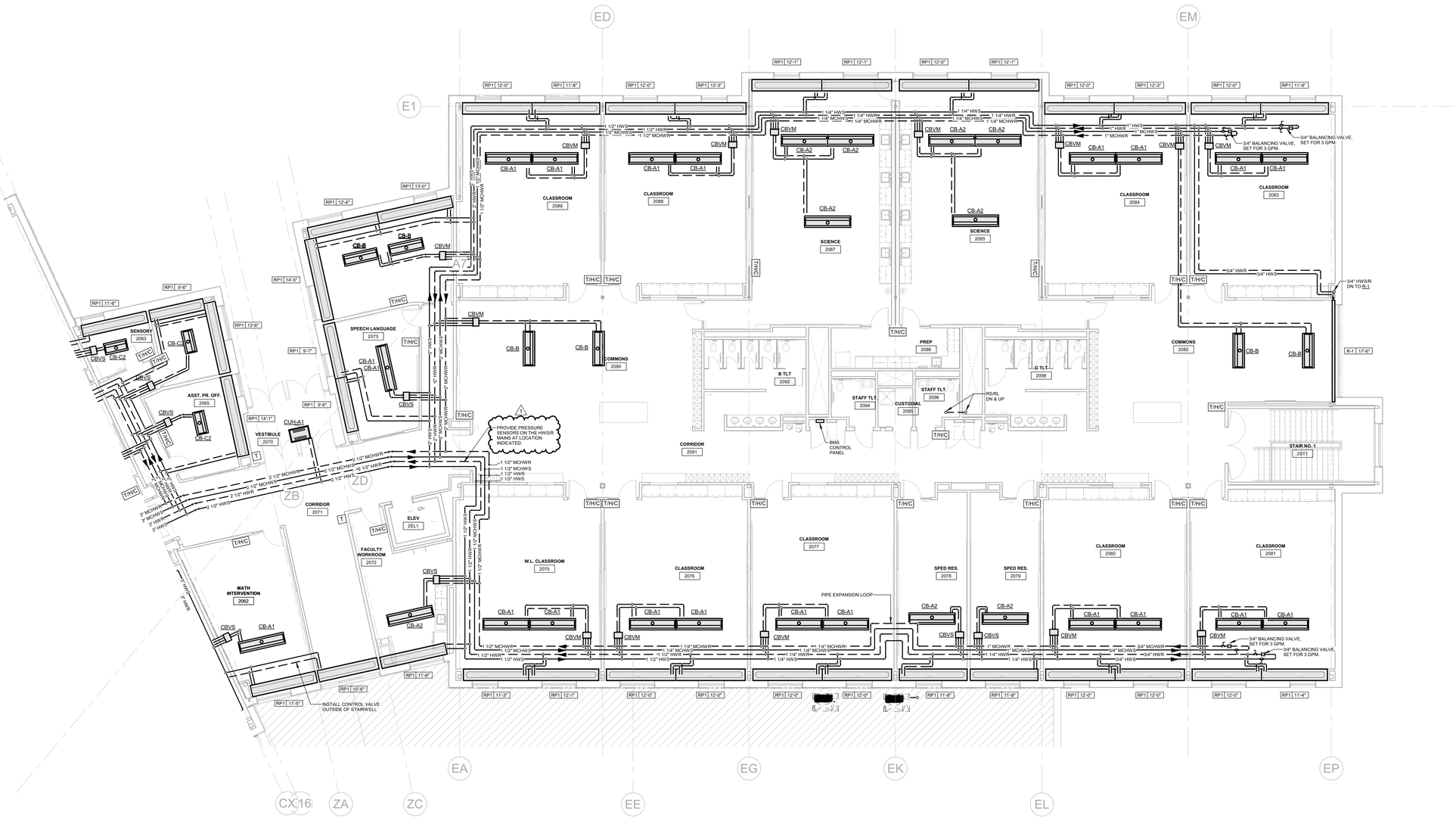

1 MECHANICAL PIPING SECOND FLOOR PLAN - E
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MECHANICAL PIPING SECOND FLOOR PLAN - PART E

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
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FINNED TUBE/PANEL RADIATOR SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NUMBER	CAPACITY BTUH/LF	EWT (°F)	LWT (°F)	FLOW GPM	ENCLOSURE HEIGHT	MOUNTING HEIGHT TO BOTTOM	NO. OF TUBES	PIPE SIZE	FLOW RATE (GPM)	REMARKS
R-1	RUNTAL R2F-2	500	130	110	SEE PLANS	5.75"	3"	2	SEE PLANS	1.0	1-4 & 7
R-2	RUNTAL R2F-3	675	130	110	SEE PLANS	8.50"	18'-6"	2	SEE PLANS	3.75	1, 2, 3, 5, 6, & 7

REMARKS:

1. PROVIDE TRIM PIECES AS REQUIRED FOR A COMPLETE WALL TO WALL INSTALLATION. TRIM SHALL COMPLETELY ENCLOSE ALL PIPING, FITTINGS AND VALVES.
2. PROVIDE WITH STANDARD POWDER COATED FINISH. FINISH COLOR TO BE SELECTED BY ARCHITECT FROM STANDARD COLOR CHART.
3. PROVIDE ALL REQUIRED MOUNTING HARDWARE.
4. UNIT SHALL BE FLOOR MOUNTED PEDISTAL TYPE.
5. VALVES SHALL BE CONCEALED ABOVE CEILING ADJACENT TO GYMNASIUM. REFER TO PIPING DETAILS
6. UNIT SHALL BE WALL MOUNTED TYPE. PROVIDE WITH WALL MOUNTING BRACKETS.
7. COORDINATE AND VERIFY EXACT LENGTH OF ELEMENT FOR WALL TO WALL INSTALLATION PRIOR TO ORDERING.

HYDRONIC RADIANT CEILING PANEL SCHEDULE

GENERAL			PHYSICAL				PERFORMANCE		REMARKS			
			DIMENSIONS		TUBING							
TAG	MANUFACTURER	MODEL	WIDTH (IN)	LENGTH (IN)	SIZE (IN)	PASSES (NO.)	FLOW (GPM)	CAPACITY (BTUH/LF)	TYPE	RATINGS	FEATURES	INSTALL
RP-1	AIRTITE	AR-X	24	SEE PLANS	1/2	4	0.50	145	1	ALL	ALL	ALL

REMARKS - TYPE	REMARKS - RATINGS	REMARKS - FEATURES	REMARKS - INSTALL
1. EXTRUDED ALUMINUM LINEAR PANEL	1. 120°F MEAN FLUID TEMPERATURE, 70°F SPACE TEMPERATURE, 67°F AVERAGE UNHEATED SURFACE TEMPERATURE, 30% PPG WATER	1. LAY-IN T-BAR CEILING MOUNT, MINIMUM 0.0725" INTERLOCKING EXTRUDED ALUMINUM PANELS WITH INTEGRAL TUBE SADDLES, STEEL CROSS BRACES, TYPE L COPPER TUBING CLIPED INTO SADDLES, WITH PANEL INTERCONNECTORS, RETURN U-BENDS, MOUNTING HARDWARE, AND ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION. 2. PROVIDE MOUNTING ACCESSORIES INCLUDING OVERLAPPING FINISH TRIM AT ENDS (AND SIDES IF NECESSARY) THAT ALLOWS FOR EXPANSION AND CONTRACTION OF THE CEILING PANEL WITHOUT ADVERSE AFFECT ON THE ADJACENT ARCHITECTURAL FINISHES OR ON ADJACENT PANELS, AND THAT DOES NOT SHOW GAPS IN THE CEILING WHERE PANELS ARE INSTALLED.	1. SEE DETAILS 8/M502 AND 9/M502 2. PROVIDE 1" BATT INSULATION WITH FOIL FACE OVER THE ENTIRE TOP SURFACE, EXCEPT 1" THICK RIGID INSULATION AT GAPS AT JOISTS AND BEAMS. 3. FOR LENGTHS OVER 16' PROVIDE TWO PANELS ABUTTING AT A T-BAR, AND SEPARATED WITH A T-BAR RUNNER ALIGNED WITH THE CEILING T-BAR RUNNERS. THE TWO LENGTHS MAY NOT BE EQUAL. SEE REMARKS - FEATURES FOR CUTTING TO LENGTH IN THE FIELD. 4. REFER TO PIPING DETAILS FOR INSTALLATION REQUIREMENTS. 5. PROVIDE WALL TO WALL INSTALLATION. COORDINATE AROUND COLUMNS AND ARCHITECTURAL LAYOUT. 6. VERIFY LENGTHS PRIOR TO ORDERING PANELS. 7. PROVIDE FILLER PANELS WHERE REQUIRED TO INFILL AROUND COLUMN ENCLOSURES, ETC. REFER TO PLANS FOR LOCATIONS

FAN SCHEDULE

GENERAL					PHYS.	PERFORMANCE						ELECTRICAL			REMARKS			
SYMBOL	MANUFACTURER	MODEL	LOCATION	SERVICE	WEIGHT (LBS)	CFM	SP (IN WG)	BHP	SONES	PLUME HEIGHT (FT)	FAN RPM	HP	VOLTS	PHASE	TYPE	RATINGS	FEATURES	INSTALL
KHEF-1	COOK	195VH17D	ROOF	KITCHEN HOOD GREASE EXHAUST	355	3,500	2.0	1.98	20	N/A	1725	3	208	3	1	ALL	3 & 4	1,2 & 4
DWEF-1	COOK	150RH17D	ROOF	DISHWASHER HOOD EXHAUST	125	600	1.25	0.27	9.9	N/A	1725	1/2	115	1	1	ALL	1 & 5	1 & 3
EF-1	COOK	100C17DEC	ROOF	GENERAL EXHAUST	70	500	0.25	N/A	6.8	N/A	1725	1/4	115	1	2	ALL	1 & 5	1 & 6
DEF-1	FANTECH	DEDPV-705	KITCHEN	DRYER EXHAUST	13.3	75	0.25	N/A	N/A	N/A	2852	N/A	120	1	3	ALL	6 - 9	1 & 5
EF-2	COOK	70C17DEC	ROOF	GENERAL EXHAUST	17	100	0.20	N/A	N/A	N/A	1300	N/A	115	1	2	ALL	1 & 5	1 & 6

REMARKS - TYPE:
1. ROOF MOUNTED DIRECT DRIVE CENTRIFUGAL UPBLAST.
2. ROOF MOUNTED BELT DRIVE CENTRIFUGAL DOWNBLAST.
3. INLINE EXHAUST VENTILATOR

REMARKS - RATINGS:
1. AMCA AIR & SOUND CERTIFIED
2. AIR PERFORMANCE IN ACCORDANCE WITH AMCA 210.
3. SOUND PERFORMANCE IN ACCORDANCE WITH AMCA 300.
4. UL LISTED.
5. FAN PERFORMANCE INCLUDES MEDIUM DRIVE LOSS.

REMARKS - FEATURES:
1. PROVIDE EC MOTOR WITH FAN MOUNTED SPEED ADJUSTMENT DIAL.
2. PROVIDE FACTORY NEMA 1 PRE-WIRED DISCONNECT.
3. PROVIDE UL762 LISTED POWER VENTILATOR FOR RESTAURANT EXHAUST WITH GREASE TERMINATOR, HINGED BASE, NEMA 3 PRE-WIRE DISCONNECT, AND VENTILATED ROOF CURB.
4. PROVIDE WITH FAN MOUNTED VFD BY OTHERS.
5. PROVIDE FAN WITH 18" HIGH ROOF CURB, MOTORIZED BACKDRAFT DAMPER, AND NEMA 1 PRE-WIRED DISCONNECT.
6. PRESSURE SENSING SWITCH
7. GALVANIZED STEEL, LEAK-PROOF HOUSING
8. IP44 ENCLOSURE CLASS MOTOR
9. CIRCULAR INLET AND OUTLET, PROVIDE WITH LINT TRAP

REMARKS - INSTALL:
1. FAN SHALL BE CONTROLLED BY BMS. COORDINATE WITH ATC.
2. FAN SHALL BE INTERLOCKED WITH HOOD OPERATION.
3. FAN SHALL BE INTERLOCKED WITH DISHWASHER OPERATION.
4. PROVIDE VFD FOR CONTROL OF FAN
5. FAN SHALL BE INTERLOCKED WITH DRYER OPERATION.
6. FAN SHALL BE INTERLOCKED WITH ON/OFF SWITCH IN ASSOCIATED ROOM.

SPLIT SYSTEM AC UNIT - INDOOR AIR HANDLER SCHEDULE

SYMBOL	MANUFACTURER	MODEL	TYPE	LOCATION	NOM. TONS	FAN	CAPACITIES		REFRIGERANT PIPING FROM CONTROLLER TO AIR HANDLER		ELECTRICAL			SOUND PRESSURE (DBA)	REMARKS
						CFM (LOW-HIGH)	COOLING (BTUH)	HEATING (BTUH)	LIQUID	GAS	W	VOLTS	PHASE		
AC-A	MITSUBISHI	PKA-A12LA1	WALL	VARIES	1.0	152-297	12,000	N/A	1/4	1/2	30	208	1	48	ALL
AC-B	MITSUBISHI	PKA-A18LA1	WALL	VARIES	1.5	265-450	18,000	N/A	1/4	1/2	30	208	1	48	ALL
AC-C	MITSUBISHI	PKA-A24KA8	WALL	VARIES	2.0	635-775	24,000	N/A	3/8	5/8	69	208	1	45	ALL
AC-D	MITSUBISHI	PKA-A30KA7	WALL	VARIES	2.5	635-775	30,000	N/A	3/8	5/8	69	208	1	45	ALL

REMARKS:
1. PROVIDE DRAIN PAN CONDENSATE SENSOR MISTUBISHI MODEL SS610E. UNIT SHALL SHUT DOWN BEFORE OVERFLOW CAN OCCUR.
2. COOLING MBH AT 75°F EDB, 72°F EWB, 95°F ODB
3. PROVIDE WITH MICROBLUE CONDENSATE PUMP TO BE POWERED BY THE SPLIT SYSTEM AC UNIT. REFER TO MANUFACTURER'S REQUIREMENTS.
4. PROVIDE WITH MAXIBLUE CONDENSATE PUMP TO BE POWERED BY THE SPLIT SYSTEM AC UNIT. REFER TO MANUFACTURER'S REQUIREMENTS.
5. PROVIDE WITH CONDENSATE PUMP FASCIA KIT.
6. INDOOR UNIT IS POWERED BY THE OUTDOOR UNIT.
7. INSATLL CONDENSATE PUMP TO BE WALL MOUNTED WITH KIT COVER FOR EASY ACCESS.

SPLIT SYSTEM OUTDOOR UNIT SCHEDULE

SYMBOL	MANUFACTURER	MODEL	LOCATION	NOMINAL TONS	CAPACITIES		ELECTRICAL			SOUND PRESSURE (DBA)	WEIGHT (LBS)	REMARKS	UNITS SERVED
					COOLING (BTUH)	HEATING (BTUH)	MCA	VOLTS	PHASE				
ACCU-A	MITSUBISHI	PUY-A12NKA7	ROOF	1.0	12,000	N/A	11	208	1	46	93	ALL	AC-A
ACCU-B	MITSUBISHI	PUY-A18NKA7	ROOF	1.5	18,000	N/A	11	208	1	46	100	ALL	AC-B
ACCU-C	MITSUBISHI	PUY-A24NHA7	ROOF	2.0	24,000	N/A	19	208	1	47	151	ALL	AC-C
ACCU-D	MITSUBISHI	PUY-A30NHA7	ROOF	2.5	30,000	N/A	19	208	1	47	151	ALL	AC-D

REMARKS:
1. COOLING ONLY, R410A REFRIGERANT. COOLING MBH AT 75°F EDB, 72°F EWB, 95°F ODB
2. ROUTE REFRIGERANT PIPING FROM CONDENSING UNIT TO ASSOCIATED EVAPORATOR UNIT. COORDINATE EXACT ROUTING IN FIELD. REFERIGERANT PIPE SIZE BY EQUIPMENT MANUFACTURER
3. PROVIDE BACNET ADAPTER FOR CONTROL INTERFACE THROUGH THE BMS.
4. INSTALL ON RAILS A MINIMUM OF 18" ABOVE ROOF. REFER TO MANUFACTURERS INSTALLATIONS INSTRUCTIONS.
5. PROVIDE WITH VARIABLE SPEED INVERTER-DRIVEN COMPRESSOR.
6. SOUND PRESSURE LEVELS PER ISO STANDARD 1996.
7. PROVIDE WITH SNOW/HAIL GUARD.

SPLIT SYSTEM COOLING UNIT GENERAL NOTES

1. UNLESS OTHERWISE INDICATED, CONDENSATE PIPING IS 3/4". PROVIDE A MINIMUM 2" WATER SEAL TRAP AT THE CONNECTION TO THE AIR HANDLING UNIT
2. CONDENSATE PIPING SHALL BE COPPER AND SHALL BE INSULATED WITH 1" THICK INSULATION. REFER TO SPECIFICATIONS.
3. MOUNT EACH MODULE ROOF REFRIGERANT UNIT ON TWO ROOF RAILS, SIMILAR TO THYCURB MODEL TEMS, GALVANIZED STEEL, 18" HIGH. ATTACH RAILS TO THE DECK STRUCTURE, THEN ROOF AND FLASH WATERTIGHT.
4. PROVIDE SPLIT SYSTEM REFRIGERANT PIPING AND CONTROL WIRING BETWEEN THE INDOOR UNIT AND THE OUTDOOR UNIT
5. UNITS SHALL BE PROVIDED WITH R410A REFRIGERANT.
6. PROVIDE WITH BACNET INTERFACE.

HVLS FAN SCHEDULE

GENERAL			PHYSICAL			ELECTRICAL				
SYMBOL	MANUFACTURER	MODEL	SIZE	WEIGHT (LBS)	NUMBER OF BLADES	MAXIMUM RPM	VOLTS	PHASE	AMPS	REMARKS
CF-A	HUNTER	ECO 8	8'	90	4	156	240	1	6.5	ALL

REMARKS:
1. PROVIDE WITH ONE WALL MOUNTED TOUCHSCREEN INTERFACE PER ROOM.
2. PROVIDE ALL EXTENSION PIECES NECESSARY FOR COMPLETE INSTALLATION
3. PROVIDE WITH GEARLESS, BRUSHLESS, VARIABLE SPEED, DIRECT DRIVE MOTOR
4. PROVIDE WITH ONBOARD MICROPROCESSOR CONTROLS WITH BMS INTEGRATION.
5. COLOR AND FINISH SHALL BE SELECTED BY ARCHITECT.
6. FAN SHALL BE SHUTDOWN IN EVENT OF FIRE ALARM ACTUATION. COORDINATE WITH DIV. 26.

FAN COIL UNIT SCHEDULE

SYMBOL	MANUFACTURER MODEL NUMBER	TYPE	NOM. TONS	CFM	ESP (IN. W.C.)	COOLING PERFORMANCE										HOT WATER HEATING PERFORMANCE							ELECTRICAL					REMARKS
						COOLING CAP (MBH)	SENSIBLE CAP (MBH)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	FLOW RATE (GPM)	WATER PD (FT)	CHWS (°F)	CHWR (°F)	ROWS	HEATING CAP (MBH)	EAT (°F)	LAT (°F)	FLOW RATE (GPM)	WATER PD (FT)	HWS (°F)	HWR (°F)	VOLTS	PHASE	HP	MCA	FLA	
FCU-A	IEC HPY06	DC	1.0	400	0.30	11.0	9.2	75.0	63.0	54.0	53.5	1.5	0.6	42	57.0	6	9.78	70	92.1	0.65	0.3	130	100	115	1	1/2	4.625	3.7	ALL
FCU-B	IEC HPY08	DC	1.5	600	0.30	17.4	14.1	75.0	63.0	53.6	53.0	2.3	1.3	42	57.0	6	15.5	70	93.5	1.0	0.6	130	100	115	1	1/2	5.375	4.3	ALL
FCU-C	IEC HPY10	DC	2.0	800	0.30	24.3	19.3	75.0	63.0	53.0	52.5	3.2	2.5	42	57.0	6	20.9	70	93.7	1.4	1.1	130	100	115	1	1/2	8.0	6.4	ALL
FCU-D	IEC HPY12	DC	2.5	1,000	0.30	31.8	24.7	75.0	63.0	52.5	51.9	4.2	4.2	42	57.0	6	26.7	70	94.2	1.8	1.8	130	100	115	1	1/2	7.425	6.6	ALL
FCU-E	IEC HPY14	DC	3.0	1,200	0.30	35.2	28.3	75.0	63.0	53.5	52.9	4.7	1.9	42	57.0	6	32.5	70	94.5	2.2	2.7	130	100	115	1	1/2	10.0	8.9	ALL
FCU-F	IEC CBY03	CR	0.50	230	N/A	6.6	5.1	75.0	63.0	54.3	53.0	1.0	4.2	42	57.0	4	2.6	70	80.3	0.50	0.10	130	100	115	1	0.14	1.875	1.5	ALL

TYPE:
DC = DUCTED CONCEALED
CR = CEILING RECESSED

REMARKS:
1. FANS SHALL HAVE EC MOTORS.
2. PROVIDE WITH LOW PROFILE, PLENUM RATED, TANK TYPE CONDENSATE PUMP, 1/30 HP, 115V, 1 PH, 60HZ, 70 GPH AT 5 FT. W.G. LITTLE GIANT VCCA-20-P OR APPROVED EQUAL. PROVIDE WHERE ONLY WHERE GRAVITY DRAINAGE CANNOT BE MAINTAINED ABOVE THE CIELING. COORDINATE ELECTRICAL REQUIREMENTS WITH DIVISION 26.
3. PROVIDE CONTROL INTERFACE WITH BMS. COORDINATE CONTROLS WITH ATC.
4. RIGHT-HAND OR LEFT-HAND ACCESS, AND SAME SIDE ELECTRIC, COIL, AND CONTROL ACCESS
5. STAINLESS STEEL DRIAN PAN WITH EXTERNAL INSULATION
6. PROVIDE DRAIN PAN CONDENSATE SENSOR. UNIT SHALL SHUT DOWN BEFORE OVERFLOW CAN OCCUR.

VARIABLE AIR VOLUME (VAV) TERMINAL UNIT SCHEDULE

GENERAL			PHYS.	PERFORMANCE									REMARKS			
							SOUND LEVEL		HOT WATER COIL							
TAG	MANUFACTURER	MODEL	INLET SIZE (IN)	DESIGN AIRFLOW (CFM)	MIN. AIRFLOW (CFM)	MAX AIR PRESS. DROP. (IN.WG)	SOUND SOURCE	MAX NC	HEATING CFM	MBH	LAT (°F)	GPM	LWT (°F)	MAX WPD (FT WG)	TYPE	RATINGS	FEATURES	INSTALL
VAV-A	TRANE	VCWF08	8	355	125	0.50	RADIATED	25	355	11.6	85.0	1.0	103.5	10.0	ALL	ALL	ALL	ALL
							DISCHARGE	25										
VAV-B	TRANE	VCWF14	14	1,260	500	0.50	RADIATED	25	1,260	41.0	85.0	3.0	101.1	10.0	ALL	ALL	ALL	ALL
							DISCHARGE	25										
VAV-C	TRANE	VCWF14	14	1,500	500	0.50	RADIATED	25	1,500	48.8	85.0	3.5	100.8	10.0	ALL	ALL	ALL	ALL
							DISCHARGE	25										

REMARKS - TYPE	REMARKS - RATINGS	REMARKS - FEATURES	REMARKS - INSTALL
1. AIR ONLY (NOT FAN POWERED), PRESSURE INDEPENDENT, 2-ROW HOT WATER COIL	1. PERFORMANCE CERTIFIED IN ACCORDANCE WITH ARI 880 2. HOT WATER COIL PERFORMANCE AT 55°F EAT, 130°F EWT 30% PROPYLENE GLYCOL SOLUTION. 3. SOUND POWER LEVELS ARE PER ARI 885-98/08, AT 1.5" INLET STATIC PRESSURE AND 1.0" DOWNSTREAM PRESSURE	1. 1" FIBERGLASS LINER. 2. ROUND INLET AND OUTLET. 3. INLET TEMPERATURE SENSOR. 4. ACCESS PANEL. 5. PROVIDE WITH 24 VOLT CONTROLS WIRING BY THE MECHANICAL CONTRACTOR (A TRANSFORMER IS NOT ACCEPTABLE)	1. UNLESS OTHERWISE INDICATED, UNSIZED DISCHARGE DUCTWORK SHALL BE THE SAME SIZE (INSIDE CLEAR) AS THE UNIT/COIL DUCT CONNECTION. 2. PROVIDE A MIN. OF 3 INLET DIAMETERS OF STRAIGHT DUCT, SAME SIZE AS VAV INLET, UPSTREAM OF TERMINAL. 3. PROVIDE A MIN. OF 5' OF STRAIGHT DUCT, DOWNSTREAM OF TERMINAL, PRIOR TO ANY FITTINGS OR TAKEOFFS. 4. THE FIRST 5'-0" (MINIMUM) OF DUCTWORK DOWNSTREAM OF THE UNIT SHALL BE PROVIDED WITH 1" THICK ACOUSTICAL LINING. 5. SELECT AUTOMATIC BALANCING VALVE FOR GPM INDICATED OR NEXT HIGHER SIZE.

DUST COLLECTOR SCHEDULE

GENERAL			PHYSICAL		FAN DATA						PRIMARY FILTER				ELECTRICAL			
TAG	MANUFACTURER	MODEL	WEIGHT (LBS)	L x W x H (IN.)	TYPE	CFM	EXT SP (IN.)	RPM	MOTOR HP	DRIVE TYPE	DESCRIPTION	EFFICIENCY AT 10 µM	FILTER SHAKER MOTOR HP	DUST STORAGE	VOLTAGE	PHASE		REMARKS
DC-1	DONALDSON	DFE 2-8	2,300	102x48x144	DONFLOW	3,400	10	1,800	10	DIRECT	CARTRIDGE STYLE	99.5%	N/A	50 GAL. DRUM	460	3		ALL

REMARKS:
1. PROVIDE WITH EXHAUST BLOWER WITH INVERTOR DUTY MOTOR, VFD IN NEMA 12 ENCLOSURE, AND DISCHARGE SILENCER (POINTED AWAY FROM BUILDING) WITH SUPPORT BRACKET.
2. PROVIDE WITH UNIT MOUNTED EXPLOSION VENT (POINTED AWAY FROM BUILDING), REMOTE MOUNTED START/STOP PUSH BUTTON AND NEMA 3R DISCONNECT SWITCH.
3. PROVIDE WITH FIRE RETARDANT FILTERS AND AN ALUMINUM FAN WHEEL.
4. NFPA REINFORCED SEALED DRUM KIT.
5. NFPA 12" NRV PASSIVE BACKDRAFT DAMPER WITH ACCUMULATION AND MICRO-SWITCH SENSORS.
6. MANUFACTURER'S SMART COLLECTOR CONTROL PANEL AND MOUNTING KIT.
7. PROVIDE WITH SPARK DETECTION AND EXTINGUISHMENT SYSTEM (HANSENTEK AN104 OR APPROVED EQUAL).
8. COMPRESSED AIR PULSE-JET FILTER CLEANING.
9. CONTROL WIRING PROVIDED BY THE MECHANICAL CONTROLS CONTRACTOR.
10. PROVIDE MANUFACTURER'S 2x2 MERV EFFICIENT ASHRAE 85 AIR LOCK FILTER DUCT MOUNTED TO THE SA SIDE DUCTWORK.

CABINET UNIT HEATER & UNIT HEATER SCHEDULE

SYMBOL	MANUFACTURER MODEL NUMBER	TYPE	DIMENSIONS (LxWxH)	CFM	HOT WATER HEATING PERFORMANCE					ELECTRICAL				REMARKS
					HEATING CAP (MBH)	FLOW RATE (GPM)	WATER PD (FT)	HWS (°F)	HWR (°F)	VOLTS	PHASE	HP	FLA	
CUH-A1	ZEHNDER RITTLING RFRC-02	RFRC	40x27x10	220	10.8	2.50	0.50	130	100	120	1	1/4	1.33	ALL
CUH-A2	ZEHNDER RITTLING RFRC-03	RFRC	45x27x10	300	14.8	3.50	1.50	130	100	120	1	1/4	1.33	ALL
CUH-B1	ZEHNDER RITTLING RFRWI-03	W	45x10x27	300	14.8	3.50	1.50	130	100	120	1	1/4	1.33	ALL
CUH-B2	ZEHNDER RITTLING RFRWI-06	W	65x27x10	620	30.0	5.50	5.00	130	100	120	1	1/4	2.21	ALL
CUH-B3	ZEHNDER RITTLING RFRWI-08	W	70x27x10	810	38.5	7.50	2.20	130	100	120	1	(2) 1/4	3.16	ALL
UH-A1	ZEHNDER RITTLING RH-18	UH	17x12x15	400	5.6	1.00	0.40	130	100	120	1	1/30	0.70	1 THRU 3
UH-A2	ZEHNDER RITTLING RH-24	UH	17x12x15	450	7.5	1.50	0.55	130	100	120	1	1/30	0.70	1 THRU 3
UH-A3	ZEHNDER RITTLING RH-33	UH	20x13x19	630	10.6	2.00	0.10	130	100	120	1	1/15	0.72	1 THRU 3
UH-A4	ZEHNDER RITTLING RH-47	UH	20x13x19	730	14.6	3.00	0.20	130	100	120	1	1/15	0.72	1 THRU 3

TYPE:
UH = SUSPENDED UNIT HEATER
RFRC = FULLY RECESSED CEILING MOUNT - FACE SUPPLY AND RETURN
W = RECESSED WALL MOUNT - FACE SUPPLY AND RETURN - INVERTED FLOW

REMARKS:
1. PROVIDE CONTROL INTERFACE WITH BMS. COORDINATE CONTROLS WITH ATC.
2. PERFORMANCE BASED ON 30% PROPYLENE GLYCOL SOLUTION, AND 70°F SPACE TEMPERATURE.
3. PROVIDE WITH DISCONNECT SWITCH.
4. PROVIDE 2-ROW HEATING COIL.
5. PROVIDE WITH 1" DISPOSABLE PANEL FILTER.
6. PROVIDE WITH RECESSED WALL OR CEILING INSTALLATION KIT.
7. FINISH COLOR SHALL BE SELECTED BY THE ARCHITECT FROM THE STANDARD COLOR CHART.

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Greenwich Public Schools

Greenwich Central Middle School

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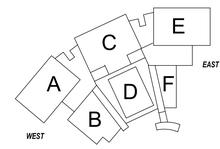
STATE PROJECT NO: 057-0114 N

NORTH / EAST / SOUTH / WEST



KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

MECHANICAL SCHEDULES

Date 07/08/2024
Scale As indicated
Proj. Number 22367.00
Drawing Number M601

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DIFFUSER AND REGISTER SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NUMBER	DUTY	TYPE	BORDER TYPE	CONSTRUCTION			REMARKS
					OBD	FRAME	BLADES	
A	TITUS OMNI	SUPPLY	SP	LAY-IN	NONE	STEEL	STEEL	1,6,7,8,9,10
B	TITUS 50R	RETURN/ EXHAUST	EG	LAY-IN	NONE	STEEL	STEEL	2,7,8
C	TITUS 350RL	RETURN/ EXHAUST	SD	SURFACE	NONE	STEEL	STEEL	4,6,7,8
D	TITUS 300RL	SUPPLY	DD	SURFACE	NONE	STEEL	STEEL	3,7,8
E	TITUS FL-15-HT	SUPPLY	LS	LAY-IN/ SURFACE	NONE	STEEL	STEEL	11,14,16,17
F	TITUS FL-15-HT	SUPPLY	LS	LAY-IN/ SURFACE	NONE	STEEL	STEEL	12,14,16,17
G	TITUS ML-39	RETURN/ EXHAUST	LS	SURFACE	NONE	STEEL	STEEL	13,15,16,17
H	TITUS R-OMNI	SUPPLY	RP	SURFACE	NONE	STEEL	STEEL	5,7,8

TYPES:
SP - SQUARE PLAQUE
EG - 1/2" x 1/2" x 1/2" EGGCRATE
LF - LOUVERED FACE
LS - LINEAR SLOT
DD - DOUBLE DEFLECTION, BLADES PARALLEL TO LONG DIMENSION.
RP - ROUND PLAQUE
SD - SINGLE DEFLECTION, BLADE PARALLEL TO LONG DIMENSION.

INDICATES UNIT TYPE
A | 12x12 / 350
INDICATES NECK SIZE
INDICATES UNIT CFM CAPACITY

1. PERFORMANCE DATA LISTED IS AT MAX AIRFLOW.
2. BORDER TYPES SHALL BE COMPATIBLE WITH THE CEILING TYPE FOR THE ROOM IN WHICH IT IS LOCATED. CONTRACTOR SHALL REVIEW THE ARCHITECTURAL REFLECTED CEILING PLANS FOR SPECIFIC CEILING TYPES IN EACH SPACE.
3. PROVIDE WHITE FINISH UNLESS OTHERWISE NOTED. FINISHES, COLOR, AND BORDER TYPES SHALL BE APPROVED BY THE ARCHITECT.
4. REFER TO PLANS FOR LOCATION, AIR QUANTITIES, TYPE, AND BLOW PATTERN OF EACH DEVICE.

REMARKS:
1. SQUARE PLAQUE DIFFUSER, ADJUSTABLE INDUCTION, 360-DEGREE DISCHARGE PATTERN.
2. SQUARE EGGCRATE GRILLE, LAY-IN OR SURFACE MOUNT.
3. SUPPLY GRILLE, ADJUSTABLE DOUBLE DEFLECTION BLADES, 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION.
4. LOUVERED GRILLE WITH 35-DEGREE FIXED BLADES, 3/4" SPACING. BLADES PARALLEL TO LONG DIMENSION.
5. ROUND PLAQUE DIFFUSER, ADJUSTABLE INDUCTION, 360-DEGREE DISCHARGE PATTERN.
6. PROVIDE HEAVY DUTY TYPE GRILLE WHERE INSTALLED IN THE GYMNASIUM.
7. PROVIDE ALUMINUM CONSTRUCTION FOR DEVICES INSTALLED IN HIGH MOISTURE AREAS INCLUDING TOILET ROOMS, SHOWER ROOMS, KITCHEN, ETC.
8. PROVIDE HARD DUCT CONNECTION WHERE DIFFUSER IS NOT INSTALLED IN A CEILING.
9. PROVIDE MANUFACTURER'S BLANKOFF STRIPS FOR 1,2 OR 3-WAY DISCHARGE FLOW INDICATED BY SUPPLY ARROWS ON THE PLAN.
10. FOR 4" AND 6" ROUND CONNECTIONS PROVIDE A 12"x12" FACE SIZE. FOR ALL OTHER CONNECTIONS PROVIDE THE MANUFACTURER'S RECOMMENDED FACE SIZE.
11. PROVIDE AS 4'-0" LINEAR SLOT WITH (2) 1.0" SLOTS.
12. PROVIDE AS 4'-0" LINEAR SLOT WITH (2) 1.5" SLOTS.
13. PROVIDE AS 4'-0" LINEAR SLOT WITH (4) 1.0" SLOTS.
14. ADJUSTABLE THROW PATTERS.
15. VERTICAL DISCHARGE PLENUM.
16. PROVIDE CABLE OPERATED DAMPER WITH REMOTE ACTUATOR FOR VOLUME DAMPERS LOCATED ABOVE GYP AND INACCESSIBLE CEILINGS.
17. PROVIDE WITH EXTENDED PLENUM WHERE REQUIRED.

1

DUCT SILENCER SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	SERVICE	PHYSICAL				PERFORMANCE											REMARKS		
					ROUND	RECTANGULAR		LENGTH 'L' (IN)	AIRFLOW				DYNAMIC INSERTION LOSS (dB) BY OCTAVE BAND (Hz)									
					DIAMETER 'D' (IN)	WIDTH 'W' (IN)	HEIGHT 'H' (IN)		CFM	AREA (SQ FT)	FPM	DIRECTION	APD (IN WG)	63	125	250	500	1000	2000	4000	8000	TYPE	RATINGS	FEATURES
SA-DOA-1S	VIBRO-ACOUSTICS	RD-MV-AY31617	MECHANICAL 1048	DOA-1 SUPPLY	N/A	44	20	36	6,000	N/A	982	SUPPLY	0.16	3	6	11	18	21	16	11	8	2	ALL	ALL
SA-DOA-1R	VIBRO-ACOUSTICS	RD-MV-AY31617	MECHANICAL 1048	DOA-1 RETURN	N/A	44	20	36	6,000	N/A	982	RETURN	0.18	5	9	14	12	15	9	10	8	2	ALL	ALL
SA-DOA-2S	VIBRO-ACOUSTICS	RD-MV-AY31617	MECHANICAL 1048	DOA-2 SUPPLY	N/A	48	22	36	7,500	N/A	1023	SUPPLY	0.19	5	10	14	12	12	9	9	8	2	ALL	ALL
SA-DOA-2R	VIBRO-ACOUSTICS	RD-LV-AY31617	MECHANICAL 1048	DOA-2 RETURN	N/A	48	22	36	7,500	N/A	1023	RETURN	0.27	6	12	17	14	14	11	10	9	2	ALL	ALL
SA-DOA-3S	VIBRO-ACOUSTICS	RED-HV-AY31617	MECHANICAL 1060	DOA-3 SUPPLY	N/A	48	22	60	7,800	N/A	1064	SUPPLY	0.20	9	9	12	18	19	22	18	14	1	ALL	ALL
SA-DOA-3R	VIBRO-ACOUSTICS	RED-HV-AY31617	MECHANICAL 1060	DOA-3 RETURN	N/A	48	22	72	7,800	N/A	1064	RETURN	0.18	9	12	11	20	18	21	16	14	1	ALL	ALL
SA-DOA-4S	VIBRO-ACOUSTICS	RED-UHV-AY31617	MECHANICAL 1067	DOA-4 SUPPLY	N/A	52	22	72	8,500	N/A	980	SUPPLY	0.17	6	10	12	25	29	30	24	20	1	ALL	ALL
SA-DOA-4R	VIBRO-ACOUSTICS	RED-MHV-AY31617	MECHANICAL 1067	DOA-4 RETURN	N/A	52	22	72	8,500	N/A	980	RETURN	0.23	10	12	11	21	20	22	19	13	1	ALL	ALL
SA-DOA-5S	VIBRO-ACOUSTICS	RED-MHV-AY31617	ORCHESTRA 1118	DOA-5 SUPPLY	N/A	62	20	72	7,000	N/A	813	SUPPLY	0.20	8	11	13	22	23	26	21	17	1	ALL	ALL
SA-DOA-5R	VIBRO-ACOUSTICS	RED-HV-AY31617	ORCHESTRA 1118	DOA-5 RETURN	N/A	62	20	84	7,000	N/A	813	RETURN	0.23	9	12	18	30	28	29	21	19	1	ALL	ALL
SA-RTU-1S	VIBRO-ACOUSTICS	RED-MHV-AY31617	ROOF	RTU-1 SUPPLY	N/A	38	24	60	6,000	N/A	947	SUPPLY	0.24	9	11	13	23	21	23	20	15	1	ALL	ALL
SA-RTU-1R	VIBRO-ACOUSTICS	RED-MHV-AY31617	ROOF	RTU-1 RETURN	N/A	26	34	60	6,000	N/A	1059	RETURN	0.34	12	14	10	21	17	18	18	13	1	ALL	ALL
SA-RTU-2S	VIBRO-ACOUSTICS	RD-HV-AY31617	ROOF	RTU-2 SUPPLY	N/A	58	30	72	10,500	N/A	869	SUPPLY	0.15	5	10	18	20	21	16	14	12	2	ALL	ALL
SA-RTU-2R	VIBRO-ACOUSTICS	RD-MHV-AY31617	ROOF	RTU-2 RETURN	N/A	56	32	60	10,500	N/A	844	RETURN	0.16	4	7	12	15	15	13	11	9	2	ALL	ALL
SA-RTU-3S	VIBRO-ACOUSTICS	RED-UHV-AY31617	PE/ ATHL. STORAGE 1087	RTU-3 SUPPLY	N/A	44	20	60	7,000	N/A	1145	SUPPLY	0.35	5	7	12	18	31	37	23	21	1	ALL	ALL
SA-RTU-3R	VIBRO-ACOUSTICS	RED-UHV-AY31617	PE/ ATHL. STORAGE 1087	RTU-3 RETURN	N/A	44	20	60	7,000	N/A	1145	RETURN	0.27	6	8	14	19	31	27	24	19	1	ALL	ALL

REMARKS - TYPE

1. RECTANGULAR ELBOW, GLASS FIBER MEDIA
2. RECTANGULAR IN-LINE, GLASS FIBER MEDIA

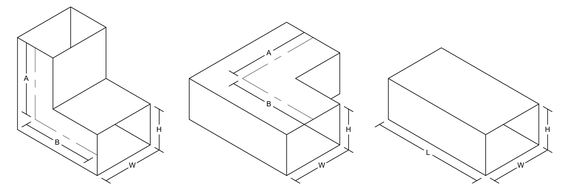
REMARKS - RATINGS

1. AIR PRESSURE DROP (APD) AND ACOUSTICAL DATA ARE IN ACCORDANCE TO ASTM E477

REMARKS - FEATURES

1. ACOUSTIC MEDIA SHALL COMPLY WITH UL 181 AND ASHRAE 90A, SHALL BE 100% NATURAL COTTON FIBERS TREATED WITH AN EPA RATED NON-TOXIC BORATE SOLUTION, "FLASH DRIED" TO PROVIDE RESISTANCE TO MOLD, MILDEW, AND FUNGI, SHALL BE PACKED TO A MINIMUM COMPRESSION OF 15% DURING SILENCER ASSEMBLY, AND SHALL NOT CAUSE OR ACCELERATE CORROSION OF ALUMINUM OR STEEL. GLASS FIBER AND ROCK WOOL ARE NOT ACCEPTABLE SUBSTITUTES FOR THE ACOUSTIC MEDIA.
2. ADJUST DIMENSIONS 'A' & 'B' SUCH THAT 'A' + 'B' = 'L', AND SUCH THAT THE SILENCER FITS AS INTENDED; 'A' & 'B' NEED NOT BE THE SAME LENGTH
3. LENGTH SHOWN FOR ELBOW SILENCERS IS CENTERLINE LENGTH
4. AIR PRESSURE DROP = SILENCER PRESSURE DROP PER ASTM E477-13 + SYSTEM EFFECT FOR NEARBY DUCT ELEMENTS
5. CONTRACTOR SHALL PROVIDE CONSULTANT PRESSURE DROP CALCULATIONS WITH PE STAMP INCLUDING SYSTEM EFFECTS.
6. CONTRACTOR SHALL PROVIDE CONSULTANT ACOUSTICAL CALCULATIONS WITH PE STAMP DEMONSTRATING THE RESULTANT DUCTBORNE FAN SOUND LEVEL IN THE OCCUPIED SPACES MEET PROJECT BACKGROUND NOISE REQUIREMENT
7. PROVIDE NOISE CALCULATIONS FROM MANUFACTURER DEMONSTRATING THE RESULTANT SOUND LEVEL IN THE OCCUPIED SPACES MEET PROJECT BACKGROUND NOISE REQUIREMENTS.

CONFIGURATION



ACTIVE CHILLED BEAM SCHEDULE

SYMBOL	MANUFACTURER MODEL NUMBER	DIMENSIONS (L x W)	DISCHARGE PATTERN	AIR INLET (IN)	PRIMARY AIRFLOW (CFM)	TOTAL AIRFLOW (CFM)	COOLING PERFORMANCE									HEATING PERFORMANCE								MEDIA	REMARKS
							TOTAL COOLING CAPACITY (BTU/H)	PRIMARY AIR SENSIBLE CAPACITY (BTU/H)	PRIMARY AIR LATENT CAPACITY (BTU/H)	BEAM SENSIBLE COOLING CAPACITY (BTU/H)	FLOW RATE (GPM)	PRESSURE DROP (FT)	PRIMARY AIR CONDITIONS (DB/WB °F)	EWT/LWT (°F)	SUPPLY AIR TEMPERATURE (°F)	TOTAL HEATING CAPACITY (BTU/H)	BEAM HEATING CAPACITY (BTU/H)	PRIMARY AIR HEATING OFFSET (BTU/H)	FLOW RATE (GPM)	PRESSURE DROP (FT)	PRIMARY AIR CONDITIONS (DB °F)	EWT/LWT (°F)	SUPPLY AIR TEMPERATURE (°F)	PRIMARY AIR INLET (INCH)		
CB-A1	DADANCO MODEL # ACB40	8' x 2'	2 WAY	8	175	755	12,184	3,802	2,672	9,512	1.5	2.6	55.0/50.0	57/64.6	63.4	11,759	8,952	2,807	0.75	0.7	60	130/98.7	84.3	8 - ELLIPTICAL	30% PPG	ALL
CB-A2	DADANCO MODEL # ACB40	8' x 2'	2 WAY	8	140	649	10,626	3,269	2,191	8,435	1.4	2.3	55.0/50.0	57/64.4	63.0	10,981	8,229	2,752	0.70	0.6	60	130/98.7	85.6	8 - ELLIPTICAL	30% PPG	ALL
CB-B	DADANCO MODEL # ACB40	6' x 2'	2 WAY	8	120	511	8,468	2,802	1,878	6,590	1.1	7.0	55.0/50.0	57/63.9	63.1	8,862	7,667	1,195	0.50	1.6	60	130/94.6	86.0	8 - ELLIPTICAL	30% PPG	ALL
CB-C1	DADANCO MODEL # ACB40	4' x 2'	2 WAY	6	80	327	5,472	1,868	1,252	4,220	0.70	2.3	55.0/50.0	57/63.7	63.1	6,966	6,358	608	0.50	1.1	60	130/102.2	89.6	6 - ROUND	30% PPG	ALL
CB-C2	DADANCO MODEL # ACB40	4' x 2'	2 WAY	6	60	279	4,563	1,401	939	3,624	0.70	2.3	55.0/50.0	57/63.3	63.0	6,626	6,189	437	0.50	1.1	60	130/103.6	91.9	6 - ROUND	30% PPG	ALL
CB-D	DADANCO MODEL # ACB40	2' x 2'	2 WAY	4	40	153	2,703	467	313	2,077	0.50	0.80	55.0/50.0	57/61.6	62.5	3,812	3,346	466	0.50	0.70	60	130/114.8	92.9	4 - ROUND	30% PPG	ALL

NOTES:

A. EACH CHILLED BEAM SHALL BE TWO (2) PIPE CONFIGURATION FOR A SINGLE COIL RECEIVING CHILLED WATER OR HOT WATER; COIL PERFORMANCE FOR COOLING AND HEATING SHOWN.
B. COOLING CAPACITY BASED ON INDOOR DESIGN CONDITIONS OF 75°F DB / 50%RH
C. HEATING CAPACITY BASED ON INDOOR DESIGN CONDITIONS OF 70°F DB.
D. COORDINATE BEAM MOUNTING WITH CEILING BEING INSTALLED PROVIDE ALL NECESSARY TRIM PIECES FOR FLUSH MOUNTING IN SUSPENDED CEILING.
E. PROVIDE COANDA WING TRIM ACCESSORY FOR MOUNTING WHERE INSTALLED WITHOUT A CEILING. CONFIRM WITH ARCHITECTURAL REFLECTED CEILING PLAN.

REMARKS:

1. PROVIDE NPT PIPING CONNECTION TO CHILLED BEAM
2. PROVIDE WITH BEAM PLENUM DUCT PRESSURE TAPS AND CFM PERFORMANCE CHART FOR BALANCING LOCATE ON BEAM HOUSING.
3. COORDINATE BEAM FRAME WITH CEILING TYPE TO ENSURE THERE IS NO CAPS AROUND BEAM WHEN SET IN CEILING GRID.
4. CHILLED BEAMS SHALL BE EXPOSED TYPE WHEN NOT LOCATED IN HARD OR DROPPED CEILINGS. COORDINATE EXACT LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS.
5. COLOR OF CHILLED BEAMS SHALL BE COORDINATED WITH ARCHITECT.
6. PROVIDE HARD DUCT CONNECTION WHERE BEAMS ARE EXPOSED WITHOUT BEING LOCATED IN A CEILING.
7. PROVIDE 3/4" FLEX PIPE CONNECTION WHERE PIPING CONNECTS TO EACH BEAM.
8. PROVIDE 6-WAY VALVE CONNECTIONS (CBVS = CHILLED BEAM VALVE SINGLE, CBMV = CHILLED BEAM VALVE MULTIPLE).

MEDIA:
HW = HOT WATER
PPG = 30% PROPYLENE GLYCOL/WATER SOLUTION.

SOUND LEVELS	
UNIT TAG	NC
CB-A1	21
CB-A2	15
CB-B	17
CB-C1	15
CB-C2	15
CB-D	15

AIR FILTRATION UNIT SCHEDULE

TAG	MANUFACTURER	MODEL	PHYSICAL		FAN DATA			DRIVE TYPE	PRE-FILTER				PRIMARY FILTER				ELECTRICAL		REMARKS
			WEIGHT (LBS)	L x W x H (IN.)	TYPE	CFM	MOTOR HP		TYPE	SIZE WxH (IN.)	DEPTH (IN.)	ASHRAE 52.2 MERV RATING	TYPE	SIZE WxH (IN.)	DEPTH (IN.)	ASHRAE 52.2 MERV RATING	VOLTAGE	PHASE	
AFU-A	MONOXIVENT	3025	160	59x24x24	FORWARD INCLINE	2,500	3/4	DIRECT	PANEL	24x24	4	N/A	MULTI-POCKET BAG	24x24	36	N/A	115	1	ALL

REMARKS:

1. UNIT SHALL BE CONTROLLED BY BMS, COORDINATE WITH ATC.
2. HUNG FROM STRUCTURE.

DUCT MOUNTED HOT WATER REHEAT COIL SCHEDULE

UNIT	MANUFACTURER MODEL #	UNIT LOCATION	TOTAL CAP (MBH)	MAXIMUM FACE VELOCITY (FPM)	AIR SIDE				HOT WATER COIL DATA				SIZE/ ROWS (WxH/QTY)	REMARKS
					FLOW (CFM)	EDB (°F)	LDB (°F)	MAX PD (IN WG)	FLOW (GPM)	EWT (°F)	LWT (°F)	MAX PD (FT HD)		
RHC-A	TRANE #DT0B	HRV-1 SUPPLY DUCT	31.50	628	1,700	55	72	0.165	2.37	130	100	5.55	26x15 / 1	ALL

REMARKS:

1. WATER/ GLYCOL SOLUTION SHALL BE 30% PROPYLENE GLYCOL SOLUTION.
2. PROVIDE DUCT MOUNTED COILS WITH ALUMINUM FINS AND COPPER TUBING.
3. FURNISH ALL ACCESSORIES AND MATERIALS NEEDED FOR PROPERLY INSTALLING HOT WATER COIL IN SUPPLY DUCTWORK.
4. FURNISH WITH FLANGED CONNECTIONS

1

HEAT EXCHANGER SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NUMBER	TYPE	LOCATION	COLD SIDE FLOW (GPM)	COLD SIDE TEMP IN/OUT DEG. F	WATER PD FT. W.G.	HOT SIDE FLOW (GPM)	HOT SIDE TEMP IN/OUT DEG. F	WATER PD FT. W.G.	CAPACITY (MBH)	REMARKS
HX-1	ARMSTRONG S17NG-150-72-600	PF	MECH. ROOM	91	42/57	1.62	170	65/57	4.82	650	ALL

TYPE:
PF=PLATE AND FRAME

REMARKS:
1. CAPACITY BASED ON 30% PROPYLENE GLYCOL SOLUTION.
2. PERFORMANCE CERTIFIED IN ACCORDANCE WITH AHRI 400.
3. ASME STAMPED
4. 304 STAINLESS STEEL PLATES
5. EPDM GASKETS.
5. 150 PSIG DESIGN PRESSURE
6. MIN. OF 111.51 SF OF HEAT TRANSFER SURFACE AREA.
7. 72 PLATES.
8. 446 LB. FLOODED WEIGHT.

PUMP SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NUMBER	TYPE	LOCATION	SYSTEM SERVING	MEDIA	FLOW RATE (GPM)	TDH (FT)	FLUID TEMP (°F)	PUMP EFF (%)	MOTOR DATA				REMARKS
										HP	RPM	VOLTS	PHASE	
HWP-1 HWP-2	ARMSTRONG 4380 2505-001.5	IL	MECHANICAL 1060	HOT WATER	PPG	130	18	130	73	1.5	2314	460	3	1-4
HWP-3A/3B	ARMSTRONG 4372 0305-010.0	DIL	MECHANICAL 1060	HOT WATER	PPG	300	75	130	78	(2) 10	3437	460	3	1-4
CHWP-1 CHWP-2	ARMSTRONG 4380 0305-003.0	IL	MECHANICAL 1067	CHILLED WATER	PPG	255	30	42	75	3	3008	460	3	1-4
CHWP-3A/3B	ARMSTRONG 4302 0606-015.0	DIL	MECHANICAL 1067	CHILLED WATER	PPG	450	70	42	75	(2) 15	3111	460	3	1-3,5
MCHWP-1A/1B	ARMSTRONG 4372 0205-010.0	DIL	MECH ROOM	CHILLED BEAM COLD WATER	PPG	175	130	57	75	(2) 10	4409	460	3	1-4

TYPE:
ES = END SUCTION
IL = VERTICAL IN-LINE, SPLIT COUPLED
DIL = DUAL VERTICAL IN-LINE, SPLIT COUPLED

MEDIA:
W = WATER
PPG = 30% PROPYLENE GLYCOL WATER SOLUTION

REMARKS:
1. PROVIDE PUMP MOTOR WITH INTEGRAL VFD AND SENSORLESS PUMP CONTROLLER WITH NATIVE BACNET COMMUNICATION.
2. PROVIDE WITH FLOOR SUPPORT STAND.
3. PROVIDE WITH SUCTION DIFFUSER.
4. PROVIDE WITH EC MOTORS.
5. PREMIUM EFFICIENT ODP INDUCTION MOTOR, OUTSIDE MECHANICAL SEALS, CUNO SEAL FLUSH LINE FILTER WITH SIGHT GLASS.

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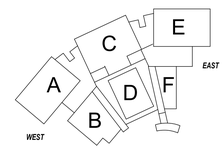
Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane, Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH



KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

MECHANICAL SCHEDULES

Date: 07/08/2024
Scale: As indicated
Proj. Number: 22367.00
Drawing Number: M602

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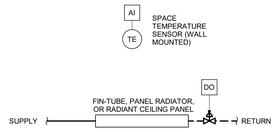
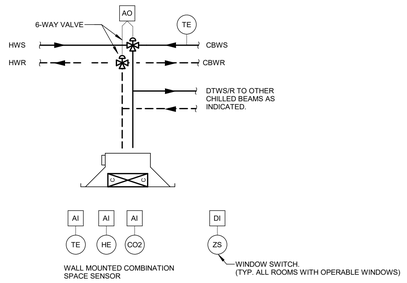
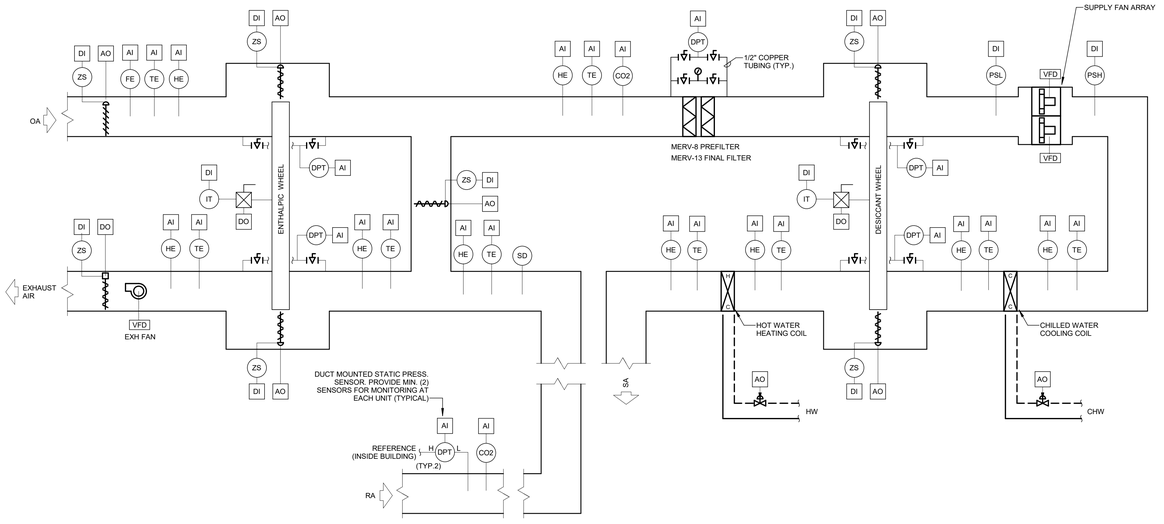


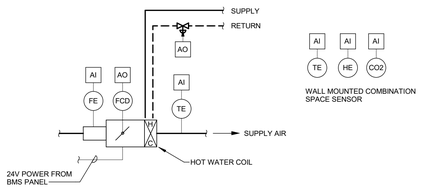
5 PERIMETER RADIATION CONTROL DIAGRAM
NTS



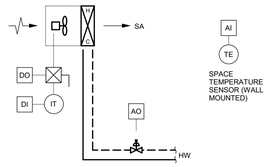
4 CHILLED BEAM CONTROL DIAGRAM
NTS



1 DEDICATED OUTDOOR AIR (DOA) UNIT CONTROL DIAGRAM (DOA-1 THRU 5)
NTS

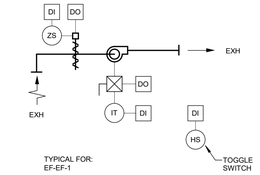


7 VAV AIR TERMINAL UNIT WITH HOT WATER REHEAT CONTROL DIAGRAM
NTS



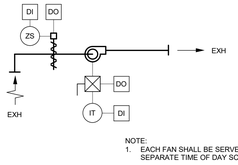
6 HOT WATER UNIT HEATER CONTROL DIAGRAM
NTS

FAN CONTROL DIAGRAM - SWITCH CONTROL

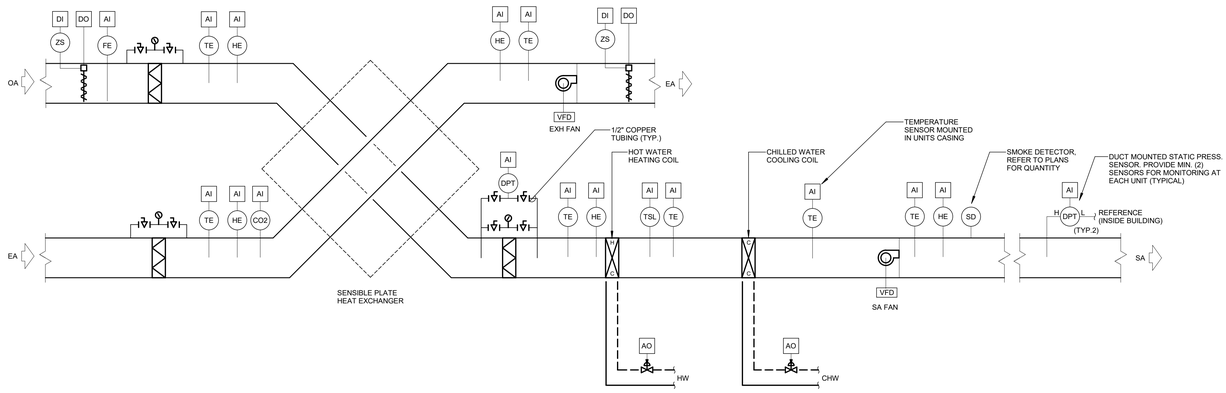


9 FANS - EXHAUST (EF-1)
NTS

FAN CONTROL DIAGRAM - TIME OF DAY

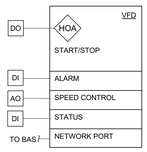


8 FAN - EXHAUST (EF-2)
NTS



2 HEAT RECOVERY VENTILATOR (HRV-1) CONTROL DIAGRAM
NTS

TYPICAL FOR ALL VFDS UNLESS NOTED OTHERWISE

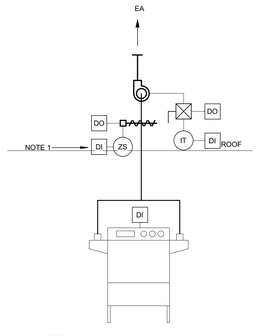


NOTES ON VARIABLE FREQUENCY DRIVES

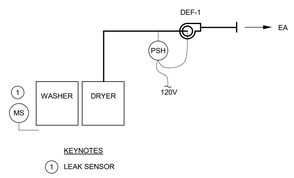
1. THE HAND-OFF-AUTOMATIC SWITCH ON THE VFD SHALL PROVIDE FOR THE FOLLOWING BASIS OF CONTROL:
   A. HAND POSITION: THE BAS SHALL HAVE NO CONTROL OVER THE MOTOR SPEED NOR SHALL IT BE ABLE TO START OR STOP THE MOTOR (EXCEPT FOR SAFETY PURPOSES WHERE THE MOTOR SHALL SHUT DOWN). THE MOTOR SHALL RUN UNDER SPEED CONTROL FROM THE HAND POTENTIOMETER ON THE VSD. ALL SAFETIES CONTROLLING THE SHUTDOWN SHALL BE OPERATIONAL (i.e. SMOKE DETECTORS, PRESSURE SWITCHES, ETC). TEMPERATURE AND HUMIDITY CONTROL SHALL BE AVAILABLE THROUGH THE BAS.
   B. OFF POSITION: THE MOTOR SHALL BE OFF. THE BAS SHALL NOT CONTROL THE MOTOR. ALL OTHER CONTROL POINTS SHALL BE IN THEIR FAIL-SAFE POSITION.
   C. AUTOMATIC POSITION: THE MOTOR SHALL BE CONTROLLED BY THE BAS.
2. ELECTRICAL DISCONNECTS SHALL REPORT DISCONNECT POSITION VIA RELAY OUTPUTS.
3. START/STOP, ALARM, SPEED CONTROL AND STATUS POINTS SHALL BE HARDWIRED
4. THE FOLLOWING POINTS SHALL BE COMMUNICATED TO THE BAS VIA THE VFD'S MANUFACTURER'S STANDARD NETWORK COMMUNICATION PORT:
   - SPEED INDICATION
   - AUTO / OUT OF AUTO INDICATION
   - FAULT / FAULT CODE
   - MOTOR CURRENT
   - DRIVE TEMPERATURE
   - DC BUS VOLTAGE
   - POWER DEMAND (kW)

12 VFD CONTROL DIAGRAM
NTS

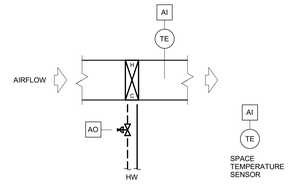
10 CLOTHES WASHER CONTROL DIAGRAM
NTS



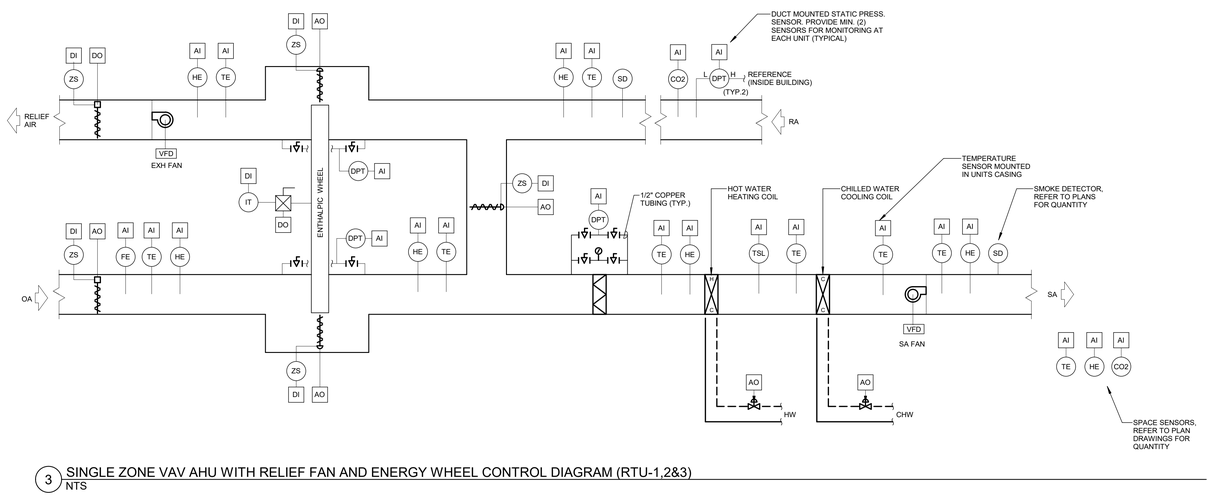
11 DISHWASHER EXHAUST FAN CONTROL DIAGRAM (DWEF-1)
NTS



14 DRYER BOOSTER FAN CONTROLS
NTS



13 DUCT MOUNTED COIL - HW COIL SPACE TEMP CONTROL
NTS



3 SINGLE ZONE VAV AHU WITH RELIEF FAN AND ENERGY WHEEL CONTROL DIAGRAM (RTU-1,2&3)
NTS

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Greenwich Public Schools

Greenwich Central Middle School

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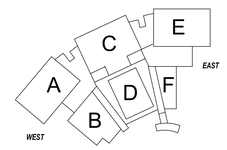
STATE PROJECT NO: 057-0114 N

NORTH
EAST
WEST
SOUTH



KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

MECHANICAL CONTROLS DIAGRAMS

Date 07/08/2024
Scale NTS
Proj. Number 22367.00

Drawing Number **M700**

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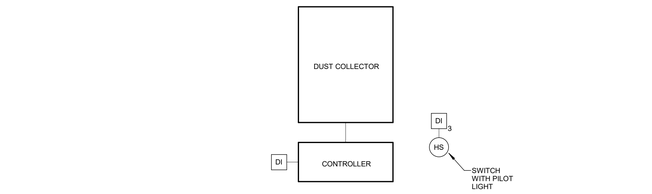
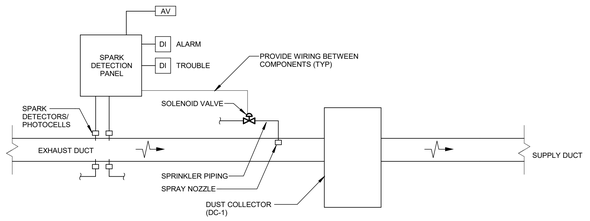
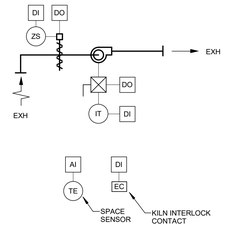


10 DUST COLLECTOR CONTROL DIAGRAM (DC-1)
NTS



5 DUST COLLECTOR (DC-1) SPARK DETECTION/ EXTINGUISHING CONTROL DIAGRAM
NTS



SEQUENCE OF OPERATION

GENERAL

1. PROVIDE BAS CONTROLS

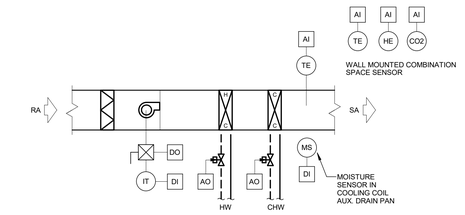
SAFETIES AND ALARMS

1. IF THE FAN IS COMMANDED ON AND IT DOES NOT ACTIVATE, AN ALARM SHALL BE GENERATED THROUGH THE BAS.

OPERATION

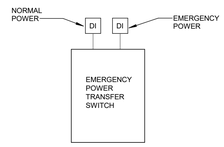
1. FAN SHALL OPERATE CONTINUOUSLY DURING THE OCCUPIED PERIOD. THE EXHAUST AIR CONTROL DAMPER (LOCATED IN EXHAUST DUCTWORK) SHALL BE CLOSED WHEN THE EXHAUST FAN IS OFF AND OPEN WHEN THE EXHAUST FAN IS ON. THE EXHAUST FAN SHALL NOT START UNTIL PROOF (BY END SWITCH) THAT THE EXHAUST AIR CONTROL DAMPER IS OPEN

4 FANS - LIFE SAFETY AND SPECIALTY (KILN)
NTS



2 FAN COIL UNIT CONTROL DIAGRAM
NTS

EMERGENCY GENERATOR CONTROL DIAGRAM



GENERAL

1. PROVIDE A MONITORING CONNECTION OF THE BAS TO THE GENERATOR. IN ACCORDANCE WITH THE GENERATOR MANUFACTURER'S COMMUNICATIONS PROTOCOL.

TYPICAL DOMESTIC HOT WATER CIRCULATING PUMP

GENERAL

PROVIDE BAS MONITORING OF THE POINTS LISTED BELOW.

1. PUMP STATUS (ON/OFF)

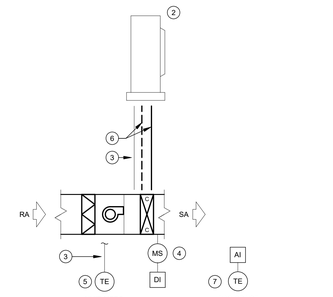
DOMESTIC WATER BOOSTER PUMP CONTROLLER

GENERAL

PROVIDE BAS MONITORING OF THE POINTS LISTED BELOW.

1. FAULT ALARM

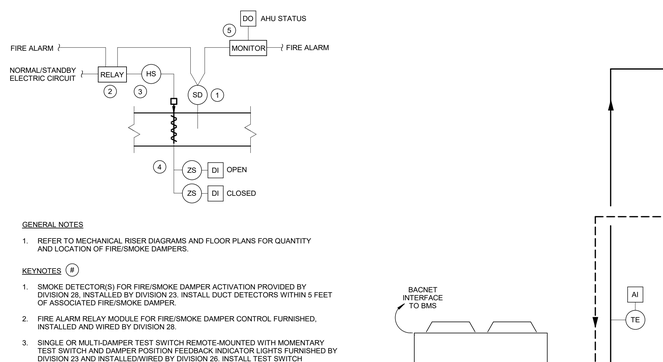
3 MISC ELECTRICAL, FA, & PLUMBING MONITORING CONTROL DIAGRAM
NTS



KEYNOTES

1. PACKAGED INDOOR EVAPORATOR UNIT
2. OUTDOOR CONDENSING UNIT
3. PROVIDE WIRING IN ACCORDANCE WITH UNIT MANUFACTURER'S INSTALLATION GUIDELINES
4. PLENUM RATED, UL508 CONDENSATE OVERFLOW SWITCH MOUNTED IN PRIMARY DRAIN PAN. SWITCH SHALL BE WIRED TO DE-ENERGIZE UNIT UPON DETECTION OF OF RISING WATER (BLOCKED DRAIN) AND GENERATE AN ALARM THROUGH THE BAS.
5. LOCAL WALL-MOUNTED THERMOSAT
6. REFRIGERANT LIQUID AND SUCTION LINES SIZED PER MANUFACTURER
7. PROVIDE BAS SPACE TEMPERATURE SENSOR FOR MONITORING

1 AC SPLIT SYSTEM CONTROL DIAGRAM
NTS



NOTE: THE SYSTEM ARCHITECTURE INDICATED IS DIAGRAMMATIC AND IS INTENDED TO QUALIFY THE FUNCTIONALITY OF THE SYSTEM INCLUDING DATA FLOW, SYSTEM DEVICES, AND COMMUNICATION MEDIA. IT IS NOT INTENDED TO DEPICT OR LIMIT SYSTEM TOPOLOGY OR QUANTIFY DEVICES.

8 BAS SYSTEM ARCHITECTURE DIAGRAM
NTS

GENERAL NOTES

1. REFER TO MECHANICAL, RISER DIAGRAMS AND FLOOR PLANS FOR QUANTITY AND LOCATION OF FIRE/SMOKE DAMPERS.

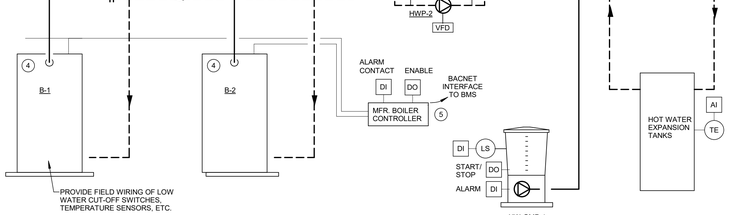
KEYNOTES (#)

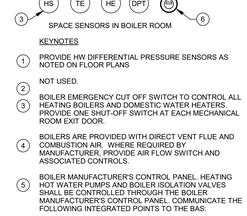
1. SMOKE DETECTOR(S) FOR FIRE/SMOKE DAMPER ACTIVATION PROVIDED BY DIVISION 26. INSTALLED BY DIVISION 23. INSTALL DUCT DETECTORS WITHIN 5 FEET OF ASSOCIATED FIRE/SMOKE DAMPER.
2. FIRE ALARM RELAY MODULE FOR FIRE/SMOKE DAMPER CONTROL FURNISHED, INSTALLED AND WIRED BY DIVISION 28.
3. SINGLE OR MULTI-DAMPER TEST SWITCH REMOTE-MOUNTED WITH MOMENTARY TEST SWITCH AND DAMPER POSITION FEEDBACK INDICATOR LIGHTS FURNISHED BY DIVISION 23 AND INSTALLED/WIRED BY DIVISION 26. INSTALL TEST SWITCH DIRECTLY BELOW DAMPER(S) OR AS INDICATED ON MECHANICAL DRAWINGS.
4. FIRE/SMOKE DAMPER BLADE END SWITCHES FURNISHED AND INSTALLED BY DIVISION 23 AND WIRED BY DIVISION 26. BAS MONITORING OF END SWITCHES FURNISHED, INSTALLED AND WIRED BY DIVISION 23.
5. RELAY MODULE FOR SUPERVISION OF AIR HANDLING SYSTEM STATUS FURNISHED, INSTALLED AND WIRED BY DIVISION 28.

SEQUENCE OF OPERATION

1. IF ASSOCIATED AIR HANDLING SYSTEM IS ACTIVATED, DAMPER SHALL OPEN.
2. IF ASSOCIATED AIR HANDLING SYSTEM IS DEACTIVATED, DAMPER SHALL CLOSE.
3. UPON ACTIVATION OF DUCT DETECTOR(S) DAMPER SHALL CLOSE VIA FACTORY WIRED CONNECTION.
4. BAS SHALL MONITOR STATUS OF DAMPER END SWITCHES

9 FIRE SMOKE DAMPER CONTROL DIAGRAM
NTS

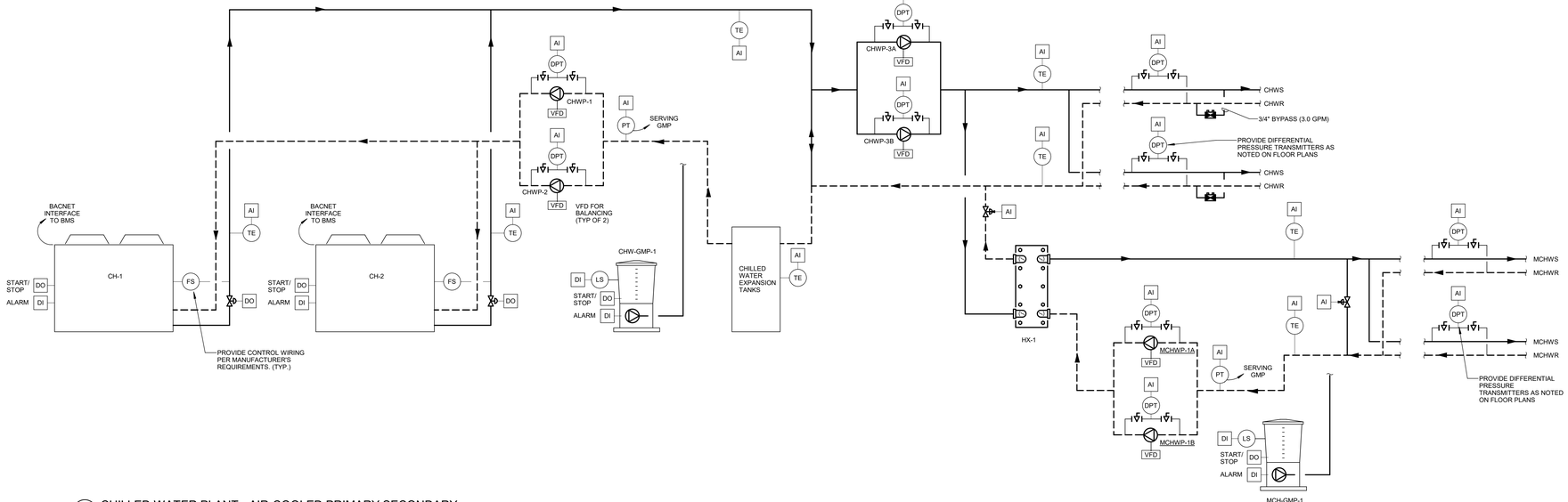




KEYNOTES

1. PROVIDE HW DIFFERENTIAL PRESSURE SENSORS AS NOTED ON FLOOR PLANS
2. NOT USED.
3. BOILER EMERGENCY CUT OFF SWITCH TO CONTROL ALL HEATING BOILERS AND DOMESTIC WATER HEATERS. PROVIDE ONE SHUT-OFF SWITCH AT EACH MECHANICAL ROOM EXIT DOOR.
4. BOILERS ARE PROVIDED WITH DIRECT VENT FLUE AND COMBUSTION AIR. WHERE REQUIRED BY MANUFACTURER, PROVIDE AIR FLOW SWITCH AND ASSOCIATED CONTROLS.
5. BOILER MANUFACTURER'S CONTROL PANEL. HEATING HOT WATER PUMPS AND BOILER ISOLATION VALVES SHALL BE CONTROLLED THROUGH THE BOILER MANUFACTURER'S CONTROL PANEL. COMMUNICATE THE FOLLOWING INTEGRATED POINTS TO THE BAS:
   - HWS TEMP. CONTROL LOGIC
   - TEMP RESET CONTROL LOGIC
   - SYSTEM START/STOP CONTROL LOGIC
   - BOILER STATUS (TYP. EA BOILER)
   - BOILER ALARM (TYP. EA BOILER)
   - BOILER % MODULATION (TYP. EA BOILER)
6. COMBUSTIBLE GAS DETECTOR IN NEMA-4 EXPLOSION PROOF ENCLOSURE TO MEASURE ETHANOL, HYDROGEN, NATURAL GAS AND METHANE WITH ANALOG OUTPUT.

6 HOT WATER PLANT CONTROL DIAGRAM
NTS



7 CHILLED WATER PLANT - AIR-COOLED PRIMARY SECONDARY
NTS

SLAM
S / L / A / M Architects, Landscape Architects & Engineers, P.C.
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
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Drawn
LAE
Checked
BH

CES
Consulting Engineering Services, Inc.
811 Middle Street
Middletown CT 06457
860.632.1682
ceseng.com
CES #2023095.00

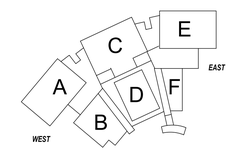
Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane, Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH



KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

MECHANICAL CONTROLS DIAGRAMS

Date: 07/08/2024
Scale: NTS
Proj. Number: 22367.00
Drawing Number: M701

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ELECTRICAL ABBREVIATIONS

A/AMP	AMPERE
AC	ALTERNATING CURRENT
AFCI	ARC FAULT CIRCUIT INTERRUPTER
ACU	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPS INTERRUPTING CURRENT
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BSMT	BASEMENT
C	CONDUIT
CATV	CABLE TELEVISION
C/B	CIRCUIT BREAKER
CKT	CIRCUIT
COMP	COMPRESSOR
CP	CONDENSATE PUMP
CT	CURRENT TRANSFORMER
CU	CONDENSING UNIT OR COPPER
CUH	CABINET UNIT HEATER
D	DRYER
DEG.	DEGREE
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
ETR	EXISTING TO REMAIN
EF	EXHAUST FAN
ELEC	ELECTRICAL
ELEV	ELEVATOR
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING
EP	EMERGENCY PANEL
EUH	ELECTRIC UNIT HEATER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
F	FAHRENHEIT
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FC	FOOT CANDLE
FCU	FAN COIL UNIT
G	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HP	HORSE POWER
HPS	HIGH PRESSURE SODIUM
HR	HOUR
HZ	HERTZ
IG	ISOLATED GROUND
IN	INCHES
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERE
KW	KILOWATT
MAX	MAXIMUM
MAU	MAKE-UP AIR UNIT
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCCB	MOLDED CASE CIRCUIT BREAKER
MH	METAL HALIDE OR MANHOLE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
NA	NOT APPLICABLE
NE	NEW DEVICE INSTALLED IN SAME LOCATION AS EXISTING REMOVED DEVICE
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NL	NEW LOCATION OF RELOCATED DEVICE
NR	NEW TO REPLACE EXISTING
NTS	NOT TO SCALE
P	POLE
PE	PRIMARY ELECTRIC SERVCE
PF	POWER FACTOR
PH	PHASE
PNL	PANEL
PVC	POLYVINYL CHLORIDE CONDUIT
RE.	EXISTING TO BE REMOVED
REF	REFRIGERATOR
RGS	RIGID GALVANIZED STEEL CONDUIT
RL	EXISTING TO BE RELOCATED
RM	ROOM
RN	EXISTING TO BE REMOVED AND REPLACED WITH NEW (EXISTING BACKBOXES, CONDUIT AND WIRING TO REMAIN)
RR	EXISTING TO BE RELOCATED IN SAME LOCATION ON NEW SURFACE
RTU	ROOFTOP UNIT
SE	SECONDARY ELECTRICAL SERVICE
SPEC	SPECIFICATION
SWBD	SWITCHBOARD
SPD	SURGE PROTECTION DEVICE
TELE	TELECOMMUNICATIONS/TELEPHONE
TV	TELEVISION
T/TX	TRANSFORMER
TYP	TYPICAL
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VA	VOLT AMPERE
VAC	VOLTS ALTERNATING CURRENT
VIF	VERIFY IN FIELD
W	WATT OR TWIRE
WA	WASHER
WG	WIRE GUARD
WP	WEATHERPROOF

FIRE ALARM LEGEND

SYMBOL	DESCRIPTION
EQUIPMENT	
EAS	EMERGENCY 2-WAY COMMUNICATION SYSTEM AREA CALL STATION. REFER TO 2-WAY COMMUNICATION SYSTEM WIRING DIAGRAM FOR ADDITIONAL INFORMATION.
EMS	EMERGENCY 2-WAY COMMUNICATION SYSTEM MASTER STATION. REFER TO 2-WAY COMMUNICATION SYSTEM WIRING DIAGRAM FOR ADDITIONAL INFORMATION.
FACP	FIRE ALARM CONTROL PANEL
FARA	FIRE ALARM REMOTE ANNUNCIATOR PANEL
EVAC	FIRE ALARM VOICE EVACUATION REMOTE MICROPHONE
FATP	FIRE ALARM TRANSPONDER PANEL
BMP	BI-DIRECTIONAL AMPLIFICATION SYSTEM MONITORING PANEL
INITIATING DEVICES	
S	CEILING MOUNTED SMOKE DETECTOR
S SB	CEILING MOUNTED SMOKE DETECTOR WITH SOUNDER BASE
S SB/CO	CEILING MOUNTED SMOKE DETECTOR WITH CARBON MONOXIDE SOUNDER BASE
S 520	CEILING MOUNTED SMOKE DETECTOR WITH LOW FREQUENCY 520HZ SOUNDER BASE
S	CEILING MOUNTED SMOKE DETECTOR WIRED TO ELEVATOR RECALL SYSTEM
	WALL MOUNTED SMOKE DETECTOR
H	CEILING MOUNTED HEAT DETECTOR WITH TEMPERATURE RATING OF 135 DEGREES UNLESS OTHERWISE NOTED
H RR	CEILING MOUNTED COMBINATION FIXED TEMPERATURE / RATE-OF-RISE HEAT DETECTOR
S/D	DUCT MOUNTED SMOKE DETECTOR AND HOUSING
SD FSD	SMOKE OR FIRE/SMOKE DAMPER WITH ASSOCIATED DUCT SMOKE DETECTOR. PROVIDE ALL ITEMS LISTED AS BY DIVISION 26 AND BY DIVISION 28 IN ELECTRICAL SMOKE DAMPER DETAIL. PROVIDE WITH ONE DUCT SMOKE DETECTOR UNLESS OTHERWISE NOTED.
F	WALL MOUNTED FIRE ALARM MANUAL PULL STATION. MOUNT AT 48" AFF
H	HEAT DETECTOR FOR ELEVATOR RECALL CONTROLS
CO	CEILING MOUNTED CARBON MONOXIDE DETECTOR
NOTIFICATION	
XX	WALL MOUNTED COMBINATION SPEAKER / STROBE LIGHT WITH A MULTI-CANDELA STROBE. MOUNT AT 6'-8" AFF. WG= PROVIDE WITH WIREGUARD. "XX"=CANDELA RATING
XX	WALL MOUNTED STROBE-ONLY UNIT WITH A MULTI-CANDELA STROBE. MOUNT AT 6'-8" AFF. WG= PROVIDE WITH WIREGUARD. "XX"=CANDELA RATING.
XX C	CEILING MOUNTED COMBINATION SPEAKER/STROBE LIGHT WITH A MULTI-CANDELA STROBE. "XX"=CANDELA RATING
XX c	CEILING MOUNTED STROBE-ONLY UNIT WITH A MULTI-CANDELA STROBE. "XX"=CANDELA RATING
F	WALL MOUNTED FIRE ALARM MANUAL PULL STATION. MOUNT AT 48" AFF. PROVIDE WITH MANUAL STATION GUARD, STI "STOPPER II" OR EQUAL WHERE REQUIRED.
B	EXTERIOR SPRINKLER BELL. PROVIDE 20A/1P CIRCUIT.
INTERFACE MODULES	
MM	FIRE ALARM MONITOR MODULE
CM	FIRE ALARM CONTROL MODULE
RM	FIRE ALARM RELAY MODULE
MISCELLANEOUS	
RTS	REMOTE DUCT SMOKE DETECTOR TEST SWITCH
TS	FIRE PROTECTION TAMPER SWITCH AND FIRE ALARM MONITOR MODULE
FS	FIRE PROTECTION FLOW SWITCH AND FIRE ALARM MONITOR MODULE
PS	FIRE PROTECTION PRESSURE SWITCH AND FIRE ALARM MONITOR MODULE
M	MAGNETIC DOOR HOLD OPEN. PROVIDE WITH SMOKE DETECTORS WITHIN 5 FEET OF BOTH SIDES OF DOOR. REFER TO DETAIL 6/E502
EOL	END OF LINE RESISTOR

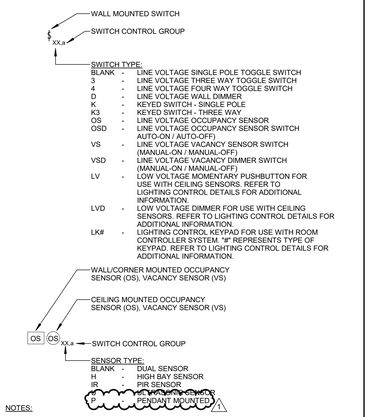
ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION
	SURFACE MOUNTED PANELBOARD
	RECESSED PANELBOARD
	DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	COMBINATION STARTER AND DISCONNECT SWITCH
	MOTOR STARTER OR CONTACTOR
M	MANUAL MOTOR STARTER
	MOTOR (REFER TO MOTOR CIRCUIT SCHEDULE FOR POWER REQUIREMENTS)
T	TRANSFORMER
M	ELECTRICAL METER
SPD	SURGE PROTECTIVE DEVICE
VFD	VARIABLE FREQUENCY DRIVE
	BRANCH CIRCUIT WIRING, CONCEALED IN WALLS OR CEILINGS
	HOMERUN TO PANELBOARD
	SWITCHED BRANCH CIRCUIT WIRING
PT #	POKE-THRU DEVICE. SUPERSCRIPT '#' INDICATES TYPE. REFER TO FLOOR BOX DEVICE SCHEDULE FOR TYPE.
FB #	FLOOR BOX. SUPERSCRIPT '#' INDICATES TYPE. REFER TO FLOOR BOX DEVICE SCHEDULE FOR TYPE.
J J	JUNCTION BOX
J MD	POWER CONNECTION TO MOTORIZED DAMPERS. COORDINATE LOCATIONS WITH DIV. 23.
	SURFACE MOUNTED RACEWAY RISER TO NEAREST ACCESSIBLE CEILING
WM	WIREMOLD, LOCATE DEVICES AS INDICATED ON DRAWINGS
	SIMPLEX WALL MOUNTED RECEPTACLE, 18" AFF UNLESS OTHERWISE NOTED
	DUPLEX WALL MOUNTED RECEPTACLE, 18" AFF UNLESS OTHERWISE NOTED
	DUPLEX WALL MOUNTED RECEPTACLE, HALF SWITCHED
	DUPLEX WALL MOUNTED RECEPTACLE, ON CRITICAL BRANCH OF GENERATOR POWER
W	DUPLEX GFCI-TYPE WALL MOUNTED RECEPTACLE FOR WASHING MACHINE. MOUNT 48" AFF UNLESS OTHERWISE NOTED.
M	DUPLEX WALL MOUNTED RECEPTACLE FOR MICROWAVE, COORDINATE WITH MICROWAVE LOCATION. VERIFY EXACT LOCATION AND MOUNTING HEIGHT WITH ARCH PRIOR TO ROUGH-IN.
DW	DUPLEX WALL MOUNTED RECEPTACLE FOR DISHWASHER. MOUNT 18" AFF UNLESS OTHERWISE NOTED. CONNECT TO GFCI BREAKER IN PANELBOARD.
REF	DUPLEX WALL MOUNTED RECEPTACLE FOR REFRIGERATOR. MOUNT 48" AFF UNLESS OTHERWISE NOTED. CONNECT TO GFCI BREAKER IN PANELBOARD.
EWC	DUPLEX WALL MOUNTED RECEPTACLE FOR ELECTRIC WATER COOLER. MOUNT 18" AFF UNLESS OTHERWISE NOTED. CONNECT TO GFCI BREAKER IN PANELBOARD.
XX*	DUPLEX WALL MOUNTED RECEPTACLE MOUNTED AT XX" ABOVE FINISHED FLOOR
	DOUBLE DUPLEX WALL MOUNTED RECEPTACLE, 18" AFF UNLESS OTHERWISE NOTED
a a	RECEPTACLE, MOUNT 6" ABOVE COUNTER OR CASEWORK
bc bc	RECEPTACLE MOUNTED BELOW FRONT OF COUNTER
GFI GFI	RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTION
WP WP	RECEPTACLE WITH WEATHERPROOF COVER
c c	RECEPTACLE, CEILING MOUNTED
U U	RECEPTACLE WITH INTEGRAL USB OUTLET FOR CHARGING
SB	DOUBLE DUPLEX RECEPTACLE FOR INTERACTIVE DISPLAY. MOUNT IN CHIEF BOX AT 60" AFF. COORDINATE WITH DIV. 27.
FB	FLOORBOX. REFER TO FLOORBOX SCHEDULE ON E6.00
CR	DUPLEX RECEPTACLE MOUNTED TO CEILING OR STRUCTURE ABOVE AND PROVIDE DROP-DOWN CORD REEL DEVICE WITH PENDANT 5-20R DUPLEX RECEPTACLE AT END OF CORD, UNLESS OTHERWISE NOTED.
CR	SPECIALTY RECEPTACLE MOUNTED TO CEILING OR STRUCTURE ABOVE AND PROVIDE DROP-DOWN CORD REEL DEVICE WITH SPECIALTY RECEPTACLE AT END OF CORD. RECEPTACLE CONFIGURATION AS NOTED ON PLANS.
	SPECIAL PURPOSE HARDWIRED CONNECTION: WIRING AS INDICATED
RH	HARDWIRED 20A/1P CONNECTION TO RANGE HOOD. MAKE FINAL CONNECTIONS AS REQUIRED BY MANUFACTURER.
HD	HARDWIRED 20A/2P CONNECTION TO HAND DRYER. MAKE FINAL CONNECTIONS AS REQUIRED BY MANUFACTURER.
	SPECIAL PURPOSE RECEPTACLE, NEMA CONFIGURATION AND WIRING AS INDICATED
R	NEMA 14-50R RECEPTACLE FOR ELECTRIC RANGE. PROVIDE 3#6, #10G, 3/4"C. TO INDICATED BREAKER IN PANEL. (2 HOT, 1 NEUTRAL, 1 GROUND)
D	NEMA 14-30R RECEPTACLE FOR ELECTRIC DRYER. PROVIDE 3#10, #10G, 3/4"C. TO INDICATED BREAKER IN PANEL. (2 HOT, 1 NEUTRAL, 1 GROUND) CONNECT TO GFCI BREAKER IN PANELBOARD.
PP	MULTI-SERVICE POWER POLE WITH POWER AND COMMUNICATIONS INSERTS AS INDICATED ON PLANS. REFER TO SPECIFICATIONS AND/OR FLOOR PLANS FOR ACCEPTABLE MANUFACTURERS. SIZE TO ACCOMMODATE ALL CIRCUITS AND COMMUNICATIONS CABLING INDICATED. PROVIDE WITH CEILING FLANGE AND ENTRANCE FITTINGS. COORDINATE AND PROVIDE FITTINGS FOR ANY INDICATED FURNITURE FEEDS IN FIELD.
E	EMERGENCY CALL TOGGLE SWITCH
	EMERGENCY CALL FOR AID COMBINATION BUZZER / LIGHT: REFER TO CALL-FOR-AID WIRING SCHEMATIC FOR MORE INFORMATION.
B	JUNCTION BOX FOR BUILDING MANAGEMENT SYSTEM LOCATED ABOVE CEILING. PROVIDE 20A/1P DEDICATED CIRCUIT. COORDINATE EXACT LOCATION WITH BMS CONTRACTOR PRIOR TO INSTALLATION.
LVT	LOW VOLTAGE TRANSFORMER
GAP	REMOTE GENERATOR ANNUNCIATOR PANEL
EPO	EMERGENCY POWER OFF PUSH BUTTON
AO AO	AUTOMATIC DOOR OPENER AND PUSHBUTTON - FURNISHED AND INSTALLED BY DIV. 8, WIRED BY ELECTRICAL CONTRACTOR. PROVIDE 20A-1P, 120V CONNECTION TO MOTOR AND CONTROL WIRING IN 1" CONDUIT PER MFR. REQUIREMENTS FROM MOTOR TO EACH PUSHBUTTON.
PL	PLUG LOAD CONTROLLER FOR AUTOMATIC RECEPTACLE SHUTOFF, TIED INTO LIGHTING CONTROL SYSTEM. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION. CONTROLLED RECEPTACLES ARE INDICATED WITH SWITCHED WIRING ON PLANS.
AVL	DUPLEX RECEPTACLE WITH INTEGRAL USB CHARGING AND 3A/5VDC OUTPUT AVAILABLE FROM BACK SIDE OF DEVICE - EQUAL TO HUBBELL AVPS152X. MOUNT IN SAME BACKBOX AS ADJACENT "AVL" AUDIO VIDEO DEVICE SHOWN ON TECHNOLOGY PLANS.
AVD	DUPLEX RECEPTACLE WITH INTEGRAL USB CHARGING AND 3A/5VDC OUTPUT AVAILABLE FROM BACK SIDE OF DEVICE - EQUAL TO HUBBELL AVPS152X. MOUNT IN SAME BACKBOX AS ADJACENT "AVD" AUDIO VIDEO DEVICE SHOWN ON TECHNOLOGY PLANS.
CS	CLASSROOM SPEECH REINFORCEMENT SYSTEM. PROVIDE 120V, 20A-1P POWER VIA LOCAL UNSWITCHED RECEPTACLE CIRCUIT. REFER TO CLASSROOM A/V SYSTEM DETAIL FOR ADDITIONAL INFORMATION.

LIGHTING SYMBOLS

SYMBOL	DESCRIPTION
	POLE MOUNTED SITE LIGHTING FIXTURE
	EXTERIOR BUILDING MOUNTED LIGHTING FIXTURE
	EXTERIOR BUILDING MOUNTED EMERGENCY LIGHTING FIXTURE
	SURFACE MOUNTED LIGHTING FIXTURE
	SURFACE MOUNTED EMERGENCY LIGHTING FIXTURE
	PENDANT MOUNTED LIGHTING FIXTURE
	PENDANT MOUNTED EMERGENCY LIGHTING FIXTURE
	RECESSED LIGHTING FIXTURE
	RECESSED EMERGENCY LIGHTING FIXTURE
	INDUSTRIAL OR STRIP TYPE FIXTURE
	TRACK LIGHTING, HEADS AS INDICATED ON DRAWINGS
	RECESSED WALL WASH FIXTURE
	RECESSED DOWNLIGHT FIXTURE
	RECESSED DOWNLIGHT EMERGENCY FIXTURE
	SURFACE MOUNTED ROUND FIXTURE
	SURFACE MOUNTED ROUND EMERGENCY FIXTURE
	PENDANT HUNG LIGHTING FIXTURE
	PENDANT HUNG EMERGENCY LIGHTING FIXTURE
	WALL SCONCE
	EMERGENCY WALL SCONCE
	WALL MOUNTED LIGHTING FIXTURE
	WALL MOUNTED EMERGENCY LIGHTING FIXTURE
	WALL MOUNTED EXIT SIGN, DOUBLE FACED
	WALL MOUNTED EXIT SIGN
	CEILING MOUNTED EXIT SIGN
	CEILING MOUNTED EXIT SIGN, DOUBLE FACED
	SELF CONTAINED EMERGENCY LIGHTING FIXTURE WITH BATTERY
	SELF CONTAINED EMERGENCY LIGHTING FIXTURE WITH REMOTE CAPABILITY
	REMOTE EMERGENCY HEAD
	REMOTE DUAL HEAD EMERGENCY LIGHTING FIXTURE
EB	EMERGENCY BATTERY UNIT FOR USE WITH REMOTE LIGHTING HEADS
R f	UL924 EMERGENCY LIGHTING RELAY. REFER TO EMERGENCY LIGHTING DETAILS FOR ADDITIONAL INFORMATION. SUBSCRIPT "f" INDICATES UL1008 TRANSFER RELAY FUNCTIONALITY.
PC	LIGHT SENSING PHOTOCELL / DAYLIGHT SENSOR
RCN	ROOM CONTROLLER FOR NORMAL POWER LOW VOLTAGE CONTROLS. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION.
RCE	ROOM CONTROLLER FOR EMERGENCY POWER LOW VOLTAGE CONTROLS. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION.
PP	POWER PACK FOR STANDALONE CONTROLS. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION.
PPN	POWER PACK FOR NORMAL POWER LOW VOLTAGE CONTROLS. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION.
PPE	POWER PACK FOR EMERGENCY POWER LOW VOLTAGE CONTROLS. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION.

LIGHTING SWITCH AND SENSOR TAGS



NOTES:

1. FIXTURE(S) SHALL BE CONTROLLED BY SWITCH OR RELAY LOCATED IN THE ROOM UNLESS OTHERWISE NOTED ON PLAN.
2. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION ON WIRING AND SWITCHING.
3. WALL MOUNTED SWITCHES SHALL BE MOUNTED AT 42" AFF UNLESS OTHERWISE NOTED. COORDINATE WITH ARCHITECT.
4. SET ALL OCCUPANCY TYPE SENSORS TO AUTO-ON, AUTO-OFF MODE. SET ALL VACANCY TYPE SENSORS TO MANUAL-ON, AUTO-OFF MODE.
5. REFER TO CONTROL SCHEME NOTES AND CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.
6. REFER TO SYMBOL LIST FOR ADDITIONAL LIGHTING CONTROL DEVICES.
7. WHERE SWITCHES ARE NOT TAGGED WITH CONTROL LETTER ON PLANS, ALL FIXTURES IN ASSOCIATED ROOM SHALL BE CONTROLLED SIMULTANEOUSLY VIA CONTROLS SPECIFIED.

ELECTRICAL LIGHTING NOTES

1. REFER TO DRAWING E601 FOR LIGHTING FIXTURE SCHEDULE.
2. EXIT SIGNS AND EMERGENCY BATTERY UNITS SHALL BE WIRED TO LINE SIDE OF LOCAL LIGHTING BRANCH CIRCUIT, AHEAD OF ALL SWITCHING DEVICES.
3. EMERGENCY LIGHTING RELAY LOCATIONS ARE SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL INSTALL RELAYS ABOVE NEAREST ACCESSIBLE CEILING, OR IN NEAREST STORAGE ROOM/ UTILITY SPACE, AND SHALL COORDINATE LOCATION WITH OTHER TRADES. REFER TO EMERGENCY LIGHTING WIRING SCHEMATICS FOR ADDITIONAL INFORMATION.
4. REFER TO DRAWING E501 FOR TYPICAL LIGHTING CONTROL WIRING SCHEMATICS.

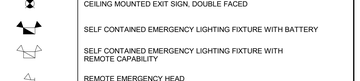
ELECTRICAL POWER NOTES

1. REFER TO DRAWING E600 FOR MOTOR/ EQUIPMENT CIRCUIT SCHEDULE.
2. RECEPTACLES LOCATED WITHIN 6' FROM WATER SOURCES SHALL BE GFCI TYPE.
3. ELECTRICAL CONTRACTOR SHALL PROVIDE (1) -2" CONDUIT SLEEVE INTO EACH ROOM SHOWN WITH COMMUNICATIONS DEVICE(S). LOCATE ABOVE CEILING WHERE POSSIBLE.
4. SOUND SYSTEM EQUIPMENT SHALL BE POWERED OFF THE SAME PHASE OF SOURCE PANELBOARD.
5. 15A AND 20A, 120V AND 250V NON-LOCKING TYPE RECEPTACLES MOUNTED BELOW 5'-0" AFF SHALL BE LISTED TAMPER-RESISTANT TYPE IN ACCORDANCE WITH NEC 406.12.

ELECTRICAL GENERAL NOTES

1. BRANCH CIRCUITS AND FEEDER CIRCUITS SHALL BE CONCEALED IN WALLS AND ABOVE CEILINGS WHERE POSSIBLE, INCLUDING HOMERUNS TO PANELBOARDS. BRANCH CIRCUITS AND FEEDERS SHALL NOT BE ROUTED IN OR UNDER SLAB UNLESS SPECIFICALLY INDICATED ON ELECTRICAL FLOOR PLANS OR DETAILS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. BRANCH CIRCUITS SHALL BE 2#12,#12G, 3/4"C., TO NEW 20A/1P CIRCUIT BREAKER IN PANEL INDICATED UNLESS NOTED OTHERWISE.
3. 120V, 1-PHASE, 20A BRANCH CIRCUITS EXCEEDING 150' IN LENGTH SHALL BE 2#10,#10G., 3/4"C. UNLESS NOTED OTHERWISE.
4. 277V, 1-PHASE, 20A BRANCH CIRCUITS EXCEEDING 250' IN LENGTH SHALL BE 2#10,#10G., 3/4"C. UNLESS NOTED OTHERWISE.
5. DEVICES SHALL BE LABELED WITH SOURCE PANEL AND CIRCUIT NUMBER(S).
6. REFER TO ARCHITECTS REFLECTED CEILING PLAN FOR EXACT LOCATION OF CEILING MOUNTED ELECTRICAL DEVICES. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATION OF WALL MOUNTED ELECTRICAL DEVICES.
7. PROVIDE FIRE STOPPING AND SMOKE BARRIER SEALING OF PENETRATIONS THROUGH FIRE WALLS OR SMOKE BARRIERS AS REQUIRED. REFER TO ARCHITECTURAL FLOOR PLANS AND CODE SHEETS FOR WALLS.
8. COORDINATE LOCATIONS OF ELECTRICAL DEVICES AND CONTROLS WITH RESPECT TO LOCATIONS OF CASEWORK AND EQUIPMENT PRIOR TO ROUGH-IN.
9. WHEN DEVICES ARE SHOWN ON PLANS OFFSET FROM ONE ANOTHER, DEVICES SHALL BE MOUNTED IN LINE, CENTERED ON WALL.
10. SHARED NEUTRAL WIRING IS NOT ACCEPTABLE, UNLESS NOTED OTHERWISE ON DRAWINGS. PROVIDE A DEDICATED NEUTRAL WIRE FOR EACH CIRCUIT, WHERE APPLICABLE.
11. DRAWINGS ARE DIAGRAMMATIC ONLY. DO NOT SCALE ELECTRICAL DRAWINGS. FIELD CONDITIONS AND ARCHITECTURAL ELEVATIONS AND DIMENSIONS SHALL GOVERN EXACT LOCATION AND MOUNTING HEIGHTS OF ELECTRICAL DEVICES AND RACEWAYS.
12. FINISHES AND COLOR OF ELECTRICAL WIRING DEVICES, EXPOSED RACEWAY, LIGHT FIXTURES, AND OTHER ELECTRICAL DEVICES SHALL BE DETERMINED BY THE ARCHITECT.
13. ELECTRICAL WORK SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE (OTHER THAN ROOF DECK).
14. THE ELECTRICAL CONTRACTOR SHALL PERFORM CORES REQUIRED FOR ELECTRICAL WORK.
15. BUILDING WIRE AND CABLE NOT IN RACEWAY SHALL BE PLENUM RATED.
16. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING SURFACE MOUNTED RACEWAY APPLICATIONS AND WIRING METHODS.
17. PER NEC ARTICLE 406.12 TAMPER-RESISTANT RECEPTACLES. ALL 15- AND 20-AMPERE, 125- AND 250-VOLT NONLOCKING-TYPE RECEPTACLES IN EDUCATIONAL USE BUILDINGS SHALL BE PROVIDED THROUGHOUT WITH LISTED TAMPER-RESISTANT RECEPTACLES. THE EXCEPTIONS TO THIS REQUIREMENT ARE AS FOLLOWS:
    (1) RECEPTACLES LOCATED MORE THAN 1.7 M (5 ½ FT) ABOVE THE FLOOR.
    (2) RECEPTACLES THAT ARE PART OF AN APPLIANCE.
    (3) A SINGLE RECEPTACLE, OR A DUPLEX RECEPTACLE FOR TWO APPLIANCES, LOCATED WITHIN THE DEDICATED SPACE FOR EACH APPLIANCE THAT, IN NORMAL USE, IS NOT EASILY MOVED FROM ONE PLACE TO ANOTHER AND THAT IS CORD-AND-PLUG-CONNECTED.

LIGHTING FIXTURE TAGS



NOTES

1. FIXTURE CONTROL DESIGNATION REFERS TO ZONE/SWITCH/RELAY CONTROL OF FIXTURES CONTROLLED BY COMMON:
    A. SWITCH FOR LIGHTING IN ROOM, CORRIDOR, OPEN AREA.
    B. ZONE RELAY IN LOCAL LIGHTING CONTROL PANEL OR LIGHTING CONTROL RELAY PANEL.
    C. ALL CONTROL DEVICES (SWITCHES, CONTROL PANELS, OCCUPANCY/VACANCY SENSORS, ETC) WITH CONTROL DESIGNATIONS REFERS TO COMMON CONTROL OF THE SAME ZONE/SWITCH/RELAY CONTROL.
2. WHERE CONTROL DESIGNATION IS NOT SHOWN, ALL FIXTURES IN ASSOCIATED ROOM OR SPACE SHALL BE CONTROLLED SIMULTANEOUSLY VIA THE CONTROL DEVICES INDICATED ON PLANS.
3. WHERE EMERGENCY AND NORMAL FIXTURES ARE CONTROLLED FROM THE SAME ZONE/SWITCH/CONTROL RELAY, UL 924 EMERGENCY BYPASS RELAYS SHOWN WITH SAME CONTROL DESIGNATION BYPASS THAT ZONE/SWITCH/CONTROL RELAY. REFER TO EMERGENCY LIGHTING CIRCUIT SCHEMATICS FOR ADDITIONAL WIRING INFORMATION.
4. UNSWITCHED LIGHTING BRANCH CIRCUIT WIRING IS SHOWN TO A SINGLE FIXTURE IN EACH COMMON CONTROL ZONE. UNLESS OTHERWISE INDICATED, PROVIDE 2#12,#12G,3/4"C FOR SWITCHED WIRING TO ALL COMMON CONTROL FIXTURES.
5. PROVIDE LOW VOLTAGE DIMMING CONTROL WIRING AS INDICATED IN LIGHTING CONTROL DETAILS FOR DIMMABLE LIGHT FIXTURES IN COMMON CONTROL ZONES/SWITCHES/RELAY CONTROL.
6. REFER TO LIGHTING CONTROL DETAILS FOR ADDITIONAL WIRING AND CONTROL INFORMATION.
7. REFER TO LIGHTING CONTROL RELAY PANEL SCHEDULES WHERE APPLICABLE FOR ADDITIONAL CONTROL INFORMATION.

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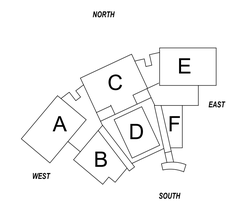

KEYPLAN

Number	Date	Issued For

1 ELECTRICAL LIGHTING FIRST FLOOR PLAN - A
1/8" = 1'-0"

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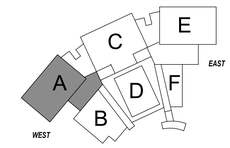
NORTH

KEYPLAN



Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART A

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00

Drawing Number: EL101A

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1 ELECTRICAL LIGHTING FIRST FLOOR PLAN - B
1/8" = 1'-0"

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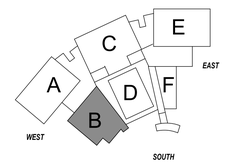

KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART B

Date
07/08/2024
Scale
1/8" = 1'-0"
Proj. Number
22367.00

Drawing Number
EL101B

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1 ELECTRICAL LIGHTING FIRST FLOOR PLAN - C
1/8" = 1'-0"

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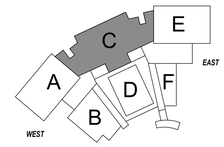
NORTH



KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART C

Date
07/08/2024
Scale
1/8" = 1'-0"
Proj. Number
22367.00

Drawing Number
EL101C

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KEYNOTES - ELECTRICAL LIGHTING	
Key Value	Keynote Text
EL2	LIGHTING FIXTURES IN THIS AREA CONTROLLED VIA THEATRICAL LIGHTING SYSTEM. REFER TO SHEET E503 FOR CIRCUITING.

1 ELECTRICAL LIGHTING FIRST FLOOR PLAN - D
1/8" = 1'-0"

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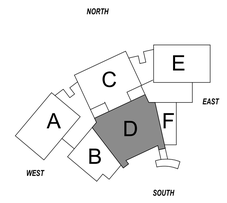

KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
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	07/08/2024	PHASE 2

ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART D

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: EL101D

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1 ELECTRICAL LIGHTING FIRST FLOOR PLAN - F
1/8" = 1'-0"

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KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL LIGHTING FIRST FLOOR PLAN - PART F

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: EL101F

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KEYNOTES - ELECTRICAL LIGHTING

Key Value	Keynote Text
EL1	REMOTE DRIVER FOR TYPE N FIXTURES TO BE MOUNTED IN THIS LOCATION AND CONCEALED ABOVE ACCESIBLE CEILING.

1 ELECTRICAL LIGHTING SECOND FLOOR PLAN - A
1/8" = 1'-0"

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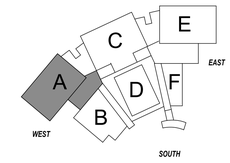
NORTH



KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL LIGHTING SECOND FLOOR PLAN - PART A

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: EL102A

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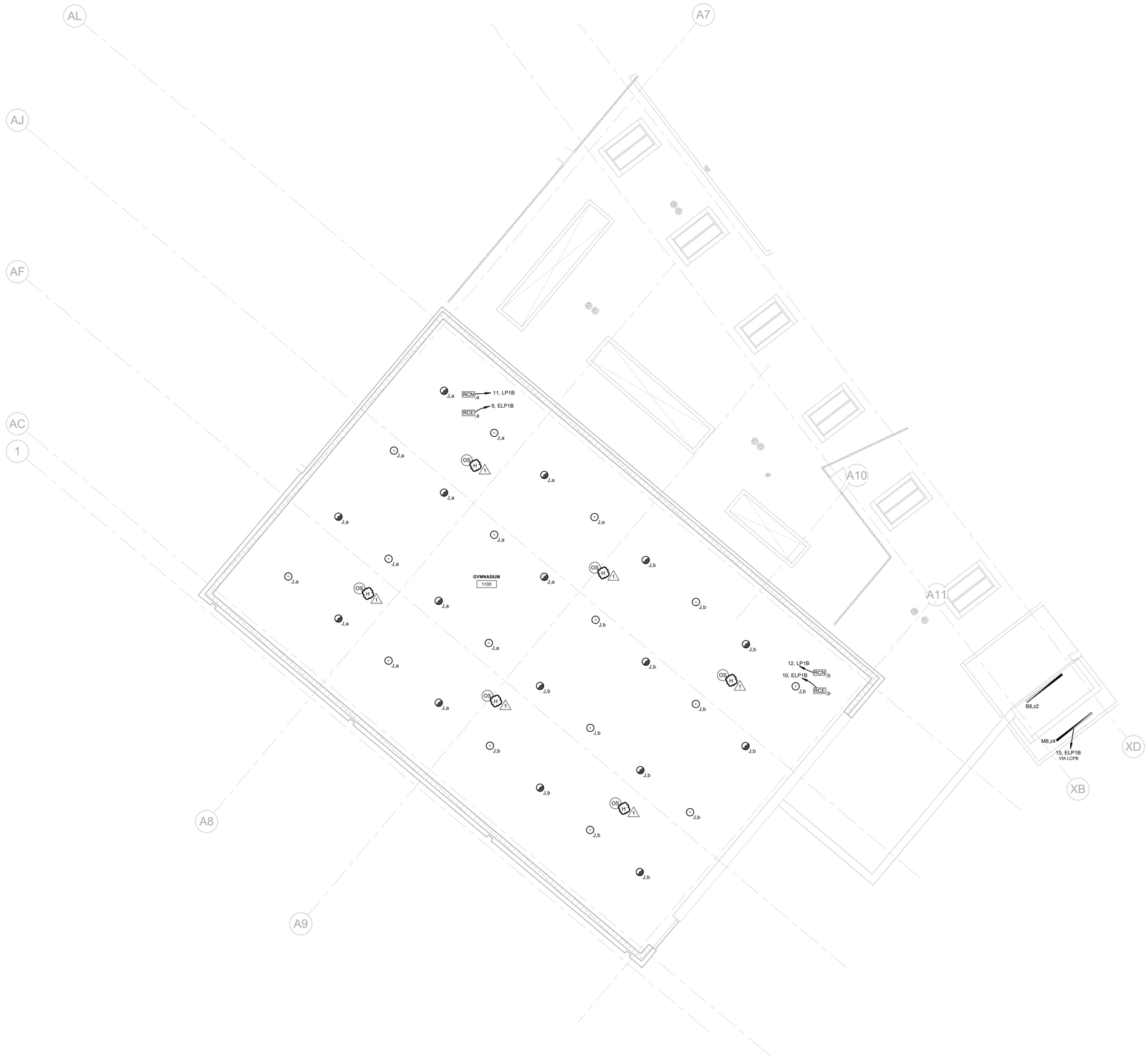

1 ELECTRICAL LIGHTING SECOND FLOOR PLAN - B
1/8" = 1'-0"

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KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL LIGHTING SECOND FLOOR PLAN - PART B

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00

Drawing Number: EL102B

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KEYNOTES - ELECTRICAL LIGHTING	
Key Value	Keynote Text
EL1	REMOTE DRIVER FOR TYPE N FIXTURES TO BE MOUNTED IN THIS LOCATION AND CONCEALED ABOVE ACCESIBLE CEILING.

1 ELECTRICAL LIGHTING SECOND FLOOR PLAN - C
1/8" = 1'-0"

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	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL LIGHTING SECOND FLOOR PLAN - PART C

Date 07/08/2024
Scale 1/8" = 1'-0"
Proj. Number 22367.00

Drawing Number **EL102C**

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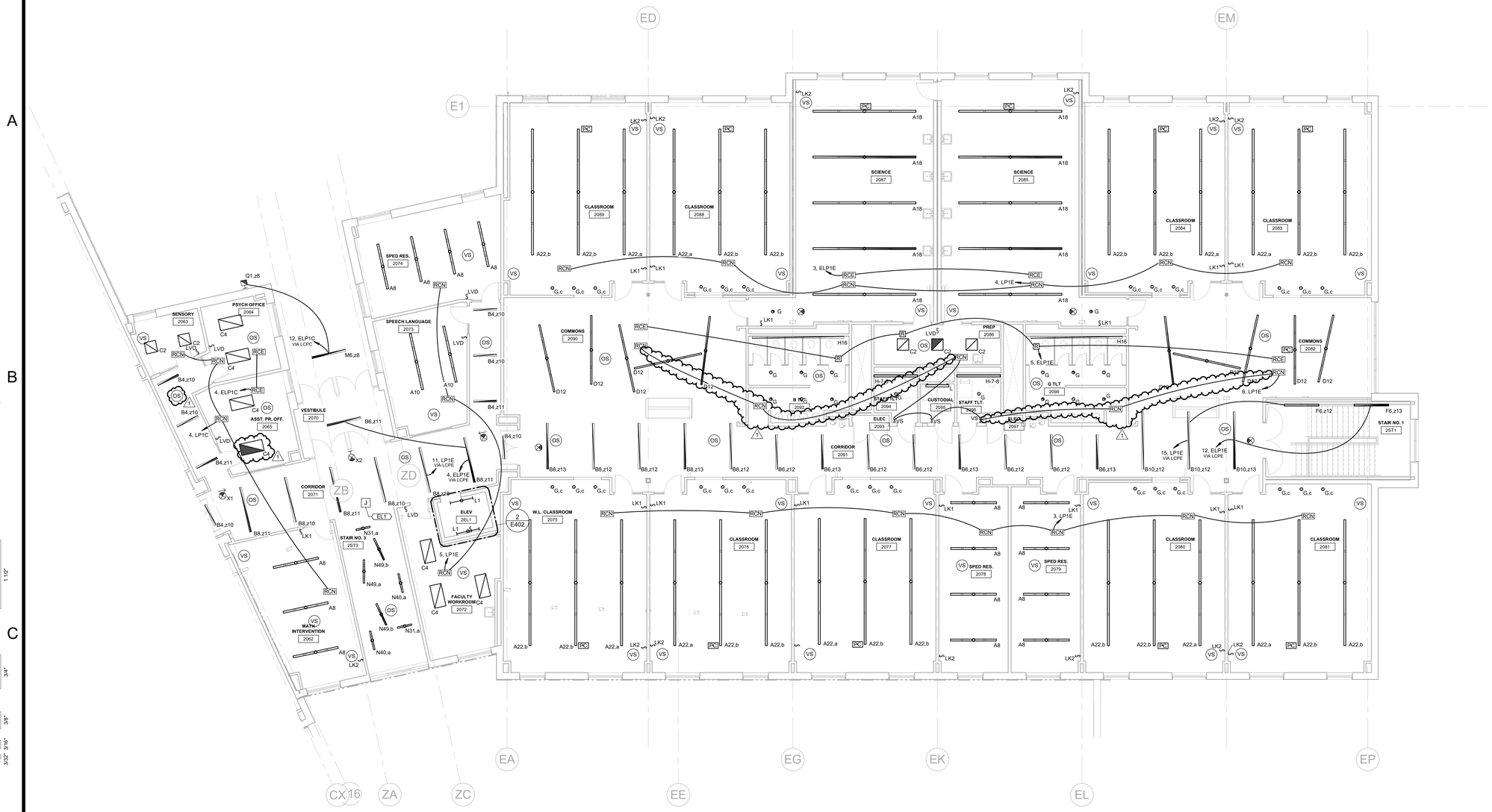

1 ELECTRICAL LIGHTING SECOND FLOOR PLAN - E
1/8" = 1'-0"

KEYNOTES - ELECTRICAL LIGHTING	
Key Value	Keynote Text
EL1	REMOTE DRIVER FOR TYPE N FIXTURES TO BE MOUNTED IN THIS LOCATION AND CONCEALED ABOVE ACCESIBLE CEILING.

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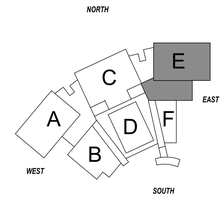

KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL LIGHTING SECOND FLOOR PLAN - PART E

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: EL102E

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KEYNOTES - ELECTRICAL POWER

Key Value	Keynote Text
EP7	DOOR HARDWARE FURNISHED AND INSTALLED BY DIVISION 08, WIRED BY DIVISION 26. PROVIDE 120V CONNECTION TO DOOR HARDWARE IN 1" CONDUIT PER MANUFACTURER REQUIREMENTS FROM SPECIFICATION 080671 AND 087100

1 ELECTRICAL POWER FIRST FLOOR PLAN - A
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KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
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ELECTRICAL POWER FIRST FLOOR PLAN - PART A

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: EP101A

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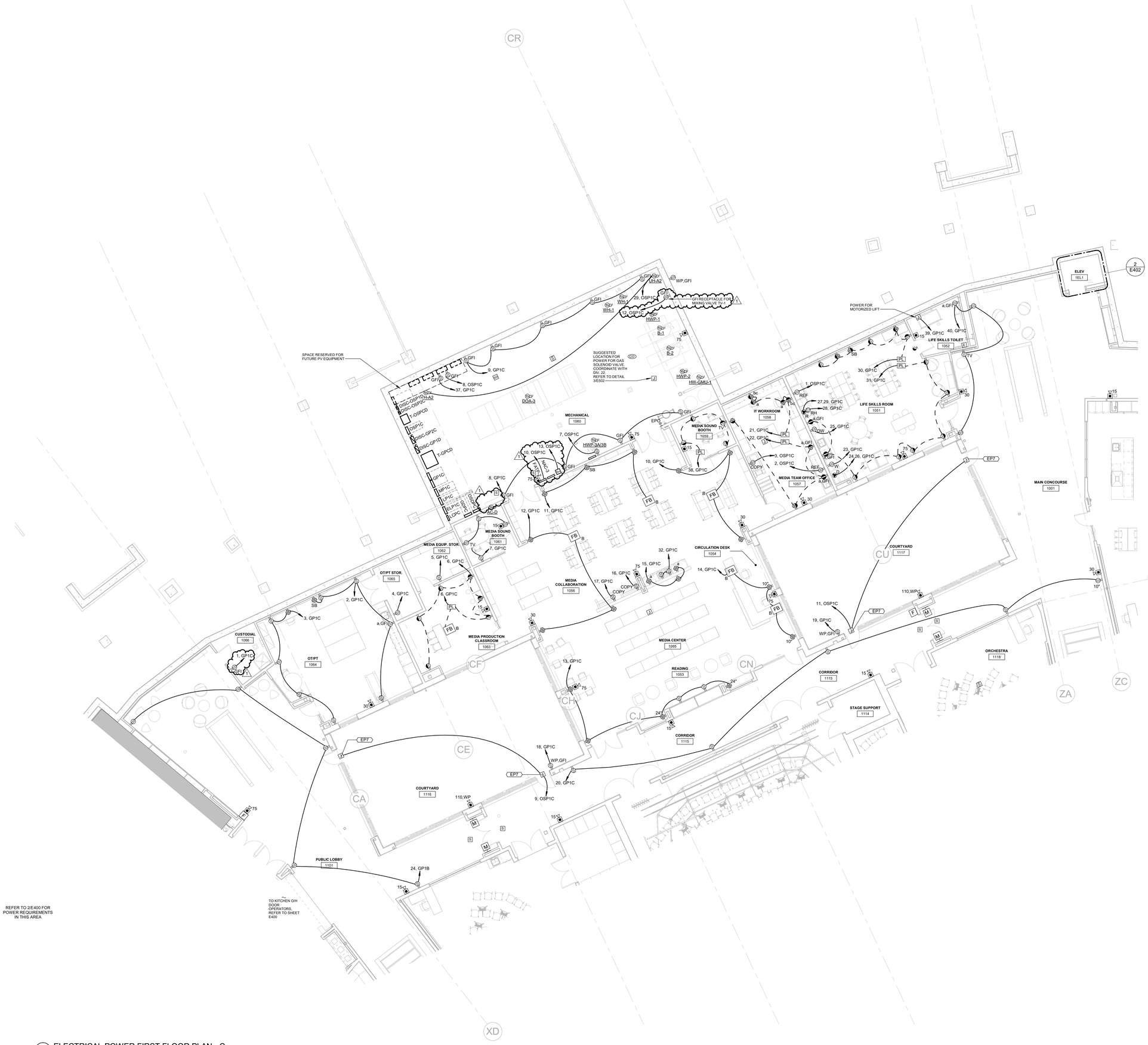

1 ELECTRICAL POWER FIRST FLOOR PLAN - C
1/8" = 1'-0"

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Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL POWER FIRST FLOOR PLAN - PART C

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: EP101C

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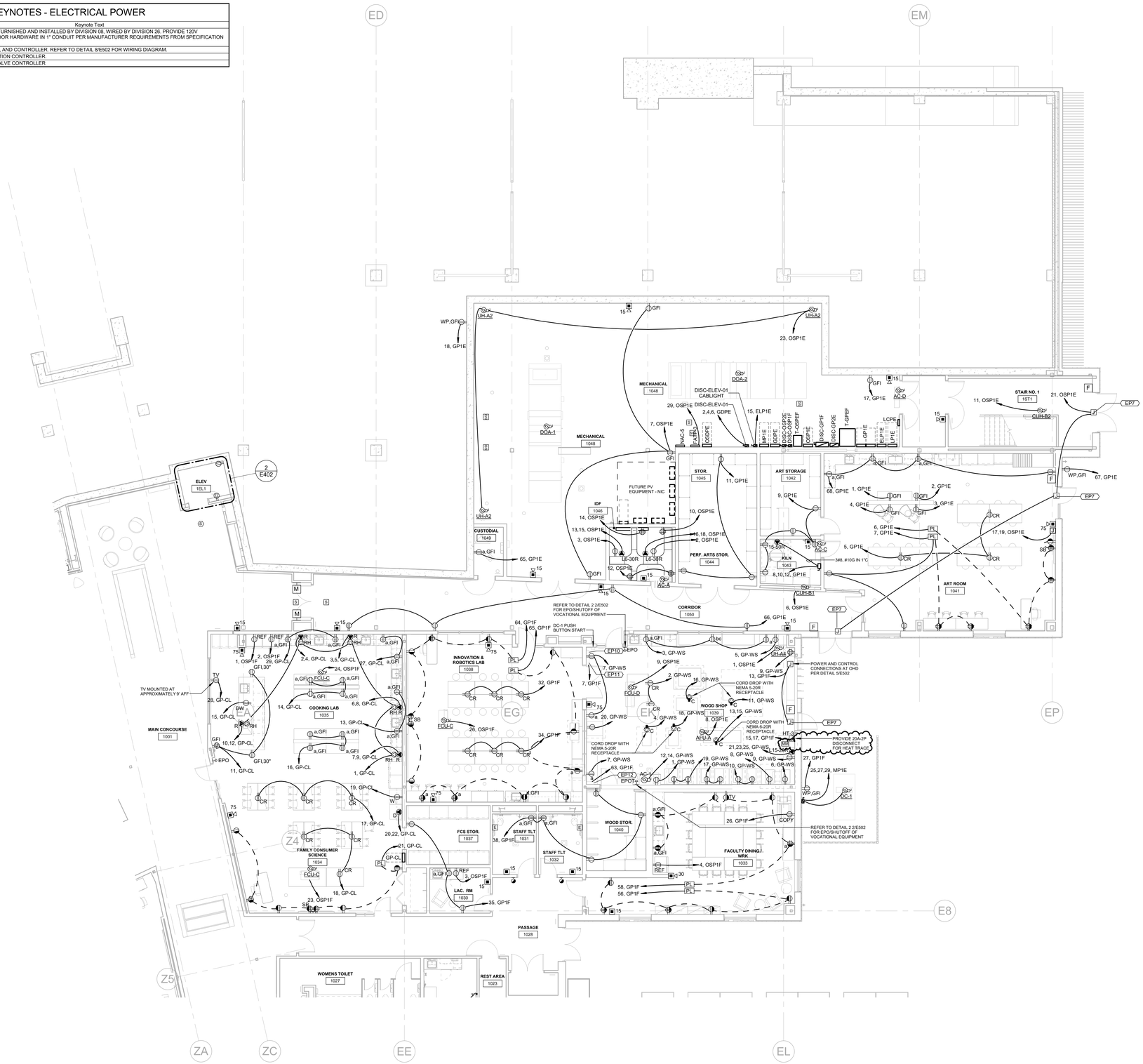
10/16/2024 10:46:23 AM

KEYNOTES - ELECTRICAL POWER	
Key Value	Keynote Text
EP7	DOOR HARDWARE FURNISHED AND INSTALLED BY DIVISION 08, WIRED BY DIVISION 26. PROVIDE 120V CONNECTION TO DOOR HARDWARE IN 1" CONDUIT PER MANUFACTURER REQUIREMENTS FROM SPECIFICATION 080671 AND 087100
EP10	DC-1 VFD, STARTER, AND CONTROLLER. REFER TO DETAIL 8/E502 FOR WIRING DIAGRAM.
EP11	DC-1 SPARK DETECTION CONTROLLER.
EP12	DC-1 NO-RETURN VALVE CONTROLLER



1 ELECTRICAL POWER FIRST FLOOR PLAN - E
1/8" = 1'-0"

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Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
WEST
SOUTH

KEYPLAN

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	07/08/2024	PHASE 2

ELECTRICAL POWER FIRST FLOOR PLAN - PART E

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00

Drawing Number: EP101E

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ELECTRICAL KITCHEN EQUIPMENT SCHEDULE

ITEM NO.	QTY.	DESCRIPTION	ELECTRICAL DATA					SOURCE PANEL	CIRCUIT BREAKER	WIRE AND CONDUIT	CONNECTION	DISCONNECT SWITCH	REMARKS
			V	PH	HP	KW	AMP						
4	1	CLOTHES WASHER	120	1	-	-	-	KP	20A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA 5-20R)	N/A	#1
5	1	CLOTHES DRYER	208	1	-	-	-	KP	30A/2P	3#10, #10G, 3/4"C	CORD & PLUG (PROVIDE NEMA 14-30R)	N/A	#1
11	1	WALK-IN COOLER	120	1	-	1.1	-	OSKP	15A/1P	2#12, #12G, 3/4"C	DIRECT CONNECTION	1PTS	#1
12	1	WALK-IN FREEZER	120	1	-	1.3	-	OSKP	20A/1P	2#12, #12G, 3/4"C	DIRECT CONNECTION	1PTS	#1
13a	1	COOLER CONDENSING UNIT	208	3	-	-	4.7	OSKP	15A/3P	3#12, #12G, 3/4"C	DIRECT CONNECTION	30A/3P	#1
13b	1	COOLER EVAPORATOR COIL	120	1	-	-	1.8	OSKP	15A/1P	2#12, #12G, 3/4"C	DIRECT CONNECTION	30A/1P	#1
13c	1	FREEZER CONDENSING UNIT	208	3	-	-	8.7	OSKP	15A/3P	3#12, #12G, 3/4"C	DIRECT CONNECTION	30A/3P	#1
13d	1	FREEZER EVAPORATOR COIL	208	1	-	-	9.1	OSKP	15A/2P	2#12, #12G, 3/4"C	DIRECT CONNECTION	30A/2P	#1
21	1	ICEMAKER WITH BIN	120	1	-	-	11.5	OSKP	20A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA L14-20R)	N/A	#1
25	1	CONVECTION OVEN DOUBLE	120	1	-	-	8	KP	(2) 15A/1P	(2) 2#12, #12G, 3/4"C	DIRECT CONNECTION	(2) 30A/3P	#7
26	1	CONVECTION OVEN DOUBLE	120	1	-	-	8	KP	(2) 15A/1P	(2) 2#12, #12G, 3/4"C	DIRECT CONNECTION	(2) 30A/3P	#7
27	1	TEN PAN STEAMER	120	1	-	-	3.5	KP	15A/1P	2#12, #12G, 3/4"C	DIRECT CONNECTION	1PTS	#7
28	1	FOUR-BURNER RANGE WITH OVEN	120	1	-	-	0.1	KP	15A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA 5-20R)	N/A	#7
29	1	GRIDDLE WITH MOBILE STAND	120	1	-	-	0.5	KP	15A/1P	2#12, #12G, 3/4"C	DIRECT CONNECTION	1PTS	#7
32	1	UTILITY DISTRIBUTION SYSTEM	208	3	-	-	-	OSKP	50A/3P	4#8, #10G, 1"C	CORD & PLUG (PROVIDE NEMA 5-20R)	N/A	#1, #4
33	1	EXHAUST VENTILATOR	-	-	-	-	-	N/A	N/A	N/A	N/A	N/A	#4, #11
34	1	EXHAUST VENTILATOR	-	-	-	-	-	N/A	N/A	N/A	N/A	N/A	#4, #11
35	1	VENTILATOR THERMOSTATIC AUTO-START CONTROL SYSTEM	120	1	-	-	-	OSKP	15A/1P	2#12, #12G, 3/4"C	DIRECT CONNECTION	30A/1P	#4, #10
35a	1	VENTILATOR CONTROL INTERFACE SCREEN	-	-	-	-	-	N/A	N/A	N/A	N/A	N/A	#10, #12
35b	1	ROOM TEMPERATURE SENSOR	-	-	-	-	-	N/A	N/A	N/A	N/A	N/A	#10, #12
36	1	FIRE SUPPRESSION SYSTEM	120	1	-	-	-	OSKP	20A/1P	2#12, #12G, 3/4"C	DIRECT CONNECTION	30A/1P	#8
41	1	COOK'S WORK TABLE WITH OVERSHELF	120	1	-	-	-	KP	(3) 20A/1P	(3) 2#12, #12G, 3/4"C	N/A	N/A	#3
42	1	ACCESSIBLE PREP STATION TABLE WITH SINK	120	1	-	1	-	KP	(3) 20A/1P	(3) 2#12, #12G, 3/4"C	N/A	N/A	#3
44	1	AUTOMATIC SLICER	120	1	-	-	5	KP	15A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA 5-20R)	1PTS	#13
45	1	TWENTY-QUART MIXER	120	1	-	-	8	KP	15A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA 5-20R)	N/A	#14
48	1	FOOD PROCESSOR	120	1	-	-	12	KP	20A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA 5-20R)	N/A	
49	1	PREP TABLE WITH SINKS	120	1	-	-	-	KP	20A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA 5-20R)	N/A	
51	3	MOBILE HOT FOOD HOLDING CABINET, PASS-THRU	120	1	-	-	13.8	OSKP	20A/1P	2#12, #12G, 3/4"C	CORD & PLUG	30A/1P	#15
52	3	DROP CORD WITH INLINE GFCI	120	1	-	-	-	KP	20A/1P	2#12, #12G, 3/4"C	N/A	N/A	
54	1	REFRIGERATOR, PASS-THRU	120	1	-	-	6.5	OSKP	15A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA 5-20R)	N/A	#4
55	1	REFRIGERATOR, PASS-THRU	120	1	-	-	6.5	OSKP	15A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA 5-20R)	30A/3P	#4
57	1	REFRIGERATOR, PASS-THRU	120	1	-	-	6.5	OSKP	15A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA 5-20R)	1PTS	#4
61	1	FUTURE SERVING COUNTER	120	1	-	-	-	KP	20A/1P	2#12, #12G, 3/4"C	N/A	N/A	#3
62	1	REFRIGERATED SELF-SERVICE GRAB & GO CASE	120	1	-	-	15.3	OSKP	20A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA L5-20R)	1PTS	#2
63	4	HOT FOOD WELL, DROP IN (MOUNTED IN GROUP)	208	1	-	3.6	-	KP	25A/2P	3#10, #10G, 3/4"C	DIRECT CONNECTION	N/A	#3, #9
64	1	SERVING COUNTER	120	1	-	-	-	OSKP	(4) 20A/1P	(4) 2#12, #12G, 3/4"C	N/A	N/A	#16
66	1	COLD WELL, DROP-IN	120	1	-	-	3.8	OSKP	20A/1P	2#12, #12G, 3/4"C	CORD & PLUG	N/A	#2
67	1	MILK COOLER	120	1	-	-	3	OSKP	20A/1P	3#12, #12G, 3/4"C	CORD & PLUG	30A/1P	#2
68	1	COLD WELL, DROP-IN	120	1	-	-	3.8	OSKP	20A/1P	2#12, #12G, 3/4"C	CORD & PLUG	N/A	#2
69	1	SERVING COUNTER	120	1	-	-	-	N/A	(3) 20A/1P	(3) 2#12, #12G, 3/4"C	N/A	N/A	#16
70	4	HOT FOOD WELL, DROP IN (MOUNTED IN GROUP)	208	1	-	3.6	-	KP	2S/2P	3#10, #10G, 3/4"C	DIRECT CONNECTION	30A/3P	#3, #9
71	1	REFRIGERATED SELF-SERVICE GRAB AND GO CASE	120	1	-	-	15.3	OSKP	20A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA L5-20R)	1PTS	#2
72	1	MERCHANDISING DISPLAY WARMERS	120	1	-	-	15.1	KP	20A/1P	2#12, #12G, 3/4"C	CORD & PLUG	N/A	#4
73	1	SERVING COUNTER	120	1	-	-	-	KP	(3) 20A/1P	(3) 2#12, #12G, 3/4"C	N/A	N/A	#16
74	1	NOVELTY ICE CREAM DISPLAY FREEZER	120	1	-	-	4.8	OSKP	20A/1P	2#12, #12G, 3/4"C	CORD & PLUG	N/A	#3
77	1	FUTURE MOBILE CASHIER STAND	120	1	-	-	-	KP	20A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA 5-20R)	N/A	#5
78	1	FUTURE CASHIER TERMINAL	120	1	-	-	-	KP	20A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA 5-20R)	N/A	#5
79	1	WORKTOP GLASS DOOR DISPLAY REFRIGERATOR	120	1	-	-	2.5	OSKP	15A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA 5-20R)	30A/3P	#1
81	3	CASHIER TERMINAL	120	1	-	-	-	KP	20A/1P	2#12, #12G, 3/4"C	CORD & PLUG (PROVIDE NEMA 5-20R)	N/A	#5
89	1	WAREWASHER, RACK CONVEYOR	480	3	-	-	68	KHP	90A/3P	3#3, #8G, 1-1/4"C	DIRECT CONNECTION	N/A	#17

GENERAL NOTES:
1. ABBREVIATIONS:
   - S.T. = SHUNT TRIP CIRCUIT BREAKER WIRED BY E.C.
   - FSC = FOOD SERVICE CONTRACTOR
   - KEC = KITCHEN EQUIPMENT CONTRACTOR
   - C.O. = CONVENIENCE OUTLET. ALL RECEPTACLE SHALL BE GFCI TYPE. "a" INDICATES ABOVE COUNTER
   - C&P = CORD & PLUG
2. COORDINATE ALL CONNECTION TYPES, MOUNTING HEIGHTS, STUB-UP AND DEVICE LOCATIONS AND OTHER ELECTRICAL REQUIREMENTS WITH KEC AND FOOD SERVICE ROUGH-IN PLANS PRIOR TO ROUGH-IN.
3. PROVIDE FINAL CONNECTIONS TO ALL PIECES OF EQUIPMENT SPECIFIED WITH DISCONNECT SWITCHES OR DIRECT CONNECTIONS.
4. ALL NEMA 5-15R AND 5-20R RECEPTACLES IN KITCHEN AND/OR SERVERY (INCLUDING CONVENIENCE RECEPTACLES SHOWN ON PLAN) SHALL BE DUPLEX GFCI-TYPE, UNLESS INDICATED TO HAVE GFCI CIRCUIT BREAKER IN THIS SCHEDULE.
5. ALL RECEPTACLES OTHER THAN NEMA 5-15R AND 5-20R SHALL BE PROTECTED BY A GFCI BREAKER IN SOURCE PANELBOARD.
6. ALL DISCONNECT SWITCHES SHALL BE NEMA 3R RATED.
   - 1PTS = 1-POLE TOGGLE SWITCH
   - 2PTS = 2-POLE TOGGLE SWITCH
7. ALL ACCESSIBLE CONVENIENCE RECEPTACLES SHALL BE GFCI RECEPTACLES. PROVIDE 15mA GFCI BREAKER IN PANELBOARD FOR ALL INACCESSIBLE RECEPTACLES AND RECEPTACLES FOR EQUIPMENT.

REMARKS:
1. PROVIDE 15mA GFCI BREAKER IN PANELBOARD FOR EQUIPMENT. DO NOT PROVIDE GFCI RECEPTACLE.
2. RECEPTACLE MOUNTED WITHIN KITCHEN COUNTER. RECEPTACLE FURNISHED AND MOUNTED BY KEC, WIRED BY EC.
3. EQUIPMENT FED FROM UNDERSLAB, AND MOUNTED ON SUPPORT 24" AFF. REFER TO KITCHEN RAISED RECEPTACLE DETAIL.
4. EQUIPMENT FED FROM ABOVE VIA SJO DROP CORD WITH RECEPTACLE SPECIFIED IN SCHEDULE. EC SHALL FURNISH AND INSTALL DROP CORD WITH STRAIN RELIEF AND ATTACH TO STRUCTURE ABOVE CEILING. DO NOT SUPPORT VIA CEILING. PROVIDE PROTECTIVE COVER PLATE WITH OPENING IN CEILING FOR ROUTING OF CORD TO EQUIPMENT.
5. RECEPTACLE MOUNTED IN FLOOR BOX, FURNISHED AND INSTALLED BY EC.
6. PROVIDE SHUNT TRIP BREAKER IN SOURCE PANEL PER KITCHEN ELECTRIC AND GAS SHUTOFF WIRING DIAGRAM DETAIL.
7. POWER VIA UTILITY DISTRIBUTION SYSTEM PANELBOARD.
8. PROVIDE FIRE ALARM MONITOR MODULE AND CONNECTIONS TO FIRE ALARM SYSTEM. REFER TO FIRE ALARM RISER FOR ADDITIONAL INFORMATION.
9. 120/208V CIRCUIT: PROVIDE 2 HOT, 1 NEUTRAL, 1 GROUND WIRE.
10. COORDINATE EXACT LOCATION OF UNIT WITH DIV. 23 AND KEC.
11. PROVIDE 120V CONNECTION TO LIGHTS IN HOOD FROM VENTILATOR THERMOSTATIC AUTO-START CONTROL SYSTEM (ITEM 35). REFER TO NOTE E-35/FS121.
12. PROVIDE CAT 5 CONNECTION TO REMOTE TOUCH SCREEN FROM VENTILATOR THERMOSTATIC AUTO-START CONTROL SYSTEM (ITEM 35). REFER TO NOTE E-35/FS121.
13. AUTOMATIC SLICER (ITEM 44) IS POWERED FROM DUPLEX RECEPTACLE MOUNTED AT COOK'S WORK TABLE WITH OVERSHELF (ITEM 41).
14. TWENTY-QUART MIXER (ITEM 45) IS POWERED FROM DUPLEX RECEPTACLE MOUNTED AT ACCESSIBLE PREP STATION TABLE WITH SINK (ITEM 42).
15. MOBILE HOT FOOD HOLDING CABINET, PASS-THRU (ITEM 51) IS POWERED FROM DROP CORD WITH INLINE GFCI (ITEM 52).
16. COORDINATE CIRCUIT CONNECTIONS AT SERVING COUNTER WITH KEC FLOOR PLANS.
17. 480V-3PH CIRCUIT: PROVIDE 2 HOT, 1 NEUTRAL, 1 GROUND WIRE.

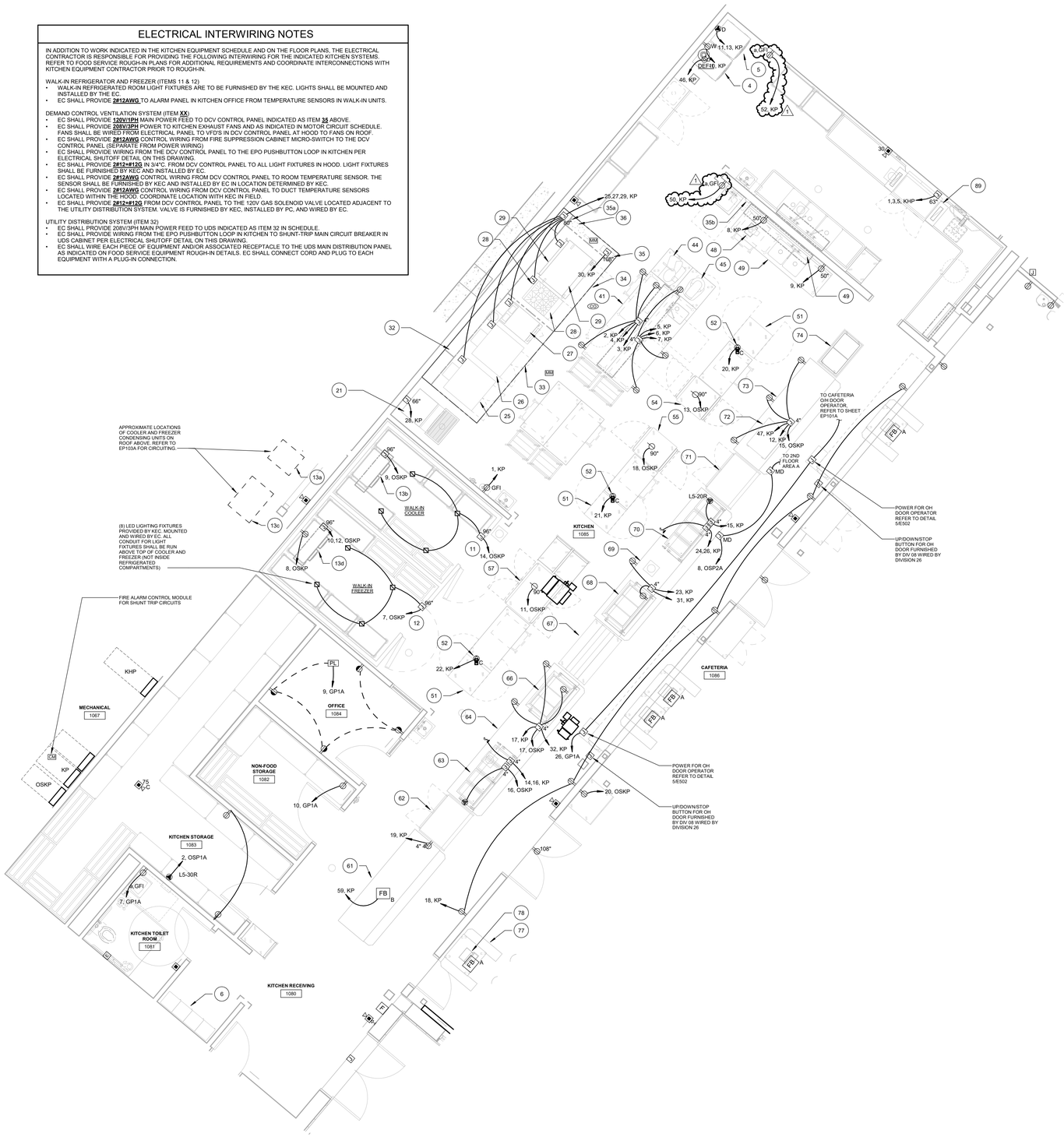
ELECTRICAL INTERWIRING NOTES

IN ADDITION TO WORK INDICATED IN THE KITCHEN EQUIPMENT SCHEDULE AND ON THE FLOOR PLANS, THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE FOLLOWING INTERWIRING FOR THE INDICATED KITCHEN SYSTEMS. REFER TO FOOD SERVICE ROUGH-IN PLANS FOR ADDITIONAL REQUIREMENTS AND COORDINATE INTERCONNECTIONS WITH KITCHEN EQUIPMENT CONTRACTOR PRIOR TO ROUGH-IN.

WALK-IN REFRIGERATOR AND FREEZER (ITEMS 11 & 12)
- WALK-IN REFRIGERATED ROOM LIGHT FIXTURES ARE TO BE FURNISHED BY THE KEC. LIGHTS SHALL BE MOUNTED AND INSTALLED BY THE EC.
- EC SHALL PROVIDE **2#12AWG** TO ALARM PANEL IN KITCHEN OFFICE FROM TEMPERATURE SENSORS IN WALK-IN UNITS.

DEMAND CONTROL VENTILATION SYSTEM (ITEM **XX**)
- EC SHALL PROVIDE **120V/1PH** MAIN POWER FEED TO DCV CONTROL PANEL INDICATED AS ITEM **35** ABOVE.
- EC SHALL PROVIDE **208V/3PH** POWER TO KITCHEN EXHAUST FANS AND AS INDICATED IN MOTOR CIRCUIT SCHEDULE. FANS SHALL BE WIRED FROM ELECTRICAL PANEL TO VFD'S IN DCV CONTROL PANEL AT HOOD TO FANS ON ROOF.
- EC SHALL PROVIDE **2#12AWG** CONTROL WIRING FROM FIRE SUPPRESSION CABINET MICRO-SWITCH TO THE DCV CONTROL PANEL (SEPARATE FROM POWER WIRING)
- EC SHALL PROVIDE WIRING FROM THE DCV CONTROL PANEL TO THE EPO PUSHBUTTON LOOP IN KITCHEN PER ELECTRICAL SHUTOFF DETAIL ON THIS DRAWING.
- EC SHALL PROVIDE **2#12+#12G** IN 3/4"C. FROM DCV CONTROL PANEL TO ALL LIGHT FIXTURES IN HOOD. LIGHT FIXTURES SHALL BE FURNISHED BY KEC AND INSTALLED BY EC.
- EC SHALL PROVIDE **2#12AWG** CONTROL WIRING FROM DCV CONTROL PANEL TO ROOM TEMPERATURE SENSOR. THE SENSOR SHALL BE FURNISHED BY KEC AND INSTALLED BY EC IN LOCATION DETERMINED BY KEC.
- EC SHALL PROVIDE **2#12AWG** CONTROL WIRING FROM DCV CONTROL PANEL TO DUCT TEMPERATURE SENSORS LOCATED WITHIN THE HOOD. COORDINATE LOCATION WITH KEC IN FIELD.
- EC SHALL PROVIDE **2#12+#12G** FROM DCV CONTROL PANEL TO THE 120V GAS SOLENOID VALVE LOCATED ADJACENT TO THE UTILITY DISTRIBUTION SYSTEM. VALVE IS FURNISHED BY KEC, INSTALLED BY PC, AND WIRED BY EC.

UTILITY DISTRIBUTION SYSTEM (ITEM 32)
- EC SHALL PROVIDE 208V/3PH MAIN POWER FEED TO UDS INDICATED AS ITEM 32 IN SCHEDULE.
- EC SHALL PROVIDE WIRING FROM THE EPO PUSHBUTTON LOOP IN KITCHEN TO SHUNT-TRIP MAIN CIRCUIT BREAKER IN UDS CABINET PER ELECTRICAL SHUTOFF DETAIL ON THIS DRAWING.
- EC SHALL WIRE EACH PIECE OF EQUIPMENT AND/OR ASSOCIATED RECEPTACLE TO THE UDS MAIN DISTRIBUTION PANEL AS INDICATED ON FOOD SERVICE EQUIPMENT ROUGH-IN DETAILS. EC SHALL CONNECT CORD AND PLUG TO EACH EQUIPMENT WITH A PLUG-IN CONNECTION.



2 ELECTRICAL ENLARGED PLAN - KITCHEN
1/4" = 1'-0"

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STATE PROJECT NO: 057-0114 N

NORTH / EAST / SOUTH / WEST

KEYPLAN

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	07/08/2024	PHASE 2

ELECTRICAL ENLARGED PLANS - KITCHEN

Date 07/08/2024
Scale As indicated
Proj. Number 22367.00
Drawing Number E400

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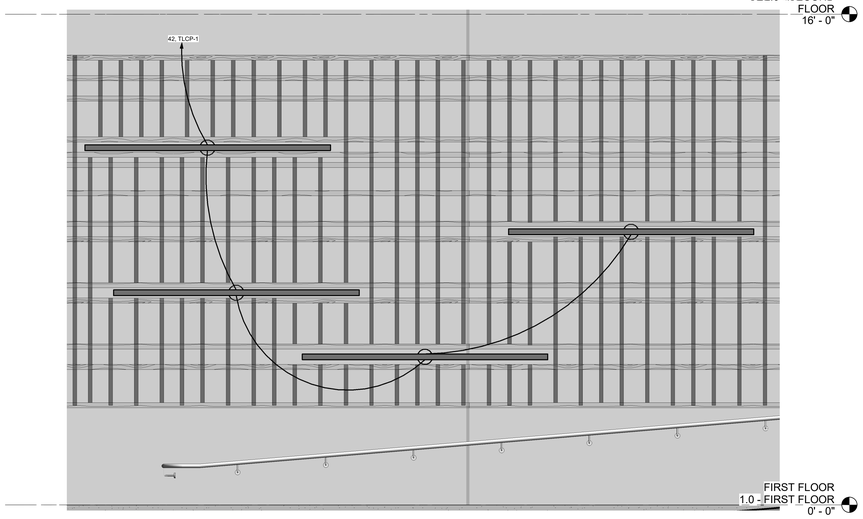
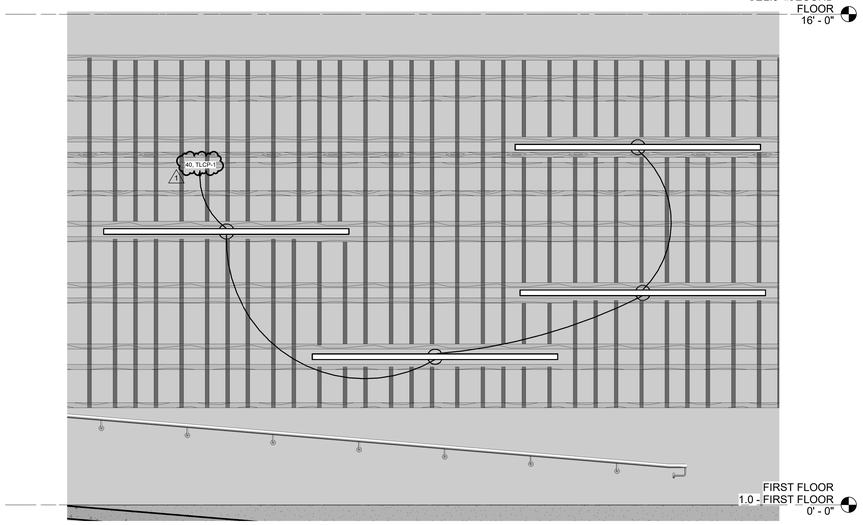
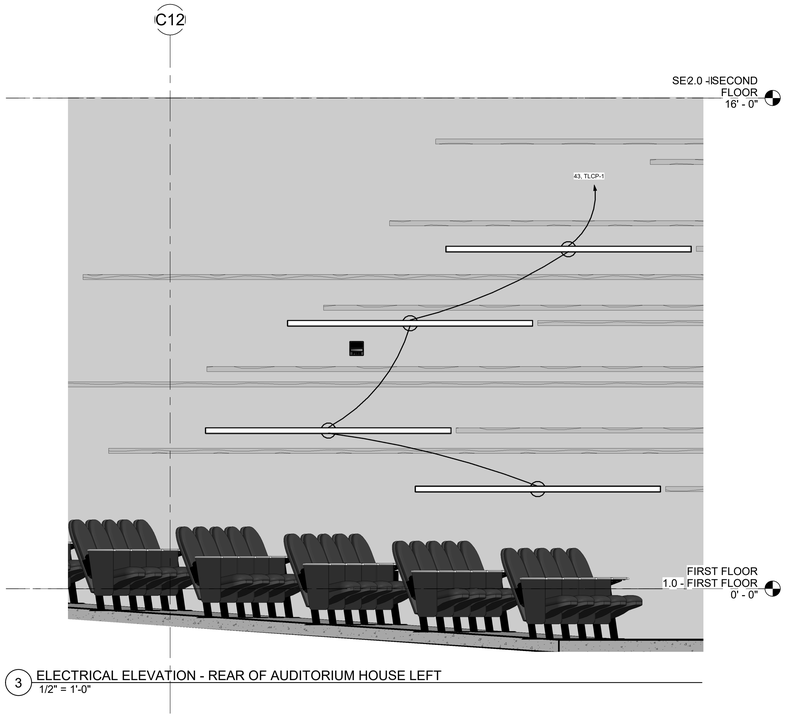


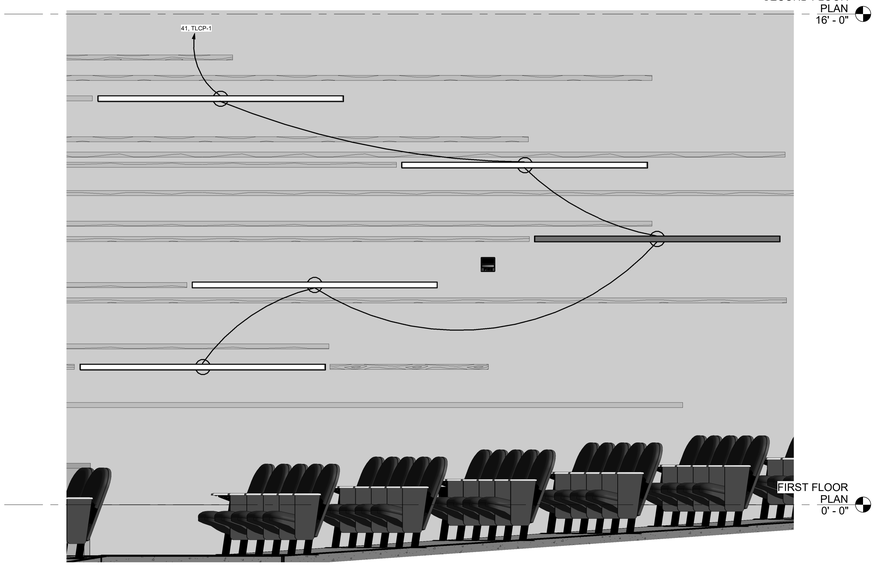
4 ELECTRICAL ELEVATION - FRONT OF AUDITORIUM HOUSE LEFT
1/2" = 1'-0"



1 ELECTRICAL ELEVATION - FRONT OF AUDITORIUM HOUSE RIGHT
1/2" = 1'-0"



3 ELECTRICAL ELEVATION - REAR OF AUDITORIUM HOUSE LEFT
1/2" = 1'-0"



2 ELECTRICAL ELEVATION - REAR OF AUDITORIUM HOUSE RIGHT
1/2" = 1'-0"

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Greenwich Public Schools

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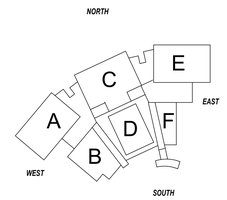
STATE PROJECT NO: 057-0114 N



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	07/08/2024	PHASE 2

ELECTRICAL ENLARGED PLANS - AUDITORIUM

Date
07/08/2024
Scale
1/2" = 1'-0"
Proj. Number
22367.00

Drawing Number
E401

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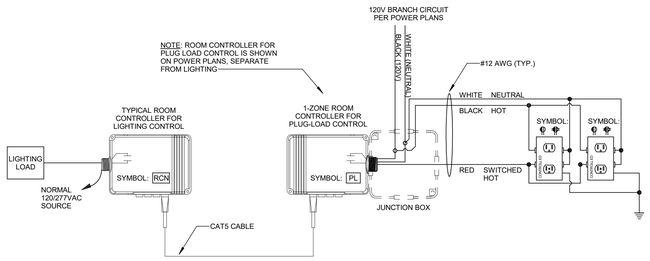
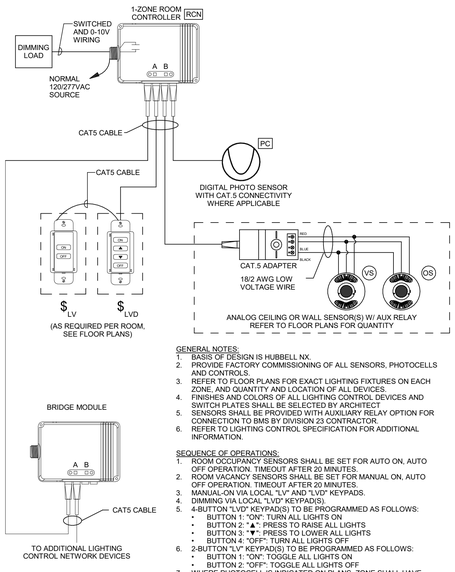


GENERAL NOTES:
1. BASIS OF DESIGN IS HUBBELL NX.
2. ALL PLUG-LOAD CONTROLLED RECEPTACLES SHALL BE PERMANENTLY MARKED PER NEC 406.3(E).
3. ONLY THE "BOTTOM" OUTLET OF DUPLEX RECEPTACLES SHALL BE CONTROLLED/ SWITCHED.
4. ANY UNCONTROLLED RECEPTACLES OR HARDWIRED DEVICES/EQUIPMENT SHOWN POWERED VIA THE SAME CIRCUIT AS CONTROLLED RECEPTACLES SHALL BE WIRED AHEAD OF THE CONTROL/SWITCH DEVICE.
5. REFER TO FLOOR PLANS FOR QUANTITY AND LOCATION OF ALL DEVICES.
6. FINISHES AND COLORS OF ALL RECEPTACLES AND COVER PLATES SHALL BE SELECTED BY ARCHITECT.
7. REFER TO LIGHTING CONTROL SPECIFICATION FOR ADDITIONAL INFORMATION.
8. REFER TO LIGHTING CONTROL DETAILS FOR TYPICAL INTERCONNECTION WITH LIGHTING CONTROL SYSTEM.

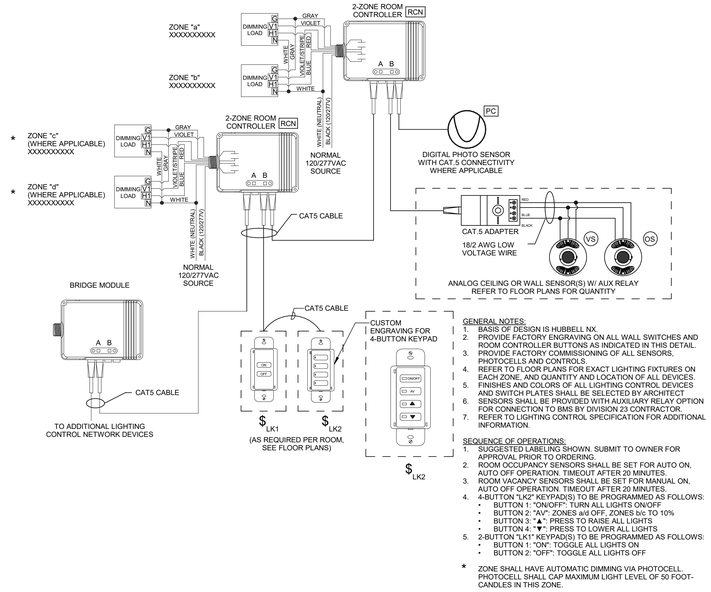
2 HUBBELL NX - PLUG LOAD CONTROL DETAIL
NTS



GENERAL NOTES:
1. BASIS OF DESIGN IS HUBBELL NX.
2. PROVIDE FACTORY COMMISSIONING OF ALL SENSORS, PHOTOCELLS AND CONTROLS.
3. REFER TO FLOOR PLANS FOR EXACT LIGHTING FIXTURES ON EACH ZONE, AND QUANTITY AND LOCATION OF ALL DEVICES.
4. FINISHES AND COLORS OF ALL LIGHTING CONTROL DEVICES AND SWITCH PLATES SHALL BE SELECTED BY ARCHITECT
5. SENSORS SHALL BE PROVIDED WITH AUXILIARY RELAY OPTION FOR CONNECTION TO BMS BY DIVISION 23 CONTRACTOR.
6. REFER TO LIGHTING CONTROL SPECIFICATION FOR ADDITIONAL INFORMATION.

SEQUENCE OF OPERATIONS:
1. ROOM OCCUPANCY SENSORS SHALL BE SET FOR AUTO ON, AUTO OFF OPERATION. TIMEOUT AFTER 20 MINUTES.
2. ROOM VACANCY SENSORS SHALL BE SET FOR MANUAL ON, AUTO OFF OPERATION. TIMEOUT AFTER 20 MINUTES.
3. MANUAL-ON VIA LOCAL "LV" AND "LVD" KEYPADS.
4. DIMMING VIA LOCAL "LVD" KEYPAD(S).
5. 4-BUTTON "LVD" KEYPAD(S) TO BE PROGRAMMED AS FOLLOWS:
   - BUTTON 1: "ON": TURN ALL LIGHTS ON
   - BUTTON 2: "▲": PRESS TO RAISE ALL LIGHTS
   - BUTTON 3: "▼": PRESS TO LOWER ALL LIGHTS
   - BUTTON 4: "OFF": TURN ALL LIGHTS OFF
6. 2-BUTTON "LV" KEYPAD(S) TO BE PROGRAMMED AS FOLLOWS:
   - BUTTON 1: "ON": TOGGLE ALL LIGHTS ON
   - BUTTON 2: "OFF": TOGGLE ALL LIGHTS OFF
7. WHERE PHOTOCELL IS INDICATED ON PLANS, ZONE SHALL HAVE AUTOMATIC DIMMING VIA PHOTOCELL AND SHALL CAP MAXIMUM LIGHT LEVEL OF 40 FOOT-CANDLES IN THIS ZONE.

TYPICAL 1-ZONE LIGHTING CONTROL DETAIL - NORMAL FIXTURES ONLY
N.T.S.

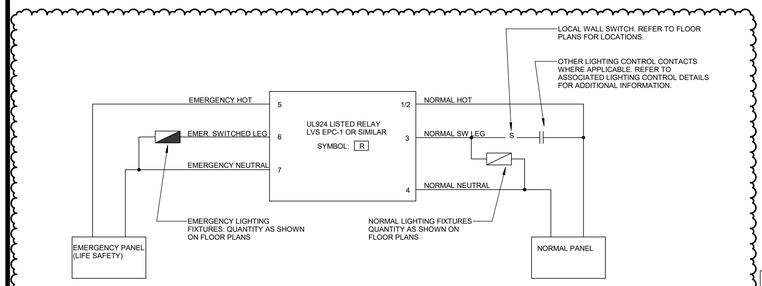


GENERAL NOTES:
1. BASIS OF DESIGN IS HUBBELL NX.
2. PROVIDE FACTORY ENGRAVING ON ALL WALL SWITCHES AND ROOM CONTROLLER BUTTONS AS INDICATED IN THIS DETAIL.
3. PROVIDE FACTORY COMMISSIONING OF ALL SENSORS, PHOTOCELLS AND CONTROLS.
4. REFER TO FLOOR PLANS FOR EXACT LIGHTING FIXTURES ON EACH ZONE, AND QUANTITY AND LOCATION OF ALL DEVICES.
5. FINISHES AND COLORS OF ALL LIGHTING CONTROL DEVICES AND SWITCH PLATES SHALL BE SELECTED BY ARCHITECT
6. SENSORS SHALL BE PROVIDED WITH AUXILIARY RELAY OPTION FOR CONNECTION TO BMS BY DIVISION 23 CONTRACTOR.
7. REFER TO LIGHTING CONTROL SPECIFICATION FOR ADDITIONAL INFORMATION.

SEQUENCE OF OPERATIONS:
1. SUGGESTED LABELING SHOWN. SUBMIT TO OWNER FOR APPROVAL PRIOR TO ORDERING.
2. ROOM OCCUPANCY SENSORS SHALL BE SET FOR AUTO ON, AUTO OFF OPERATION. TIMEOUT AFTER 20 MINUTES.
3. ROOM VACANCY SENSORS SHALL BE SET FOR MANUAL ON, AUTO OFF OPERATION. TIMEOUT AFTER 20 MINUTES.
4. 4-BUTTON "LK2" KEYPAD(S) TO BE PROGRAMMED AS FOLLOWS:
   - BUTTON 1: "ON/OFF": TURN ALL LIGHTS ON/OFF
   - BUTTON 2: "AV": ZONES a/d OFF, ZONES b/c TO 10%
   - BUTTON 3: "▲": PRESS TO RAISE ALL LIGHTS
   - BUTTON 4: "▼": PRESS TO LOWER ALL LIGHTS
5. 2-BUTTON "LK1" KEYPAD(S) TO BE PROGRAMMED AS FOLLOWS:
   - BUTTON 1: "ON": TOGGLE ALL LIGHTS ON
   - BUTTON 2: "OFF": TOGGLE ALL LIGHTS OFF

* ZONE SHALL HAVE AUTOMATIC DIMMING VIA PHOTOCELL. PHOTOCELL SHALL CAP MAXIMUM LIGHT LEVEL OF 50 FOOT-CANDLES IN THIS ZONE.

TYPICAL MULTI-ZONE LIGHTING CONTROL DETAIL - NORMAL FIXTURES ONLY
N.T.S.



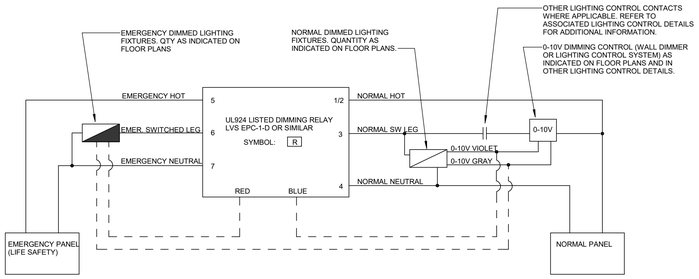
SEQUENCE OF OPERATION

1. THE WALL SWITCH OR OCCUPANCY SENSOR TURNS ON AND OFF BOTH NORMAL AND EMERGENCY LIGHTING CIRCUITS SIMULTANEOUSLY. THIS IS ACCOMPLISHED BY HAVING THE ROOM SWITCH LEG POWER ACTIVATE THE RELAY.
2. UNSWITCHED NORMAL POWER HOT AND NEUTRAL WIRES ARE CONNECTED TO A SENSING CIRCUIT WITHIN THE RELAY. IN CASE OF A POWER FAILURE, THIS CIRCUIT CAUSES CONTACTS WITHIN THE RELAY TO DROP TO A NORMALLY CLOSED POSITION, AND TURNS ON THE EMERGENCY LOADS.

GENERAL NOTES

1. ON FLOOR PLANS, NORMAL POWER IS DIAGRAMMATICALLY SHOWN TO THE CLOSEST NORMAL FIXTURE. WIRING SHALL BE CONNECTED TO RELAY AS SHOWN IN ABOVE DIAGRAM.
2. IN LOCATIONS WHERE RELAY IS CONNECTED ONLY TO EMERGENCY FIXTURES (NO NORMAL FIXTURES). PROVIDE NORMAL CONNECTIONS FROM CLOSEST NORMAL LIGHTING CIRCUIT TO TERMINALS 1/2 & 4 (HOT & NEUTRAL) AS SHOWN ABOVE. THIS WILL ALLOW THE RELAY TO SENSE A POWER FAILURE AND OVERRIDE WALL SWITCH AND OCC SENSOR CONTROLS.

TYPICAL NON-DIMMING RELAY



SEQUENCE OF OPERATION

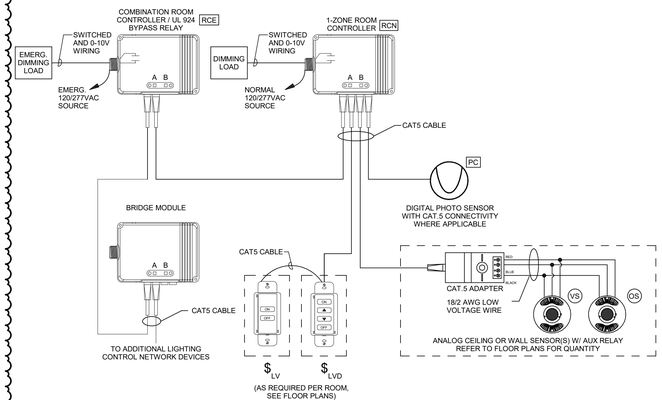
1. THE 0-10V DIMMING SYSTEM OR OCCUPANCY SENSOR TURNS ON AND OFF BOTH NORMAL AND EMERGENCY LIGHTING CIRCUITS SIMULTANEOUSLY. SWITCHED AND DIMMED CONTROL OF EMERGENCY LIGHTING FIXTURES IS ACCOMPLISHED THROUGH THE RELAY.
2. UNSWITCHED NORMAL POWER HOT AND NEUTRAL WIRES ARE CONNECTED TO A SENSING CIRCUIT WITHIN THE RELAY. IN CASE OF A POWER FAILURE, THE RELAY ENERGIZES WIRE #6, WHICH SWITCHES ON EMERGENCY LOADS REGARDLESS OF LOCAL SWITCH/OCC SENSOR INPUTS.
3. ADDITIONALLY, IN THE EVENT OF A POWER FAILURE, THE LOW VOLTAGE DIMMING CIRCUIT IS DISCONNECTED FROM THE EMERGENCY LOADS, WHICH ARE THEN BROUGHT TO FULL BRIGHTNESS REGARDLESS OF DIMMER POSITION.

GENERAL NOTES

1. ON FLOOR PLANS, NORMAL POWER IS DIAGRAMMATICALLY SHOWN TO THE CLOSEST NORMAL FIXTURE. WIRING SHALL BE CONNECTED TO RELAY AS SHOWN IN ABOVE DIAGRAM.
2. IN LOCATIONS WHERE RELAY IS CONNECTED ONLY TO EMERGENCY FIXTURES (NO NORMAL FIXTURES). PROVIDE NORMAL CONNECTIONS FROM CLOSEST NORMAL LIGHTING CIRCUIT TO TERMINALS 1/2 & 4 (HOT & NEUTRAL) AS SHOWN ABOVE. THIS WILL ALLOW THE RELAY TO SENSE A POWER FAILURE AND OVERRIDE WALL SWITCH AND OCC SENSOR CONTROLS.

TYPICAL DIMMING RELAY

3 EMERGENCY LIGHTING RELAY DETAILS
NTS



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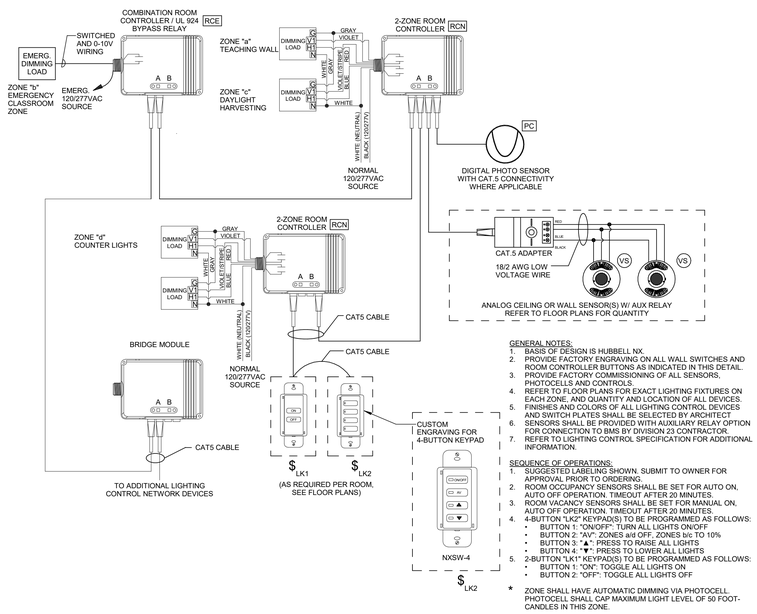
   - BUTTON 4: "OFF": TURN ALL LIGHTS OFF
6. 2-BUTTON "LV" KEYPAD(S) TO BE PROGRAMMED AS FOLLOWS:
   - BUTTON 1: "ON": TOGGLE ALL LIGHTS ON
   - BUTTON 2: "OFF": TOGGLE ALL LIGHTS OFF
7. WHERE PHOTOCELL IS INDICATED ON PLANS, ZONE SHALL HAVE AUTOMATIC DIMMING VIA PHOTOCELL AND SHALL CAP MAXIMUM LIGHT LEVEL OF 40 FOOT-CANDLES IN THIS ZONE.

TYPICAL 1-ZONE LIGHTING CONTROL DETAIL - NORMAL AND EMERGENCY FIXTURES
N.T.S.



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TYPICAL MULTI-ZONE LIGHTING CONTROL DETAIL - NORMAL AND EMERGENCY FIXTURES
N.T.S.

1 LIGHTING CONTROL DETAILS
NTS

SLAM
The S/L/A/M Collaborative
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Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

Drawn: KCM
Checked: SJM

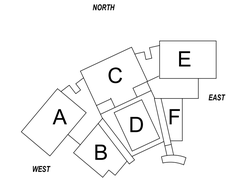
CES Consulting Engineering Services, Inc.
811 Middle Street
Middletown CT 06457
860.632.1682
ceseng.com
CES #2023095.00

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane, Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N



KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL DETAILS

Date: 07/08/2024
Scale: NTS
Proj. Number: 22367.00
Drawing Number: E501

10/16/2024 10:45:33 AM
Autodesk Docs://22367.00 - Greenwich Central Middle School/R22.2023095-MEP Central - Greenwich Central Middle School.rvt

Branch Panel: GP2A

Location: ELEC 2026 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10k AIC
Supply From: T-GPA/B | **Phases:** 3 | **Bus Material:** CU
Mounting: Surface | **Wires:** 4 | **Bus Rating:** 225 A
Enclosure: Type 1 | **MCB Rating / MLO:** 200A MCB

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	RECEPTACLES ELL BILINGUAL CR...	20 A	1	1.08	0.54		1	20 A	RECEPTACLES ELL BILINGUAL CR...	2
3	RECEPTACLES CLASSROOM 2019	20 A	1		0.54	0.54	1	20 A	RECEPTACLES CLASSROOM 2019	4
5	RECEPTACLES CLASSROOM 2019	20 A	1			0.90 0.54	1	20 A	RECEPTACLES CLASSROOM 2018	6
7	RECEPTACLES CLASSROOM 2018	20 A	1	0.90	0.54		1	20 A	RECEPTACLES CLASSROOM 2018	8
9	RECEPTACLES W L. CLASSROOM 2017	20 A	1		0.54	0.72	1	20 A	RECEPTACLES W L. CLASSROOM 2017	10
11	RECEPTACLES W L. CLASSROOM 2017	20 A	1			0.90 0.54	1	20 A	RECEPTACLES SPED RES. 2016	12
13	RECEPTACLES SPED RES. 2016	20 A	1	0.72	0.54		1	20 A	RECEPTACLES SPED RES. 2015	14
15	RECEPTACLES SPED RES. 2015	20 A	1		0.72	0.54	1	20 A	RECEPTACLES CLASSROOM 2014	16
17	RECEPTACLES CLASSROOM 2014	20 A	1			0.72 0.90	1	20 A	RECEPTACLES CLASSROOM 2014	18
19	RECEPTACLES CLASSROOM 2013	20 A	1	0.54	0.54		1	20 A	RECEPTACLES CLASSROOM 2013	20
21	RECEPTACLES CLASSROOM 2013	20 A	1		0.90	0.54	1	20 A	RECEPTACLES CLASSROOM 2011	22
23	RECEPTACLES CLASSROOM 2011	20 A	1			0.54 0.90	1	20 A	RECEPTACLES CLASSROOM 2011	24
25	RECEPTACLES CLASSROOM 2010	20 A	1	0.54	0.54		1	20 A	RECEPTACLES CLASSROOM 2010	26
27	RECEPTACLES CLASSROOM 2010	20 A	1		0.90	0.72	1	20 A	RECEPTACLES SCIENCE 2009	28
29	RECEPTACLES SCIENCE 2009	20 A	1			1.08 0.72	1	20 A	RECEPTACLES SCIENCE 2009	30
31					0.72		1	20 A	RECEPTACLES SCIENCE 2007	32
33	RECEPTACLES SCIENCE 2007	20 A	1		1.44	0.72	1	20 A	RECEPTACLES SCIENCE 2007	34
35						0.54	1	20 A	RECEPTACLES CLASSROOM 2006	36
37	RECEPTACLES CLASSROOM 2006	20 A	1	0.54	0.90		1	20 A	RECEPTACLES CLASSROOM 2006	38
39	RECEPTACLES CLASSROOM 2005	20 A	1		0.54	0.90	1	20 A	RECEPTACLES CLASSROOM 2005	40
41	RECEPTACLES CLASSROOM 2005	20 A	1			0.54 0.72	1	20 A	RECEPTACLES SPED RES. 2002	42
43	RECEPTACLES SPED RES. 2002	20 A	1	0.72	0.90		1	20 A	RECEPTACLES HEAR/VIS IMPAR 2003	44
45	RECEPTACLES HEAR/VIS IMPAR 2003	20 A	1		0.90	0.90	1	20 A	RECEPTACLES COMMONS 2004	46
47	RECEPTACLES/FL BOX COMMONS...	20 A	1			0.90 0.18	1	20 A	RECEPTACLE B TLT 2027	48
49	RECEPTACLES CORRIDOR 2020	20 A	1	0.54	0.18		1	20 A	*EWC RECEPTACLE CORRIDOR 2020	50
51	EXTERIOR RECEPTACLE	20 A	1		0.18	0.18	1	20 A	RECEPTACLE STAFF TLT 2025	52
53	RECEPTACLE CUSTODIAL 2024	20 A	1			0.18 0.18	1	20 A	RECEPTACLE STAFF TLT 2023	54
55	RECEPTACLE ELEC 2022	20 A	1	0.18	0.18		1	20 A	*EWC RECEPTACLE CORRIDOR 2020	56
57	RECEPTACLE G TLT 2021	20 A	1		0.18	0.54	1	20 A	RECEPTACLES PREP 2008	58
59	*REFRIGERATOR PREP 2008	20 A	1			0.18 0.18	1	20 A	*DISHWASHER PREP 2008	60
61	RECEPTACLES COMMONS 2012	20 A	1	1.08	0.90		1	20 A	RECEPTACLES/FL BOX COMMONS...	62
63	RECEPTACLES CORRIDOR 2001	20 A	1		0.72	0.00	1	20 A	*SPARE	64
65	*SPARE	20 A	1			0.00 0.00	1	20 A	*SPARE	66
67	*SPARE	20 A	1	0.00	0.72		1	20 A	RECEPTACLES SPED RES. 2015	68
69	RECEPTACLES SPED RES. 2016	20 A	1		0.72	0.00	1	20 A	SPARE	70
71	SPARE	20 A	1			0.00 0.00	1	20 A	SPARE	72
73	SPARE	20 A	1	0.00	0.00		2	20 A	SPARE	74
75	SPARE	20 A	1		0.00	0.00	--	--	--	76
77										78
79										80
81										82
83										84
	Phase Load:			14.04 kVA	14.58 kVA	11.34 kVA				
	Phase...			120.5 A	125 A	94.5 A				
	Total Load:			39.96 kVA						
Notes:	**Total Amps:**			110.92 A						

*PROVIDE GFCI CIRCUIT BREAKER

Branch Panel: GP2C

Location: ELEC 2060 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10k AIC
Supply From: T-GPCD | **Phases:** 3 | **Bus Material:** CU
Mounting: Surface | **Wires:** 4 | **Bus Rating:** 225 A
Enclosure: Type 1 | **MCB Rating / MLO:** 200A MCB

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	RECEPTACLES MATH INT. 2062	20 A	1	0.54	0.72		1	20 A	RECEPTACLES MATH INT. 2062	2
3	RECEPTACLES MATH INT. 2062	20 A	1		0.54	0.72	1	20 A	RECEPTACLES CORRIDOR 2071	4
5	RECEPTACLES ASST. PR. OFF. 2065	20 A	1			0.72 0.54	1	20 A	RECEPTACLES ASST. PR. OFF. 2065	6
7	RECEPTACLES PSYCH OFFICE 2064	20 A	1	0.90	0.54		1	20 A	RECEPTACLES SENSORY 2063	8
9	RECEPTACLES CLASSROOM 2044	20 A	1		0.54	0.72	1	20 A	RECEPTACLES CLASSROOM 2044	10
11	RECEPTACLES CLASSROOM 2044	20 A	1			0.72 0.54	1	20 A	RECEPTACLES CLASSROOM 2043	12
13	RECEPTACLES CLASSROOM 2043	20 A	1	0.72	0.72		1	20 A	RECEPTACLES CLASSROOM 2043	14
15	RECEPTACLES W.L. CLASSROOM 2042	20 A	1		0.54	0.72	1	20 A	RECEPTACLES W.L. CLASSROOM 2042	16
17	RECEPTACLES W.L. CLASSROOM 2042	20 A	1			0.72 0.54	1	20 A	RECEPTACLES W.L. CLASSROOM 2041	18
19	RECEPTACLES W.L. CLASSROOM 2041	20 A	1	0.72	0.72		1	20 A	RECEPTACLES W.L. CLASSROOM 2041	20
21	RECEPTACLES CLASSROOM 2040	20 A	1		0.72	0.72	1	20 A	RECEPTACLES CLASSROOM 2040	22
23	RECEPTACLES CLASSROOM 2040	20 A	1			0.54 0.54	1	20 A	RECEPTACLES CLASSROOM 2039	24
25	RECEPTACLES CLASSROOM 2039	20 A	1	0.72	0.72		1	20 A	RECEPTACLES CLASSROOM 2039	26
27	RECEPTACLES READING INT. 2029	20 A	1		0.36	0.72	1	20 A	RECEPTACLES READING INT. 2029	28
29	RECEPTACLES READING INT. 2029	20 A	1			0.54 0.54	1	20 A	RECEPTACLES ASST. PR. OFF. 2030	30
31	RECEPTACLES ASST. PR. OFF. 2030	20 A	1	0.72	0.72		1	20 A	RECEPTACLES SOCIAL WORKER 2031	32
33	RECEPTACLES SENSORY 2032	20 A	1		0.54	0.54	1	20 A	RECEPTACLES CLASSROOM 2052	34
35	RECEPTACLES CLASSROOM 2052	20 A	1			0.72 0.72	1	20 A	RECEPTACLES CLASSROOM 2052	36
37	RECEPTACLES CLASSROOM 2051	20 A	1	0.54	0.72		1	20 A	RECEPTACLES CLASSROOM 2051	38
39	RECEPTACLES CLASSROOM 2051	20 A	1		0.72	0.90	1	20 A	RECEPTACLES SCIENCE 2050	40
41	RECEPTACLES SCIENCE 2050	20 A	1			0.54 0.90	1	20 A	RECEPTACLES SCIENCE 2050	42
43					0.90		1	20 A	RECEPTACLES SCIENCE 2048	44
45	RECEPTACLES SCIENCE 2048	20 A	1		0.54	0.90	1	20 A	RECEPTACLES SCIENCE 2048	46
47						0.54	1	20 A	RECEPTACLES CLASSROOM 2047	48
49	RECEPTACLES CLASSROOM 2047	20 A	1	0.90	0.54		1	20 A	RECEPTACLES CLASSROOM 2047	50
51	RECEPTACLES CLASSROOM 2046	20 A	1		0.54	0.90	1	20 A	RECEPTACLES CLASSROOM 2046	52
53	RECEPTACLES CLASSROOM 2046	20 A	1			0.54 0.90	1	20 A	RECEPTACLES COMMONS 2045	54
55	RECEPTACLES/FL BOX COMMONS...	20 A	1	0.90	0.54		1	20 A	RECEPTACLES CORRIDOR 2054	56
57	*EWC RECEPTACLE CORRIDOR 2054	20 A	1		0.18	0.18	1	20 A	*EWC RECEPTACLE CORRIDOR 2054	58
59	EXTERIOR RECEPTACLE	20 A	1			0.18 0.18	1	20 A	RECEPTACLE ELEC 2056	60
61	RECEPTACLES PREP 2049	20 A	1	0.54	0.18		1	20 A	RECEPTACLE STAFF TLT 2057	62
63	RECEPTACLE CUSTODIAL 2058	20 A	1		0.18	0.18	1	20 A	RECEPTACLE STAFF TLT 2059	64
65	RECEPTACLE B TLT 2055	20 A	1			0.18 0.18	1	20 A	*REFRIGERATOR PREP 2049	66
67	*DISHWASHER PREP 2049	20 A	1	0.18	0.72		1	20 A	RECEPTACLES COMMONS 2053	68
69	RECEPTACLES/FL BOX COMMONS...	20 A	1		1.08	0.18	1	20 A	RECEPTACLE G TLT 2061	70
71	*SPARE	20 A	1			0.00 0.18	1	20 A	EXTERIOR RECEPTACLE	72
73	*SPARE	20 A	1	0.00	0.00		1	20 A	SPARE	74
75	SPARE	20 A	1		0.00	0.00	1	20 A	SPARE	76
77	SPARE	20 A	1			0.00 0.00	2	20 A	SPARE	78
79	SPARE	20 A	1	0.00	0.00		--	--	--	80
81										82
83										84
	Phase Load:			15.12 kVA	13.86 kVA	11.70 kVA				
	Phase...			128.8 A	118.3 A	97.5 A				
	Total Load:			40.68 kVA						
Notes:	**Total Amps:**			112.92 A						

*PROVIDE GFCI CIRCUIT BREAKER

Branch Panel: GP2E

Location: ELEC 2097 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10k AIC
Supply From: T-GPEF | **Phases:** 3 | **Bus Material:** CU
Mounting: Surface | **Wires:** 4 | **Bus Rating:** 225 A
Enclosure: Type 1 | **MCB Rating / MLO:** 200A MCB

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	RECEPTACLES CLASSROOM 2084	20 A	1	0.54	0.54		1	20 A	RECEPTACLES CLASSROOM 2084	2
3	RECEPTACLES CLASSROOM 2084	20 A	1		0.90	0.90	1	20 A	RECEPTACLES CLASSROOM 2083	4
5	RECEPTACLES CLASSROOM 2083	20 A	1			0.54 0.54	1	20 A	RECEPTACLES CLASSROOM 2083	6
7	RECEPTACLES SCIENCE 2085	20 A	1	0.90	0.90		1	20 A	RECEPTACLES SCIENCE 2085	8
9	RECEPTACLES SCIENCE 2085	20 A	1		0.72					10
11	RECEPTACLES SCIENCE 2087	20 A	1			0.72 0.90	1	20 A	RECEPTACLES SCIENCE 2087	12
13	RECEPTACLES SCIENCE 2087	20 A	1	0.90						14
15	RECEPTACLES CLASSROOM 2088	20 A	1		0.54	0.72	1	20 A	RECEPTACLES CLASSROOM 2088	16
17	RECEPTACLES CLASSROOM 2088	20 A	1			0.90 0.54	1	20 A	RECEPTACLES CLASSROOM 2089	18
19	RECEPTACLES CLASSROOM 2089	20 A	1	0.72	0.90		1	20 A	RECEPTACLES CLASSROOM 2089	20
21	RECEPTACLES W.L. CLASSROOM 2075	20 A	1		0.54	0.90	1	20 A	RECEPTACLES W.L. CLASSROOM 2075	22
23	RECEPTACLES W.L. CLASSROOM 2075	20 A	1			0.54 0.54	1	20 A	RECEPTACLES CLASSROOM 2076	24
25	RECEPTACLES CLASSROOM 2076	20 A	1	0.90	0.54		1	20 A	RECEPTACLES CLASSROOM 2076	26
27	RECEPTACLES CLASSROOM 2077	20 A	1		0.54	0.90	1	20 A	RECEPTACLES CLASSROOM 2077	28
29	RECEPTACLES CLASSROOM 2077	20 A	1			0.54 0.54	1	20 A	RECEPTACLES SPED RES. 2078	30
31	RECEPTACLES SPED RES. 2078	20 A	1	0.72	0.72		1	20 A	RECEPTACLES SPED RES. 2078	32
33	RECEPTACLES SPED RES. 2079	20 A	1		0.54	0.72	1	20 A	RECEPTACLES SPED RES. 2079	34
35	RECEPTACLES SPED RES. 2079	20 A	1			0.72 0.54	1	20 A	RECEPTACLES CLASSROOM 2080	36
37	RECEPTACLES CLASSROOM 2080	20 A	1	0.54	0.90		1	20 A	RECEPTACLES CLASSROOM 2080	38
39	RECEPTACLES CLASSROOM 2081	20 A	1		0.54	0.54	1	20 A	RECEPTACLES CLASSROOM 2081	40
41	RECEPTACLES CLASSROOM 2081	20 A	1			0.90 0.90	1	20 A	RECEPTS. FAC/ACAD. STORAGE 2072	42
43	COPIER IN FAC/ACAD. STORAGE 2072	20 A	1	0.18	0.18		1	20 A	*FRIDGE IN FAC/ACAD. STORAGE 2072	44
45	RECEPTACLES/FL BOX COMMONS...	20 A	1		1.08	0.72	1	20 A	RECEPTACLES COMMONS 2090	46
47	RECEPTACLES CORRIDOR 2091	20 A	1			0.54 0.18	1	20 A	*EWC RECEPTACLE CORRIDOR 2091	48
49	*EWC RECEPTACLE CORRIDOR 2091	20 A	1	0.18	0.18		1	20 A	EXTERIOR RECEPTACLE	50
51	RECEPTACLE ELEC. 2093	20 A	1		0.18	0.18	1	20 A	RECEPTACLE B TLT 2092	52
53	RECEPTACLE STAFF TLT 2094	20 A	1			0.18 0.18	1	20 A	RECEPTACLE CUSTODIAL 2095	54
55	RECEPTACLE STAFF TLT 2096	20 A	1	0.18	0.18		1	20 A	RECEPTACLE G TLT 2098	56
57	RECEPTACLES PREP 2086	20 A	1		0.54	0.18	1	20 A	*DISHWASHER PREP 2086	58
59	*REFRIGERATOR PREP 2086	20 A	1			0.18 0.90	1	20 A	RECEPTACLES/FL BOX COMMONS...	60
61	RECEPTACLES COMMONS 2082	20 A	1	0.54	0.72		1	20 A	RECEPTACLES COMMONS 2082	62
63	RECEPTACLES SPEECH LANG. 2073	20 A	1		0.72	0.90	1	20 A	RECEPTACLES SPEECH LANG. 2073	64
65	RECEPTACLES SPED RES. 2074	20 A	1			0.36 0.72	1	20 A	RECEPTACLES SPED RES. 2074	66
67	RECEPTACLES SPED RES. 2074	20 A	1	0.90	0.00		1	20 A	SPARE	68
69	SPARE	20 A	1		0.00	0.00	1	20 A	SPARE	70
71	SPARE	20 A	1			0.00 0.00	1	20 A	SPARE	72
73	SPARE	20 A	1	0.00	0.00		1	20 A	SPARE	74
75										76
77										78
79										80
81										82
83										84
	Phase Load:			12.96 kVA	13.50 kVA	12.60 kVA				
	Phase...			108.5 A	113 A	105 A				
	Total Load:			39.06 kVA						
Notes:	**Total Amps:**			108.42 A						

*PROVIDE GFCI CIRCUIT BREAKER

Branch Panel: KHP

Location: MECHANICAL 1067 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 25k AIC
Supply From: MSB-1 | **Phases:** 3 | **Bus Material:** CU
Mounting: Surface | **Wires:** 4 | **Bus Rating:** 225 A
Enclosure: Type 1 | **MCB Rating / MLO:** 200A MCB

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	WAREWASHER, RACK CONVEYOR	90 A	3	18.84	16.61		3	150 A	T-KP	2
3	--	--	--		18.84	15.39	--	--	--	4
5	--	--	--			18.84 14.31	--	--	--	6
7										8
9										10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33										34
35										36
37										38
39										40
41										42
	Phase Load:			35.44 kVA	34.22 kVA	33.15 kVA				
	Phase...			128.6 A	124.1 A	119.7 A				
	Total Load:			102.81 kVA						
Notes:	**Total Amps:**			123.67 A						

Branch Panel: KP

Location: MECHANICAL 1067 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 22k AIC
Supply From: T-KP | **Phases:** 3 | **Bus Material:** CU
Mounting: Surface | **Wires:** 4 | **Bus Rating:** 225 A
Enclosure: Type 1 | **MCB Rating / MLO:** 150 MCB

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	CONV. RECEPTACLE KITCHEN 1085	20 A	1	0.18	0.18		1	20 A	*CONV. RECPT. PREP COUNTER 1085	2
3	*CONV. RECPT. PREP COUNTER 1085	20 A	1			0.18 0.18	1	20 A	*AUTOMATIC SLICER	4
5	*TWENTY QUART MIXER	20 A	1			0.18 0.18	1	20 A	*CONV. RECPT. PREP COUNTER 1085	6
7	*CONV. RECPT. PREP COUNTER 1085	20 A	1	0.18	1.44		1	20 A	*FOOD PROCESSOR	8
9	*CONV. RECPT. PREP COUNTER 1085	20 A	1			0.18 0.18	1	20 A	*WASHING MACHINE KITCHEN 1085	10
11	DRYER	30 A	2			2.50 1.81	1	20 A	MERCHANDISING DISPLAY WARMERS	12
13	--	--	--	2.50	1.80		2	25 A	*HOT FOOD WELLS	14
15	*REFRIGERATED GRAB & GO CASE	20 A	1			1.84 1.80	--	--	--	16
17	CONV. RECEPT SERV. COUNTER 1085	20 A	1			0.18 0.90	1	20 A	*CONV. RECEPTS. KITCHEN 1085	18
19	FUTURE SERVING COUNTER	20 A	1	0.18	1.66		1	20 A	**MOBILE HOT FOOD CABINET	20
21	**MOBILE HOT FOOD CABINET	20 A	1			1.66 1.66	1	20 A	**MOBILE HOT FOOD CABINET	22
23	CONV. RECEPT SERV. COUNTER 1085	20 A	1			0.18 1.80	2	25 A	*HOT FOOD WELLS	24
25	*UTILITY DISTRIBUTION SYSTEM	50 A	3	4.34	1.80		--	--	--	26
27	--	--	--		4.34	1.38	1	20 A	*ICEMAKER	28
29	--	--	--			4.34 0.50	1	20 A	*HOOD LIGHTS AND VENTILATOR...	30
31	*COLD WELLS	20 A	1	0.46	0.46		1	20 A	*COLD WELLS	32
33	KHEF-1	20 A	3		0.00	0.00	3	20 A	SPARE	34
35	--	--	--			0.00 0.00	--	--	--	36
37	--	--	--	0.00	0.00		--	--	--	38
39	*SPARE	20 A	1		0.00	0.00	1	20 A	*SPARE	40
41	*SPARE	20 A	1			0.00 0.00	1	20 A	*SPARE	42
43	*SPARE	20 A	1	0.00	0.00		1	20 A	*SPARE	44
45	*SPARE	20 A	1		0.00	0.70	1	15 A	DEF-1	46
47	*CONV. RECEPT SERV. COUNTER 1085	20 A	1			0.18 1.20	1	20 A	Other	48
49	SPARE	20 A	1	0.00	1.44		1	20 A	RECEPTACLE - SINK	50
51	SPARE	20 A	1		0.00	1.44	1	20 A	RECEPTACLE - DRYERS	52
53	SPARE	30 A	2			0.00 0.00	3	20 A	SPARE	54
55	--	--	--	0.00	0.00		--	--	--	56
57	SPARE	30 A	1		0.00	0.00	--	--	--	58
59	FLOOR BOX KITCHEN 1080	20 A	1			0.36 0.00	1	15 A	*CONVECTION OVEN (DOUBLE)	60
61	*CONVECTION OVEN (DOUBLE)	15 A	1	0.00	0.00		1	15 A	*CONVECTION OVEN (DOUBLE)	62
63	*CONVECTION OVEN (DOUBLE)	15 A	1		0.00					64
65										66
67										68
69										70
71										72
73										74
75										76
77										78
79										80
81										82
83										84
	Phase Load:			16.61 kVA	15.39 kVA	14.31 kVA				
	Phase...			139.8 A	129.6 A	119.3 A				
	Total Load:			46.31 kVA						
Notes:	**Total Amps:**			128.53 A						

*PROVIDE GFCI CIRCUIT BREAKER

Branch Panel: GP-CL

Location: FAMILY CONSUMER... | **Volts:** 120/208 Wye | **A.I.C. Rating:**
Supply From: GP1F | **Phases:** 3 | **Bus Material:** CU
Mounting: RECESSED | **Wires:** 4 | **Bus Rating:** 225 A
Enclosure: Type 1 | **MCB Rating / MLO:** 200A MCB

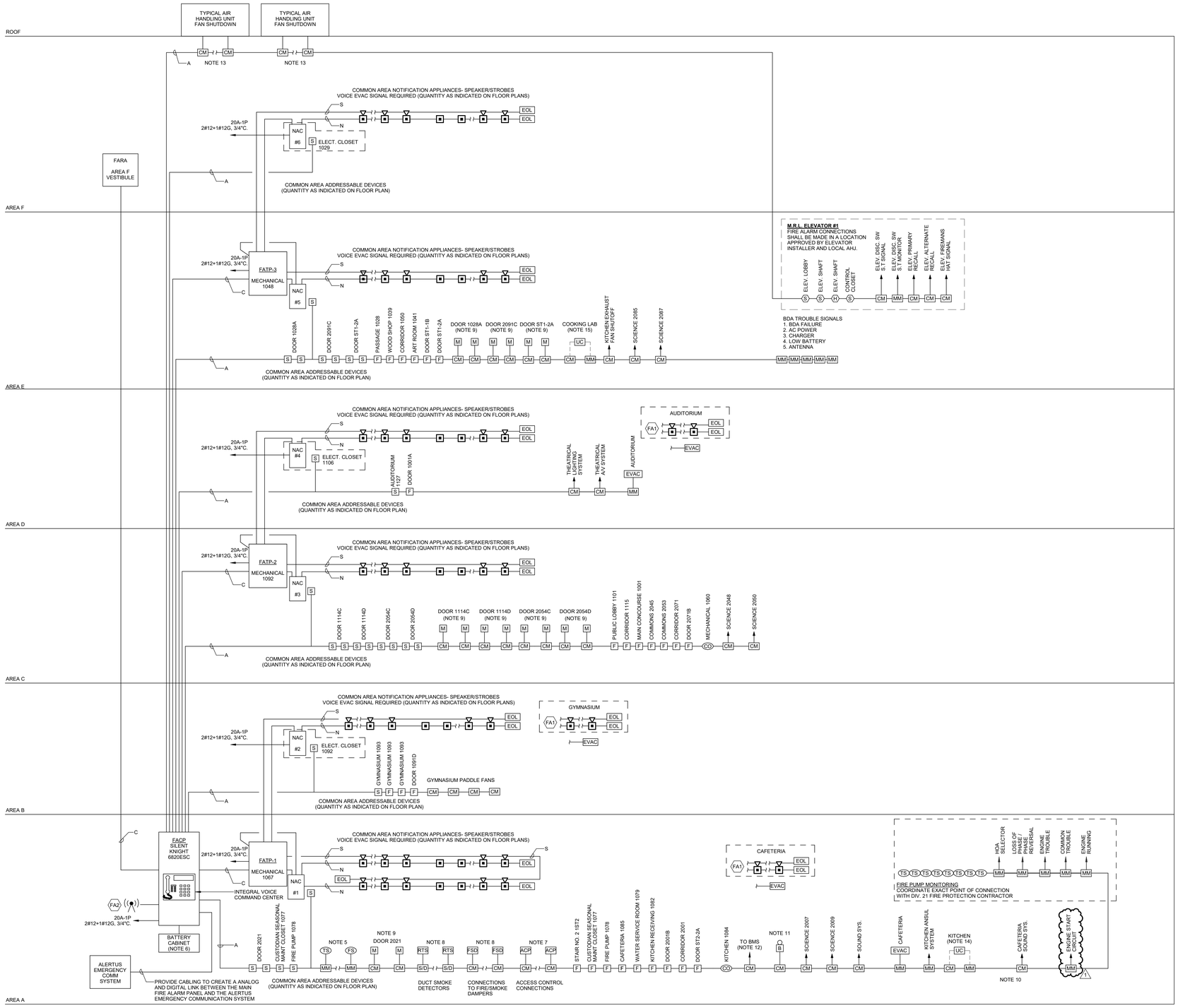
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	RANGE HOODS COOKING 1035	20 A	1	0.90	3.95		2	50 A	RANGE COOKING 1035	2
3	RANGE COOKING 1035	50 A	2		3.95	3.95	--	--	--	4
5	--	--	--			3.95 3.95	2	50 A	RANGE COOKING 1035	6
7	RANGE COOKING 1035	50 A	2	3.95	3.95		--	--	--	8
9	--	--	--		3.95	3.95	2	50 A	DEMO RANGE COOKING 1035	10
11	RECEPTACLES COOKING 1035	20 A	1			0.72 3.95	--	--	--	12
13	RECEPTACLES COOKING 1035	20 A	1	0.36	0.72		1	20 A	RECEPTACLES CULINARY 1035	14
15	*DISHWASHER COOKING 1035	20 A	1		0.18	0.72	1	20 A	RECEPTACLES COOKING LAB 1035	16
17	CORD REELS FAM. & CONS. SCI. 1034	20 A	1			0.54 0.54	1	20 A	CORD REELS FAM. & CONS. SCI. 1034	18
19	WASHER FACS 1034	20 A	1	0.18	2.25		2	30 A	DRYER FAM. & CONS. SCI. 1034	20
21	RECEPTS. FAM. & CONS. SCI. 1034	20 A	1		1.80	2.25	--	--	--	22
23	*SPARE	20 A	1			0.00 0.00	1	20 A	*SPARE	24
25	*SPARE	20 A	1	0.00	0.00		1	20 A	*SPARE	26
27	RECEPTACLES COOKING 1035	20 A	1		0.36	0.18	1	20 A	TV CULINARY 1035	28
29	RECEPTACLES COOKING 1035	20 A	1			0.18 0.00	1	20 A	SPARE	30
31	SPARE	20 A	1	0.00	0.00		1	20 A	SPARE	32
33	SPARE	20 A	1		0.00	0.00	1	20 A	SPARE	34
35	SPARE	20 A	1			0.00 0.00	1	20 A	SPARE	36
37	SPARE	20 A	1	0.00	0.00		1	20 A	SPARE	38
39	SPARE	20 A	1		0.00	0.00	1	20 A	SPARE	40
41	SPARE	20 A	1			0.00 0.00	1	20 A	SPARE	42
	Phase Load:			16.26 kVA	21.29 kVA	13.83 kVA				
	Phase...			138.6 A	180.5 A	115.3 A				
	Total Load:			51.38 kVA						
Notes:	**Total Amps:**			142.62 A						

*PROVIDE GFCI CIRCUIT BREAKER

Branch Panel: GP-WS

Location: ELECT. CLOSET 1029 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10k AIC
Supply From: GP1F | **Phases:** 3 | **Bus Material:** CU
Mounting: Surface | **Wires:** 4 | **Bus Rating:** 100 A
Enclosure: Type 1 | **MCB Rating / MLO:** 100A MCB

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	AIR COMPRESSOR DRYER	20 A	1	0.16	0.36		1	20 A	CORD REELS WOOD SHOP 1039	2
3	CONV. RECEPTS. WOOD SHOP 1039	20 A	1			0.54 1.20	1	15 A	BAND SAW WOOD SHOP 1039	4
5	SPRAY BOOTH WOOD SHOP 1039	15 A	1				0.24	1.66	1	20 A	DRILL PRESS WOOD SHOP 1039	6
7	CONV. RECEPTS. WOOD SHOP 1039	20 A	1	0.54	1.66		1	20 A	DRILL PRESS WOOD SHOP 1039	8
9	CONV. RECEPTS. WOOD SHOP 1039	20 A	1			0.54 0.31	1	15 A	SCROLL SAWS WOOD SHOP 1039	10
11	TABLE SAW WOOD SHOP 1039	20 A	1			1.68 2.91	2	60 A	AIR COMPRESSOR	12
13	JOINER WOOD SHOP 1039EW	20 A	2	0.94	2.91



1 FIRE ALARM RISER DIAGRAM
NTS

FIRE ALARM GENERAL NOTES

1. REFER TO DRAWING E0.00 FOR DESCRIPTION OF SYMBOLS, ABBREVIATIONS AND NOTES.
2. CABLES SHALL BE ROUTED ABOVE CEILING AND IN STUD WALLS WHENEVER POSSIBLE. FIRE ALARM MC CABLING IS ACCEPTABLE WHEN CABLING IS NOT EXPOSED. WHERE EXPOSED OR ROUTED IN CONCRETE, PROVIDE WIRE IN CONDUIT.
3. PROVIDE EXTRA POWER SUPPLIES AND TRANSPONDERS WHERE REQUIRED BY MANUFACTURER. IF NAC POWER SUPPLIES AND TRANSPONDERS ARE SUPPLIED AT THE DISCRETION OF THE FIRE ALARM INTEGRATOR A SMOKE DETECTOR SHALL BE PROVIDED AT EACH PANEL LOCATION.
4. TYPICAL DEVICES SHOWN IN RISER. REFER TO FLOOR PLANS FOR DEVICE QUANTITIES AND LOCATIONS.
5. REFER TO FIRE PROTECTION DRAWINGS FOR LOCATIONS AND QUANTITIES OF FLOW AND TAMPER SWITCHES.
6. CONTRACTOR IS RESPONSIBLE FOR SIZING BATTERY CABINET CAPABLE OF SUPPORTING BUILDING FIRE ALARM SYSTEM IN THE EVENT OF A POWER FAILURE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
7. PROVIDE FIRE ALARM CONTROL MODULE AND CONNECTIONS TO FIRE ALARM SYSTEM FOR EACH ACCESS CONTROL PANEL AND DOOR LOCK POWER SUPPLY IN PROJECT. REFER TO TECHNOLOGY DRAWINGS FOR EXACT QUANTITY AND LOCATION REQUIRED.
8. REFER TO HVAC DRAWINGS FOR LOCATIONS AND QUANTITIES OF DUCT SMOKE DETECTORS AND SMOKE DAMPERS. REMOTE TEST SWITCHES SHALL BE FLUSHED IN CEILING DIRECTLY BELOW DUCT SMOKE DETECTOR (OR IN CLOSEST DROPPED CEILING TO DETECTOR), UNLESS OTHERWISE NOTED.
9. REFER TO ARCHITECTURAL CODE DRAWINGS FOR LOCATIONS AND QUANTITIES OF MAGNETIC-HOLD DEVICES FOR FIRE DOORS. MAG-HOLD DEVICES SHALL BE FURNISHED BY DIV. 8 HARDWARE CONTRACTOR, AND INSTALLED/ WIRED BY EC.
10. EXTERIOR RED BEACON LIGHTS FOR FIRE DEPARTMENT NOTIFICATION, PER SPECIFICATIONS.
11. ELECTRIC SPRINKLER BELL FURNISHED BY DIV.21 FIRE PROTECTION CONTRACTOR AND INSTALLED/WIRED BY FIRE ALARM CONTRACTOR.
12. PROVIDE FIRE ALARM CONTROL MODULE(S) AND CONNECTIONS TO BUILDING MANAGEMENT SYSTEM TO REPORT FIRE ALARM CONDITION. COORDINATE EXACT POINT OF CONNECTION AND QUANTITY OF CONNECTIONS REQUIRED WITH HVAC CONTRACTOR AND BUILDING MANAGEMENT SEQUENCE OF OPERATION PRIOR TO INSTALLATION.
13. FIRE ALARM CONTRACTOR SHALL PROVIDE CONTROL MODULE AND HARD WIRED CONNECTION TO EACH AIR HANDLING UNIT FOR SHUTDOWN. COORDINATE EXACT POINT OF CONNECTION WITH DIV. 23 ATC CONTROLS CONTRACTOR PRIOR TO INSTALLATION.
14. REFER TO KITCHEN NATURAL GAS DETECTION SYSTEM DETAIL FOR FIRE ALARM INTERCONNECTIONS.
15. REFER TO SCIENCE LAB ELECTRIC & GAS SHUTOFF SYSTEM DETAIL FOR FIRE ALARM INTERCONNECTIONS. (TYPICAL FOR EACH SCIENCE LAB)
16. REFER TO BOILER ROOM NATURAL GAS DETECTION SYSTEM DETAIL FOR FIRE ALARM INTERCONNECTIONS.
17. THE ALERTUS EMERGENCY COMMUNICATION SYSTEM SHALL BE INTERCONNECTED TO PERFORM THE FOLLOWING FUNCTIONS IN CONFORMANCE WITH THIS PROVIDED SEQUENCE OF OPERATION:
18. ALL ALERTUS GENERATED VOICE COMMUNICATIONS SHALL BE ANNUNCIATED OVER THE FIRE ALARM SYSTEM VOICE EVAC SPEAKER SYSTEM. THIS SHALL INCLUDE PRE-RECORDED MESSAGES AND LIVE MICROPHONE GENERATED VOICE OUTPUT. PROVIDE AN ANALOG COMMUNICATION LINK BETWEEN THE ALERTUS SYSTEM HEAD END AND THE FIRE ALARM PANEL INPUTS. PROVIDE A DIGITAL ETHERNET LINK BETWEEN THE FIRE ALARM PANEL AND THE LOCAL NETWORK FOR ANY DIGITAL BASED COMMUNICATIONS. ALERTUS MESSAGING THAT NEEDS TO BE ANNUNCIATED SHALL OVERRIDE THE FIRE ALARM SYSTEM SHALL SEND ALL FIRE ALARM ANNUNCIATION, CONTROL AND MONITORING COMMANDS TO THE ALERTUS SYSTEM FOR ANNUNCIATION OF FIRE ALARM GENERATED EMERGENCY COMMUNICATIONS ON THE ALERTUS SYSTEM TO THE DISTRICT SELECTED CONNECTED ENTITIES AND END USERS.

FIRE ALARM KEY NOTES

- FA1 — CONNECT TO FIRE ALARM PANEL AS SEPARATE SPEAKER CIRCUIT TO BE CONTROLLED VIA REMOTE EVAC MICROPHONE IN ASSOCIATED AREA OF ASSEMBLY.
- FA2 — SECONDARY COMMUNICATION TO CENTRAL STATION MONITORING SHALL BE VIA CELLULAR/ GSM SIGNAL. PROVIDE CELLULAR MODULE COMPATIBLE WITH FIRE ALARM PANEL AND ALL REQUIRED PROGRAMMING TO REPORT TO CENTRAL STATION.

FIRE ALARM CABLING LEGEND

	CIRCUIT DESCRIPTION	CONSTRUCTION/SIZE	CABLE TYPE
N	NOTIFICATION APPLIANCE	14AWG UTP SOLID	M.C. CABLE
C	SERIAL COMM.	14AWG STP SOLID + 2#14 POWER	THHN IN 1"C.
A	ADDRESSABLE INPUT LOOP	16AWG UTP SOLID	M.C. CABLE
S	SPEAKER CIRCUIT	14AWG STP SOLID	M.C. CABLE

NOTE:
1. EXACT CABLE SIZES, TYPES AND QUANTITY SHALL BE AS RECOMMENDED BY MANUFACTURER.

SEQUENCE OF OPERATION

	INITATION	ACTION: A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V
		OPERATE ALL NOTIFICATION DEVICES (VISIBLE AND VOICE EVAC)	TRANSMIT ALARM SIGNAL TO CENTRAL STATION, ACTIVATE BEACON	TRANSMIT SUPERVISORY SIGNAL TO FIRE ALARM CONTROL PANEL	ACTUATE AUDIBLE SUPERVISORY SIGNAL	SEND DRY CONTACT SIGNAL TO BUILDING MANAGEMENT SYSTEM	TURN ON FIRE PROTECTION BELL	RECALL ELEVATOR TO FIRST FLOOR	RECALL ELEVATOR TO SECOND FLOOR	SEND WARNING TO ELEVATOR CAB / FIREMAN'S HAT	SHUNT-TRIP SIGNAL TO ELEV. DISCONNECT SWITCH	CLOSE ALL FIRE/SMOKE DAMPERS IN BUILDING	ACTUATE HVAC FAN SHUT DOWN INC. HVLS CEILING FANS	CUT POWER TO AND CLOSE MAGNETIC DOOR HOLDS	SEND SIGNAL TO ACCESS CONTROL PANELS	SHUTOFF SIGNAL TO KITCHEN GAS/ELECTRIC CONTROLLER	SHUTOFF SIGNAL TO SCIENCE LAB CONTROL PANELS	SHUTOFF SIGNAL TO BOILER ROOM GAS/ELECTRIC CONTROLLER	FULL-BRIGHT SIGNAL TO LIGHTING CONTROL SYSTEMS (PER DETAILS)	COMMUNICATE OVER SPEAKERS IN ASSOCIATED AREA OF ASSEMBLY	ACTIVATE STAGE FIRE CURTAIN RELEASE	MUTE SIGNAL TO ALL SOUND SYSTEMS AND THEATRICAL SYSTEMS
1	MANUAL PULL STATION	X	X			X							X	X	X		X		X			X
2	SMOKE DETECTOR OR HEAT DETECTOR	X	X			X							X	X	X		X		X			X
3	DUCT SMOKE DETECTOR	X	X			X						X	X	X	X		X		X			X
4	SMOKE DETECTOR - 1ST FLOOR ELEV. LANDING	X	X			X			X	X			X	X	X		X		X			X
5	SMOKE DETECTOR - 2ND ELEV. LANDING	X	X			X		X		X			X	X	X		X		X			X
6	SMOKE DETECTOR - ELEV. SHAFT	X	X			X		X		X			X	X	X		X		X			X
7	SPRINKLER WATER FLOW	X	X			X	X						X	X	X		X		X			X
8	SPRINKLER VALVE TAMPER			X	X																	
9	CARBON MONOXIDE DETECTOR IN KITCHEN			X	X											X						
10	CARBON MONOXIDE DETECTOR - OTHER THAN KITCHEN			X	X																	
11	KITCHEN ANSUL SYSTEM ACTIVATION	X	X			X							X	X	X	X			X			X
12	NATURAL GAS DETECTION IN KITCHEN			X	X											**						
13	NATURAL GAS DETECTION IN SCIENCE LAB			X	X												**					
14	NATURAL GAS DETECTION IN BOILER ROOM			X	X												**					
15	REMOTE EVAC MICROPHONE																			X		
16	BDA/ DAS SYSTEM TROUBLE			X	X																	
17	FIRE PUMP		X	X																		
18																						

NOTE
1. SEQUENCE OF OPERATION IS TYPICAL. REFER TO PLANS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
** = SHUTOFF SIGNAL SHALL OCCUR DIRECTLY THROUGH THE UTILITY CONTROLLER, NOT VIA FIRE ALARM SYSTEM.

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Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
SOUTH
WEST

KEYPLAN

Number	Date	Issued For
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

FIRE ALARM RISER DIAGRAM

Date: 07/08/2024
Scale: NTS
Proj. Number: 22367.00
Drawing Number: E701

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10/16/2024 10:45:37 AM

COMMUNICATION CABLING INFRASTRUCTURE

REFER TO SPECIFICATION SECTION 27 1000 FOR DEVICES

		OUTLET BOX & CONDUIT SIZES PROVIDED & INSTALLED BY ELECTRICAL CONTRACTOR								CABLE & TERMINATION PROVIDED & INSTALLED BY LOW VOLTAGE CONTRACTOR								
SYMBOL	DESCRIPTION	MOUNTING AFF UNLESS OTHERWISE NOTED	1 G - 3-1/2" DP	4 x 4" x 2-1/8" DP	1G DEVICE RING	1" C	CHIEF #PAC525FCW	LEGRAND #EFSB4		CAT6A SHLD PLENUM CABLE	8P8C (RJ45) JACK - CAT6A	FACEPLATE - DATA	WALL PHONE MTG PLATE	HUBBELL #RSB2WP	CAT6 PLENUM CABLE	8P8C (RJ45) JACK - CAT6			COMMMENTS
W ▶	WALL PHONE OUTLET	48" AFF	1		1	1							1		1	1			
1D ▷	1 DATA OUTLET	18" AFF		1	1	1						1			1	1			
2D ▷	2 DATA OUTLET	18" AFF		1	1	1						1			2	2			
3D ▷	3 DATA OUTLET	18" AFF		1	1	1						1			3	3			
4D ▷	4 DATA OUTLET	18" AFF		1	1	1						1			4	4			
1V1D ▶▷	1 VOICE - 1 DATA OUTLET	18" AFF		1	1	1						1			2	2			
1V2D ▶▷	1 VOICE - 2 DATA OUTLET	18" AFF		1	1	1						1			3	3			
2V2D ▶▷	2 VOICE - 2 DATA OUTLET	18" AFF		1	1	1						1			4	4			
1V ▶	1 VOICE OUTLET	18" AFF		1	1	1						1			1	1			
#V #D ▷	FLOOR BOX					A/R				A/R	A/R	1							REFER TO ELECTRICAL DRAWINGS FOR FLOOR BOX CONDUIT REQUIREMENTS. # - DENOTES QTY OF CABLES
#V #D	CEILING MOUNTED BOX			1	1	A/R				A/R	A/R	1							CEILING MOUNTED DEVICES. # - DENOTES QTY OF CABLES
AP	WIRELESS ACCESS POINT CEILING MOUNTED									2	2			1					CEILING MOUNTED AP SHALL HAVE A 15FT SERVICE LOOP AND LOCATED AT APPROXIMATE LOCATIONS SHOWN ON PLANS. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
AP	WIRELESS ACCESS POINT WALL MOUNTED	96" AFF	1		1	1				2	2			1					
	ETHERNET CABLE FOR CAMERA			1	1									1	1	1			INCLUDE 10 FT SERVICE LOOP FOR CABLING. CONFIRM NO OBSTRUCTIONS BLOCK THE INTENDED CAMERA FIELD OF VIEW. PRIOR TO INSTALLATION OF CABLING, WHICH MAY INCLUDE SIGNAGE, PENDANT LIGHTS, SPEAKERS, TREES, OR ANY OTHER OBSTRUCTIONS IN THE IMMEDIATE FIELD OF VIEW. BRING ALL FIELD OF VIEW OBSTRUCTIONS TO THE ATTENTION OF THE SECURITY CONSULTANT.
	ETHERNET CABLE FOR CAMERA			1	1									1	1	1			
	ETHERNET CABLE FOR CAMERA			1	1									1	1	1			
AB	ETHERNET CABLE FOR ALERT BEACON	66" AFF	1	1											1	1			
TTS	ETHERNET CABLE FOR TEXT TO SPEECH MODULE	66" AFF	1	1											1	1			
ID-XX ▷	ETHERNET CABLE FOR INTERACTIVE DISPLAY	60" AFF				2	1							1	2	2			COORDINATE POWER IN CHIEF BOX. COIL ETHERNET IN BOX.
MO-XX ▷	ETHERNET CABLE FOR DISPLAY/MONITOR	60" AFF				1		1						1	1	1			COORDINATE POWER IN CHIEF BOX. COIL ETHERNET IN BOX.
PE	ETHERNET CABLING FOR FUTURE PLENUM ENCLOSURE					A/R								1	1	1			COIL IN CEILING WITH 10' SERVICE LOOP. COORDINATE IN FIELD NEAR ENCLOSURE POWER IN CEILING.

PUBLIC ADDRESS & CLOCKS

REFER TO SPECIFICATION 27 5116 FOR PA DEVICES & 27 5313 OF CLOCK DEVICES

		OUTLET BOX & CONDUIT SIZES PROVIDED & INSTALLED BY ELECTRICAL CONTRACTOR				CABLING PROVIDED & INSTALLED BY PA CONTRACTOR					
SYMBOL	DESCRIPTION	MOUNTING AFF UNLESS OTHERWISE NOTED	2G - 2-1/2" DP	1G - DEVICE RING	3/4" C	PLENUM RATED CABLE A/R					COMMMENTS
(S) VC	PA SPEAKER W/BUILT-IN VOLUME CONTROL					1					VERIFY COLOR WITH ARCHITECT
(S)	PA SPEAKER - 8" DIAMETER					1					VERIFY COLOR WITH ARCHITECT
(S) 2x2	CLASSROOM SPEAKER 2' X 2' TILE					1					
S	PA WALL MOUNTED BOX SPEAKER	96" AFF	1		1	1					VERIFY COLOR WITH ARCHITECT
VC ▶	PA VOLUME CONTROL	48" AFF	1	1	1	1					VOLUME CONTROL SHALL CONTROL THE SPEAKERS SHOWN WITHIN THE SAME ROOM. CONFIRM COLOR WITH ARCHITECT.
PA	PA MASTER HANDSET BOGEN #MCDS4					1					INCLUDE CABLING A/R, DATA JACK, & FACEPLATE FOR CABLING.
CS	PA CALL SWITCH	48" AFF	1	1	1	1					CS SHALL ACTIVATE 2-WAY CONVERSATIONS BETWEEN CLASSROOM SPEAKERS AND MAIN OFFICE. CABLING A/R
H	PA HORN SPEAKER			1		1	1				SECURE HORNS TO STRUCTURE. EXTERIOR HORNS SHALL RECEIVE PROPER WEATHER PROOFING ASSEMBLY.
PSB	PA STROBE	108" AFF	1	1	1	1					
PS	PA PENDANT SPEAKER			1		1	1				
	CLOCK - ALL CLOCKS ARE 12" DIA. CLOCKS NOTED AS 16 ARE TO BE 16" DIA. CLOCKS	96" AFF									REFER TO ARCHITECTURAL PLAN FOR MOUNTING HEIGHT.

RESPONSIBILITY MATRIX			
	DEFINITIONS & NOTES: OF/OI = Owner Furnished / Owner Installed CF/CI = Contractor Furnished / Contractor Installed NOTE = Scope Delineation of Subs per Bid Packages		
	DISCIPLINE	OF/OI	CF/CI
1	SERVICE INTO BUILDING		
	PHONE, CABLE, FIBER, OTHER SERVICE FROM STREET	X	
	LIGHTNING PROTECTION FOR COPPER INTO BUILDING	X	
	PATHWAYS / CONDUIT INTO BUILDING FOR SERVICE PROVIDER		X
2	HORIZONTAL CABLING		
	CATEGORY RATED ETHERNET CABLE		X
	TERMINATION EQUIPMENT AND TERMINATIONS		X
	TESTING OF ETHERNET CABLE		X
	EXTENDED MANUFACTURER'S WARRANTY		X
	CABLE TRAY & J-HOOKS		X
	FLOOR BOXES		X
	PATHWAYS, CONDUIT, OUTLET BOXES, AND PENETRATIONS		X
	FIRESTOPPING		X
3	BACKBONE CABLING (FIBER, COPPER, & GROUNDING)		
	CATEGORY RATED ETHERNET CABLE & FIBER BACKBONE		X
	TERMINATION EQUIPMENT AND TERMINATIONS		X
	TESTING OF FIBER & COPPER CABLE		X
	EXTENDED MANUFACTURER'S WARRANTY		X
	CABLE TRAY & J-HOOKS		X
	PATHWAYS, CONDUIT, OUTLET BOXES, AND PENETRATIONS		X
	GROUNDING CONDUCTOR BETWEEN DATA ROOMS		X
	GROUNDING BUSSBARS AND GROUNDING OF EQUIPMENT TO BUSSBARS		X
	GROUNDING OF BUSSBARS TO ELECTRICAL PANELS OR OTHER MEANS		X
	FIRESTOPPING		X
4	DATA ROOM BUILDOUT		
	EQUIPMENT RACKS & CABINETS		X
	PATCH PANELS FOR ETHERNET CABLING		X
	WIRE MANAGERS - VERTICAL & HORIZONTAL		X
	CABLE TRAY & J-HOOKS		X
	FIRE RATED BACKER BOARD		X
	GROUNDING OF DATA EQUIPMENT TO BUSSBARS		X
	GROUNDING OF BUSSBARS TO ELECTRICAL PANELS OR OTHER MEANS		X
	FIRESTOPPING		X
	SECURITY SYSTEM SERVERS		X
	POWER		X
	UPS's & POU's		X
	PATCH CORDS TO CAMERAS AND SPECIFIED AV DEVICES		X
	PATCH CORDS TO SWITCHES (FIBER & COPPER) IN MDF / IDF	X	
5	TECHNOLOGY EQUIPMENT		
	WIRELESS ACCESS POINTS	X	
	BUILDING LAN NETWORK ELECTRONICS (SWITCHES) IN MDF/IDF	X	
	PHONE SYSTEM INCLUDING HANDSETS AND SERVERS	X	
	SERVERS (OTHER THAN SECURITY SERVERS)	X	
6	PHYSICAL SECURITY SYSTEMS		
	SECURITY CAMERAS		X
	SECURITY CABLING FOR INTRUSION DETECTION & ACCESS CONTROL		X
	INTRUSION DETECTION DEVICES AND PANELS		X
	ACCESS CONTROL DEVICES AND PANELS		X
	SECURITY SYSTEM SERVERS		X
	SECURITY SYSTEM LICENSING		X
7	AUDIO VIDEO SYSTEMS		
	BACKBOX, CONDUIT, AND PATHWAYS FOR ALL AV SYSTEMS SHOWN ON DRAWINGS		X
	CLASSROOM AV DEVICES AND CABLING	X	
	OFFICE AV DEVICES AND CABLING	X	
	CONFERENCE ROOM AV DEVICES AND CABLING	X	
	CAFETERIA AV DEVICES, CABLING, LICENSES, AV SWITCHES, CONFIGURATION - COMPLETE SYSTEM		X
	GYMNASIUM AV DEVICES, CABLING, LICENSES, AV SWITCHES, CONFIGURATION - COMPLETE SYSTEM		X
	GYMNASIUM AV DEVICES, CABLING, LICENSES, AV SWITCHES, CONFIGURATION - COMPLETE SYSTEM		X

GENERAL PLAN SYMBOLS

- 1 / T301 — DETAIL NUMBER / DETAIL/PLAN IDENTIFIER / SHEET NUMBER
- 1 / T301 — DETAIL NUMBER / SECTION IDENTIFIER / SHEET NUMBER
- 1 / T301 — DETAIL NUMBER / ELEVATION IDENTIFIER / SHEET NUMBER
- 1 — DRAWINGS KEYNOTE NOTE TAG
- 1 — EQUIPMENT NOTE TAG
- CONDUIT SLEEVE - THROUGH CEILING TO ABOVE FLOOR
- CONDUIT SLEEVES - THROUGH FLOOR TO BELOW FLOOR
- CONDUIT SLEEVES - HORIZONTAL

GENERAL NOTES

1. DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT.
2. ALL COMMUNICATION OUTLETS MUST COINCIDE WITH ELECTRICAL POWER DRAWINGS AND SECURITY DRAWINGS. THE CONTRACTOR MUST COORDINATE ALL LOCATIONS OF THE ELECTRICAL OUTLETS WITH THE DATA OUTLETS.
3. REQUIRED CABLE COLORS: SUBMIT ALL CABLE AND JACK COLOR WITH PRODUCT SUBMITTALS PRIOR TO PROCUREMENT
4. LABEL ALL CABLES WITHIN 12" OF FINAL TERMINATION.
5. THE CONTRACTOR SHALL MAINTAIN THE TWIST OF THE INDIVIDUAL PAIRS TO WITHIN 1/2" OF FINAL TERMINATION FOR ALL CATEGORY 3 OR HIGHER CABLE.
6. USE ONLY HOOK AND LOOP CABLE TIES (VELCRO) FOR CABLES RATED CATEGORY 3 OR HIGHER.
7. ALL CABLES RUN IN CEILING AREAS SHALL BE PROPERLY SUPPORTED WITH CONDUIT OR J-HOOKS MOUNTED TO SLAT AT MINIMUM OF 5' INTERVALS. NO CABLE SHALL REST OR TOUCH CEILING ASSEMBLIES. CABLES SHALL NOT BE INSTALLED EXPOSED IN OPEN CEILING AREAS.
8. ALL LABELS SHALL BE MACHINE PRINTED. NO HAND LETTERED CABLES SHALL BE USED.
9. USE ONLY PLENUM RATED CABLES.
10. DO NOT RUN ETHERNET CABLES PARALLEL TO POWER CABLES. CROSS POWER CABLES ONLY AT RIGHT ANGLES.
11. MAINTAIN 8" DISTANCE FROM ALL LIGHTING TRANSFORMERS.
12. COLOR AND STYLE OF TELECOMMUNICATION FACE PLATES SHALL MATCH ELECTRICAL FACE PLATES AND BE COORDINATED WITH AND CONFIRMED BY THE ARCHITECT.
13. OBTAIN AND EXTEND TO OWNER ALL AVAILABLE MANUFACTURER AND SYSTEM WARRANTEES THE LOW VOLTAGE INSTALLATION CONTRACTOR SHALL SUBMIT ALL TEST RESULTS TO THE CABLE MANUFACTURER TO CERTIFY THE CABLING INSTALLATION AND ATTAIN AND DELIVER TO THE OWNER THE EXTENDED MANUFACTURER'S WARRANTY FOR MATERIAL AND WORKMANSHIP.
14. SPLICING CABLES IS NOT PERMITTED EXCEPT AS SPECIFICALLY NOTED.
15. DEVICE CABLING SHALL BE TERMINATED WITHIN THE INDICATED DATA ROOMS AND SHALL BE TERMINATED ONTO A 19" RACK MOUNTED, RJ45, 48 PORT, CATEGORY 6A RATED PATCH PANEL.
16. THE FOLLOWING CABLING SHALL BE TERMINATED ONTO IT'S OWN DISCRETE AND SEPARATE CATEGORY 6A RATED, RACK MOUNTED PATCH PANELS. REFER TO RACK ELEVATION DETAILS:
    A. ALL WIRELESS APS
    B. ALL VIDEO SURVEILLANCE CAMERAS (REFER TO SECURITY DRAWINGS FOR PLACEMENT)
17. LOCATIONS OF EQUIPMENT FOR ALL OTHER TRADES SHALL BE COORDINATED BEFORE CONSTRUCTION.
18. THE CONTRACTOR SHALL COORDINATE LAYOUT LOCATIONS AND CLEARANCE OF ALL EQUIPMENT WITH OTHER TRADES AND ATTAIN OWNER'S APPROVAL PRIOR TO INSTALLATION.
19. CONTRACTOR SHALL COORDINATE ALL RACEWAYS, LOCATIONS, AND POWER REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
20. ALL VOICE AND DATA OUTLETS THAT DO NOT HAVE AN ELECTRICAL OUTLET WITHIN 3FT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE THE PROJECT ARCHITECT, CONSTRUCTION MANAGER, AND TECHNOLOGY CONSULTANT PRIOR TO THE TIME OF INSTALLATION.
21. ALL DEVICES SHOWN ON THESE PLANS MUST BE COORDINATED AND APPROVED BY THE ARCHITECT. THE INSTALLATION CONTRACTOR SHALL DEPICT ALL DEVICES ONTO ELEVATION SUBMITTALS BEFORE INSTALLATION. ANY DEVICE THAT IS NOT APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION MAY BE REQUIRED TO BE RELOCATED AS DIRECTED BY THE ARCHITECT AND CORRECTED BY THE CONTRACTOR WITH NO ADDITIONAL CHARGE TO THIS PROJECT.
22. ALL PATHWAYS, INCLUDING ALL WALL AND CEILING PENETRATIONS ARE REQUIRED TO INSTALL CABLING TO THE END DEVICE AND SHALL BE COORDINATED BETWEEN THE LOW VOLTAGE AND SECURITY CONTRACTOR AND THE ELECTRICAL CONTRACTOR AND SHALL BE INCLUDED AS PART OF THIS SECTION.
23. SECURE ATTACHMENT OF TECHNOLOGY AND SECURITY DEVICES:
    A. TO ENSURE PROPER ATTACHMENT OF FIXTURES, FURNISHINGS & EQUIPMENT ITEMS, INCLUDING AND TECHNOLOGY ITEMS, WHERE "ITEMS" ARE ATTACHED TO WALL, CEILING, OVERHEAD STRUCTURE, AND/OR FLOOR, CONTRACTOR SHALL PROVIDE INFORMATION ADEQUATE FOR ARCHITECT TO VERIFY ITEMS ATTACHED TO WALL, CEILING, AND/OR FLOOR ARE ATTACHED SECURELY AND PER MANUFACTURER'S RECOMMENDATIONS. ARCHITECT'S REVIEW MAY BE IMPLEMENTED DURING SUBMITTAL PROCESS.
    B. CONTRACTOR SHALL PROVIDE STRUTS, HANGERS, FASTENERS, SAFETY HARNESSES, CHANNELS, BOLTS, SCREWS, RODS, ETC. TO SECURELY ATTACH ITEMS TO THE EXISTING STRUCTURE AS REQUIRED TO MEET FIELD CONDITIONS AND MEET APPLICABLE CODES.
24. ALL CONDUIT IS TO ABOVE ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.
25. PLACEMENT OF ALL SECURITY VIDEO SURVEILLANCE CAMERA CABLING MUST BE COORDINATED WITH THE SECURITY CONTRACTOR AND APPROVED BY THE SECURITY CONSULTANT AND/OR OWNER PRIOR TO CONSTRUCTION.

TECHNOLOGY ABBREVIATIONS

(NOTE: NOT ALL ABBREVIATIONS APPLICABLE)

AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISHED GRADE
AIC	ABOVE COUNTER
ACS	ACCESS CONTROL SYSTEM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
A/R	AS REQUIRED
AWG	AMERICAN WIRE GAUGE
BICSI	BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL
BNC	BAYONET NEIL-CONCELMAN
C	CONDUIT(S)
DEMARC	DEMARCATION
DPDT	DOUBLE THROW DOUBLE PULL
EIA	ELECTRONICS INDUSTRIES ALLIANCE
EMT	ELECTRICAL METALLIC TUBING
FACP	FIRE ALARM CONTROL PANEL
F	FACSIMILE (FAX)
IDS	INTRUSION DETECTION SYSTEM
LAN	LOCAL AREA NETWORK
MER	MAIN EQUIPMENT ROOM
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OFE	OWNER FURNISHED EQUIPMENT
PA	PUBLIC ADDRESS
PBX	PRIVATE BRANCH EXCHANGE
PC	PERSONAL COMPUTER
PoE	POWER OVER ETHERNET
PP	PATCH PANEL
PVC	POLYVINYL CHLORIDE CONDUIT
QYT	QUANTITY
STP	SHIELDED TWISTED PAIR
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATIONS
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TR	TELECOMMUNICATIONS ROOM
TV	TELEVISION
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
VGA	VIDEO GRAPHICS ARRAY
VoIP	VOICE OVER INTERNET PROTOCOL
VSS	VIDEO SURVEILLANCE SYSTEM
W	WALL TELEPHONE (VOICE)
WAN	WIDE AREA NETWORK
WAO	WORK AREA OUTLET
WAP	WIRELESS (DATA) ACCESS POINT
WG	WIRE GUARD
WP	WEATHERPROOF

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Greenwich Central Middle School

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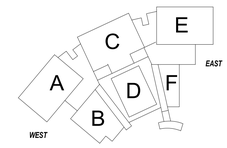

KEYPLAN

Number	Date	Issued For
1	10/16/2024	Addendum No. 2
	09/30/2024	BIDDING / PERMIT
	07/08/2024	PHASE 2

TECHNOLOGY SYMBOL LEGEND & GENERAL NOTES

Date: 07/08/2024
Scale: NTS
Proj. Number: 22367.00
Drawing Number: T000

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TECHNOLOGY DRAWING KEYNOTES

No.	DESCRIPTION
1	MOUNT OUTLETS ABOVE COUNTER
2	INCLUDE OBERON PROTECTIVE BOX FOR WIRELSS ACCESS POINT
3	COORDINATE WITH ELEVATOR VENDOR FOR POTS LINE. TERMINATE CABLE DIRECTLY TO 110 BLOCK IN MDF.
4	FACTORY PAINT SPEAKER BLACK
5	SPEAKER SHALL BE SOUNDTUBE #CM31-EZ OR EQUIVALENT. USE INDOOR/OUTDOOR RATED SPEAKER CABLE AND WEATHERIZE ALL PENETRATIONS AND OPENINGS.
6	PROPERLY SECURE HORNS TO STEEL DECKING ABOVE. BOTTOM OF SPEAKERS TO BE ABOVE BOTTOM OF JOISTS. COORDINATE SPEAKER LOCATIONS FOR BEST COVERAGE. TYP ALL GYM HORNS.
7	FIELD VERIFY ROUGH-IN WITH BMS / FACP VENDOR.

1 1.0 - TECHNOLOGY FIRST FLOOR PLAN A
1/8" = 1'-0"

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TECHNOLOGY FIRST FLOOR PLAN A

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00

Drawing Number: T101A

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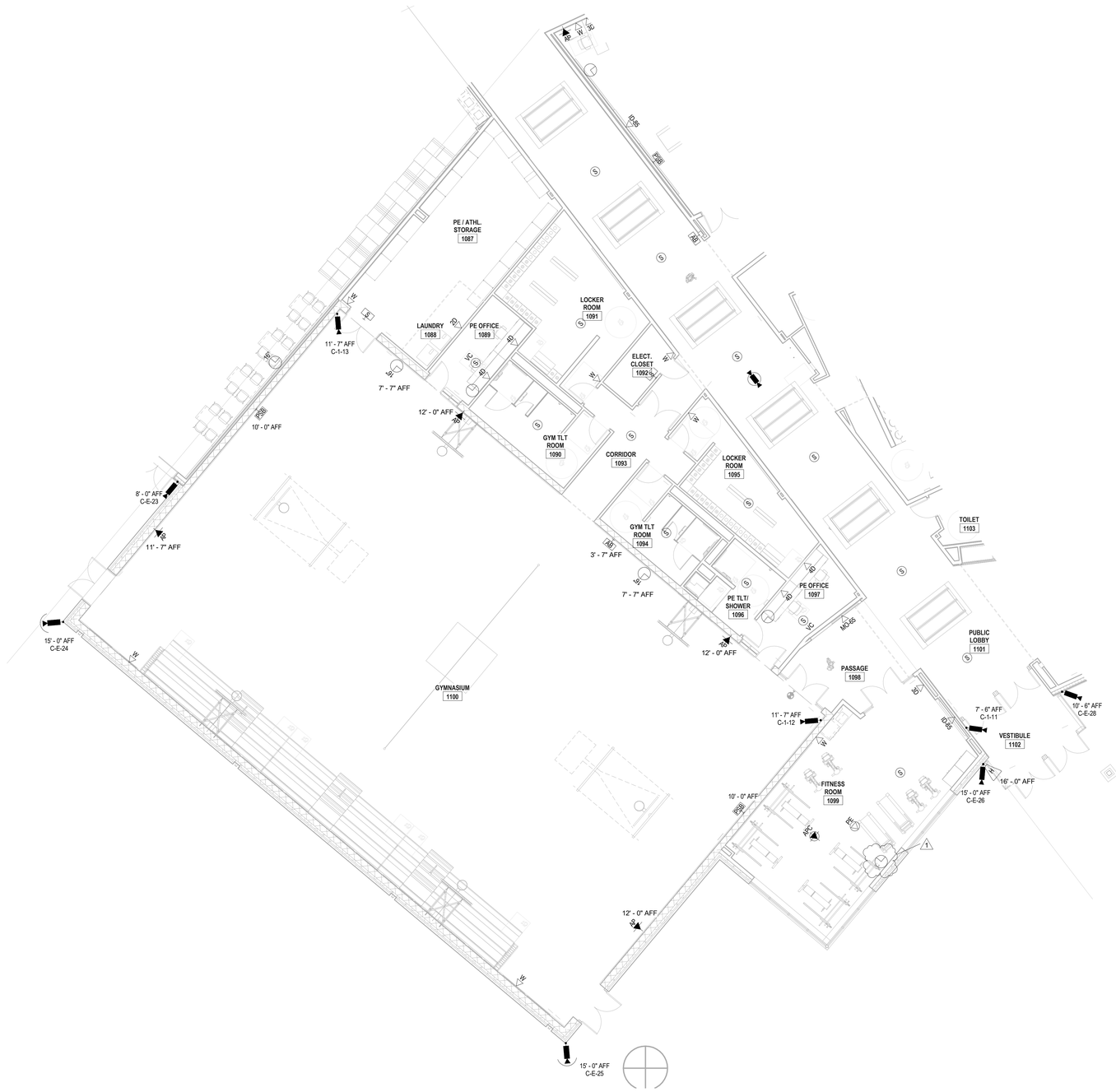
TECHNOLOGY DRAWING KEYNOTES

No.	DESCRIPTION
1	MOUNT OUTLETS ABOVE COUNTER
2	INCLUDE OBERON PROTECTIVE BOX FOR WIRELSS ACCESS POINT.
3	COORDINATE WITH ELEVATOR VENDOR FOR POTS LINE. TERMINATE CABLE DIRECTLY TO 110 BLOCK IN MDF.
4	FACTORY PAINT SPEAKER BLACK
5	SPEAKER SHALL BE SOUNDTUBE #CM31-EZ OR EQUIVALENT. USE INDOOR/OUTDOOR RATED SPEAKER CABLE AND WEATHERIZE ALL PENETRATIONS AND OPENINGS.
6	PROPERLY SECURE HORNS TO STEEL DECKING ABOVE. BOTTOM OF SPEAKERS TO BE ABOVE BOTTOM OF JOISTS. COORDINATE SPEAKER LOCATIONS FOR BEST COVERAGE. TYP ALL GYM HORNS.
7	FIELD VERIFY ROUGH-IN WITH BMS / FACP VENDOR.



1 1.0 - TECHNOLOGY FIRST FLOOR PLAN B
1/8" = 1'-0"

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TECHNOLOGY FIRST FLOOR PLAN B

Date: 07/08/2024
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TECHNOLOGY DRAWING KEYNOTES

No.	DESCRIPTION
1	MOUNT OUTLETS ABOVE COUNTER
2	INCLUDE OBERON PROTECTIVE BOX FOR WIRELSS ACCESS POINT
3	COORDINATE WITH ELEVATOR VENDOR FOR POTS LINE. TERMINATE CABLE DIRECTLY TO 110 BLOCK IN MDF.
4	FACTORY PAINT SPEAKER BLACK
5	SPEAKER SHALL BE SOUNDTUBE #CM31-EZ OR EQUIVALENT. USE INDOOR/OUTDOOR RATED SPEAKER CABLE AND WEATHERIZE ALL PENETRATIONS AND OPENINGS.
6	PROPERLY SECURE HORNS TO STEEL DECKING ABOVE. BOTTOM OF SPEAKERS TO BE ABOVE BOTTOM OF JOISTS. COORDINATE SPEAKER LOCATIONS FOR BEST COVERAGE. TYP ALL GYM HORNS.
7	FIELD VERIFY ROUGH-IN WITH BMS / FACP VENDOR.

1 1.0 - TECHNOLOGY FIRST FLOOR PLAN C
1/8" = 1'-0"

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Greenwich Central Middle School

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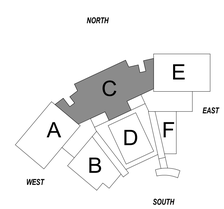

KEYPLAN

Number	Date	Issued For
1	10/16/2024	Addendum No. 2
	09/30/2024	BIDDING / PERMIT
	07/08/2024	PHASE 2

TECHNOLOGY FIRST FLOOR PLAN C

Date
07/08/2024
Scale
1/8" = 1'-0"
Proj. Number
22367.00

Drawing Number
T101C

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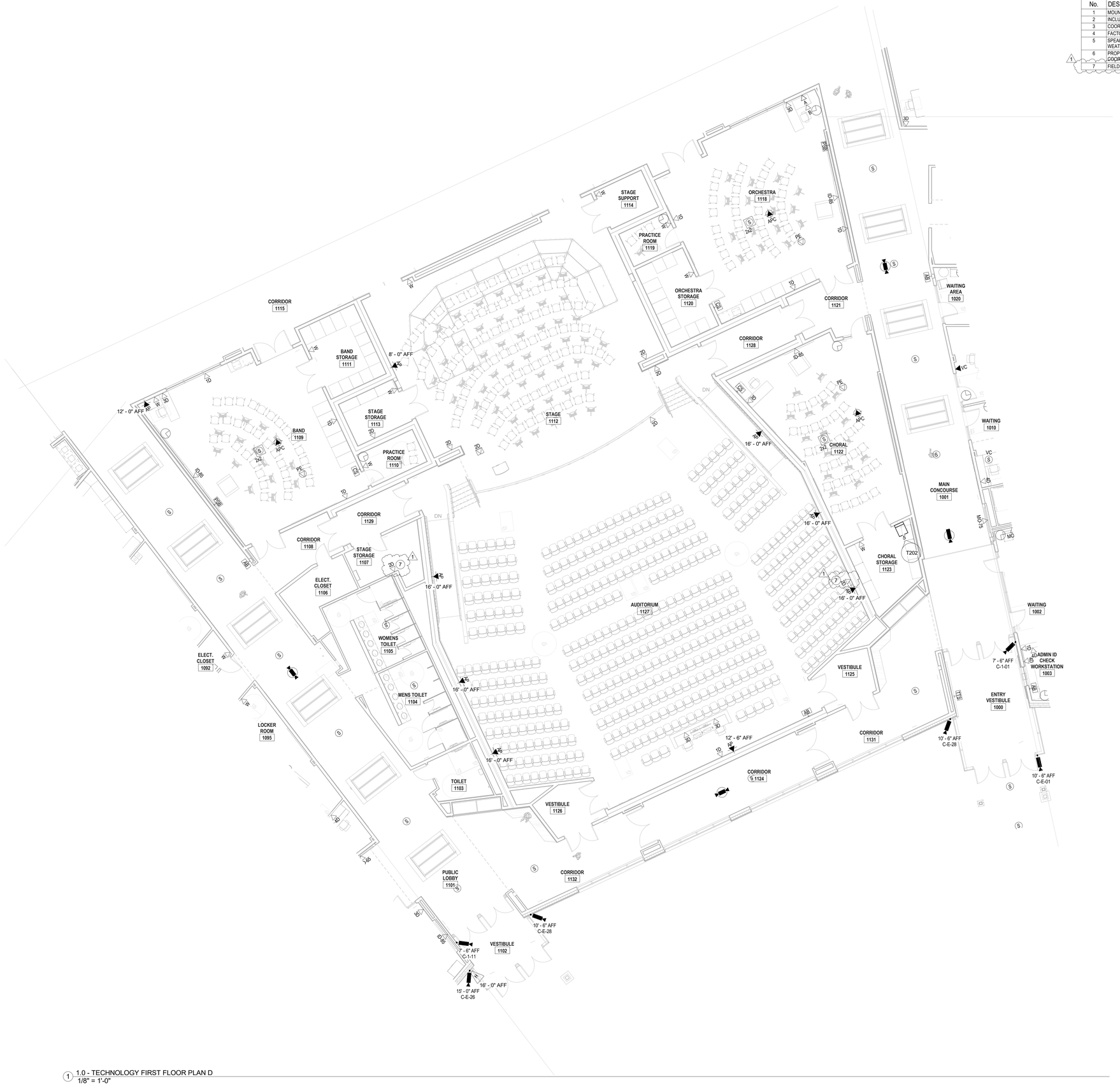
TECHNOLOGY DRAWING KEYNOTES

No.	DESCRIPTION
1	MOUNT OUTLETS ABOVE COUNTER
2	INCLUDE OBERON PROTECTIVE BOX FOR WIRELSS ACCESS POINT
3	COORDINATE WITH ELEVATOR VENDOR FOR POTS LINE. TERMINATE CABLE DIRECTLY TO 110 BLOCK IN MDF.
4	FACTORY PAINT SPEAKER BLACK.
5	SPEAKER SHALL BE SOUNDTUBE #CM31-EZ OR EQUIVALENT. USE INDOOR/OUTDOOR RATED SPEAKER CABLE AND WEATHERIZE ALL PENETRATIONS AND OPENINGS.
6	PROPERLY SECURE HORNS TO STEEL DECKING ABOVE. BOTTOM OF SPEAKERS TO BE ABOVE BOTTOM OF JOISTS. COORDINATE SPEAKER LOCATIONS FOR BEST COVERAGE. TYP ALL GYM HORNS.
7	FIELD VERIFY ROUGH-IN WITH BMS / FACP VENDOR.



1 1.0 - TECHNOLOGY FIRST FLOOR PLAN D
1/8" = 1'-0"

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A B C D E F

KEYPLAN

Number	Date	Issued For
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TECHNOLOGY FIRST FLOOR PLAN D

Date: 07/08/2024
Scale: 1/8" = 1'-0"
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TECHNOLOGY DRAWING KEYNOTES

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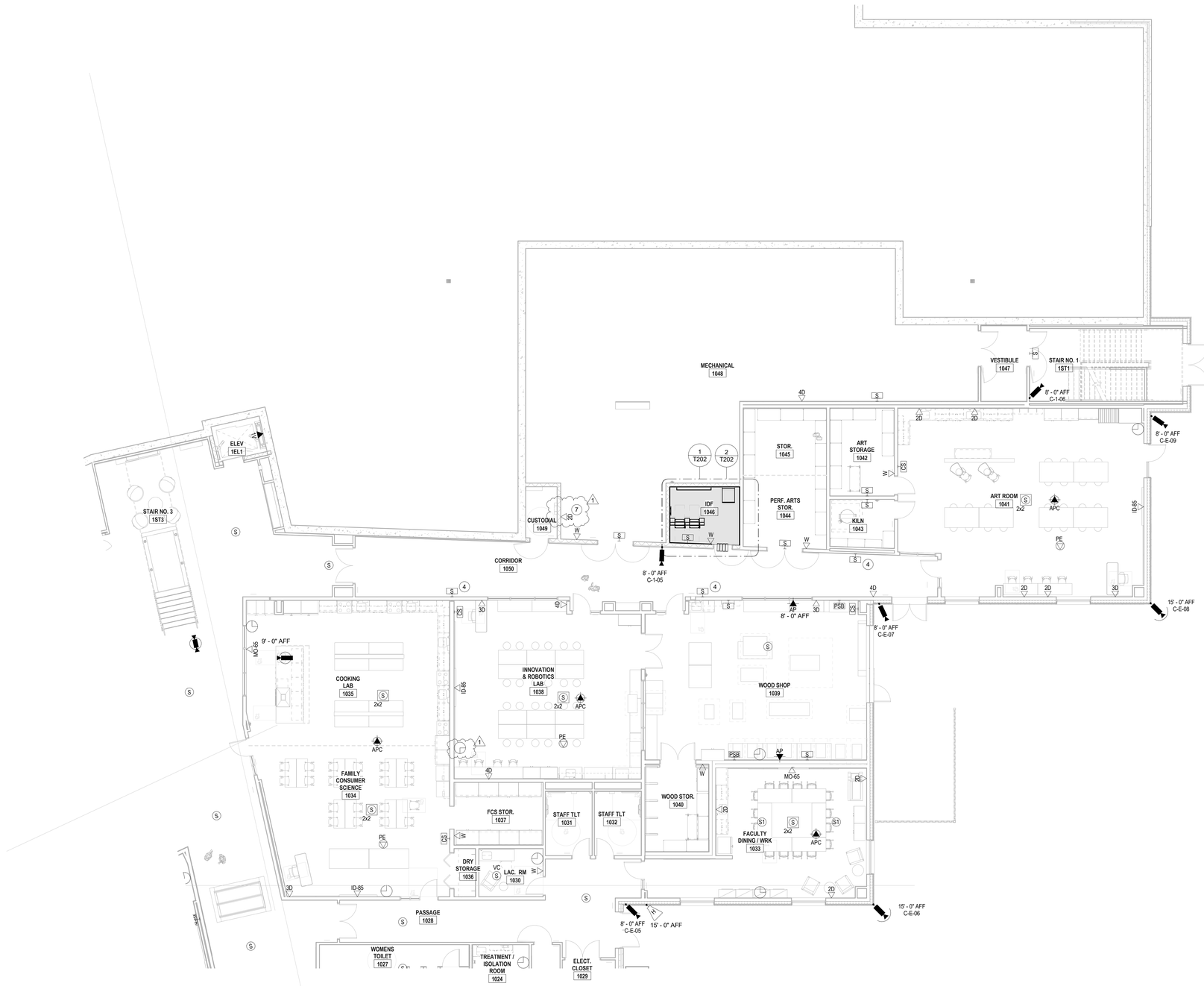

1 1.0 - TECHNOLOGY FIRST FLOOR PLAN E
1/8" = 1'-0"

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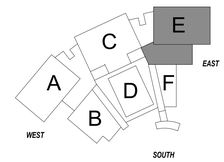
NORTH



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TECHNOLOGY FIRST FLOOR PLAN E

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1 1.0 - TECHNOLOGY FIRST FLOOR PLAN F
1/8" = 1'-0"

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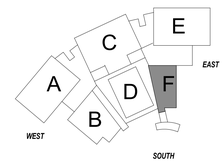

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TECHNOLOGY FIRST FLOOR PLAN F

Date: 07/08/2024
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Drawing Number: T101F

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TECHNOLOGY DRAWING KEYNOTES

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1 2.0 - TECHNOLOGY SECOND FLOOR PLAN A
1/8" = 1'-0"

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KEYPLAN

Number	Date	Issued For
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TECHNOLOGY SECOND FLOOR PLAN A

Date
07/08/2024
Scale
1/8" = 1'-0"
Proj. Number
22367.00

Drawing Number
T102A

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TECHNOLOGY DRAWING KEYNOTES

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1 2.0 - TECHNOLOGY SECOND FLOOR PLAN C
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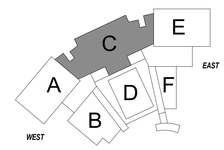

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TECHNOLOGY SECOND FLOOR PLAN C

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1 2.0 - TECHNOLOGY SECOND FLOOR PLAN E
1/8" = 1'-0"

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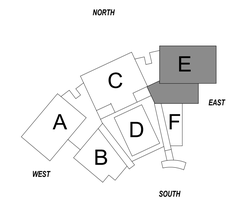

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TECHNOLOGY SECOND FLOOR PLAN E

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TECHNOLOGY ABBREVIATIONS

(NOTE: NOT ALL ABBREVIATIONS APPLICABLE)

AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISHED GRADE
A/C	ABOVE COUNTER
ACS	ACCESS CONTROL SYSTEM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AIR	AS REQUIRED
AWG	AMERICAN WIRE GAUGE
BICSI	BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL
BNC	BAYONET NEIL-CONCELMAN
C	CONDUIT(S)
DEMARC	DEMARCATION
DPDT	DOUBLE THROW DOUBLE PULL
EIA	ELECTRONICS INDUSTRIES ALLIANCE
EMT	ELECTRICAL METALLIC TUBING
FACP	FIRE ALARM CONTROL PANEL
F	FACSIMILE (FAX)
IDS	INTRUSION DETECTION SYSTEM
LAN	LOCAL AREA NETWORK
MER	MAIN EQUIPMENT ROOM
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OFE	OWNER FURNISHED EQUIPMENT
PA	PUBLIC ADDRESS
PBX	PRIVATE BRANCH EXCHANGE
PC	PERSONAL COMPUTER
PoE	POWER OVER ETHERNET
PP	PATCH PANEL
PVC	POLYVINYL CHLORIDE CONDUIT
QYT	QUANTITY
STP	SHIELDED TWISTED PAIR
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATIONS
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TR	TELECOMMUNICATIONS ROOM
TV	TELEVISION
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
VGA	VIDEO GRAPHICS ARRAY
VoIP	VOICE OVER INTERNET PROTOCOL
VSS	VIDEO SURVEILLANCE SYSTEM
W	WALL TELEPHONE (VOICE)
WAN	WIDE AREA NETWORK
WAO	WORK AREA OUTLET
WAP	WIRELESS (DATA) ACCESS POINT
WG	WIRE GUARD
WP	WEATHERPROOF

AUDIO VISUAL

REFER TO SPECIFICATION SECTION 27 4100 FOR DEVICES

SYMBOL	DESCRIPTION	MOUNTING AFF UNLESS OTHERWISE NOTED	OUTLET BOX & CONDUIT SIZES PROVIDED & INSTALLED BY ELECTRICAL CONTRACTOR: 4" x 4" x 4" DP	12" x 12" x 4" DP	2G DEVICE RING	3G DEVICE RING	3/4" C	1" C	1-1/4" C	CHIEF #PAC525FCW	CABLING PROVIDED & INSTALLED BY LOW VOLTAGE CONTRACTOR (ALL CABLING TO BE PLENUM RATED): CAT6A CABLE	8P8C (RJ-45) JACK - CAT6A	AV CABLING INDICATED ON SIGNAL FLOW DIAGRAMS	COMMMENTS
ID-XX ▷	INTERACTIVE DISPLAY - EMPTY BACKBOX XX = DISPLAY SIZE	*												* REFER TO ARCHITECTUAL ELEVATIONS FOR MOUNTING HIEGHTS. ETHERNET TERMINATES TO LAN (MDF / IDF)
MON-XX ▷	DIGITAL DISPLAY	60" AFF											1	REFER TO 274100 FOR REQUIRED DISPLAYS.
A ▷	EMPTY BACKBOX FOR FUTURE AV CABLING & DEVICE.	34" AFF	1		1			2						CONDUIT TO ABOVE ACCESSIBLE CEILING.
B ▷	EMPTY BACKBOX FOR FUTURE AV CABLING & DEVICE.	48" AFF	1		1			1						CONDUIT TO ABOVE ACCESSIBLE CEILING.
C ▷	EMPTY BACKBOX FOR FUTURE AV CABLING & DEVICE.	18" AFF	1		1			1					1	CONDUIT TO ABOVE ACCESSIBLE CEILING.
D ▷	AVOIP ENCODER	18" AFF	1		1			1					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
E ▷	AV CONTROL PANEL	48" AFF	1		1			1					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
F ▷	FOH MIX PANEL	18" AFF	1		1			1					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
GS ▷	GYM LOUDSPEAKER	As Noted	1		1			1					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
ALS ▷	ASSISTED LISTENING TRANSMITTER	As Noted	1		1			1					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
ANT ▷	ANTENNA - WIRELESS MIC RECEIVER	As Noted	1		1			1					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
MIC ▷	DIGITAL XLR	18" AFF	1		1			1					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
P ▷	PROJECTOR PANEL	As Noted	1		1			1					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
PE ▷	CEILING MOUNTED PLENUM RATED ENCLOSURE - SHOWN FOR REF.													
S1	CLASSROOM SPEAKER - SHOWN FOR REF.													
S2	FLUSH MOUNT SPEAKER - REFER TO SPEC.												1	
SP ▷	SPEAKER PANEL	As Noted	1		1			1					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
R ▷	WALL MOUNTED PIVOT CABINET	As Noted	1		1			1					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
R2 ▷	AUDITORIUM WALL MOUNTED PIVOT CAB.	As Noted	1		1			1					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
R3 ▷	MIX POSITION AV RACK	As Noted	1		1			1					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
F ▷	5-GANG FLOOR BOX - 4" DP	As Noted	1		1			1					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
IO ▷	AUDIO INTERFACE	As Noted		1	1			2					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
SC ▷	SCREEN PASS-THRU PANEL	As Noted	1		1			1					1	REFER TO SIGNAL FLOW DIAGRAMS FOR CABLING AND ROUTING REQUIREMENTS
XX ▷	FLOOR BOX MOUNTED DEVICE													
XX ▷	CEILING MOUNTED DEVICE													CEILING MOUNTED DEVICE XX - DENOTES DEVICE AND CABLING REQUIREMENTS

AUDIO/VIDEO WIRE TYPES

AUDIO/VIDEO SYSTEM WIRING IS DIVIDED INTO GROUPS ACCORDING TO NOMINAL VOLTAGE LEVELS

	WIRING TYPE
GROUP A	MICROPHONE AND OTHER SENSITIVE WIRING (0mV to 100 mV)
GROUP B	LINE LEVEL WIRING (100 mV to 10V)
GROUP C	LOUDSPEAKER AND CONTROL WIRING (10 V TO 70 V)
GROUP D	VIDEO, CONTROL AND DIGITAL CIRCUITS
GROUP E	DATA AND FIBER OPTIC CABLE
GROUP F	SPARE CONDUIT

NOTE: THESE WIRING GROUPS MUST NEVER BE INTERMIXED WITHIN A GIVEN CONDUIT RUN OR JUNCTION BOX!

AUDIO/VIDEO CONDUIT SEPARATION

MINIMUM CONDUIT SEPARATION BETWEEN CONDUITS CARRYING WIRING OF DIFFERENT GROUPS IS:

	GROUP A	GROUP B	GROUP C	GROUP D	GROUP E
GROUP A	ADJACENT	6"	12"	12"	12"
GROUP B	--	ADJACENT	12"	6"	6"
GROUP C	--	--	ADJACENT	6"	6"
GROUP D	--	--	--	ADJACENT	ADJACENT
GROUP E	--	--	--	--	ADJACENT
GROUP F	12"	12"	12"	12"	12"

NOTE: NINETY DEGREE CROSSINGS IN CLOSE PROXIMITY ARE ACCEPTABLE. SEPARATIONS MUST BE MAINTAINED UNTIL WITHIN SIX FEET OF BOX OR GUTTER ENTRY.

ELECTRICAL CONDUIT SEPARATION

MINIMUM CONDUIT SEPARATION BETWEEN CONDUITS CARRYING AUDIO/VIDEO WIRING AND OTHER ELECTRICAL SERVICE CONDUIT IS:

	GROUP A	GROUP B	GROUP C	GROUP D	GROUP E	GROUP F
DIMMER CONTROLED LIGHTING	24"	12"	6"	12"	12"	24"
SCR CONTROLLED SERVICES	24"	12"	6"	12"	12"	24"
220/440VAC CIRCUITS	6"	6"	ADJACENT	ADJACENT	ADJACENT	24"
ALL OTHER SERVICES	6"	6"	ADJACENT	ADJACENT	ADJACENT	24"

NOTE: HEAVY CURRENT DEMANDS IN, OR LONG PARALLEL RUN WITH THE ABOVE SERVICES MAY DICTATE GREATER SEPARATIONS TO AVOID INTERFERENCE IN THE SYSTEMS. SEPARATIONS MUST BE MAINTAINED UNTIL WITHIN SIX FEET OF BOX OR GUTTER ENTRY.

EXCEPTIONS:

1. THE CONDUIT SEPARATIONS ABOVE ARE BASED ON THE USE OF EMT CONDUIT FOR ALL AV AND OTHER SIGNALS.
2. SEPARATIONS WHERE RIGID CONDUIT IS UTILIZED FOR AV SYSTEMS AND/OR OTHER ADJACENT SYSTEMS MAY BE HALVED.
3. SEPARATIONS WHERE PVC CONDUIT IS UTILIZED FOR AV SYSTEMS AND/OR OTHER ADJACENT SYSTEMS MUST BE DOUBLED.
4. THE CONTRACTOR MUST HAVE WRITTEN AUTHORIZATION FROM THE SYSTEMS DESIGNER FOR ANY CONDUIT INSTILLATION WHICH DOES NOT CONFORM TO THESE REQUIREMENTS.

SIGNAL TYPE	DESCRIPTION	DESCRIPTOR	MANUFACTURER	WIRE NUMBER
A	MICROPHONE	MIC	BELDEN	9451
C	TWISTED JACKETED 12 AWG	70V12	WEST PENN	227
C	TWISTED JACKETED 16 AWG - REMOTE POWER	PWR	WEST PENN	225
C	TWISTED UNJACKETED 10 AWG	LS10	WEST PENN	NJ210BKWH
C	TWISTED UNJACKETED 12 AWG	LS12	WEST PENN	C207
C	TWISTED UNJACKETED 14 AWG	LS14	WEST PENN	C206
D	RF-MICS AND RF-ALS	ANT	BELDEN	7810A
D	CONTROL SYSTEM RELAY	RLY	BELDEN	9460
D	CONTROL SYSTEM 232/485 AND IR	SER	BELDEN	9460
E	MULTI MODE FIBER - 6 STR - OM4	MMF	BELDEN	FI4D006R9A
E	SINGLE MODE FIBER - 6 STR - OS2	SMF	BELDEN	FISD006R9
E	SMPTE HYBRID	SMPTE	GEPCO	HDC920R
E	SHIELDED CAT6A	STP	BELDEN	10GXS2F
E	UNSHIELDED CAT6A	UTP	BELDEN	2414
F	EMPTY CONDUIT - 1"	ECO1		
F	EMPTY CONDUIT - 2"	ECO2		

GENERAL NOTES

1. DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT.
2. ALL AUDIO VISUAL OUTLETS MUST COINCIDE WITH ELECTRICAL POWER DRAWINGS AND TECHNOLOGY DRAWINGS. THE CONTRACTOR MUST COORDINATE ALL LOCATIONS OF THE ELECTRICAL OUTLETS WITH THE AUDIO VISUAL OUTLETS.
3. REQUIRED CABLE AND TERMINATIONS: SUBMIT ALL CABLE AND TERMINATION DEVICES WITH PRODUCT SUBMITTALS PRIOR TO PROCUREMENT
4. LABEL ALL CABLES WITHIN 12" OF FINAL TERMINATION.
5. USE ONLY HOOK AND LOOP CABLE TIES (VELCRO) FOR CABLES RATED CATEGORY 3 OR HIGHER.
6. ALL CABLES RUN IN CEILING AREAS SHALL BE PROPERLY SUPPORTED WITH CONDUIT OR J-HOOKS MOUNTED TO SLAT AT MINIMUM OF 5' INTERVALS. NO CABLE SHALL REST OR TOUCH CEILING ASSEMBLIES. CABLES SHALL NOT BE INSTALLED EXPOSED IN OPEN CEILING AREAS.
7. ALL LABELS SHALL BE MACHINE PRINTED. NO HAND LETTERED CABLES SHALL BE USED.
8. USE ONLY PLENUM RATED CABLES.
9. DO NOT RUN ETHERNET CABLES PARALLEL TO POWER CABLES. CROSS POWER CABLES ONLY AT RIGHT ANGLES.
10. MAINTAIN 8" DISTANCE FROM ALL LIGHTING TRANSFORMERS.
11. COLOR AND STYLE OF AUDIO VISUAL FACE PLATES SHALL BE COORDINATED WITH AND CONFIRMED BY THE ARCHITECT.
12. OBTAIN AND EXTEND TO OWNER ALL AVAILABLE MANUFACTURER AND SYSTEM WARRANTEES.
13. SPLICING CABLE IS NOT PERMITTED EXCEPT AS SPECIFICALLY NOTED.
14. LOCATIONS OF EQUIPMENT FOR ALL OTHER TRADES SHALL BE COORDINATED BEFORE CONSTRUCTION.
15. CONTRACTOR SHALL COORDINATE LAYOUT LOCATIONS AND CLEARANCE OF ALL EQUIPMENT WITH OTHER TRADES AND ATTAIN OWNER'S APPROVAL PRIOR TO INSTALLATION.
16. CONTRACTOR SHALL COORDINATE ALL RACEWAYS, LOCATIONS, AND POWER REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
17. ALL DEVICES SHOWN ON THESE PLANS MUST BE COORDINATED AND APPROVED BY THE ARCHITECT. THE INSTALLATION CONTRACTOR SHALL DEPICT ALL DEVICES ONTO ELEVATION SUBMITTALS BEFORE INSTALLATION. ANY DEVICE THAT IS NOT APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION MAY BE REQUIRED TO BE RELOCATED AS DIRECTED BY THE ARCHITECT AND CORRECTED BY THE CONTRACTOR WITH NO ADDITIONAL CHARGE TO THIS PROJECT.
18. ALL PATHWAYS, INCLUDING ALL WALL AND CEILING PENETRATIONS ARE REQUIRED TO INSTALL CABLING TO THE END DEVICE AND SHALL BE COORDINATED BETWEEN THE LOW VOLTAGE AND ELECTRICAL CONTRACTOR AND SHALL BE INCLUDED AS PART OF THIS SECTION.
19. SECURE ATTACHMENT OF AUDIO VISUAL DEVICES:
    A. TO ENSURE PROPER ATTACHMENT OF FIXTURES, FURNISHINGS & EQUIPMENT ITEMS, INCLUDING AND TECHNOLOGY ITEMS, WHERE "ITEMS" ARE ATTACHED TO WALL, CEILING, OVERHEAD STRUCTURE, AND/OR FLOOR, CONTRACTOR SHALL PROVIDE INFORMATION ADEQUATE FOR ARCHITECT TO VERIFY ITEMS, ATTACHED TO WALL, CEILING, AND/OR FLOOR ARE ATTACHED SECURELY AND PER MANUFACTURER'S RECOMMENDATIONS. ARCHITECT'S REVIEW MAY BE IMPLEMENTED DURING SUBMITTAL PROCESS.
    B. CONTRACTOR SHALL PROVIDE STRUTS, HANGERS, FASTENERS, SAFETY HARNESSES, CHANNELS, BOLTS, SCREWS, RODS, ETC. TO SECURELY ATTACH ITEMS TO EXISTING STRUCTURE AS REQUIRED TO MEET FIELD CONDITIONS AND MEET APPLICABLE CODES.
20. ALL CONDUIT IS TO ABOVE ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.

GENERAL PLAN SYMBOLS

- 1 / TA301 — DETAIL NUMBER / SHEET NUMBER — DETAIL/PLAN IDENTIFIER
- 1 / TA301 — DETAIL NUMBER / SHEET NUMBER — SECTION IDENTIFIER
- 1 / TA301 — DETAIL NUMBER / SHEET NUMBER — ELEVATION IDENTIFIER
- 1 — DRAWINGS KEYNOTE NOTE TAG
- 1 — EQUIPMENT NOTE TAG
- CONDUIT SLEEVE - THROUGH CEILING TO ABOVE FLOOR
- CONDUIT SLEEVES - THROUGH FLOOR TO BELOW FLOOR
- CONDUIT SLEEVES - HORIZONTAL

1

RESPONSIBILITY MATRIX			
	DEFINITIONS & NOTES: OF/OI = Owner Furnished / Owner Installed CF/CI = Contractor Furnished / Contractor Installed NOTE = Scope Delineation of Subs per Bid Packages		
	DISCIPLINE	OF/OI	CF/CI
1	SERVICE INTO BUILDING		
	PHONE, CABLE, FIBER, OTHER SERVICE FROM STREET	X	
	LIGHTNING PROTECTION FOR COPPER INTO BUILDING	X	
	PATHWAYS / CONDUIT INTO BUILDING FOR SERVICE PROVIDER		X
2	HORIZONTAL CABLING		
	CATEGORY RATED ETHERNET CABLE		X
	TERMINATION EQUIPMENT AND TERMINATIONS		X
	TESTING OF ETHERNET CABLE		X
	EXTENDED MANUFACTURER'S WARRANTY		X
	CABLE TRAY & J-HOOKS		X
	FLOOR BOXES		X
	PATHWAYS, CONDUIT, OUTLET BOXES, AND PENETRATIONS		X
	FIRESTOPPING		X
3	BACKBONE CABLING (FIBER, COPPER, & GROUNDING)		
	CATEGORY RATED ETHERNET CABLE & FIBER BACKBONE		X
	TERMINATION EQUIPMENT AND TERMINATIONS		X
	TESTING OF FIBER & COPPER CABLE		X
	EXTENDED MANUFACTURER'S WARRANTY		X
	CABLE TRAY & J-HOOKS		X
	PATHWAYS, CONDUIT, OUTLET BOXES, AND PENETRATIONS		X
	GROUNDING CONDUCTOR BETWEEN DATA ROOMS		X
	GROUNDING BUSSBARS AND GROUNDING OF EQUIPMENT TO BUSSBARS		X
	GROUNDING OF BUSSBARS TO ELECTRICAL PANELS OR OTHER MEANS		X
	FIRESTOPPING		X
4	DATA ROOM BUILDOUT		
	EQUIPMENT RACKS & CABINETS		X
	PATCH PANELS FOR ETHERNET CABLING		X
	WIRE MANAGERS - VERTICAL & HORIZONTAL		X
	CABLE TRAY & J-HOOKS		X
	FIRE RATED BACKER BOARD		X
	GROUNDING OF DATA EQUIPMENT TO BUSSBARS		X
	GROUNDING OF BUSSBARS TO ELECTRICAL PANELS OR OTHER MEANS		X
	FIRESTOPPING		X
	SECURITY SYSTEM SERVERS		X
	POWER		X
	UPS's & PDU's		X
	PATCH CORDS TO CAMERAS AND SPECIFIED AV DEVICES		X
	PATCH CORDS TO SWITCHES (FIBER & COPPER) IN MDF / IDF	X	
5	TECHNOLOGY EQUIPMENT		
	WIRELESS ACCESS POINTS	X	
	BUILDING LAN NETWORK ELECTRONICS (SWITCHES) IN MDF/IDF	X	
	PHONE SYSTEM INCLUDING HANDSETS AND SERVERS	X	
	SERVERS (OTHER THAN SECURITY SERVERS)	X	
6	PHYSICAL SECURITY SYSTEMS		
	SECURITY CAMERAS		X
	SECURITY CABLING FOR INTRUSION DETECTION & ACCESS CONTROL		X
	INTRUSION DETECTION DEVICES AND PANELS		X
	ACCESS CONTROL DEVICES AND PANELS		X
	SECURITY SYSTEM SERVERS		X
	SECURITY SYSTEM LICENSING		X
7	AUDIO VIDEO SYSTEMS		
	BACKBOX, CONDUIT, AND PATHWAYS FOR ALL AV SYSTEMS SHOWN ON DRAWINGS		X
	CLASSROOM AV DEVICES AND CABLING	X	
	OFFICE AV DEVICES AND CABLING	X	
	CONFERENCE ROOM AV DEVICES AND CABLING	X	
	CAFETERIA AV DEVICES, CABLING, LICENSES, AV SWITCHES, CONFIGURATION - COMPLETE SYSTEM		X
	GYMNASIUM AV DEVICES, CABLING, LICENSES, AV SWITCHES, CONFIGURATION - COMPLETE SYSTEM		X
	GYMNASIUM AV DEVICES, CABLING, LICENSES, AV SWITCHES, CONFIGURATION - COMPLETE SYSTEM		X

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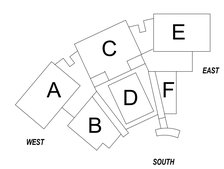
Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH / EAST / WEST / SOUTH



KEYPLAN

Number	Date	Issued For
1	10/16/2024	Addendum No. 2
	09/30/2024	BIDDING / PERMIT
	07/08/2024	PHASE 2

AUDIO VISUAL SYMBOL LEGEND & GENERAL NOTES

Date: 07/08/2024
Scale: As indicated
Proj. Number: 22367.00
Drawing Number: TA000

Autodesk Docs://22367.00 - Greenwich Central Middle School/TAS_22367_GREENWICH_CENTRAL_MS_R22.rvt
10/16/2024 8:34:09 AM

SECURITY

REFER TO SPECIFICATION 28 1300 FOR DEVICES

SYMBOL	DESCRIPTION	OUTLET BOX & CONDUIT SIZES PROVIDED & INSTALLED BY ELECTRICAL CONTRACTOR: MOUNTING AFF UNLESS OTHERWISE NOTED	1G - 2-1/2" DP	4 x 4" x 2-1/8" DP	1G DEVICE RING	2G DEVICE RING	3/4" C	1" C	1/2" FLEX	SURFACE MOUNTED BOX	CABLING PROVIDED & INSTALLED BY SECURITY CONTRACTOR (ALL CABLING TO BE PLENUM RATED): CAT 6A - CABLE TO NETWORK	CAT 6A - 6 in. LONG PATCH CORD / CABLE	CAT 6A - 5 ft. LONG PATCH CORD / CABLE	#22 - 2C	#22 - 4C	#18 - 4C	#18 - 6C	#18 - 6C SHL'D	PLENUM CABLE A/R	BELDEN #6584AFJ COMPOSITE CABLE or Equiv. (6-18C SHLD, 12-2C, 22-4C, 18-4C	COMMMENTS
	FIXED DOME CAMERA - WALL MTG	As Noted										1									REFER TO CAMERA SCHEDULE FOR ADDITIONAL INFORMATION.
	FIXED DOME CAMERA - CEILING MTG - INTERIOR											1									REFER TO CAMERA SCHEDULE FOR ADDITIONAL INFORMATION.
	MULTI-SENSOR CAMERA	As Noted										1									REFER TO CAMERA SCHEDULE FOR ADDITIONAL INFORMATION.
CR	ACCESS CONTROL CARD READER HID MULTICLASS SE #RP10 of SE #RP40	46" AFF		1														1			
DC	DOOR POSITION SWITCH								1					1							SPECIFIED IN DIV. 08 0671. DPS SHALL BE DPDT SHOWN ON THESE PLANS FOR FINAL CABLING CONNECTIONS.
JB	JUNCTION BOX			1				1	A/R											1	REFER TO DETALS FOR OUTLET AND CONDUIT INSTALLATION.
EL STK	ELECTRIC DOOR HARDWARE															1					SPECIFIED IN DIV. 08 0671. SHOWN ON THESE PLANS FOR FINAL CABLING CONNECTIONS.
PS	POWER SUPPLY FOR DOOR HARDWARE															1					SPECIFIED IN DIV. 08 0671. SHOWN ON THESE PLANS FOR FINAL CABLING CONNECTIONS.
ICD	VIDEO INTERCOM DOOR STATION	46" AFF		1				1			1							1			INTERCOM DOOR RELEASE SHALL RELEASE LOCKED DOOR FROM THE ACCESS CONTROL PANEL.
ICM	VIDEO MASTER STATION - INTERCOM - DOOR RELEASE										1										CONTRACTOR TO CONFIRM ROUTING OF ICD TO ICM'S, AND ROLLOVER, FROM THE OWNER PRIOR TO CONFIGURATION.
KPD	INTRUSION DETECTION KEYPAD	48" AFF		1			1											1			
M	MOTION SENSOR, CEILING MOUNTED - 360 DEGREE			1			1										1				
M	MOTION SENSOR - CORNER / WALL MOUNT	108" AFF		1			1										1				
DB	DURESS BUTTON SENTROL UL RATED #3050	*	1		1			1	1								2				* MOUNT BELOW DESKS. REFER TO DETAILS FOR ADDITIONAL INFORMATION. COORDINATE WITH FURNITURE INSTALLATION.
LD	EMERGENCY LOCK DOWN BUTTON	48" AFF	1				1										2				STI BOX SHALL BE GREEN - CUSTOM LABEL "LOCKDOWN". CONFIRM LOCATION WITH CONSULTANT PRIOR TO INSTALLATION.
DR	DOOR RELEASE BUTTON - DORTRONICS #5276-HD29 1 GANG, FSR #DSKB_385 TABLE BOX		1		1			1	1	1				1							MOUNT SWITCH TO TABLE BOX. LABEL SWITCH "DOOR # PUSH TO RELEASE". LABEL SHALL BE ENGRAVED.CONFIRM LOCATION ON DESK WITH OWNER AND FURNITURE CONTRACTOR.
SBE	BLUE SECURITY STROBE - EXTERIOR	As Noted	1				1												1		COORDINATE 120V POWER WITH ELECTRICIAN. REFER TO DETAILS AND WIRING DIAGRAMS FOR ADDITIONAL INFORMATION.
SBI	BLUE SECURITY STROBE - INTERIOR	As Noted	1				1												1		COORDINATE 120V POWER WITH ELECTRICIAN. REFER TO DETAILS AND WIRING DIAGRAMS FOR ADDITIONAL INFORMATION.
SM	SPOT MONITOR & MICRO PC	6' AFF	1				1				1		1								ALL CONNECTIONS BY CONTRACTOR AWARDED THIS PROJECT. 55" DIAGONAL 4K PROFESSIONAL DISPLAY U.O.N.
R	INTERNAL REQUEST TO EXIT SWITCH								1					1							SPECIFIED IN DIV. 08 0671. SHOWN ON THESE PLANS FOR FINAL CABLING CONNECTIONS.
DA	LOCAL DOOR ALARM DSI #ES4200-KT-T1 DSI #ES450-K1	6' AFF		1			1												1		COORDINATE MTG HEIGHT OF ALARM WITH OWNER PRIOR TO ROUGH-IN. KEYED ALARM AND DPS SHALL BE FLUSH MOUNTED. COORDINATE WITH DOOR CONTRACTOR. REFER TO SECURITY DETAILS FOR ADDITIONAL INFO.
MP	LOCAL DOOR ALARM REMOTE MONITORING PLATE			1			1												1		COORDINATE MTG HEIGHT OF ALARM WITH OWNER PRIOR TO ROUGH-IN. REFER TO SECURITY DETAILS FOR ADDITIONAL INFO.
CPU	COMPUTER LOCATION FOR "SM" - TOWER WORKSTATION & DISPLAYS																				
AB	ALERTUS ALERT BEACON	5'-6" AFF										1									SECURE TO BACKBOX PROVIDED IN DIV. 27. PATCH TO NETWORK & CONFIGURE.
TTS	ALERTUS TEXT TO SPEECH OR EQUIVALENT	5'-6" AFF										1			1						REFER TO ALERTUS SIGNAL FLOW.

RESPONSIBILITY MATRIX			
	DEFINITIONS & NOTES: OF/OI = Owner Furnished / Owner Installed CF/CI = Contractor Furnished / Contractor Installed NOTE = Scope Delineation of Subs per Bid Packages		
	DISCIPLINE	OF/OI	CF/CI
1	SERVICE INTO BUILDING		
	PHONE, CABLE, FIBER, OTHER SERVICE FROM STREET	X	
	LIGHTNING PROTECTION FOR COPPER INTO BUILDING	X	
	PATHWAYS / CONDUIT INTO BUILDING FOR SERVICE PROVIDER		X
2	HORIZONTAL CABLING		
	CATEGORY RATED ETHERNET CABLE		X
	TERMINATION EQUIPMENT AND TERMINATIONS		X
	TESTING OF ETHERNET CABLE		X
	EXTENDED MANUFACTURER'S WARRANTY		X
	CABLE TRAY & J-HOOKS		X
	FLOOR BOXES		X
	PATHWAYS, CONDUIT, OUTLET BOXES, AND PENETRATIONS		X
	FIRESTOPPING		X
3	BACKBONE CABLING (FIBER, COPPER, & GROUNDING)		
	CATEGORY RATED ETHERNET CABLE & FIBER BACKBONE		X
	TERMINATION EQUIPMENT AND TERMINATIONS		X
	TESTING OF FIBER & COPPER CABLE		X
	EXTENDED MANUFACTURER'S WARRANTY		X
	CABLE TRAY & J-HOOKS		X
	PATHWAYS, CONDUIT, OUTLET BOXES, AND PENETRATIONS		X
	GROUNDING CONDUCTOR BETWEEN DATA ROOMS		X
	GROUNDING BUSSBARS AND GROUNDING OF EQUIPMENT TO BUSSBARS		X
	GROUNDING OF BUSSBARS TO ELECTRICAL PANELS OR OTHER MEANS		X
	FIRESTOPPING		X
4	DATA ROOM BUILDOUT		
	EQUIPMENT RACKS & CABINETS		X
	PATCH PANELS FOR ETHERNET CABLING		X
	WIRE MANAGERS - VERTICAL & HORIZONTAL		X
	CABLE TRAY & J-HOOKS		X
	FIRE RATED BACKER BOARD		X
	GROUNDING OF DATA EQUIPMENT TO BUSSBARS		X
	GROUNDING OF BUSSBARS TO ELECTRICAL PANELS OR OTHER MEANS		X
	FIRESTOPPING		X
	SECURITY SYSTEM SERVERS		X
	POWER		X
	UPS's & PDU's		X
	PATCH CORDS TO CAMERAS AND SPECIFIED AV DEVICES		X
	PATCH CORDS TO SWITCHES (FIBER & COPPER) IN MDF / IDF	X	
5	TECHNOLOGY EQUIPMENT		
	WIRELESS ACCESS POINTS	X	
	BUILDING LAN NETWORK ELECTRONICS (SWITCHES) IN MDF/IDF	X	
	PHONE SYSTEM INCLUDING HANDSETS AND SERVERS	X	
	SERVERS (OTHER THAN SECURITY SERVERS)	X	
6	PHYSICAL SECURITY SYSTEMS		
	SECURITY CAMERAS		X
	SECURITY CABLING FOR INTRUSION DETECTION & ACCESS CONTROL		X
	INTRUSION DETECTION DEVICES AND PANELS		X
	ACCESS CONTROL DEVICES AND PANELS		X
	SECURITY SYSTEM SERVERS		X
	SECURITY SYSTEM LICENSING		X
7	AUDIO VIDEO SYSTEMS		
	BACKBOX, CONDUIT, AND PATHWAYS FOR ALL AV SYSTEMS SHOWN ON DRAWINGS		X
	CLASSROOM AV DEVICES AND CABLING	X	
	OFFICE AV DEVICES AND CABLING	X	
	CONFERENCE ROOM AV DEVICES AND CABLING	X	
	CAFETERIA AV DEVICES, CABLING, LICENSES, AV SWITCHES, CONFIGURATION - COMPLETE SYSTEM		X
	GYMNASIUM AV DEVICES, CABLING, LICENSES, AV SWITCHES, CONFIGURATION - COMPLETE SYSTEM		X
	GYMNASIUM AV DEVICES, CABLING, LICENSES, AV SWITCHES, CONFIGURATION - COMPLETE SYSTEM		X

GENERAL NOTES

1. DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT.
2. ALL SECURITY DEVICES AND OUTLETS MUST COINCIDE WITH ELECTRICAL POWER DRAWINGS AND TECHNOLOGY DRAWINGS. THE CONTRACTOR MUST COORDINATE ALL LOCATIONS OF THE ELECTRICAL OUTLETS WITH THE SECURITY DEVICES.
3. REQUIRED CABLE: SUBMIT ALL CABLE AND TERMINATION DEVICES WITH PRODUCT SUBMITTALS PRIOR TO PROCUREMENT
4. LABEL ALL CABLES WITHIN 12" OF FINAL TERMINATION.
5. ALL CABLES RUN IN CEILING AREAS SHALL BE PROPERLY SUPPORTED WITH CONDUIT OR J-HOOKS MOUNTED TO SLAT AT MINIMUM OF 5' INTERVALS. NO CABLE SHALL REST OR TOUCH CEILING ASSEMBLIES. CABLES SHALL NOT BE INSTALLED EXPOSED IN OPEN CEILING AREAS.
6. ALL LABELS SHALL BE MACHINE PRINTED. NO HAND LETTERED CABLES SHALL BE USED.
7. USE ONLY PLENUM RATED CABLES.
8. DO NOT RUN ETHERNET CABLES PARALLEL TO POWER CABLES. CROSS POWER CABLES ONLY AT RIGHT ANGLES.
9. MAINTAIN 8" DISTANCE FROM ALL LIGHTING TRANSFORMERS.
10. SPLICING CABLES IS NOT PERMITTED EXCEPT AS SPECIFICALLY NOTED.
11. LOCATIONS OF EQUIPMENT FOR ALL OTHER TRADES SHALL BE COORDINATED BEFORE CONSTRUCTION.
12. CONTRACTOR SHALL COORDINATE LAYOUT LOCATIONS AND CLEARANCE OF ALL EQUIPMENT WITH OTHER TRADES AND ATTAIN OWNER'S APPROVAL PRIOR TO INSTALLATION.
13. CONTRACTOR SHALL COORDINATE ALL RACEWAYS, LOCATIONS, AND POWER REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
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15. ALL PATHWAYS, INCLUDING ALL WALL AND CEILING PENETRATIONS ARE REQUIRED TO INSTALL CABLING TO THE END DEVICE AND SHALL BE COORDINATED BETWEEN THE LOW VOLTAGE AND ELECTRICAL CONTRACTOR AND SHALL BE INCLUDED AS PART OF THIS SECTION.
16. SECURE ATTACHMENT OF TECHNOLOGY AND SECURITY DEVICES:
    A. TO ENSURE PROPER ATTACHMENT OF FIXTURES, FURNISHINGS & EQUIPMENT ITEMS, INCLUDING AND TECHNOLOGY ITEMS, WHERE "ITEMS" ARE ATTACHED TO WALL, CEILING, OVERHEAD STRUCTURE, AND/OR FLOOR, CONTRACTOR SHALL PROVIDE INFORMATION ADEQUATE FOR ARCHITECT TO VERIFY ITEMS ATTACHED TO WALL, CEILING, AND/OR FLOOR ARE ATTACHED SECURELY AND PER MANUFACTURER'S RECOMMENDATIONS. ARCHITECT'S REVIEW MAY BE IMPLEMENTED DURING SUBMITTAL PROCESS.
    B. CONTRACTOR SHALL PROVIDE STRUTS, HANGERS, FASTENERS, SAFETY HARNESSES, CHANNELS, BOLTS, SCREWS, RODS, ETC. TO SECURELY ATTACH ITEMS TO EXISTING STRUCTURE AS REQUIRED TO MEET FIELD CONDITIONS AND MEET APPLICABLE CODES.
17. ALL CONDUIT IS TO ABOVE ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.
18. PLACEMENT OF ALL SECURITY VIDEO SURVEILLANCE CAMERAS MUST BE APPROVED BY THE SECURITY CONSULTANT AND/OR OWNER PRIOR TO CONSTRUCTION.

TECHNOLOGY ABBREVIATIONS

(NOTE: NOT ALL ABBREVIATIONS APPLICABLE)

AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISHED GRADE
A/C	ABOVE COUNTER
ACS	ACCESS CONTROL SYSTEM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
A/R	AS REQUIRED
AWG	AMERICAN WIRE GAUGE
BICSI	BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL
BNC	BAYONET NEIL-CONCELMAN
C	CONDUIT(S)
DEMARC	DEMARCATION
DPDT	DOUBLE THROW DOUBLE PULL
EIA	ELECTRONICS INDUSTRIES ALLIANCE
EMT	ELECTRICAL METALLIC TUBING
FACP	FIRE ALARM CONTROL PANEL
F	FACSIMILE (FAX)
IDS	INTRUSION DETECTION SYSTEM
LAN	LOCAL AREA NETWORK
MER	MAIN EQUIPMENT ROOM
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OFE	OWNER FURNISHED EQUIPMENT
PA	PUBLIC ADDRESS
PBX	PRIVATE BRANCH EXCHANGE
PC	PERSONAL COMPUTER
PoE	POWER OVER ETHERNET
PP	PATCH PANEL
PVC	POLYVINYL CHLORIDE CONDUIT
QYT	QUANTITY
STP	SHIELDED TWISTED PAIR
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATIONS
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TR	TELECOMMUNICATIONS ROOM
TV	TELEVISION
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
VGA	VIDEO GRAPHICS ARRAY
VoIP	VOICE OVER INTERNET PROTOCOL
VSS	VIDEO SURVEILLANCE SYSTEM
W	WALL TELEPHONE (VOICE)
WAN	WIDE AREA NETWORK
WAO	WORK AREA OUTLET
WAP	WIRELESS (DATA) ACCESS POINT
WG	WIRE GUARD
WP	WEATHERPROOF

GENERAL PLAN SYMBOLS

- 1 / TY301 — DETAIL NUMBER / SHEET NUMBER — **DETAIL/PLAN IDENTIFIER**
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- CONDUIT SLEEVES - HORIZONTAL

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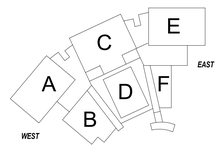
Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH



KEYPLAN

Number	Date	Issued For
1	10/16/2024	Addendum No. 2
	09/30/2024	BIDDING / PERMIT
	07/08/2024	PHASE 2

SECURITY SYMBOL LEGEND & GENERAL NOTES

Date: 07/08/2024
Scale: NTS
Proj. Number: 22367.00

Drawing Number: TY000

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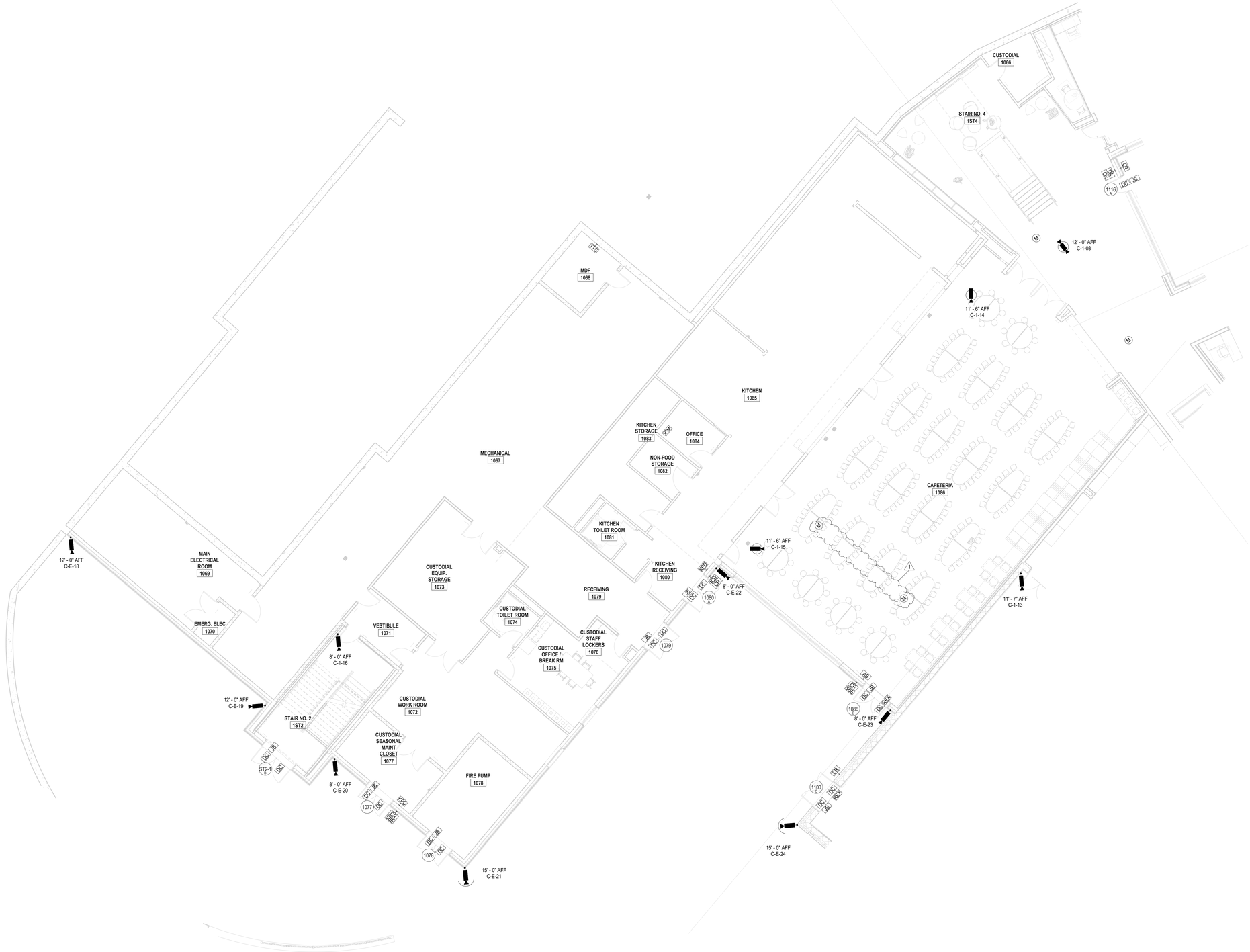
SECURITY DRAWING KEYNOTES

No.	DESCRIPTION
1	CARD READER SHALL SHUNT LOCAL ALARM AND NOT IMPEDE EGRESS UNDER ANY CIRCUMSTANCES.
2	DOOR RELEASE BUTTON SHALL UNLOCK DOOR #1001D.
3	CONFIGURE DOOR TO BE LOCKED AND UNLOCKED ON A SCHEDULE FROM THE ACS SYSTEM. INCLUDE ALL LOCK CABLING A/R.
4	SEQUENCE OF OPERATION WITH AUTO DOOR OPPENER.
5	INSTALL 4 STRAND OUTDOOR RATED OS2 FIBER TO CARD ACCESS PEDESTAL. PROCURE AND INSTALL HARDENED ELECTRIC SWITCH AND ACS DOOR CONTROLLER IN PEDESTAL. INSTALL LONG-RANGE READER AT TWO DIFFERENT HEIGHTS FOR CARS AND BUSSES. LONG-RANGE READER SHALL BE CONFIRMED WITH OWNER PRIOR TO PROCUREMENT. COORDINATE WITH SITE PEDESTAL DRAWINGS.
6	REFER TO CAMERA POLE MOUNT DETAIL. TYP.
7	40" DISPLAY CONFIGURED WITH VMS AND SELECT EXTERIOR CAMERAS. COORDINATE WITH OWNER PRIOR TO CONFIGURATION.



1 1.0 - SECURITY FIRST FLOOR PLAN A
1/8" = 1'-0"

SLAM

S / L / A / M Architects, Landscape Architects & Engineers, P.C.

80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077

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Drawn: MJD
Checked: NAD

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
SOUTH
WEST

KEYPLAN

Number	Date	Issued For
1	10/16/2024	Addendum No. 2
	09/30/2024	BIDDING / PERMIT
	07/08/2024	PHASE 2

SECURITY FIRST FLOOR PLAN A

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00

Drawing Number: TY101A

Autodesk Docs://22367.00 - Greenwich Central Middle School/7AS_22367_GREENWICH_CENTRAL_MS_R22.rvt
10/16/2024 8:35:02 AM

SECURITY DRAWING KEYNOTES

No.	DESCRIPTION
1	CARD READER SHALL SHUNT LOCAL ALARM AND NOT IMPEDE EGRESS UNDER ANY CIRCUMSTANCES.
2	DOOR RELEASE BUTTON SHALL UNLOCK DOOR #1001D.
3	CONFIGURE DOOR TO BE LOCKED AND UNLOCKED ON A SCHEDULE FROM THE ACS SYSTEM. INCLUDE ALL LOCK CABLING A.R.
4	SEQUENCE OF OPERATION WITH AUTO DOOR OPPENER.
5	INSTALL 4 STRAND OUTDOOR RATED OS2 FIBER TO CARD ACCESS PEDESTAL. PROCURE AND INSTALL HARDENED ELECTRIC SWITCH AND ACS DOOR CONTROLLER IN PEDESTAL. INSTALL LONG-RANGE READER AT TWO DIFFERENT HEIGHTS FOR CARS AND BUSSES. LONG-RANGE READER SHALL BE CONFIRMED WITH OWNER PRIOR TO PROCUREMENT. COORDINATE WITH SITE PEDESTAL DRAWINGS.
6	REFER TO CAMERA POLE MOUNT DETAIL. TYP.
7	40" DISPLAY CONFIGURED WITH VMS AND SELECT EXTERIOR CAMERAS. COORDINATE WITH OWNER PRIOR TO CONFIGURATION.

1 1.0 - SECURITY FIRST FLOOR PLAN C
1/8" = 1'-0"

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Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH
EAST
SOUTH
WEST
A B C D E F

KEYPLAN

Number	Date	Issued For
1	10/16/2024	Addendum No. 2
	09/30/2024	BIDDING / PERMIT
	07/08/2024	PHASE 2

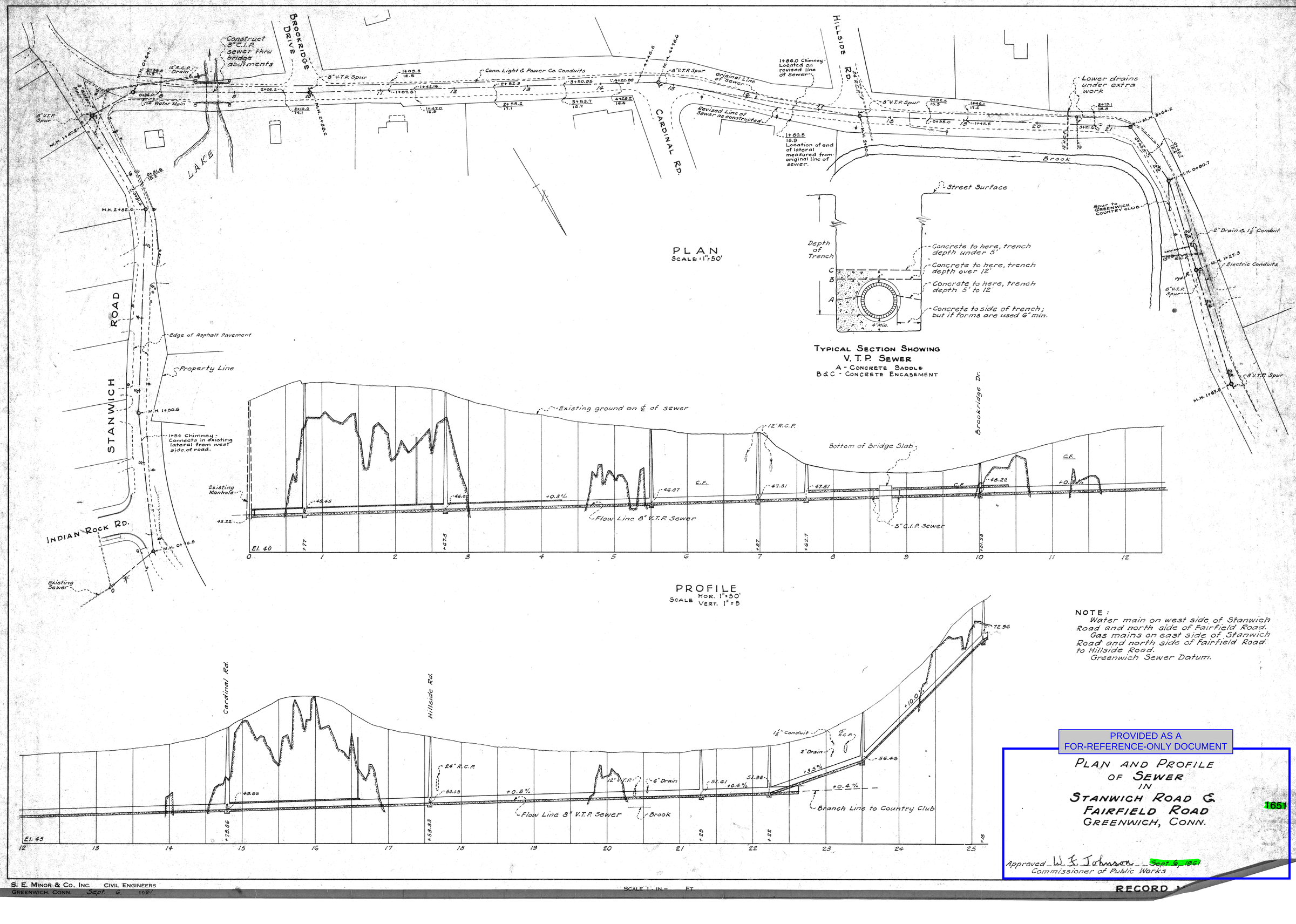
SECURITY FIRST FLOOR PLAN C

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00

Drawing Number: TY101C

Autodesk Docs://22367.00 - Greenwich Central Middle School/TAS_22367_GREENWICH_CENTRAL_MS_R22.rvt
10/16/2024 8:35:05 AM

PLATE F



PROVIDED AS A FOR-REFERENCE-ONLY DOCUMENT

PLAN AND PROFILE OF SEWER IN STANWICH ROAD & FAIRFIELD ROAD GREENWICH, CONN.

1651

Approved W. F. Johnson Sept. 6, 1961
Commissioner of Public Works

S. E. MINOR & CO., INC. CIVIL ENGINEERS
GREENWICH, CONN. Sept. 6, 1961

SCALE 1" IN = FT.

RECORD

STANWICH ROAD & FAIRFIELD ROAD
Plan and Profile of Sewer-Record Map
Drawer #1