SECTION 00 9113 – ADDENDUM NO. 6

Central Middle School
Greenwich, Connecticut

S/L/A/M Project No. 22367.00

This Addendum, dated November 7, 2024, forms a part of the Contract Documents, and modifies the original Bidding Documents dated September 30, 2024, Addendum No. 1 dated October 16, 2024, Addendum No. 2, dated October 22, 2024, Addendum No. 3, dated October 25, 2024, Addendum No. 4, dated October 31, 2024 and Addendum No. 5, dated November 5, 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 5, and the following attachments:

1.1 BID RFI LOG (GCMS Phase 2 – Bidder's Question Log – dated 11/07/2024)

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

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

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

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

H. 03z - Updated BP#33 - Scope of Work – WINDOW TREATMENTS

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

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

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

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

M. 34 – Updated Form of Proposal showing Bid Extension to 11/19/2024.
   1) Note: Bid Due Time updated to 12 p.m. (Noon)

1.3 PROJECT MANUAL

A. REPLACE the follow specification section, previously dated September 30, 2024 with the revised section dated November 6, 2024

1.	07 2119	FOAMED IN-PLACE INSULATION
2.	08 3326	OVERHEAD COILING GRILLES
3.	08 4413	GLAZED ALUMINUM CURTAIN WALLS
4.	11 5400	ART EQUIPMENT
5.	11 6833	ATHLETIC FIELD EQUIPMENT
6.	22 1005	PLUMBING PIPING
7.	23 0900	INSTRUMENTATION AND CONTROLS FOR HVAC
8.	23 3100	HVAC DUCTS AND CASINGS
9.	23 6411	PACKAGED WATER CHILLERS-SCROLL
10.	23 8126	SPILT-SYSTEM AIR-CONDITIONERS
11.	26 0548	VIBRATION AND SEISMIC CONTROLS FOR ELECTRICAL
12.	26 0573	OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY
13.	28 0528	PATHWAYS FOR SECURITY SYSTEMS
14.	31 2316.26	ROCK REMOVAL
15.	32 1313	CONCRETE PAVING

B. REMOVE specification section in its entirety

1.	32 3118	METAL FENCES AND GATES
2.	32 3120	VEHICLE BARRIER GATES

C. Additional information, these Appendices to be Added to Vol 4 of 4
   1. **Appendix G – Statements of Special Inspection – Structural & Architectural –** See Specification section 01 4533 – Code-Required Special Inspections for additional information

1.2 DRAWINGS

A. Replace the following Drawing, previously issued on 09/30/2024 for BIDDING/PERMIT, or ADDENDUM No.1 on 10/10/24 or ADDENDUM No. 2 on 10/16/2024, with new drawings dated 10/23/2024

GENERAL

1.	GC0A	CODE INFORMATION

CIVIL

2.	C508	SITE UTILITY DETAILS - 2

SITE UTILITIES

3.	SU500	MEP SITE UTILITY PLAN – DETAILS & SCHEDULES

LANDSCAPE

4.	L001	GENERAL SITE INFORMATION
5.	L202A	SITE MATERIALS NORTHEAST
6.	L402	PLANT MATERIALS LIST
7.	L501	SITE DETAILS
8.	L602	ATHLETIC FIELD SITE DETAILS

STRUCTURAL

9.	S101A	FOUNDATION PLAN – PART A
10.	S101E	FOUNDATION PLAN – PART E
11.	S200	TYPICAL FOUNDATION DETAILS

ARCHITECTURAL

12.	A092	SECOND FLOOR & LOWER ROOF SLAB EDGE PLAN
13.	A103	OVERALL ROOF PLAN
14.	A103A	ROOF PLAN – PART A
15.	A103B	ROOF PLAN – PART B
16.	A103C	ROOF PLAN – PART C
17.	A103D	ROOF PLAN – PART D
18.	A103E	ROOF PLAN – PART E
19.	A103F	ROOF PLAN – PART F
20.	A315	EXTERIOR STAND ALONE MOCK-UP
21.	A805	INTERIOR DETAILS
22.	A901B	FIRST FLOOR FINISH PLAN – PART B
23.	A903	FLOOR PATTERN DETAILS
24.	A910	FINISH PRODUCT LIST – PART A
25.	A911	FINISH PRODUCT LIST – PART B AND FINISH NOTES
26.	A912	SPECIALTY EQUIPMENT LIST

THEATRICAL

27.	TR1	THEATRICAL RIGGING

MECHANICAL

28.	M103B	MECHANICAL ROOF PLAN – PART B
29.	M103D	MECHANICAL ROOF PLAN – PART D
30.	MP102A	MECHANICAL PIPING SECOND FLOOR PLAN – PART A
31.	MP102C	MECHANICAL PIPING SECOND FLOOR PLAN – PART C
32.	M500	MECHANICAL DETAILS
33.	M601	MECHANICAL SCHEDULES

ELECTRICAL

34.	EP101A	ELECTRICAL POWER FIRST FLOOR PLAN – PART A

35.	E505	ELECTRICAL DETAILS
36.	E600	ELECTRICAL SCHEDULES AND DIAGRAMS
37.	E602	ELECTRICAL PANEL SCHEDULES
38.	E700	ELECTRICAL RISER DIAGRAM
39.	E701	FIRE ALARM RISER DIAGRAM

END OF DOCUMENT 00 9113 - ADDENDUM No. 6

END OF SECTION 01 09113

THIS PAGE INTENTIONALLY LEFT BLANK

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.	Spec section 285319 has been removed. Refer to specification 276010 for distributed antenna system	10/30/2024	CES		Closed	10/31/2024
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

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.	Follow-up - Confirmed	10/28/2024	SLAM		Closed	10/31/2024
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.	Atcahnment to bottom of roof joist is the design intention. This conection is provided by the partiton manufacturer. **Turner Response (10/31/24):** The General Trade Subcontractor (BP #21) shall design, furnish, & install any additional supports necessary to mount the motorized partition.	10/28/2024	SLAM		CLosed	10/31/2024
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?	Detail has been revised in Addendum 4 relocating the steel beams to be centered under the skyligh curb framing, and eliminating the CFMF angles.	10/28/2024	SLAM		Closed	10/31/2024
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.	See Spec section 07 2163, paragraph 3.8. for schedule the Isulative Coatng Schedule. This schedule defines steel prep for regular steel and galvanized steel related to the Insulative Coating. There no additional primers required, as the BOD Insulative Coatings manufacturer can be covered with BOD Intumesent Fire Protection. Where all three occur, order shoudl be Galvanized first, InsulativeCoating Second, as specified, Intumescent last.	11/5/2024	SLAM		Closed	11/6/2024
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

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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
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. **DA Response to Turner Follow Up (11/05/24):** Confirmed. Note that conduit and backbox infrastructure for monitors and interactive displays is shown on T000.	10/16/2024	DA		Closed	11/6/2024
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. **Turner Follow-up (10/23/24):** Please advise how the fire alarm reports out without network connections?	No network connections are needed. Dial out is facilitated by the fire alarm panel UDACT and cellular dialer that the district requested.	11/4/2024	CES		Closed	11/6/2024
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.	Spec section 285319 has been removed. Refer to specification 276010 for distributed antenna system and its Delegated design rquirments.	10/30/2024	CES		Closed	10/31/2024
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). **T&B response (11/5/2024):** Concrete encasement has been removed from detail on C508 in Addendum No. 6 per coordination with the utility companies. Conduit below paved areas shall be sch80 PVC, conduit below landscape areas shall be sch40 PCV.	10/10/2024	CES		Closed	11/6/2024
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?	Yes, the utility companies have reviewed the design. The intent of the note 28 make the contractor aware that the design may be modified during construction/installation at the discretion of the governing utility company.	11/5/2024	T&B		Closed	11/6/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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
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.	Electrical studies confirmed, revised spec section issued in Addendum No 4.	11/5/2024	CES		Closed	11/6/2024
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.	Electrical seismic requirements issued as part of Addendum No 6. These are structural in nature and should be part of a delegated design assessment.	11/5/2024	CES		Closed	11/7/2024
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.	EV charging pedestal communication shall be via Cellular	11/5/2024	CES		Closed	11/6/2024
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.	Refernces to 27 0533 in this spec section should be replaced with 27 0536.	10/9/1902	CES		Closed	10/24/2024
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

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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
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.	Will be provided as part of a final conformed set – current drawing key plan provides clarity on part plan location.	11/6/2024	CES		Closed	11/6/2024
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. **Turner Follow-up (10/29/24):** Please provide detailed section cuts on the TR plans, especially for 3/TR1, 4/TR1, 5/TR1, & 6/TR1, that are similar in level of detail to 6 & 7 on TR2. There are so many light weights that it is not clear what is intended. Please also provide a section cut symbol showing where details 6 & 7 on TR2 apply.	Reference specifications for basis of design products. Note that it different products between detail 6 on TR1 and Details 3 and 5. **SLAM Follow-up Response (11/06/24):** Different theatrical rigging manufacturers have different details for the equipment in question. There are several acceptable ways to achieve design intent. A Revised TR1 drawing for addendum 6 has been issued, adding callouts and providing detail lines and notes about the side curtain track supplemental support.	10/22/2024	CT/SLAM		Closed	11/7/2024
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

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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. **Revised CES Response (11/06/24):** Under slab on grade feeders and branch circuits are allowed per project specifications (i.e. 260533 "raceway & boxes for electrical systems", Section 1.8.D and 2.1), unless otherwise noted on drawings. Typical detial to be provided in Addendum #6. **Turner Follow-up Response (11/07/24):** Trenching, sand bedding, and backfill for interior trenches needed for in floor electrical shown on the contract documents, including but not limited to the media rooms, kitchen & auditorium, shall be performed by the Sitework subcontractor (BP #09) as shown in Detail 2 on E505 issued in Addendum #6. All conduit, electrical components, and accessories to be furnished & installed by the Electrical subcontractor (BP #38).	10/11/2024	CES		Closed	11/7/2024
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. **Turner Follow-up Response (10/24/24):** E700 was updated in Addendum #3.	10/11/2024	CES		Closed	10/24/2024
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

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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.	Revised detail and plan, at this location was Issued in Addednum No. 2 removing this requirement.	10/28/2024	SLAM		Closed	10/31/2024
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
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.	Yes shades are required	10/30/2024	SLAM		Closed	10/31/2024
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. **SLAM Follow-up Response (10/23/24):** See Addendum #3 for written Heat Trace Specification.	10/16/2024	CES		Closed	10/24/2024
63	SLAM	275313	10/9/24	Is it acceptable to utilize Primex Clocks in lieu of SiteSync IQ by American Time?	No - The Clock system specifed is an approved sole source item for this project.	10/22/2024	SLAM		Closed	10/24/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
64	SLAM		10/9/24	Are the site boulders intended to be imported to site or harvested from site? Turner Follow-up (10/28/24): Design Team please provide the intended source to procure the boulders.	~~Although a new specification has been issued, the architect leaves this difficult to quanttify. Turner's direction to the bidding sitework subcontractors is to assume the required boulders sourced from site will either not be acceptable or in the quantity and size required. For these reason, Sitework bidders shall include providing boulders from an off-site location and do not assume the site will yeild the required boulders.~~ SLAM Follow-up Response (11/05/24): Weathered boulders from sections of material harvested by blasting Indian Rock Outcropping and other on-site outcroppings may be submitted to fill the quantities and sizes required. Any sharp angles must be buried or ground down to eliminate safety risk of finished exposed surfaces of boulders. Specification section 32 0529 Glacial Boulders for Exterior Improvements to be updated accordingly. Turner Revised Response (11/06/24): The sitework Bidders shall assume that all boulders & stepping stones will be procured from the site. Bidders shall include off-site storage of the boulders and delivery back to the project once ready for installation.	10/23/2024	JAC/Turner		Closed	11/6/2024
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 and updated L404 in Addendum 2.	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. Turner Follow-up (10/31/24): No new spec was provided in Addendum 4. Please provide individual spec for Ballistic Curtainwall frame with acceptable manufactures that provides frames to meet UL 752, Level 3 requirement and that coordinates to the security glazing listed in 08 8000.	A. Balistic Spec has been added in Addednum 4. B. Follow-Up - Confirmed - Entire frame to be the balistic frame. SLAM Follow-up Response (11/05/24): Revise answer to item A to read Ballistic requirement for the BOD manufacturer and BOD system have been added to Spec Section 08 4413 in Addendum No. 4. SLAM Follow-up Response (11/05/24): No additional spec is required as each listed manufacturer has a Ballistic Frame Option. Turner Revised Response (11/06/24): Subcontractor to include a fully tested & UL rated Ballistic system with colors to match curtainwall spec. Profiles to match as close as possible.	10/28/2024	SLAM		Closed	11/6/2024
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.	Halo/Back Lit lighting is required and meets the Town's Lighting regulation	10/22/2024	SLAM		Closed	10/24/2024
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?	See existing drawings issued in Addendum #3	10/24/2024	SLAM	yes - Existing Drawings	Closed	10/24/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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
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.~~ **Turner Revised Response (10/24/24):** BP18 MIllwork Shall furinish and install TRM2 and TRM3. TRM1 by painter BP27. TRM4 and TRM5 shall be furnished and installed by BP23 Tile. SOW have been updated to clarify. Please review SOW for millwork as AWP ownership is explained on what millwork owns.	10/16/2024	JM/Turner		Closed	10/24/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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. **SLAM Follow-up Response (11/07/24):** Substitution is approved. See mark-ups attached.	10/16/2024	SLAM	yes - substitution request	Closed	11/7/2024
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.	Delgated design is required for this spec section - langage has been changed to match 08 4313 in Addendum #3.	10/22/2024	SLAM		Closed	10/24/2024
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. **Turner Follow-up (10/31/24):** Please confirm that a seperate performance mock-up is not required, and that testing at an off-site lab (i.e. Intertek) is not required.	The two required fleld tests are outlined in part 3.4 Field Qulaity Control to be included by BP #19. **SLAM Response to Turner Follow Up (11/05/24):** SLAM to strike the 1.6b requirements form Section 08 4413 **SLAM Response to Turner Follow Up (11/05/24):** The sperate mock up is not required	10/13/2024	SLAM		Closed	11/6/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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. **Revised SLAM Response (11/05/24):** The certification would be that the bleachers comply with the specified performance requirements. We're not asking for these to be designed from scratch; they're essentially pre-engineered to meet the specified performance standard but customized to our project.	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.	Delegated design for gas piping shall include hangers and supports. Refer to 220529 Hangers and Supports for Plumbing Piping and Equipment for delegated design of hangars and support. See updated GCOA in Addendum #6.	11/6/2024	CES		Closed	11/7/2024
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.	Spec Section will be added to the GC0A will include this spec section. As identified under 1.9C.f the rigging system, as shown on the drawings is requitred to be part of the delegated design. The Loading criteria is defined in part 2 of the specification for some of the items and the LINESET SCHEDULE, with its assocoated weights are provided on sheet TR1, use this for the remaining weights to be accounted for in the delegated design.	11/5/2024	SLAM		Closed	11/7/2024
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.	Yes these specs shall be added to GC0A in Addendum #6	11/5/2024	CES		Closed	11/7/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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.	See specification issued as part of Addendum #2	10/22/2024	SLAM		Closed	10/24/2024
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. **Turner Follow-up (10/31/24):** If "approved as noted" please provide the associated notes in the BQ response.	Lockers are Approved as Noted **SLAM Follow-up Response (11/05/24):** All review coments for substitution are provided on the substitution form, which is included as an attachment to this BQ Log.	10/30/2024	SLAM	Yes -- Substitution Request	Closed	11/6/2024
90				BQ NOT UTILIZED					Closed	10/24/2024
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
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. **SLAM Follow-up Response (11/05/24):** Plates are not structural. The Scope of work delineation shall remain as described in the original response above.	10/13/2024	SLAM		Closed	11/6/2024
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

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
96	JLL	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?	The Greenwich Public Schools (GPS) Facilities Department will remove a limited amount of materials, such as door hardware, after the school year. However, they won't store any items for attic stock due to limited space. The demolition contractor shall include the disposal of existing tables, chairs, file cabinets, general FF&E, etc..	11/6/2024	JP/Turner		Closed	11/6/2024
97	JLL	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?	Subcontractors to include demo & disposal of all existing exterior "loose" items, including but not limited to chain link backstops, basketball hoops, fenced garden, soccer goals, etc. in base bid.	11/6/2024	JP/Turner		Closed	11/6/2024
98				BQ NOT UTILIZED					Closed	10/24/2024
99	SLAM	31 2300	10/11/24	Are reports available regarding the hazardous material clasification of the exiting soils to be removed?	Available reports have been issued in Addendum #2	10/22/2024	SLAM		Closed	10/24/2024
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.	Color to be selected by architect form the manufactures full range of standard colors.	11/6/2024	SLAM		Closed	11/6/2024
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.	Chilled beam details have been updated for Addendum No. 3.	10/22/2024	CES		Closed	10/24/2024
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?	A. Roof top supports for duct wrok should be placed over roof structure. B. Roof mounted ductwork and pipe supports/rails shall be securely attached to steel below the roof deck. The details mentioned will be updated to reflect that attachment to steel within the next addendum. Wind load calculations are required for all roof mounted ductwork. **Turner Response (10/31/24):** The HVAC contractor (BP #37) shall design, furnish, & install all roof support structure for duct & HVAC piping including but not limited to wind load calculations.	10/28/2024	CES		Closed	10/31/2024
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.	Geotechnical Report has been provided in Addendum No. 2	10/22/2024	T&B		Closed	10/24/2024
104	SLAM	Civil Series	10/14/24	Will Versa Lok retaining walls be an acceptable substitiion to the specified product? See attached Product Data.	Versa-lock is an acceptable substitution. Contractor to ensure that proposed product can meet design intent with regard to layout and construction. Color to be selected from manufacturer's full range of colors and finishes (including premium). Near vertical batter (1/4").	10/30/2024	SLAM	Yes -- Substitution Request	Closed	10/31/2024
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

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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.	The individual details are no longer required as the equipment details are shown on the hot water and chilled water piping diagrams.	10/22/2024	CES		Closed	10/24/2024
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	Controls diagrams have been updated in Addendum No. 2, all units not shown are outlined with the sequence of operations spcefification 230993.	10/22/2024	CES		Closed	10/24/2024
109	CES	M700	10/14/24	Please confirm Detail 8/M700 should be utilized for both Exhaust Fans EF-1 and EF-2.	Exhaust fan controls diagrams have been updated in Addednum No. 3.	10/22/2024	CES		Closed	10/24/2024
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	Sequences of operation have been added for addendum #3.	10/22/2024	CES		Closed	10/24/2024
111	CES	M601	10/14/24	Please provide a Specification Section for Dust Collector DC-1.	Dust Collector DC-1 specification has been added to section 233400 - HVAC Fans within Addendum No. 3.	10/22/2024	CES		Closed	10/24/2024
112	CES	M602	10/14/24	Please provide a Specification Section for Air Filtration Unit AFU-A.	Air Filtration Unit AFU-A specification has been added to section 233400 - HVAC Fans within Addendum No. 3.	10/22/2024	CES		Closed	10/24/2024
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.	Specification 230993 has been updated in Addendum #4 to reflect these changes.	10/30/2024	CES		Closed	10/31/2024
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.	Specification 230993 has been updated in Addendum #4 to reflect these changes.	10/30/2024	CES		Closed	10/31/2024
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.	The water heaters are located within Mechanical Room 1060 and are specified under Division 22, specification 223300.	10/22/2024	CES		Closed	10/24/2024
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

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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?	Backfill material shall be Concrete furnished & isntalled by the Concrete subcontractor (BP #10).	10/28/2024	Crabtree		Closed	10/31/2024
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.	Approved	10/30/2024	SLAM	Yes -- Substitution Request	Closed	10/31/2024
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?	Please use the Greenwich municipal standard for curbs. SLAM will update the detail accordingly. Maintain overall walk widths.	10/28/2024	SLAM		Closed	10/31/2024
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.	The proposed condition in the chiller pad area should be heavy duty concrete pavement. The errant leader will be deleted from L202C accordingly.	10/28/2024	SLAM		Closed	10/31/2024
122	SLAM	S210	10/15/24	Please provide a detail for the chiller and generator pads. The detail callout of 7/S210 doesn’t seem to be correct.	The concrete pad in detail 18/S200 will bear on the frost walls indicated and be reinforced per detail 7/S210.	10/28/2024	SLAM		Closed	10/31/2024
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	Yes, warning track should be provided. Limits are shown on L202 series and are clarified in Addendum #4. Detail of warning track section has been provided on L601.	10/28/2024	SLAM		Closed	10/31/2024
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	Any athletic field area should utilize detail 3C/L601 for the turf section. This includes run-off areas as shown with a dashed line on the plans. This is also the limit of sod for the alternate. Infield and warning track to be omitted from the turf areas.	10/28/2024	SLAM		Closed	10/31/2024
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	See existing drawings issued in Addendum #3. The demolition subcontractor (BP #08) shall remove all slabs on grade and footings, per the Turner scope of work documents. Sitework Subcontractor (BP #09) shall include all fill as needed based on the existing building elevation changes. The Sitework Subcontractor shall remove any existing gravel course or footing / slab-on-grade subgrade prep materials (assume 12" depth). The demolition subcontractor to cut back any slopes (per Turner EH&S) where foundation walls/retaining walls are being removed. The sitework subcontractor shall backfill sloped and excavated areas to achieve the correct final elevation and conditions.	10/24/2024	SLAM	yes - Existing Drawings	Closed	10/25/2024
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	See detail for precast concrete barriers to be used as concrete weirs on C501 issued in Addendum No. 3	10/22/2024	T&B		Closed	10/24/2024
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.	Geotechnical Report has been provided in Addendum No. 2	10/22/2024	T&B		Closed	10/24/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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.	The Sitework Subcontractor (BP #09) shall use all information available through Project Manual, Drawings, borings and reports provided within the contract documents for quantities of all rock, soils, unsuitable material, etc. encountered during excavation within their base bid. Unclassified does not include unforeseen concrete foundations, slabs or walls. Sitework subcontractor shall be responsible to remove all soil, rock, etc. material to subgrade per elevations required per the contract documents, however, all soils identified as unsuitable per the contract documents shall be removed (and replaced to subgrade elevations) in their entirety unless the alternate for aggregate pier ground improvement is accepted.	11/5/2024	T&B		Closed	11/6/2024
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 ?	Wall partition type B1B and B1A are located in the Main Entry Vestibule 1000 and are full height to unerside of roof deck.	10/22/2024	SLAM		Closed	10/24/2024
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?	Revised Structural details have been provided at this condition in Addendum No. 2	10/28/2024	SLAM		Closed	10/31/2024
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.	There is no page 2, the blank page was for the 11x17 to print correctly. See revised Geotech Report issued in Addendum No. 2	10/22/2024	T&B		Closed	10/24/2024
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?	See bidder question #10 response	10/28/2024	SLAM		Closed	10/31/2024
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?	The wall panel is tagged incorrectly on the plan and should be AWP8 as noted on the Finish Product List	10/28/2024	SLAM		Closed	10/31/2024
140	SLAM	A901D	10/15/24	Are AWP panels in rooms 1119 and 1110 to extend floor to ceiling?	Practice Rooms get full height/width AWP on walls noted on Finish Plan	10/28/2024	SLAM		Closed	10/31/2024
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?	Revise to be USG # 86258	10/28/2024	SLAM		Closed	10/31/2024
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?	The manufacturer listed on A911 is incorrect and should be Kinetics as listed in the specifications.	10/28/2024	SLAM		Closed	10/31/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
143	SLAM	A911	10/15/24	Are perforations and acoustical felt required for ADC1 panels?	Perforations and acoustical felt are not an option for ADC1	10/28/2024	SLAM		Closed	10/31/2024
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?	AWP7 is not used.	10/28/2024	SLAM		Closed	10/31/2024
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 (BP #09) shall trench and backfill for power requirements, and Electrical Subcontractor (BP #38) shall be responsible for load carrying conductors, raceways and power connections, and Eversource Coordination. Sitework subcontractor shall furnish and install, solar panels, batteries any interconnecting or control wiring for these systems. Turner Updated Response (10/24/24): See updated TC202 issued in Addendum #3	10/22/2024	JAC-Turner		Closed	10/24/2024
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.	Contractor is to submit information for laboratories they use for OSHA personal air sampling analysis (asbestos and PCB) as well as additional laboratory information if they are going to send any disposal TCLP samples out for analysis.	10/28/2024	Langan		Closed	10/31/2024
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.	Contractor is to submit information for laboratories they use for OSHA personal air sampling analysis (asbestos and PCB) as well as additional laboratory information if they are going to send any disposal TCLP samples out for analysis.	10/28/2024	Langan		Closed	10/31/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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
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	Yes - Trailer Layout	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	Confirmed, these units are to be solar powered. No line voltage is required.	10/22/2024	T&B		Closed	10/24/2024
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	See the revised TC202 in Addendum No. 3	10/22/2024	T&B		Closed	10/24/2024
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?	Yes, 1C/A502 was the intended detail. 1C will be renumbered to 1B in the confromed set.	10/22/2024	SLAM		Closed	10/24/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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. **Turner Follow-up (10/24/24):** 1) Please confirm that by "AL" series, you are referencing the Architectural Layout Plan drawings. 2) AL series (example: AL102E) calls for "Roof to Wall Expansion Joint" and Architectural Roof Series (example: A103A) calls for "EJ." No designation for this expansion joint is called out that keys it to the associated Expansion Joint Spec (i.e. Exterior Wall Non-Fire Rated or Exterior Wall Fire-Rated Expansion joint). Please clarify what type of exterior wall expansion joint is required in coordination with the specs.	Refer to "AL" series, wall sections and section details for expansion joint types and details. **SLAM Response to Turner Follow Up (11/5/24):** 1. Yes, the AL series refernce is to Architectural Layout Plan drawings, as they are the only AL Series drawings 2. Roof and Roof to wall expansion joints are not “types” and all associated materials are called out in details. The A103A refernce to “EJ” is another Roof to Wall expansion joint. Many of these details were updated and reissued in Addendum No 4 to simplify these roofs to wall expansion joints. 3. Our typical exterior wall expansion joint (EWJ-1) is shown on the AL plans and in the Plan details. None of these exterior walls are rated and the refernce to the Exterior wall Fire-Rated Expansion joint should be ignored.	10/22/2024	SLAM		Closed	11/6/2024
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)	Both Architectural and Structural SSI's have been furnished in Addendum 6	11/5/2024	SLAM		Closed	11/7/2024
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).	Granite Curbing and Pre-Cast Concrete Curbing shall be furnished and installed by the Sitework Subcontractor **SLAM Follow-up Response (10/23/24):** See the revised TC202 in Addendum No. 3 for Asphalt curbing detail, which shall be furnished & installed by the sitework subcontractor (BP #09).	10/23/2024	JAC/Turner		Closed	10/24/2024
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.	All curbing is granite, as shown on the drawings	10/28/2024	SLAM		Closed	10/31/2024
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?	Contractor Choice. **Turner Follow-up Response (10/24/24):** Masonry subcontractor (BP #11) to furnish & install all masonry or steel lintels indicated on the lintel schedules.	10/22/2024	SLAM		Closed	10/24/2024
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?	a. Use 9/16 " DXT Grid b. Recycled content is specifically for the tile not the grid	10/28/2024	SLAM		Closed	10/31/2024
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?	Refer to revised details in Addendum No. 3 **SLAM Follow-up Response (11/05/24):** This is not AVB at both locations. The AVB is behind the Wall Insulation, the other dashed line is the insulted portion of the expansion joint system (see referenced detail 3E/A53) The AVB terminates on the face of the lowest wood blocking prior to the plywood being applied.	10/22/2024	SLAM		Closed	11/6/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
167	SLAM	A911	10/17/24	Substitution request for Certainteed products in lieu of USG. See attached RFI 167 request form. **Turner Follow-up (10/31/24):** If "approved as noted" please provide the associated notes in the BQ response.	Certainteed is Approved as Noted **SLAM Follow-up Response (11/05/24):** All review coments for substitution are provided on the substitution form, which is included as an attachment to this BQ Log.	10/28/2024	SLAM	yes - substitution request	Closed	11/6/2024
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. **Turner Follow-up (10/31/24):** Please confirm that there are no local point loads imposed by the future PV system that needs to be accounted for in the joist delegated design.	See drawing S302B for joist loads. These include PV panel loads. **SLAM Follow-up Response (11/05/24):** As the future system is unknow the design team cannot answer the follow-up question. Design per loads identified on the contract documents.	10/28/2024	SLAM		Closed	11/6/2024
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?	As long as the ceilings being provided meet the Note A and Note B criteria listed in the question.	10/22/2024	SLAM		Closed	10/24/2024
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. **Turner Follow-up (10/24/24):** Please provide updated details.	The VB has been modified and reissued in Addendum No 4	10/28/2024	SLAM		Closed	10/31/2024
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? **Turner Follow-up (10/24/24):** Please provide elevator interior cab elevations, details, and RCP.	Spec section 14 2100, 2.10-A-4 calls out a recessed stainless steel wall bse. **SLAM Follow-up Response (11/05/24):** All interior finishes are called out for and identified in the specification for the interior of the elevator cab, coordinate refences to finish product list.	10/22/2024	SLAM		Closed	11/6/2024
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?	Detail has been revised in Addendum 4	10/28/2024	SLAM		Closed	10/31/2024
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?	No Sloped tops	10/22/2024	SLAM		Closed	10/24/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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	JLL	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. **Turner Follow-up (10/24/24):** JLL please provide this information per SLAM's response.	Any existing electrical feeds originating from existing school to remain or be recircuited to be identified by Greenwich Public Schools. **JLL Follow-up Response (11/05/24):** The GPS Director of School Facilities states that there is a single circuit responsible for all exterior lighting at CMS, including parking lot lights, building floodlights, and tennis court lighting. The plans for the tennis courts during construction are uncertain. Additionally, there are multiple pumps in the basement that prevent flooding in the Mechanical room. It is crucial to note that once the power is cut, the room will quickly become flooded.	10/22/2024	CES		Closed	11/6/2024
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?	Cameras are to be mounted to light fixture poles.	10/22/2024	DA		Closed	10/24/2024
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?	In lieu of compliance with ASTM E1537, upholstery materials shall comply with requirement set forth in California Bureau of Home Furnishing Technical Bulletin 117-2013 ("TB-117").	10/22/2024	SLAM		Closed	10/24/2024
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.	"Fernco" style shielded couplings shall be used for pipe-to-pipe connections. Details and specifications have been revised in Adendum No. 4 to clarify.	10/29/2024	Tighe & Bond		Closed	10/31/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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.	Follow the specification. Product data for the basis-of-design thermally broken EFCO Thermastile D502 indicates that these are 2" thick doors. However, it's understood that thermal door thickness may vary slightly from manufacturer to manufacturer. The 2" dimension may be considered a nominal dimension. The BOD interior doors – EFCO Durastile D518 -- are also 2" thick doors. Similar slight variations in these doors are also expected/acceptable.	10/29/2024	SLAM		Closed	10/31/2024
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.	S1 speakers, S2 speakers, and Plenum enclosures will be furnished and installed by Owner, including support systems.	10/29/2024	DA		Closed	10/31/2024
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).	Ceiling mounted AP's do not require backbox. Wall mounted AP's do require backbox. Refer to T301/12 & 13.	10/29/2024	DA		Closed	10/31/2024
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. **Turner Follow-up (10/31/24):** Please confirm that this is acceptable at ares with "Cloud" ceilings also	Low voltage cabling shown on the T series may be run above accessible ceiling in J-Hooks. **DA Response to Turner Follow Up (11/05/24):** Exposed cabling is not acceptable at areas with "Cloud" ceilings. This cable shall be run in Conduit where visible. Refer to 27 100, Section 3.03, D, 1, c.	10/29/2024	DA		Closed	11/6/2024
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.	EPO located adjacent to switchboard, generator annunciator panel located in custodial work room per Addendum No. 4.	10/30/2024	CES		Closed	10/31/2024
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.	One of these is intended to be Auditorium	10/29/2024	DA		Closed	10/31/2024
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. **Turner Follow-up (10/31/24):** If the CMU elevator shaft walls were designed to take the loads imposed by the rails, then please confirm that elevator rail support steel is not needed in addition to the CMU walls.	Confirmed. All steel in the elevator section is by the elevator manufacturer and is to be included in their dlegated design for there elevator. **SLAM Follow-up Response (11/05/24):** Typical installation of elevators in CMU wall construction requires elevator rails to be embedded into the CMU wall construction. The CMU shaft walls are designed to carry the loads imposed by the elevator rails. The elevator subcontractor shall design and furnish the approporiate elevator rail inserts to the Mason (BP #11) to install.	10/28/2024	SLAM		Closed	11/6/2024
189	SLAM		10/22/24	For site pavers, Unilock Artline has (7) different sized blocks. Can you please clarify what size is required?	Please use Unit G – 7 ½" x 17 ¾" x 2 ¾". Specification Section 32 1400 has been updated accordingly and issued with Addendum 4	10/29/2024	SLAM		Closed	10/31/2024
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?	Either is acceptable. Spec calls for fastening per Drawings. If PAF's are used they need to be fastened for the equivalent strength of the values given in the schedule as noted in Section 05 3100 2.3.E.2.	10/28/2024	SLAM		Closed	10/31/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
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.	See repsonse to BQ #17	11/4/2024	SLAM		Closed	11/6/2024
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
New Bidder's Questions as of 10/23/24 Issuance										
193	SLAM	113013	10/23/24	Specificaiton section 11 3013 does not provide a model for EQ02 Frigidare. Also, Models provided for EQ01 - Refrigerator, EQ06-Cloths Washer, EQ07-cloths dryer and EQ08-Range are discontinued. Provide currnet models for inclusion.	EQ01 Refrigerator – Frigidaire, Gallery GRFG2353AF EQ02 Refrigerator – Frigidaire, Gallery GRFN2023AF EQ06 Cloths Washer – GE GFW550SSN/SPN EQ07 Cloths Dryer – GE GFD55EssN/ESPN EQ08 Range – GE JB480ST A912 will be modified	11/5/2024	SLAM		Closed	11/6/2024
194	Turner	General Scope Delineation	10/23/24	If a Turner scope of work line item, or Bidder Question response, contradicts the scope delineation identified by the Design Team in the contract documents, how should the bidders handle this?	In the event that a conflict or contradiction exists between a Turner Scope of work line item (or Bidder Question response) and a scope delineation identified by the Design Team in the contract documents, then the Turner Scope line item and/or Bidder Question response shall govern. For example, detail 2 on FS141 identifies backfill by the "GC", but this scope is identified to be performed by the Concrete subcontractor (BP #10).	10/23/2024	CL/Turner		Closed	10/23/2024
195	SLAM	Structural & Architectural Series	10/23/24	Please verify what steel, if any, should be treated as AESS.	There is no AESS steel on this project.	10/28/2024	SLAM		Closed	10/31/2024
196	SLAM	Structural Series	10/23/24	Please confirm that only the Gym roof will be acoustical cellular deck.	Confirmed	10/28/2024	SLAM		Closed	10/31/2024
197	SLAM	A315	10/23/24	Please advise if any steel supports will be required for the mock-up shown on A315. No steel is currently shown. **Turner Follow-up (10/31/24):** Please provide the steel support requirements and design for the mock-up as this is not a delegated design.	See note on 4E/A315, contrcator to coordinate steel support requirements for mock-up **SLAM Response to Turner Follow Up (11/05/24):** Mock up drawing has been revised in Addendum 6, to include CFMF wall supports. CFMF supports to be furnished & installed by the General Trades Subcontractor (BP #21).	10/28/2024	SLAM		Closed	11/7/2024
198	SLAM	GC11	10/23/24	Please confirm that the only colored galvanizing required is for the HSS canopy columns shown on GC11.	Confirmed	10/28/2024	SLAM		Closed	10/31/2024
199	SLAM		10/23/24	There appear to be cast in place concrete curbs in details but none shown on the site plans. Please clarify if any curbs are cast in place and provide the locations	All curbing to be granite, per Town of Greenwich. Cast-in-place curbing specification has been removed from the project manual with Addendum 4 to eliminate confusion.	10/29/2024	SLAM		Closed	10/31/2024
200	SLAM	Site Material Plans	10/23/24	Site Plans show several locations that appear to be curbs. There is no GC designation on these curbs, if all curbing is granite curbing, please identify the Curbs with GC designation or clarify the curb type.	As noted in item 199 and 162, all curbing to be granite.	10/29/2024	SLAM		Closed	10/31/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
201	SLAM	L501 & L202A	10/23/24	Detail 1C on L501 calls for curbs (See detail) but doesn't specify a curb type. Material Plan L202A doesn'tshow curbs at the 1C poruos bituminous pavement. Please clarify this discrepncy. Turner Follow-up (10/31/24): Please confirm that the revised detail 1C on L501 shall utilize granite curbs.	Transitions from one type of bituminous pavement to another (porous, regular duty, heavy duty) do not require curbing. Detail will be added to show this condition and L202A and L202B plan drawings will be updated in Addendum 4. SLAM Follow-up Response (11/05/24):See BQ200 & 201 – all curbs are granite	10/29/2024	SLAM		Closed	11/6/2024
202	SLAM	GC0A	10/23/24	There appear to be more spec sections that have delegated design language within them than what is listed in the delegated design table on GC0A. Below is a list of examples we have found. Please advise and please provide a revised table that includes all delegated design required for the project. 110610 - Stage Rigging & Curtains 142100 - Electric Traction Elevators 220516 - Expansion Fittings and Loops for Plumbing 22 1123 - Fuel Gas Piping 23 0516 - Expansion Fittings and Loops for HVAC Piping 23 0900 - Instrumentation & Controls for HVAC 23 3100 - HVAC Duct & Casings 23 5100 - Breechings, Chimneys, & Stacks 27 0536 - Cable Tray for Communication Systems 276010 - Emergency Responder Radio Coverage System 28 0528 - Pathways for Security Systems 312300 - Excavation, Backfill, Compaction, & Dewatering 316616 - Aggregate Piers 32 3120 - Vehicle Barrier Gates 334419 - Stormwater Treatment System	Delegated design schedule has been updated in addendum no. 6	11/6/2024	SLAM		Closed	11/7/2024
203	SLAM	08 5653	10/23/24	The new spec section 08 5653 issued in Addendum #2 appears to be a sole source for Armortex. Please confirm that this is acceptable with the State.	SLAM email response (10/23/24): The way the spec is written we have provided a BOD and allow for a substitution, this is not a sole source item.	10/23/2024	SM/SLAM		Closed	10/23/2024
204	Turner	A805	10/23/24	Who owns the Locker toe kicks and low wall framing / plywood ?	Locker bases by the locker subcontractors BP29. The low wall framing and plywood will be by Drywall & General Trades BP21.	10/23/2024	JM/ TCCO		Closed	10/23/2024
205	Turner	Procurement Manual	10/23/24	Please confirm if the steel subcontractor (BP #12) or Misc. Metals subcontractor (BP #13) should provide debris nets at shaft openings and stair openings.	The steel subcontractor (BP #12) shall furnish, install, and maintain the debris at all shaft and stair openings per the Turner Scope of Work Document. The steel subcontractor (BP #12) shall remove nets when directed by Turner for other trades to complete their work at shafts and stair openings. The scope of work document for Misc. Metals (BP #13) will be updated to reflect this.	10/23/2024	CL/Turner		Closed	10/23/2024
206	Turner	Procurement Manual	10/24/24	looking at BP#40 for concrete flatwork and noticed a potential scope overlap. BP#9 SOW 120 notes that this package owns furnish and install of concrete pads for generators. BP#40 SOW 16 notes that this package owns all exterior pads including but not limited to the generator pad. Which package should it fall under?	BP#40 - Concrete Flatwork shall furnish and install concrete pads for Transformer(s), Generator(s) and Gas Meter(s). BP#9 Sitework shall exclude furnish and installing these concrete pads. BP#9 Sitework Scope of Work will be updated to reflect this.	10/24/2024	JAC/Turner		Closed	10/24/2024
207	SLAM	1B/ A805	10/24/24	Detail 1B/A805 notes TRM4 at wallcovering. TRM4 is trim that is called out for tile edges. Should this trim be TRM1 being that it is at the edge of wallcovering?	TRM1 is correct code for 1B/A805	11/5/2024	SLAM		Closed	11/6/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
208	SLAM	21 0433 / 210533	10/24/24	The new spec section 21 0433 states that the Heat Tracing for Fire Suppression to be delegated design, however 21 0533 - Heat Trace for Plumbing does not have delegated design. Please confirm that only Fire Protection needs to be delegated design and if so please add the specification to GC0A - Code Information	Both fire protection and plumbing heat trace shall be delegated design. Turner Follow-up Response (11/07/24): The subcontractor that furnishes the heat trace system(s) shall perform the delegated design.	11/5/2024	CES		Closed	11/6/2024
209	CES	26 26 53	10/24/24	Please confirm if the installing Subcontractor for the electric vehicle charging equipment is required to be a licensed installer with the manufacturer as well as if the charging equipment itself needs to be registered nationally or on a State level.	The installing sub (BP #38) will be required to be factory trained.	10/30/2024	CES		Closed	10/31/2024
210	SLAM	122401	10/24/24	Please confirm if it acceptable to provide the window shades per the attached Substitution Request Form.	Not Approved - doesn't meet the same level of quality of the BOD and the project specification list 4 acceptable manufacturers	10/30/2024	SLAM	yes - substitution request	Closed	10/31/2024
211	SLAM	A805	10/24/24	Acoustical Panels- Detail 1A/A805 calls for 1-5/8" thick panels, Detail 3B/A805 calls for 3/4", Finish Schedule calls for 1-1/8". Please advise which prevails.	1-1/8", as noted on the finish schedule is the correct panel thickness. A805 has been reissued in Addendum 4	10/29/2024	SLAM		Closed	10/31/2024
212	Turner	Coordination Matrix	10/24/24	Please provide a Responsibility Matrix for the Electrical Gear.	Please refer to the coordination matrix provided in Addendum #2.	10/24/2024	CL/Turner		Closed	10/24/2024
213	JLL	276010	10/24/24	Please confirm what kind of system is needed for the DAS System (i.e. UHF, VHF, 700/800). Turner Follow-up (10/31/24): JLL please provide direction.	Frequencies required for the BDA system have not been provided by the town to the design team - this will need to be coordinated as part of constrcution. Turner & JLL Follow-up Response (11/07/24): The DAS System is a delegated design. The bidders shall provide an appropriate system per the project specifications and the Town of Greenwich.	10/30/2024	CES		Closed	11/7/2024
214	CES	EL101D	10/24/24	There are two closets on the first floor of part D (1119 & 1120) that show switches but no light fixtures. Please advise on the fixture type & quantity required.	Light fixtures in room 1119 and 1120 are shown in addendum 2	10/30/2024	CES		Closed	10/31/2024
215	Turner	Masonry Scope	10/24/24	BP 11 Masonry Scope Item 17 states "Trade Allowance: 80 hours of labor time for 5S…". Please clarify "5S".	Reference Procurement Manual Item #03 - Boiler Plate Additonal Provisions for all Subcontractors (page 3U for "5S"). 5S stands for "Sort, Straighten, Shine, Standardize, & Sustain".	10/25/2025	CL/Turner		Closed	10/25/2024
216	Turner	Masonry Scope	10/24/24	BP 11 Masonry Scope Item 43 indicates to "Furnish and Install Sealant at…….attachments that penetrate the air/Vapor Barrier". Please confirm this applies only to attachments/fasteners required by the work of BP 11, and other attachments/fasteners will be sealed by the trades requiring the attachments.	The Mason (BP #11) is responsible for furnishing and installing sealant at ALL through-wall penetrate and attachments that pentrate the AVB regardless of trade whom installs item that pentrates the AVB. Trades with penetrations through AVB to coordinate and install penetration prior to install of AVB.	10/28/2024	BM/Turner		Closed	10/31/2024
217	Turner	Masonry & Drywall Scope	10/24/24	BP 11 Masonry Scope Item 32 indicates the mason is responsible to furnish and install top of wall anchors as shown on Detail 1B/A605. However, BP 21 Drywall & General Trades Scope Item 77 indicates the General Trades contractor is responsible for all the CFMF 12 GA clips and sheet metal at tops of masonry walls per Details 1C and 1B on A605. Please advise which Bid Package will own these details at the tops of CMU walls.	The Mason (BP #11) is to furnish and install top of wall anchors and plate to support masonry walls per scope of work item 32. Dyrwall & General Trades (BP #21) scope will be updated to exclude furnish and install top of wall anchors for masonry walls. BP 21 to furnish and install beam support at walls including stude brace and bent plate.	10/28/2024	BM/Turner		Closed	10/29/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
218	SLAM	07 6200	10/24/24	The specification for Masonry through wall flashing and separate drip edge (Section 076200) is for stainless steel with No. 2D-Dull Finish. There are notes on the elevation drawings indicating “Flashing Color To Match Stone” (ex. 1E/A-311). Details indicate the drip edge is flush with the face of stone and does not protrude out of the wall. Please confirm the SS through wall flashing and drip edge are not colored. Turner Follow-up (10/31/24): Please confirm the Stainless Steel is not colored.	Flashings are to be Stainless Steel with a hemmed edge as detailed on A502. SLAM Follow-up Response (11/5/24): Flashing is not required to be colored. This masonry through wall flashing shall be furnished & installed by the Mason (BP #11).	10/28/2024	SLAM		Closed	11/6/2024
219				BQ NOT UTILIZED					Closed	10/31/2024
220	SLAM	A311 & A502	10/24/24	Please provide a specification and basis of design for the 8” HIGH LIMESTONE BASE (1E/A-311 and 3E/A-502).	04 4313 Specification Section has been added to Addendum No 4	10/28/2024	SLAM		Closed	10/31/2024
221	SLAM	A500	10/24/24	Ref. TYPICAL EXTERIOR ELEVATIONS on A-500: In Assembly Type 06 (3B/A-500) the wall brackets are thermally broken. Do the anchors for the stone veneer in Assembly 01A (5B/A500) also need to be thermally broken? If yes, what is the thermal break material?	No, provide specified anchor system	10/28/2024	SLAM		Closed	10/31/2024
222	SLAM	Drawing Addendum	10/24/24	Reviewing the updated Addendum #2 drawings, can you confirm all of the changes to the drawings have been clouded?	All drawings are clouded and tagged to associated Addedndum's	10/28/2024	SLAM		Closed	10/31/2024
223	SLAM	Geotech Report	10/25/24	Sitework Bidders I have marked up the area scheduled for removal of unsuitable materials and have plotted the boring information from the available boring logs included in the report. The problem is that many of the borings located within the removal area are missing. Please provide the missing borings or provide assumptions sitework bidders may use to complete their takeoff as siteowrk bidders cannot accurately determine the quantity of unsuitable to be removed without this information as can be seen from the attached plan sheet. Specific needs include need TP03,06,07,09,10,12; and also TP 118, 119 and 120.	TP 03 through TP12 are included in the geotechnical report. See page 50-69 of the geotechnical report for test pit information. On Sheets C202, C203, C205, C206 in Addendum No. 4, TP 118 has been relabeled to TP 102, TP 119 has been relabeled to TP 110, and TP 120 has been relabeled to TP 111 . The addition of TP 112 and TP 113 have also been included in the geotechnical report on Page 18 with correspoding Soil Discriptions on pages 43 and 44 . See the geotechnical report for TP 101 through TP 113, see page 32-44 for test pit information. See supplemental Geotechnical Data for TP 101 through TP 120 data.	10/30/2024	Tighe & Bond		Closed	10/31/2024
224	SLAM	126100	10/25/24	Specification section 126100 Fixed Audience Seating Subsection 1.4.A. it refers to 01 3000 – Administrative Requirements and 1.4.J.1. refers to 01 6000 – Product Requirements, both of which mention CTHPB, which we believe FSC plywood is part of CTHPB. Do the chairs require FSC plywood inner back panels?	The applicable credit calls for at least half of wood and wood-based products to be FSC-certified for permanently installed items. If the 50% threshold can be met without using FSC-certfied plwyood seat panels, they are not required. See Section 01 3566.42 -1.1-E.2 for CM/contractor tracking and reporting responsibility.	10/29/2024	SLAM		Closed	10/31/2024
225	SLAM	126100	10/25/24	Specification section 126100 Fixed Audience Seating Subsection 2.2.2. E. Calls for Oval Mechanical Tubing. This is NOT the Traditional Standard as called out in 2.1.A.1.e. The Traditional Steel is more in line with most manufacturer’s Steel Standards, which as rectangular Tubing, a.k.a. – Traditional design. Are Oval Standards required?	That description was taken directly from the Hussey guide spec Section 12610 with footer subtitle "Quattro Traditional Collection Specification", Rev. Date February 2016, page 12, Article A. As such we understood this to be the typical standard material/shape for this chair. If you are submitting a char by one of the other named manufacturers, use the manufacturer's standard tubing shape.	10/29/2024	SLAM		Closed	11/6/2024
226	SLAM	126613	10/25/24	Specification section 126613 Telescoping Bleachers Subsection 1.4.C. CTHPB is referenced, which we believe FSC plywood is part of CTHPB. Does the bleacher require FSC plywood decking?	See response to BQ# 224.	10/29/2024	SLAM		Closed	10/31/2024
227	SLAM	126613	10/25/24	Specification section 126613 Telescoping Bleachers Subsection 2.3.B.2 Calls for 3 tiers, however, drawing A111.4 is showing 4 tier. How many tiers are needed?	There are 4, as shown on the drawing - specifcation have been modified to account for the discrepancy	10/29/2024	SLAM		Closed	10/31/2024
228	SLAM	126613	10/25/24	Specification section 126613 Telescoping Bleachers Subsection 2.4.A Calls for UV Inhibitors. The drawings seem to show no windows. Are UV Inhibitors needed?	There is glazed aluminum curtain wall on the south elevation. UV inhibitors to remain.	10/29/2024	SLAM		Closed	10/31/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
229	SLAM	126613	10/25/24	Specification section 126613 Telescoping Bleachers Subsection 2.4.A.6. Calls for Seat numbers and Row Letters. This is unusual for a bleacher used for general assembly. Are SN/RL's required?	Seat numbers and row letters are not required.	10/29/2024	SLAM		Closed	10/31/2024
230	SLAM	126613	10/25/24	Specification section 126613 Telescoping Bleachers Subsection 2.5.A.3. Calls for Top Row Rear Guardrails. This project only required End Rails, which the very top tier is included, therefore, the top rear rails is not required. Confirm this portion should be omitted.	Yes, omit. Bleachers will back right up to and attach to wall.	10/29/2024	SLAM		Closed	10/31/2024
231	Turner	Procurement Manual	10/25/24	What is the address Bids are to be sent?	Per invite to bid: All Bids shall be submitted in a sealed envelope with hard copies in duplicate (2 copies) by mail or in person to 290 Greenwich Ave, Greenwich CT 06830 The envelope shall be labeled by bid package number, GPS number and bid package description. Bidders submitting for multiple bid packages must submit each bid package sealed and labeled separately by bid package. Bids may be submitted at any time leading up to the specified due date and time, and will remain sealed until the specified due date and time. Turner Construction will be conducting a in person public bid opening at 290 Greenwich Ave, Greenwich CT. Bids received after the specified due date and time will not be allowed to be submitted.				closed	10/25/2024
232	Turner	09 8430	10/25/24	Clarification on spec section 09 8430 Sound absorbing wall and ceiling units.	Spec section 098430 Sound- absorbing Wall and Ceiling Units is a shared spec section between the ceiling bid package and the millwork bid package. BP18 Millwork shall be responsible for furnishing and installing all Wall sound absorbing panels and BP22 Ceilings shall be responsible for furnishing and installing all Ceiling sound absorbing panels.	10/25/2025	JM/ Turner		Closed	10/25/2024
233	CES	E604 & E607	10/25/24	There doesn't appear to be a panel labeled OSDPC or OSDPE in the E600 series. Are the two panels on E607 (OSP2C and OSP2E) mislabeled? Those panel designations also appear on E604. Please advise and revise accordingly.	OSDPC and OSDPE added to Addendum 4 drawings.	10/30/2024	CES		Closed	10/31/2024
234	Turner	E700	10/25/24	Please advise what manufacturer will be providing the Pre-Purchased Electrical Distribution equipment that is part of BP #05, and indicated in the BQ #118 prepurchased equipment list attachment.	The intent is for this electrical distribution equipment (i.e. switchgear, panels, transformers, etc.) to be manufactured by Eaton, except for the Generator & ATS's.	10/25/2024	CL/Turner		Closed	10/25/2024
235	CES	E700	10/25/24	Please adivse if all electrical equipment & devices throughout must be sourced from the same manufacturer as the pre-purchased electrical distribution equipment. For example, **FP-DS** is not part of the pre-purchased electrical distribution equipment. Note that the Generator and ATS-1 & ATS-2 will by a different manufacturer as part of Phase 1, BP #06. For reference, see the BQ #118 attachment for a list of the electrical distribution equipment that is part of the pre-purchased equipment (Phase 1, BP #05). Also, see BQ #234 for the intended manufacturer for the pre-purchased electrical distribution equipment.	The bulk of the prepurchase equipment, including disconnect switches, will be the same manufacturer. If the contractor wants to provide any equipment other than the manufacturer of the prepurchase equipment, they should formally submit it in an RFI. **Turner Response (10/31/24):** The electrical subcontractor (BP #38) shall assume Eaton for their base bid.	10/30/2024	CES		Closed	10/31/2024
236	Turner	Procurement Manual	10/25/24	Please clarify the intent of the Concrete foundations noted to start on February 2025 and steel to start on April 25, 2025.	See attached Turner Construction Crew Flow diagrams dated 10.25.24 showing intended month to month crew flow and direction January to June 2025. Subcontractors to include appropriate crews, crew size and equipment to meet project schedule requirements.	10/25/2024	JP/Turner	Yes - TCCO Crew Flow Diagrams	Closed	10/25/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
237	SLAM	A901A	10/25/24	According to the finish floor plan drawing A901A in the finish plan graphic legend RS-2 is at the gymnasium only. When referring to the gymnasium drawings there is one window on drawing A111.4 Detail 3B but no call outs for RS-2 can you please provide details on how this roller shade is too be mounted?	Elevation on A111.4 has been revised to include shade locations. The assocoated Wall Section Detail has also been revised. Both revisions are included in Addendum No. 4	10/28/2024	SLAM		Closed	10/31/2024
238	JLL	Procurement Manual	10/25/24	Can you share how much of this project is State funded? I believe the CHRO participation is based on that total, not our contract total.	The State of Connecticut has approved a 20% reimbursement rate for this project.	11/6/2024	JLL		Closed	11/6/2024
New Bidder's Questions as of 10/25/24 Issuance										
239	SLAM	10 2800	10/25/24	According to Spec Section 10 2800 - Toilet Accessories page 6 section 2.6 paragraph D Clothes hook Type T15 is Typical at all offices. It is not clear what rooms are considered offices on the drawings can you please provide a count of robe hooks we should carry.	T15 designations have been added to the Drawing set in Addendum 4	11/4/2024	SLAM		Closed	11/6/2024
240	Turner	Procurement Manual	10/25/24	Question Regarding bonding: 1.Provide us with a completion date or timeframe it will take you to complete this project? 2.Are there any daily liquidated damages for not completing the project in time? How much? 3.Is there a standard 1 year warranty for workmanship? 4.if you are awarded this job, then Turner and the town of Greenwich want to be listed as multiple obligees on the Payment/Performance bonds?	1. Reference Procurement manual document "04 - Project Schedule" Construction Phase 1 New Bldg Substantial completion July 2026, Construction Phase 2 closeout January 2027. 2. Reference Procurement manual document "03 - Boiler Plate Additional Provisions for all Subcontractors" page 3G, item 11. Liquidated damages $6,000/Day. 3. Reference Procurement manual document "08 - Turner Form 36 rev 7-31-20", Article XXII for minimum 1 year Guarantee in addition to any specified warranty within the contract documents. 4. Yes, Turner Construction & the Town of Greenwich are the Dual obligee(s) for Bid Bond and Payment/Performance Bonds.				Closed	10/25/2024
241	SLAM	323223	10/25/24	Specification 32 3223 Segmental Block Retaining Wall Drawings L301A, 301C, 301D and C603 & C604 Detail 1D/L503 The proposed retaining wall will encounter rock between stations 1+50 to 3+0 and 6+0 to 7+50 approximately. The specifications for rock exc and the logistics plan require presplitting or line drilling to provide a smooth exposed surface of the rock. Since the retaining wall design specifies the bottom of wall elevation at approx. the FG of the access driveway which takes precedence? Please provide a detail showing the intersection of the top of rock and the installation of the proposed retaining wall.	Per drawing C.603, rock s to be excavated to a depth of 2' minimum below the fire lane paving section (4' overall depth) so rock will be removed to a depth of approximately 6' below the Fire Lane. The adjacent unit wall system as shown on Detail 1D / L503 indicates that the unit wall system will be set on below grade base coursing which is set on a compacted processed aggregate base to allow the wall to be set true and level. In addition, there is drainage both behind the wall and at the base of the wall adjacent to the fire lane which will be installed as part of the overall design. The design for the wall system is called to be "delegated design". As such, we would assume that the final cross section and detailing will be coordinated with the successful subcontractor for this scope of work in order to meet the requirements necessary to properly accommodate the design intent.	11/5/2024	SLAM		Closed	11/6/2024
242	SLAM	A911	10/25/24	Please advise on a spec section for the "fabric facing" noted on the ADP1 & ADP2 description on the finish schedule.	Fabric facing is inclusive of the overall system. See specification 09 8416.	11/5/2024	SLAM		Closed	11/6/2024
243	SLAM	S410	10/28/24	In Detail 4/S410 please provide the bolt size, type, quantity, and spacing required for the L4x4x1/4" under the windows to the C4x4.5. Also, please provide the 1/4" thick cap plate attachment to the post.	Note will be added, "2-3/4"Ø BOLTS 7" C-C". Minimum weld indicated on S001 general notes in section I.2 is acceptable.	11/1/2024	SLAM		Closed	11/6/2024
244	SLAM	S410	10/28/24	In detail 6/S410, please confirm the weld sizes, type, pattern, etc. of the L4x4x1/4" to the wide flange beam.	See detail 1/S410 for typical weld.	11/1/2024	SLAM		Closed	11/6/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
245	SLAM	S410	10/28/24	In detail 8/S410: 1. Please confirm the weld sizes, type, pattern, etc. of the L6x4x5/16" to the wide flange beam. 2. Please provide with the clip sizes and weld sizes, type, pattern, etc. required for the HSS7x5x3/8"	1. See detail 1/S410 for typical weld. 2. Detailed by fabricators's engineer.	11/1/2024	SLAM		Closed	11/6/2024
246	SLAM	S410	10/28/24	In detail 9/S410: 1. Please confirm the weld sizes, type, pattern, etc. of the L4x4x1/4" to the wide flange beam. 2. Please provide with the clip sizes and weld sizes, type, pattern, etc. required for the HSS9x5x1/2"	1. See detail 1/S410 for typical weld. 2. Detailed by fabricators's engineer.	11/1/2024	SLAM		Closed	11/6/2024
247	SLAM	S410	10/28/24	In detail 10/S410: Please confirm the weld sizes, type, pattern, etc. of the L6x4x5/16" to the wide flange beam.	Minimum weld indicated on S001 general notes in section I.2 is acceptable.	11/1/2024	SLAM		Closed	11/6/2024
248	SLAM	S410	10/28/24	In detail 13/S410: Please confirm the weld sizes, type, pattern, etc. of the L5x5x5/16" to the HSS12x8x3/8.	See detail 1/S410 for typical weld.	11/1/2024	SLAM		Closed	11/6/2024
249	SLAM	S410	10/28/24	In detail 14/S410: Please confirm that the 1/4" closure plate for the HSS12x8x3/8 should be a 1/4" fillet weld all around.	Minimum weld indicated on S001 general notes in section I.2 is acceptable.	11/1/2024	SLAM		Closed	11/6/2024
250	SLAM	S410	10/28/24	In detail 14A/S410: Please advise if the "U-Plate" or the HSS12x8x3/8 gets physically fastened to the CMU wall, or is it just bearing on the CMU? Are any bearing plates needed?	U-plate is attached to wall as detailed. No bearing plates are needed.	11/1/2024	SLAM		Closed	11/6/2024
251	SLAM	S410	10/28/24	In detail 15/S410: 1. Please confirm the weld sizes, type, pattern, etc. of the L4x4x1/4"" to the wide flange beam. 2. Please confirm the bolt size, type, quantity, and spacing for the L8x6x7/16" angle to the C6x8.2. 3. Please confirm the HSS7x5x3/8 connection will be the same as clarified in BQ #245 above.	1. See detail 1/S410 for typical weld. 2.Minimum bolts indicated on S001 general notes in section I.2 is acceptable. 3. Correct.	11/1/2024	SLAM		Closed	11/6/2024
252	SLAM	S410	10/28/24	In Detail 16/S410 please confirm the bolt size, type, quantity, and spacing required for the L4x4x1/4" under the windows to the C4x4.5. Also, please provide the 1/4" thick cap plate attachment to the post.	See response to BQ #243. Cap plate will be welded to post.	11/1/2024	SLAM		Closed	11/6/2024
253	SLAM	S411	10/28/24	In Detail 1/S411: 1. Please confirm the weld size, type, pattern, etc. for the L4x4x5/16" angle to the wide flange beam. 2. Please confirm the weld size, type, pattern, etc. for the L3.5x3.5x5/16" angle kicker to the wide flange beam. Is a connection plate or stiffener required at the WF? If so, please provide sizing and attachment detail.	1. Typical weld is indicated. 2.Gusset plate will be sized and detailed by fabricator. Stiffener is not required.	11/1/2024	SLAM		Closed	11/6/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
254	SLAM	S411	10/28/24	In Detail 3/S411: 1. Please confirm the weld size, type, pattern, etc. for theL6x4x5/16" angle to the wide flange beam (top & bottom flange) should be the same as shown in detail 2/S411. 2. Please confirm the weld size, type, pattern, etc. for the 1/4" bent plate to the wide flange beam. 3. Please provide with the clip sizes and weld sizes, type, pattern, etc. required for the HSS12x6x3/8".	1. Correct, see detail 2/S411 for typical weld. 2.Minimum weld indicated on S001 general notes in section I.2 is acceptable. 3. Connection is detailed by fabricators's engineer.	11/1/2024	SLAM		Closed	11/6/2024
255	SLAM	S411	10/28/24	In Detail 5/S411: 1. There appears to be an angle along grid line "X12", but no size is annotated or weld information provided. Please advise and provide. 2. Please provide the stiffener plate and cap plate weld sizes, type, pattern, etc. 3. Please confirm the weld size, type, pattern, etc. for the L6x4x5/16" angle to the wide flange beam.	1. Provide L3x3x5/16 continuous. Minimum weld indicated on S001 general notes in section I.2 is acceptable. 2.Minimum weld indicated on S001 general notes in section I.2 is acceptable. 3. See detail 2/S411 for typical weld.	11/1/2024	SLAM		Closed	11/6/2024
256	SLAM	S411	10/28/24	In Detail 6/S411 please provide the bolt size, type, quantity, and spacing required for the L4x4x1/4" under the windows to the C4x4.5. Also, please provide the 1/4" thick cap plate attachment to the post.	See response to BQ #243. Cap plate will be welded to post.	11/1/2024	SLAM		Closed	11/6/2024
257	SLAM	S411	10/28/24	In detail 8/S411, please confirm the 3/4" thick cap plate weld size, type, pattern, etc. to the column.	5/16" fillet weld. The same as column to base plate.	11/1/2024	SLAM		Closed	11/6/2024
258	SLAM	S411	10/28/24	In Detail 1/S411, please provide the weld size, type, pattern, etc. for the L3x3x1/4" angle to the wide flange beam.	See detail 2/S411 for typical weld.	11/1/2024	SLAM		Closed	11/6/2024
259	SLAM	S420	10/28/24	In details 4 & 5 on S420, please provide the weld size, type, pattern, etc. for the 12x6x5/16" bent plates to the wide flange beams.	See details 2 & 3 for typical welds.	11/1/2024	SLAM		Closed	11/6/2024
260	SLAM	S421	10/28/24	In detail 2/S421, please confirm the angle and weld size shown in detail 1/S421 should be utilized along the edge of the metal deck.	Confirmed.	11/1/2024	SLAM		Closed	11/6/2024
261	SLAM	S421	10/28/24	In detail 4/S421, please provide the weld size, type, pattern, etc. for the 10x5x5/16" bent plates to the joist.	See detail 3/S421 for typical weld.	11/1/2024	SLAM		Closed	11/6/2024
262	SLAM	S421	10/28/24	In detail 5/S421, please provide the weld size, type, pattern, etc. for the L6x4x5/16 and the L8x4x7/16.	See similar details on this sheet for typical welds.	11/1/2024	SLAM		Closed	11/6/2024
263	SLAM	S430	10/28/24	In details 2, 3, 4, 5, 6, & 9 on S430, please provide the weld size, type, pattern, etc. for all the L6x4x5/16 and the L4x4x1/4 shown.	See similar details on this sheet for typical welds.	11/1/2024	SLAM		Closed	11/6/2024
264	SLAM	S411	10/28/24	In detail 2/S411: 1. Please provide the clip size and weld details required for the L8x4x7/16 attachment to the "jambs". 2. Please confirm the intent is to cope, extend, & connect the vertical portion of the BP14x4x5/16 Frame up to the HSS12x6x3/8 tube. If so, please provide the weld details for this attachment.	1. Connection is detailed by fabricators's engineer. 2.Confirmed. Connection will be detailed by fabricators's engineer.	11/1/2024	SLAM		Closed	11/6/2024
265	SLAM	S420	10/28/24	For clarity, per the previous BQ #13 response, please confirm that all the kickers, diagonal braces, bridging, rigging beams, etc. shown in details 1, 2, & 6 on S420 should have delegated design connections.	Confirmed.	11/1/2024	SLAM		Closed	11/6/2024
266	SLAM	S420	10/28/24	In detail 7/S420, please provide the weld size, type, pattern, etc. for the L6x6x5/16 brace to the joist top chord.	Minimum weld indicated on S001 general notes in section I.2 is acceptable.	11/1/2024	SLAM		Closed	11/6/2024
267	SLAM	14 2100	10/28/24	Please see attached substitution request for the electric traction elevators and please confirm if acceptable.	Schindler 3300 MRL has been approved as a notes in the formal Substitution Request.	11/1/2024	SLAM	yes - substitution request	Closed	11/6/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
268	SLAM	C304	10/28/24	Please provide a detailed drawing with dimensions of the solar system and USA map to be painted on the asphalt	As shown on drawings, painted solar system is approximately 50' x 28' and USA map is approximately 37' x 28'. Full-scale AutoCAD drawings will be provided to the awarded bidder. Please also see Specification section 12 9300 Site Furnishings for detail on painted marking requirements.	11/5/2024	SLAM		Closed	11/6/2024
269	SLAM	321640	10/28/24	The granite curb spec states the curb is to be 6"x30". The detail shows 6"x20". Greenwich municipal spec is 5"x18" with buzzed edge. Please clarify as to which size is desired	See repsonse to BQ120 for size clarification - which should include the "Buzzed Edge"	11/5/2024	SLAM		Closed	11/6/2024
270	SLAM	Specifications	10/28/24	Please provide a spec for the shade enclosures. (ie. Preferred manufacturer)	In spec section 11 6833 "Shade enclosure" are listed as Ballfield Dugouts, wich require delgated design as listedin 2.2 of this spec section. Spec will be revised to change Ballfo\ield Dugouts to Shade Enclosures to match the drawing reference.	11/5/2024	SLAM		Closed	11/6/2024
271	Turner	Procurement Manual	10/28/24	Please clarify the scope of work as relates to the athletic fields between BP#9 & BP#41. a. Shade Structures & Fence – b. Infield Mix & Warning Track Mix c. Furnish & Install Bases d. Root Zone Mix	a. Shade Structures & Fence – The shade structure/dugout is Furnish & installed by BP#41 Landscaping. Part of Athletic Equipment spec. 11 6833. All fencing is by BP#9 Sitework per their scope of work. b. Infield Mix & Warning Track Mix furnish & installed by Sitework (BP #9).Reference spec. 32 1823.17 Natural Infield & warning track surfacing c. Furnish & Install Bases Furnished and installed by Landscaping subcontractor (BP #41) part of spec. 11 6833 Athletic equipment spec. d. Root Zone Mix – Removals by Sitework (BP#9), and furnish & install of Root Zone Mix by Landscaping (BP #41). Turner Follow up: 11.6.24 : In item d. the reason for the removals of the existing soils at the fields by BP#9 is that it is referenced in exclusive spec. 31 1005 Athletic Field Preparation and secondly because schedule wise BP#9 will be on site doing site prep and rock removal in this area. While also mentioned in the Root zone mix exclusive spec for BP#41 to remove the existing soil at the field, it makes more sense schedule/logistics wise for BP#9 to include it as part of sitework.	11/6/2024	PM		Closed	10/29/2024
272	SLAM	L202A	10/28/24	Please provide a specification for Stepping Stones shown on drawing L202A & detail 5C/L501.	Detail has been added to the project manual for stepping stones. Please see Specification section 32 0529 Glacial Boulders for Exterior Improvements.	11/5/2024	SLAM		Closed	11/6/2024
273	SLAM	260519	10/28/24	Please confirm that areas with "Cloud" ceilings are considered exposed and no MC cable for line voltage electrcial power should be utilized in these locations.	Confirmed. Areas with cloud ceilings are considered exposed and MC cable is not permitted in exposed areas.	11/6/2024	CES		Closed	11/6/2024
New Bidder's Questions as of 10/28/24 Issuance										
274	SLAM	A125	10/29/24	In detail 5D/A125 it appears that the stair nosing does not cover the 1/2" thick steel tread. Please advise if the intent is to paint the leading edge of the steel tread.	Yes, leading edge of steel plates to be painted. Painting to be performed by the Painting Subcontractor (BP #27)	11/4/2024	SLAM		Closed	11/6/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
275	CES	M0.00	10/29/24	Drawing M0.00 contains a Damper Legend which includes smoke dampers (SD), combination fire/smoke dampers (FSD) and backdraft dampers (BD). We cannot seem to locate where any of these are indicated on the Mechanical ductwork plans. Please review and confirm none are required.	None are required unless called for within specifications and schedules. **CES Follow-up Response (11/06/24):** The mechanical floor plans show all dampers that are required.	11/5/2024	CES		Closed	11/6/2024
276	SLAM	098416	10/29/24	ADC1 panels call for an NRC value of 0.10 in Spec section 098416 Part 2. While this is a low NRC, a solid panel does not achieve any NRC value. The solid wedge shape will only provide sound deflection. To achieve an NRC value, perforations with an acoustical felt backing will be needed but this comes at an additional cost. Are acoustical perforations needed?	ADC1 is a diffusion panel intended to reflect/diffuse sound as our product list description says. The manufacturer spec says the NRC shall be no greater than .10" to make sure it does not absorb sound.	11/5/2024	SLAM		Closed	11/6/2024
277	JLL	A912	10/29/24	Please clarify if any of the OFCI specialty equipment identified on A912 is hard wired. Also, please advise if the owner will be delivering the equipment and setting it in place.	1. Power requirements are identified on sheet and specification - additionally see electrical drawings for connections and hook-up. 2. See A912 Special Equipment Product information Schdeule for identified Owner Installed items. **Turner & JLL Response (11/07/24):** The Owner will furnish, deliver, and set all OFCI items (existing & new) in their final, permanent locations. Any hardwired electrical connections, plumbing connections, or ventilation connections will be by the associated trades.	11/5/2024	SLAM		Closed	11/7/2024
278	Turner	Procurement Manual	10/29/24	Please confirm the following items for bidding: 1.You will need Union labor for all areas that apply, correct? 2.DAS certified 3.PP bond. Do you want this as an add alternative or in our base bid? 4.Tax exempt for new construction 5.Now prevailing wage or chro requirements.	1) See BQ #1 2) DAS certification requirements varies per package. Reference Procurement Manual "00 - Invitation to Bid" for DAS certification requirements. 3) Reference Procurement Manual "03 - Boiler Plate Additional Provisions for All Subcontractors" B-1 for PP bond requirements. PP bond to be included in base bid. 4) This project is tax exempt for new construction; reference Procurement Manual "03 - Boiler Plate Additional Provisions for All Subcontractors" B-2 for tax requirements. 5) Both requirements are applicable. This is a prevailing wage project. Minimum rates are provided in the Procurement Manual. See BQ #1 for further details. Chro requirements varies per package. Reference Procurement Manual "00 - Invitation to Bid" Trade Package Table and SBE/MBE Column for requirements.	10/29/2024	BM/Turner		Closed	10/30/2024
279	CES	23 05 23	10/29/24	Specification Section 23 05 23-2.5.A & B state ball valves can be press type valves. This same specification, but sub-part 3.3.C.1 states ball valves are to be threaded valves. Please verify if ball valves can be Pro-Press type valves.	Pro press is acceptable	11/5/2024	CES		closed	11/6/2024
280	CES	23 82 00	10/29/24	The CUH & UH units do not have Piping Details in any of the project drawings. Please provide Piping Details for these units.	Detail #5/M502	11/5/2024	CES		Closed	11/6/2024
281	CES	MP102C	10/29/24	Drawing MP102C is missing room tags for SPED RES. 2002 and HEARING / VISION IMPAR. 2003. Each of these rooms appear to indicate Radiant Ceiling Panels (one in 2002 and two in 2003), however, are missing the associated pipe routing and connections. Please provide a piping drawing for these rooms.	Drawing has been updated within ADDENDUM NO. 6.	11/5/2024	CES		Closed	11/7/2024
282	CES	MP102C	10/29/24	Drawing MP102C is missing Active Chilled Beam designations in SPED RES. 2002, HEARING / VISION IMPAR. 2003 and FACULTY WORKROOM 2072. Please advise which room will receive which Active Chilled Beam designation.	Drawing has been updated within ADDENDUM NO. 6.	11/5/2024	CES		Closed	11/7/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
283	SLAM	L202A	10/29/24	Chain link fence at the garden on L202A (Addendum 2) does not state a height. Please advise.	6’ fence height. Drawing L202A has been updated accordingly in Addendum 6.	11/5/2024	SLAM		Closed	11/7/2024
284	CES	MP102A, MP102C	10/29/24	Drawing MP102A appears to depict two (2) Active Chilled Beams in SPED RES. 2002, however, Drawing MP102C appears to indicate only one (1) Active Chilled Beam in this same room. Please advise which is correct and update drawings accordingly.	Drawing has been updated within ADDENDUM NO. 6.	11/5/2024	CES		Closed	11/7/2024
285	SLAM	L401 series & Spec. 32 9200	10/29/24	Please provide the lawn seed mix for the various grassy areas not considered the ball fields. Spec. 32 9200 says to find the seed mix on the plans but we have not been able to locate this information	Please use the following mix for general lawn areas: Drawing L402 will be updated accordingly in Addendum 6. 25% Falcon IV Turf Type Tall Fescue 20% Ambrose Chewings Fescue 20% Viking H20 Hard Fescue 15% Double Time Tetraploid PRG 10% Mazama KBG 10% Diva KBG	11/5/2024	SLAM		Closed	11/6/2024
286	Turner	EP102D, E504	10/30/24	There are six motorized lighting battens on the plans. On sheet EP102D, a note says "HPP (HOIST POWER PANEL) PROVIDED BY DIV. 11 AND INSTALLED UNDER DIV. 26". This appears to be referencing the junction boxes for the hoist motors. Similarly, the connector strips are noted as “PROVIDED BY THE DIV. 11 RIGGING CONTRACTOR AND WIRED BY THE DIV. 26 CONTRACTOR” on Sheet E504. My question is: are the EC’s providing a theatrical package complete with motorized hoists, rigging and connector strips? Or are they only doing the electrical hookup for the rigging motors? Sometimes the GCs want all theatrical equipment to be handled under one contract. Please confirm the scope delineation.	The electrical subcontractor (BP #38) shall be responsible for all final power connections to the theatrical rigging system, including but not limited to the control & power panel, connector strips, etc. The theatrical rigging subcontractor (BP #31) shall be responsible to furnish & install all theatrical rigging components, including but not limited to all controls & control wiring. The Stage Rigging and Curtains specification 110610 is exclusive to the Theatrical Rigging Subcontractor (BP #31). The electrical subcontractor shall furnish & install all theatrical lighting, supports, & components for a complete system per BP #38 scope of work line items #66 & 67 for example. The Theatrical Lighting Specification 265561 is exclusive to the electrical subcontractor (BP #38).				CLosed	10/30/2024
287	SLAM	323120	10/30/24	Section 1.2 of spec setion 323120 calls for delegated design. However, it seems like specific products are identified in Part 2 of the spec. If the specified products are used can we just submit the manufacturer's literature / product data. It is not clear what specifically needs to be a delegated design. Please advise.	Specification Sections 32 3120 Vehicle Barrier Gates and 32 3118 Metal Fences and Gates have been removed from the project manual in Addendum #6. The delegated design gates and equipment items may be found in 12 9300 Site Furnishings.	11/5/2024	SLAM		Closed	11/7/2024
288	SLAM	334419	10/30/24	Section 1.4 of spec setion 334419 calls for delegated design. However, it seems like specific products are identified in Part 2 of the spec. If the specified products are used can we just submit the manufacturer's literature / product data. It is not clear what specifically needs to be a delegated design. Please advise.	The intent of Section 1.4 is not for a delegated design. Typically, the product manufactures covered in section 334419 generate site specific shop drawings. If an alternative product is submitted design calculation showing equivalency are required.	11/6/2024	SLAM		Closed	11/6/2024
289	SLAM	280528	10/30/24	Section 1.05.B of Spec section 280528 calls for Professional Engineer qualifications. It is not clear from the spec section what needs to be a delegated design or engineered for the security system pathways. Please advise.	This delegated design requirement will be removed from the specification in Addendum #6	11/6/2024	SLAM		Closed	11/7/2024
290	SLAM	280528	10/30/24	Section 1.05.C of Spec section 280528 calls for Seismic Certificates. Are there seismic requirements for the scope covered by this spec section? Per BQ #41 there are no seismic requirements necessary for cable tray. There also doesn't appear to be any seismic requirements for line voltage pathways. Please advise.	This delegated design requirement will be removed from the specification in Addendum #6	11/6/2024	SLAM		Closed	11/7/2024
291	Turner	Procurement Manual	10/30/24	Where is the project schedule located?	The project schedule is included with the Procurment Manual, "04-Project Schedule."	10/30/2024	BM/Turner		Closed	10/30/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
292	SLAM	230900	10/30/24	Section 1.10.D of spec section 230900 mentions a Professional Engineer licensed in the state of CT shall perform the design of the system software. It is not clear to us exactly what the delegated design intent is based on this section of the spec. Can you please clarify and provide the specific delegated design requirements.	The delegated design requirements for this section are not required.	11/5/2024	CES		Closed	11/6/2024
293	SLAM	233100	10/30/24	Section 1.4.A of spec section 233100 mentions delegated design for duct construction and sheet metal thicknesses. In our experience this is **not** typical as the EOR already has calculated the static pressure and typically specifies the duct construction. Can you pelase confirm the intent? There also does not appear to be a mention of a professional engineer or their qualifications in this spec section either.	Sheet metal type and thickness is indicated in the specifications. Delegated design includes placing and spacing of hangers and supports and conforming to duct construction means and methods indicated in SMACNA guidelines. No professional engineering qualifications are required in this specification. **CES Revised Response (11/06/24):** The spec has been updated for ADDENDUM NO. 6. Rectangular ductwork shall be constructed based on the ductwork sizes shown on plan and the pressure classes within section 3.8.B in accordance with the SMACNA duct construction standards.	11/5/2024	CES		Closed	11/7/2024
294	SLAM	235100	10/30/24	Section 1.8.A of spec section 235100 states that the stacks shall be designed under the supervision of a structural engineer licensed in the State of CT. Can you please clarify exactly what is intended to be a delegated design? Is it limited to delegated design of vibration and seismic? The size of the vents are shown on the contract drawings and Part 2 identifies the vent materials / products. Please advise.	Requirement of structural engineer is not required.	11/5/2024	CES		Closed	11/6/2024
295	SLAM	221005	10/30/24	On drawing P-100A there is grease waste and vent piping but there is nothing in the plumbing specs for grease waste and vent. Please specify what pipe material to use for this.	Grease waste and vent piping shall be CPVC pipe. Refer to revised specifications in Addendum #6	11/5/2024	CES		Closed	11/7/2024
296	CES	EP101A	10/30/24	We were recently informed by Johnson Controls that the water box heaters and convenience outlets associated with both Chillers CH-1 and CH-2 require separate power wiring. These power requirements are not indicated on Drawing EP101A or the panel schedule drawings. Please provide all pertinent circuiting information including, but not limited to, conduit size, wire size, panelboard, circuit breaker size, etc. The water box heater kits require either 115V/60Hz or 220V/50Hz.	The chillers ordered in Phase 1 are not basis of design, therefore will need to be fully reviewed through shop drawings, which have not been received to this point. The contractor takes responsibility. **Turner Response (11/07/24):** Electrician (BP #38) shall furnish & install additional circuits required as shown in Addendum #6	11/5/2024	CES		Closed	11/7/2024
297	SLAM	321640	10/30/24	There is a conflict between the specs and the drawings. The specs call for 6” x 30” and the plans call for 6” x 20”.	See BQ269 for clarification	11/5/2024	SLAM		Closed	11/6/2024
298	SLAM	S101A	10/30/24	Architectural Drawing A101A illustrates concrete pads on the exterior of the building for two (2) chillers, one (1) generator and one (1) transformer and states to refer to the mechanical, structural and electrical drawings. None of these disciplines appear to indicate pad locations, dimensions or details. Please provide and update drawings accordingly.	Structural drawings will be updated to show the pads and key in specific details. See addendum #6	11/6/2024	SLAM		Closed	11/7/2024
299	CES	23 64 11	10/30/24	Specification Section 23 64 11 - 2.3.C. states the Contractor shall wire separate power to energize heat tape to protect cooler while chiller is disconnected from the main power. Mechanical heat tracing is not specified, please provide. Please also provide all pertinent circuiting information including, but not limited to, conduit size, wire size, panelboard, circuit breakers, etc.	Not applicable to project.	11/5/2024	CES		Closed	11/6/2024
300	SLAM	L501 detail 2A & 2B	10/31/24	Details 2A & 2B on L501 references staining of concrete and that the scope of which sidewalks are stained is reflected in the plans. We cannot locate this delineation nor do we have any information on the staining specification that is required. Please provide.	No staining to be provided. Notes on details have been updated on drawing L501 accordingly in Addendum 6.	11/5/2024	SLAM		Closed	11/7/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
301	SLAM	105113-Metal lockers	10/31/24	In Spec Section 105113 - Metal Lockers Page 2 Detail 2.2 Part A states that Type A Lockers are to be 4 Tier but this conflicts with the drawings as indicated on drawing A102C under the floor plan graphic legend it states Type A Lockers are 2 Tier and on drawing A112.2 detail 1E it shows Type A lockers to be two tier. Please confirm if we should carry a two tier locker or 4 tier locker?	2-Tier - See revised specification issued in Adendum 4	11/4/2024	SLAM		Closed	11/6/2024
302	SLAM	SWPCP	10/31/24	Within the Addendum #2 Stormwater Pollution Conrol Plan, the Permittee section 1-1 is not completed. Please identifty the Permitee for the SWPCP and complete associated form. Note Permittee shall hold meeting with qualified professional, qualified inspector conducting inspections and site contractor and subcontractor Per item (16)-A on page 18 of 49 of General Permit. Turner Follow-up (11/6/24): Please confirm qualified inspector is hired by the Owner.	The Town of Greenwich is the Permittee and their Owner's Representative will be acting on their behalf. The project has not received its General Permit at this time and the SWPCP has been included for bidder's to understand its content. Once the General Permit has been granted, Section 1-1 will be filled completed as well as the certifications for the contractors and subcontractors. The SWPCP is a live document and will be updated with the contactor information and qualified inspector's reports throughout construction. SLAM / JLL Follow-up Response (11/06/24): Confirmed	11/6/2024	SLAM		Closed	11/6/2024
303	SLAM	SWPCP	10/31/24	Within the Addendum #2 Stormwater Pollution Conrol Plan, the General permit for Discharge of Stormwater and Dewatering from Construction Activities was effective Dec. 31, 2020 and expires 12/20/25 (prior to the completion of construction activities. Please confirm that the Owner's consultant will update per current project schedule.	The Issuance dates referred to are for the General Permit itself. CT DEEP will be issuing a new GP that will be effective before this program is concluded. The Project has applied for their General Permit and the Final SWPCP and General Permit information will be provided at that time.	11/6/2024	SLAM		Closed	11/6/2024
304	SLAM	L202A, L202B, & L202C	10/31/24	Confirm Mateiral type 1E added in parking areas within Addendum #4 and not shown within Site Material Legend on same sheets (L202A, L202B, L202C) is intended to be Bituminous Concrete pavement (Porous asphalt) per detail 1E on Drawing L501.	Confirmed. This material is Bituminous concrete pavement (porous) per detail 1E on L501.	11/5/2024	SLAM		Closed	11/6/2024
305	CES	M103B, M103D	10/31/24	Drawings M103B & M103D issued in Addendum #4 added notes to provide stair dunnage for walking pathway over roof mounted ductwork associated with RTU-1 and RTU-2 as well as to coordinate with the Architectural Drawings. Drawings A103B or A103D do not indicate any stairs at these locations. Nor does Drawings S301B and S301D indicate any structural steel members for this "dunnage". Typically, dunnage is furnished and installed by the Sturtural Steel or Misc. Metals disciplines, not HVAC. Please provide details indicating these stairs, included roof details, supports, etc. as well as confirm which discpline should furnish and install.	Stair dunnage will not be provided. Mechnaical drawings have been updated in ADDENDUM NO. 6.	11/5/2024	CES		Closed	11/7/2024
306	Turner	Procurement Manual	10/31/24	BP12 Scope number 13 of D. Safety Additional Provisions says install stairways with pace of erection. Stairs are in BP13.	For BP12 this is referring to the temporary stair towers identified in safety scope of work line item #01.	10/31/2024	CL/Turner		Closed	10/31/2024
307	SLAM	220523	10/31/24	Is the use of grooved Butterfly valves acceptable in lieu of Gate valves for grooved domestic water size 2-1/2" and larger,	Butterfly valves are acceptable for isolation and shut off on pipes 2" and larger as long as they are lead free ductile iron, indicating, and has a 10 position lever handle. Furnish chain-wheel operators for valves mounted over 8 feet above floor. Acceptable manufactures are Victaulic, Milwaukee Valve Company, NIBCO, Watts, and American Valve co	11/6/2024	CES		Closed	11/6/2024
308	Turner	P100A	10/31/24	Alt #7 asks for a gas generator vs a diesel fuel generator, ref P100A & P500 which shows gas to a generator. If a diesel generator is needed please provide spec's and details on piping ect.	The alternate was accepted during phase 1 for a gas generator. Please inculde gas piping as shown on contract documents.	10/31/2024	TB/Turner		Closed	10/31/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
309	Turner	Scope of Work	10/31/24	In reference to BP 15 Scope of Work #14, please provide detail/s of that specific requirement for the roofer to furnish and install associated with Future PV Array installation.	See BQ #52 for conduit scope for future PVs. BP 15 shall patch roof as required.	10/31/202	BM/Turner		Closed	10/31/2024
310	Turner	A091-A093	10/31/24	Please provide locations of building expansion joints	See Slab edge plans (A091-A093) for locations where EJ is Marked.	10/31/202	TB/Turner		Closed	10/31/2024
311	SLAM	078100	10/31/24	078100-2.3.A.1 states “not mineral fiber based” however, basis of design names Cafco Blaze Shield HP which is a mineral fiber based product. Please confirm mineral based products are excluded and products such as Cafco 400 or GCP Z106HY are acceptable.	The product data for CAFCO Blaze Shield HP describes it as Portland-cement based. That’s what we are looking for, as also indicated on the Fireproofing/Architectural Treatment Legend on drawings GC11, GC12, and GC13.	11/5/2024	SLAM		Closed	11/6/2024
312	SLAM	078100	10/31/24	078100-2.3.C.1 states “not mineral fiber based” however, basis of design names Cafco Blaze Shield II HS which is a mineral fiber based product. Please confirm mineral based products are excluded and gypsum products such as Cafco 300HS or GCP MK10HB are acceptable.	See response to BQ 311 above. The product data for CAFCO Blaze Shield II HS describes it as Portland cement based. All SFRM on the project is to be Portland cement based.	11/5/2024	SLAM		Closed	11/6/2024
313	SLAM	078100	10/31/24	Bond strength of low density fireproofing 078100 2.3.C.2 states bond strength of 600psf. This higher bond strength is required on building greater than 75’ in height. Can 200lb psf standard bond strength low density fireproofing be utilized? Cafco 300/Monokote MK6 vs. Cafco 300HS/Monokote MK10HB	Yes, we acknowledge that the building code only requires 150 psf bond strength for a building with highest occupied floor at 75’ above grade or less. A cementitious SFRM that meets minimum bond strength from one of the named alternate manufacturers is acceptable. Note that CAFCO 300 is gypsum-based and would not be an acceptable alternative.	11/5/2024	SLAM		Closed	11/6/2024
314	Turner	Scope of Work	10/31/24	In reference to BP 15 Scope of Work #31, please clarify what particular roof curb/s and metal covers does the Roofer will furnish and install. Does the roofer responsible in furnishing and installing large RTU/ HVAC curbs?	Mechanical equipment will have prefabricated curbs. BP 15 is to extend the roofing system up the prefabricated curb and furnish and install insulation and drywall as required, for example 4D/A530.	11/4/2024	BM/Turner		Closed	11/4/2024
315	Turner	Scope of Work	10/31/24	In reference to BP 15 Scope of work #35, please clarify further the inclusion of custom fabricated galvanized bent plate to the Roofing scope. (Typically, this is owned by the Steel/Structural sub.) Also, detail 3E/A511 is a wall detail. How is this related to the roofing scope?	BP 15 to provide RWL and RWL attachments (spec 07 7100), for example on 3E/A511. Scope to be revised. The mason (BP 11) to furnish and install custom galvanized plate and clips at Recessed RWL. BP 11 to reference & follow the appropriate specification for colored galvanized steel. BP 15 to exclude the colored galvanized plate at the Recessed RWL. BP 15 must provide RWL and attachments to the galvanized plate.	10/31/202	BM/Turner		Closed	10/31/2024
316	Turner	Scope of Work	10/31/24	Please confirm whether all stair towers, engineered over-head protection, temporary access stairs are all included in the Roofing Scope of Work. Note: These items are not typically carried by the Roofing Contractor as these safety equipment are commonly used by all other trades (for liability insurance issues).	These are required scope of work items for the Roofer (BP #15) per the Turner Scope of Work document for use by all Trades, Turner, Inspectors, etc.	11/6/2024	Turner		Closed	11/6/2024
317	Turner	Scope of Work	10/31/24	Who furnishes and installs VFD's?	VFD's are to be furnished by the Bid Package purchasing the equipment requiring a VFD. VFD's to be furnished to BP#38 for installation and wiring.	10/31/202	BL/Turner		Closed	10/31/2024
318	Turner	Schedule	10/31/24	Can you expand the schedule to show MEP durations?	Milestones dates must be maintained and achieved. Field team to coordate with subcontractors through pull planning and per the sequencing outlined in the Turner Crew Flow documents issued as part of the BQ #236 response in Addendum #3.	11/6/2024	JP/Turner		Closed	11/6/2024
319	Turner	Scope of Work	10/31/24	Will the electrician wire equipment splits?	Yes. BP #38 Electrical and Fire Alarm shall make all internal connections between shipping splits needed for mechanical equipment.	10/31/202	BL/Turner		Closed	10/31/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
320	Turner	Scope of Work	10/31/24	Please confirm that the gym floor will be protected by others, so lifts, etc., can be driven over it for MEP installs.	MEP and overhead infrastructure / equipment should be installed prior to finished flooring. If installed after the associated subcontractor shall provide flooring protection and ensure not to exceed allwoable loads on the finished floor system.	11/6/2024	JP/Turner		Closed	11/6/2024
321	Turner	Scope of Work	10/31/24	Please confirm we are NOT furnishing any "T-bars" associated with the ceilings. Ref BP#37 pg 5, SOW #28.	Confirmed. BP #38 shall not be furnishing or installing and "T-bars" associated with the ceilings, however, will need to furnish and install "T-bars" associated with the assembly of the hydronic radiant ceiling panels and active chilled beam units. For instance, between each unit where multiple units are adjacent to one another.	10/31/202	BL/Turner		Closed	10/31/2024
322	Turner	Scope of Work	10/31/24	Ref BP#37 pg 5 item #33, we can only include dampers as shown on our mechanical drawings. We are not the design engineers and the sheet metal union will not take that responsibility. This is always agreed to on every project to date.	Understood and agreed. Turner will amend BP #37, SOW #33 accordingly. BP #37 to furnish and install all fire, smoke and combination dampers with actuators at locations indicated on the Contract Documents.	10/31/202	BL/Turner		Closed	10/31/2024
323	Turner	Scope of Work	10/31/24	Ref BP#37 pg 6 #45, please clarify is this just for equipment? If not please define what exactly is to be included	This scope of work shall include cleaning of all major mechanical equipment including DOA's, RTU's, HRV-1, Chillers, Boilers, Dust Collector DC-1, Cabinet Unit Heaters, Unit Heaters, and Split Systems.	10/31/2024	BL/Turner		Closed	10/31/2024
324	CES	Scope of Work	10/31/24	Please provide a specification for VFD's.	All VFD's provided are integral to the equipment. There are no loose VFD's.	11/5/2024	CES		Closed	11/6/2024
New Bidder's Questions as of 10/31/24 Issuance										
325	Turner	Scope of Work	11/1/24	Ref BP#37 pg 6 #47. Please state a date when early equipment use to start for heating and cooling. Please confirm filter changes during this period to occur 2 times per month.	Early equipment use to start for heating and cooling to commence the beginning of April 2026. Confirmed, filter changes during the early equipment use period to occur two (2) times per month.	11/1/2024	BL/Turner		Closed	11/1/2024
326	Turner	Scope of Work	11/1/24	Ref BP#37 pg 9 #72, The electrician should furnish and install all the wiring conduit ect for the ansul system?. Please confirm	The electrician (BP #38) shall furnish & install all conduit and wiring required for power & fire alarm integration. HVAC subcontractor (BP #37) shall furnish & install all control wiring from the Ansul system to mechanical & plumbing components & equipment.				Closed	11/6/2024
327	Turner	Scope of Work	11/1/24	Ref BP#37 pg9 #75, please provide a list of pre purchased equipment and there corresponding storage durations	Reference BP#37 SOW #73 as well as the SourceBlue Coordination Matrices for a list of all pre-purchased equipment. BP #37 SOW #75 includes storage durations.	11/1/2024	BL/Turner		Closed	11/1/2024
328	CES	Scope of Work	11/1/24	Please provide a refrigeration piping specification.	Refrigerant piping specification has been added to spec section 238126 in ADDENDUM NO. 6	11/5/2024	CES		Closed	11/7/2024
329	CES	23 05 29	11/1/24	Specification section 013573 list delegated design for 230529. What needs this requirement as it is not listed in that spec section.	Spec 230529 is not part of delegated design.	11/5/2024	CES		Closed	11/6/2024
330	CES	23 21 23	11/1/24	Will an authorized pump manufactures rep be acceptable to align pumps in lieu of a millwright? Ref 232123.1.4.B	Yes	11/5/2024	CES		Closed	11/6/2024
331	Turner	23 64 11	11/1/24	Please confirm the maintenance service for the chiller has been included by Source Blue. Ref 236411.1.11. It is typical for that manufacture to provide that service	The chiller maintenance service, outlined in 236411-1.11 has been excluded by SourceBlue. Bp#37 to also exclude. Turner will update the scope of work accordingly.	11/1/2024	BL/Turner		Closed	11/1/2024
332	Turner	Scope of Work	11/1/24	Please confirm all attic stock for the PP equipment has been included by Source Blue, this would include all filters needed and per the project additional provisions.	All attic stock listed in the Specification Sections associated with the pre-purchased equipment has been included by SourceBlue.	11/1/2024	BL/Turner		Closed	11/1/2024
333	SLAM	23 3100	11/1/24	Specification Section 23 3100 pages 4 & 5 (Duct Liner) calls out for Fibrous Glass Duct Liner and Elastromeric Duct Liner but does not specify where to use each one. Please Clarify.	Spec 233100 has been updated to clarify within ADDENDUM NO. 6	11/5/2024	CES		Closed	11/7/2024
334	SLAM	23 3100	11/1/24	Specification Section 23 3100 – 16 (Duct Liner Schedule) calls out for Duct Liner 10' downstream of VAV Boxes. In many cases there are Round Branch Take-offs within that 10', are these to be also lined or is it just the Trunk Line? Please Clarify	Just the main duct truncks shall be lined.	11/5/2024	CES		Closed	11/6/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
335	SLAM	23 3100	11/1/24	Specification Section 23 3100 – 15 (Duct Material Schedule) calls out for both Galvanized & Aluminum for Supply, Return, Relief and General Exhaust Duct. Can you please clarify where to use both listed types.	Provide aluminum grilles in bathroom groups, and kitchen area. All other areas can receive galvanized grilles.	11/5/2024	CES		Closed	11/6/2024
336	SLAM	10 1100	11/1/24	Tackboards (TB1)- For tackboards, are manufacture standard profile for aluminum frames acceptable? If not, please provide a proposed detail for the tackboard aluminum frames.	Yes standard frame profile for prefabricated tackboards (and whiteboards) is acceptable.	11/5/2024	SLAM		Closed	11/6/2024
337	SLAM	M500, M501	11/1/24	1. In Addendum 4 new roof mounted equipment details were provided (12/M500, 9/M501) showing the supports bearing directly onto steel framing below. Please advise if the intent is to stop and start the metal deck at these curb / support locations. This is how it seems based on this detail. This would require curbs & supports to be installed prior to metal deck being installed. Also, it is not clear if this would leave enough flange width for metal deck minimum bearing on each side.of the curb. 2. What if curbs are running perpendicular to steel framing? Will supplemental steel framing need to be installed the full length of the curbs? If so, please provide those beam sizes as needed on the structural drawings.	M500 and M501 details have been updated and will be provided as part of Addendum No 6	11/5/2024	CES		Closed	11/7/2024
338	SLAM	A092	11/1/24	Drawing A092 shows metal roof deck between grid lines XC & CE and CS & ZB at the low roof. S301D shows concrete on deck in areas between these grid lines (Type F1). Please confirm that the structural drawings govern and update A092.	These is concrete on deck per structural drawings and per A103D. All roof types desigantion for the project are identified on the roof plans. The Intent of the A090-Series is to identify opening sizes and locations in the roof (Edge of deck/Edge of Slab)	11/5/2024	SLAM		Closed	11/6/2024
339	Turner	07 2726	11/1/24	BP11 Masonry Scope of Work #41 states this Contractor shall furnish and install ALL fluid-applied membrane air barriers as shown on the Contract Documents, including but not limited to mason, FCP, skylight, louvers, curtainwall/Storefront, rainscreen system, and metal panel locations with a minimum 1-foot overlap , etc. BP 19 Glass, Glazing & Metal Panels #26 has this Scope of work include's metal composite panel, cold form metal hat channels, insulation, Fluid applied membrane air vapor barrier, cladding support system, etc. Can the areas of who own's the AVB be clarified? Typically we would own the AVB in our Veneer Cavity.	BP 11 Masonry to furnish & install all AVB per Scope of work #34. BP 19 Glass & Glazing scope of work #25 & #26 to be revised to tie-in AVB as required.	11/1/2024	BM/Turner		Closed	11/6/2024
340	SLAM	3C/A521 & 1C/A640	11/1/24	Please clarify the intent of the box-header in between the insulated metal panel and aluminum closure panel on detail 3C/A521. What is this box-header supporting? Additionaly, this box header is calling for flashing attachment. This flashing requirement is in contradicition to BQ#9 response. Please clarify this requirement and the attachment of the flashing. Lastly, is the box header intended to connect or fasten to vertical curtain wall mullions?	1. Box header is there for the termination bar to have place to screw into behind the insulated wall panel. 2. Flashing to be installed behind the termnation bar and over the vertical roof membrane extension. 3. Yes, use standard CFMF framing accessories to attach the horizontal box header to the vertical CW mullions. CFMF shall be furnished & installed by General Trades (BP #21) and coordianted with BP #19.	11/5/2024	SLAM		Closed	11/6/2024
341	SLAM	A910	11/1/24	Drawing A901B & A903 show RT9 to be installed. The finish schedule A910 does not note a RT9. Please advise on a product type, spec section etc. for RT9.	RT9 shown on A901B should be RT4, and RT9 shown in 1B/A903 should be RT7.	11/5/2024	SLAM		Closed	11/6/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
342	SLAM	07 1400	11/1/02	Please provide clarification on the fluid-applied waterproofing material. Basis of Design is Procor by GCP, however no specific product by the other manufacturers are listed. Please provide the specific waterproofing material by the other manufacturers that are listed in the spec that would be acceptable for use on the project.	Per standard practice, we identifed a BOD product and listed acceptable alternative manufactures that can meet the specification.	11/5/2024	SLAM		Closed	11/6/2024
343	CES	23 34 00	11/1/24	Please advise if the roof curbs for exhaust fans need to be pre-faricated as well as insulated.	Exhaust fan roof curbs shall be pre-fabricated and insulated	11/5/2024	CES		Closed	11/6/2024
344	SLAM	L502 Details 1C & 1E	11/1/24	In details 1C & 1E on L502 the accessable ramp construction shows a concrete curbing as part of this ramp. Is it to be concrete or is it Granite like all the other curbs?	Granite curbing	11/5/2024	SLAM		Closed	11/6/2024
345	CES	23 74 13	11/1/24	Please confirm the pre-fabricated equipment curbs for the DOA's, RTU's and HRV-1 do NOT need to be insulated.	The roof curbs shall be insulated	11/5/2024	CES		Closed	11/6/2024
346	JLL	11 5410	11/1/24	Spec 11 5410 Para 2.A – We have multiple questions regarding the Owner finishing this equipment for Rooms 1038 & 1039. Some questions deal with the equipment being new, and others whether the items are existing and must be brought to the new school. Note, both rooms in the new school have only a single man door entry. **A. Assuming all equipment is new:** i. Confirm the Owner will deliver this equipment to the rooms. ii.Please clarify who UNBOXES and ASSEMBLES all this new equipment. **B. Assuming all equipment is existing:** i.Confirm the Owner is delivering the equipment to the rooms. ii. If the Owner is NOT bringing the existing items to the jobsite and the contractor is, please address the following: 1. What address are the items located at? 2. What floor are the items located on? 3. How do you get to that floor? Stairs,ramps,elevator? 4. Is disassembly required to get any of the equipmentout of the existing room AND the building ie doorways, etc. 5. Confirm the elevator can be used by the Contractortor remove the items.	**Turner & JLL Response (11/07/24):** The Owner will furnish, deliver, and set all OFCI items (existing & new) in their final, permanent locations. Any hardwired electrical connections, plumbing connections, or ventilation connections will be by the associated trades. Also, the new elevator within the middleschoool is not intended for any trade's use. Access to each level provided from grade.	11/5/2024	SLAM/Turner		Closed	11/7/2024
347	Turner	329119.23 &	11/1/24	1 - On line item #40 on BP#09 - Sitework it states that they are responsible for removing any preexisting materials from the athletic field area as indicated on the contract documents including but not limited to the specification section 31 1005 Athletic Field site prep. - On Exclusive Specifications on BP#41 we have 323313.29 Athletic Field Root Zone, please clarify the extent of which bid package owns what on this. 2. Please clarify what the Landscape contractor is responsible for on the fields and what the sitework contractor is responsible for on the fields	Item#1 Refer to Turner response to RFI#271. Item#2 : The BP#9 Sitework contractor owns all removals of existing amenities and existing soil & Rock in the areas of the ball fields. BP#9 Sitework also owns all fencing, backstops and safety netting including footings for this work. BP#9 Sitework owns the skinned infield and warning track surfaces per exclusive specification 32 1823.17. This includes the concrete edge drain as well shown on L601. BP#41 Landscape contractor owns furnishing and installing the root mix soil & seed per spec. 32 9113.29. BP#41 owns all athletic equipment per exclusive spec. 11 6833 for the fields including but not limited to all base ball bags, pitchers mound, the shade enclosure structure and benches and spectactor benches for a complete installation.	11/5/2024	Pm/Turner		Closed	11/6/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
348	SLAM	S301B, S301D	11/1/24	Drawings M103B and M103D indicate ductwork pentrations below DOA-5, RTU-3 and HRV-1, however, Structural Steel Drawings S301B and S301D do not indicate any supplemental structural steel for these penetrations. Please either confirm none are required or add them to the Contract Drawings.	Openings are indicated on the A90-Series Roof Slab Edge Plans. Specific sizes are not indicated since they are manufacturer dependent and yet to be determined. Typical roof opening framing for such items are covered with detail 5/S400 and coordinated with the typical mechanical roof curb detail 4D/A530. Supplemental steel needed for these openings shall be furnished & installed by the Steel subcontractor (BP #12) and cooridnated with the mechanical subcontractors.	11/6/2024	SLAM		Closed	11/6/2024
349	SLAM	A103 Series	11/1/24	The Architectural Roof Drawings do not appear to indicate furnishing and/or installing roof insulation or membrane below any of the DOA's, RTU's or HRV-1. Please confirm none are required or update Contract Drawings to include.	Drawimgs have been updated to identify where insulation is required per 4E/A530 in Addendum #6	11/5/2024	SLAM		Closed	11/7/2024
350	CES	M103B, M103D	11/1/24	Drawings M103B and M103D indicate ductwork pentrations below DOA-5, RTU-3 and HRV-1. After the associated equipment curbs are installed and the units are landed, how is the Mechanical Subcontractor supposed to make mechanical piping and ductwork connections below the unit?	Mechanical contractor means and methods. This is a typical rooftop unit installation with ductwork connections on the bottom of the unit.	11/5/2024	CES		Closed	11/6/2024
351	Turner	BP 16 Scope of Work	11/1/24	Specific scope items (4) out of sequence (7) access/protection are impossible to figure as defined. Please further clarify or create an allowance for these items.	These are required scope of work items for the Fireproofing Subcontractor (BP #16) per the Turner Scope of Work documents.	11/6/2024	Turner		Closed	11/6/2024
New Bidder's Questions as of 11/01/24 Issuance										
352	JLL	Specifications	11/1/24	Please advise what percentage of the project will be state funded to meet our CHRO requirements.	The State of Connecticut has approved a 20% reimbursement rate for this project.	11/6/2024	JLL		Closed	11/6/2024
353	Turner	A521	11/1/24	Many window details on A521, A640 and similar call for “SHIM SPACE - FILL ALL VOIDS W/ SPRAY FOAM”. Please confirm this insulation is provided by BP 19 Glass, Glazing & Metal Panels	Glass & Glazing subcontractor (BP #19) shall furnish & install all spray foam required within shim spaces of their own systems, including at perimeter of curtain wall.	11/6/2024	Turner		Closed	11/6/2024
354	SLAM	07 2119	11/1/24	Spec 07 2119 Para 2.1B1a – please clarify where closed cell spray foam is intended in deck flutes. Spec 07 2119 Para 2.2B – please clarify where intumescent coating for spray foam is intended.	1.Spray foam in the deck flutes is not used, see details 1B & 2B on A521, which shows preformed mineral wool deck plugs. Same spec section identified Hilti Deck Plugs as the BOD. 2.Any spray foam insulation that is exposed to the interior of the building is required to have the Intumescent coating to meet the building code.	11/6/2024	SLAM		Closed	11/6/2024
355	SLAM	3B/A131	11/1/24	Plan View 3B/A131 Custodial 2095 calls out tag T23. Spec 10 2800 does not call out tag T23. Please clarify what this accessory. Is T23 the Owner furnished Dilution and Dispensing System?	Yes it is. Per Drawing A701, accessory type T23 is a cleaning chemical dispenser. It is included in 10 2800 at 2.8-A, without the T23 tag. It’s noted there as OFCI.	11/5/2024	SLAM		Closed	11/6/2024
356	SLAM	10 2800	11/1/24	Spec 10 2800 Para 2.5E tags mirrors T4. Enlarged Toilet Plans A130 (and similar) tag the mirrors as T5. Please clarify the difference.	All the individual framed lavatory mirrors are tagged as T4, in alignment with Section 10 2800. T5 is intended designation for unframed, wall-to-wall mirror glass at multi-sink counters.	11/5/2024	SLAM		Closed	11/6/2024
357	Turner	11 4000	11/1/24	Please confirm the Food Service Package is providing the following items noted on FS001 and specified in Spec 114000, because the General Trade package is responsible for these items outside of the Kitchen: a.Fire Extinguisher, Items #36a b.Roll Down Shutter, Item #86	Spec 11 4000 is an exclusive spec to the Food Service subcontractor (BP #30). All items specified therein shall be furnished & installed by the Food Service Subcontractor.	11/6/2024	Turner		Closed	11/6/2024
358	SLAM	11 3013	11/1/24	Spec 11 3013 Para 2.1H calls outs the Cooking Exhaust as EQ14. Drawing A912 has E14 as laser printer, which is OFOI. Please clarify the Cooking Exhaust EQ number. Is the Cooking Exhaust EQ number intended to be EQ10.	Range hoods at student stations are EQ03. EQ10 is only at the Instructor station above the island mounted EQ09 range.	11/5/2024	SLAM		Closed	11/6/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
359	Turner	11 5400	11/1/24	Spec 11 5400 Para 2.3 – please confirm the following: a.BP 21 Drywall & General Trades will furnish and deliver the Kiln Exhaust Vent Kit ONLY b.BP 37 HVAC & Controls will install ALL Kiln Exhaust Vent Kit c.BP 37 HVAC & Controls will provide other necessary materials	General Trades (BP #21) shall furnish (including all accessories & kits) & install the kiln. The HVAC subcontractor (BP #37) shall receive and install all necessary components to connect the kiln to proper exhaust. The HVAC subcontractor shall provide all ductowork necessary not included with the vent kit. The electrician (BP #38) shall furnish and install all electrical circuits and make final power connections.	11/6/2024	Turner		Closed	11/6/2024
360	SLAM	11 5400	11/1/24	Spec 11 5400 Para 2.2A8a - Are you sure the Dynatrol controller is intended? We do not know of many who want the old Dynatrol controller. L&L has made changes so that "All Easy-Fire Kilns include Genesis Touchscreen Multi-Zone Control" now. Please clarify the intended controller.	Provide the standard Genesis Touchscreen Control in lieu of the Dynatrol controller. Spec section to be updated accordingly in Addendum #6	11/6/2024	SLAM		Closed	11/7/2024
361	SLAM	11 5400	11/1/24	Spec 11 5400 does not include a furniture kit. Please provide a spec for the intended furniture kit, because the kiln has little value without a kit.	Provide furniture kit #H-E-K23T/3H by L&L Kilns per Addendum #6 spec updates.	11/6/2024	SLAM		Closed	11/7/2024
362	SLAM	11 5400	11/1/24	1. Spec 11 5410 Para 2.2A refer to Equipment Labels EC01-EC13. Equipment Drawing A912 lists EC12 and EC13 and EC14 as Owner Furnish/Owner install (OFOI). Please confirm EC12 and EC13 and EC 14 are all OFOI. 2. Spec 11 5410 Para 2.2A refer to Equipment Labels EC01-EC13. 3. Equipment Drawing A912 lists EC10 as Contractor Furnish/Contractor install (CFCI). Drawing A912 provide the product spec. a.Please confirm EC10 is CFCI. b.Turner – if CFCI, please clarify which BP will provide EC10. c.Turner – if CFCI, please confirm BP 37 HVAC & Controls willprovide all venting for EC10.	1. E12-E14 will be modified in Addendum #6 on A912 to be Owner Furnished/Contractor Installed. 2. 2.2A should read "EC01-EC14" 3. Confirming EC10 in Contractor Furnish/Contractor install by the General Trades subcontractor (BP #21). The HVAC subcontractor (BP #37) shall furnish and install all necessary components to connect the kiln to proper exhaust. The electrician (BP #38) shall furnish and install all electrical circuits and make final power connections.	11/6/2024	SLAM		Closed	11/6/2024
363	SLAM	11 5400	11/1/24	Spec 11 5410 calls for submittals, quality assurance, warranty, adjusting, cleaning, closeout, training, etc. that are typically associated with furnishing the materials. Since the Owner is furnishing all this equipment, please confirm BP21 is ONLY installing and has no responsibility for these other portions of the spec.	This portion of this spec will be required for EC-10 and its associated venting. For the rest of the EC items, this portion of the spec will only apply to the connection required to make the Owner Furnished equipment functional. Ensuring the Contractor Installation side of the effort is done correctly as these spec requirements are not exclusive to furnishing the equipment.	11/6/2024	SLAM		Closed	11/6/2024
364	SLAM	11 5400	11/1/24	Spec 11 7300 Para 2.1B and 2.1D both refer to Equipment Label EH01. Please confirm Para 2.1B is Equipment Label EH04 to match Equipment Drawing A912.	The sharps (or biohazard) container should be EH04.	11/5/2024	SLAM		Closed	11/7/2024
365	Turner	A641	11/1/24	Detail 1B/A641 and similar conditions – please confirm that BP11 Masonry will provide the metal sill flashing … to match the stone.	BP 11 (Mason) to provide metal sills / through wall flashing for locations where masonry occurs, (to match stone).	11/6/2024	CC/Turner		Closed	11/7/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
366	SLAM	A641	11/1/24	Detail 1D/A641and similar conditions – there are two notes pointing at what seems to be same piece of metal. The first is the manufacturer provide FCP flashing … and the second is the metal trim fabrication from 1/8" bent metal alum plate… a.Can this detail be clarified further to define the two pieces? b.Turner – please confirm that the manufacturer provide FCP flashing… is by BP21. c.Turner – please confirm that the metal trim fabrication from 1/8" bent metal alum plate… is by BP19.	**Slam Response (11/07/24):** A. The Manufacturer Flashing is Typically a "Z" Shape see 1C/A641, the arrow is pointing at the cut "Z" which is now an "L" sitting on top of the projected bent aluminum flashing which fastens to the Z-Furring and PT blocking. The Bent Aluminum is a longer, projected piece, right below the cut "Z" which fastens back at the window head blocking. **Turner Responses (11/07/24):** B. Yes BP 21 to provide Manufacturer FCP Flashing as indicated on drawings. C. – Yes 1/8" bent metal alum. Plate to be provided by BP 19 Glass and Glazing.	11/7/2024	SLAM		Closed	11/7/2024
367	Turner	A641	11/1/24	Detail 1D/A641 and similar conditions – there are multiple caulk joints in the detail. The two concealed, inbound are assumed to be provided by BP19. Please confirm that BP 19 also provide the exposed "perimeter joint sealant" between the aluminum head and the AVB/wood. Detail 1E/A641 and similar conditions – there are multiple caulk joints in the detail. The two concealed, inbound are assumed to be provided by BP19. Please clarify which BP (19 or 21) is to provide the exposed "perimeter joint sealant" between the aluminum head and the FCP.	Caulk joints similar to 1D and 1E that are adjacent to Curtain Wall systems to be provided BP 19.	11/6/2024	CC/Turner		Closed	11/7/2024
368	Turner	A641	11/1/24	Detail 2F/A641 and similar sill conditions – please confirm that BP 19 Glass, Glazing & Metal Panels will provide the typical aluminum 1/8" plate sill…	BP 19 to provide 1/8" aluminum sill at sills of Storefront/Curtain walls	11/6/2024	CC/Turner		Closed	11/7/2024
369	Turner	07 2726	11/1/24	07 2726 Fluid-Applied Membrane Air Barrier (shared) is assigned to both BP 21 and BP11. BP11 Scope Item #46 says to provide all AVB including at FCP (fiber cement panel). a.Please confirm that BP 11 is providing the AVB at all the FCP. b.What is the "shared" scope for BP21?	Masonry (BP #11) shall furnish & install all AVB, including behind FCP areas (Reference BQ #359 & BQ #216).	11/7/2024	CC/Turner		Closed	11/7/2024
370	Turner	Scope Item	11/1/24	BP 21 Item #76 (regarding overhead coiling doors) – please confirm that the Electrical BP will provide the line voltage power, and BP 21 is only responsible for low voltage control wiring.	Confirmed	11/6/2024	CC/Turner		Closed	11/7/2024
371	SLAM	08 3326	11/1/24	Spec 08 3326 Para 2.2A calls for stainless steel grilles. A611 Door Schedule calls for aluminum OH2 1085A, 1085C & OH3 1086C. Please clarify the intended material.	As scheduled, these are intended to be Aluminum, spec section 08 3326 has been revised in Addendum 6.	11/7/2024	SLAM		Closed	11/7/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
372	SLAM	MEP Series	11/1/24	1. Please confirm that the intent is to run mechanical systems through the roof joists and not below them at the Gymnasium and Auditorium. 2. If the mechanical systems need to run through roof joists but cannot be supported from the metal roof deck directly, please advise on the intent for supporting these systems. How should supplemental unistrut supports be attached to the roof joists? Please provide a typical detail showing the intent. 3. Please confirm that the roof joist openings and cross braces have been fully coordinated with the ductwork and other mechanical systems (including insulation) to ensure that they will fit through the joists.	1. Confirmed. 2. Standard unistrut style connection to top cords of the roof joists. 3. The project has been coordinated.	11/4/2024	SLAM		Closed	11/7/2024
373	SLAM	27 1000	11/1/24	Spec section 27 1000-7 2.04 B-2 references plenum rated category 6A, Print T000 references category 6A shielded cable for AP's and category 6 for data and voice. Please confirm cable type for each?	AP's shall have Cat6A shielded cable and 6A 8P8C shielded jacks. Voice & Data shall have Category 6 cable and Category 6 8P8C jacks. All cabling shall be plenum rated.	11/5/2024	DA		Closed	11/6/2024
374	SLAM	27 1000	11/1/24	Spec Section 27 1000-8 F.1. Patch cords are mentioned but not lengths and quantities. Can this be provided?	Patch cords, other than patch cords to connect cameras to jacks in the field (refer to TY000) and patch cords specified on the TA drawings, are not required and will be Owner furnished.	11/5/2024	DA		Closed	11/6/2024
375	SLAM	27 6010	11/1/24	Will a design be provided or is the Low Voltage subcontractor (BP #39) providing a design to be approved?	Low voltage sub-contractor to submit design for approval by engineer based on specification 27 6010 and detail 4/E502.	11/6/2024	CES		Closed	11/6/2024
376	Turner	EY Series	11/1/24	Does the Fire Alarm trade perform the ties into the paging system?	The electrical & fire alarm subcontractor (BP #38) shall furnish & install all fire alarm devices / modules and make all tie-ins & final connections to systems required to be monitored or integrated with the fire alarm system. The low voltage subcontracotr (BP #39) must coordinate with the electrician for making these tie-ins.	11/7/2024	Turner		Closed	11/7/2024
377	Langan	01 2201	11/1/24	The bid asks for unit pricing for selective items; however, no quantities were provided. Can quantities be provided for the following materials: Ceiling/Deck Caulking Compound – Miscellaneous Material (Located at Ceilings/Deck Panels and Metal Beams/Columns) (Adjacent Materials/Substrates are Contaminated) (Assumed PCB Bulk Product Waste > 50 ppm also)	Unit pricing needs to be filled out by each bidder (42 of them). The contractor is required to assume full containments throughout the entire building per the specifications. This material is sporadic throughtout and impossible to quantify without performing ceiling, wall, selective demolition throughout the entire building first. Contractor owns all of the material throughout the second floor and needs to fill out unit pricing in case it is also found hidden on the lower floor.	11/5/2024	Langan		Closed	11/7/2024
378	Langan	01 2201	11/1/24	The bid asks for unit pricing for selective items; however, no quantities were provided. Can quantities be provided for the following materials: Interior Window Glazing Compounds – Miscellaneous Materials (Adjacent Materials/Substrates are Contaminated) (Assumed PCB Bulk Product Waste > 50 ppm also)	Unit pricing needs to be filled out by each bidder (42 of them). The locations of this material is listed clearly in the specifications and contractor can see them clearly at site. Unit pricing to be filled out in case additional locations are identified.	11/5/2024	Langan		Closed	11/7/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
379	Langan	01 2201	11/1/24	The bid asks for unit pricing for selective items; however, no quantities were provided. Can quantities be provided for the following materials: Interior Wall/Wall and Wall/Column Caulking Compounds – Miscellaneous Materials (Multiple Layers/Types of Materials and Adjacent Materials/Substrates are Contaminated) (Assumed PCB Bulk Product Waste > 50 ppm also)	Unit pricing needs to be filled out by each bidder (42 of them). The contractor is required to assume full containments throughout the entire building per the specifications. This material is sporadic throughtout and impossible to quantify without performing ceiling, wall, selective demolition throughout the entire building first. Contractor owns all of the material throughout the building and locations are listed in specifications.	11/5/2024	Langan		Closed	11/7/2024
380	Langan	01 2201	11/1/24	The bid asks for unit pricing for selective items; however, no quantities were provided. Can quantities be provided for the following materials: Interior/Exterior Window/Wall/Column/Window Walls/Door Caulking and Glazing Compounds – Miscellaneous Materials (Multiple Layers/Types of Materials and Adjacent Materials/Substrates are Contaminated) (Assumed PCB Bulk Product Waste > 50 ppm also)	Unit pricing needs to be filled out by each bidder (42 of them). The contractor is required to assume full containments throughout the entire building and exterior ground protection per the specifications. Contractor owns several line items that have locations/quantities listed in specs and all the perimeter walls/window walls and the materials are visible at the site.	11/5/2024	Langan		Closed	11/7/2024
381	Langan	01 2201	11/1/24	The bid asks for unit pricing for selective items; however, no quantities were provided. Can quantities be provided for the following materials: Exterior Wall/Wall Expansion and Column Caulking Compounds – Miscellaneous Materials (Multiple Layers/Types of Materials and Adjacent Materials/Substrates are Contaminated) (Assumed PCB Bulk Product Waste > 50 ppm also) Roofing Penetration Flashing Materials (Tar on Wood – Bottom Layer) – Miscellaneous Material (Adjacent Materials/Substrates are Contaminated)	Unit pricing needs to be filled out by each bidder (42 of them). The exterior wall/wall expansion/column sealant compounds, contractor can see them clearly at site. The contractor shall assume all roof penetration flashing is asbestos (quantity cant be determined until select demolition occurs). Contractor owns all the material.	11/5/2024	Langan		Closed	11/7/2024
382	Langan	01 2300	11/1/24	How should the lump sums be broken down for Alternates 10 and 11? Do the alternates assume all painted material will be characterized the same for each alternate, when in reality the material could be a mix of PCBs less than and greater than 50ppm?	Normally paint results are consistent and will fall into less than 1ppm, less than 50 ppm or greater than 50 ppm. Bidding alternates should be assuming all the paint will be characterized the same.	11/5/2024	Langan		Closed	11/7/2024
383	Langan	01 2201	11/1/24	Please confirm that during exterior abatement the exterior of the existing building requires two layers of 10-mil poly and one layer of plywood twenty feet out from the building. Is its expected that we will provide the same level of protection around the building in alternates 10 and 11?	The poly and plywood is required for removing exterior asbestos and assumed PCB containing materials. It is not required for the building demolition debris in alternates 10 and 11	11/5/2024	Langan		Closed	11/7/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
384	Langan	Project Manual	11/1/24	In the Additional Provisions/Scope of Work, under the paragraph for Insurance, items 6 & 7, Item 6 calls out for bid packages excluded from the CCIP to provide minimum insurance of $5,000,000 for General Liability, $2,000,000 for Employers Liability, $2,000,000 for Disease Limit, $2,000,000 Disease-Policy Limit and $2,000,000 for Automobile Liability. Any subcontractor performing Structural Demolition to include $20,000,000.00 for General Liability limit. Item 7 calls out for a Pollution Liability insurance limit of $5,000,000 per occurrence and $10,000,000 aggregate. These policy limits are more than what is typically required on State of Connecticut demolition and abatement projects. Most SBE/MBE/WBE subcontractors required to meet CHRO inclusion requirements will not have this kind of coverage. Will bidders be required to meet these insurance rates?	Limits are in line with the requirements of the Town of Greenwich for the project and are to be maintained accordingly.	11/1/2024	JP/Turner		Closed	11/1/2024
385	Langan	Abatement	11/1/24	Will pre-waste disposal testing for hazardous materials of demolished materials be allowed by contractor if consultant or owner elect to assume paints, caulks, and glazing as PCB?	The sealant compounds are asbestos and assumed PCB bulk product waste and must be disposed of as such (will NOT be tested). The painted building materials will be tested by the consultant to see if they contain > 50 ppm PCB, < 50 ppm PCB or less than 1 ppm PCB. Should the contractor be required by the hauler/landfill to perform PCB TCLP sampling, that would need to be discussed first before testing occurs	11/5/2024	Langan		Closed	11/7/2024
386	Langan	Abatement	11/1/24	What role will the consultant have in determining the waste categorization for removed building debris?	See answer in BQ#385	11/5/2024	Langan		Closed	11/7/2024
387	Langan	Abatement	11/1/24	The alternate pricing for disposal as >50 PCB and <50PCB only address paint to be tested, are we to assume that testing will be performed?	See answer in BQ#385	11/5/2024	Langan		Closed	11/7/2024
388	Langan	Abatement	11/1/24	The PCB spec bullet points out suspect assumed materials to contain PCBs. With these materials, primarily caulk and glazing, be tested prior to demolition by the consultant?	See answer in BQ#385	11/5/2024	Langan		Closed	11/7/2024
389	SLAM	12 6613	11/1/24	See attached Substitution request for Telescoping Bleachers	Rejected	11/7/2024	SLAM	yes - substitution request	Closed	11/7/2024
390	SLAM	12 6100	11/1/24	See attached Substitution request for Fixed Seating	Rejected	11/7/2024	SLAM	yes - substitution request	Closed	11/7/2024
391	SLAM	A901B	11/1/24	Per the drawings there is RB4 listed in the fitness room, but not listed on the finish schedule. Please advise what flooring type RB4 is intended to be?	The RB in the Fittness room should be RB2 in lieu of RB4	11/5/2024	SLAM		Closed	11/6/2024
392	SLAM	A910	11/1/24	Please confirm with architect the 'Vented Wall Base' RB2 which is to be installed in the gym/auditorium is not manufactured by Burke/Mannington (confirmed with Rep)	BOD Vented Base manufacturer should be Johnsonite/Tarkette	11/5/2024	SLAM		Closed	11/6/2024
393	CES	M102B	11/1/24	Is the 32" and 26" round duct in the Gymnasium on Drawing M102B single wall, double wall or lined?	Ducts shall be double wall insulated round ductwork	11/5/2024	CES		Closed	11/6/2024
394	Turner	A530	11/1/24	Is Detail 4E on Drawing A530 required on this project for the roof curb mounted RTU's and DOA's? If so, what bid packages are responsible for the insulation and gypsum board inside the curb?	Yes, Detail 4E on Drawing A530 is required on this project. Bi Package #15 - Roofing shall furnish and install the insulation and gypsum board within/under the equipment curbs.	11/4/2024	BL/Turner		Closed	11/4/2024

BQ #	Responsible Consultant	Reference	Date	Question	Answer	Date Item Responded	Answered By (Name / Company)	Attachment (SK# or Spec Section)	Status ("Closed")	Date Closed
395	SLAM	S200 Series	11/1/24	Please provide typical foundation wall penetration details for items such as mechanical piping, conduit, etc. including but not limited to mechanical requirements (i.e. link seals or simialr).	See 5B/A501, 6/M501, and 3/S200 for typical detail	11/5/2024	SLAM		Closed	11/6/2024
396	Turner	Scope Item	11/1/24	Please clarify where to find scope item #13 b, d, f & g for the concrete flatwork scope of work .	Scope item #13: b. should be omitted from Concrete Flatwork Scope as the concrete beneath the spectator benches is with the Landscaper per exclusive spec. 11 6833 Athletic field equipment, d. The concrete utility pads are all pads shown outside the building footprint namely the chillers, the generator and the transformer as shown on drawings included but not limited too L201C, A101A, M101A, EP101A & S101A , detail 18 on S200. f & g. The concrete edge and drain on the warning track in detail 1A on L601 is by BP#9 Sitework	11/5/2024	PM/Turner		Closed	11/7/2024

RFI 77 ATTACHMENT

SUBSTITUTION REQUEST
(During the Bidding/Negotiating Phase)

PROJECT: Greenwich Central Middle School

SUBSTITUTION REQUEST NUMBER:

FROM:

TO:

DATE: November 01, 2024

A/E PROJECT NUMBER: State Project No: 057-0114 N

RE:

CONTRACT FOR:

SPECIFICATION TITLE: 06 4100 - Architectural Wood Casework **DESCRIPTION:** Self-Close Door and Drawer Damper

SECTION: 2.9 **PAGE:** 496 **ARTICLE/PARAGRAPH:** J.

PROPOSED SUBSTITUTION: Tiomos Grade 1 Soft Close European Hinge

MANUFACTURER: Grass **ADDRESS:** 1202 NC Hwy 66S Kernersville, NC 27284 **PHONE:** 1-800-334-3512

TRADE NAME: Architectural Millwork **MODEL NO.:** GRT160FSCD

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.
Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:
- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

SUBMITTED BY:

SIGNED BY:

FIRM:

ADDRESS:

TELEPHONE:

A/E's REVIEW AND RECOMMENDATION:

- [x] Approve Substitution—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
- [ ] Approve Substitution as noted—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
- [ ] Reject Substitution—Use specified materials.
- [ ] Substitution Request received too late—Use specified materials.

SIGNED BY: Stephen Martocchio **DATE:** 11/6/2024

SUPPORTING DATA ATTACHED: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐

CSI Form 1.5C (August 2020 version)

RFI 77 ATTACHMENT

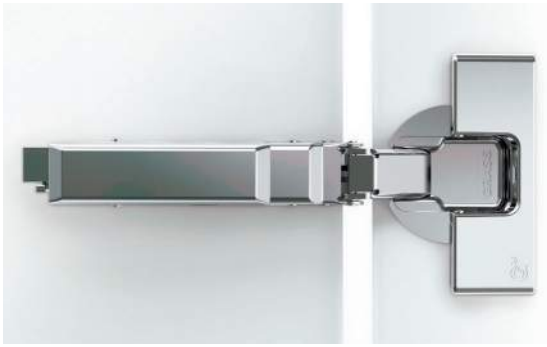


TIOMOS

G*GRASS®

TIOMOS HINGE SYSTEM

Integrated Soft-close, stylish design, maximum stability.
The best possible hinge solution for cabinet doors.



RFI 77 ATTACHMENT



RFI 77 ATTACHMENT



Tiomos, an elegant hinge system today that meets the technical and functional requirements of tomorrow.

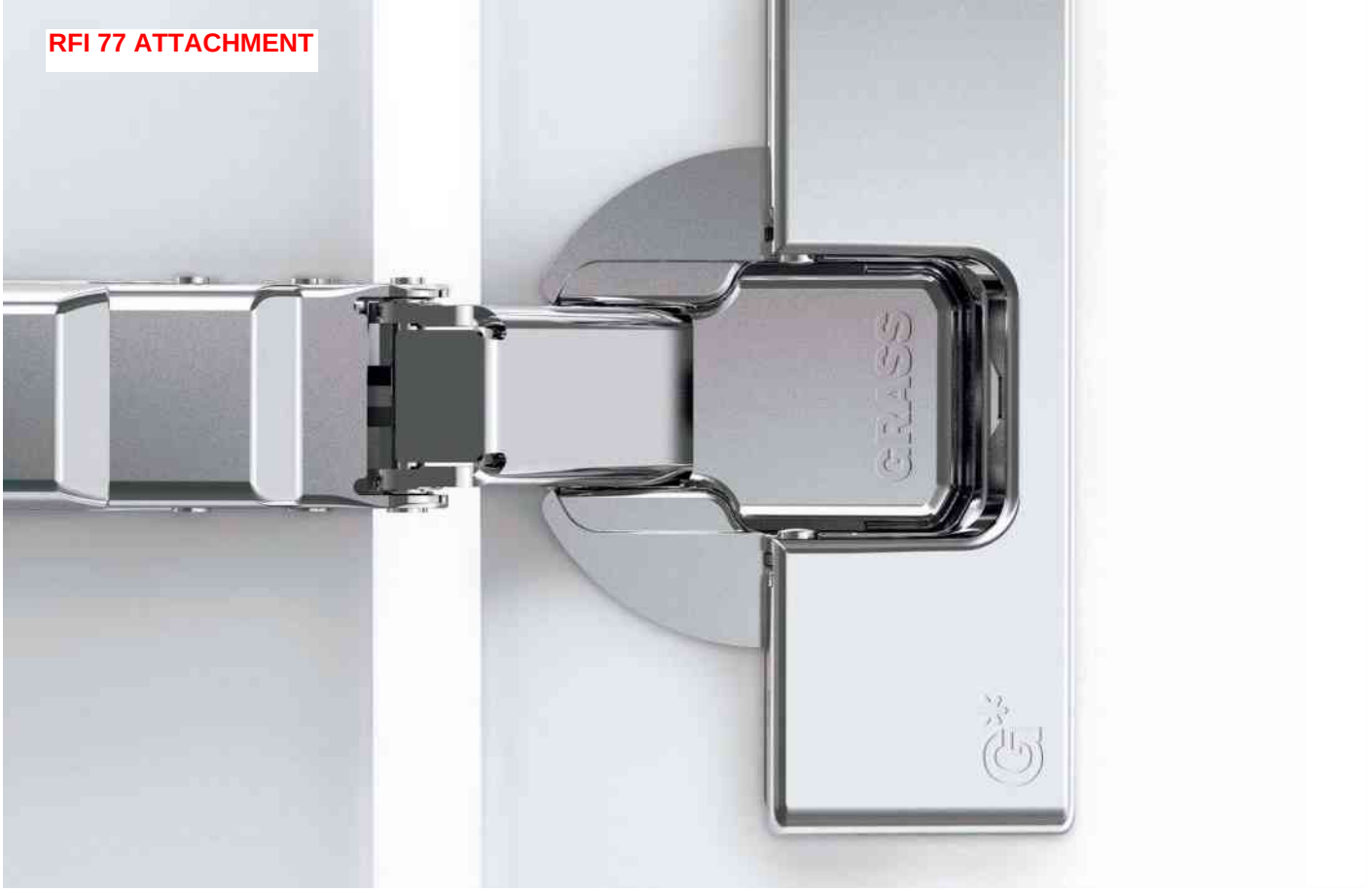


Our developers set out to create a completely new hinge system. The result is Tiomos. Not only does Tiomos outperform any other hinge in the industry, it offers a timeless design as well as its own individual character.

The product range covers virtually every application, from standard doors to wide angle doors, from frameless applications to face frame applications. The Tiomos offers two closing actions: the standard Self-close and the popular Soft-close. The Soft-close offers a three tier adjustable mechanism, which is fully integrated and concealed in the hinge arm. The Soft-close mechanism remains active through the duration of the close, resulting in an extremely smooth action. With the superb engineering and design, size and weight of the door will not be a factor. The doors pull open with ease and minimal gaps can be achieved due to the design of the hinge.

Tiomos - the ideal solution to the ever increasing requirements of today's manufacturers.

RFI 77 ATTACHMENT



Tiomos - One hinge system to cover all applications.

Meet Tiomos, an evolutionary hinge system that offers the best possible movement for cabinet doors.

Tiomos provides perfect movement for essentially every application, from standard doors to wide angle doors, from diagonal corner hinges to pie-cut corner hinges, and from frameless applications to face frame applications. Tiomos is available in a 45mm or 42mm boring pattern for dowelled hinges and 45mm for screw-on hinges. The Tiomos Impresso, the ever popular tool-free version, is available in a combined 42/45mm pattern.



TIOMOS HINGE SYSTEM

One hinge system featuring a multitude of innovative aspects.



Soft-close technology is concealed within the hinge arm.

Three levels of closing pressure are available with the Tiomos adjustable Soft-close mechanism, which is fully integrated and concealed in the hinge arm. The hinges arrive with the adjustment lever in the horizontal position. A turn to the left or the right will adjust the Soft-close mechanism to your individual requirements.



For stronger damping action, turn the adjustment lever by 90° to the right.



Perfect alignment with a twist of the hand.

For fine adjustment, the Tiomos hinge system offers 3-dimensional adjustment. Depth adjustment (+3/-2mm) is based on the worm screw principle and is continuous and self-locking. Depending on the type of base plate chosen, height adjustment (± 2mm) can be achieved via a worm screw or through elongated holes (± 2.5mm). Side adjustment (± 2mm) is on the hinge arm.



Tiomos hinges leave the factory with the adjustment lever in the horizontal position.



The kinematics inside Tiomos.

The complex inner workings of this high-tech hinge are hidden from view, but they are most impressive when working as one. With the kinematics in place the doors are extremely easy to open. This mechanism makes alignment with the smallest of gaps and reveals possible, opening up new possibilities to cabinet designers.

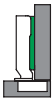
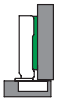
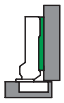
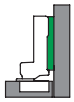
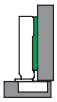
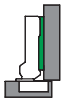
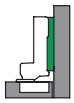
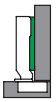
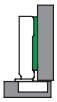
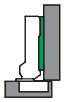
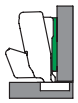
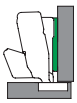
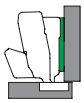
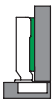
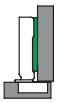
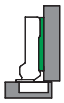
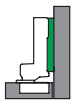
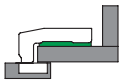
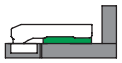
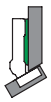
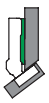
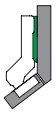
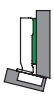
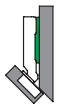


For a gentler closing action, the adjustment lever of the Soft-close damper is turned to the left by 90°.

RFI 77 ATTACHMENT

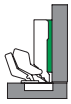
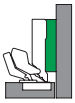
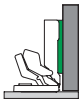
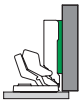
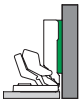
Tiomos

Table of Content

Opening Angle		Description	Full Overlay	Overlay	Half Overlay	Inset	Page
		Features and Benefits					8
		Technical Information					10
110°		**Tiomos 110** • Optimal reveals up to 24mm door thickness • Convenient depth adjustment via worm screw					16
110°		**Tiomos 110 Tipmatic Plus** • Push to open for handle-free doors • Works with Grass Tipmatic Pin system					17
120°		**Tiomos 120** • Optimal reveals up to 24mm door thickness • Convenient depth adjustment via worm screw					20
155°		**Tiomos 155** • Optimal reveals up to 32mm door thickness • Zero protrusion • For cabinets with inset drawers or pull-out shelves					22
95°		**Tiomos 95** • Optimal reveals up to 36mm door thickness • Convenient depth adjustment via worm screw					26
110°		**Tiomos 110/90** • Hinge for blind corner cabinets • Convenient depth adjustment via worm screw					28
110°		**Tiomos 110/30A** • For 30° angled cabinets, overlay • Convenient depth adjustment via worm screw					30
110°		**Tiomos 110/45A** • For 45° angled cabinets, overlay • Convenient depth adjustment via worm gear					32
110°		**Tiomos 110/45E** • For 45° angled cabinets, inset • Convenient depth adjustment via worm screw			Corner Angle 		34
120°		**Tiomos 120/-15A** • For -15° angled cabinets, overlay • Convenient depth adjustment via worm screw					36
120°		**Tiomos 120/-45A** • For -45° angled cabinets, overlay • Convenient depth adjustment via worm screw					38
110°		**Tiomos PCC** • For pie-cut corner application • Convenient depth adjustment via worm screw					40

RFI 77 ATTACHMENT

Table of Content

Opening Angle		Description	Full Overlay	Overlay	Half Overlay	Inset	Page
110°		**Tiomos M9** • For door thicknesses from 12mm (15/32") to 28mm (1 1/8") • Convenient depth adjustment via worm screw					42
125°		**Tiomos M0** • For door thickness from 6mm (1/4") to 10mm (3/8") • Convenient depth adjustment via worm screw					46
		**Tiomos Base Plates** • Wing base plates • Straight base plates • Face frame base plates					48
		**Tipmatic** • For use with Grass Tipmatic Plus • For handle-free wooden doors					52
90°		**Tiomos Flap Hinge** • For fold down flap • For Flap thickness up to 21mm (13/16") • Overlay up to 19mm (3/4")					54
		**Accessories**					56
		**Machinery** • Grass PRO1 for 45mm boring					61

RFI 77 ATTACHMENT

Features and Benefits

Tiomos

Features



- Adjustable 3-tier Soft-close mechanism integrated and concealed in the hinge arm
- Continuous, smooth closing action from the degree that the Soft-close is activated until the door is completely closed
- Uniform closing action regardless of the door size, weight, or materials
- Soft-close mechanism can be adjusted easily and without tools, even after doors are installed
- Wide selection of hinges and specialty hinges cover all application needs
- Increased applications:
  - Full overlay from 24 - 13.5mm
  - Overlay from 19 - 11.5mm
  - Half Overlay from 12.5 - 5mm
  - Inset

Integrated damper adjustment
with 3 Soft-close settings. Adjustment system is concealed in the hinge arm.

Depth adjustment (+3/-2mm)
is smooth and self-locking via worm screw.

Easy height adjustment (± 2mm)
via hinge arm on baseplate

Side adjustment (±2mm)
with overturn stop

Ergonomic clip
release with audible locking





3 Soft-close settings
adjust to meet your individual Soft-close requirements.



Height adjustment
is based on the worm screw principle that is continuous and self-locking.

Features

- One hinge type for all door thicknesses up to 24mm
- 3-dimensional adjustment with suitable base plate
  - Depth adjustment +3/-2mm via self-locking worm screw
  - Height adjustment +/-2mm on base plate via hinge arm
  - Side adjustment with overturn stop +/-2 via hinge arm
- Soft-close or Self-close hinges are available
- For face frame or frameless applications
- Impresso for tool-free application
- 42mm and 45mm boring patterns



Impresso Hinges
for tool-free application
Insertion instructions on page 14.

Improved Kinematic
reduces opening force and minimizes reveals.



Tiomos Styles
42mm pattern, Dowelled
45mm pattern, Screw-on and Dowelled
42/45mm pattern, Impresso

Cup depth
12.6mm (1/2")



Dowelled and Screw-on
cup attachments. Dowelled available in both 42mm and 45mm patterns. Screw-on available in 45mm pattern.



RFI 77 ATTACHMENT

Technical information

For Tiomos

Number of Hinges Per Door

The number of hinges is determined by the door height, door weight, quality of the door material, and the fixing of the cup and base plate.

The load and height data refer to 24" standard door widths.

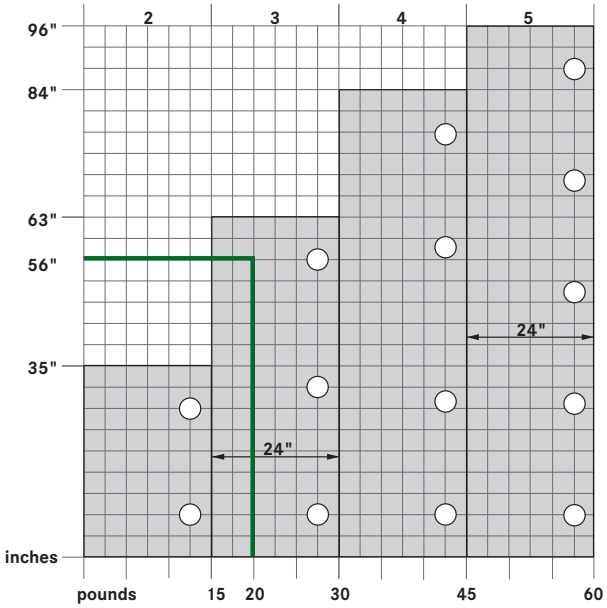
The table refers to hinges with and without integrated dampers.
Grass strongly recommends a trial mount for all hinges and base plates.

Attach base plates using all available screw holes.

Example:
For doors measuring 56" x 24" and weighing 19 lb, Grass recommends the installation of 3 hinges.

Note: The distance between the top and bottom hinge must be greater than the width of the door.

The **Tiomos** hinge meets and exceeds the minimum requirements of ANSI/BHMA A156.9 Standard.



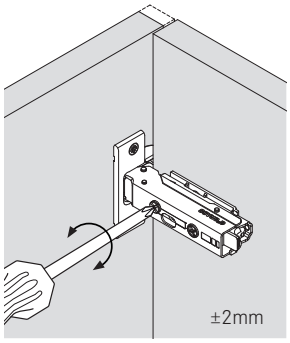
Adjustments

The options for height adjustment depend on the type of base plate. All adjustments can be made independent of one another.

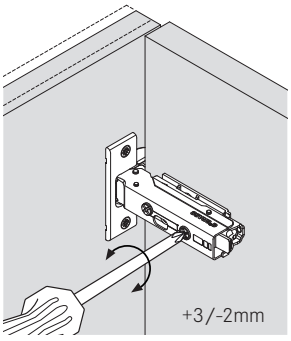
For depth adjustment, select base plates have worm screw adjustment access through the hinge arm.

Use a #2 POZI drive screwdriver for hinge adjustments.

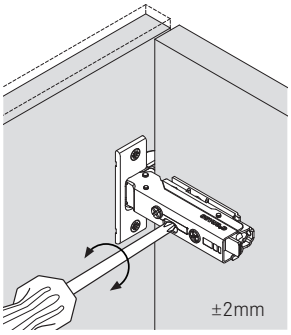
Attach base plates using all available screw holes.



Side adjustment



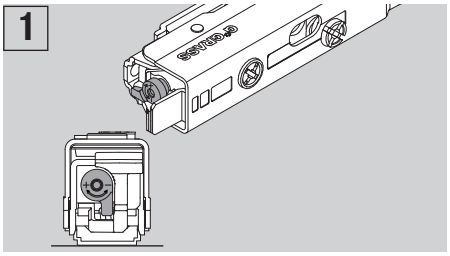
Depth adjustment
via worm screw



Height adjustment
via base plate

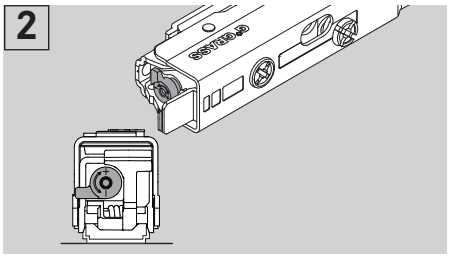
Tool-free Soft-close Adjustment

Soft-closing performance can be regulated for any door size and weight with the Tiomos adjustable integrated Soft-close.
Depending upon the requirement, the Soft-close settings can be adjusted easily and without tools. With 2 hinges there are 6 Soft-close settings.



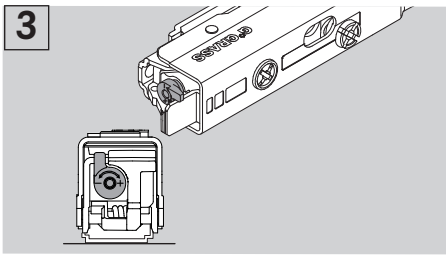
Light setting
Adjustment lever points toward the cabinet wall

Appropriate for:
- Small, light doors



Medium setting (factory setting)
Adjustment lever is parallel to the cabinet wall.
This setting covers 80% of door applications.

Appropriate for:
- Standard doors

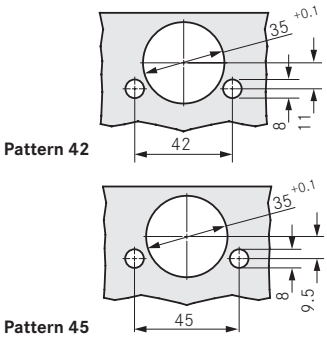


Strong setting
Adjustment lever points toward the cabinet interior

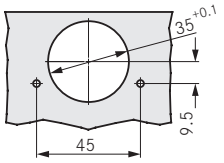
Appropriate for:
- Large, heavy doors

Tiomos Drilling Patterns

Dowelled



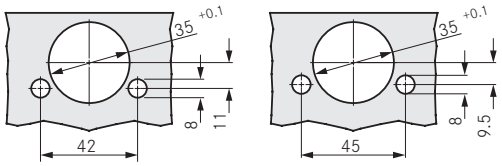
Screw-on



Tiomos Impresso Drilling Patterns

Impresso 42/45 hinges accommodate cup drilling patterns of both 42mm and 45mm.

Pattern 42 and 45

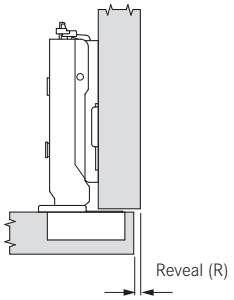


Reveal

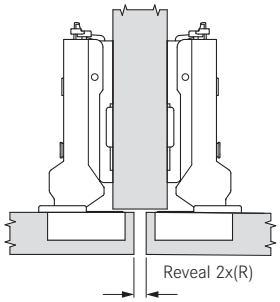
The reveal (R) is the distance required between two doors or between the door and side wall of the cabinet to allow sufficient space for opening the door. The required reveal width (R) depends on the thickness of the door.

Most cabinet makers prefer a reveal (R) of between 3mm and 6mm.

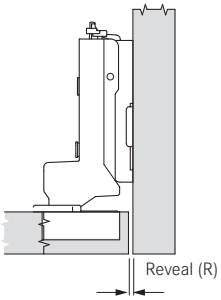
Full Overlay Door



Half Overlay Door



Inset Door



Reveal for Full Overlay, Overlay, and Half Overlay Doors

The table shows the reveal necessary between two doors or between door and side wall to allow enough space for opening the door.

Example:
For a door thickness of 19mm and a drilling distance of 6mm, a reveal of 0.9mm is needed.

Door thickness (DT) \ Drilling Distance (DD)	3	4	5	6	7
24	2.4	2.1	2.1	2.1	2.0
21	1.6	1.6	1.6	1.5	1.5
21	1.4	1.3	1.3	1.3	1.3
20	1.1	1.1	1.1	1.5	1.1
19	0.9	0.9	0.9	0.9	0.9
18	0.7	0.7	0.7	0.7	0.7
17	0.6	0.6	0.6	0.6	0.6
16	0.6	0.6	0.6	0.6	0.6
	Reveal min. (R)				

Reveal for Inset Door

The table shows the minimum reveal for an inset door, depending on the drilling distance and base plate height.

Example: A drilling distance of 6mm results from using a base plate with height 03 in a reveal of 1mm.

Minimum Reveal (R) \ Drilling Distance (DD)	3	4	5	6	7
0		0		2	3
.5					3.5
1	0		2	3	
1.5				3.5	
2		2	3		
3	2	3			
4	3				
	Base Plate Height (BPH)				

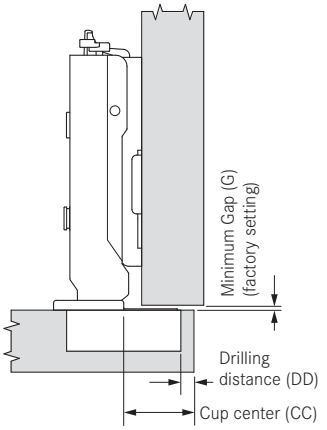
Note:
Reveal dimensions were determined with a door edge radius of 1mm. Hinge dimensions and calculation of gap with factory setting.

IMPORTANT

To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

Minimum Gap

The Minimum Gap (G) is the gap between the closed door and the front of the cabinet.



Drilling Distance

Drilling Distance (DD)		Cup Center (CC)	
1/8"	3	13/16"	20.5
5/32"	4	27/32"	21.5
3/16"	5	7/8"	22.5
1/4"	6	15/16"	23.5
9/32"	7	31/32"	24.5
5/16"	8	1"	25.5

The Drilling Distance (DD) is the distance between the edge of the door and the edge of the cup hole.

The Cup Center (CC) is the distance of the cup drilling distance plus 1/2 of the cup diameter.

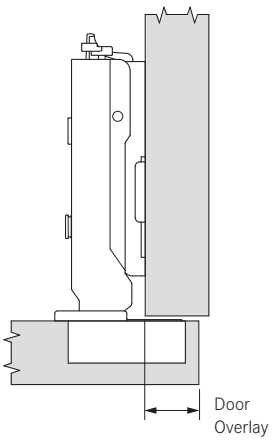
Example:
For a door thickness (DT) of 17mm and a drilling distance (DD) of 6mm a minimum gap of 1mm is needed.

Door Thickness (DT) \ Drilling Distance (DD)	3	4	5	6	7
24	1.0	1.0	1.0	1.2	2.1
22	1.0	1.0	1.0	1.0	1.5
21	1.0	1.0	1.0	1.0	1.2
20	1.0	1.0	1.0	1.0	1.0
19	1.0	1.0	1.0	1.0	1.0
18	1.0	1.0	1.0	1.0	1.0
17	1.0	1.0	1.0	1.0	1.0
16	1.0	1.0	1.0	1.0	1.0

Minimum Gap (G)

Door Overlay

The door overlay is the part of the cabinet side wall or face frame that is covered by the door on the hinge side.



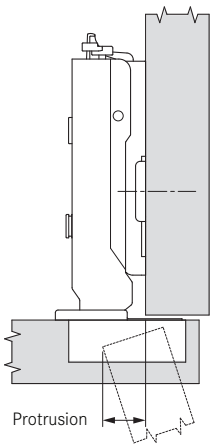
Example:
For a hinge with a cranking of 03, a base plate height (BPH) of 2mm, and a drilling distance (DD) of 4mm, the door overlay is 14mm.

Door Overlay \ Drilling Distance (DD)	3	4	5	6	7
19					0
18				0	
17			0		2
16.5					
16		0		2	3
1.5					3.5
15	0		2	3	
14.5				3.5	
14		2	3		
13.5			3.5		
13	2	3			
12.5		3.5			
12	3				
11.5	3.5				

Base Plate Height (BPH)

Door Edge Protrusion

The door edge protrusion is the amount by which the edge of the open door protrudes into the opening and varies depending on the type of hinge and method of fixing. It is stated on the respective catalog page and refers to the stated base plate for the factory setting. It can be changed by changing the height of the base plate and adjusting the lateral adjustment.

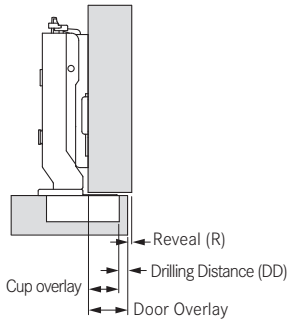


Door Positions

Achieve overlay with hinge cranking

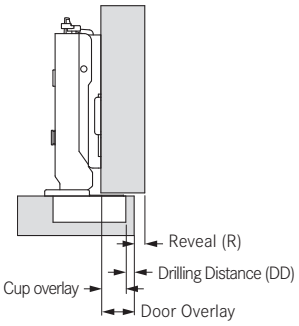
Full Overlay (Cranking 00)

The cup overlay (factory setting) plus drilling distance determines the door overlay. Dimensions can be found in a table on the respective page of the catalog.



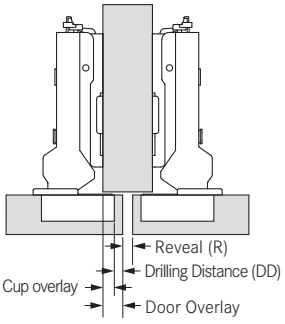
Overlay (Cranking 03)

The cup overlay (factory setting) plus drilling distance determines the door overlay. Dimensions can be found in a table on the respective page of the catalog.



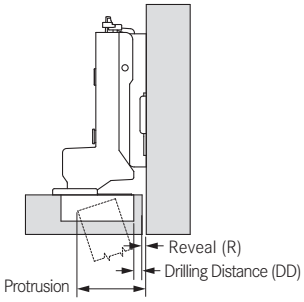
Half Overlay (Cranking 9.5)

The cup overlay (factory setting) plus drilling distance determines the door overlay. Dimensions can be found in a table on the respective page of the catalog.



Inset (Cranking 19)

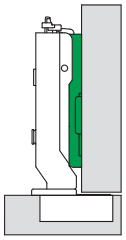
There is no door overlay. The reveal between the side of the cabinet and the door depends on the base plate height (BPH) and the drilling distance (DD). Dimensions can be found in a table on the respective page of the catalog.



Achieve overlay with base plate

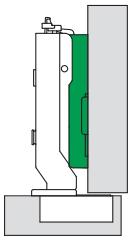
Full Overlay

Using a hinge with a cranking of 00 and a base plate height (BPH) 00



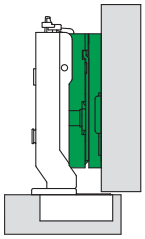
Overlay

Using a hinge with a cranking of 00 and a base plate height (BPH) 03



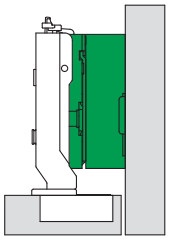
Half Overlay

Using a hinge with a cranking of 00 and a base plate height (BPH) 9.5



Inset

Using a hinge with a cranking of 00 and a base plate height (BPH) 21



RFI 77 ATTACHMENT

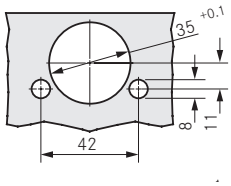
Insertion instructions

Tiomos Impresso

Tiomos Impresso



The Tiomos Impresso is a high quality, performance hinge with superior strength. For the best results for cup insertion into a door, please follow the guide shown below.



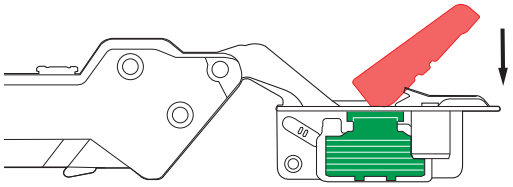
IMPORTANT

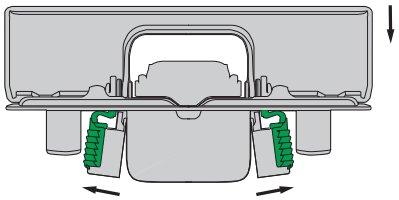
Cup bore hole diameter must be within 35mm - 35.1mm range.

Instructions for Impresso Insertion

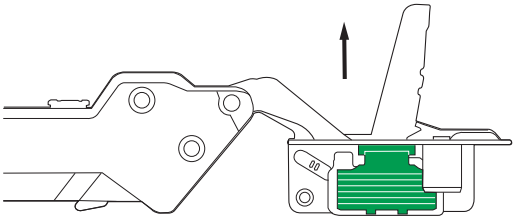
Begin with hinge in the open position and not mounted on door.

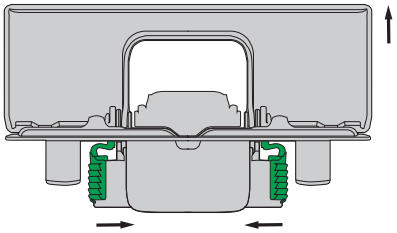
If the hinge cup flap is partially closed due to shipping and handling, lift flap to upright position before inserting into door as illustrated.



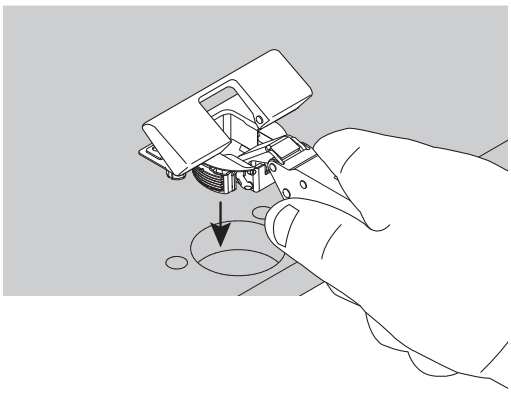


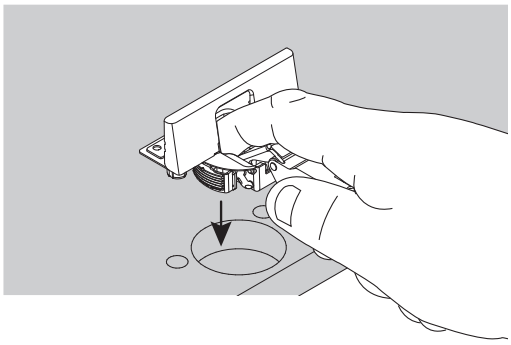
Ensure that expanding green brackets are in loose/neutral position before inserting into door.





For fast and easy insertion, use index finger to push cup into door.





Testing information

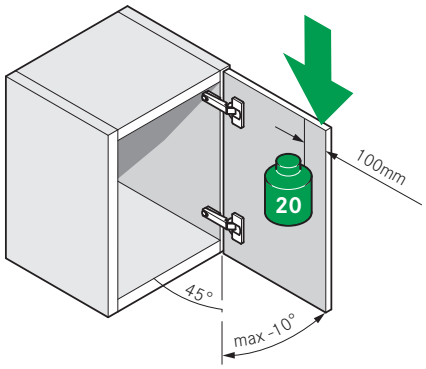
Tiomos

Functional Test

Static Load - vertical

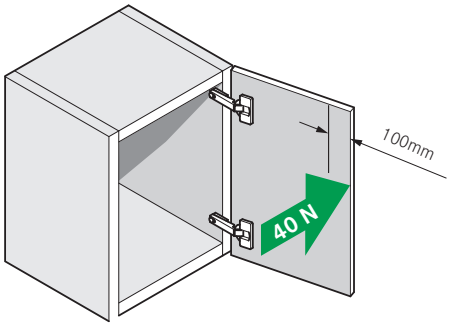
Additional load: 44 lb (20 kg)

Opening angle: max -10°



Static Load - horizontal

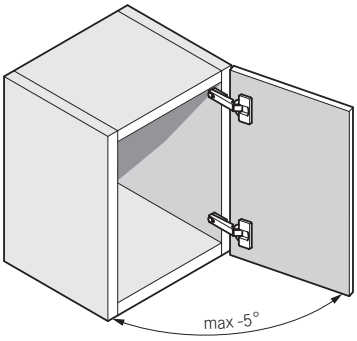
Force: 40 N



Endurance Test

Opening angle: max -5°

Open and close movements: 100,000

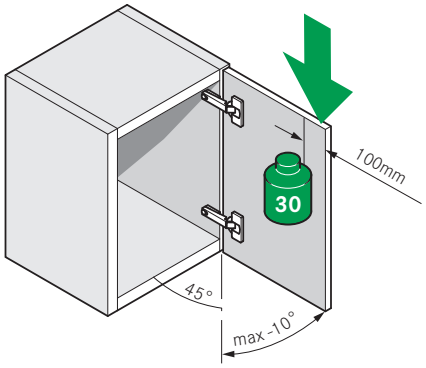


Overload Testing

Vertical

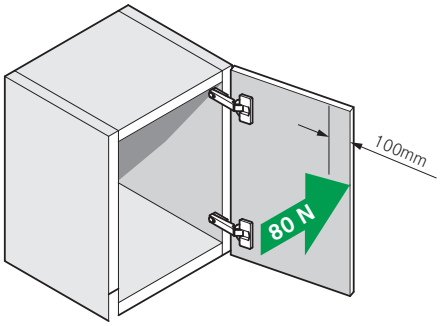
Additional load: 66 lb (30 kg)

Opening angle: max -10°



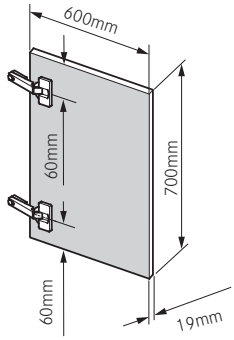
Horizontal

Force: 80 N



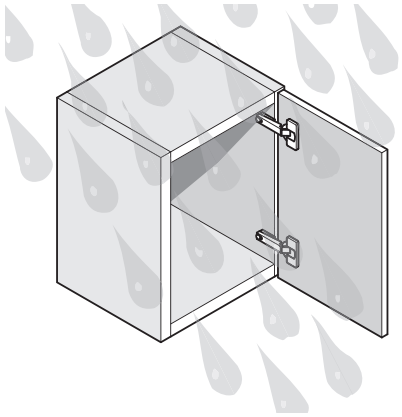
Test Door

Weight approximately 11.5 lb (5.2 kg)



Salt Spray and Humidity Test

Based on DIN ISO 9227 and DIN 6270-2



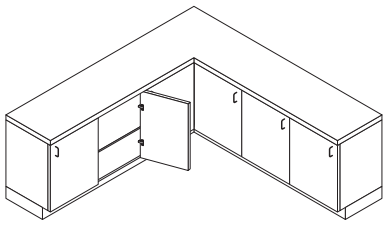
RFI 77 ATTACHMENT

Tiomos 110

110° hinge for standard doors

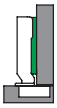
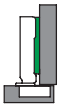
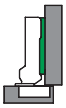
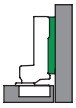


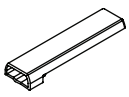
- 3-dimensional adjustment with suitable base plate
- Accommodates overlays up to 24mm (15/16")
- Optimal reveal up to 24mm door thickness
- Soft-close or Self-close hinges available
- For face frame or frameless cabinets
- Convenient depth adjustment with worm screw



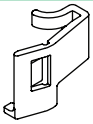




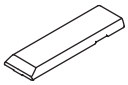
Tiomos 110 Opening Angle 110°		Impresso				Screw-On	Dowelled	
Full Overlay	**Cranking 00**	**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated Hinge arm: steel, nickel-plated	42/45	Soft-close	**F017**139**414**228	150	45	Soft-close	**F028**138**519**228	**F028**138**523**228	150
		42/45	Self-close	**F034**139**385**228	150	45	Self-close	**F045**138**457**228	**F045**138**461**228	150
						42	Soft-close	-	**F028**138**341**228	150
						42	Self-close	-	**F045**138**279**228	150
Overlay	**Cranking 03**	**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated Hinge arm: steel, nickel-plated	42/45	Soft-close	**F017**139**415**228	150	45	Soft-close	**F028**138**520**228	**F028**138**524**228	150
		42/45	Self-close	**F034**139**386**228	150	45	Self-close	**F045**138**458**228	**F045**138**462**228	150
		42/45	Free-swing	**F035**139**443**228	150	42	Soft-close	-	**F028**138**342**228	150
						42	Self-close	-	**F045**138**280**228	150
Half Overlay	**Cranking 9.5**	**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated Hinge arm: zinc, nickel-plated	42/45	Soft-close	**F017**139**416**228	150	45	Soft-close	**F028**138**521**228	**F028**138**525**228	150
		42/45	Self-close	**F034**139**387**228	150	45	Self-close	**F045**138**459**228	**F045**138**463**228	150
		42/45	Free-swing	**F035**139**444**228	150	42	Soft-close	-	**F028**138**343**228	150
						42	Self-close	-	**F045**138**281**228	150
Inset	**Cranking 19**	**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated Hinge arm: zinc, nickel-plated	42/45	Soft-close	**F017**139**417**228	150	45	Soft-close	**F028**138**522**228	**F028**138**526**228	150
		42/45	Self-close	**F034**139**388**217	50	45	Self-close	**F045**138**460**228	**F045**138**464**228	150
						42	Soft-close	-	**F028**138**344**217	50
						42	Self-close	-	**F045**138**282**228	150

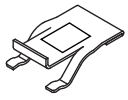
Cover Cap with Clip Protector	Item No.	PU
 Plastic, black	**F072**140**504**247	1000

For installation see page 57

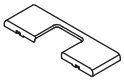
Hinge Clip Protector	Item No.	PU
 Plastic, grey	**F072**135**807**540	500

For installation see page 57

Cover Caps	Item No.	PU
 Steel, nickel-plated	**F072**135**500**247	1000

Opening Angle Reduction Clip to 85°	Item No.	PU
 Steel, nickel	**F072**135**751**517	50

For installation see page 56

Hinge Cup Cover Cap	Item No.	PU
 Steel, nickel-plated	**F072**135**503**228	150

Wood Screw, Nickel-plated	Item No.	PU
 #6 x 5/8" FHP, NI	81001-43	500

PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.

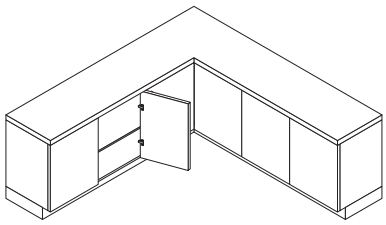
RFI 77 ATTACHMENT

Tiomos 110 Tipmatic Plus

110° hinge for handle free doors

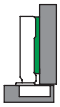


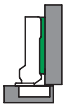
- Integrated spring in hinge arm assists Tipmatic Pin for handle-free door opening
- Extended opening angle
- Works with Tipmatic Pin system (page 54-55)
- 3-dimensional adjustment with suitable base plate
- Compatible with all Tiomos base plates

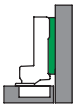


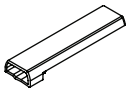


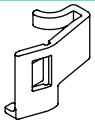
Tiomos 110 Tipmatic Plus Opening Angle 110° — Screw-On

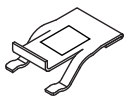
Overlay	Cranking 03	Pattern	Type	Item No.	PU
	Hinge cup: steel, nickel-plated; Hinge arm: steel, nickel-plated	45	TT Plus	**F046**140**360**213	25

Half Overlay	Cranking 9.5	Pattern	Type	Item No.	PU
	Hinge cup: steel, nickel-plated; Hinge arm: zinc, nickel-plated	45	TT Plus	**F046**140**365**213	25

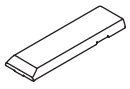
Inset	Cranking 19	Pattern	Type	Item No.	PU
	Hinge cup: steel, nickel-plated; Hinge arm: zinc, nickel-plated	45	TT Plus	**F046**140**366**213	25

Cover Cap with Clip Protector		Item No.	PU
	Plastic, black	**F072**140**504**247	1000
		For installation see page 57	

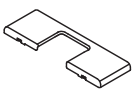
Hinge Clip Protector		Item No.	PU
	Plastic, grey	**F072**135**807**540	500
		For installation see page 57	

Opening Angle Reduction Clip to 85°		Item No.	PU
	Steel, nickel	**F072**135**751**517	50
		For installation see page 56	

Tipmatic Pin	Item No.	PU
	**F069**135**396**513	25

Cover Caps		Item No.	PU
	Steel, nickel-plated	**F072**135**500**247	1000

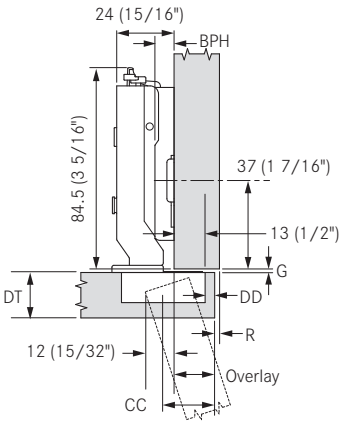
Important Note:
Tiomos Tipmatic Plus works with our recommended Tipmatic Pin. Grass does not accept any liability if a different system other than the recommended system is used. Before the Tipmatic Pin is inserted for gluing, the surface must be thoroughly cleaned and free from grease. Complete Tipmatic Pin System is shown on page 52-53.

Hinge Cup Cover Cap		Item No.	PU
	Steel, nickel-plated	**F072**135**503**228	150

Wood Screw, Nickel-plated		Item No.	PU
	#6 x 5/8" FHP, NI	81001-43	500

PU - Packaging unit

Full Overlay

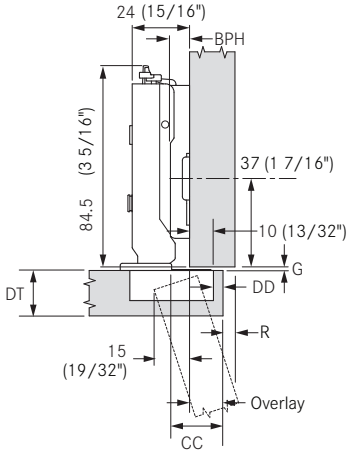


Drawings show Tiomos with a base plate, **(BPH) 02**.

Drilling Distance (DD)

Door Overlay	3	4	5	6	7	
22.0					0	
21.0				0		
20.0			0		2	
19.0		0		2	3	
18.5					3.5	
18.0	0		2	3		
17.5				3.5		
17.0		2	3			
16.5			3.5			
16.0	2	3				
15.5		3.5				
15.0	3					
14.5	3.5					
		Base Plate Height (BPH)				

Overlay



Drawings show Tiomos with a base plate, **(BPH) 02**.

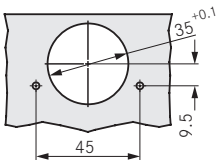
Drilling Distance (DD)

Door Overlay	3	4	5	6	7	
19.0					0	
18.0				0		
17.0			0		2	
16.5						
16.0		0		2	3	
15.5					3.5	
15.0	0		2	3		
14.5				3.5		
14.0		2	3			
13.5			3.5			
13.0	2	3				
12.5		3.5				
12.0	3					
11.5	3.5	Base Plate Height (BPH)				

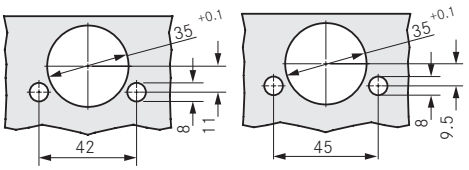
Legend

BPH = Base Plate Height
CC = Center Cup
DD = Drilling Distance
DT = Door Thickness
G = Gap
R = Reveal
X = Base Plate Setback

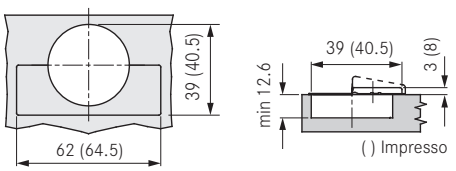
Screw-on



Impresso and Dowelled

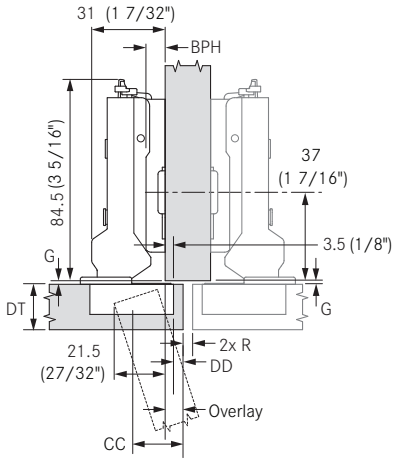


Cup Dimensions



Dimensions in millimeters, fractional inch equivalents as noted.

Half Overlay

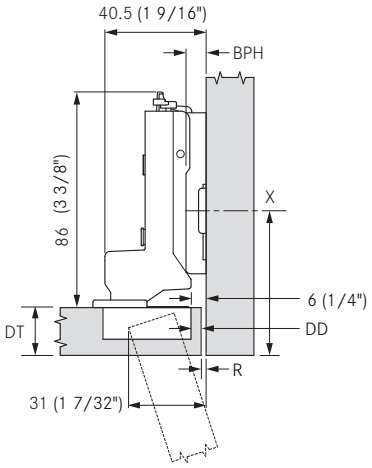


Drawings show Tiomos with a base plate, **(BPH) 02**.

Drilling Distance (DD)

Door Overlay	3	4	5	6	7
12.5					0
11.5				0	
10.5			0		2
10					
9.5		0		2	3
9.0					3.5
8.5	0		2	3	
8.0				3.5	
7.5		2	3		
7.0			3.5		
6.5	2	3			
6.0		3.5			
5.5	3				
5.0	3.5	Base Plate Height (BPH)			

Inset



Drawings show Tiomos with a base plate, **(BPH) 02**.

X= 38.5 + DT

Drilling Distance (DD)

Reveal (R)	*3	4	5	6	7
0.0		0		2	3
0.5					3.5
1.0	0		2	3.5	
1.5				3.5	
2.0		2	3		
3.0	2	3			
4.0	3				
	Base Plate Height (BPH)				

Note: A door stop is needed to prevent overclose.

Minimum Gaps

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7
24	1.0	1.0	1.0	1.2*	2.1*
22	1.0	1.0	1.0	1.0	1.5*
21	1.0	1.0	1.0	1.0	1.2*
20	1.0	1.0	1.0	1.0	1.0
19	1.0	1.0	1.0	1.0	1.0
18	1.0	1.0	1.0	1.0	1.0
17	1.0	1.0	1.0	1.0	1.0
16	1.0	1.0	1.0	1.0	1.0
	Minimum Gap (G)				

The minimum gap is the gap between the closed door and the front of the cabinet.
*Only achievable with 85° angle reduction clip.

Reveal

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7
24	2.4	2.1	2.1	2.1	2.0
22	1.6	1.6	1.6	1.5	1.5
21	1.4	1.3	1.3	1.3	1.3
20	1.1	1.1	1.1	1.1	1.1
19	0.9	0.9	0.9	0.9	0.9
18	0.7	0.7	0.7	0.7	0.7
17	0.6	0.6	0.6	0.6	0.6
16	0.6	0.6	0.6	0.6	0.6
	Reveal (R)				

Note: Reveal dimensions were determined with an edge radius (of the door) of 1mm. Hinge dimensions and reveal calculation based on factory setting.

IMPORTANT

To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

Reveal with 85° Angle Reduction Clip

Drilling Distance (DD)

Door Thickness (DT)	*3	4	5	6	7
36.0	11.1	10.3	9.7	9.1	8.5
30.0	5.4	4.8	4.4	4.3	4.2
28.0	3.7	3.6	3.5	3.4	3.3
26.0	2.9	2.8	2.8	2.7	2.6
24.0	2.2	2.1	2.1	2.1	2.0
22.0	1.6	1.6	1.6	1.5	1.5
21.0	1.4	1.3	1.3	1.3	1.3
20.0	1.1	1.1	1.1	1.1	1.1
19.0	0.9	0.9	0.9	0.9	0.9
18.0	0.7	0.7	0.7	0.7	0.7
16.0	0.6	0.6	0.6	0.6	0.6
	Reveal (R)				

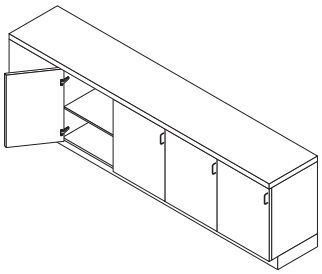
RFI 77 ATTACHMENT

Tiomos 120

120° hinge for standard doors

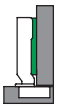
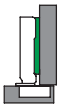
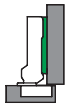


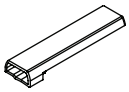
- 3-dimensional adjustment with suitable base plate
- Accommodates overlays up to 24mm (15/16")
- Optimal reveal up to 24mm door thickness
- Soft-close or Self-close hinges available
- For face frame or frameless cabinets
- Convenient depth adjustment with worm screw

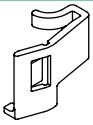


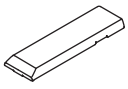


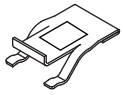


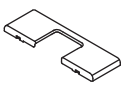
Tiomos 120 Opening Angle 120°		Impresso				Screw-On	Dowelled	
Full Overlay	**Cranking 00**	**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated Hinge arm: steel, nickel-plated	42/45	Soft-close	F017139**428**228	150	45	Soft-close	F028138**547**228	F028138**551**228	150
		42/45	Self-close	F034139**399**228	150	45	Self-close	F045138**485**228	F045138**489**228	150
						42	Soft-close	-	F028138**369**228	150
						42	Self-close	-	F045138**307**228	150
Overlay	**Cranking 03**	**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated Hinge arm: steel, nickel-plated	42/45	Soft-close	F017139**429**228	150	45	Soft-close	F028138**548**228	F028138**552**228	150
		42/45	Self-close	F034139**400**228	150	45	Self-close	F045138**486**228	F045138**490**228	150
						42	Soft-close	-	F028138**370**228	150
						42	Self-close	-	F045138**308**228	150
Half Overlay	**Cranking 9.5**	**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated Hinge arm: zinc, nickel-plated					45	Soft-close	F028138**549**228	F028138**553**228	150
						45	Self-close	F045138**487**228	F045138**491**228	150
						42	Soft-close	-	F028138**371**228	150
						42	Self-close	-	F045138**309**228	150

Cover Cap with Clip Protector	Item No.	PU
 Plastic, black	F072140**504**247	1000
	For installation see page 57	

Hinge Clip Protector	Item No.	PU
 Plastic, grey	F072135**807**540	500
	For installation see page 57	

Cover Caps	Item No.	PU
 Steel, nickel-plated	F072135**500**247	1000

Opening Angle Reduction Clip to 85°	Item No.	PU
 Steel, nickel	F072135**751**517	50
	For installation see page 56	

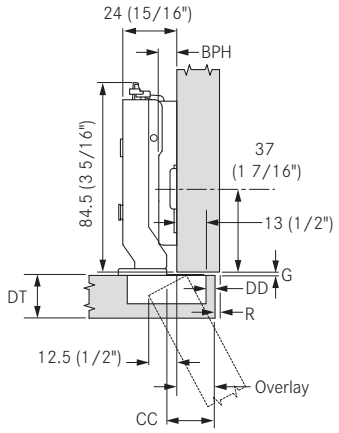
Hinge Cup Cover Cap	Item No.	PU
 Steel, nickel-plated	F072135**503**228	150

Wood Screw, Nickel-plated	Item No.	PU
 #6 x 5/8" FHP, NI	81001-43	500

PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.

Full Overlay

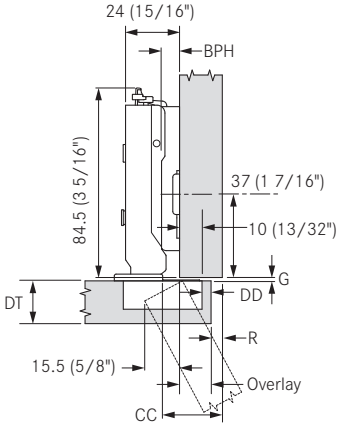


Drawings show Tiomos with a base plate, **(BPH) 02**.

Drilling Distance (DD)

Door Overlay	3	4	5	6	7
22.0					0
21.0				0	
20.0			0		2
19.0		0		2	3
18.5					
18.0	0		2	3	
17.5				3.5	
17.0		2	3		
16.5			3.5		
16.0	2	3			
15.5		3.5			
15.0	3				
14.5	3.5				
Base Plate Height (BPH)					

Overlay

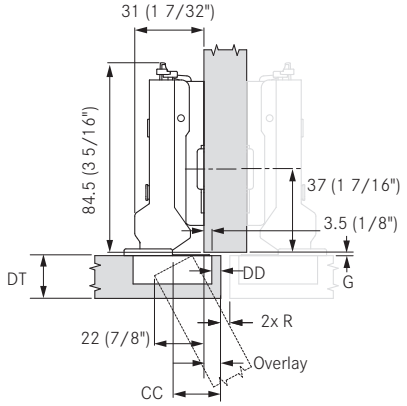


Drawings show Tiomos with a base plate, **(BPH) 02**.

Drilling Distance (DD)

Door Overlay	3	4	5	6	7
19.0					0
18.0				0	
17.0			0		2
16.5					
16.0		0		2	3
15.5					3.5
15.0	0		2	3	
14.5				3.5	
14.0		2	3		
13.5			3.5		
13.0	2	3			
12.5		3.5			
12.0	3				
11.5	3.5	Base Plate Height (BPH)			

Half Overlay



Drawings show Tiomos with a base plate, **(BPH) 02**.

Drilling Distance (DD)

Door Overlay	3	4	5	6	7
12.5					0
11.5				0	
10.5			0		2
10.0					
9.5		0		2	3
9.0					3.5
8.5	0		2	3	
8.0				3.5	
7.5		2	3		
7.0			3.5		
6.5	2	3			
6.0		3.5			
5.5	3				
5.0	3.5	Base Plate Height (BPH)			

Minimum Gaps

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7
24	1.2	2.1	3.0	3.9	4.7
22	1.0	1.1	2.0	2.9	3.8
21	1.0	1.0	1.6	2.4	3.3
20	1.0	1.0	1.1	2.0	2.9
19	1.0	1.0	1.0	1.5	2.4
18	1.0	1.0	1.0	1.0	1.9
17	1.0	1.0	1.0	1.0	1.5
16	1.0	1.0	1.0	1.0	1.0
Minimum Gap (G)					

The minimum gap is the gap between the closed door and the front of the cabinet.

Reveal

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7
24	6.4	5.4	4.4	3.4	2.4
22	3.0	2.0	1.5	1.5	1.5
21	1.4	1.3	1.3	1.3	1.3
20	1.1	1.1	1.1	1.1	1.1
19	0.9	0.9	0.9	0.9	0.9
18	0.7	0.7	0.7	0.7	0.7
17	0.6	0.6	0.6	0.6	0.6
16	0.6	0.6	0.6	0.6	0.6
Reveal (R)					

Note: Reveal dimensions were determined with an edge radius (of the door) of 1mm. Hinge dimensions and reveal calculation based on factory setting.

IMPORTANT

To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

Reveal with 85° Angle Reduction Clip

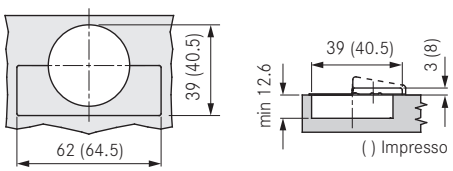
Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7
36.0	11.1	10.3	9.7	9.1	8.5
30.0	5.4	4.8	4.4	4.3	4.2
28.0	3.7	3.6	3.5	3.4	3.3
26.0	2.9	2.8	2.8	2.7	2.6
24.0	2.2	2.1	2.1	2.1	2.0
22.0	1.6	1.6	1.6	1.5	1.5
21.0	1.4	1.3	1.3	1.3	1.3
20.0	1.1	1.1	1.1	1.1	1.1
19.0	0.9	0.9	0.9	0.9	0.9
18.0	0.7	0.7	0.7	0.7	0.7
16.0	0.6	0.6	0.6	0.6	0.6
Reveal (R)					

Legend

BPH = Base Plate Height
CC = Center Cup
DD = Drilling Distance
DT = Door Thickness
G = Gap
R = Reveal
X = Base Plate Setback

Cup Dimensions



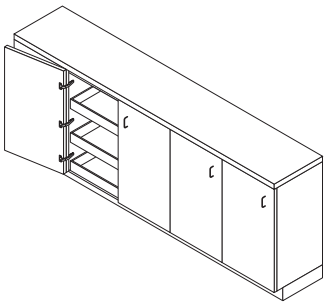
RFI 77 ATTACHMENT

Tiomos 155

155° wide angle hinge



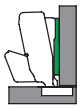
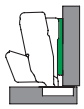
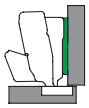
- 3-dimensional adjustment with suitable base plate
- Accommodates overlays up to 23.4mm (15/16")
- Soft-close or Self-close hinges available
- For face frame or frameless cabinets
- Convenient depth adjustment with worm screw
- Zero protrusion when door is opened 90°
- 10mm cup depth
- For door thicknesses up to 32mm (1 1/4")
- Minimal reveal

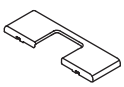


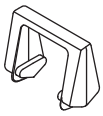






Tiomos 155 Opening Angle 155°		Impresso				Screw-On	Dowelled	
Full Overlay	**Cranking 00**	**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated Hinge arm: steel, nickel-plated	42/45	Soft-close	**F017**139**435**217	50	45	Soft-close	**F028**138**561**217	**F028**138**564**217	50
		42/45	Self-close	**F034**139**406**217	50	45	Self-close	**F045**138**499**217	**F045**138**502**217	50
						42	Self-close	-	**F045**138**320**217	50
Overlay	**Cranking 03**	**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated Hinge arm: steel, nickel-plated	42/45	Soft-close	**F017**139**436**217	50	45	Soft-close	**F028**138**562**217	**F028**138**565**217	50
		42/45	Self-close	**F034**139**407**217	50	45	Self-close	**F045**138**500**217	**F045**138**503**217	50
						42	Soft-close	-	**F028**138**383**217	50
						42	Self-close	-	**F045**138**321**217	50
Half Overlay	**Cranking 9.5**	**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated Hinge arm: zinc, nickel-plated					45	Soft-close	**F028**138**563**217	**F028**138**566**217	50
						42	Self-close	-	**F045**138**322**217	50

Hinge Cup Cover Cap		Item No.	PU
	Steel, nickel-plated	**F072**135**503**228	150

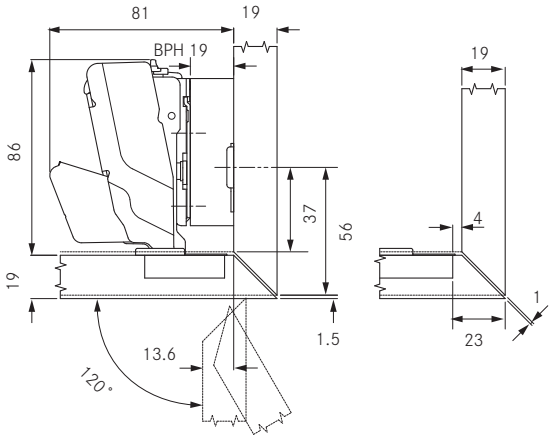
Angle Reduction Clip to 120°		Item No.	PU
	Plastic, black	**F072**135**753**517	50

For installation see page 56

PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.

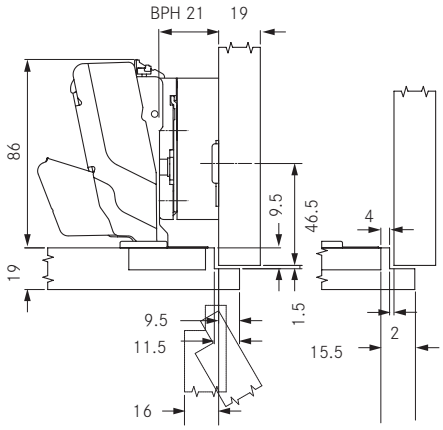
Mitered Corner Application



Use Full overlay hinge (00 Cranking) with 19mm base plate.

Mitered door application is now possible without using the 120° opening angle reduction clip.

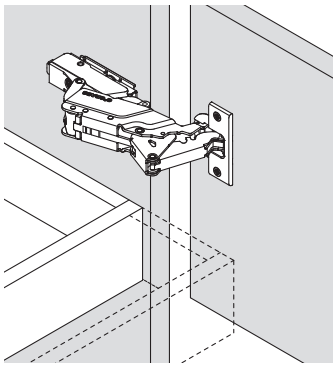
3/8" Lip Door Application



Use Full overlay hinge (00 Cranking) with 21mm base plate.

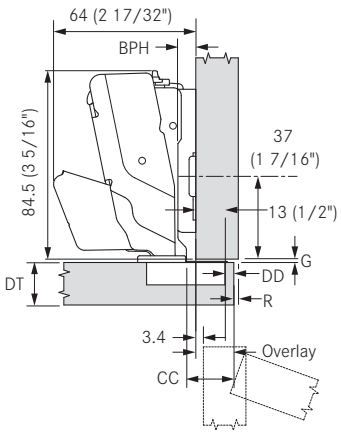
Use 120° opening angle reduction clip. Prevents doors from bumping with the cabinet side in inset applications and mitered corner applications.

Zero Protrusion at 90°



At 0 cranking, and with all mounting plate thicknesses, the door protrudes inwards at 90°. With cranking size 3 and mounting plate height 3mm, the door will be flush with the cabinet.

Full Overlay

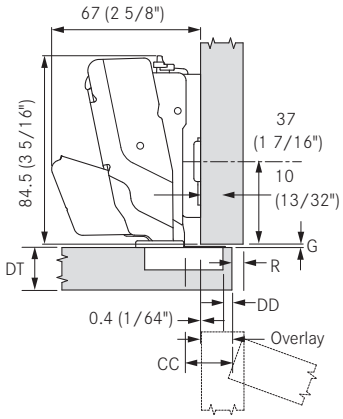


Drawings show Tiomos with a base plate, **(BPH) 02**.

Drilling Distance (DD)

Door Overlay	3	4	5	6	7	8
23.0						0
22.0					0	
21.0				0		2
20.0			0		2	3
19.0		0		2	3	
18.5					3.5	
18.0	0		2	3		
17.5				3.5		
17.0		2	3			
16.5			3.5			
16.0	2	3				
15.5		3.5				
15.0	3					
14.5	3.5					
	Base Plate Height (BPH)					

Overlay



Drawings show Tiomos with a base plate, **(BPH) 02**.

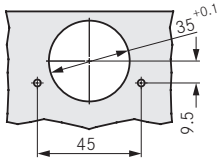
Drilling Distance (DD)

Door Overlay	3	4	5	6	7	8
20.0						0
19.0					0	
18.0				0		2
17.0			0		2	3
16.5						3.5
16.0		0		2	3	
15.5					3.5	
15.0	0		2	3		
14.5				3.5		
14.0		2	3			
13.5			3.5			
13.0	2	3				
12.5		3.5				
12.0	3					
11.5	3.5					
	Base Plate Height (BPH)					

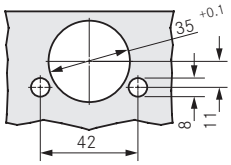
Legend

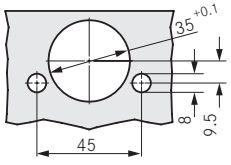
BPH = Base Plate Height
CC = Center Cup
DD = Drilling Distance
DT = Door Thickness
G = Gap
R = Reveal
X = Base Plate Setback

Screw-on

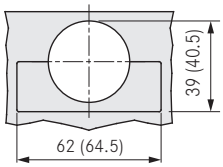


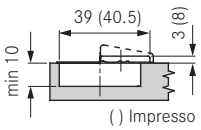
Impresso and Dowelled





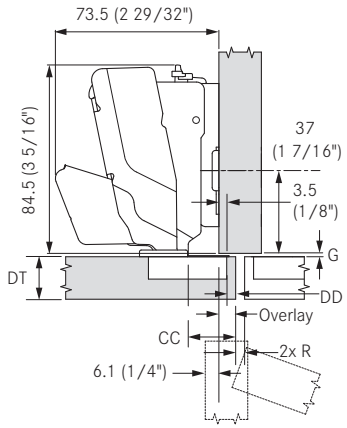
Cup Dimensions





Dimensions in millimeters, fractional inch equivalents as noted.

Half Overlay

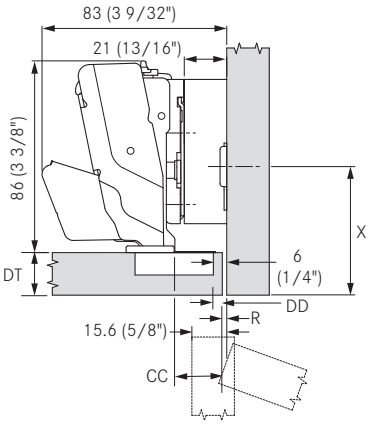


Drawings show Tiomos with a base plate, **(BPH) 02**.

Drilling Distance (DD)

Door Overlay	3	4	5	6	7	8
13.5						0
12.5					0	
11.5				0		2
10.5			0		2	3
10.0						3.5
9.5		0		2	3	
9.0					3.5	
8.5	0		2	3		
8.0				3.5		
7.5		2	3			
7.0			3.5			
6.5	2	3				
6.0		3.5				
5.5	3					
5.0	3.5	Base Plate Height (BPH)				

Inset



Drawings show Tiomos with a cranking 00 hinge & base plate, **(BPH) 21**.
X= 38.5 + DT

Drilling Distance (DD)

Reveal (R)	3	4	5	6
1.0	19		21	
2.0		21		
3.0	21			
	Base Plate Height (BPH)			

Note: A door stop is needed to prevent overclose.

Minimum Gaps

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7	8
32	1.0	1.0				
31	1.0	1.0	1.0			
30	1.0	1.0	1.0			
29	1.0	1.0	1.0	1.0	1.0	1.0
28	1.0	1.0	1.0	1.0	1.0	1.0
26	1.0	1.0	1.0	1.0	1.0	1.0
25	1.0	1.0	1.0	1.0	1.0	1.0
24	1.0	1.0	1.0	1.0	1.0	1.0
22	1.0	1.0	1.0	1.0	1.0	1.0
21	1.0	1.0	1.0	1.0	1.0	1.0
20	1.0	1.0	1.0	1.0	1.0	1.0
18	1.0	1.0	1.0	1.0	1.0	1.0
16	1.0	1.0	1.0	1.0	1.0	1.0
	Minimum Gap (G)					

The minimum gap is the gap between the closed door and the front of the cabinet.

IMPORTANT

To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

Reveal

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7	8
32	0.2*	0.2*				
31	0.2*	0.2*	0.2*	0.2*		
30	0.2*	0.2*	0.2*	0.2*	0.2*	
29	0.2*	0.2*	0.2*	0.2*	0.2*	0.2*
28	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0
	Reveal (R)					

Note: Reveal dimensions were determined with an edge radius (of the door) of 1mm. Hinge dimensions and reveal calculation based on factory setting.

*Only achievable with 120° angle reduction clip.

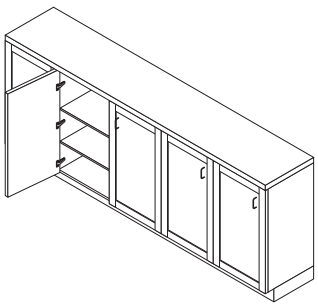
RFI 77 ATTACHMENT

Tiomos 95

95° hinge for thick doors

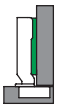
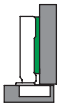
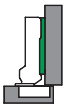
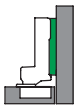


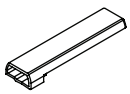
- 3-dimensional adjustment with suitable base plate
- Accommodates overlays up to 24mm (15/16")
- For door thicknesses up to 36mm (1 7/16")
- Soft-close or Self-close hinges available
- For face frame or frameless cabinets
- Convenient depth adjustment with worm screw



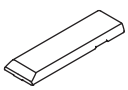


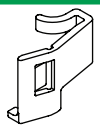


Tiomos 95 Opening Angle 95°		Impresso				Screw-On		Dowelled	
Full Overlay	**Cranking 00**	**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated	42/45	Soft-close	**F017**139**438**217	50	45	Soft-close	**F028**138**567**228	**F028**138**571**228	150
	Hinge arm: steel, nickel-plated	42/45	Self-close	**F034**139**409**228	150	45	Self-close	-	**F045**138**509**228	150
Overlay	**Cranking 03**	**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated	42/45	Soft-close	**F017**139**439**217	50	45	Soft-close	**F028**138**568**228	**F028**138**572**228	150
	Hinge arm: steel, nickel-plated					45	Self-close	**F045**138**506**228	-	150
						42	Self-close	-	**F045**138**328**228	150
Half Overlay	**Cranking 9.5**	**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated	42/45	Soft-close	**F017**139**440**228	150	45	Soft-close	**F028**138**569**228	**F028**138**573**228	150
	Hinge arm: zinc, nickel-plated					45	Self-close	-	**F045**138**511**228	150
Inset	**Cranking 19**	**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated	42/45	Soft-close	**F017**139**441**217	50	45	Soft-close	**F028**138**570**228	**F028**138**574**228	150
	Hinge arm: zinc, nickel-plated	42/45	Self-close	**F034**139**412**228	150	45	Self-close	**F045**138**508**228	-	150

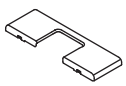
Cover Cap with Clip Protector		Item No.	PU
	Plastic, black	**F072**140**504**247	1000

For installation see page 57

Cover Caps		Item No.	PU
	Steel, nickel-plated	**F072**135**500**247	1000

Hinge Clip Protector		Item No.	PU
	Plastic, grey	**F072**135**807**540	500

For installation see page 57

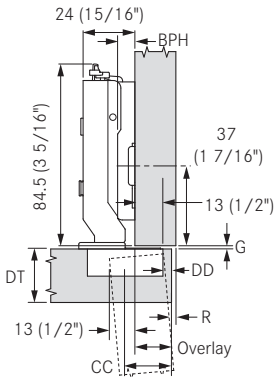
Hinge Cup Cover Cap		Item No.	PU
	Steel, nickel-plated	**F072**135**503**228	150

Wood Screw, Nickel-plated		Item No.	PU
	#6 x 5/8" FHP, NI	81001-43	500

PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.

Full Overlay

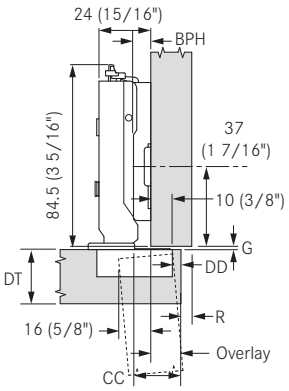


Drawings show Tiomos with a base plate, **(BPH) 02**.

Drilling Distance (DD)

Door Overlay	3	4	5	6	7
22.0					0
21.0				0	
20.0			0		2
19.0		0		2	3
18.5					3.5
18.0	0		2	3	
17.5				3.5	
17.0		2	3		
16.5			3.5		
16.0	2	3			
15.5		3.5			
15.0	3				
14.5	3.5				
		Base Plate Height (BPH)			

Overlay

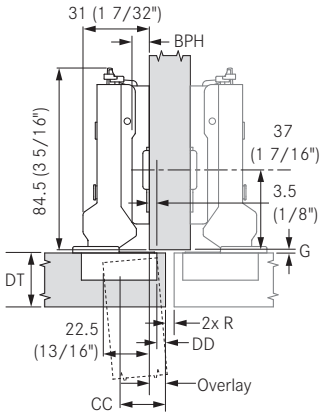


Drawings show Tiomos with a base plate, **(BPH) 02**.

Drilling Distance (DD)

Door Overlay	3	4	5	6	7
19.0					0
18.0				0	
17.0			0		2
16.5					
16.0		0		2	3
15.5					3.5
15.0	0		2	3	
14.5				3.5	
14.0		2	3		
13.5			3.5		
13.0	2	3			
12.5		3.5			
12.0	3				
11.5	3.5				
	Base Plate Height (BPH)				

Half Overlay

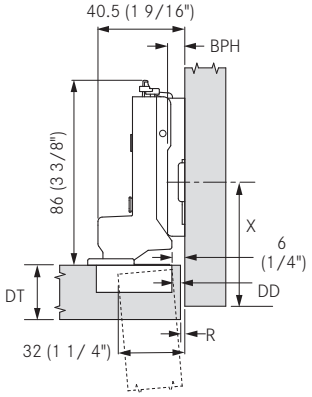


Drawings show Tiomos with a base plate, **(BPH) 02**.

Drilling Distance (DD)

Door Overlay	3	4	5	6	7
12.5					0
11.5				0	
10.5			0		2
10.0					
9.5		0		2	3
9.0					3.5
8.5	0		2	3	
8.0				3.5	
7.5		2	3		
7.0			3.5		
6.5	2	3			
6.0		3.5			
5.5	3				
5.0	3.5	Base Plate Height (BPH)			

Inset



Drawings show Tiomos with a base plate, **(BPH) 02**. X= 38.5 + DT

Drilling Distance (DD)

Reveal (R)	3	4	5	6	7
0.0		0		2	3
0.5					3.5
1.0	0		2	3	
1.5				3.5	
2.0		2	3		
3.0	2	3			
4.0	3				
	Base Plate Height (BPH)				

Note: A door stop is needed to prevent overclose.

Minimum Gaps

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7
36	1.0	1.0	1.0	1.4	2.4
30	1.0	1.0	1.0	1.0	1.9
28	1.0	1.0	1.0	1.0	1.7
26	1.0	1.0	1.0	1.2	1.5
24	1.0	1.0	1.0	1.0	1.4
22	1.0	1.0	1.0	1.0	1.2
20	1.0	1.0	1.0	1.0	1.0
18	1.0	1.0	1.0	1.0	1.0
16	1.0	1.0	1.0	1.0	1.0
	Minimum Gap (G)				

The minimum gap is the gap between the closed door and the front of the cabinet.

Reveal

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7
36	10.6	9.6	8.6	7.6	6.7
34	8.0	7.0	6.5	5.9	6.4
32	6.0	5.0	4.5	3.9	4.4
30	4.5	3.5	2.5	2.5	1.5
28	2.0	1.5	1.5	1.3	1.3
26	1.0	1.0	1.0	1.0	1.0
24	0.6	0.6	0.6	0.6	0.6
22	0.5	0.5	0.5	0.5	0.5
20	0.3	0.3	0.3	0.3	0.3
18	0.2	0.2	0.2	0.2	0.2
16	0.2	0.2	0.2	0.2	0.2
	Reveal (R)				

Note: Reveal dimensions were determined with an edge radius (of the door) of 1mm. Hinge dimensions and reveal calculation based on factory setting.

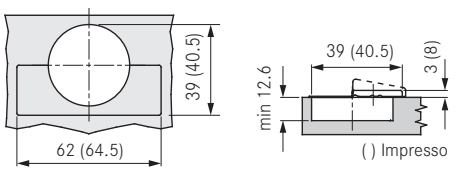
IMPORTANT

To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

Legend

BPH = Base Plate Height
CC = Center Cup
DD = Drilling Distance
DT = Door Thickness
G = Gap
R = Reveal
X = Base Plate Setback

Cup Dimensions



RFI 77 ATTACHMENT

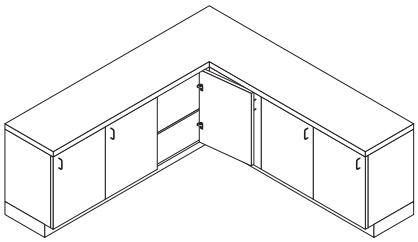
Tiomos 110/90

110° blind corner hinge





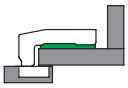
- For blind corner construction
- 110° opening angle
- 3-dimensional adjustment with suitable base plate
- Soft-close or Self-close hinges available
- Convenient depth adjustment with worm screw

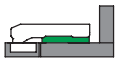


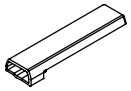




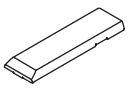


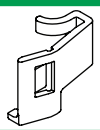
Tiomos 110/90A Opening Angle 110°		Screw-On		Dowelled	
Overlay		**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated Hinge arm: zinc, nickel-plated	45	Soft-close	**F028**138**535**223	**F028**138**545**213	100
		45	Self-close	-	**F045**138**483**223	100

Tiomos 110/90E Opening Angle 110°		Impresso				Screw-On			Dowelled	
Inset		**Pattern**	**Type**	**Item No.**	**PU**	**Pattern**	**Type**	**Item No.**	**Item No.**	**PU**
	Hinge cup: steel, nickel-plated Hinge arm: zinc, nickel-plated	42/45	Soft-close	**F017**139**427**223	100	45	Soft-close	**F028**138**536**223	**F028**138**546**223	100
		42/45	Self-close	-	-	45	Self-close	-	**F045**138**484**223	100
		42/45	Self-close	**F034**139**398**213	25	45	Self-close	**F045**138**474**213	-	25

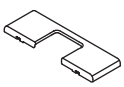
Cover Cap with Clip Protector		Item No.	PU
	Plastic, black	**F072**140**504**247	1000

For installation see page 57

Cover Caps		Item No.	PU
	Steel, nickel-plated	**F072**135**500**247	1000

Hinge Clip Protector		Item No.	PU
	Plastic, grey	**F072**135**807**540	500

For installation see page 57

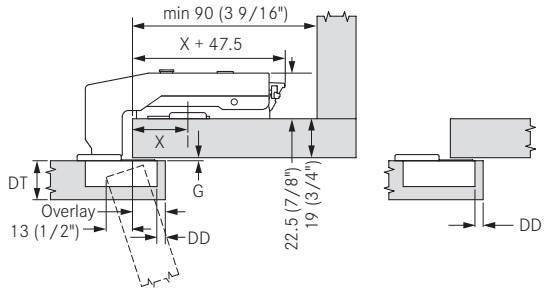
Hinge Cup Cover Cap		Item No.	PU
	Steel, nickel-plated	**F072**135**503**228	150

Wood Screw, Nickel-plated		Item No.	PU
	#6 x 5/8" FHP, NI	81001-43	500

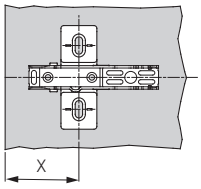
PU - Packaging unit

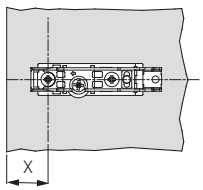
Dimensions in millimeters, fractional inch equivalents as noted.

Overlay



Drawings show Tiomos with a base plate, **(BPH) 00**.





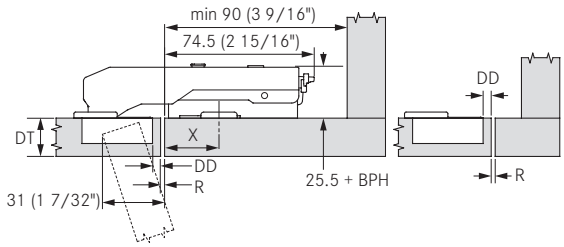
Wing Base Plate Position (X) / Drilling Distance (DD) — Door Overlay

	3	4	5	6	7
30	18	19	20	21	22
29	17	18	19	20	21
28	16	17	18	19	20
27	15	16	17	18	19
26	14	15	16	17	18

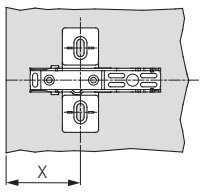
Straight Base Plate Position (X) / Drilling Distance (DD) — Door Overlay

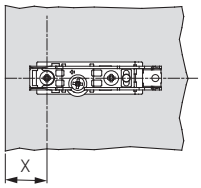
	3	4	5	6	7
13	18	19	20	21	22
12	17	18	19	20	21
11	16	17	18	19	20
10	15	16	17	18	19
9	14	15	16	17	18

Inset



Drawings show Tiomos with a base plate, **(BPH) 03**.





Wing Base Plate Position (X) / Drilling Distance (DD) — Reveal (R)

	3	4	5	6	7
28	2	1	0		
27	3	2	1	0	
26	4	3	2	1	0

Straight Base Plate Position (X) / Drilling Distance (DD) — Reveal (R)

	3	4	5	6	7
11	2	1	0		
10	3	2	1	0	
9	4	3	2	1	0

Minimum Gaps

Door Thickness (DT) / Drilling Distance (DD) — Minimum Gap (G)

	3	4	5	6	7
24	1.0	1.0	1.0	1.2	2.1
22	1.0	1.0	1.0	1.0	1.5
21	1.0	1.0	1.0	1.0	1.2
20	1.0	1.0	1.0	1.0	1.0
19	1.0	1.0	1.0	1.0	1.0
18	1.0	1.0	1.0	1.0	1.0
17	1.0	1.0	1.0	1.0	1.0
16	1.0	1.0	1.0	1.0	1.0

The minimum gap is the gap between the closed door and the front of the cabinet.

IMPORTANT

To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

Reveal

Door Thickness (DT) / Drilling Distance (DD) — Minimum Reveal (R)

	3	4	5	6	7
24	2.4	2.1	2.1	2.1	2.0
22	1.6	1.6	1.6	1.5	1.5
21	1.4	1.3	1.3	1.3	1.3
20	1.1	1.1	1.1	1.1	1.1
19	0.9	0.9	0.9	0.9	0.9
18	0.7	0.7	0.7	0.7	0.7
17	0.6	0.6	0.6	0.6	0.6
16	0.6	0.6	0.6	0.6	0.6

Note: Reveal dimensions were determined with an edge radius (of the door) of 1mm. Hinge dimensions and reveal calculation based on factory setting.

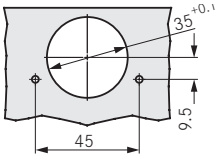
IMPORTANT

To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

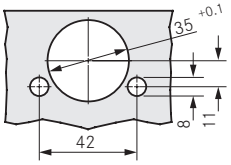
Legend

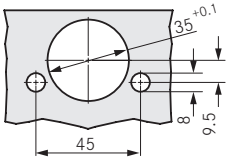
BPH = Base Plate Height
CC = Center Cup
DD = Drilling Distance
DT = Door Thickness
G = Gap
R = Reveal
X = Base Plate Setback

Screw-on

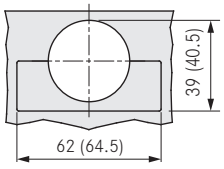


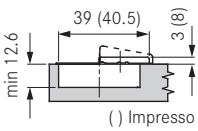
Impresso and Dowelled





Cup Dimensions





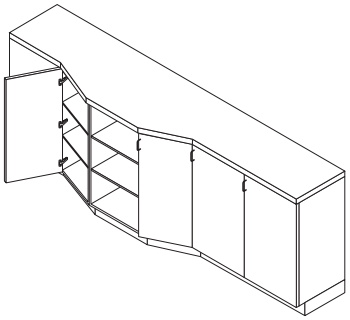
RFI 77 ATTACHMENT

Tiomos 110/30A

+30° angle corner cabinet hinge for overlay doors

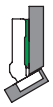


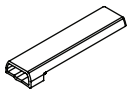
- For 30° angle corner cabinets
- 110° opening angle
- 3-dimensional adjustment with suitable base plate
- Self-close hinges available
- Convenient depth adjustment with worm screw



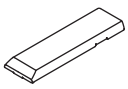


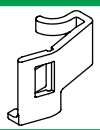
Tiomos 110/30A Opening Angle 110° — Screw-On

Overlay		Pattern	Type	Item No.	PU
	Hinge cup: steel, nickel-plated Hinge arm: zinc, nickel-plated	45	Self-close	**F045**138**467**223	100

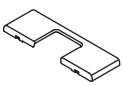
Cover Cap with Clip Protector		Item No.	PU
	Plastic, black	**F072**140**504**247	1000

For installation see page 57

Cover Caps		Item No.	PU
	Steel, nickel-plated	**F072**135**500**247	1000

Hinge Clip Protector		Item No.	PU
	Plastic, grey	**F072**135**807**540	500

For installation see page 57

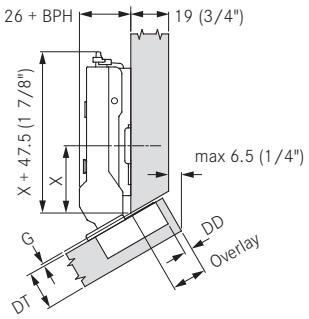
Hinge Cup Cover Cap		Item No.	PU
	Steel, nickel-plated	**F072**135**503**228	150

Wood Screw, Nickel-plated		Item No.	PU
	#6 x 5/8" FHP, NI	81001-43	500

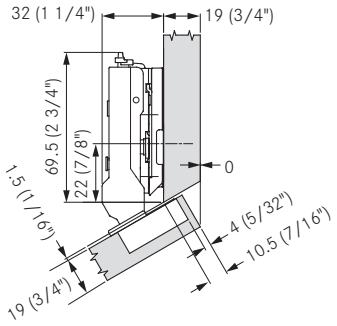
PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.

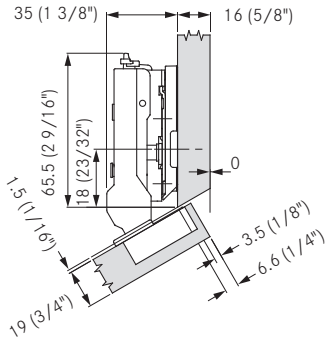
Overlay



Drawings show Tiomos with a base plate, **(BPH) 0**.



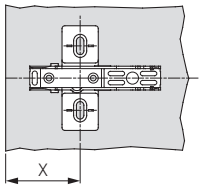
Drawings show Tiomos with a base plate, **(BPH) 6**.



Drawings show Tiomos with a base plate, **(BPH) 9.5**.

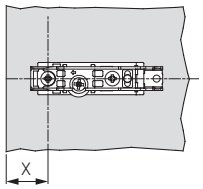
Drilling Distance (DD)

Door Overlay	3	4	5	6	7
20.5					0
19.5				0	
18.5			0		2
17.5		0		2	3
16.5	0				3.5
16.0			2	3	
15.5				3.5	
15.0		2	3		
14.5			3.5		
14.0	2	3			
13.5		3.5			
13.0	3				
12.5	3.5			6	
11.5			6		
10.5		6			
	Base Plate Height (BPH)				



Base Plate Height (BPH)

	0	2	3	3.5	6
X	34.0	33.0	32.0	32.0	30.5
	Wing Base Plate Position (X)				



Base Plate Height (BPH)

	0	2	3	3.5	
X	17.0	16.0	15.0	15.0	
	Straight Base Plate Position (X)				

Minimum Gaps

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7
24	1.0	1.0	1.0	1.2	2.1
22	1.0	1.0	1.0	1.0	1.5
21	1.0	1.0	1.0	1.0	1.2
20	1.0	1.0	1.0	1.0	1.0
19	1.0	1.0	1.0	1.0	1.0
18	1.0	1.0	1.0	1.0	1.0
17	1.0	1.0	1.0	1.0	1.0
16	1.0	1.0	1.0	1.0	1.0
	Minimum Gap (G)				

The minimum gap is the gap between the closed door and the front of the cabinet.

Reveal

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7
24	2.4	2.1	2.1	2.1	2.0
22	1.6	1.6	1.6	1.5	1.5
21	1.4	1.3	1.3	1.3	1.3
20	1.1	1.1	1.1	1.1	1.1
19	0.9	0.9	0.9	0.9	0.9
18	0.7	0.7	0.7	0.7	0.7
17	0.6	0.6	0.6	0.6	0.6
16	0.6	0.6	0.6	0.6	0.6
	Reveal (R)				

Note: Reveal dimensions were determined with an edge radius (of the door) of 1mm. Hinge dimensions and reveal calculation based on factory setting.

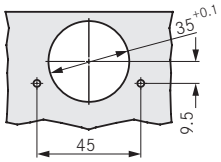
IMPORTANT

To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

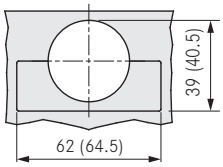
Legend

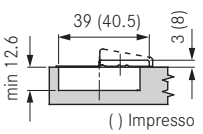
BPH = Base Plate Height
CC = Center Cup
DD = Drilling Distance
DT = Door Thickness
G = Gap
R = Reveal
X = Base Plate Setback

Screw-on



Cup Dimensions





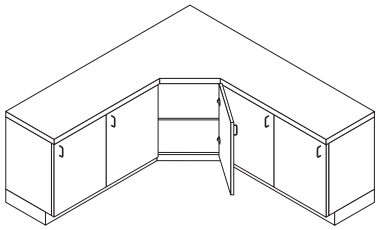
RFI 77 ATTACHMENT

Tiomos 110/45A

+45° angle corner cabinet hinge for overlay doors



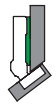
- For 45° angle corner cabinets
- 110° opening angle
- 3-dimensional adjustment with suitable base plate
- Soft-close hinges available
- Convenient depth adjustment with worm screw

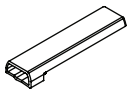




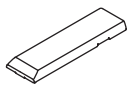


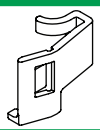


Tiomos 110/45A	Opening Angle 110°			Impresso			Screw-On	Dowelled
Overlay	Cranking 03	Pattern	Type	Item No.	PU	Pattern	Type	Item No.	Item No.	PU
	Hinge cup: steel, nickel-plated Hinge arm: zinc, nickel-plated	42/45	Soft-close	**F017**139**424**223	100	45	Soft-close	**F028**138**533**223	**F028**138**543**223	100

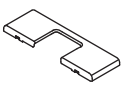
Cover Cap with Clip Protector		Item No.	PU
	Plastic, black	**F072**140**504**247	1000

For installation see page 57

Cover Caps		Item No.	PU
	Steel, nickel-plated	**F072**135**500**247	1000

Hinge Clip Protector		Item No.	PU
	Plastic, grey	**F072**135**807**540	500

For installation see page 57

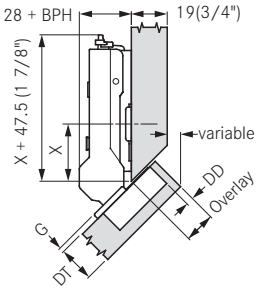
Hinge Cup Cover Cap		Item No.	PU
	Steel, nickel-plated	**F072**135**503**228	150

Wood Screw, Nickel-plated		Item No.	PU
	#6 x 5/8" FHP, NI	81001-43	500

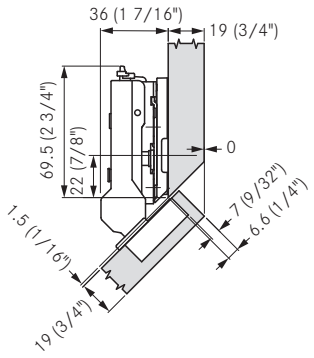
PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.

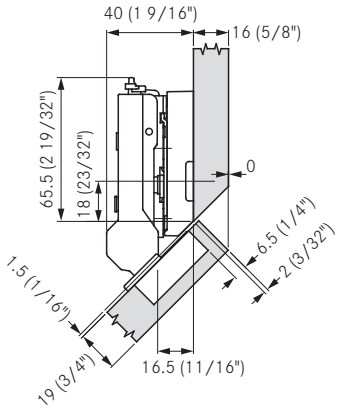
Overlay



Drawings show Tiomos with a base plate, **(BPH) 0**.



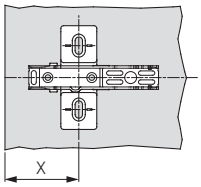
Drawings show Tiomos with a base plate, **(BPH) 9.5**.



Drawings show Tiomos with a base plate, **(BPH) 12**.

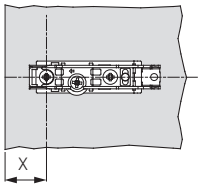
Drilling Distance (DD)

Door Overlay	3	4	5	6	7
19.5					0
19.0					
18.5				0	
18.0					
17.5			0		
17.0					
16.5		0			2
16.0					
15.5	0			2	
15.0					3
14.5			2		3.5
14.0				3	
13.5		2		3.5	
13.0			3		
12.5	2		3.5		
12.0		3			
11.0	3				6
10.0				6	
		Base Plate Height (BPH)			



Base Plate Height (BPH)

	0	2	3	3.5	6	9.5	12
X	30.5	28.5	27.5	27.0	24.5	21.0	18.5
	Wing Base Plate Position (X)						



Base Plate Height (BPH)

	0	2	3	3.5	
X	13.5	11.5	10.5	10.0	
	Straight Base Plate Position (X)				

Minimum Gaps

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7
24	1.0	1.0	1.0	1.2	2.1
22	1.0	1.0	1.0	1.0	1.5
21	1.0	1.0	1.0	1.0	1.2
20	1.0	1.0	1.0	1.0	1.0
19	1.0	1.0	1.0	1.0	1.0
18	1.0	1.0	1.0	1.0	1.0
17	1.0	1.0	1.0	1.0	1.0
16	1.0	1.0	1.0	1.0	1.0
	Minimum Gap (G)				

The minimum gap is the gap between the closed door and the front of the cabinet.

Reveal

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7
24	2.4	2.1	2.1	2.1	2.0
22	1.6	1.6	1.6	1.5	1.5
21	1.4	1.3	1.3	1.3	1.3
20	1.1	1.1	1.1	1.1	1.1
19	0.9	0.9	0.9	0.9	0.9
18	0.7	0.7	0.7	0.7	0.7
17	0.6	0.6	0.6	0.6	0.6
16	0.6	0.6	0.6	0.6	0.6
	Reveal (R)				

Note: Reveal dimensions were determined with an edge radius (of the door) of 1mm. Hinge dimensions and reveal calculation based on factory setting.

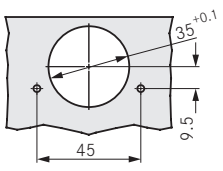
IMPORTANT

To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

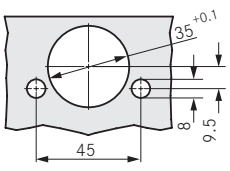
Legend

BPH = Base Plate Height
CC = Center Cup
DD = Drilling Distance
DT = Door Thickness
G = Gap
R = Reveal
X = Base Plate Setback

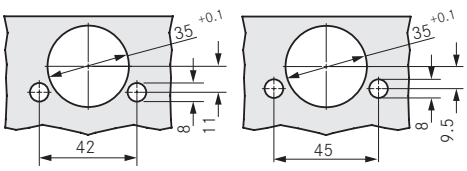
Screw-on



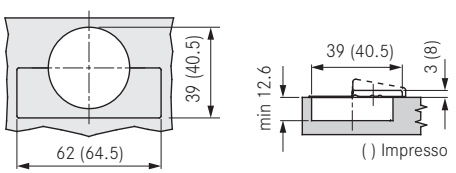
Dowelled



Impresso



Cup Dimensions



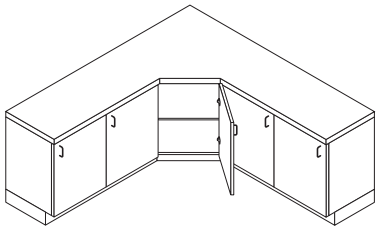
RFI 77 ATTACHMENT

Tiomos 110/45E

+45° angle corner cabinet hinge for inset doors



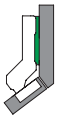
- For 45° angle corner cabinets
- 110° opening angle
- 3-dimensional adjustment with suitable base plate
- Soft-close or Self-close hinges available
- Convenient depth adjustment with worm screw

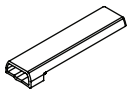


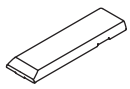


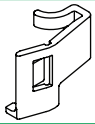


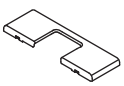


Tiomos 110/45E Opening Angle 110°		Impresso				Screw-On	Dowelled	
Inset		Pattern	Type	Item No.	PU	Pattern	Type	Item No.	Item No.	PU
	Hinge cup: steel, nickel-plated Hinge arm: zinc, nickel-plated	42/45	Soft-close	**F017**139**425**213	25	45	Soft-close	-	**F028**138**544**223	100
						45	Self-close	-	**F045**138**482**223	100
						45	Self-close	**F045**138**472**213	-	25

Cover Cap with Clip Protector		Item No.	PU
	Plastic, black	**F072**140**504**247	1000
		For installation see page 57	

Cover Caps		Item No.	PU
	Steel, nickel-plated	**F072**135**500**247	1000

Hinge Clip Protector		Item No.	PU
	Plastic, grey	**F072**135**807**540	500
		For installation see page 57	

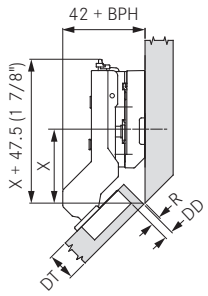
Hinge Cup Cover Cap		Item No.	PU
	Steel, nickel-plated	**F072**135**503**228	150

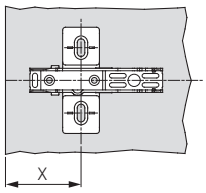
Wood Screw, Nickel-plated		Item No.	PU
	#6 x 5/8" FHP, NI	81001-43	500

PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.

Inset





Drawings show Tiomos with a base plate, **(BPH) 12**.

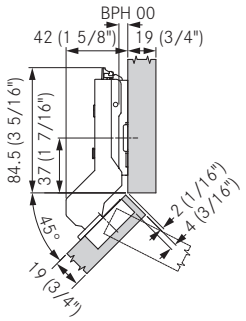
Drilling Distance (DD)

Door Overlay	3	4	5	6	7
22.0					
21.0					
20.0					
19.0	12				
18.0		12			
17.0			12		
16.0				12	
15.0					12
	Base Plate Height (BPH)				

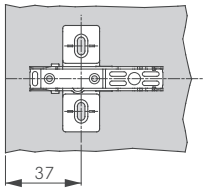
Drilling Distance (DD)

Door Overlay	3	4	5	6	7
22.0					
21.0					
20.0					
19.0	52.0				
18.0		50.5			
17.0			49.0		
16.0				47.5	
15.0					46.0
	Wing Base Plate Position (X)				

Corner Angle



Drawings show Tiomos with a base plate, **(BPH) 03**.



Reveal

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7
24	2.4	2.1	2.1	2.1	2.0
22	1.6	1.6	1.6	1.5	1.5
21	1.4	1.3	1.3	1.3	1.3
20	1.1	1.1	1.1	1.1	1.1
19	0.9	0.9	0.9	0.9	0.9
18	0.7	0.7	0.7	0.7	0.7
17	0.6	0.6	0.6	0.6	0.6
16	0.6	0.6	0.6	0.6	0.6
	Reveal (R)				

Note: Reveal dimensions were determined with an edge radius (of the door) of 1mm. Hinge dimensions and reveal calculation based on factory setting.

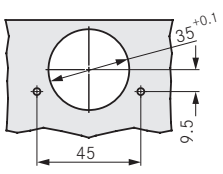
IMPORTANT

To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

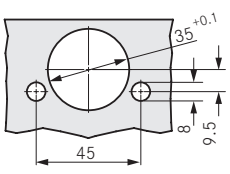
Legend

BPH = Base Plate Height
CC = Center Cup
DD = Drilling Distance
DT = Door Thickness
R = Reveal
X = Base Plate Setback

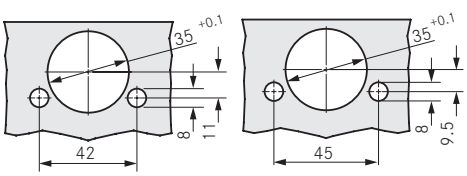
Screw-on



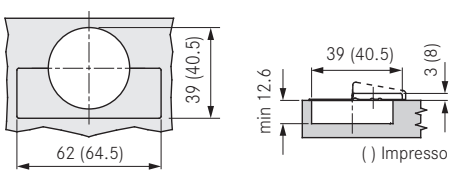
Dowelled



Impresso



Cup Dimensions



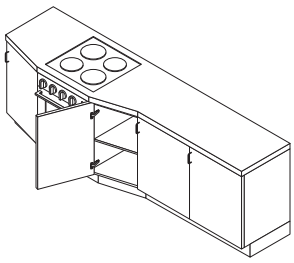
RFI 77 ATTACHMENT

Tiomos 120/-15A

-15° angle corner cabinet hinge for overlay doors



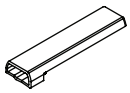
- For -15° angle corner cabinets
- 120° opening angle
- 3-dimensional adjustment with suitable base plate
- Self-close hinges available
- Convenient depth adjustment with worm screw



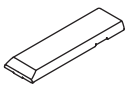


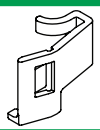
Tiomos 120/-15A Opening Angle 120° — Screw-On

Overlay		Pattern	Type	Item No.	PU
	Hinge cup: steel, nickel-plated Hinge arm: zinc, nickel-plated	45	Self-close	**F045**138**493**223	100

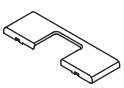
Cover Cap with Clip Protector		Item No.	PU
	Plastic, black	**F072**140**504**247	1000

For installation see page 57

Cover Caps		Item No.	PU
	Steel, nickel-plated	**F072**135**500**247	1000

Hinge Clip Protector		Item No.	PU
	Plastic, grey	**F072**135**807**540	500

For installation see page 57

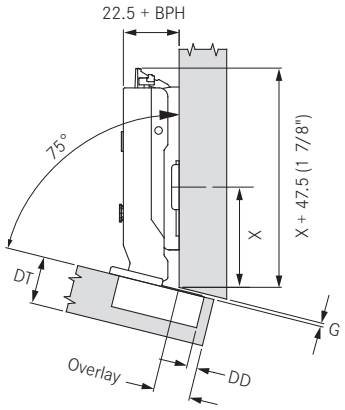
Hinge Cup Cover Cap		Item No.	PU
	Steel, nickel-plated	**F072**135**503**228	150

Wood Screw, Nickel-plated		Item No.	PU
	#6 x 5/8" FHP, NI	81001-43	500

PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.

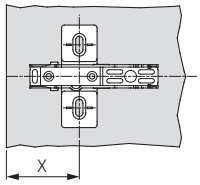
Overlay



Drawings show Tiomos with a base plate, **(BPH) 0**.

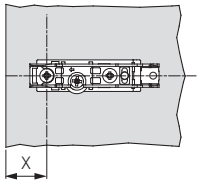
Drilling Distance (DD)

Door Overlay	3	4	5	6	7
18.0					0
17.0				0	
16.0			0		
15.0		0			
14.5				2	3
14.0	0				3.5
13.5			2	3	
13.0				3.5	
12.5		2	3		
12.0			3.5		
11.5		3			6
11.0		3.5			
10.5	3			6	
10.0	3.5				
9.5			6		
8.5		6			
		Base Plate Height (BPH)			



Base Plate Height (BPH)

	0	2	3	3.5	6
X	40.0	40.5	40.5	41.0	41.5
	Wing Base Plate Position (X)				



Base Plate Height (BPH)

	0	2	3	3.5	
X	23	23.5	23.5	24	
	Straight Base Plate Position (X)				

Minimum Gaps

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7
24	6.4	5.4	4.4	3.4	2.4
22	1.6	1.6	1.6	1.5	1.5
21	1.4	1.3	1.3	1.3	1.3
20	1.1	1.1	1.1	1.1	1.1
19	0.9	0.9	0.9	0.9	0.9
18	0.7	0.7	0.7	0.7	0.7
17	0.6	0.6	0.6	0.6	0.6
16	0.6	0.6	0.6	0.6	0.6
	Minimum Gap (G)				

The minimum gap is the gap between the closed door and the front of the cabinet.

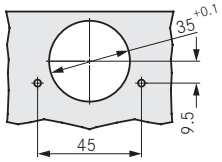
IMPORTANT

To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

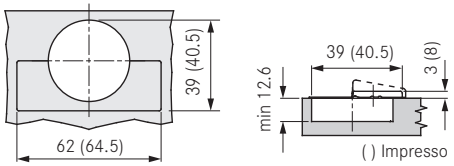
Legend

BPH = Base Plate Height
CC = Center Cup
DD = Drilling Distance
DT = Door Thickness
G = Gap
R = Reveal
X = Base Plate Setback

Screw-on



Cup Dimensions



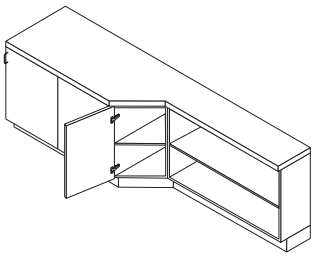
RFI 77 ATTACHMENT

Tiomos 120/-45A

-45° angle corner cabinet hinge for overlay doors

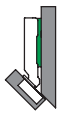


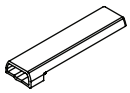
- For -45° angle corner cabinets
- 120° opening angle
- 3-dimensional adjustment with suitable base plate
- Soft-close or Self-close hinges available
- Convenient depth adjustment with worm screw



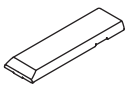


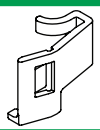


Tiomos 120/-45A Opening Angle 120°		Impresso				Screw-On			
Overlay		Pattern	Type	Item No.	PU	Pattern	Type	Item No.	PU
	Hinge cup: steel, nickel-plated	42/45	Soft-close	-	-	45	Soft-close	**F028**138**557**213	25
	Hinge arm: zinc, nickel-plated	42/45	Self-close	**F034**139**405**223	100	45	Self-close	**F045**138**495**213	25

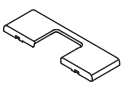
Cover Cap with Clip Protector		Item No.	PU
	Plastic, black	**F072**140**504**247	1000

For installation see page 57

Cover Caps		Item No.	PU
	Steel, nickel-plated	**F072**135**500**247	1000

Hinge Clip Protector		Item No.	PU
	Plastic, grey	**F072**135**807**540	500

For installation see page 57

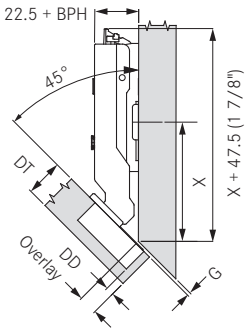
Hinge Cup Cover Cap		Item No.	PU
	Steel, nickel-plated	**F072**135**503**228	150

Wood Screw, Nickel-plated		Item No.	PU
	#6 x 5/8" FHP, NI	81001-43	500

PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.

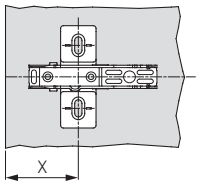
Overlay



Drawings show Tiomos with a base plate, **(BPH) 02**.

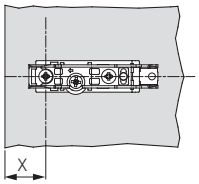
Drilling Distance (DD)

Door Overlay	3	4	5	6	7
12.0					0
11.5				0	
10.5			0		
9.5		0			2
8.5	0			2	
8.0					3
7.5			2		3.5
7.0				3	
6.5		2		3.5	
6.0			3		
5.5	2		3.5		
5.0		3			
4.5		3.5			
4.0	3				6
3.5	3.5				
3.0				6	
2.0			6		
1.0		6			
0.0	6				
		Base Plate Height (BPH)			



Base Plate Height (BPH)

	0	2	3	3.5	6
X	60.5	62.5	63.5	64	66.5
	Wing Base Plate Position (X)				



Base Plate Height (BPH)

	0	2	3	3.5	
X	43.5	45.5	46.5	47	
	Straight Base Plate Position (X)				

Minimum Gaps

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6	7
24	6.4	5.4	4.4	3.4	2.4
22	3.0	2.0	1.5	1.5	1.5
21	1.4	1.3	1.3	1.3	1.3
20	1.1	1.1	1.1	1.1	1.1
19	0.9	0.9	0.9	0.9	0.9
18	0.7	0.7	0.7	0.7	0.7
17	1.0	1.0	1.0	1.0	1.5
16	1.0	1.0	1.0	1.0	1.0
	Minimum Gap (G)				

The minimum gap is the gap between the closed door and the front of the cabinet.

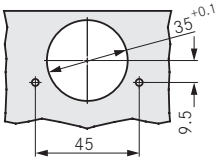
IMPORTANT

To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

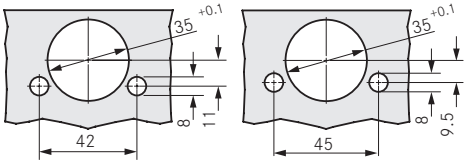
Legend

BPH = Base Plate Height
CC = Center Cup
DD = Drilling Distance
DT = Door Thickness
G = Gap
R = Reveal
X = Base Plate Setback

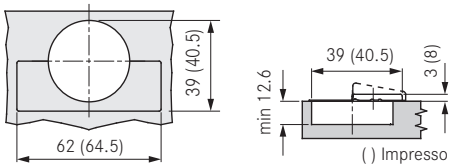
Screw-on



Impresso



Cup Dimensions



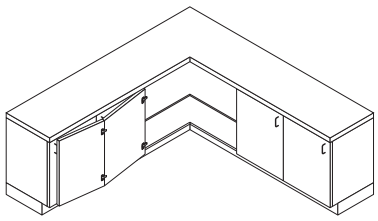
RFI 77 ATTACHMENT

Tiomos PCC

Pie-cut corner cabinet hinge



- 3-dimensional adjustment with suitable base plate
- Designed for folding doors in corner cabinets
- For door thicknesses 14mm to 24mm
- Self-close hinges available
- Used in conjunction with Tiomos 155 hinges
- 35mm full cup drill hole





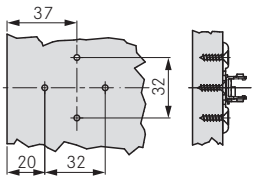


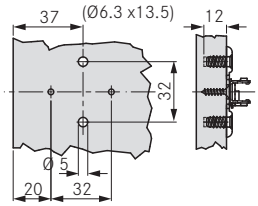
Tiomos Pie-cut Corner Hinge		Screw-On	Dowelled	
	Pattern	Type	Item No.	Item No.	PU
Hinge cup: steel, nickel-plated; Hinge arm: zinc, nickel-plated	42	Self-close	-	**F045**138**336**228	150
	45	Self-close	**F045**138**517**228	**F045**138**518**228	150

Base Plates for PCC — **Wing Base Plate, 4-Point Fixing**









Door Thickness	Screws	Height	Item No.	PU
14mm-24mm	For wood screws	0	**F058**139**746**228	150
14mm-24mm	With pre-mounted Euro screws	0	**F058**139**761**228	150

Cover Cap with Clip Protector	Item No.	PU
Plastic, black	**F072**140**504**247	1000

For installation see page 57

Cover Caps	Item No.	PU
Steel, nickel-plated	**F072**135**500**247	1000

Hinge Clip Protector	Item No.	PU
Plastic, grey	**F072**135**807**540	500

For installation see page 57

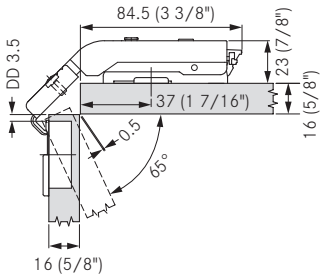
Hinge Cup Cover Cap	Item No.	PU
Steel, nickel-plated	**F072**135**503**228	150

Wood Screw, Nickel-plated	Item No.	PU
#6 x 5/8" FHP, NI	81001-43	500

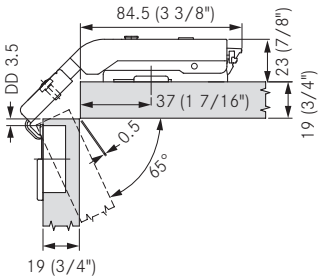
PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.

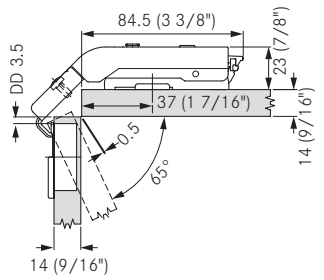
Hinge Application



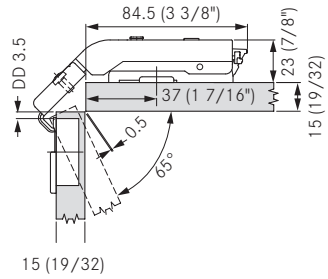
16mm door thickness with base plate height **(BPH) 0**.



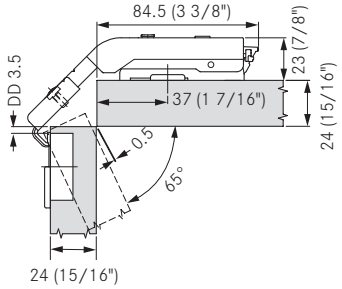
19mm door thickness with base plate height **(BPH) 0**.



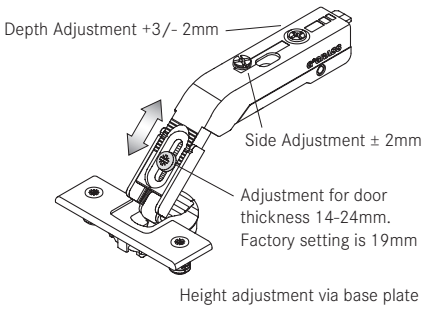
14mm door thickness with base plate height **(BPH) 0**.

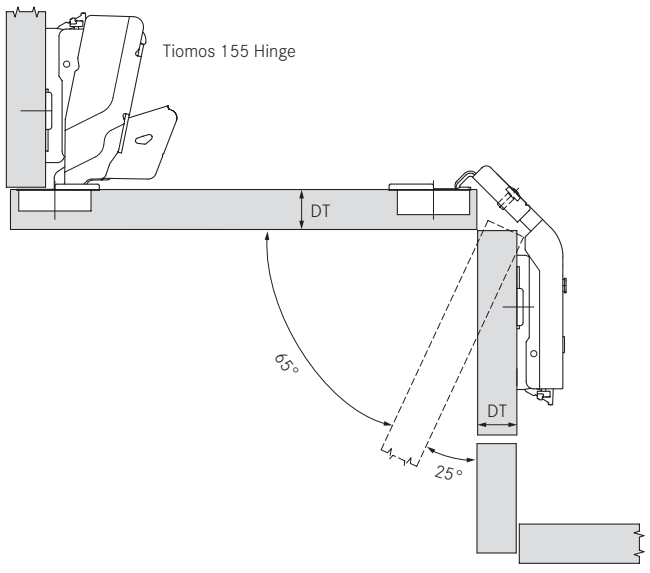


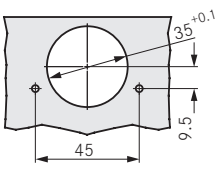
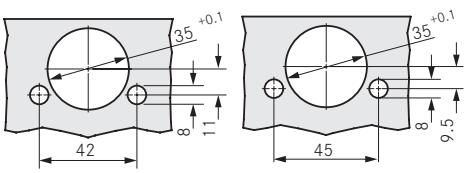
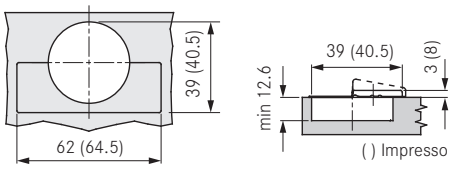
15mm door thickness with base plate height **(BPH) 0**.



24mm door thickness with base plate height **(BPH) 0**.

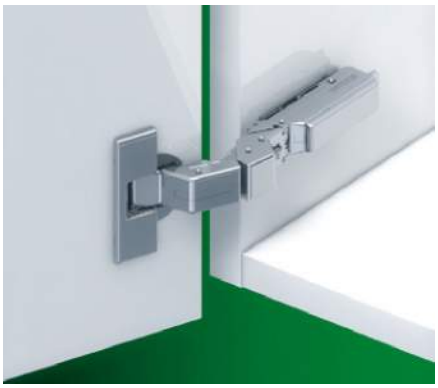




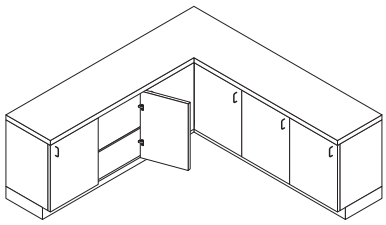
Legend	Screw-on	Dowelled	Cup Dimensions
BPH = Base Plate Height CC = Center Cup DD = Drilling Distance DT = Door Thickness R = Reveal X = Base Plate Setback			

Tiomos M9

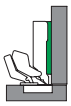
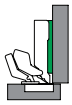
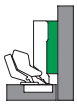
110° hinge for 12mm-28mm door thicknesses

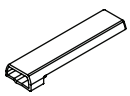


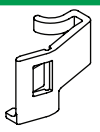
- Accommodates overlays up to 25mm (1")
- For door thicknesses from 12mm (15/32") to 28mm (1 1/8")
- Soft-close and self-close hinges available
- For face frame or frameless cabinets
- 3-dimensional adjustments with suitable base plate
- Shallow cup depth of 9mm

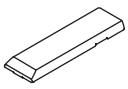


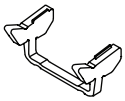


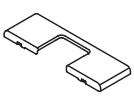
Tiomos M9 Opening Angle 110°				Screw-On		
Overlay	Half Overlay	Inset	Cranking 14	Pattern	Type	Item No.	PU
			Hinge cup: zinc, nickel-plated Hinge arm: zinc, nickel-plated	45	Soft-close	**F029**140**338**217	50
				45	Self-close	**F047**140**339**217	50

Cover Cap with Clip Protector	Item No.	PU
 Plastic, black	**F072**140**504**247	1000
	For installation see page 57	

Hinge Clip Protector	Item No.	PU
 Plastic, grey	**F072**135**807**540	500
	For installation see page 57	

Cover Caps	Item No.	PU
 Steel, nickel-plated	**F072**135**500**247	1000

Opening Angle Reduction Clip to 85°	Item No.	PU
	**F072**135**871**517	50

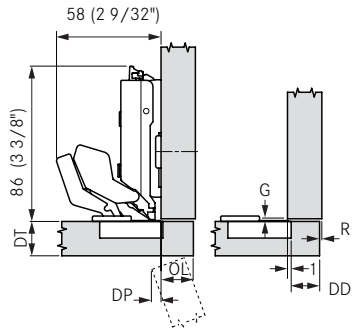
Hinge Cup Cover Cap	Item No.	PU
 Steel, nickel-plated	**F072**135**503**228	150

Wood Screw, Nickel-plated	Item No.	PU
 #6 x 5/8" FHP, NI	81001-43	500

PU - Packaging unit

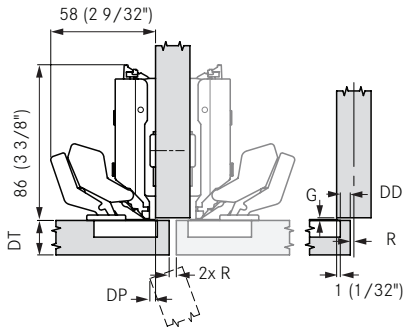
Dimensions in millimeters, fractional inch equivalents as noted.

Overlay



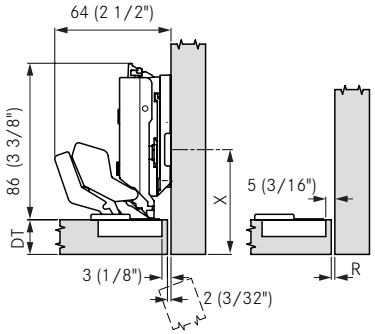
Drawings show Tiomos with a base plate, **(BPH) 0**.

Half Overlay



Drawings show Tiomos with a base plate, **(BPH) 0**.

Inset



Drawings show Tiomos with a base plate, **(BPH) 06**.

X= 38.5 + DT

Note: A door stop is needed to prevent overclose.

Minimum Gap and Minimum Reveal

Application Data	Drilling Distance (DD)	3		4		5		6		7		8		9		10		11		12		13	
	Door Protrusion (DP)	0.8		1.1		1.5		1.8		2.2		2.5		2.9		3.2		3.5		3.9		4.2	
	Door Overlay (OL)	4		5		6		7		8		9		10		11		12		13		14	
	Min Reveal (R)/ Gap (G)	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G
Door Thickness (DT)	12-20	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5
	22	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.5	1.5	1.7	1.5	4.0	1.5
	24	1.0	1.5	1.2	1.5	1.3	1.5	1.5	1.5	1.7	1.5	2.0	1.5	2.4	1.3	3.3	1.5	8.3	1.5	7.7	1.5	6.9	1.5
	26	2.2	1.5	2.4	1.5	2.7	1.5	3.1	1.5	3.6	1.5	4.7*	1.5	12*	1.5	11.8	1.5	10.9	1.5	9.9	1.5	8.9	1.5
	28	3.9	1.5	4.3	1.5	5.1	1.5	6.3*	1.5	16*	1.5	16*	1.5	15*	1.5	14*	1.5	13*	1.5	12*	1.5	11*	1.5

Application Data	Drilling Distance (DD)	14		15		16		17		18		19		20		21		22		23		24	
	Door Protrusion (DP)	4.6		4.9		5.3		5.6		5.9		6.3		6.6		7		7.3		7.6		8	
	Door Overlay (OL)	15		16		17		18		19		20		21		22		23		24		25	
	Min Reveal (R)/ Gap (G)	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G
Door Thickness (DT)	12-20	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0	2.0	1.0	2.0	1.0	2.0
	22	4.0	1.5	3.5	1.5	3.0	1.5	2.2	1.5	1.7	1.5	1.3	1.5	1.0	1.5	1.0	1.5	1.0	2.0	1.0	2.0	1.0	2.0
	24	6.0	1.5	5.2	1.5	4.5	1.5	4.0	1.5	3.3	1.5	3.0	1.5	2.5	1.5	2.1	1.5	1.9	2.0	1.6	2.0	1.5	2.0
	26	8.0	1.5	7.2	1.5	6.4	1.5	5.8	1.5	5.1	1.5	4.6	1.5	4.1	1.5	3.7	1.5	3.3	2.0	3.0	2.0	2.6	2.0
	28	10*	1.5	9.2	1.5	8.4	1.5	7.6	1.5	6.9	1.5	6.4	1.5	5.8	1.5	5.3	1.5	4.9	2.0	4.5	2.0	4.2	2.0

Note:

Reveal dimensions were determined with an edge radius (of the door) of 1mm.

Hinge dimensions and reveal calculation based on factory setting.

*Only achievable with 85° angle reduction clip.

IMPORTANT

To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

Legend

BPH = Base Plate Height

DD = Drilling Distance

DP = Door Protrusion

DT = Door Thickness

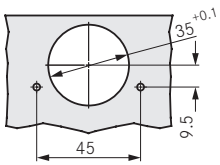
G = Gap

OL = Overlay

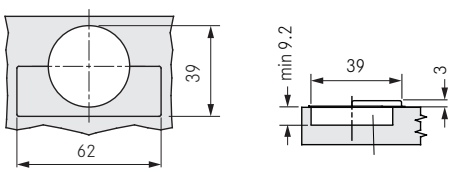
R = Reveal

X = Base Plate Setback

Drilling Pattern

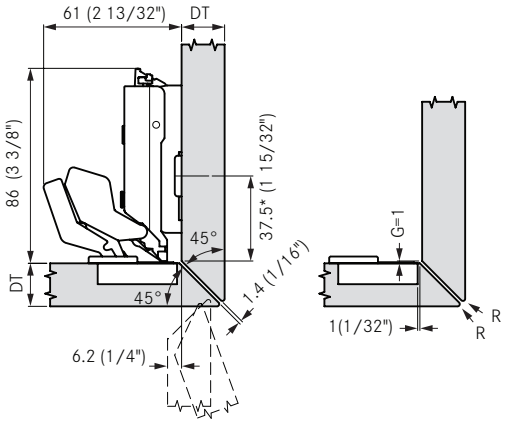


Cup Dimensions



Installation Information

Mitered Application - Circumferential and Lateral

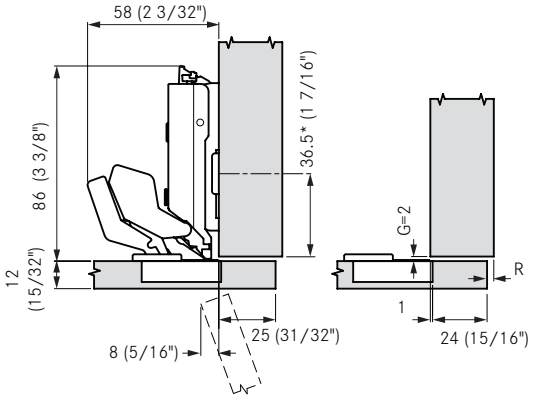


Drawings show Tiomos with a base plate, **(BPH) 3**.

Door Thickness (DT)	Mitered Application Circumferential	Mitered Application Lateral
	R (min)	R (min)
12-17	0	0
18	0.2	0
19	1.0	0.4
20	1.5	1.0
21	2.2	1.8
22	3.0	2.5
24	4.3	4.1

Note:
With circumferential mitered application all sides 1.4mm reveal

Maximum Overlay



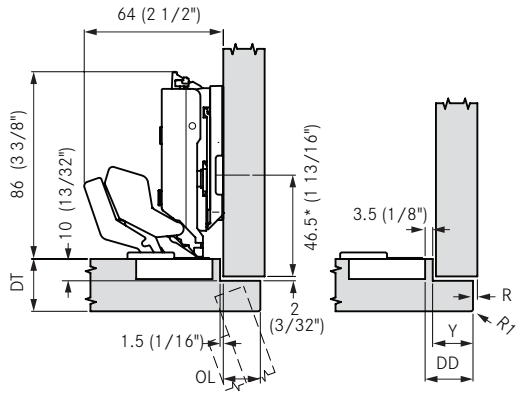
Drawings show Tiomos with a base plate, **(BPH) 0.**

*Dimension is calculated using a base plate that requires a 37mm hole setback. This dimension will vary if a base plate requiring a different standard setback is used.

Installation Information

Rabbet Applications

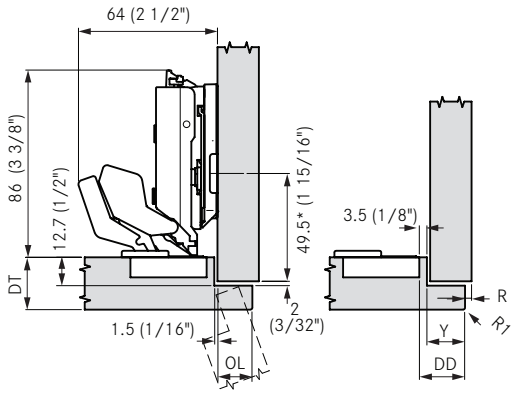
10mm (3/8")



Drawings show Tiomos with a base plate, **(BPH) 6**.

Cabinet Wall Location	DT (max)	OL (max)	Y (max)	DD (max)	R (max)
	20	17	18.5	22	1
	28	17	18.5	22	See reveal table page 45
	38	17	18.5	22	

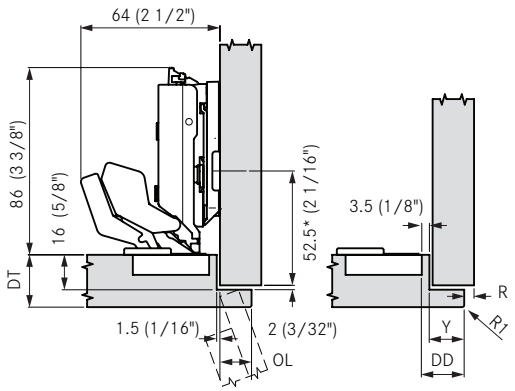
12.7mm (1/2")



Drawings show Tiomos with a base plate, **(BPH) 6**.

Cabinet Wall Location	DT (max)	OL (max)	Y (max)	DD (max)	R (max)
	20	16	17.5	21	1
	28	16	17.5	21	See reveal table page 45
	35	14	15.5	19	

16mm (5/8")



Drawings show Tiomos with a base plate, **(BPH) 6**.

Cabinet Wall Location	DT (max.)	OL (max.)	Y (max.)	DD (max.)	R (max.)
	20	14.5	16	19.5	1
	26	14.5	16	19.5	See reveal table page 45
	32	12.5	14	17.5	

*Dimension is calculated using a base plate that requires a 37mm hole setback.
This dimension will vary if a baseplate requiring a different standard setback is used.

Legend

BPH = Base Plate Height
DD = Drilling Distance
DP = Door Protrusion
DT = Door Thickness
G = Gap
OL = Overlay
R = Reveal
Y = Rabbet

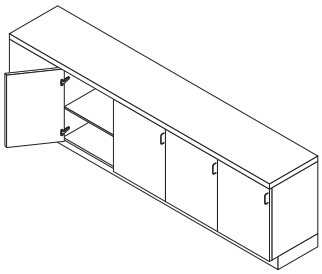
RFI 77 ATTACHMENT

Tiomos M0

125° hinge for thin doors (6-10mm)

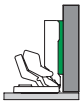
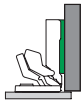
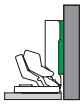


- No cup hole necessary
- Door thickness of 6mm (1/4") to 10mm (3/8")
- Accommodates door overlays up to 25.4mm (1")
- Soft-close hinges
- Works with a variety of door material - wood, aluminum, MDF, mineral composite, HPL (laminate), chipboard, solid surface
- Special fasteners for hinge attachment to door
- Compatible with Tiomos base plates

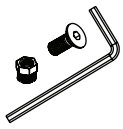




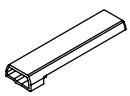
Tiomos M0 Opening Angle 125° — Screw-On

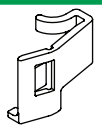
Overlay	Half Overlay	Inset		Pattern	Type	Item No.	PU
			Hinge cup: zinc, die-cast Hinge arm: steel, nickel-plated	45	Soft-close	**F029**140**331**217	50

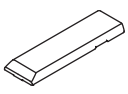
Fastening Options

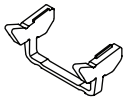
Fasteners	Description	Item No.	PU
	Countersunk screw PH2, M5 x 6mm For a minimum door thickness of 6mm For aluminum, HPL, mineral composite	**F072**135**923**223	100
	Set: 100 Countersunk screw M4 x 8mm, 100 sleeve M4 x 5.5mm, 1 internal hex key For a minimum door thickness of 8mm, for chipboard, MDF, mineral composite, HPL	**F072**135**928**201	1

Material	Material thickness		
	6mm	8mm	10mm
Aluminum	**F072**135**923**223		
HPL (laminate)	**F072**135**923**223	**F072**135**928**201	
Mineral Composite	**F072**135**923**223		
Chipboard	–	**F072**135**928**201	–
MDF	–	**F072**135**928**201	–

Cover Cap with Clip Protector	Item No.	PU
 Plastic, black	**F072**140**504**247	1000
	For installation see page 57	

Hinge Clip Protector	Item No.	PU
 Plastic, grey	**F072**135**807**540	500
	For installation see page 57	

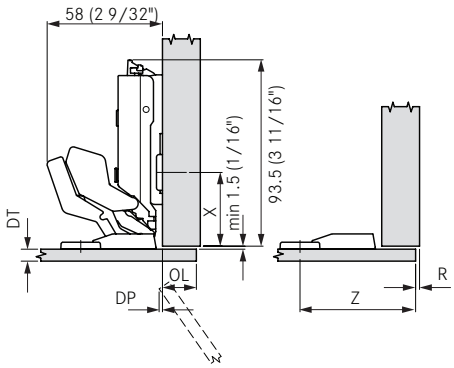
Cover Caps	Item No.	PU
 Steel, nickel-plated	**F072**135**500**247	1000

Opening Angle Reduction Clip to 85°	Item No.	PU
	**F072**135**871**517	50

PU - Packaging unit

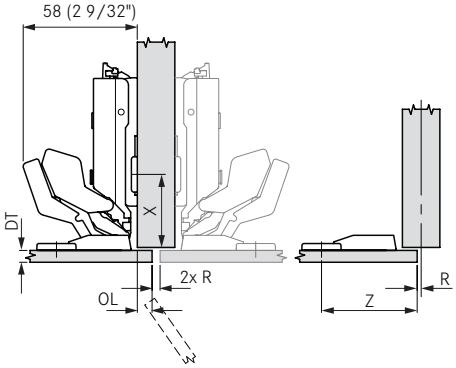
Dimensions in millimeters, fractional inch equivalents as noted.

Overlay



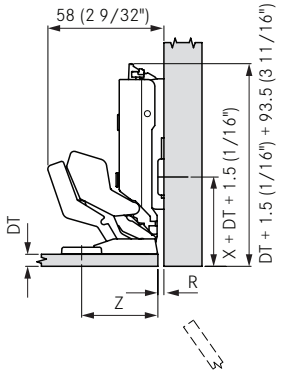
Drawings show Tiomos with a base plate, **(BPH) 0**.

Half Overlay



Drawings show Tiomos with a base plate, **(BPH) 0**.

Inset



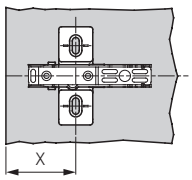
Drawings show Tiomos with a base plate, **(BPH) 0**.

Minimum Gap and Reveal

Hinge Attachment (Z)	38		39		47		49		51		53		55		56		58		60		61		63		64		66	
Door Protrusion (DP)	0		0		0		0		0		0		0		0.5		1.5		3.0		3.4		0		0		0	
Door Overlay (OL)	-3		-2		6		8		10		12		14		15		17		19		20		22*		23*		25*	
Min Reveal (R)/ Gap (G)	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G	R	G
Door Thickness 6-10 (DT)	2.0	1.5	2.0	1.5	2.0	1.5	2.0	1.5	2.0	1.5	2.0	1.5	2.0	1.5	2.0	1.5	2.0	1.5	2.0	1.5	2.0	1.5	2.0	2.5	2.0	3.0	2.0	4.0

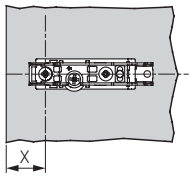
*Only achievable with 85° angle reduction clip.

Wing Base Plate



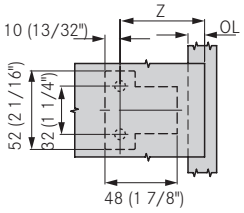
Setback	Base Plate Height 0
X	46

Straight Base Plate



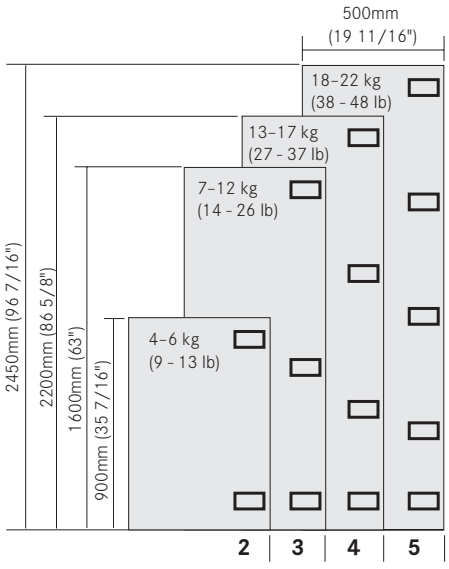
Setback	Base Plate Height 0
X	29

Hinge Attachment



Setback	Base Plate Height 0
Z	OL + 41
OL	25 max

Number of Hinges Per Door



Installation Information

Countersunk screw M5 x 6mm

(except for aluminum)**:**

1. Drill a Ø 4.8mm hole
2. Cut a Ø 5mm thread
3. Position the hinge and secure with the screws

Countersunk screw M4 x 8mm with sleeve M4 x 5.5mm:

1. Drill a Ø 5mm hole
2. Slightly countersink the edge of the hole
3. Insert the sleeve
4. Knock in the sleeve with a hammer
5. Position the hinge and secure with the screws

Notes

An inset application is achieved with the base plate (X) and a low housing screwing distance (Z).

Depending on the type and thickness of the base material the pull-out resistances can vary with the same fastening method. For information regarding the selection and processing of the base material please contact the base material supplier.

Liability claims: Please note that Grass cannot accept any liability for damage resulting from unsuitable fastening materials or methods.

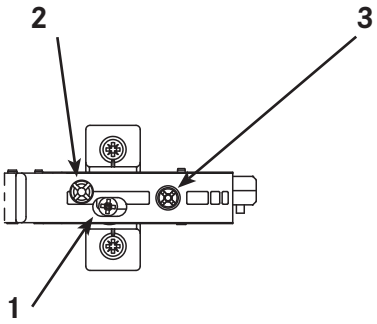
IMPORTANT

To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

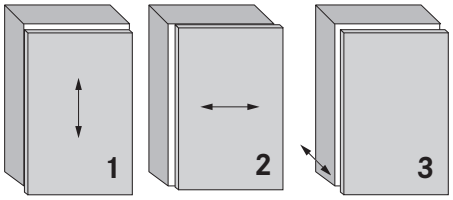
RFI 77 ATTACHMENT

Tiomos Base Plates

For Tiomos hinges



- Steel, nickel plated
- Depth adjustment via worm screw
- Height adjustment via worm screw or elongated hole
- Side adjustment via hinge
- Use a #2 Pozi drive screwdriver for hinge adjustment
- Attach base plates using all available screw holes



Height adjustment via base plate
Via worm screw ± 2mm

Side adjustment ±2mm

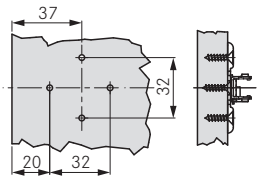
Depth adjustment +3/-2mm

All adjustment options can be made independently of one another

Wing Base Plate, 4 Point Fixing — 37/32 — For Wood Screws



- Height adjustment via worm screw

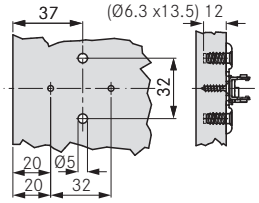


Height	Item No.	PU
0	**F058**139**746**228	150
2	**F058**139**747**228	150
3	**F058**139**748**228	150
3.5	**F058**139**749**217	50

Wing Base Plate, 4 Point Fixing — 37/32 — For Euro Screws



- Height adjustment via worm screw

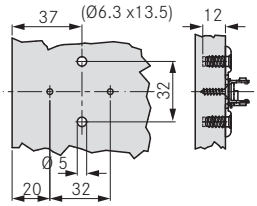


Height	Item No.	PU
0	**F058**139**756**228	150
2	**F058**139**757**228	150
3	**F058**139**758**228	150
3.5	**F058**139**759**228	150

Wing Base Plate, 4 Point Fixing — 37/32 — Pre-mounted Euro Screws (13.5mm)



- Height adjustment via worm screw

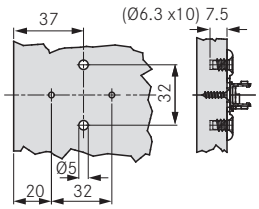


Height	Item No.	PU
0	**F058**139**761**228	150
2	**F058**139**762**228	150
3	**F058**139**763**228	150
3.5	**F058**139**764**228	150

Wing Base Plate, 4 Point Fixing — 37/32 — Pre-mounted Euro Screws (10mm)



- Height adjustment via worm screw
- For twin application



Height	Item No.	PU
0	**F058**139**863**228	150
2	**F058**139**864**228	150
3	**F058**139**865**228	150

PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.

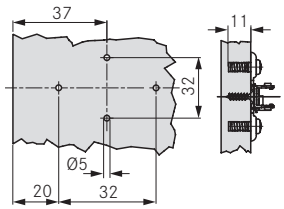
Tiomos Base Plates

For Tiomos hinges

Wing Steel Base Plate, 4 Point Fixing | 37/32 | Expanding Dowels (5mm)



- Height adjustment via worm screw

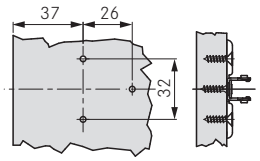


Height	Item No.	PU
0	**F058**139**766**228	150
2	**F058**139**767**228	150
3	**F058**139**768**228	150

Wing Steel Base Plate, 3 Point Fixing | 37/32 | For Wood Screws



- Height adjustment via elongated screw holes

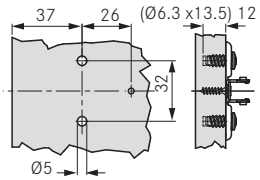


Height	Item No.	PU
0	**F058**139**721**228	150
2	**F058**139**722**228	150
3	**F058**139**723**228	150

Wing Steel Base Plate, 3 Point Fixing | 37/32 | Pre-mounted Euro Screws (13.5mm)



- Height adjustment via elongated screw holes

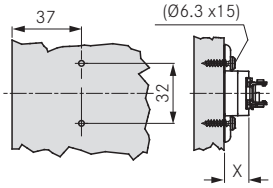


Height	Item No.	PU
0	**F058**139**736**228	150
2	**F058**139**737**228	150
3	**F058**139**738**228	150

Wing Base Plate, 2 Point Fixing | 37/32 | For Wood Screws



- Zinc die-cast/Steel, nickel plated
- Height adjustment via worm screw

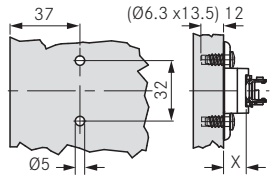


Height	Item No.	PU
6	**F058**139**892**217	50
9.5	**F058**139**888**217	50
12	**F058**139**893**217	50
15	**F058**139**890**217	50
19	**F058**139**894**217	50
21	**F058**139**895**217	50

Wing Base Plate, 2 Point Fixing | 37/32 | Pre-mounted Euro Screws (13.5mm)



- Zinc die-cast/Steel, nickel plated
- Height adjustment via worm screw

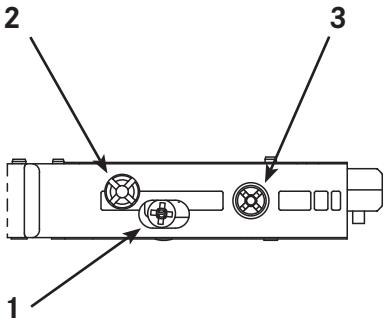


Height	Item No.	PU
6	**F058**139**873**217	50
9.5	**F058**139**882**217	50
12	**F058**139**874**217	50
19	**F058**139**875**217	50
21	**F058**139**896**217	50

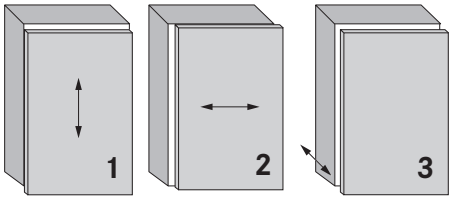
PU - Packaging unit

Tiomos Base Plates

For Tiomos hinges



- Steel, nickel plated
- Height and depth adjustment via worm screw
- Side adjustment via hinge
- Use a #2 Pozi drive screwdriver for hinge adjustment
- Attach base plates using all available screw holes



Height adjustment via base plate
Via worm screw ± 2mm

Side adjustment ±2mm

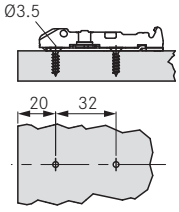
Depth adjustment +3/-2mm

All adjustment options can be made independently of one another

Straight Base Plate, 2 Point Fixing — 20/32 — For Wood Screws



- Height adjustment via worm screw

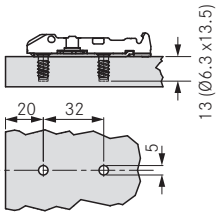


Height	Item No.	PU
0	**F059**139**701**228	150
2	**F059**139**702**228	150
3	**F059**139**703**228	150

Straight Base Plate, 2 Point Fixing — 20/32 — Pre-mounted Euro Screws



- Height adjustment via worm screw



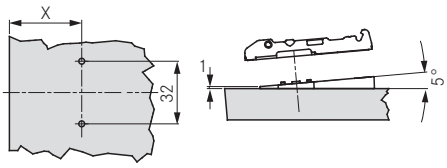
Height	Item No.	PU
0	**F059**139**711**228	150
3	**F059**139**713**228	150

Spacers

+5° Wedge for Screw Fixing — 37/32 — For Wood Screws



- Zinc, nickel plated
- For placing under wing base plates
- Can be stacked (max 3)

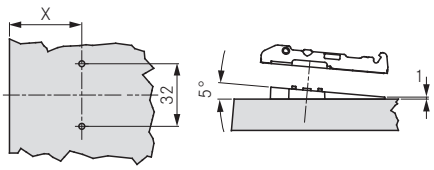


Height	Item No.	PU
	F072135**757**217	50

-5° Wedge for Screw Fixing — 37/32 — For Wood Screws



- Zinc, nickel plated
- For placing under wing base plates
- Can be stacked (max 3)

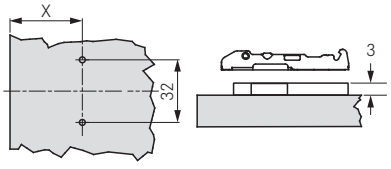


Height	Item No.	PU
	F072135**758**217	50

3mm Universal Spacer — 37/32



- For use with Nexis or Tiomos base plate applications
- Snap-to-fit breakaway section for Nexis applications
- For placing under wing base plates
- Can be stacked (max 2)



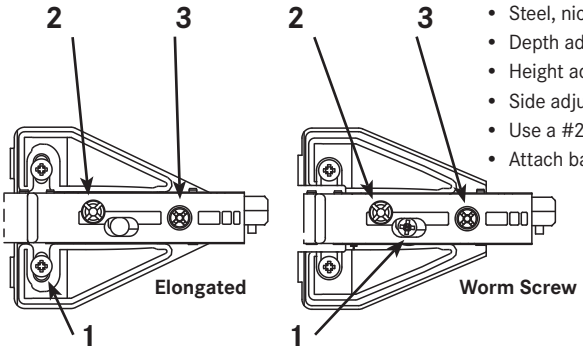
Height	Item No.	PU
3	13461-41	50

PU - Packaging unit

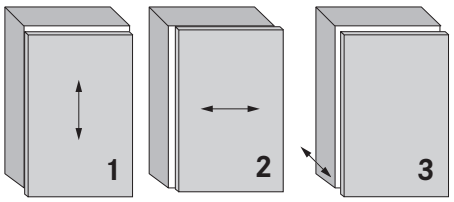
Dimensions in millimeters, fractional inch equivalents as noted.

Tiomos Base Plates

For Tiomos hinges



- Steel, nickel plated
- Depth adjustment via worm screw
- Height adjustment via worm screw or elongated hole
- Side adjustment via hinge
- Use a #2 Pozi drive screwdriver for hinge adjustment
- Attach base plates using all available screw holes



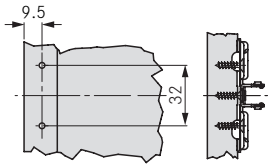
Height adjustment via base plate ± 2mm | Side adjustment ±2mm | Depth adjustment +3/-2mm

All adjustment options can be made independently of one another

FFA Base Plate, 2 Point Fixing — 9.5/32 — For Wood Screws



- Height adjustment via elongated screw holes

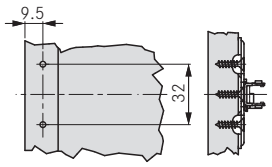


Height	Item No.	PU
1.5	**F058**139**821**228	150
3.5	**F058**139**822**228	150

FFA Base Plate, 2 Point Fixing — 9.5/32 — For Wood Screws



- Height adjustment via worm screw

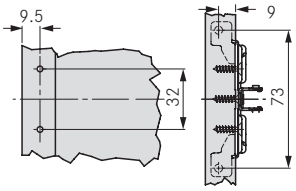


Height	Item No.	PU
1.5	**F058**139**825**228	150
3.5	**F058**139**826**228	150
4.5	**F058**139**827**228	150
5	**F058**139**828**228	150

FFAL Base Plate With Flange, 4 Point Fixing — 9.5/32 — For Wood Screws



- Height adjustment via elongated screw holes



Height	Item No.	PU
3.5	**F058**139**829**228	150

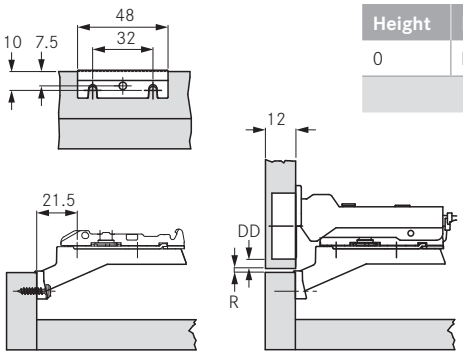
Inset FFA Base Plate, 3 Point Fixing — 10/32 — For Wood Screws



- Steel, diecast, nickel plated
- Height adjustment via worm screw
- Note: Requires a 9.5 crank hinge (half-overlay)

Drilling Distance (DD)

Door Thickness (DT)	3	4	5	6
28	4.0			
26	4.0	3.0		
24	4.0	3.0	2.0	
22	4.0	3.0	2.0	1.0
20	4.0	3.0	2.0	1.0
19	4.0	3.0	2.0	1.0
18	4.0	3.0	2.0	1.0
16	4.0	3.0	2.0	1.0
	Reveal (R)			



Height	Item No.	PU
0	**F058**139**831**228	150

PU - Packaging unit

Tipmatic

For handle-free wooden doors

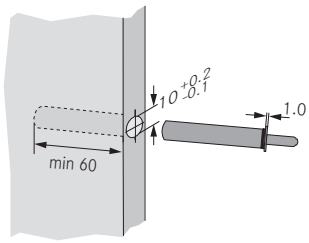


- Gently tapping the front causes the doors to open to a convenient angle
- Use with Tiomos 110 Tipmatic Plus or with Nexis and Tiomos free-swinging hinges
- Large magnet catch range – holds door closed securely
- Gap adjustment from 2.5 to 5.5mm with integrated, self-locking and tool-free depth adjustment feature
- Mount on the front side of the cabinet or with an adapter plate

Tipmatic Pin — For Drilling



- Incl. Tipmatic mechanism:
  - Stick on strike plate
  - Screw on strike plate
- Hole drilled from the front
- Plastic RAL 7036, platinum grey

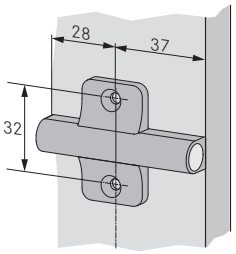


Item No.	PU
F069135**396**513	25

Adapter Plate for Line Boring — For Euro Screws



- Suitable for line boring 28 and 37mm
- Attach with Euro screws (6.3 x 13.5)
- Plastic RAL 7035, light grey

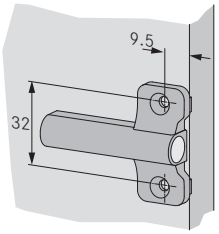


Item No.	PU
F069063**310**213	25

Face Frame or Standard Adapter Plate — For Wood Screws



- Quick upgrade installation
- Attach with wood screws (3.5 x 13)
- Plastic RAL 7035, light grey

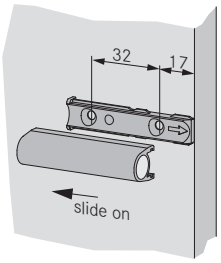


Item No.	PU
F069073**697**213	25

Linear Adapter Plate — For Wood Screws



- Design solution – also suitable for inset door applications
- Attach with wood screws (3.5 x 13)
- Plastic RAL 7035, light grey



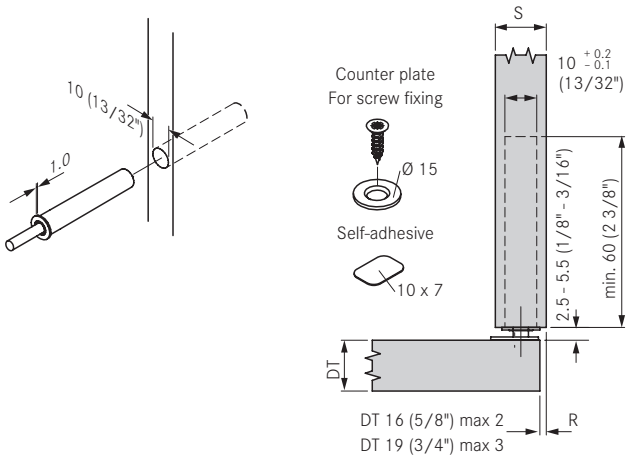
Item No.	PU
F069149**398**523	25

PU - Packaging unit

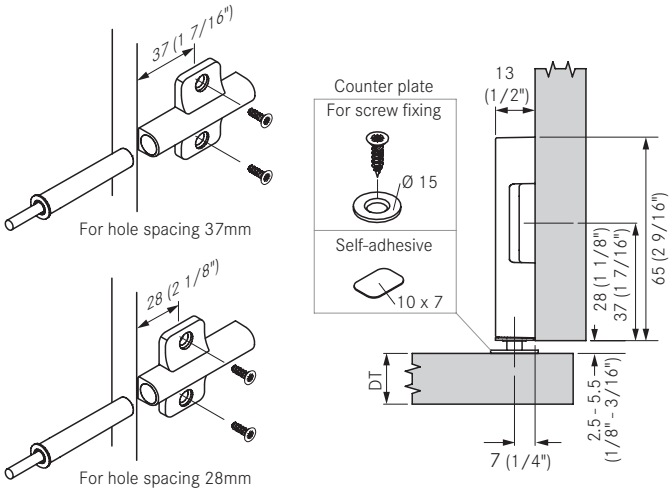
Dimensions in millimeters, fractional inch equivalents as noted.

Mounting Dimensions

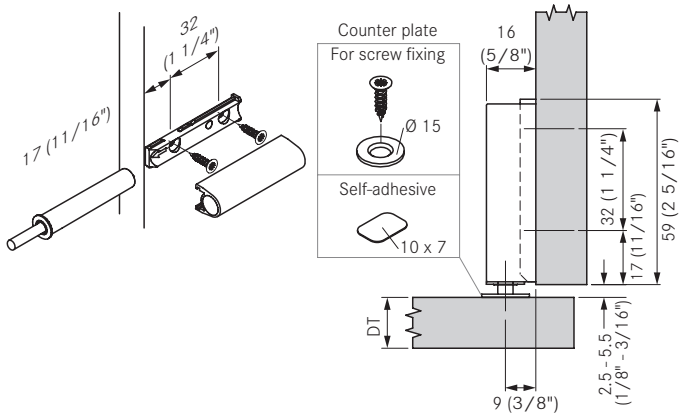
Tipmatic Pin



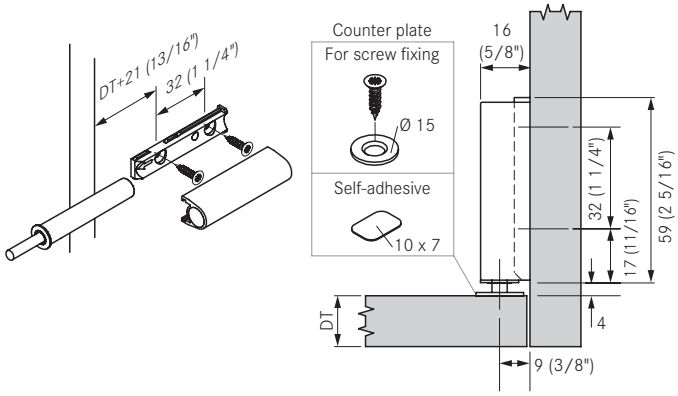
Adapter Plate for Line Boring



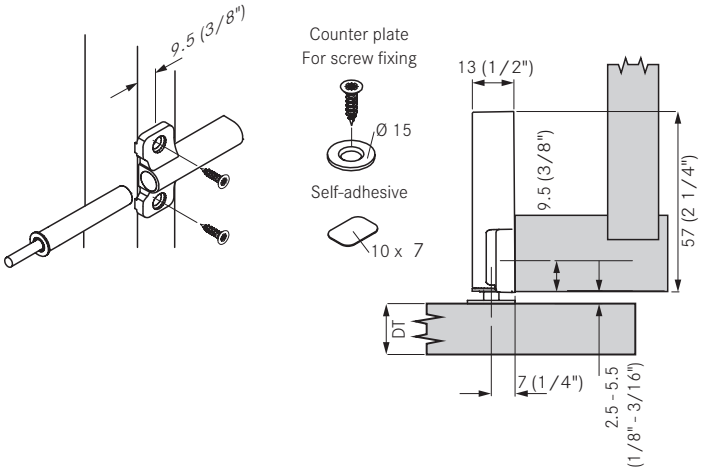
Linear Adapter Plate, Overlay



Linear Adapter Plate, Inset



Face Frame Plate



Legend

DT = Door Thickness

R = Reveal

S = Cabinet Sidewall

RFI 77 ATTACHMENT

Tiomos Flap Hinge

90° hinge for flap door



- Sleek modern design
- 90° opening angle
- For flap thicknesses of up to 30mm (1 3/16")
- Narrow joint
- Large overlay of up to 19mm (3/4")
- 3-dimensional adjustment
- Compatible with Tipmatic pin system
- Compatible with Kinvaro D-M/D-S flap system



Tiomos Flap Hinge Opening Angle 90° — **Screw-On**

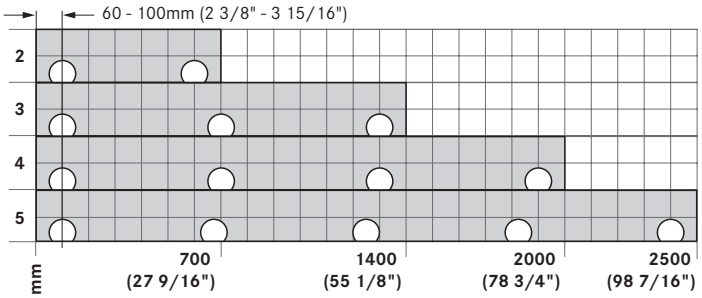
Overlay	For Flap Thickness 14-21mm	Color	Cup Depth	Item No.	PU
	Hinge: zinc die-cast, nickel-plated	Nickel	12mm	**F053**139**671**223	100
	Hinge: zinc die-cast, night	Night	12mm	**F053**139**677**223	100

Overlay	For Flap Thickness 22-28mm	Color	Cup Depth	Item No.	PU
	Hinge: zinc die-cast, nickel-plated	Nickel	17mm	**F053**139**672**223	100
	Hinge: zinc die-cast, night	Night	17mm	**F053**139**678**223	100

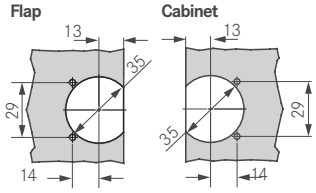
Cover Cap for Flap Hinge		Item No.	PU
	Steel, nickel plated	**F053**139**675**223	100
	Steel, night	**F053**139**683**223	100

1.5mm Spacer for Tiomos Flap Hinge		Item No.	PU
	Steel, nickel plated	**F053**139**676**223	100
	Steel, night	**F053**139**684**223	100

Number of Hinges per Door



Drilling Pattern



PU - Packaging unit

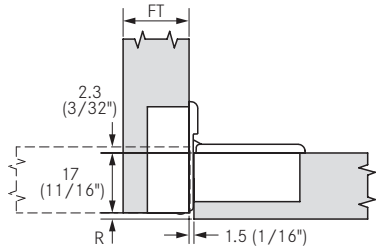
Dimensions in millimeters, fractional inch equivalents as noted.

RFI 77 ATTACHMENT

Tiomos Flap Hinge

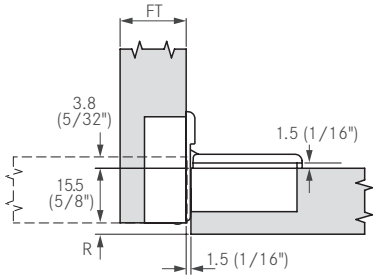
90° hinge for flap door

Overlay, Without Spacer, 12mm Cup Depth



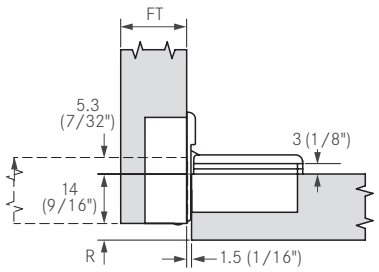
Flap Thickness (FT)								
	21	20	19	18	17	16	15	14
Min Reveal (R)	2.5	1.5	1	1	1	1	1	1

Overlay, with 1 Spacer, 12mm Cup Depth



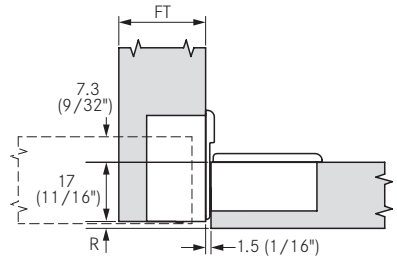
Flap Thickness (FT)								
	21	20	19	18	17	16	15	14
Min Reveal (R)	2.5	1.5	1	1	1	1	1	1

Overlay, with 2 Spacers, 12mm Cup Depth



Flap Thickness (FT)								
	21	20	19	18	17	16	15	14
Min Reveal (R)	2.5	1.5	1	1	1	1	1	1

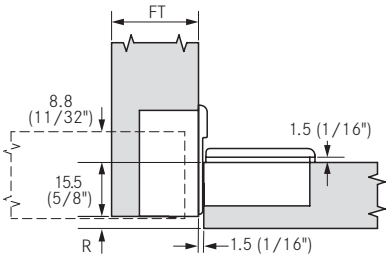
Overlay, Without Spacer, 17mm Cup Depth



Flap Thickness (FT)									
	30	29	28	27	26	25	24	23	22
Min Reveal (R)	6.5	5.5	4.5	3.5	2.5	1.5	1	1	1

Note: Hinge dimensions and reveal calculation based on factory setting.

Overlay, with 1 Spacer, 17mm Cup Depth

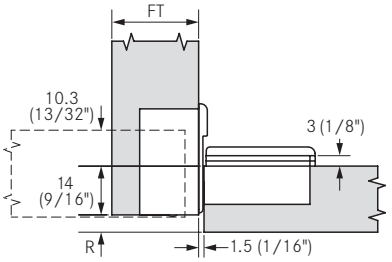


Flap Thickness (FT)									
	30	29	28	27	26	25	24	23	22
Min Reveal (R)	6.5	5.5	4.5	3.5	2.5	1.5	1	1	1

IMPORTANT

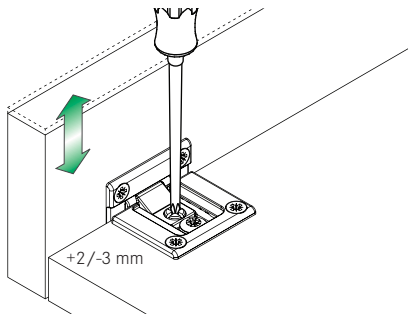
To determine the correct application Grass strongly recommends a trial mounting for all hinges and base plates.

Overlay, with 2 Spacers, 17mm Cup Depth

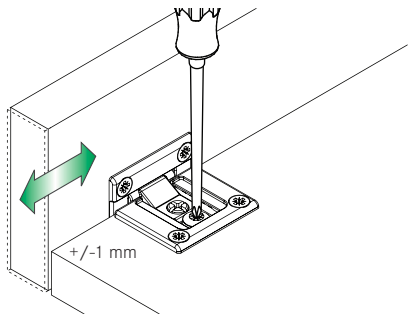


Flap Thickness (FT)									
	30	29	28	27	26	25	24	23	22
Min Reveal (R)	6.5	5.5	4.5	3.5	2.5	1.5	1	1	1

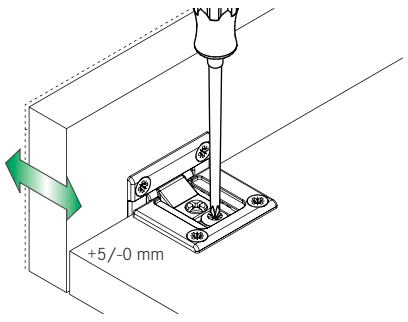
Height Adjustment



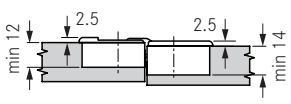
Side Adjustment



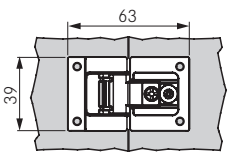
Depth Adjustment



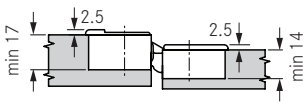
Cup Dimensions, 12mm Cup Depth



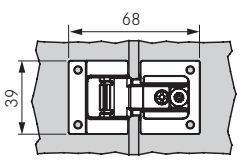
Hinge Dimensions, 12mm Cup Depth



Cup Dimensions, 17mm Cup Depth



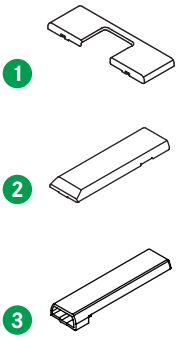
Hinge Dimensions, 17mm Cup Depth



Accessories and Assembly Aids

Tiomos

Cover Caps



Hinge Cup Cover Cap:
- Steel, nickel plated, without imprint

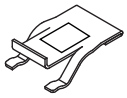
Hinge Arm Cover Cap Long:
- Steel, nickel plated, without imprint
- Imprinting available upon special request

Hinge Arm Cover Cap with Clip Protection:
- Plastic, black, without imprint
- Also serves as clip protection for the back release

	Description	Item No.	PU
1	Hinge cup cover cap	**F072**135**503**228	150
2	Hinge arm cover cap	**F072**135**500**247	1000
3	Cover Cap with Clip Protector	**F072**140**504**247	1000

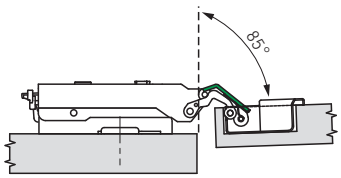
Angle Reduction Clips

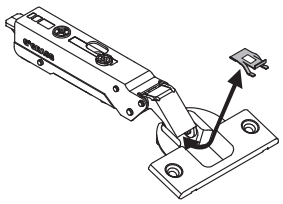
Angle Reduction Clip to 85°

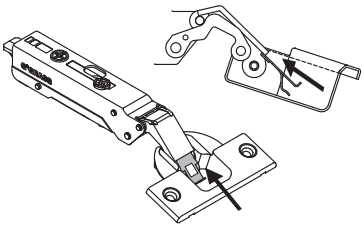


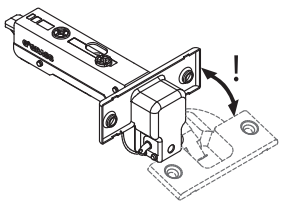
Works for all Tiomos 110° and 120° standard hinges. Reduces the opening angle to 85° to prevent doors from bumping fronts or walls in corner installations.

Description		Item No.	PU
Angle reduction clip, 85°	Steel, nickel	**F072**135**751**517	50

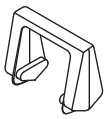






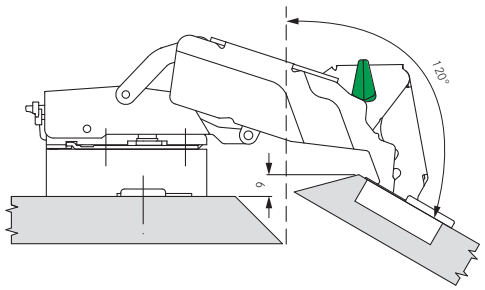


Angle Reduction Clip to 120°



Works for all Tiomos 155° standard hinges. Reduces the opening angle to 120° to prevent doors from bumping the cabinet side in inset and mitered corner applications.

Description		Item No.	PU
Angle reduction clip, 120°	Plastic, black	**F072**135**753**517	50



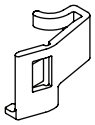
PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.

Accessories and Assembly Aids

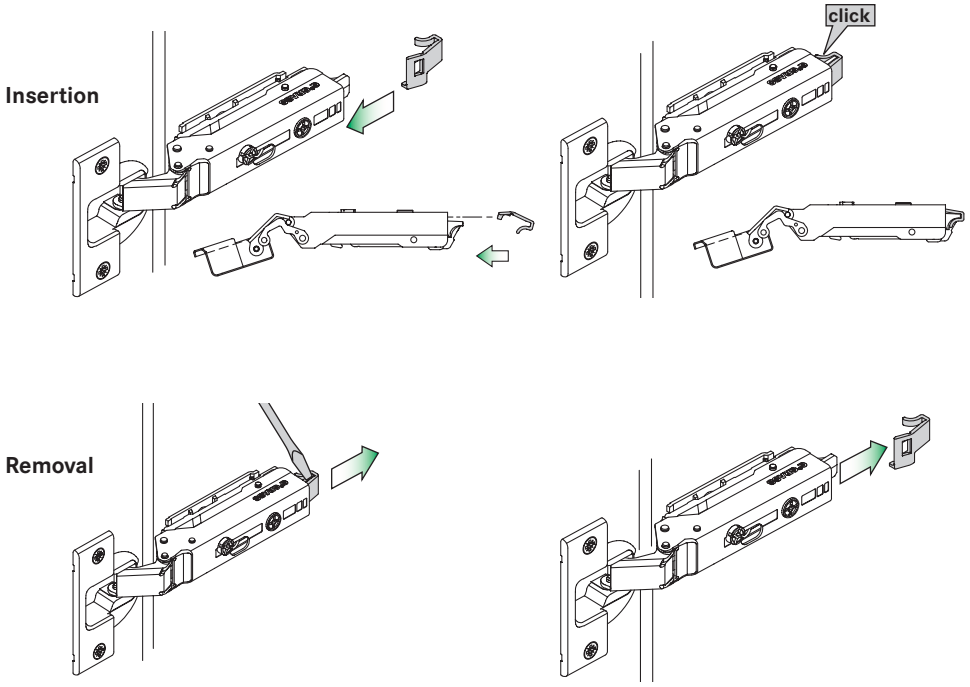
Tiomos

Hinge Clip Protector

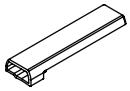


Prevents accidental release of the hinge from the base plate. For use in lockers, wardrobes, office furniture or similar applications.

Description		Item No.	PU
Hinge clip protector	Plastic, grey	**F072**135**807**540	500

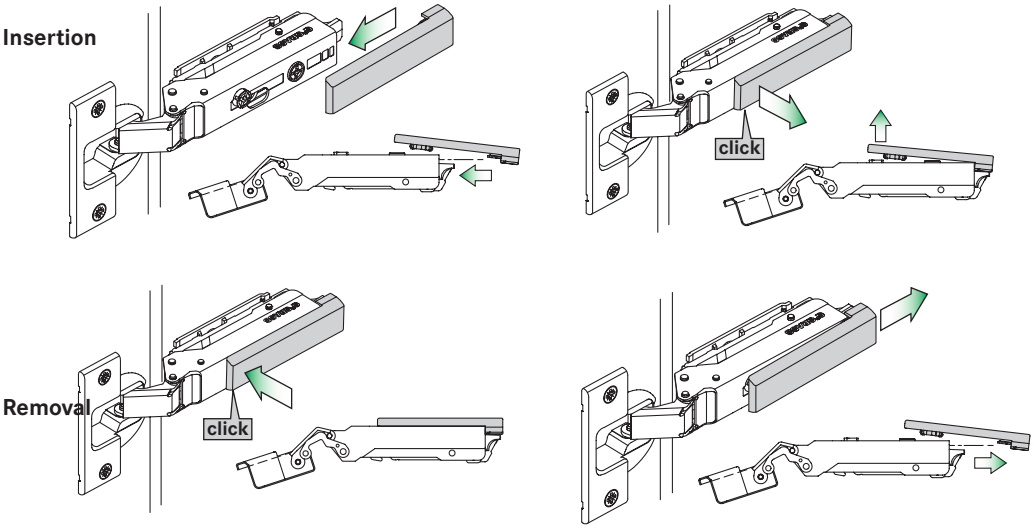


Cover Cap with Clip Protector



Prevents accidental release of the hinge from the base plate. For use in lockers, wardrobes, office furniture or similar applications.

Description		Item No.	PU
Cover Cap with Clip Protector	Plastic, black	**F072**140**504**247	1000



Accessories and Assembly Aids

Tiomos

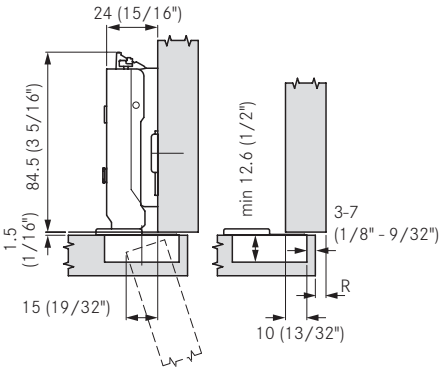
Tiomos Spacer Ring



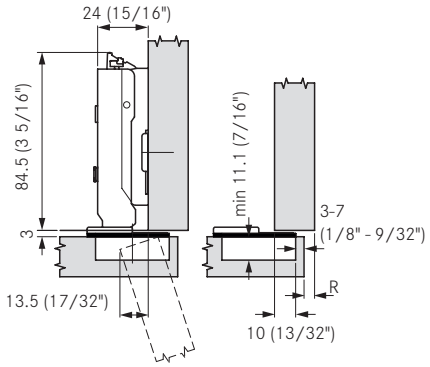
- Permits the use of standard hinges for thinner doors
- Simple installation
- Can be double-stacked
- Suitable for all Tiomos hinges

Description	Item No.	PU
Tiomos spacer ring, 1.5 height	**F072**135**885**228	150

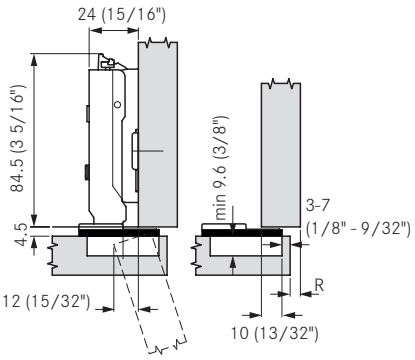
Without Spacer Ring



1 Spacer Ring

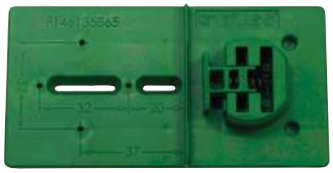


2 Spacer Rings



Tiomos Marking Aids

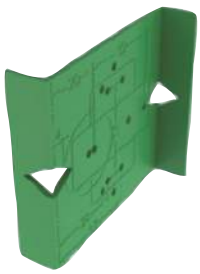
Tiomos Marking Jig



- Easy to use
- Cup distance 3-5mm
- Hinge cup positioning
- Straight base plate positioning
- Wing base plate positioning

Description	Item No.	PU
Tiomos marking jig	**F146**135**865**202	1

Tiomos Marking Template



Easy marking and pre-drilling for:

- 45mm pattern hinges
- Wing base plates
- Straight base plates

Description	Item No.	PU
Tiomos marking template	**F146**135**787**217	1

PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.

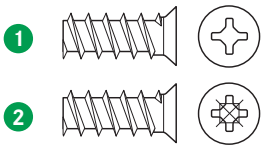
RFI 77 ATTACHMENT

Tiomos

Screws and Dowels

Euro Screw, Nickel-plated





	Description	Item No.	PU
1	13mm Euro Screw (1/2")	81015-43	500
	18mm Euro Screw (11/16")	83000-43	500
	7.5mm Euro Screw (5/16")	83001-43	500
2	Euro Screw 11mm (7/16") Pozi	499.360.61.1015	500
	Euro Screw 13mm (1/2") Pozi	499.360.61.3015	500

Wood Screw, Nickel-plated

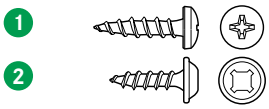




Description	Item No.	PU
#6 x 1/2" FHP, NI	81014-43	500
#6 x 5/8" FHP, NI	81001-43	500
#6 x 3/4" FHP, NI	81003-43	500
#6 x 1" FHP, NI	81004-43	500

Wood Screw, Nickel-plated

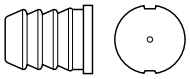




	Description	Item No.	PU
1	#10 x 3/4" PHP	81007-43	500
2	#8 x 5/8" Quad Round	81017-43	500

Dowels, Plastic





Description		Item No.	PU
Dowel, TEC Hinge	8mm	00102-43	500
Spax screw for TEC Hinge Dowel		02445-43	500
Dowel, Nexis	8mm	**F069**073**390**256	500
Dowel, Tiomos	8mm	**F072**135**773**247	1000
Dowel, VZ Hinge Cup	8mm	04885-43	500
Dowel, Zargen / ZBox	10mm	05853-42	100
Dowel and screw set Zargen	10mm	12768-37	1
Dowel, base plate	10mm	05404-43	500
Dowel, pilaster dowel	8mm x 16mm	00395-43	500

Pozidrive Screwdriver



#2 Pozidrive screwdriver for hinges

Description	Item No.	PU
Pozidrive screwdriver	98000-01	1
Pozidrive screwdriver	98000-08	50

Accessories and Assembly Aids

Tiomos

Shelf Supports





	Description	Item No.	PU
1	H-802 plastic, square, clear	00036-43	500
2	Shelf support 7006/9.5, nickel	**F069**073**460**253	2500

Bumper Pads

Bumper Pads, Self-adhesive



Description	Height	Diameter	Item No.	PU
Bumper pad, clear	2.5mm	10mm	63407-99	288
Bumper pad, clear	2.5mm	10mm	63407-47	7200

AirSoft Bumper Pads, Self-adhesive



Description	Height	Diameter	Item No.	PU
AirSoft Bumper pad, clear	5mm	12.7mm	63481-43	500
AirSoft Bumper pad, clear	5mm	12.7mm	63483-30	5000

Bumper Pads, Self-adhesive



Description	Height	Diameter	Item No.	PU
Bumper pad, clear	4mm	12mm	630.000.02.1250	5000

Bumper Pads, Self-adhesive



Description	Height	Diameter	Item No.	PU
Bumper pad, clear	3mm	12.7mm	31002-43	500
Bumper pad, clear	1.5mm	12.7mm	31004-43	500

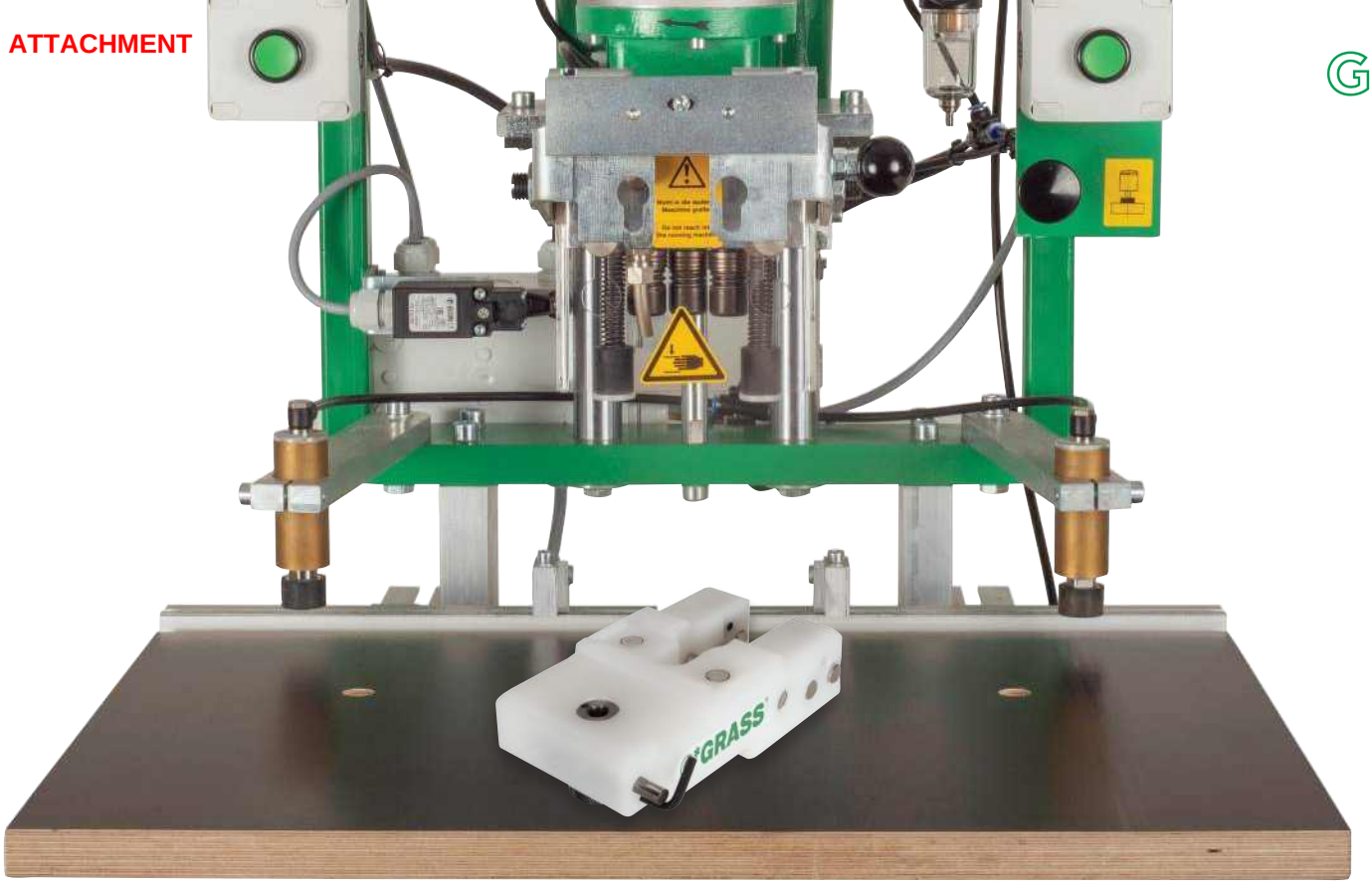
Door Stop



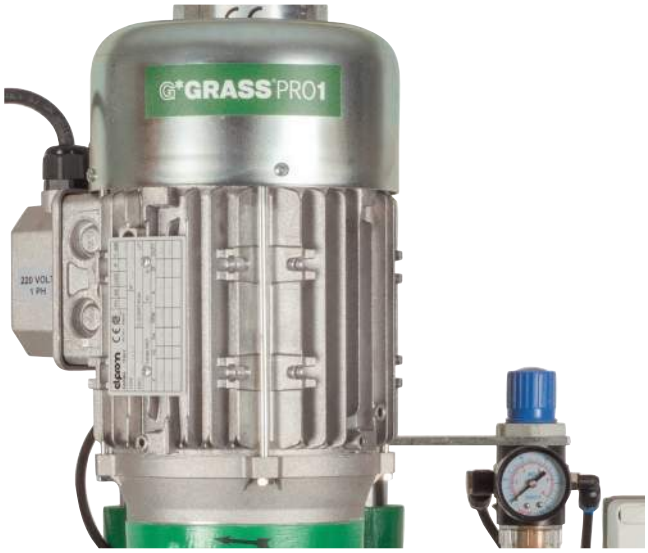
Description	Item No.	PU
H-950 door stop, clear	00068-43	500

PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.



GRASS PRO1 drilling and insertion machine for 45mm boring pattern



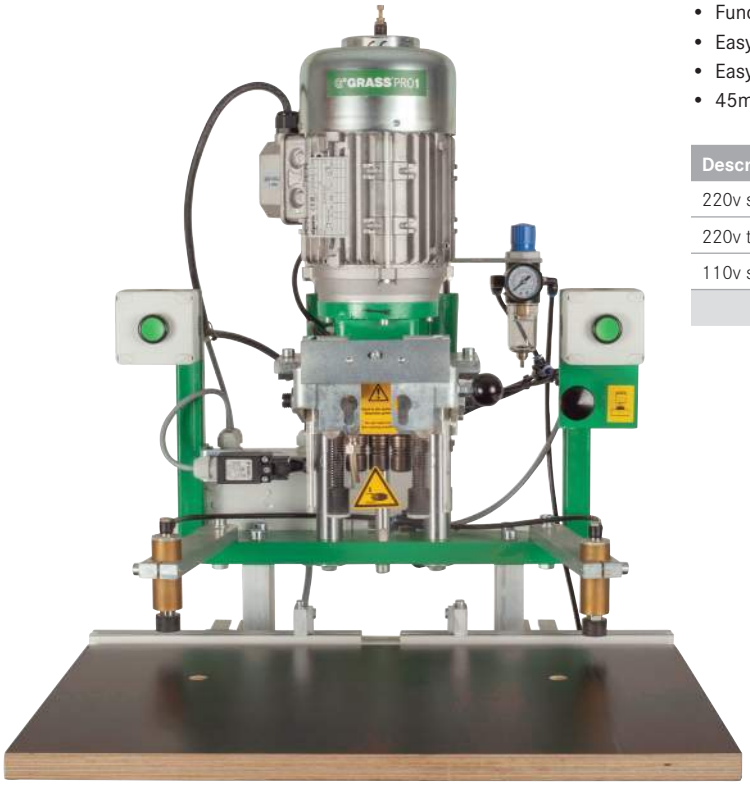
One machine can do the job. Whether it's drilling, boring, or inserting for hinges or installing slides for drawer boxes, GRASS PRO1 has it covered. Constructed from the highest quality materials and precision assembled, the GRASS PRO1 is designed for the demands of everyday use. Designed for use with Grass products, every unit is supported by Grass technicians and engineering.

- Bore depth automatically adjusts to material thickness
- Functional design
- Easy, fast and efficient operation
- Easy maintenance

Machinery

GRASS PRO1 drilling and insertion machine for 45mm boring pattern

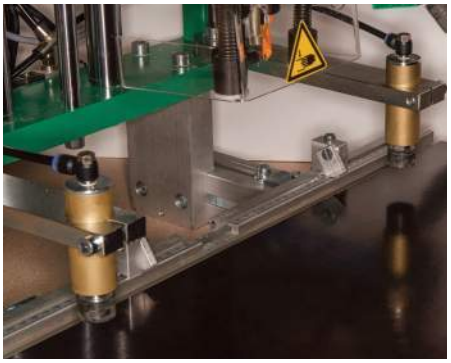
GRASS PRO1



- Depth stop can be adjusted to material thickness
- Functional design
- Easy, fast, and efficient operation
- Easy maintenance
- 45mm boring pattern

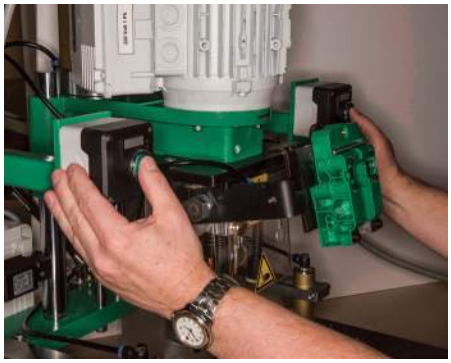
Description	Item No.	PU
220v single phase pneumatic	94559-01	1
220v three phase pneumatic	94560-01	1
110v single phase pneumatic	94561-01	1

GRASS PRO1 Features



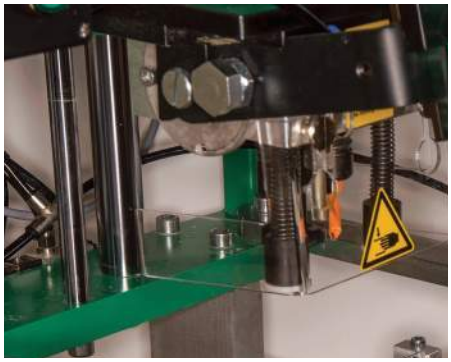
Adjustable hold-down devices

Adjustable hold-down devices are suitable for a wide range of material thicknesses.
Holds door firmly in place for drilling and insertion and features manual release.



Pneumatic controls

Two-hand start button controls for safe drilling and insertion functions.



Quick change chucks

Easy drill bit removal and insertion using quick change chucks.

PU - Packaging unit

Dimensions in millimeters, fractional inch equivalents as noted.

RFI 77 ATTACHMENT

Machinery

GRASS PRO1 accessories

Drill Bits





	Description	Direction	Item No.	PU
1	35mm bit	RH	00077-01	1
2	8mm bit	LH	00160-01	1
	American Bit Set for Hinge Drilling		00213-01	1

Set consists of:

1 - 35mm bit, RH

2 - 8mm bit, LH

Fence Stops





	Description	Item No.	PU
1	Additional fence stop	949.200.21.0000	1
2	Universal fence stop	949.200.21.0100	1

Insertion Dies









	Description	Item No.	PU
1	Tiomos Universal Insertion Die 110°/120°/160°	80039	1
2	TEC Insertion Die	92617	1
3	Nexis Insertion Die 110°/125°	04216-01	1
4	Nexis Insertion Die 170°	04218-01	1

Extension Fence



Description	Item No.	PU
Extension fence 300mm to 1550mm	88612-01	1

PU - Packaging unit

RFI 77 ATTACHMENT

G*GRASS®

GRASS America Inc.
1202 NC Highway 66 South
Kernersville, NC 27284

Phone: 1-800-334-3512
Fax: 1-800-525-8406

www.grassusa.com
info@grassusa.com

TÜV SÜD ISO 9001

Item #02006-TC-2.5M-JSKH-11/22 OL_V1_02/23)

RFI 89

SUBSTITUTION REQUEST
(During the Bidding/Negotiating Phase)

CSI®

PROJECT: Greenwich Central Middle School

SUBSTITUTION REQUEST NUMBER: 1

FROM:

TO: Turner Construction

DATE: 10/10/24

A/E PROJECT NUMBER:

RE:

CONTRACT FOR:

SPECIFICATION TITLE: Metal Lockers

DESCRIPTION: Metal Locker & Bench

SECTION: 10 5113

PAGE: 2,3,4

ARTICLE/PARAGRAPH: 2.1-A, 2.2-A, 2.2-B 2.2-C, 2.4-A

PROPOSED SUBSTITUTION: Metal Lockers & Bench

MANUFACTURER: List Industries **ADDRESS:** Deerfield Beach, FL **PHONE:** 1-800-776-1342

TRADE NAME: Metal Lockers & Benches **MODEL NO.:** Classmate Corridor Bench Tops & Pedistals

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.
Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:
- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

SUBMITTED BY:

SIGNED BY:

FIRM:

ADDRESS:

TELEPHONE:

A/E's REVIEW AND RECOMMENDATION:

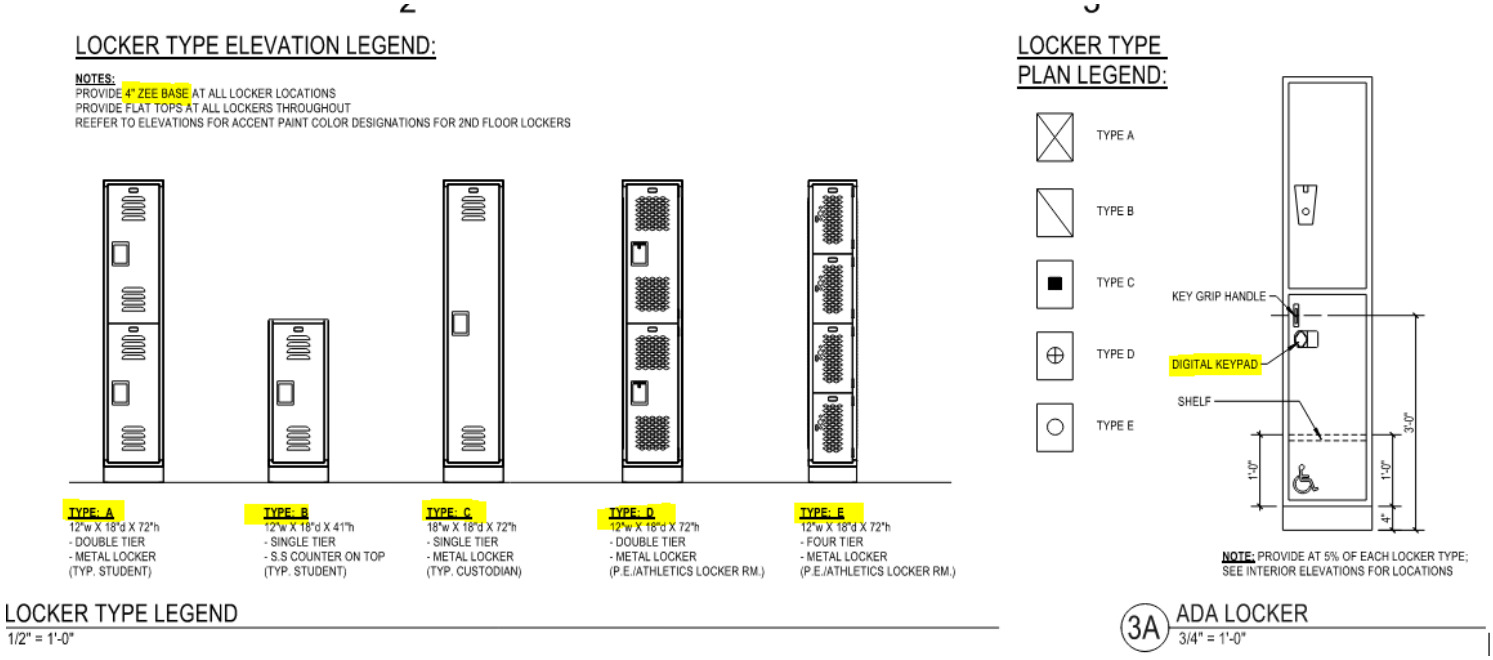
- ☐ Approve Substitution—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
- ☒ Approve Substitution as noted—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
- ☐ Reject Substitution—Use specified materials.
- ☐ Substitution Request received too late—Use sp

LOCKERS - Needs to be able to meet the A911 Color requirements(does not acknowledge project specific colors). Product needs to meet all Accessibility requirements in the Specification including Built-In Digital Keypad Locking (information missing)
BENCHES - See comments

SIGNED BY: Stephen Martocchio - SLAM **DATE:** 10/30/24

SUPPORTING DATA ATTACHED: ☑ Drawings ☑ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

RFI 89



FROM A911

3. Substitutions: See Section 01 6000 - Product Requirements.

2.2 LOCKER APPLICATIONS

A. Student Lockers: **Types A and B**. Metal lockers, free-standing with matching closed base.
   1. Width: 9 inches 12 inches.
   2. Depth: 15 inches 18 inches.
   3. Height:
      a) Type A: 72 inches.
      b) Type B: 40 inches, nominal.
   4. Configurations: As indicated below.
      a) **Type A**: Four-tier. DOUBLE
      b) **Type B**: Single-tier.
   5. Fittings: Size and configuration as indicated on drawings.
      a) Provide additional shelf for accessibility compliance, as indicated on drawings. Provide at 5% of each locker type, or (1) minimum, whichever is greater.
      b) Hooks: One single prong.
   6. Ventilation: Louvers at top and bottom of door panel.
   7. Locking: Recessed lift handles with built-in padlock hasp.
      a) Accessible Lockers: Provide a built-in digital keypad lock.
   8. Provide sloped top, to the extent indicated on drawings.
   9. Color: To be selected from manufacturer's full range by Architect and allow for (3) additional custom accent colors, as indicated on the "Finish Product List - Finishes for Miscellaneous Items" on the drawings.

B. Custodial Lockers: **Type C**. Metal lockers, free-standing with matching closed base.
   1. Width: 18 inches.
   2. Depth: 18 inches.
   3. Height: 72 inches.
   4. Configuration: Single tier.
   5. Fittings: Size and configuration as indicated on drawings.
      a) Hat shelf.
      b) Hooks: One single prong.

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.

RFI 89

Approved Substitution - SLAM

SUPERIOR®
Bench Top and Pedestal Specifications

Maple

Benchtops: To be 9-1/2" wide x 1-1/4" thick and made from laminated ~~hardwood~~. Benchtops are to be finished with one coat deep penetrating sealer and two coats of heavy body high impact hot hydraulically applied lacquer. Benches up to 8'-0" in length have two pedestals. Benchtops longer than 8'-0" up to 12'-0" are supplied with three pedestals.

No. 4805 Heavy-Duty Steel Pedestal: Fabricated from 1-1/2" diameter 14 gauge steel tube welded to top and bottom 11 gauge formed flanges. Each flange to have three anchoring holes. Color: #729 Parchment.

No. 4810 Extra Heavy Duty Cast Iron Pedestal: One piece cast iron pedestal to include 6" diameter top and bottom flanges. Each flange to have three anchoring holes. Multiple piece constructed pedestal are not acceptable. Color #729 Parchment.

No. 4820 Standard Moveable Pedestal: Fabricated of extruded aluminum providing four anchoring holes at bottom. Pedestal is designed to be moveable type if desired. Color #729 Parchment.

No. 4825 Stainless Steel Pedestal: Fabricated from 16 gauge stainless steel. Pedestal is designed to be moveable but includes 4 holes for anchoring to floor if desired. Unpainted

No. 8032 Pedestal: Adjustable height pedestal consisting of a cast aluminum base, threaded pipe nipple and steel pipe flange at the top. Anchoring thru the cast aluminum base is concealed.
Color #729 Parchment.

UNIBODY ALL-WELDED CORRIDOR LOCKERS

WHAT IS UNIBODY ALL-WELDED?

- Superior unibody all-welded corridor lockers include our double vertical frame design adding strength, integrity, durability and visual appeal.
- First we start with prime grade cold rolled sheet steel. 16 gauge for all body components except backs which are 18 gauge. Doors are heavy 14 gauge.
- Sides are formed to be an integral part of the front vertical locker frame which locks into the bottom for precise alignment and added strength.
- We MIG weld an additional channel shaped vertical frame member between doors providing a continuous door strike at both the hinge and latch side of the door.
- The top and bottom are flanged downward at the front to form a 1-1/2" high channel shaped top and bottom horizontal frame member continuous across the multiple column unit up to 60" wide.
- The base is a full 1-1/2" high keeping locker contents away from moisture on the floor and/or wood/concrete base.
- Front-to-back channel stiffeners are welded into the base under each side panel providing a strong anchor bearing surface for installation and increasing overall unit strength.
- Horizontal tier dividers for double and triple tier models project through to the face of the locker forming a horizontal cross member between doors for maximum strength.
- Guaranteed in writing by our lifetime warranty.

THE CLASSMATE™ CORRIDOR LOCKERS

Our unique double frame, unibody all-welded design provides a durable locker with a classic appearance that is backed by our life-time warranty.



Single Tier 3-Wide

Double Tier 3-Wide

Triple Tier 3-Wide



UPGRADE

INTEGRAL SLOPE TOP *is fabricated of heavy 16 gauge steel, runs continuous across a multiple column unit and is MIG welded at the factory replacing welded locker unit flat top. Sides are sloped at top providing rigid support beneath the slope top between each locker column.*



UPGRADE

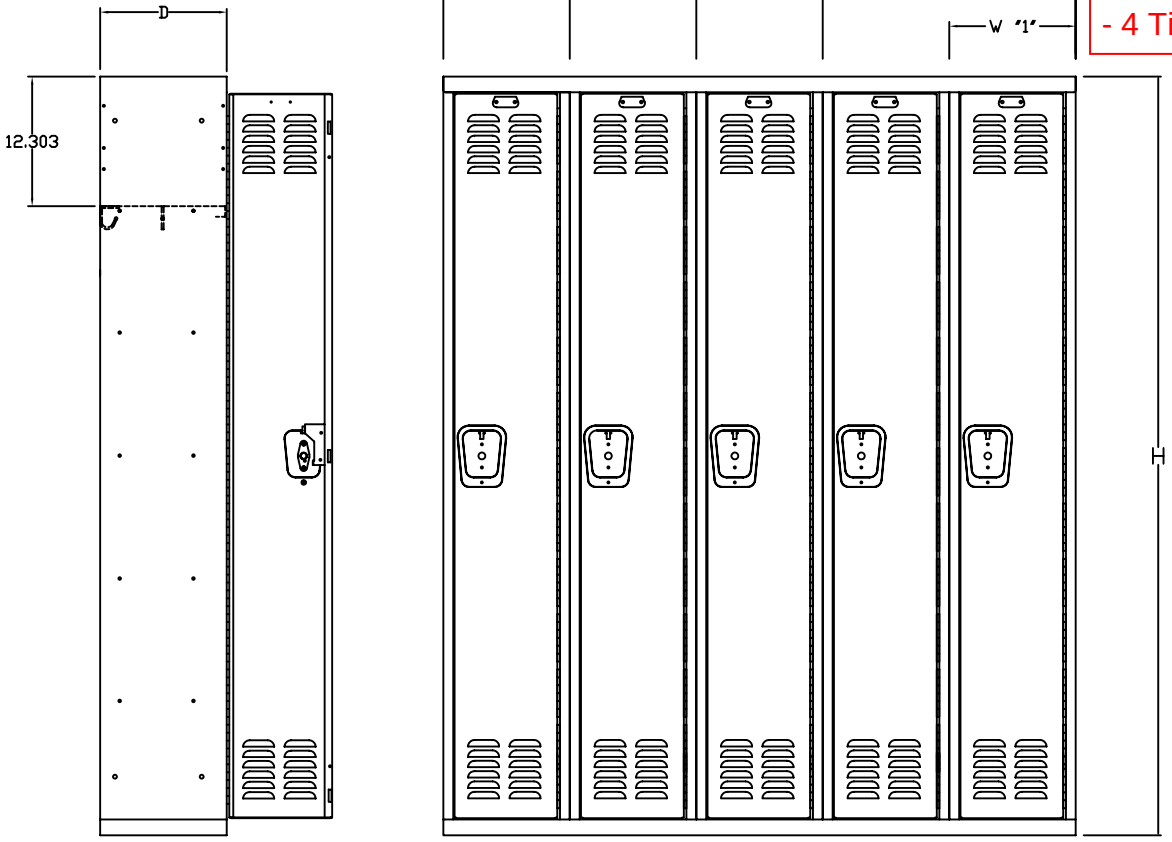
PREMIER SERIES CLASSMATE *which includes a 3" wide 18 gauge full height door stiffener spot welded to the inner door face and MIG welded to the hinge side as well as to the top and bottom door flanges providing a rigid torque-free door. A 1-1/2" wide stiffener will be furnished for 9" wide Premier doors. 18" and 24" all-welded lockers are only available in Premier Series.*

FOR MORE INFO GO TO LISTINDUSTRIES.COM

RFI 89

LIST "CLASSMATE" WELDED SINGLE TIER LOCKER (9" TO 15") (PRODUCT No. LUC _ _ _ -1)

ELEVATION ' '



SIDE VIEW

FRONT VIEW

Lockers can also be:
- 2 Tier
- 3 Tier
- 4 Tier

LOCKER DETAILS:

EXTERIOR COLOR =
INTERIOR COLOR = SAME AS EXTERIOR
TOP =
HANDLE = LIFT (S.S. RECESSED DRAWN)
DOOR VENTILATION = 3" LOUVER
SIDE VENTILATION = SOLID
BASE =
LOCKS =
HINGE = 16ga. CONTINUOUS PIANO TYPE HINGE WELDED TO DOOR & RIVETED TO FRAME

CONTRACTOR NOTE

ALL CONCRETE BASES SHOULD BE LEVEL AND TROWELED SMOOTH TO ASSURE PROPER INSTALLATION OF THE LOCKERS. ALL FLOORING MATERIAL ATTACHED TO THE FACE OF THE BASE SHOULD BE RECESSED AT LEAST 1/4" FROM THE TOP EDGE OF THE BASE. LOCKERS MUST BE ANCHORED TO WALL.

GAUGES

DOOR =	14 GA., C.R.S.
FRAME =	16 GA., C.R.S
TOP =	16 GA., C.R.S.
BOTTOM BASE =	16 GA., C.R.S.
SHELVES =	16 GA., C.R.S.
SIDES =	16 GA., C.R.S.
BACKS =	18 GA., C.R.S.

LATCHING: (WARDROBE) THREE POINT RECESSED ON LOCKER DOORS 48" AND OVER, TWO POINT RECESSED ON ON LOCKER DOORS 36" TO 20". AUTOMATIC LOCKING DEVICE WITH LIFT-TYPE PADLOCK HASP.

SUPERIOR

THIS DRAWING AND THE INFORMATION ON IT IS THE CONFIDENTIAL PROPERTY OF LIST INDUSTRIES, INC. AND SHALL NOT BE COPIED OR DISCLOSED TO OTHERS WITHOUT WRITTEN PERMISSION. ONLY LIST INDUSTRIES RESERVES THE RIGHT TO ALTER ANY DESIGN. ANY UNAUTHORIZED MODIFICATIONS RELEASES LIST INDUSTRIES FROM ALL LIABILITIES.

TOLERANCES UNLESS SPECIFIED:
FRACTIONS: ±1/32 DECIMALS: ±.010 DEGREES: ±1°

Customer: CUSTOMER
Customer Order Number: PO#
Description: JOB NAME
JOB LOCATION

Drawn By:	Checked By:	Date:	Scale:
DRAFTER		DATE	NONE

Acad Number: PAGE NUMBER | Sheet # Of # | Revision:

Drawing Number: FOLDER NUMBER

LUC-1 11-21-12

RFI 89

SUPERIOR®
Classmate Corridor™
Unibody All-Welded Lockers

General: Lockers shall Be **"Superior Classmate Corridor Unibody All-Welded Lockers**" as manufactured by List Industries Inc. or approved equal. All lockers shall be factory-assembled, of all MIG welded construction, in multiple column units to meet job conditions. **Assembly of locker bodies by means of bolts, screws, or rivets will not be permitted. Welding of knockdown locker construction is not acceptable.** Grind exposed welds and metal edges flush and make safe to touch.

Lockers shall be **GREENGUARD Gold Certified**℠.

Finishing: All locker parts to be cleaned and coated after fabrication with a seven stage zinc/iron phosphate solution to inhibit corrosion, followed by a coat of high grade custom blend powder electrostatically sprayed and baked at 350 degrees Fahrenheit for a minimum of 20 minutes to provide a tough durable finish. Color to be selected from manufacturer's standard list of colors. **Two-Tone Color Combination: Shall be at no additional cost with the locker body, frame and trim chosen from one color and the doors may be one of any other color chosen from manufacturers standard selection.**

Classmate Wardrobe Doors: Doors 20" high and over and 15" wide and under shall be fabricated from single sheet prime 14 gauge with single bends at top and bottom and double bends at the sides. The channel formed by the double bend at the latch side is designed to fully conceal the lock bar. Doors to be louvered.

Seamless Drawn Stainless Steel Recessed Locker Handle: All locker doors shall have a seamless drawn not less than 304 stainless steel recessed handle shaped to receive a padlock or built-in combination lock. The recess pan shall be deep enough to have the lock be completely flush with the outer door face. A finger lift/padlock hasp shall protrude through the top of the handle for easy opening of the locker door.

Latching: The latching mechanism shall be finger lift control type constructed of 14 gauge (minimum) steel with a nylon cover that has a generous finger pull. Spring activated nylon slide latches shall be completely enclosed in the lock channel allowing doors to close with the lock in the locked position. Lock bar shall be hot dip galvanized and installed after paint to ensure proper paint coverage and lock bar operation. Locking devise shall be designed for use with either built-in combination locks or padlocks. Latch hooks shall be 12 gauge (minimum) and shall be MIG welded to vertical frame member. Provide three latch hooks for doors 48" and over and two for doors under 48".

Hinges: Hinges shall not be less than 16 gauge continuous piano type hinges riveted to the frame and welded to the door. All doors shall be right hand side hinged.

Twin-Frame / Vertical Side Panels: Shall be of integral frame and side wall construction manufactured from solid 16 gauge sheet steel. The one-piece side/frame shall be formed to provide a continuous door strike on the hinge side. An additional continuous vertical door strike shall be achieved at the latch side by MIG welding a 16 gauge full height channel frame member to the integral locker side producing a rigid torque-free welded locker body. The frame shall include a tab which engages a slot in the base locking the side panel and frame into position.

RFI 89

SUPERIOR® Classmate™ Corridor Unibody All-Welded Lockers (Page 2)

Integral Frame Locker Base: 16 gauge formed sheet steel with double return flanges at the front and rear. A full depth horizontal channel shall be MIG welded under the locker bottom front-to-back at the left and right side of each welded locker unit as well as beneath each vertical side panel for maximum rigidity.

Flat Tops: Shall be formed of one piece of 16 gauge cold rolled sheet steel and shall be an integral part MIG welded to each vertical side panel frame member and be continuous to cover the full width of a multiple locker unit.

Hat Shelves, Intermediate Shelves And Bottoms: Shall be 16 gauge sheet steel, have double bends at front and shall be MIG welded to the sides.

Backs: Shall be 18 gauge cold rolled sheet steel, be continuous to cover a multiple twin-framed unit and be welded to each vertical side panel.

Locks (If Required): Shall be master keyed to one system for the entire project. (See lock use chart for suggested lock application).

Equipment: Furnish each locker with the following items, unless otherwise shown.

Single tier lockers: Openings 60” and 72” shall include one hat shelf, one double prong ceiling hook and a minimum of two single prong hooks.

Double and Triple tier lockers: Openings 20” thru 36” high shall include one double prong ceiling hook and a minimum of two single prong hooks.

Lifetime Warranty: Superior Unibody All-Welded Lockers are covered against all defects in materials and workmanship excluding finish, damage resulting from deliberate destruction and vandalism under this section **for the lifetime of the facility**.

RFI 89

PEDESTAL AND BENCH TOP INSTALLATION INSTRUCTIONS

General Instructions

1. Check material received against the packing list. First, check the number of packages received and then check the contents of each package.

2. Check the material received for damage. If damage has occurred, secure a "damage notation" from the carrier

3. Identify each part as it is unpacked and put like parts together as close as possible to the working area where they are to be assembled.

4. Be careful to use the correct hardware as specified in the assembly instructions.

CAUTION

In the interest of safety, all lockers must be securely anchored to the floor and/or wall. For safety, handle all components carefully and wear work gloves when assembling lockers. Install all units plumb and tighten all hardware securely. Retain instruction for future reference.

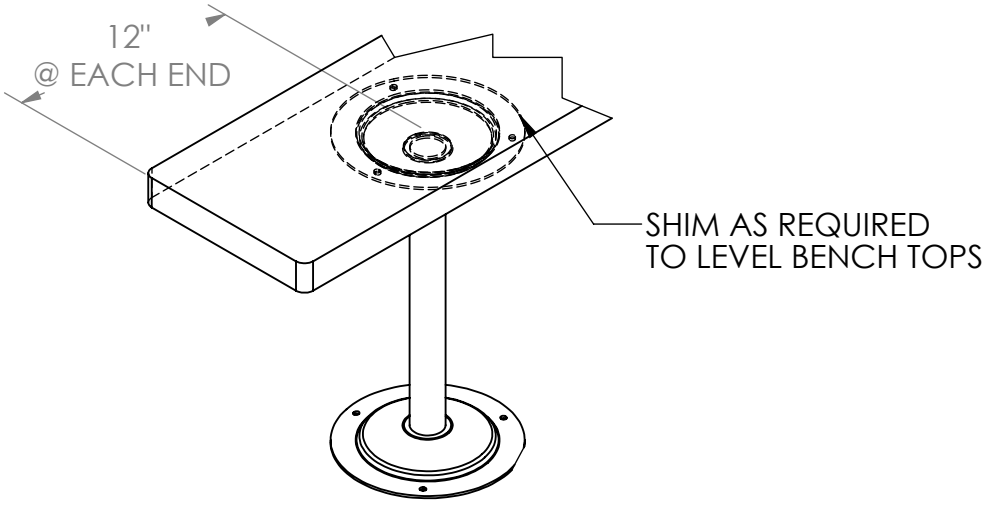
LIST INDUSTRIES INC.®

800-776-1342
info@ListIndustries.com
www.ListIndustries.com

RFI 89

GENERAL ASSEMBLY FOR PEDESTALS

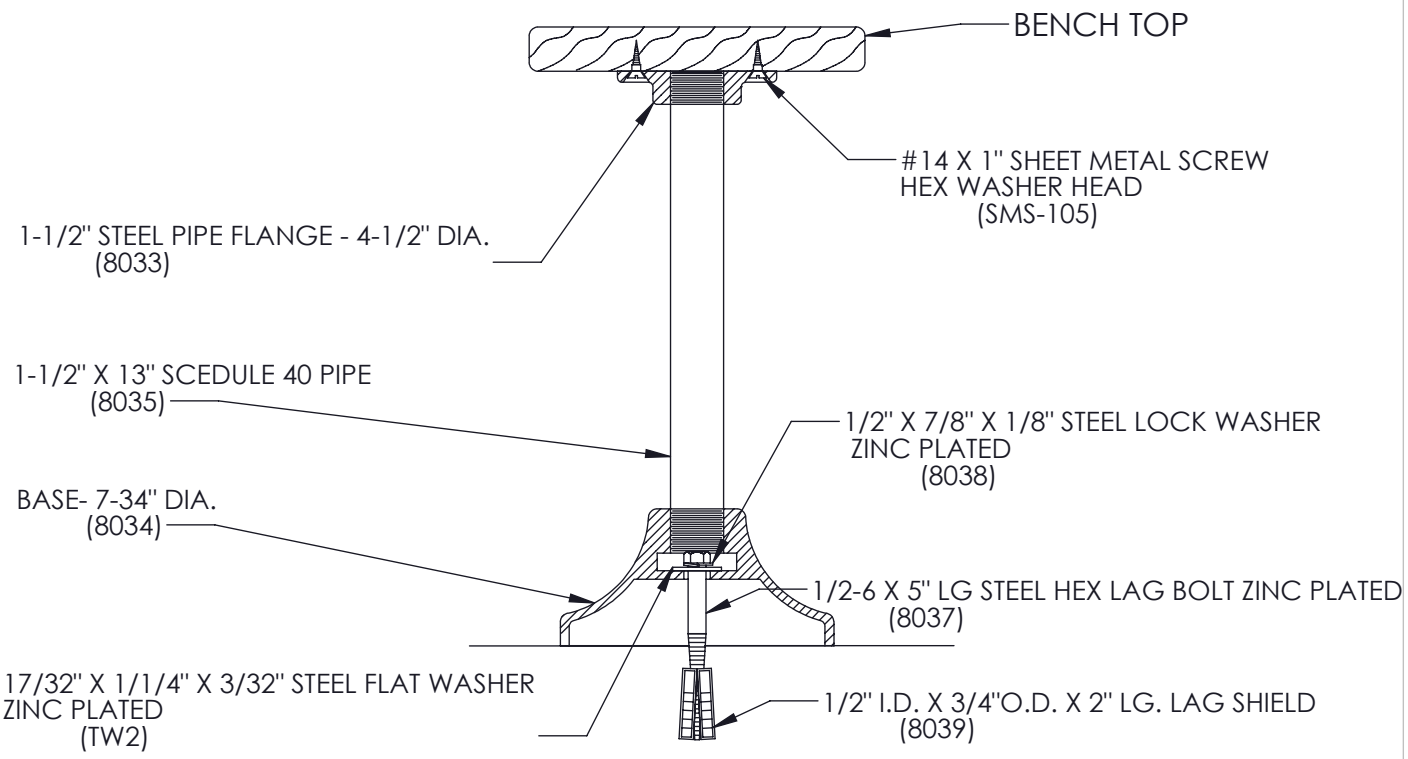
USING THE PEDESTAL AS A TEMPLATE, LOCATE CENTERS. DRILL 3/16" HOLES AND ATTACH WITH THE SCREWS PROVIDED. FLOOR ANCHORS ARE PROVIDED BY THE INSTALLER. RECOMMENDED HILTI ALUMINUM HIT ANCHORS CAT. NO. 5400192 OR 1/4" X 2" TAP-COM.



PEDESTAL ARRANGEMENT

ALL PEDESTALS TO BE LOCATED 12" FROM EACH END WITH A MAXIMUM OF 6'0" SPACING.
ON BENCH LENGTHS GREATER THAN 8'0", (3) PEDESTALS ARE REQUIRED.

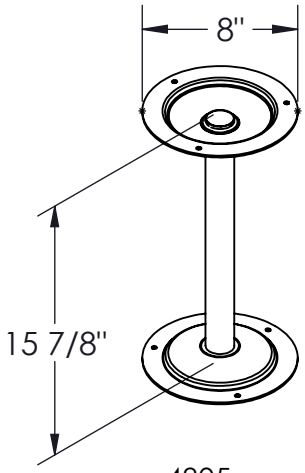
8032 PEDESTAL ANCHORING



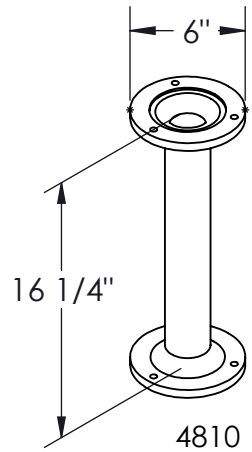
SA0754-1

RFI 89

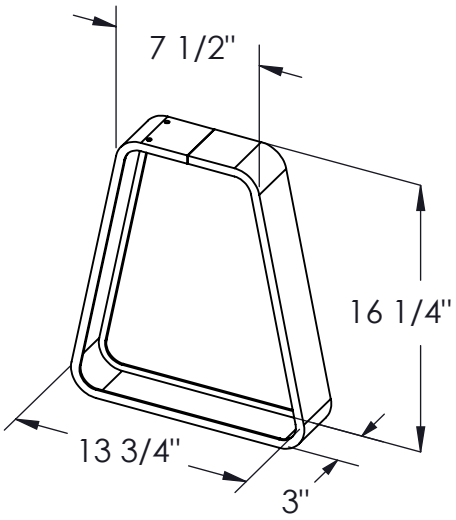
PEDESTAL TO BENCH TOP ATTACHMENT HARDWARE



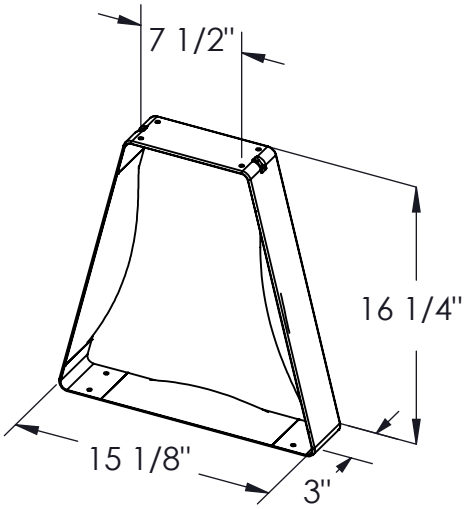
4805
(3)#14 X 1" HEX WASHER
HEAD SHEET
METAL SCREW



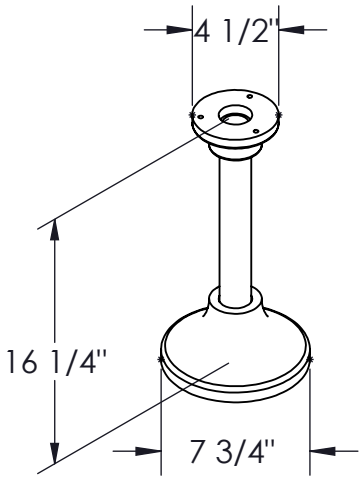
4810
(3)#14 X 1-1/2" HEX
WASHER
HEAD SHEET
METAL SCREWS



4820
(4)#14 X 1" HEX WASHER
HEAD SHEET
METAL SCREWS



4825
(4)#14 X 1" HEX WASHER
HEAD SHEET
METAL SCREW



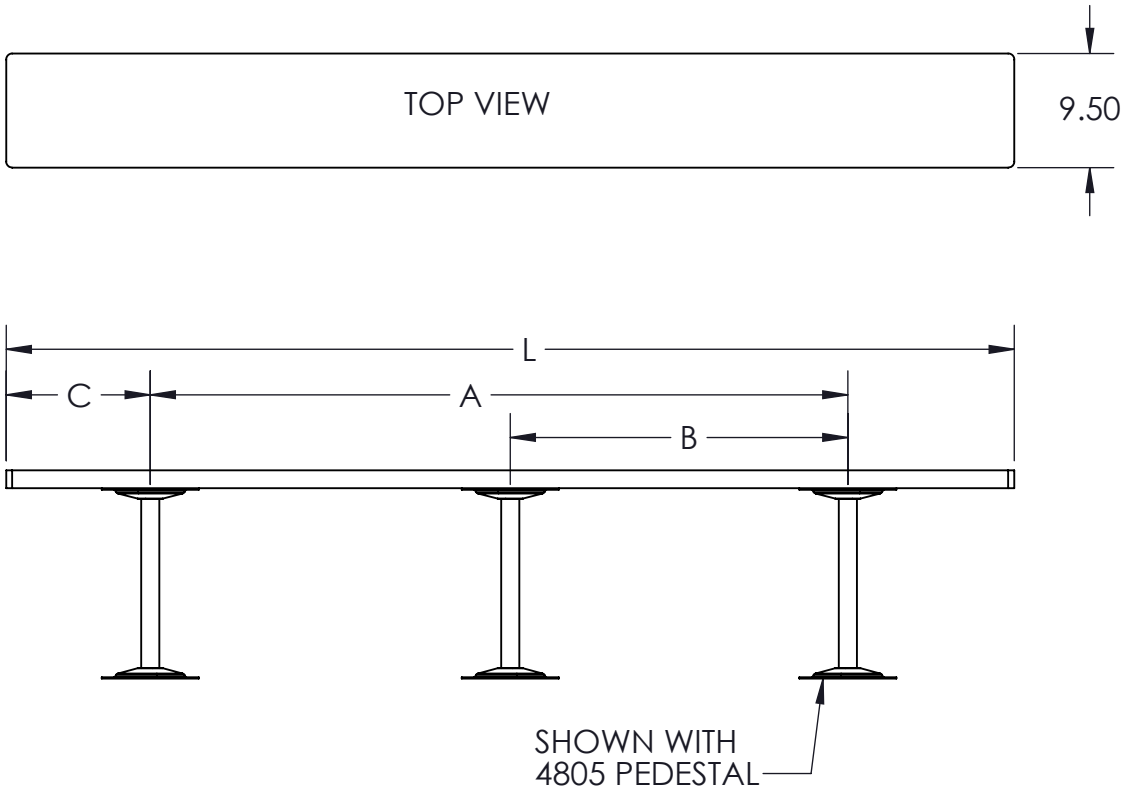
8032
(3)#14 X 1-1/2" HEX
WASHER
HEAD SHEET
METAL SCREW

NOTE: FLOOR ANCHORS
SUPPLIED BY OTHERS

SA0754-2

RFI 89

BENCHES & TOPS



QTY. OF PEDESTALS	
3 FT.	2
4 FT.	2
5 FT.	2
6 FT.	2
7 FT.	2
8 FT.	2
9 FT.	3
10 FT.	3
11 FT.	3
12 FT.	3
13 FT.	3
14 FT.	3
15 FT.	4

LENGTH	L	A	B	C
3 FT.	36"	24"	X	6"
4 FT.	48"	32"	X	8"
5 FT.	60"	40"	X	10"
6 FT.	72"	48"	X	12"
7 FT.	84"	60"	X	12"
8 FT.	96"	72"	X	12"
9 FT.	108"	84"	42"	12"
10 FT.	120"	96"	48"	12'
11 FT.	132"	108"	54"	12"
12 FT.	144"	120"	60"	12"
13 FT.	156"	132"	66"	12"
14 FT.	168"	144"	72"	12"
15 FT.	180"	156"	52"	12"

BQ#104 Attachment

SUBSTITUTION REQUEST
(During the Bidding/Negotiating Phase)

CSI®

PROJECT: Greenwich Central Middle School
State Project No. 057-0114N

TO: Turner Construction Company

RE: BP-9 Sitework Retaining Walls

SUBSTITUTION REQUEST NUMBER: 001

FROM:

DATE: 10/14/24

A/E PROJECT NUMBER:

CONTRACT FOR:

SPECIFICATION TITLE: Segmental Retaining Walls

DESCRIPTION:

SECTION: 323223 **PAGE:** 6 of 10

ARTICLE/PARAGRAPH: 2.2 Segmental Retaining Wall

PROPOSED SUBSTITUTION: Versa-Lok Square Foot

MANUFACTURER: Versa-Lok

ADDRESS: 5 Northern Blvd #15
Amherst, NH 03031

PHONE: (603)883-3042

TRADE NAME:

MODEL NO.: Square Foot

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.
Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:
- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

SUBMITTED BY:

SIGNED BY:

FIRM:

ADDRESS:

TELEPHONE:

Versa-lock is an acceptable substitution. Approval contingent on contractor to ensuring that proposed product can meet design intent with regard to layout and construction, as well as warranty and compatibility. Color to be selected from manufacturer's full range of colors and finishes (including premium). Near vertical batter (1/4"). - SLAM

A/E's REVIEW AND RECOMMENDATION:

- ☐ Approve Substitution—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
- ☒ Approve Substitution as noted—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
- ☐ Reject Substitution—Use specified materials.
- ☐ Substitution Request received too late—Use specified materials.

SIGNED BY: Kathryn Packtor - SLAM **DATE:** 10.30.2024

SUPPORTING DATA ATTACHED: ☒ Drawings ☒ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

CSI Form 1.5C (August 2020 version)

BQ#104 Attachment

VERSA-LOK SQUARE FOOT

RETAINING WALL SYSTEM

VERSA-LOK®
Retaining Wall Systems
Solid Solutions.™



AFFORDABLE & ATTRACTIVE WALLS BY THE FOOT.

VERSA-LOK® Square Foot™ units are engineered to provide the construction flexibility you need in a large retaining wall project, making it a smart, low-cost alternative for public works, institutional and commercial projects. At 87-pounds each, the Square Foot unit is a unique hybrid design, combining the versatility of VERSA-LOK's top-pinning technology with cost-effective hollow-core unit construction. No mortar or concrete footings are needed, so Square Foot walls remain flexible in climates that experience freeze-thaw cycles. And its thick face affords better durability than other cored systems.

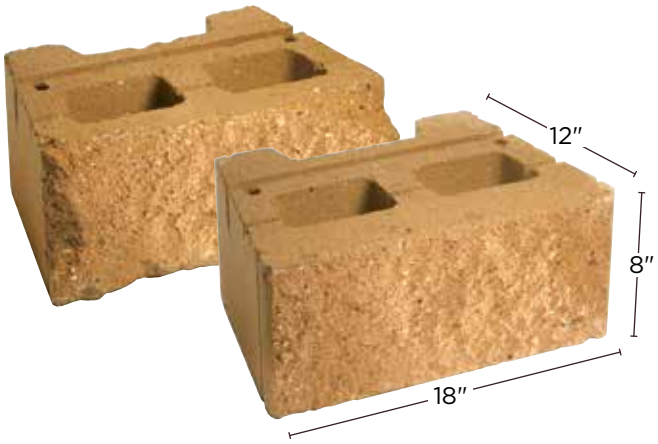
Square Foot's top-pinning system allow for variable bond construction, quick accurate alignment, tighter vertical joints and easy installation. Its trapezoidal design enables inside and outside curves with one of the tightest radiuses in the industry (4' 6"). Square Foot retaining walls can be built with a traditional 1-inch setback or near-vertical, and will accommodate geogrid reinforcement to build walls to any height. The maximum stable unreinforced Square Foot wall is 3 feet, depending on soil, site and loading conditions (including terraces). Square Foot walls can be finished off with VERSA-LOK cap units.

BQ#104 Attachment

VERSA-LOK SQUARE FOOT

RETAINING WALL SYSTEM

VERSA-LOK® Retaining Wall Systems
Solid Solutions.™

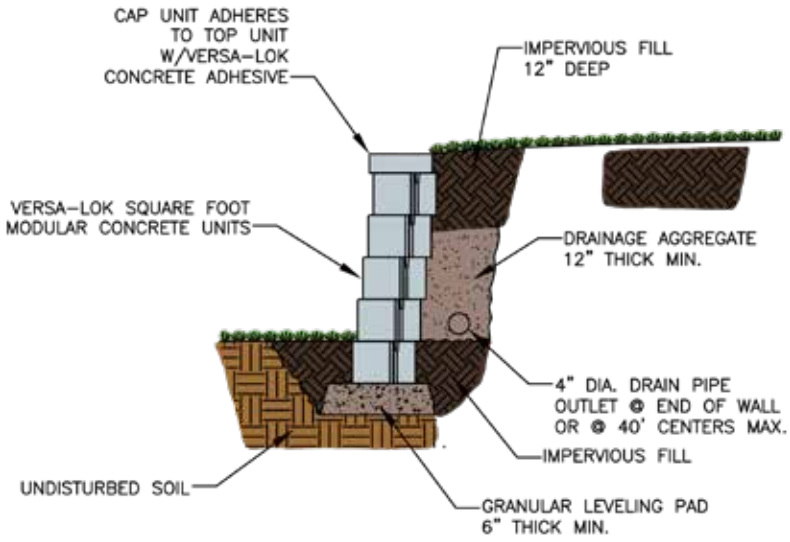


SPECIFICATIONS

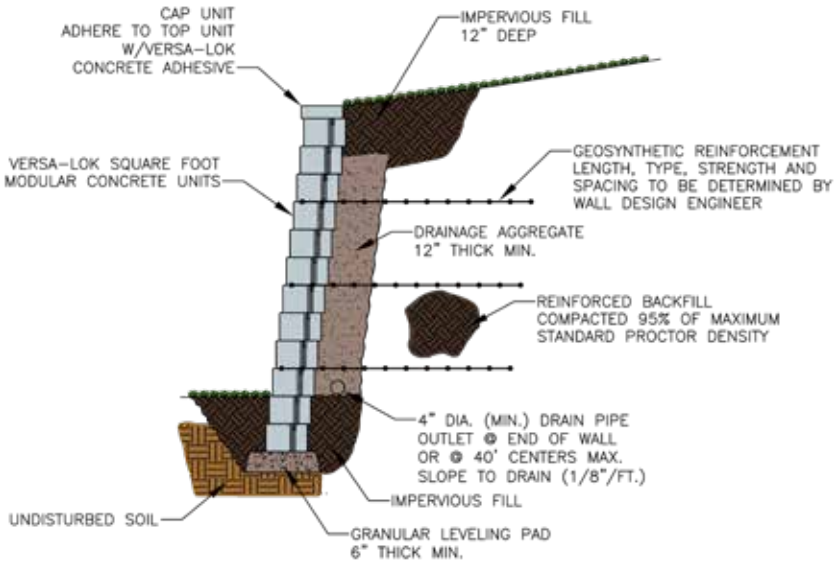
Height	8″
Width (face)	18″
Depth	12″
Face area	1 sq. ft.
Weight	87 lbs.
Weight (w/ aggregate fill)	115 lbs.
Minimum outside radius	4′ 6″
Setback	1″ (7 degrees)
	or 1/4″ (1.8 degrees)
Pins	2 per unit



UNREINFORCED*



SOIL-REINFORCED



***Please note:** The maximum height for an unreinforced Square Foot retaining wall is 3 feet. Taller walls up to 50 feet+ require soil reinforcement and engineering assistance. Individual site, soil and loading conditions (including terraces) may limit unreinforced wall heights to less than 3 feet. Check your local building code requirements. Please contact your supplier or VERSA-LOK representative for assistance.

© 2022 Kiltie Corporation • Oakdale, MN • (800) 770-4525 • Specifications subject to change • Printed in U.S.A.

BQ#104 Attachment



Square Foot™

Design & Installation Guidelines









Building a reputation.
One square foot at a time.





BQ#104 Attachment

WELCOME

This guide is intended to illustrate design and construction capabilities of Square Foot™ retaining walls. There are many variables to consider, however, when planning or constructing any retaining wall. Soil types, drainage, loading, topography, and height each need to be addressed on every project to ensure safe, trouble-free installation.



Walls that support heavy loads or exceed three feet in height require special soil reinforcement and often professionally designed plans. Consult a qualified engineer if unsure about any construction, site, or soil conditions.

A variety of technical support is available including in-house engineering assistance and reference literature. The following Technical Bulletins* are for VERSA-LOK® Standard units, however, the general principles also apply to Square Foot units.

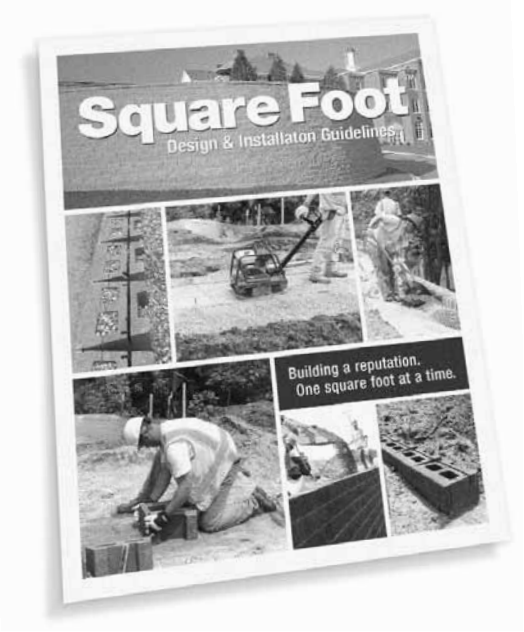
Please call **(800) 770-4525** with questions or to request any of the following:

- **Technical Bulletin #1** *Shoreline, Waterway and Retention Pond Protection*
- **Technical Bulletin #3** *Curves and Corners*
- **Technical Bulletin #4** *VERSA-LOK® Caps*
- **Technical Bulletin #5** *Base Installation*
- **Technical Bulletin #7** *Tiered Walls*
- **Technical Bulletin #8** *Fences, Railings, and Traffic Barriers*
- **Technical Documentation for VERSA-Grid® Soil Reinforcement**

**Technical Bulletins are also available for download online at www.versa-lok.com.*

BQ#104 Attachment

TABLE OF CONTENTS



1 **Introduction & Unit Specifications** 3

2 **System Overview** 5

3 **Wall Components** 7

- Foundation
- Embedment
- Soils and Compaction
- Drainage Within Walls
- Surface Drainage
- Geosynthetic Reinforcement

4 **Engineering** 10

5 **Special Design Considerations** 12

- Shorelines
- Loads Behind Walls
- Slopes
- Tiering

6 **Planning, Estimating, & Final Designs** 14

7 **Wall Construction** 16

- Tools
- Unit Modification
- Excavation
- Leveling Pad
- Base Course
- Additional Courses
- Drainage Aggregate
- Compacted Soil Backfill
- Geosynthetic Soil Reinforcement
- Caps

8 **Wall Design Elements** 24

- Curves
- Corners
- Stepped Base Elevations
- Returns
- Guide Rails, Railings, and Traffic Barriers

SUPPLEMENTAL INFORMATION

Material Estimation Worksheet 28

VERSA-Grid® Estimating Charts 29

Square Foot Specifications 30

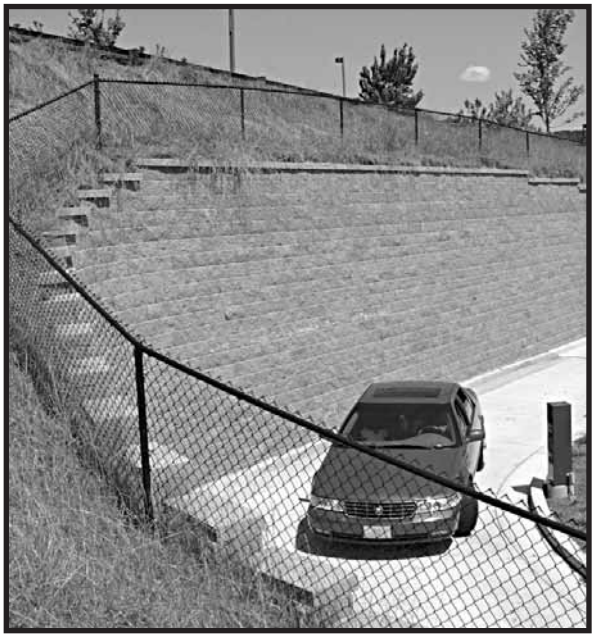
Construction Details 36

BQ#104 Attachment

INTRODUCTION & UNIT SPECIFICATIONS

1

Square Foot™ retaining walls are a permanent, attractive, preferred alternative to ordinary retaining wall types. They have a natural split-face texture to complement any environment and because they are made of concrete, are environmentally safe.



Square Foot retaining walls are economically installed without mortar and do not require concrete footings. In addition, each unit covers one square foot of wall face, making Square Foot retaining walls an economical choice for large commercial and agency projects.

Square Foot retaining walls have rapidly earned approval from architects, engineers, and contractors. It may be easily installed by contractors, grounds maintenance personnel, or municipal construction crews. Matching concrete caps are available to attractively finish any Square Foot retaining wall.

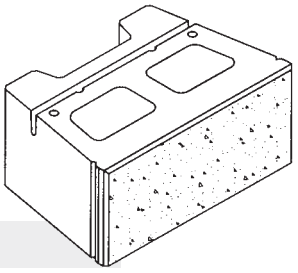
Square Foot units are routinely used by many state transportation departments. Properly designed, walls may be constructed to heights in excess of 40 feet.

Square Foot units are made from high-strength, low-absorption concrete on standard block machines. Holes and slots molded into units accept VERSA-TUFF® non-corrosive, nylon/fiberglass pins. Pins interlock units and help provide consistent alignment. This unique hole-to-slot pinning system permits easy variable-bond construction—keeping vertical joints tight.

1 INTRODUCTION & UNIT SPECIFICATIONS

SQUARE FOOT™ UNIT

(Actual unit size and weight may vary slightly by region.)



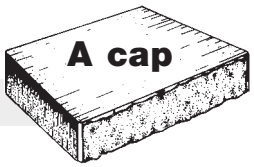
Height:	8 inches	(203.2 mm)
Width (face)**:**	18 inches	(457.2 mm)
Width (rear)**:**	14 inches	(355.6 mm)
Depth:	12 inches	(304.8 mm)
Face Area:	1.0 foot^2	(0.093 m^2)
Weight:	87 lbs.	(39.46 kg)

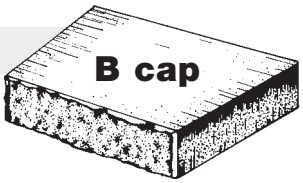
VERSA-TUFF® PIN



Length:	6.8 inches	(172.7 mm)
Diameter:	0.48 inches	(12.2 mm)
Material:	Glass-Reinforced Nylon	

CAP UNITS



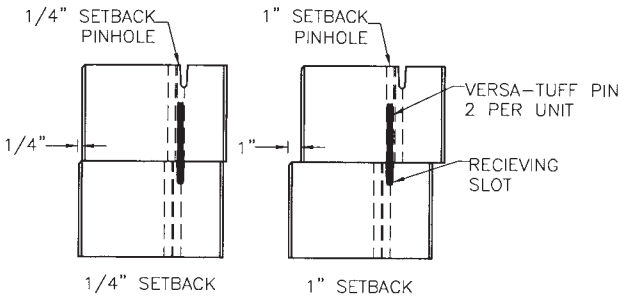


Height:		3-5/8 inches	(92.1 mm)
Width (face)**:**		14 inches	(355.6 mm)
Width (rear)**:**	**A** cap	12 inches	(304.8 mm)
	B cap	16 inches	(406.4 mm)
Depth:		12 inches	(304.8 mm)
Weight:	**A** cap	40 lbs.	(18.14 kg)
	B cap	50 lbs.	(22.68 kg)

BQ#104 Attachment

Pinning

Square Foot™ units interlock with non-corrosive VERSA-TUFF® pins (two per unit). As wall courses are installed, pins are inserted through holes in uppermost course units and are received in slots of adjacent lower course units. Receiving slots allow pinning for near vertical (1/4" setback) or canted (1" setback) walls.

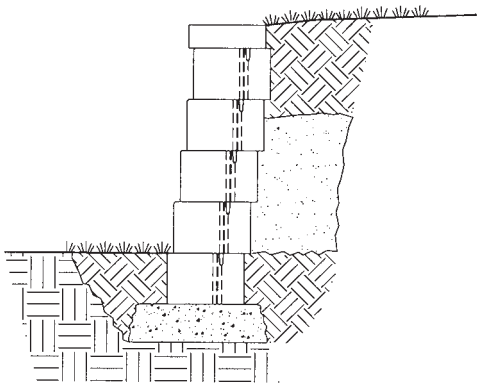


PINNING DETAIL

Unreinforced Walls

For shorter walls, Square Foot retaining walls work purely as gravity systems—unit weight alone provides resistance to earth pressures. Batter setback of wall faces offers additional resistance against overturning.

Maximum allowable wall height for gravity walls varies with soil and loading conditions. Generally, with level backfill, good soils and no excessive loading, Square Foot gravity walls are stable to heights of three feet.



Reinforced Walls

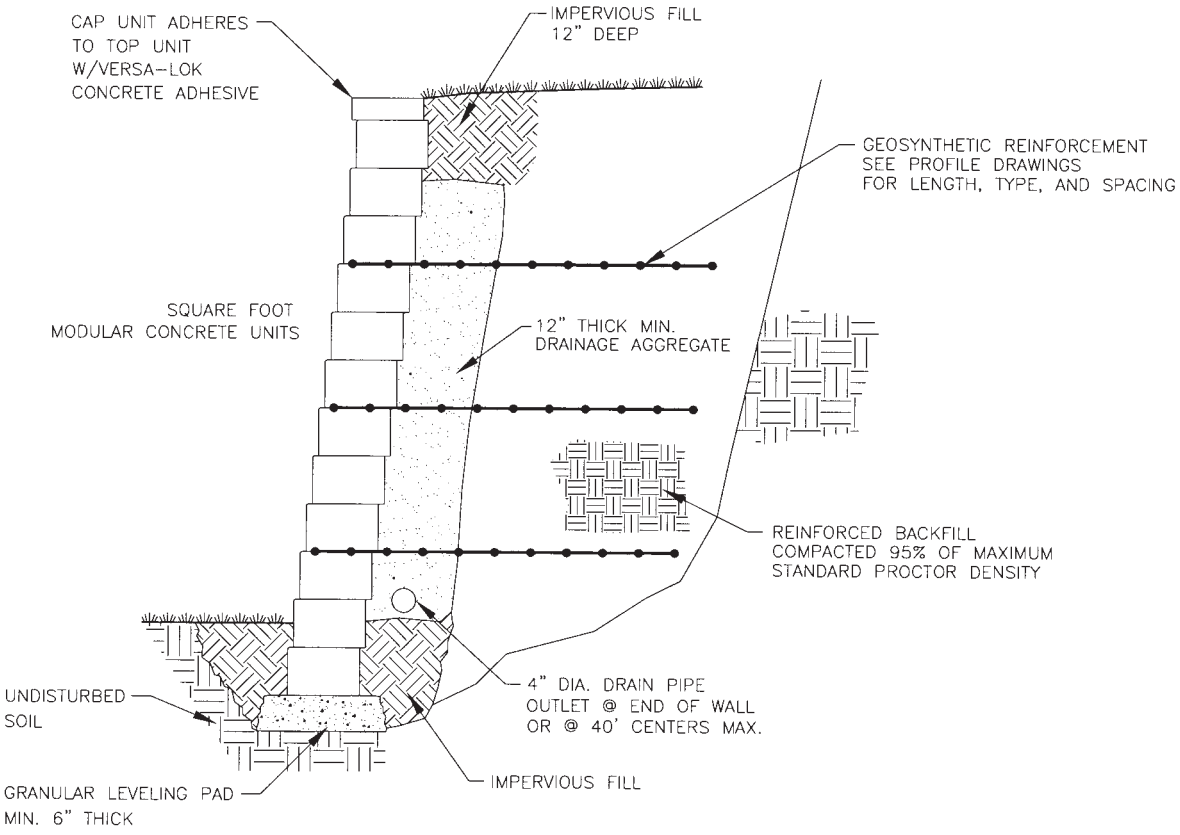
When weight of units alone is not enough to resist soil loads, horizontal layers of geosynthetics are used to reinforce soil behind walls. With proper soil reinforcement and design, Square Foot retaining walls can be constructed to heights in excess of 50 feet. Geosynthetics and soil combine to create reinforced soil structures that are strong and massive enough to resist forces exerted on them.

2 SYSTEM OVERVIEW

Reinforced Wall Typical Section

(The need for design of soil reinforcement and drainage materials is site/soil dependent.)

A Square Foot™ retaining wall has a number of components: the Square Foot modular concrete facing units, geosynthetic reinforcement (if required), leveling pad, backfill, drainage features, and retained soil.



BQ#104 Attachment

Foundation

Foundation soils on which walls will rest must be stiff, firm, and have sufficient capacity to support wall system weight. Any loose, soft, or compressible material must be removed and replaced with properly compacted backfill. The bearing capacity of the foundation soils should be addressed by a soils engineer.

Square Foot™ retaining walls are installed on leveling pads consisting of well-graded angular gravel. The most commonly used material for leveling pads is that which is used locally as road base aggregate. Granular leveling pads provide stiff, yet somewhat flexible, bases to distribute wall weights.

Rigid concrete footings extending below frost are not required or recommended. Because Square Foot units are installed without mortar, they are free to move slightly in relation to each other. Flexibility of the leveling pad and wall units accommodates freeze/thaw cycles without damage to structures. Square Foot walls, installed on granular leveling pads, have been successfully used on projects throughout North America—including shoreline applications and walls exceeding 50 feet in height.

If a contractor chooses to form leveling pads using concrete, unreinforced pads should be made of lean concrete mix (200-300 psi) and no more than two inches thick. To ensure correct Square Foot unit alignment, special care needs to be taken to construct concrete pads that are exactly level. In rare situations where rigid, reinforced-concrete footings are required, they should be placed below seasonal frost depths.

Embedment

Square Foot retaining walls usually have one-tenth of exposed wall heights embedded below grade. For example, a wall with 20 feet of height exposed above grade would have a minimum of 2.0 feet buried below grade—making a total wall height of 22.0 feet. Embedment should be increased for special conditions such as slope at the toe of walls, soft foundation soils, or shoreline applications. Embedment provides enhanced wall stability and long-term protection for leveling pads.

BQ#104 Attachment

3 WALL COMPONENTS

Soils and Compaction

With proper design, segmental walls can be constructed within a wide variety of soil conditions. Granular soils are preferred as fill in the areas reinforced with geosynthetics. However, fine-grained soils such as clays are acceptable, too. Usually, coarse soils require less soil reinforcement and are easier to compact than fine soils. Problem materials like expansive clays, compressible soils, or highly organic soils (top soil) should be avoided or properly addressed in designs.

Proper compaction of foundation and backfill soil is critical to long-term performance of retaining wall systems. Loose backfill will add pressure on walls, collect water, cause settlement, and will not anchor soil reinforcement materials properly.

Foundation and backfill materials should be compacted to at least 95 percent of standard Proctor density. (Proctor density is the maximum density of the soil achieved in a laboratory using a standard amount of compaction effort.) Generally, construction observation and testing for proper soil type and compaction is provided by the project's soils engineer.

Drainage Within Walls

Segmental retaining walls are designed assuming no hydrostatic pressure behind walls. Drainage aggregate (angular gravel, clear of fines) placed behind walls helps eliminate water accumulation. Because no mortar is used in Square Foot™ wall construction, water is free to weep through joints of installed units. For walls taller than three feet high, a perforated drain pipe is recommended at the base of the drainage aggregate to quickly remove large amounts of water.

If high groundwater levels are anticipated or if the wall is along a shoreline, additional drainage materials behind and below reinforced fill may be required. Filter fabric may be required to prevent unwanted migration of fine soil particles into the drainage aggregate.

Surface Drainage

Wall sites should be graded to avoid water flows, concentrations, or pools behind retaining walls. If swales are designed at the top of walls, properly slope them so water is removed before it can flow down behind walls.

BQ#104 Attachment

Give special attention to sources of stormwater from building roofs, gutter downspouts, paved areas draining to one point, or valleys in the topography. Be sure to guide flows from these areas away from retaining walls. Slope the soil slightly down and away from wall base to eliminate water running along base and eroding soil.

If finish grading, landscaping, or paving is not completed immediately after wall installation, temporarily protect the wall from water runoff until adjacent construction and drainage control structures are completed.

Geosynthetic Reinforcement

Geosynthetics are durable, high-strength polymer products designed for use as soil reinforcement. Horizontal layers of geosynthetic provide tensile strength to hold the reinforced soil together, so it behaves as one coherent mass. The geosynthetic reinforced soil mass becomes the retaining wall. Sufficient length and strength of geosynthetics can create a reinforced soil mass large enough and strong enough to resist destabilizing loads. Geosynthetic layers also connect the Square Foot units to the reinforced soil.

Geosynthetics are made from several types of polymers that resist installation damage and long-term degradation. Geosynthetics are designed to interact with the soil for anchorage against pullout and resistance to sliding. Geogrids, the most common soil reinforcement for walls, are formed with an open, grid-like configuration. Geotextiles (solid fabrics) are also used. Product-specific testing determines the durability, soil interaction, and strength of each type of geosynthetic. The interaction of various geosynthetics with Square Foot units (connection strength) has also been thoroughly tested.

Geosynthetic layers must be nominally tensioned and free of wrinkles when placed. Geosynthetics are generally stronger in one direction—the roll direction. It is important that the high-strength direction is placed perpendicular to the wall face, in one continuous sheet (no splices). Along the wall length and parallel to the face, adjacent sections of reinforcement are placed immediately next to each other without overlap to create 100-percent coverage with no gapping, and with special details for curves and corners.

The required type, length, vertical spacing, and strength of geosynthetic vary with each project depending on wall height, loading, slopes, and soil conditions. A professional Civil Engineer (P.E.) should prepare a final, geogrid-reinforced wall design for each project.

BQ#104 Attachment

4 ENGINEERING

Square Foot™ retaining walls are designed as traditional gravity walls. For unreinforced walls, the stabilizing weight of the battered wall units is compared to the loading on the walls to ensure stability against overturning and sliding. *(Figure **1A**)* When the loading exceeds the stability of the units alone, a larger gravity mass is created from reinforced soil. *(Figure **1B**)*

To ensure stability of a reinforced retaining wall, the wall engineer must design a reinforced soil mass large enough to resist loads from outside the wall system (external stability) and with enough layers of proper strength geosynthetic to keep the reinforced soil mass together (internal stability). In addition, the design must have sufficient geosynthetic layers to keep units stable and properly connected to the reinforced soil mass (facial stability).

For internal stability, the geosynthetic layers must resist loads that could pull apart the reinforced soil mass. *(Figure **2**)* The wall design engineer must ensure the geosynthetic has enough anchorage length to resist pullout from the stable soils and enough strength to resist overstress (breakage). The geosynthetic also must be long enough to resist sliding along the lowest layer.

For external stability, the reinforced soil mass must have sufficient width to resist sliding and overturning. *(Figure **3**)* The wall design engineer increases geosynthetic lengths until the reinforced soil is massive enough to provide required stability. The project geotechnical engineer should review the wall design and site soil conditions for external stability against bearing failures, settlement, or slope instability. *(Figure **4**)* Often, the wall design engineer can address any such global stability concerns by increasing geosynthetic lengths.

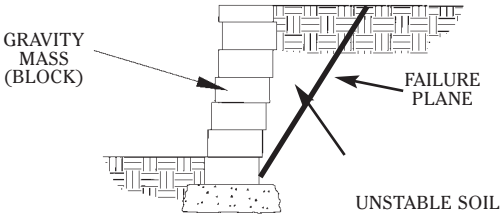
For facial stability, the wall design engineer must ensure wall units can resist loads at the face of the wall and stay connected to the reinforced soil mass, stay interlocked between geosynthetic layers, and not overturn at the top of the wall.

Loading on segmental walls is dependent on soil conditions, surcharges, slopes, water conditions, and wall heights. Accurate knowledge of each of these properties is needed for a proper design. Soil properties required for a segmental retaining wall design include the internal friction angle (ϕ) and soil unit weight (γ). Generally, the cohesion (c) of any fine-grained soils is conservatively ignored to simplify the design.

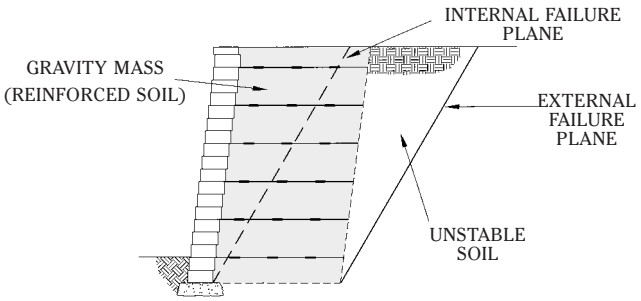
BQ#104 Attachment

Stability Analysis

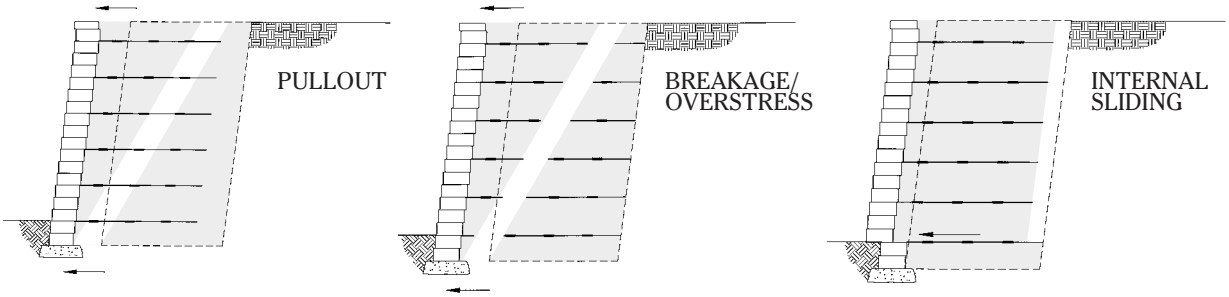
Unreinforced Wall *(Figure 1A)*



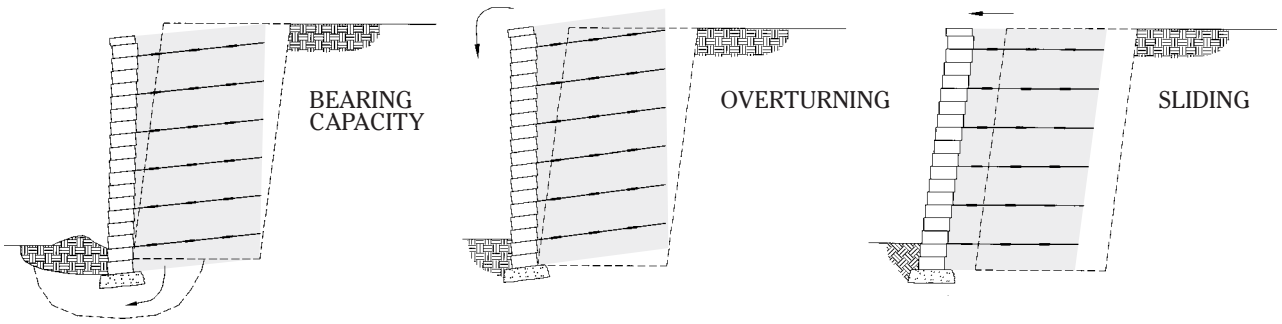
Reinforced Wall *(Figure 1B)*



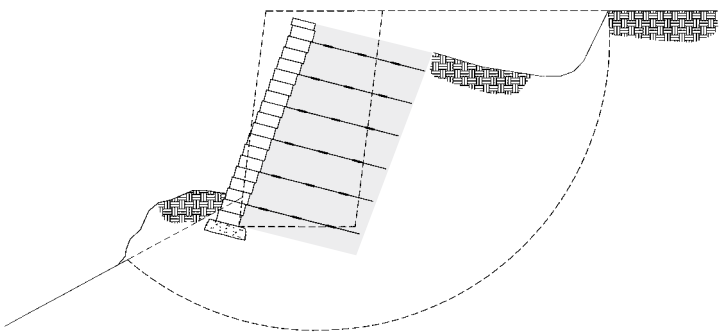
Internal Stability *(Figure 2)*



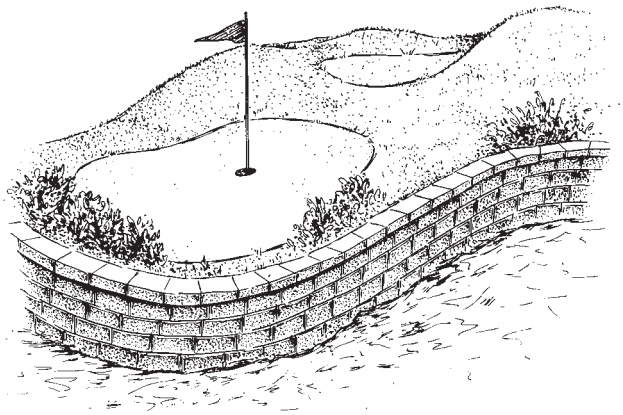
External Stability *(Figure 3)*



Global Stability *(Figure 4)*



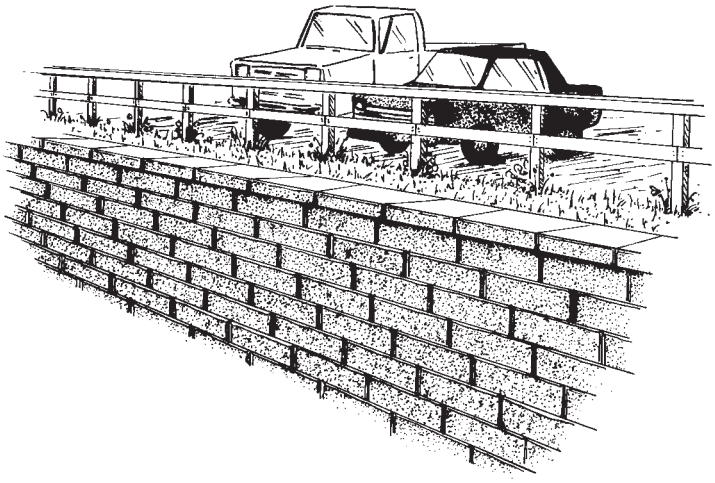
5 SPECIAL DESIGN CONSIDERATIONS



Shorelines

Square Foot™ retaining walls perform well in shoreline applications. However, special design considerations are often necessary to ensure that water pressures do not build up behind walls. Special provisions may include granular reinforced backfill, additional drainage aggregate, drainage behind reinforced soil masses, and filter fabric. Protection of bases from water scour, wave action,and ice may also be necessary.

! *See VERSA-LOK® Technical Bulletin #1 for more information regarding shoreline and retention pond protection.*



Loads Behind Walls

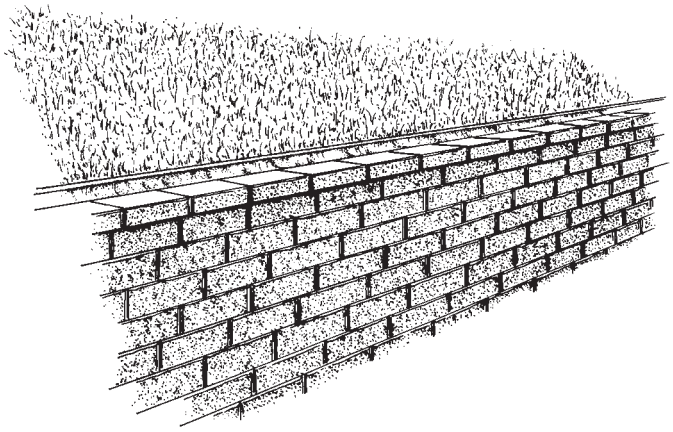
Surcharge loads behind walls can substantially increase amounts of required soil reinforcement. Common surcharge loads include: parking areas, driveways, roads, and building structures. For design purposes, permanent loads like buildings are considered to contribute to both destabilizing and stabilizing forces acting on walls. Dynamic forces like vehicular traffic are considered to contribute to destabilizing forces only.

BQ#104 Attachment

Often, the highest surcharge loads are caused by grading or paving equipment during construction. Heavy equipment should be kept at least three feet behind the back of retaining wall units. Soil reinforcement designs should accommodate all anticipated surcharge loads—even if they will occur infrequently or just once.

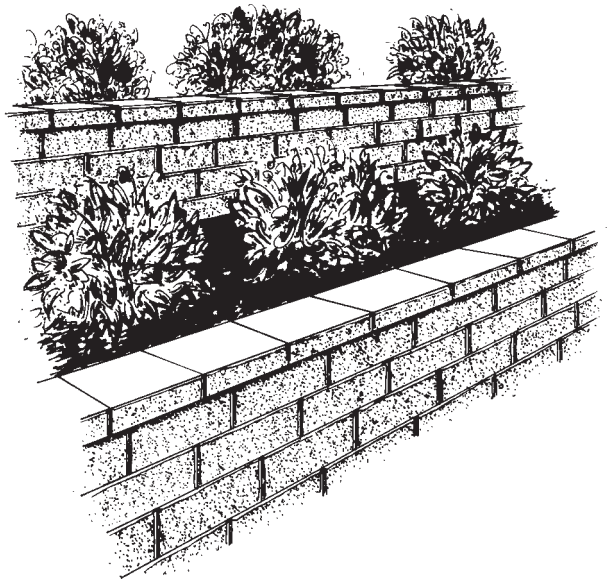
Slopes

Slopes behind walls increase pressures, sometimes doubling soil loads compared to level backfills. Steep slopes below walls can decrease stability of wall foundations. Slopes can increase the amount of soil reinforcement needed, especially the length. Generally, slopes above or below walls should be no steeper than 2:1 (horizontal:vertical).



Tiering

Aesthetically, dividing large grade changes into tiered wall sections may sometimes be desirable. However, upper wall tiers can add surcharge loads to lower walls and necessitate special designs. To avoid loading lower walls, upper walls must be set back horizontally at least twice the height of the lower walls. If walls are placed closer, lower walls must be designed to resist the load of upper walls.



! Several closely spaced tiered walls can create steep, unstable slopes. If tiered walls make a grade change steeper than 2:1 (horizontal:vertical), global slope stability may need to be reviewed by a qualified soils engineer. See VERSA-LOK® Technical Bulletin #7 for more information regarding tiered wall construction.

BQ#104 Attachment

6 PLANNING, ESTIMATING, & FINAL DESIGNS

Planning

Careful planning is critical to successful projects. Prior to design, accurate information needs to be gathered including soil conditions, proposed wall heights, topography, groundwater levels, and surface water conditions. Proper permits, owner approvals, utility clearances, and temporary easements should also be obtained in advance.

Planned wall alignments should be reviewed for feasibility. Make sure that layouts account for minimum curve radii, wall setback, and area needed for geosynthetic soil reinforcement. Be sure that all wall components fit within property constraints. Verify that temporary construction excavations will not undermine foundation supports of any existing structures or utilities. Considerations should also be given to site access for equipment and materials.

Estimating

Accurately estimate and order required materials including Square Foot™ units, VERSA-TUFF® pins, cap units, VERSA-LOK® Concrete Adhesive, imported backfill, leveling pad materials, geosynthetic soil reinforcement, drainage aggregate, and additional drainage materials. See the Material Estimation Worksheet on page 28 to help determine Square Foot quantities.



For reinforced-wall projects, the VERSA-Grid® estimating charts on page 29 provide approximate amounts of geogrid soil reinforcement necessary to construct walls in various soil and loading conditions. For tall walls or complex situations, our staff engineers can prepare project-specific preliminary designs to be used for estimation purposes.

BQ#104 Attachment

Final Designs

For walls more than four feet tall, most building codes require a final wall design prepared by a licensed Civil Engineer (P.E.) registered in that state. Square Foot™ retaining wall manufacturers have a network of licensed civil engineers who are familiar with segmental retaining wall design. These individuals are available for referrals to architects, engineers, or contractors with final wall design needs.

Final wall designs may be provided prior to putting projects out for bidding. Alternatively, wall portions of projects can be specified design/build. With design/build projects, engineers/architects provide wall layout information (line and grade) but not final engineering for the wall. Contractors submit bids based on this layout including estimated labor, materials, and final engineering costs. Contractors who are awarded projects retain licensed engineers to prepare final wall designs and submit shop drawings for approval from project engineers/architects.

As with all proposed construction, a soils report prepared by a qualified geotechnical engineer is required to provide adequate information for proper design. The soils report should address overall stability of planned grade changes and allowable bearing capacity of foundation soils. The report should also include information about reinforced and retained soil properties.

For assistance in specifying, designing and engineering Square Foot retaining walls, standard design/build specifications and sample construction details are provided on pages 30 to 41. This information is also available in electronic format on a Square Foot Construction Details disk. Technical staff is also available to assist with planning, layout, preliminary engineering, and referrals for final engineering.

BQ#104 Attachment

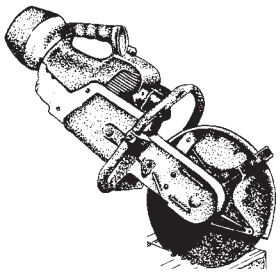
7 WALL CONSTRUCTION

Tools

The following tools may be helpful during construction of Square Foot™ retaining walls.

- **Safety Protection**
- **Shovel**
- **Four-Foot Level**
- **Smaller Level**
- **Four-Pound Sledge Hammer**
- **Masonry Chisel**
- **Brick Hammer**
- **Tape Measure**
- **Hand Tamper**
- **Vibratory-Plate Compactor**
- **Caulking Gun**
- **String Line**
- **Finishing Trowel**
- **Broom**
- **Diamond-Blade Concrete Saw**
- **Transit or Site Level**
- **Backhoe or Skid-Steer Loader**

Unit Modification



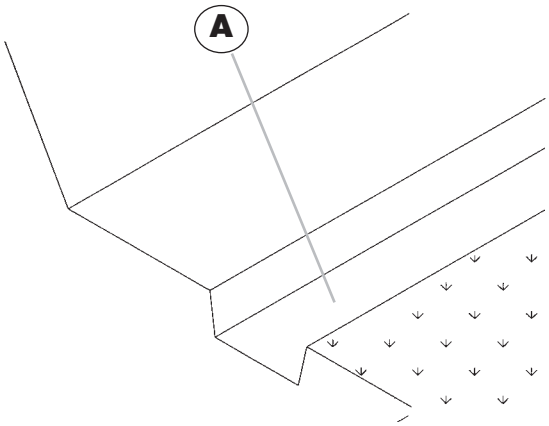
Saw-cuts are normally made using a gas-powered cut-off saw with a diamond blade. To cut a unit, mark desired path of cut on all unit sides. Stand the unit with its face up and cut two to three inches deep along the front path. Reposition the unit and complete the cut by cutting the remainder of the unit along top and bottom paths. Cutting first into the front face ensures a straight, square edge which will likely have to fit closely next to the straight edge of an adjacent unit. Remember to always wear proper safety protection when performing cutting operations.

BQ#104 Attachment

Excavation

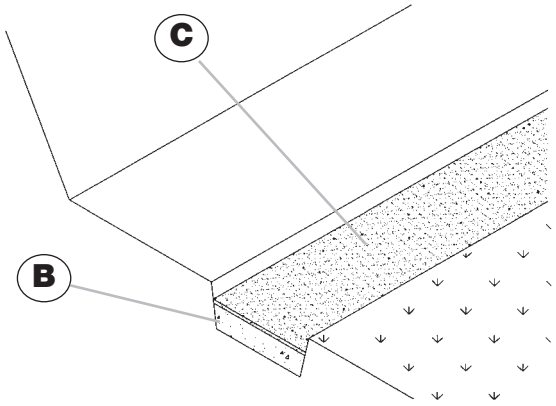
Excavate just deeply enough to accommodate the leveling pad (usually six inches) and required unit embedment below grade. (A) When necessary, also excavate areas where geosynthetic soil reinforcement will be placed. Required unit embedment varies with wall height and site conditions. Generally, if grade in front of the wall is level, one-tenth of the exposed wall height should be buried (embedded) below grade. Additional embedment may be required for special conditions including slopes in front of walls, soft foundation soils, and water applications.

Compact soil at the bottom of excavation. Do not place wall system on loose, soft, wet, or frozen soil—settlement may result. If the wall will sit on a previously backfilled excavation such as a utility line trench, be sure the entire depth of existing backfill is well compacted. If necessary, over-excavate soft soils and replace with properly compacted backfill.



Leveling Pad

Place granular leveling pad material and compact to a smooth, level surface. (B) Leveling pad should be at least six inches thick and 24 inches wide. It should consist of 3/4-inch crushed gravel. Use a thin layer of fine sand on top of the leveling pad for final leveling. (C)



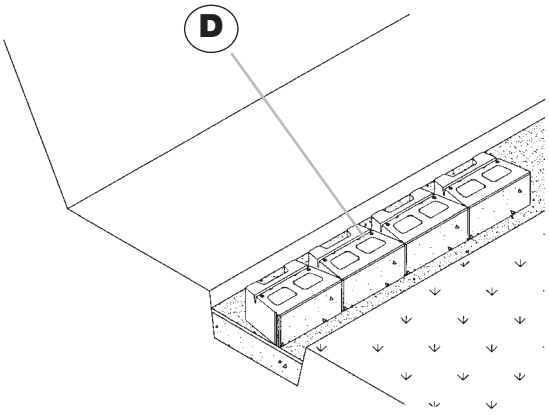
To quickly construct long sections of leveling pad, create forms by leveling and staking rectangular metal tubing along both sides of the planned pad. Place and compact granular material within these leveled forms and screed off excess. See VERSA-LOK® Technical Bulletin #5 and video for more tips about leveling pad construction.

BQ#104 Attachment

7 WALL CONSTRUCTION

If the planned grade along wall front will change elevation, the leveling pad may be stepped in eight-inch increments to match the grade change. Always start at the lowest level and work upward.

Step the leveling pad often enough to avoid burying extra units while maintaining required unit embedment.



Base Course

Make sure that the leveling pad is level and begin placing base course units. (D) If the leveling pad is stepped, begin at the lowest course before proceeding to next course.

Align units using their backs or slot rather than their irregularly textured front faces. String lines may be helpful when aligning straight walls. Refer to pages 24 and 25 for tips on curve and corner alignment. Place units on the leveling pad, side-by-side. Front faces on adjacent units should fit tightly and unit bottoms should contact the leveling pad completely. Using a four-foot level, level units front-to-back, side-to-side with adjacent units. Tap high points with a mallet or hand tamper until level. Take time to ensure a level base course. Minor unevenness in the base course will be amplified and difficult to correct after several course have been installed.

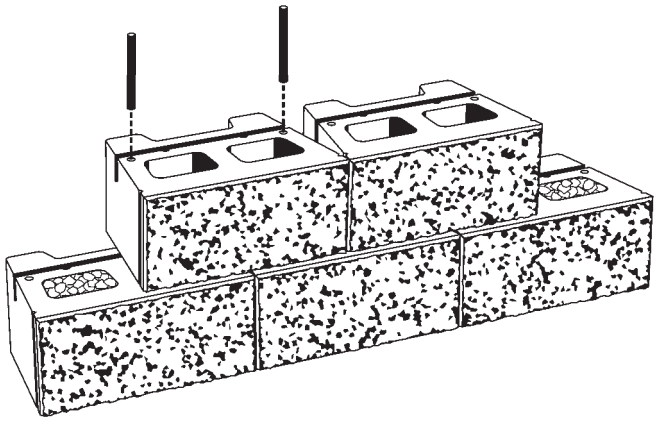
After positioning the base course, fill the voids (cores) of the units with crushed gravel. To avoid clogging the pinning slots, use gravel that is 1.0 to 1.5 inches in diameter. Crushed gravel is suggested in the base course core fill because free-draining aggregate core fill may allow water to flow down to the base. Place and compact soil backfill behind the units. Also replace and compact over-excavated soil in front of the units. The backfill behind and in front of embedded units should consist of soil—do not use drainage aggregate.



BQ#104 Attachment

Additional Courses

Sweep off tops of installed units to remove any debris that may interfere with additional courses. Place the next course of units by setting them a short distance away from their final position and slide them into place. Sliding helps remove imperfections and debris from the top surface of installed units.



A unique hole-to-slot pinning system allows units to be installed on variable bond. (Square Foot™ units do not need to be placed exactly halfway over the two lower course units.) Vertical joints can wander in relation to other joints throughout walls. Do not try to install walls on half bond by leaving gaps in vertical face joints. Because the bond can vary, vertical face joints can and always should be tight.

Pin Square Foot units with a one-inch setback (7 degree cant) or a 1/4-inch setback (near vertical). Use the one-inch setback unless the near vertical setback is specifically required. (Near-vertical walls require more geogrid than setback walls). For the one-inch setback, use the front pin holes (outside holes). For the near vertical setback, use the pin holes within the slots (inside holes). Insert two VERSA-TUFF® pins through the appropriate holes of the upper units into the receiving slots in the lower units. The two pins should engage two separate units in the course below. Make sure the pins are fully seated in the lower unit slots. If necessary, seat pins using a mallet and another pin. Avoid dropping pins into holes in the slots.

Pull the units forward to remove any looseness in the pin connection. Check unit alignment and levelness—adjust if necessary. If length of a course must fit into a limited space or if vertical joints begin to line up with joints below, adjust by installing partial units. Create partial units by saw-cutting whole units into pieces at least four inches wide.

Fill the voids (cores) of each course of units with angular, free-draining gravel before stacking the next course. Stack no

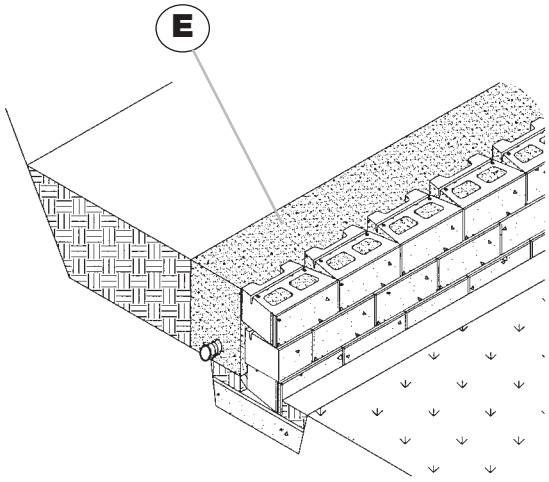
BQ#104 Attachment

7 WALL CONSTRUCTION

more than two courses before backfilling. If units are stacked too high, they may push out of alignment during placement of backfill.

Drainage Aggregate

Beginning at the level of planned grade in front of the wall, place drainage aggregate (1-1.5-inch clear, free-draining, angular gravel) between and directly behind units to a minimum of 12 inches. Drainage aggregate must be free of fine dirt or soil. Do not place drainage aggregate behind units that will be embedded. (E)



Drainage aggregate is critical to wall performance because it keeps water pressures from building up behind the wall face.

For walls over three feet in height, perforated drain pipes should be used to collect water along the base of the drainage aggregate. Drain pipes help to quickly remove large amounts of water.

For some projects, especially shoreline applications, a geosynthetic filter fabric may be required behind the drainage aggregate. Filter fabric prevents soils or sands (fines) from migrating into the drainage aggregate and wall face joints.

Compacted Soil Backfill

Proper placement and compaction of backfill is critical to the stability of a segmental wall. Poorly compacted backfill puts extra pressures on a wall—especially when it becomes wet.

Place soil backfill beginning directly behind drainage fill in layers (lifts) no thicker than six inches. Compact soil backfill—making sure that backfill is neither too wet nor dry. The amount and type of effort needed for adequate backfill compaction varies with soil type and moisture content. Generally, hand-operated vibratory-plate compactors can be used to achieve adequate compaction of granular soils—even on big projects. Fine soils such as clays should be compacted with kneading-type equipment like sheepsfoot rollers.

BQ#104 Attachment

To avoid pushing wall units out of alignment, do not use heavy self-propelled compaction equipment within three feet of the wall face.

At the end of the day's construction, protect the wall and the reinforced backfill from possible rainstorm water damage. Grade the soil backfill so water will run away from wall face and direct runoff from adjacent areas away from project site.

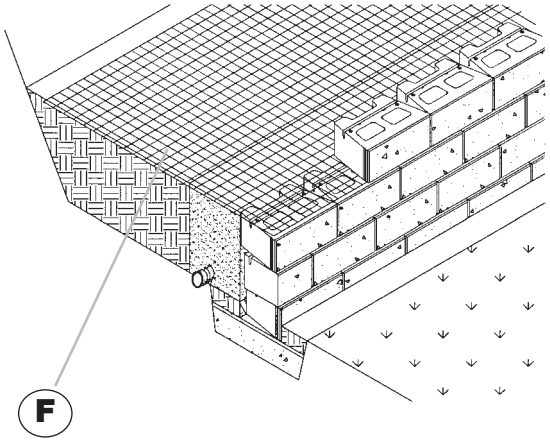
Geosynthetic Soil Reinforcement

Geosynthetic soil reinforcement, like VERSA-Grid®, is used to reinforce soil backfill when weight of Square Foot™ units alone is not enough to resist soil pressures. Soil reinforcement type, length, and vertical spacing will vary for each project and should be specified in a final wall design prepared by a licensed Civil Engineer (P.E.).

Prepare to install soil reinforcement materials by placing Square Foot units and backfilling up to the height of the first soil reinforcement layer specified on construction drawings. Lay soil reinforcement horizontally on top of compacted backfill and Square Foot units. (F) Geosynthetic layers should be placed about one inch from the front of Square Foot units.

Geosynthetics are usually stronger in one direction. It is very important to place them in the correct direction.

The strongest direction of the geosynthetic must be perpendicular to the wall face. For correct orientation, follow the geosynthetic manufacturer's directions carefully.



To ensure stability during construction, vertical spacing between geosynthetic layers should never exceed two feet. See VERSA-Grid® estimating charts on page 29 for assistance with preliminary material estimating.

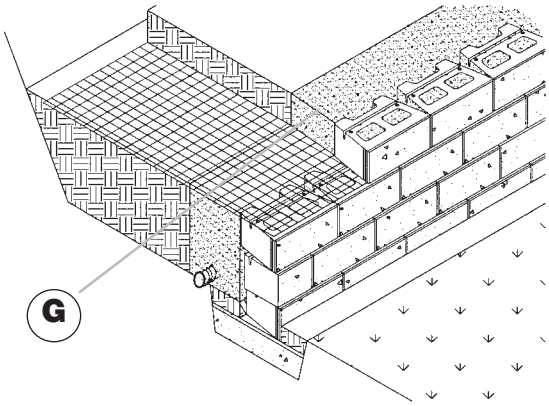
After positioning soil reinforcement, place the next course of Square Foot units on top of soil reinforcement. Insert pins through Square Foot units and into lower course units. Place drainage aggregate against back of the units and on top of soil reinforcement. Remove slack by pulling soil reinforcement away from the wall face and anchoring at back ends.

7 WALL CONSTRUCTION

(G) Beginning at the wall face, place and compact soil backfill. Keep soil reinforcement taut and avoid wrinkles.

Place a minimum of six inches of soil backfill before using any tracked equipment on top of soil reinforcement. Follow manufacturer's construction guidelines to avoid damage to soil reinforcement.

Placing soil reinforcement behind curves and corners requires special layout and overlapping procedures. Never overlap soil reinforcement layers directly on top of each other. Slick surfaces of geosynthetics will not hold in place properly when placed directly on top of one another. Always provide at least three inches of soil fill between overlapping soil reinforcement layers.



! *See VERSA-LOK® Technical Bulletin #3 and geosynthetic manufacturer's instructions for more curve/corner soil reinforcement details.*

More, More, More ...

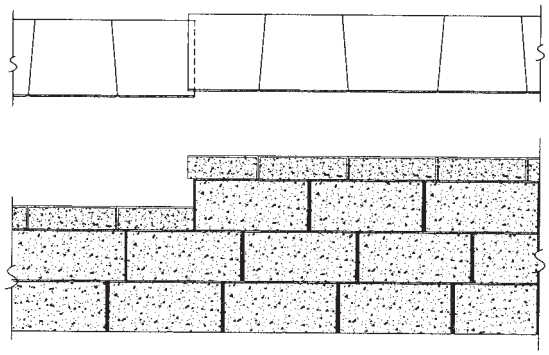
Continue placing additional courses, drainage material, compacted soil backfill, and geosynthetic soil reinforcement as specified until desired wall height is achieved.

! *For walls more than four feet high, most building codes require a final wall design prepared by a licensed Civil Engineer (P.E.) registered in that state. Square Foot™ and its manufacturers have a network of licensed civil engineers who are familiar with segmental retaining wall design. These individuals are available for referrals to architects, engineers, or contractors with final wall design needs.*

BQ#104 Attachment

Caps

Finish the wall by placing cap units along the top. Two cap unit types are available—A and B. Alternate A and B caps on straight walls. Use A caps for convex (outside) curves. Use B caps for concave (inside) curves.



If cap layout does not exactly match the wall radius, adjust spacing at the back of the caps—do not gap caps at the front. To completely eliminate gapping, it may be necessary to saw-cut sides of cap units.

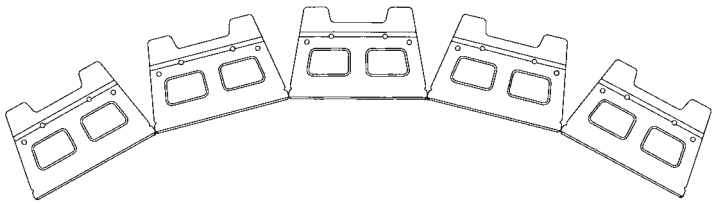
Front faces of caps may be placed flush, set back, or slightly overhanging faces of Square Foot™ units. It is preferred to overhang cap units approximately 3/4-inch to create an "eyebrow" on top of the wall. Overhanging cap units will create a small shadow on wall units and help hide minor imperfections in wall alignment.

! *All cap units should be arranged before securing with VERSA-LOK® Concrete Adhesive. Secure caps by placing two, continuous, 1/4-inch beads of adhesive along the top course of wall units. Set caps on prepared wall units. Do not secure caps using mortar or adhesives that become rigid. A Square Foot wall may move slightly (especially in areas subject to freeze/thaw cycles) causing a rigid cap adhesive to fail. Do not place caps if the units are too wet for the adhesive to stick. In cold weather, keep the adhesive tubes warm until just prior to use. For more information about capping, see VERSA-LOK Technical Bulletin #4.*

BQ#104 Attachment

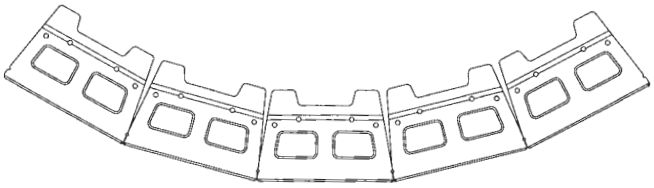
8 WALL DESIGN ELEMENTS

Curves



The trapezoidal shape of Square Foot™ units permits construction of concave and convex curves. Construct curves by increasing or decreasing spaces between the backs of the units—always keeping the front joints tightly aligned. The recommended minimum radius for both convex (outside) and concave (inside) curves is 4’ 6” (4.5 feet), measured from the front face of the units.

See VERSA-LOK® Technical Bulletin #3 for proper placement of geosynthetic soil reinforcement.

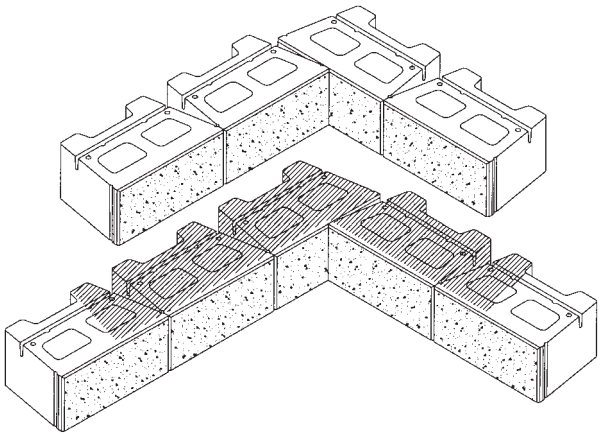


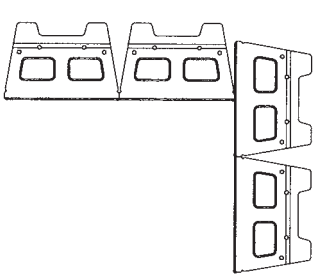
For convex curves, plan ahead to make sure the upper courses do not get tighter than the minimum radius. Because each course sets back, the radius of a convex curve becomes smaller as each course is stacked. To calculate minimum base course radius of a convex curve, add up the setback (either 1/4 or one inch) for each course needed. For example, minimum base course radius for a wall that will have six one inch setbacks (including embedded units) will be (6 x 1") + 4'6" = 5.0".

BQ#104 Attachment

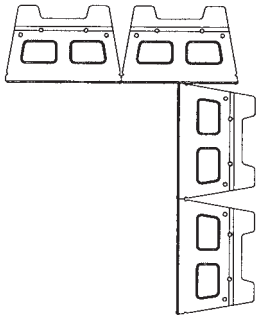
Corners

Inside 90-degree corners can be easily installed with no unit modification. For the first course, abut the unit from one side of the corner against a unit on the other side that runs past the corner. On the next course, simply reverse which side abuts and which side runs long.





UPPER COURSE



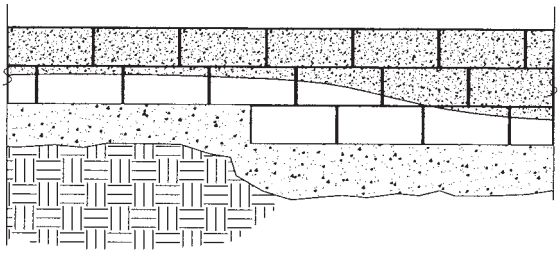
LOWER COURSE

A special corner unit is needed for an outside 90-degree corner and is available only in limited markets. Check with your local Square Foot™ supplier. For ease of installation, it is suggested to replace outside corners with a tight radius convex curve whenever possible.

8 WALL DESIGN ELEMENTS

Stepped Base Elevations

If the final grade along the front of the wall changes elevation, the leveling pad and base course may be stepped in eight-inch increments to match the grade change. Always start at the lowest level and work upward.



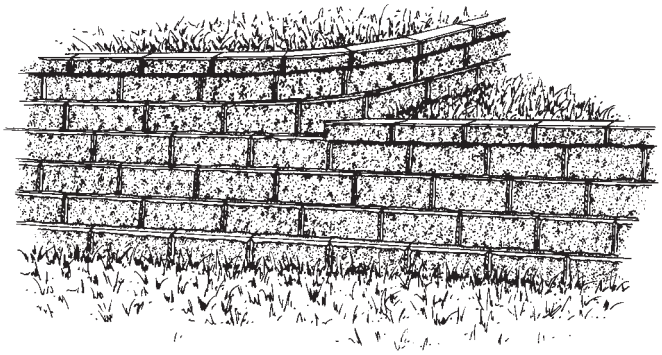
Step the leveling pad often enough to avoid burying extra units while maintaining required unit embedment.

Returns

As an option to stepping wall tops, grade changes at the top of a wall can be accommodated by creating returns that turn into slopes behind a wall.

Returns create a terraced appearance instead of several small steps along the top of a wall.

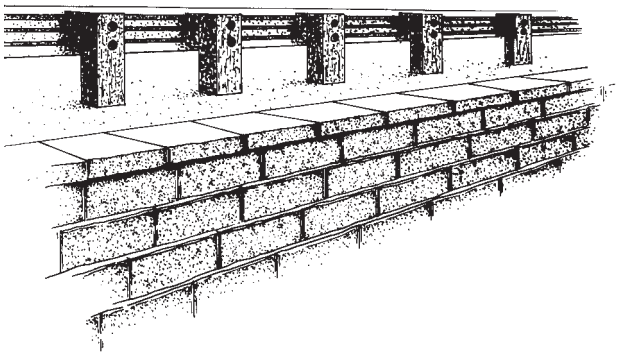
! *See VERSA-LOK® Technical Bulletin #7 for more information on tiered walls.*



BQ#104 Attachment

Guide Rails, Railings, and Traffic Barriers

For safety purposes, a variety of barriers may be placed behind Square Foot™ walls, including fences, railings, and guide rails. Barriers should be placed several feet behind wall faces to provide post foundations. Posts may penetrate geosynthetic soil reinforcement layers in accordance with the manufacturer's and engineer's recommendations.



When space is limited, properly designed, reinforced concrete barriers can be placed directly on top of walls. Expansion joints and bond breaks should be provided to accommodate differential movement between rigid barriers and flexible wall faces. Cantilevered supports extending behind walls stabilize the barriers against overturning.

! *For more information about guide rails, railings, and traffic barriers see VERSA-LOK® Technical Bulletin #8 or Construction Details Disk—available FREE by calling (800) 770-4525.*

BQ#104 Attachment

MATERIAL ESTIMATION WORKSHEET

Square Foot™ Units

Area of Wall (SF) x 1.0 Units per SF = Number of Units

_____ SF x 1.0 = _____ Units Needed

VERSA-TUFF® Pins

Units x 2 Pins per Unit = Number of Pins

_____ Units x 2 = _____ Pins Needed

NOTE: *Pins will not be used on the base course.*

Cap Units

Lineal Feet of Wall (LF) x .86 = Number of Caps

_____ LF x .86 = _____ Caps Needed

straight walls - use half **A** caps and half **B** caps
inside curves - use **B** caps
outside curves - use **A** caps

Additional caps may be needed for special splits or cuts.
Gradual curves may require a combination of A & B caps.

VERSA-LOK® Concrete Adhesive

11 oz. Tube: _____ LF ÷ 14 LF per Tube = _____ Tubes

For estimating purposes, the tables on the following page provide approximate amounts of geogrid soil reinforcement needed to construct walls in certain soil and loading conditions. For tall walls or complex situations, in-house staff engineers can prepare project specific preliminary designs to be used for estimation purposes.

VERSA-GRID® ESTIMATING CHARTS

These tables are provided for **estimating purposes only**. *They should not be used or relied upon for any application without verification of accuracy, suitability, and applicability for the use contemplated, which is the sole responsibility of the user. A final, project-specific design should be prepared by a qualified, licensed, professional Civil Engineer (P.E.) based on actual site conditions. Preparation of these tables did not include consideration or analysis of global slope stability or allowable bearing capacity of foundation soils. These must be reviewed for each project by a qualified Geotechnical Engineer.*

There are three tables provided in this guide to help estimate geogrid for different wall loading situations—level backfill, sloping backfill, and surcharges. To estimate geogrid quantities, first look under the **column** *appropriate for project soils, determine the height (H) of the proposed wall and read across the* **row** *(under appropriate soil column) to approximate geogrid type, number of layers, and lengths of each layer.*

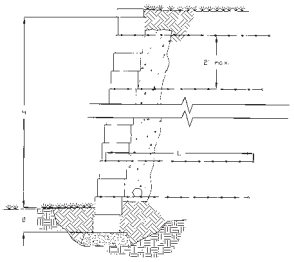
These design charts assume the following conditions:

- Uniform soil conditions
- Stable foundation soils
- Level grade in front of the wall
- No groundwater/water loads
- Slopes and loads behind the wall as shown
- No additional loading behind wall *(such as tiered walls, building loads, etc.)*

Design standards and properties used to develop these charts were:

- Design methodology - in general accordance with NCMA Design Manual for SRWs
- Unit weight of soil (γ) 120 pcf
- Internal friction angle of soil (ϕ) as shown on charts
- Long term design strength of the geogrid (LTDS)
  - **VERSA-Grid VG 3.0 - 1250 lb/ft**
  - **VERSA-Grid VG 5.0 - 1875 lb/ft**

LEVEL BACKFILL



Gravel (ϕ = 34°)

H (feet)	D (feet)	L (feet)	layers	Versa-Grid
4	0.5	n/a	n/a	n/a
5	0.5	3.5	2	VG 3.0
6	0.5	4.0	2	VG 3.0
7	1.0	5.0	3	VG 3.0
8	1.0	5.5	4	VG 3.0
9	1.0	6.0	4	VG 3.0
10	1.0	6.5	5	VG 3.0
12	1.0	8.0	6	VG 3.0

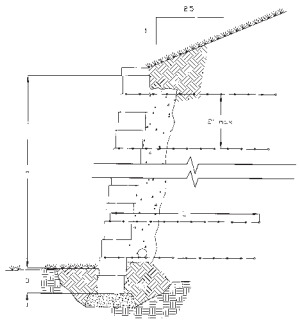
Sand (ϕ = 30°)

H (feet)	D (feet)	L (feet)	layers	Versa-Grid
4	0.5	4.0	1	VG 3.0
5	0.5	4.0	2	VG 3.0
6	0.5	4.5	2	VG 3.0
7	1.0	5.5	3	VG 3.0
8	1.0	6.0	4	VG 3.0
9	1.0	6.5	5	VG 3.0
10	1.0	7.0	5	VG 3.0
12	1.0	8.5	7	VG 3.0

Clay (ϕ = 28°)

H (feet)	D (feet)	L (feet)	layers	Versa-Grid
4	0.5	4.0	1	VG 3.0
5	0.5	4.5	2	VG 3.0
6	0.5	5.0	2	VG 3.0
7	1.0	5.5	3	VG 3.0
8	1.0	6.0	4	VG 3.0
9	1.0	6.5	5	VG 3.0
10	1.0	7.0	6	VG 3.0
12	1.0	8.5	7	VG 3.0

SLOPING BACKFILL



Gravel (ϕ = 34°)

H (feet)	D (feet)	L (feet)	layers	Versa-Grid
4	0.5	4.0	1	VG 3.0
5	0.5	4.0	2	VG 3.0
6	0.5	4.5	3	VG 3.0
7	1.0	5.5	4	VG 3.0
8	1.0	6.0	4	VG 3.0
9	1.0	6.5	5	VG 3.0
10	1.0	7.5	6	VG 3.0
12	1.0	8.5	7	VG 3.0

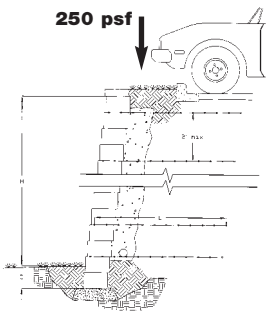
Sand (ϕ = 30°)

H (feet)	D (feet)	L (feet)	layers	Versa-Grid
4	0.5	4.5	1	VG 3.0
5	0.5	4.5	2	VG 3.0
6	0.5	5.5	3	VG 3.0
7	1.0	6.5	4	VG 3.0
8	1.0	7.0	5	VG 3.0
9	1.0	8.0	6	VG 3.0
10	1.0	8.5	6	VG 3.0
12	1.0	10.0	7	VG 5.0

Clay (ϕ = 28°)

H (feet)	D (feet)	L (feet)	layers	Versa-Grid
4	0.5	4.5	2	VG 3.0
5	0.5	5.5	2	VG 3.0
6	0.5	6.0	3	VG 3.0
7	1.0	8.0	4	VG 3.0
8	1.0	9.5	5	VG 3.0
9	1.0	11.0	6	VG 3.0
10	1.0	12.0	6	VG 5.0
12	1.0	15.0	7	VG 5.0

SURCHARGE BACKFILL



Gravel (ϕ = 34°)

H (feet)	D (feet)	L (feet)	layers	Versa-Grid
4	0.5	4.0	2	VG 3.0
5	0.5	4.5	2	VG 3.0
6	0.5	5.0	3	VG 3.0
7	1.0	6.0	4	VG 3.0
8	1.0	6.5	4	VG 3.0
9	1.0	7.0	5	VG 3.0
10	1.0	7.5	5	VG 3.0
12	1.0	9.0	7	VG 3.0

Sand (ϕ = 30°)

H (feet)	D (feet)	L (feet)	layers	Versa-Grid
4	0.5	4.5	2	VG 3.0
5	0.5	5.5	2	VG 3.0
6	0.5	6.0	3	VG 3.0
7	1.0	7.0	4	VG 3.0
8	1.0	7.5	5	VG 3.0
9	1.0	8.5	5	VG 3.0
10	1.0	9.0	6	VG 3.0
12	1.0	10.0	7	VG 5.0

Clay (ϕ = 28°)

H (feet)	D (feet)	L (feet)	layers	Versa-Grid
4	0.5	5.5	2	VG 3.0
5	0.5	6.0	2	VG 3.0
6	0.5	6.5	3	VG 3.0
7	1.0	7.5	4	VG 3.0
8	1.0	8.0	5	VG 3.0
9	1.0	9.0	5	VG 3.0
10	1.0	9.5	6	VG 3.0
12	1.0	11.0	7	VG 5.0

*Geogrids with similar LTDS and connection strengths with Square Foot™ units can also be estimated using these charts. With some variations, the VERSA-Grid VG 3.0 charts also generally estimate quantities for Miragrid 3XT, Stratagrid 300, and Raugrid 4/2. The charts for VERSA-Grid VG 5.0 generally estimate quantities for Miragrid 5XT, Stratagrid 500, and Raugrid 6/3.

Miragrid is a registered trademark of Nicolon Corporation. • Stratagrid is a registered trademark of Strata Systems, Inc.
Raugrid is a trademark of Lückenhaus Technische Textilien GmbH and Lückenhaus North America, Inc.

BQ#104 Attachment

SQUARE FOOT™ SPECIFICATIONS

PART 1: *GENERAL*

1.01 DESCRIPTION

A. *Work includes furnishing and installing segmental retaining wall (SRW) units to the lines and grades designated on the project's final construction drawings or as directed by the Architect/Engineer. Also included are furnishing and installing appurtenant materials required for construction of the retaining wall as shown on the construction drawings.*

1.02 REFERENCE STANDARDS

A. *Segmental Retaining Wall Units*
   1. **ASTM C 1372**
      - Standard Specification for Segmental Retaining Wall Units
   2. **ASTM C 140**
      - Standard Test Methods of Sampling and Testing Concrete Masonry Units

B. *Geosynthetic Reinforcement*
   1. **ASTM D 4595**
      - Tensile Properties of Geotextiles by the Wide-Width Strip Method
   2. **ASTM D 5262**
      - Test Method for Evaluating the Unconfined Creep Behavior of Geosynthetics
   3. **GRI:GG1**
      - Single Rib Geogrid Tensile Strength
   4. **GRI:GG5**
      - Geogrid Pullout

C. *Soils*
   1. **ASTM D 698**
      - Moisture Density Relationship for Soils, Standard Method
   2. **ASTM D 422**
      - Gradation of Soils
   3. **ASTM D 424**
      - Atterberg Limits of Soil

D. *Drainage Pipe*
   1. **ASTM D 3034**
      - Specification for Polyvinyl Chloride (PVC) Plastic Pipe
   2. **ASTM D 1248**
      - Specification for Corrugated Plastic Pipe

E. *Engineering Design*
   1. "NCMA Design Manual for Segmental Retaining Walls," Second Edition

F. *Where specifications and reference documents conflict, the Architect/Engineer shall make the final determination of applicable document.*

1.03 SUBMITTALS

A. **Material Submittals**: *The Contractor shall submit manufacturers' certifications two weeks prior to start of work stating that the SRW units and geosynthetic reinforcement meet the requirements of Section 2 of this specification.*

B. **Design Submittal**: *The Contractor shall submit two sets of detailed design calculations and final retaining wall plans for approval at least two weeks prior to the beginning of wall construction. All calculations and drawings shall be prepared and sealed by a professional Civil Engineer (P.E.) – (Wall Design Engineer) experienced in SRW design and licensed in the state where the wall is to be built.*

1.04 DELIVERY, STORAGE AND HANDLING

A. *Contractor shall check materials upon delivery to assure that specified type and grade of materials have been received and proper color and texture of SRW units have been received.*

B. *Contractor shall prevent excessive mud, wet concrete, epoxies, and like materials that may affix themselves, from coming in contact with materials.*

C. *Contractor shall store and handle materials in accordance with manufacturer's recommendations.*

D. *Contractor shall protect materials from damage. Damaged materials shall not be incorporated into the retaining wall.*

BQ#104 Attachment

SQUARE FOOT™ SPECIFICATIONS

PART 2: *MATERIALS*

2.01 SEGMENTAL RETAINING WALL UNITS

A. *SRW units shall be machine-formed, Portland Cement concrete blocks specifically designed for retaining wall applications. SRW units currently approved for this project are:* Square Foot™ units as manufactured by _____.

B. *Color of SRW units shall be* _____.

C. *Finish of SRW units shall be split face.*

D. *SRW unit faces shall be of straight geometry.*

E. *SRW unit height shall be 8 inches.*

F. *SRW units (not including aggregate fill in unit voids) shall provide a minimum weight of 80 psf wall face area.*

G. *SRW units shall be interlocked with connection pins, designed with proper setback to provide 8:1 vertical to horizontal batter (a 7 degree cant from vertical) or near vertical (2 degree cant from vertical).*

H. *SRW units shall be capable of being erected with the horizontal gap between adjacent units not exceeding 1/8 inch.*

I. *SRW units shall be sound and free of cracks or other defects that would interfere with the proper placing of the unit or significantly impair the strength or permanence of the structure. Cracking or excessive chipping may be grounds for rejection. Units showing cracks longer than 1/2" shall not be used within the wall. Units showing chips visible at a distance of 30 feet from the wall shall not be used within the wall.*

J. *Concrete used to manufacture SRW units shall have a minimum 28 days compressive strength of 3,000 psi and a maximum moisture absorption rate, by weight, of 8 percent as determined in accordance with ASTM C140. Compressive strength test specimens shall conform to the saw-cut coupon provisions of ASTM C140.*

K. *SRW units' molded dimensions shall not differ more than ± 1/8 inch from that specified, in accordance with ASTM C1372.*

2.02 SEGMENTAL RETAINING WALL UNIT CONNECTION PINS

A. *SRW units shall be interlocked with VERSA-TUFF® connection pins. The pins shall consist of glass-reinforced nylon made for the expressed use with the SRW units supplied.*

2.03 GEOSYNTHETIC REINFORCEMENT

A. *Geosynthetic reinforcement shall consist of geogrids or geotextiles manufactured as a soil reinforcement element. The manufacturers/suppliers of the geosynthetic reinforcement shall have demonstrated construction of similar size and types of segmental retaining walls on previous projects. The geosynthetic type must be approved one week prior to bid opening. Geosynthetic types currently approved for this project are:* **VERSA-Grid® Geogrids.**

B. *The type, strength, and placement location of the reinforcing geosynthetic shall be as determined by the Wall Design Engineer, as shown on the final, P.E. sealed retaining wall plans.*

2.04 LEVELING PAD

A. *Material for leveling pad shall consist of compacted sand, gravel, or combination thereof (USCS soil types GP, GW, SP, & SW) and shall be a minimum of 6 inches in depth. Lean concrete with a strength of 200 to 300 psi and three inches thick maximum may also be used as a leveling pad material. The leveling pad should extend laterally at least a distance of 6 inches from the toe and heel of the lowermost SRW unit.*

2.05 DRAINAGE AGGREGATE

A. *Drainage aggregate shall be angular, clean stone or granular fill meeting the following gradation as determined in accordance with ASTM D422*

Sieve Size	Percent Passing
1 inch	100
3/4 inch	75-100
No. 4	0-60
No. 40	0-50
No. 200	0-5

SQUARE FOOT™ SPECIFICATIONS

2.06 DRAINAGE PIPE

A. *The drainage collection pipe shall be a perforated or slotted PVC, or corrugated HDPE pipe. The drainage pipe may be wrapped with a geotextile to function as a filter.*

B. *Drainage pipe shall be manufactured in accordance with ASTM D 3034 and/or ASTM D 1248*

2.07 REINFORCED (INFILL) SOIL

A. *The reinforced soil material shall be free of debris. Unless otherwise noted on the final, P.E. sealed retaining wall plans prepared by the Wall Design Engineer, the reinforced material shall consist of the inorganic USCS soil types GP, GW, SW, SP, SM meeting the following gradation, as determined in accordance with ASTM D422:*

Sieve Size	Percent Passing
4 inches	100
No. 4	20-100
No. 40	0-60
No. 200	0-35

B. *The maximum particle size of poorly-graded gravels (GP) (no fines) should not exceed 3/4 inch unless expressly approved by the Wall Design Engineer and the long-term design strength (LTDS) of the geosynthetic is reduced to account for additional installation damage from particles larger than this maximum.*

C. *The plasticity of the fine fraction shall be less than 20.*

PART 3: *DESIGN PARAMETERS*

3.01 SOIL

A. *The following soil parameters, as determined by the Owner's Geotechnical Engineer shall be used for the preparation of the final design:*

	Unit Weight (γ) (pcf)	Internal Friction Angle (ϕ) (degrees)	Cohesion (c)
REINFORCED FILL:	_____	_____	0
RETAINED SOIL:	_____	_____	0
FOUNDATION SOIL:	_____	_____	_____

(If internal friction angles are not available for the above section, the specifier can provide the USCS soil type classification for the reinforced, retained, and foundation soils and/or attach the geotechnical investigation report for this project.)

B. *Should the actual soil conditions observed during construction differ from those assumed for the design, design shall be reviewed by the Wall Design Engineer at the Owner's Geotechnical Engineer's direction.*

3.02 DESIGN

A. *The design analysis for the final, P.E.-sealed retaining wall plans prepared by the Wall Design Engineer shall consider the external stability against sliding and overturning, internal stability, and facial stability of the reinforced soil mass and shall be in accordance with acceptable engineering practice and these specifications. The internal and external stability analysis shall be performed in accordance with the "NCMA Design Manual for Segmental Retaining Walls", using the recommended minimum factors of safety in this manual.*

B. *External stability analysis for bearing capacity, global stability, and total and differential settlement shall be the responsibility of the Owner and the Owner's Geotechnical Engineer. The Geotechnical Engineer shall perform bearing capacity, settlement estimates, and global stability analysis based on the final wall design provided by the Wall Design Engineer and coordinate any required changes with Wall Design Engineer.*

C. *While vertical spacing between geogrid layers may vary, it shall not exceed 2.0 feet maximum in the wall design.*

BQ#104 Attachment

D. *The geosynthetic placement in the wall design shall have 100-percent continuous coverage parallel to the wall face. Gapping between horizontally adjacent layers of geosynthetic (partial coverage) will not be allowed.*

PART 4: CONSTRUCTION

4.01 INSPECTION

A. *The Owner or Owner's Representative is responsible for verifying that the Contractor meets all the requirements of the specification. This includes all submittals for materials and design, qualifications, and proper installation of wall system.*

B. *Contractor's field construction supervisor shall have demonstrated experience and be qualified to direct all work at the site.*

4.02 EXCAVATION

A. *Contractor shall excavate to the lines and grades shown on the project grading plans. Contractor shall take precautions to minimize over-excavation. Over-excavation shall be filled with compacted infill material, or as directed by the Engineer/Architect, at the Contractor's expense.*

B. *Contractor shall verify location of existing structures and utilities prior to excavation. Contractor shall ensure all surrounding structures are protected from the effects of wall excavation. Excavation support, if required, is the responsibility of the Contractor.*

4.03 FOUNDATION PREPARATION

A. *Following the excavation, the foundation soil shall be examined by the Owner's Engineer to assure actual foundation soil strength meets or exceeds the assumed design bearing strength. Soils not meeting the required strength shall be removed and replaced with infill soils, as directed by the Owner's Engineer.*

B. *Foundation soil shall be proofrolled and compacted to 95 percent standard Proctor density and inspected by the Owner's Engineer prior to placement of leveling pad materials.*

4.04 LEVELING PAD CONSTRUCTION

A. *Leveling pad shall be placed as shown on the final, P.E.-sealed retaining wall plans with a minimum thickness of 6 inches. The leveling pad should extend laterally at least a distance of 6 inches from the toe and heel of the lower most SRW unit.*

B. *Granular leveling pad material shall be compacted to provide a firm, level bearing surface on which to place the first course of units. Well-graded sand can be used to smooth the top 1/4- to 1/2-inch of the leveling pad. Compaction will be with mechanical plate compactors to achieve 95-percent of maximum standard Proctor density (ASTM D 698).*

4.05 SRW UNIT INSTALLATION

A. *All SRW units shall be installed at the proper elevation and orientation as shown on the final, P.E.-sealed retaining wall plans and details as directed by the Wall Design Engineer. The SRW units shall be installed in general accordance with the manufacturer's recommendations. The specifications and drawings shall govern in any conflict between the two requirements.*

B. *First course of SRW units shall be placed on the leveling pad. The units shall be leveled side-to-side, front-to-rear and with adjacent units, and aligned to ensure intimate contact with the leveling pad. The first course is the most important to ensure accurate and acceptable results. No gaps shall be left between the front of adjacent units. Alignment may be done by means of a string line or offset from base line to the back of the units.*

C. *The voids (cores) of the base course units shall be filled with crushed gravel. The cores of additional courses shall be filled with free-draining aggregate.*

D. *All excess debris shall be cleaned from top of units and the next course of units installed on top of the units below.*

E. *Two VERSA-TUFF® connection pins shall be inserted through the pin holes of each upper course unit into receiving slots in lower course units. Pins shall be fully seated in the pin slot below. Units shall be pushed forward to remove any looseness in the unit-to-unit connection.*

F. *Prior to placement of next course, the level and alignment of the units shall be checked and corrected, where needed.*

BQ#104 Attachment

SQUARE FOOT™ SPECIFICATIONS

G. *Layout of curves and corners shall be installed in accordance with the wall plan details or in general accordance with SRW manufacturer's installation guidelines. Walls meeting at corners shall be interlocked by overlapping successive courses.*

H. *Procedures "C" through "F" shall be repeated until reaching top of wall, just below the height of the cap units. Geosynthetic reinforcement, drainage materials, and reinforced backfill shall be placed in sequence with unit installation as described in Section 4.06, 4.07, and 4.08.*

4.06 GEOSYNTHETIC REINFORCEMENT PLACEMENT

A. *All geosynthetic reinforcement shall be installed at the proper elevation and orientation as shown on the final, P.E.-sealed retaining wall plan profiles and details, or as directed by the Wall Design Engineer.*

B. *At the elevations shown on the final plans, (after the units, drainage material, and backfill have been placed to this elevation) the geosynthetic reinforcement shall be laid horizontally on compacted infill and on top of the concrete SRW units. It shall be placed to within one inch of the front face of the unit below. Embedment of the geosynthetic in the SRW units shall be consistent with SRW manufacturer's recommendations. Correct orientation of the geosynthetic reinforcement shall be verified by the Contractor to be in accordance with the geosynthetic manufacturer's recommendations. The highest strength direction of the geosynthetic must be perpendicular to the wall face.*

C. *Geosynthetic reinforcement layers shall be one continuous piece for their entire embedment length. Splicing of the geosynthetic in the design strength direction (perpendicular to the wall face) shall not be permitted. Along the length of the wall (parallel to the face), horizontally adjacent sections of geosynthetic reinforcement shall be butted in a manner to assure 100-percent coverage parallel to the wall face.*

D. *Tracked construction equipment shall not be operated directly on the geosynthetic reinforcement. A minimum of 6 inches of backfill is required prior to operation of tracked vehicles over the geosynthetic. Turning should be kept to a minimum. Rubber-tired equipment may pass over the geosynthetic reinforcement at slow speeds (less than 5 mph).*

E. *The geosynthetic reinforcement shall be free of wrinkles prior to placement of soil fill. The nominal tension shall be applied to the reinforcement and secured in place with staples, stakes, or by hand tensioning until reinforcement is covered by 6 inches of fill.*

4.07 DRAINAGE MATERIALS

A. *Drainage aggregate shall be installed to the line, grades, and sections shown on the final P.E. sealed retaining wall plans. Drainage aggregate shall be placed to the minimum thickness shown on the construction plans between and behind units (a minimum of 1 cubic foot for each exposed square foot of wall face unless otherwise noted on the final wall plans).*

B. *Drainage collection pipes shall be installed to maintain gravity flow of water to outside the reinforced soil zone. The drainage collection pipe shall daylight into a storm sewer manhole or along a slope at an elevation lower than the lowest point of the pipe within the aggregate drain.*

4.08 BACKFILL PLACEMENT

A. *The reinforced backfill shall be placed as shown in the final wall plans in the maximum compacted lift thickness of 10 inches and shall be compacted to a minimum of 95-percent of standard Proctor density (ASTM D 698) at a moisture content within 2-percent of optimum. The backfill shall be placed and spread in such a manner as to eliminate wrinkles or movement of the geosynthetic reinforcement and the SRW units.*

B. *Only hand-operated compaction equipment shall be allowed within 3 feet of the back of the wall unit. Compaction within the 3 feet behind the wall unit shall be achieved by at least three (3) passes of a lightweight mechanical tamper, plate, or roller.*

C. *At the end of each day's operation, the Contractor shall slope the last level of backfill away from the wall facing and reinforced backfill to direct water runoff away from the wall face.*

D. *At completion of wall construction, backfill shall be placed level with final top-of-wall elevation. If final grading, paving, landscaping, and/or storm drainage installation adjacent to the wall is not placed*

BQ#104 Attachment

immediately after wall completion, temporary grading and drainage shall be provided to ensure water runoff is not directed at the wall nor allowed to collect or pond behind the wall until final construction adjacent to the wall is completed.

4.09 SRW CAPS

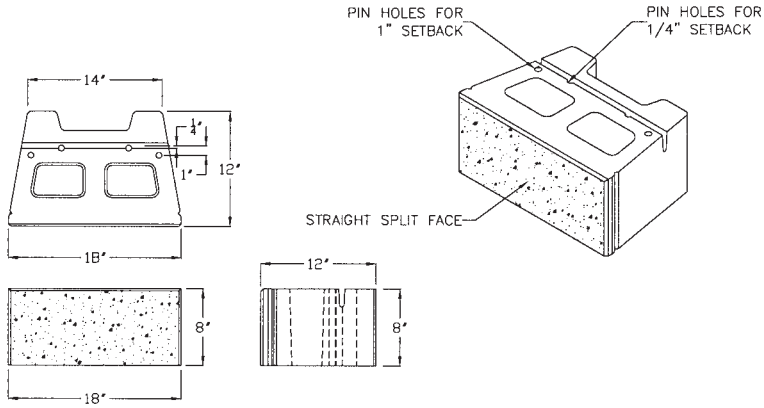
A. *SRW caps shall be properly aligned and glued to underlying units with VERSA-LOK® Concrete Adhesive, a flexible, high-strength concrete adhesive. Rigid adhesive or mortar are not acceptable.*

B. *Caps shall overhang the top course of units by 3/4- to 1-inch. Slight variation in overhang is allowed to correct alignment at the top of the wall.*

4.11 CONSTRUCTION ADJACENT TO COMPLETED WALL

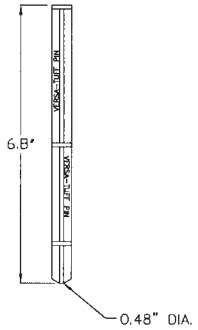
A. *The Owner or Owner's Representative is responsible for ensuring that construction by others adjacent to the wall does not disturb the wall or place temporary construction loads on the wall that exceed design loads, including loads such as water pressure, temporary grades, or equipment loading. Heavy paving or grading equipment shall be kept a minimum of 3 feet behind the back of the wall face. Equipment with wheel loads in excess of 150 psf live load shall not be operated within 10 feet of the face of the retaining wall during construction adjacent to the wall. Care should be taken by the General Contractor to ensure water runoff is directed away from the wall structure until final grading and surface drainage collection systems are completed.*

CONSTRUCTION DETAILS



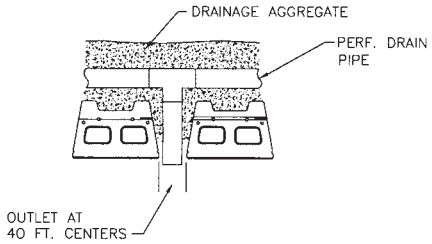
VERSA-LOK SQUARE FOOT UNIT

UNIT DIMENSIONS
SCALE: NONE



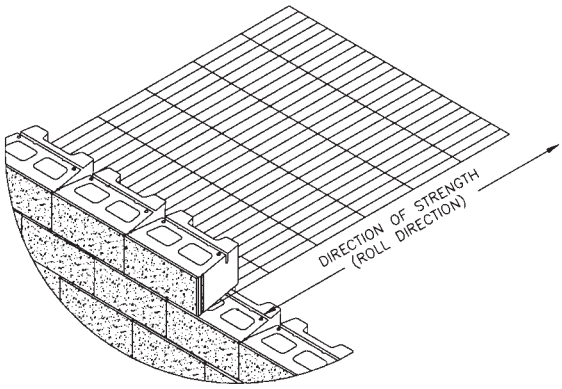
VERSA-TUFF PIN

PIN DIMENSIONS
SCALE: NONE



DRAIN DETAIL

WALLS OVER 3'
SCALE: NONE

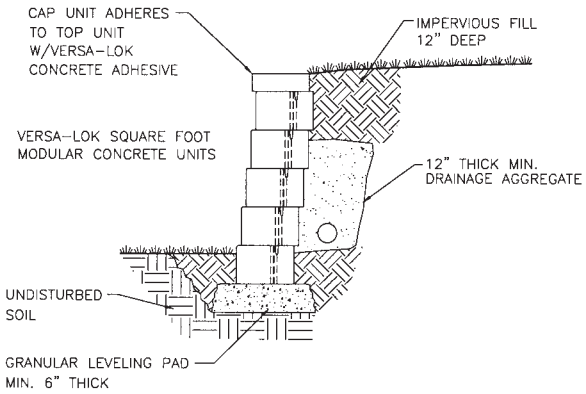


NOTE:
1. FOLLOW GEOSYNTHETIC GRID MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SPECIFICATIONS
2. GEOGRID LENGTH AND ELEVATION PLACEMENT SHALL BE DETERMINED BY PROJECT ENGINEER

GEOSYNTHETIC INSTALLATION DETAIL

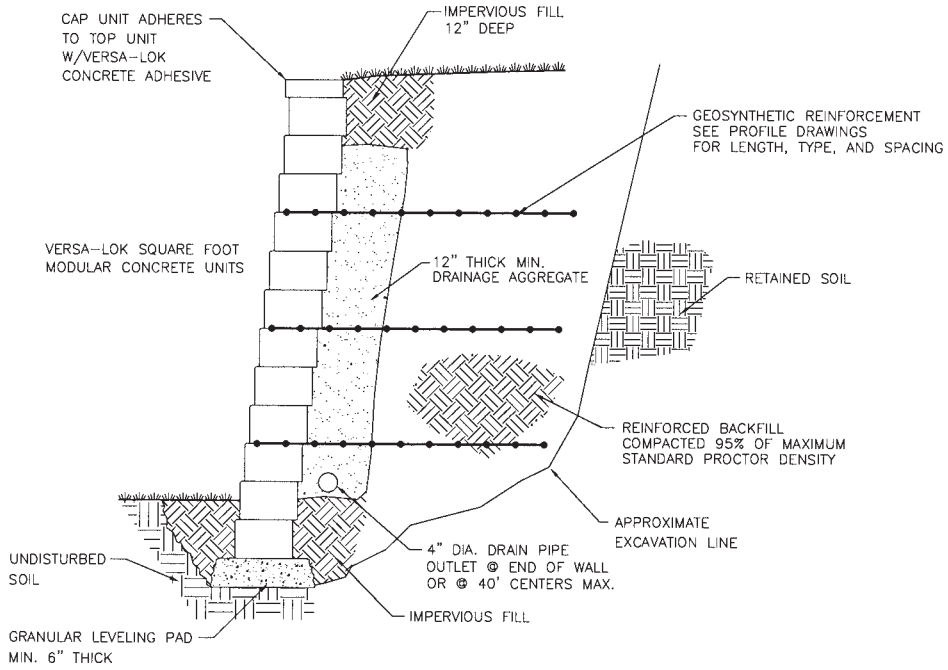
SCALE: NONE

CONSTRUCTION DETAILS



TYPICAL SECTION – UNREINFORCED RETAINING WALL

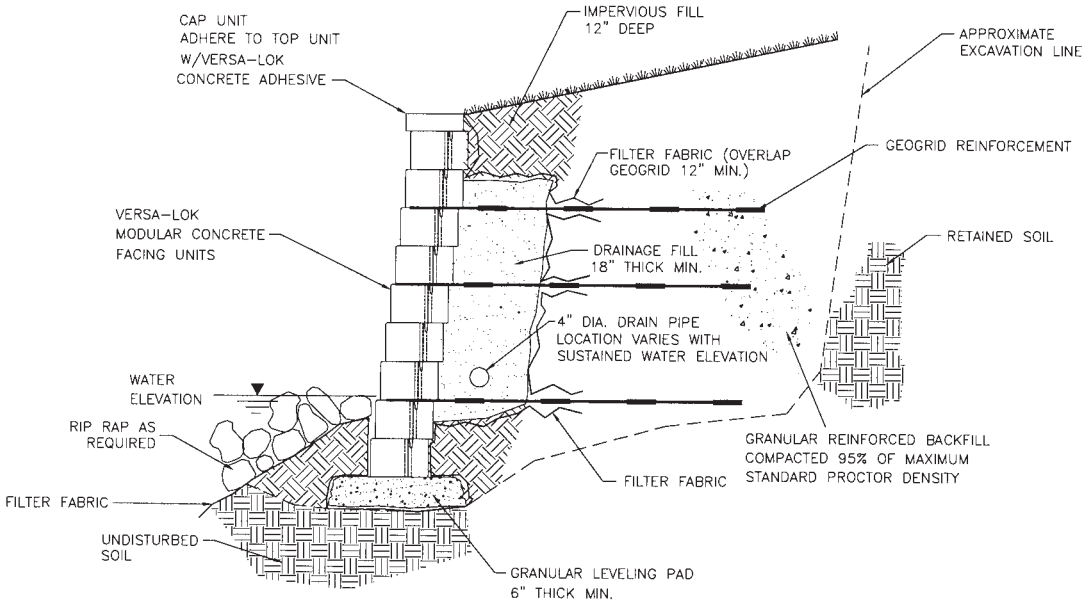
SCALE: NONE



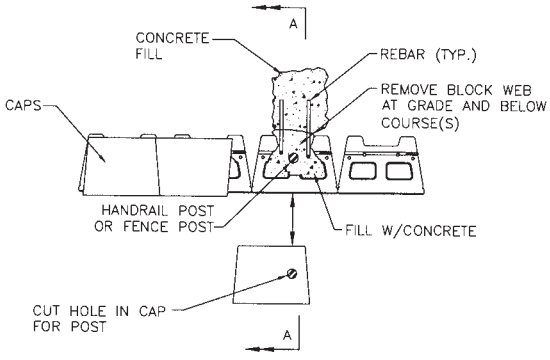
TYPICAL SECTION – REINFORCED RETAINING WALL

SCALE: NONE

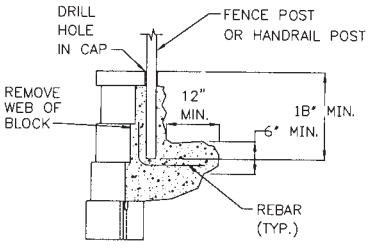
CONSTRUCTION DETAILS



TYPICAL SECTION-REINFORCED SHORELINE WALL
SCALE: NONE

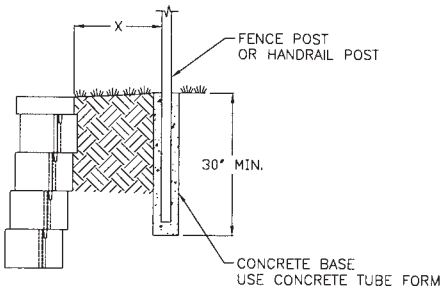


POST DETAIL- PLAN VIEW
TYPICAL HANDRAIL AND/OR FENCE POST
SCALE: NONE



POST DETAIL- SECTION A-A
TYPICAL HANDRAIL AND/OR FENCE POST
SCALE: NONE

CONSTRUCTION DETAILS

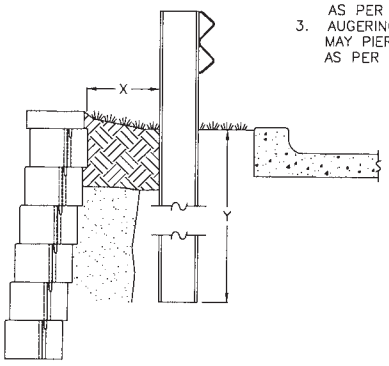


POST DETAIL

TYPICAL HANDRAIL AND/OR FENCE POST
SCALE: NONE

GUARD RAIL NOTES:

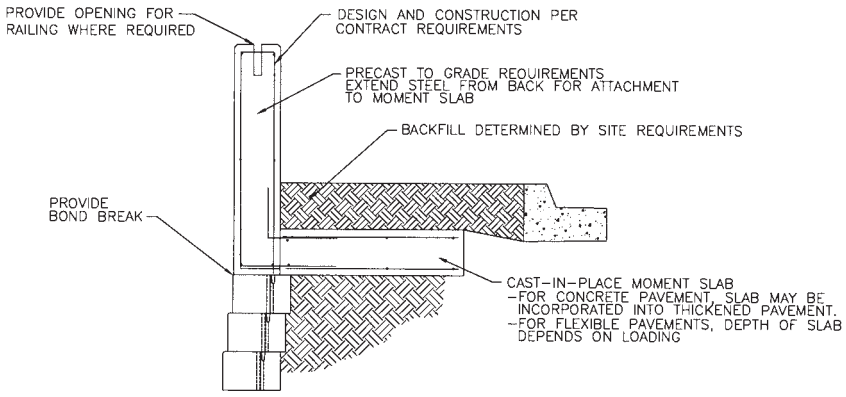
1. DISTANCE X AND Y TO BE DETERMINED BY ENGINEER BASED ON SOIL AND LOADING CONDITIONS.
2. INSTALL H-PILE OR WOOD POST AS PER MANUFACTURER'S RECOMMENDATIIONS.
3. AUGERING OR DRIVING OF POST MAY PIERCE UPPER LAYER OF GEOSYNTHETIC AS PER ENGINEER'S DESIGN.



GUARD RAIL DETAIL

TYPICAL GUARD RAIL
SCALE: NONE

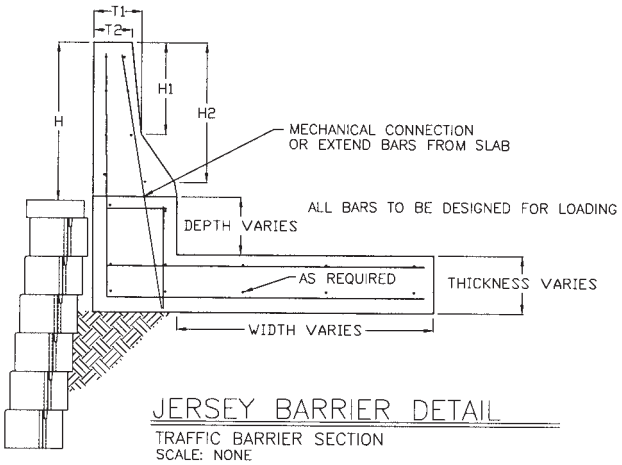
CONSTRUCTION DETAILS



COPING DETAIL
TRAFFIC BARRIER SECTION
SCALE: NONE

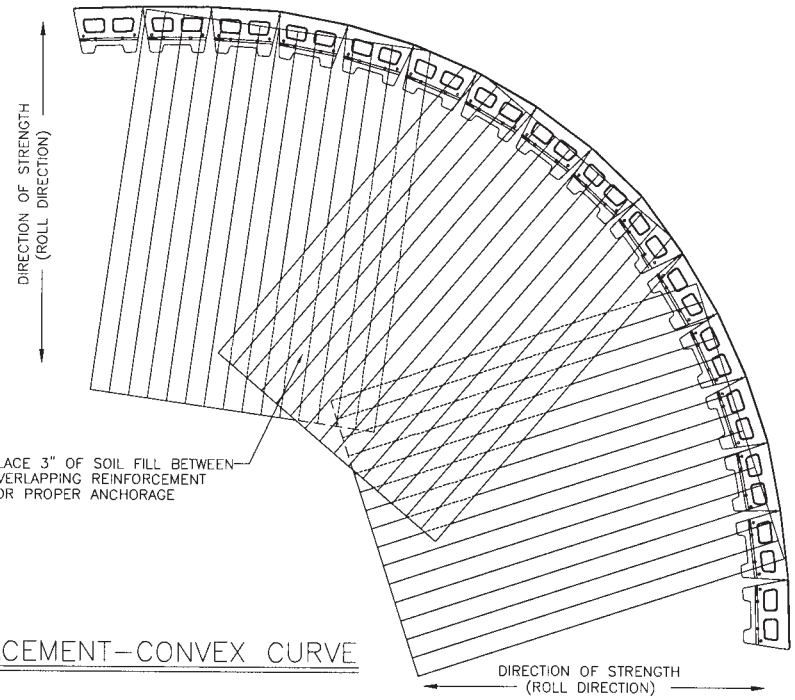
BARRIER NOTES:

1. BARRIERS MAY BE SET ON TOP OF OR BEHIND WALL.
2. BARRIERS ON TOP OF WALL SHALL BE DESIGNED TO ACCOMODATE DIFFERENTIAL MOVEMENT OF RETAINING WALL.
3. STEEL DESIGN AND COPING GEOMETRY WILL VARY WITH SITE LOADINGS. DESIGN MUST BE PROJECT SPECIFIC.
4. DURING PLACEMENT OF CONCRETE, PRECAUTIONS SHOULD BE TAKEN TO REDUCE LATERAL PRESSURES ON THE VERSA-LOK WALL. FORMING AND/OR TEMPORARY BRACING MAY BE REQUIRED.



JERSEY BARRIER DETAIL
TRAFFIC BARRIER SECTION
SCALE: NONE

CONSTRUCTION DETAILS

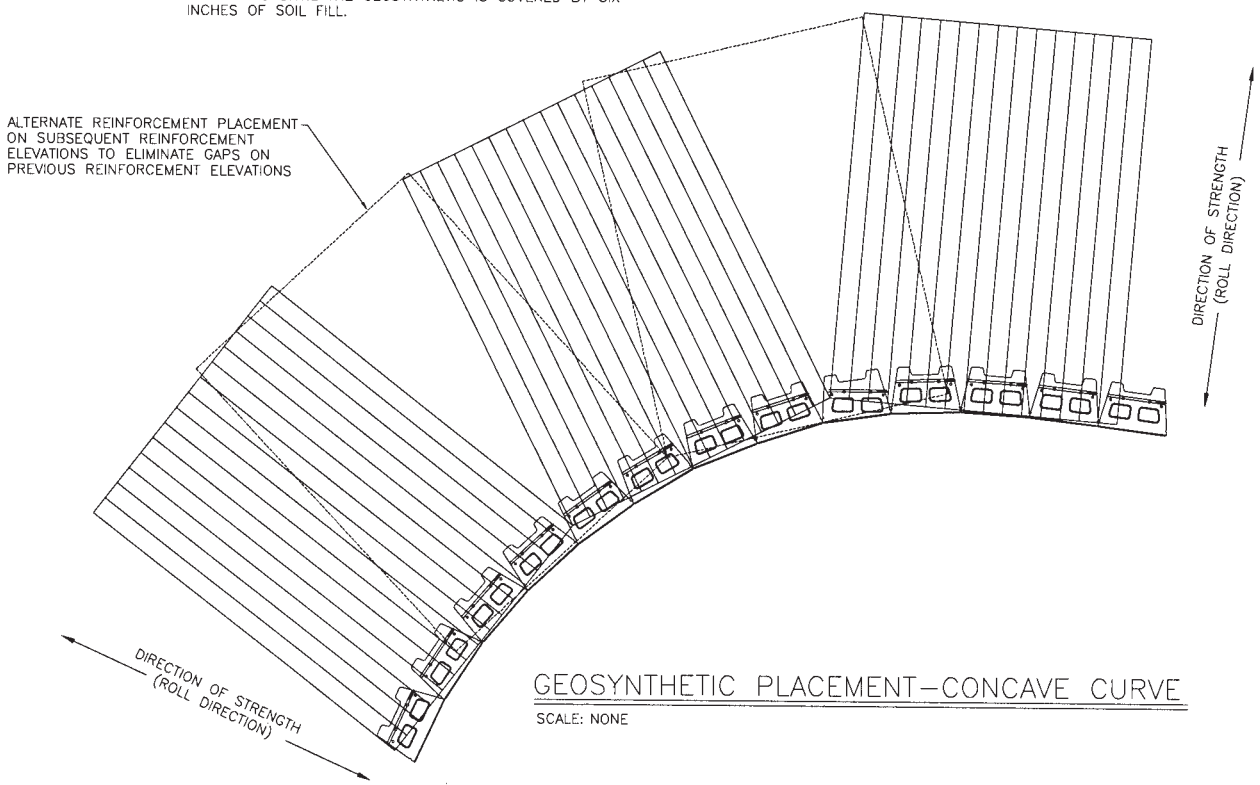


GEOSYNTHETIC PLACEMENT–CONVEX CURVE

SCALE: NONE

GENERAL NOTES FOR GEOSYNTHETIC REINFORCEMENT

1. AT THE ELEVATIONS SHOWN ON THE CONSTRUCTION PLANS, THE GEOSYNTHETIC SHALL BE LAID HORIZONTALLY ON COMPACTED SOIL FILL AND PLACED ON TO THE VERSA–LOK UNITS.
2. CORRECT ORIENTATION (ROLL DIRECTION) OF THE GEOSYNTHETIC SHALL BE VERIFIED BY THE CONTRACTOR TO BE IN ACCORDANCE WITH THE GEOSYNTHETIC MANUFACTURER'S RECOMMENDATIONS.
3. THE GEOSYNTHETIC SHALL BE IN TENSION AND FREE OF WRINKLES PRIOR TO PLACEMENT OF SOIL FILL.
4. NOMINAL TENSION SHALL BE APPLIED TO THE GEOSYNTHETIC AND SECURED IN PLACE WITH STAPLES, STAKES OR BY HAND TENSIONING UNTIL THE GEOSYNTHETIC IS COVERED BY SIX INCHES OF SOIL FILL.



GEOSYNTHETIC PLACEMENT–CONCAVE CURVE

SCALE: NONE



VERSA-LOK® Retaining Wall Systems · A Division of Kiltie Corporation
6348 Hwy 36, Suite 1 · Oakdale, MN 55128
(651) 770-3166 · (800) 770-4525 · (651) 770-4089 fax · www.versa-lok.com

---

Made worldwide under license from VERSA-LOK® Retaining Wall Systems.
U.S. Patent D319,885, U.S. Patent D321,060, U.S. Patent D341,215,
U.S. Patent D346,667, U.S. Patent D378,702, U.S. Patent D391,376,
U.S. Patent D430,680, U.S. Patent D435,302, U.S. Patent D452, 332 and other U.S. patents pending; Canadian Industrial Design Registration No. 63929, No. 71472, No. 73910, No. 73911, No. 73912, No. 77816, No. 79058, No. 82288, and No. 89084.

THE INFORMATION, INCLUDING TECHNICAL AND ENGINEERING DATA, FIGURES, TABLES, DESIGNS, DRAWINGS, DETAILS, SUGGESTED PROCEDURES, AND SUGGESTED SPECIFICATIONS, PRESENTED IN THIS PUBLICATION IS FOR GENERAL INFORMATION ONLY. WHILE EVERY EFFORT HAS BEEN MADE TO ENSURE ITS ACCURACY, THIS INFORMATION SHOULD NOT BE USED OR RELIED UPON FOR ANY APPLICATION WITHOUT VERIFICATION OF ACCURACY, SUITABILITY, AND APPLICABILITY FOR THE USE CONTEMPLATED, WHICH IS THE SOLE RESPONSIBILITY OF THE USER. A FINAL, PROJECT SPECIFIC DESIGN SHOULD BE PREPARED BY A QUALIFIED, LICENSED, PROFESSIONAL ENGINEER BASED ON ACTUAL SITE CONDITIONS. *VERSA-LOK RETAINING WALL SYSTEMS DISCLAIMS ANY AND ALL EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY FITNESS FOR ANY GENERAL OR PARTICULAR PURPOSE, TRADEMARK, OR COPYRIGHT IN REGARD TO INFORMATION OR PRODUCTS CONTAINED OR REFERRED TO HEREIN.*

© 2002 Kiltie Corporation • Printed in U.S.A. • VSQ-602 • 5K • 8-02

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

RFI 119

SUBSTITUTION REQUEST
(During the Bidding/Negotiating Phase)

PROJECT: Greenwich Middle School

SUBSTITUTION REQUEST NUMBER: 1

FROM:

TO: Joseph Matta

Turner Construction Company

DATE: 10/14/2024

A/E PROJECT NUMBER:

RE: Aacer Power Play Panel equal to basis of design

CONTRACT FOR: Aacer Sports Flooring

SPECIFICATION TITLE: Wood Athletic Flooring

DESCRIPTION: Wood Athletic Flooring

SECTION: 096466 **PAGE:** 3

ARTICLE/PARAGRAPH: 2.1,A,1

PROPOSED SUBSTITUTION: Aacer Power Play Panel

MANUFACTURER: Aacer Sports Flooring **ADDRESS:** 701 E. Elm St, Crandon, WI 54520 **PHONE:** (877)-582-1181

TRADE NAME: Aacer Sports Flooring LLC **MODEL NO.:**

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.
Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:
- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

SUBMITTED BY:

SIGNED BY:

FIRM:

ADDRESS:

TELEPHONE:

A/E's REVIEW AND RECOMMENDATION:

- [X] Approve Substitution—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
- [ ] Approve Substitution as noted—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
- [ ] Reject Substitution—Use specified materials.
- [ ] Substitution Request received too late—Use specified materials.

SIGNED BY: Stephen Martocchio - SLAM **DATE:** 10/30/24

SUPPORTING DATA ATTACHED: [ ] Drawings [X] Product Data [ ] Samples [ ] Tests [ ] Reports [ ]

RFI 119

PowerPlay™ Panel

FIXED RESILIENT SYSTEM

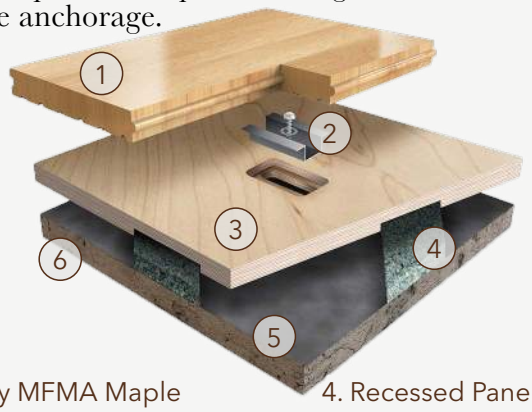
AACER SPORTS FLOORING
an Infinity Wood Floors Company

Prefabricated PowerPlay Panels provide lineal cushions contributing to uniform high shock absorption and ball rebound value and offer athletic response equivalent to full blanket floors with the added advantage of subfloor ventilation and resilient pad protection. Sectional steel channel anchorage contributes to added stability and uniformity while allowing for lateral movement.



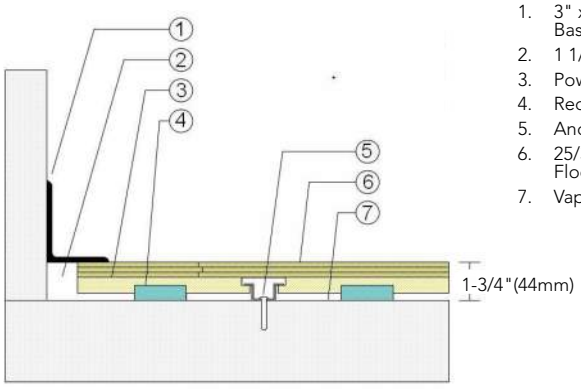
PowerPlay™ Panel RFI 119

PowerPlay Panel provides desired shock absorption, basketball rebound, protective pad housing, airflow, and stabilizing steel concrete anchorage.



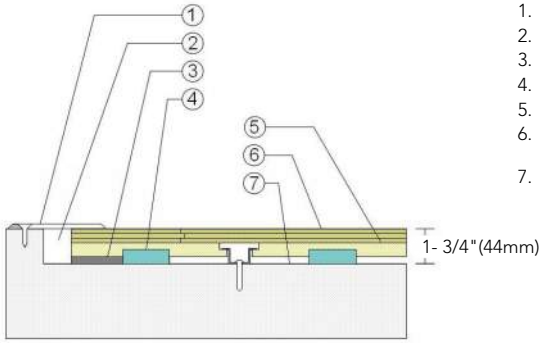
1. Infinity MFMA Maple
2. Sectional Steel Channel Anchor
3. Pre-manufactured Panel
4. Recessed Panel Cushion
5. Vapor Retarder
6. Concrete Substrate

WALL BASE



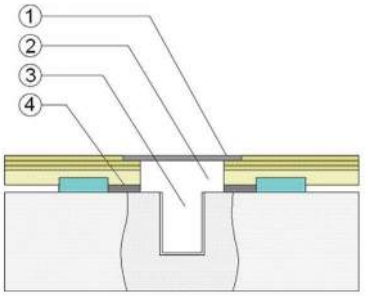
1. 3" x 4" (76mm x 101mm) Vent Cove Base
2. 1 1/2" (38mm) Min. Expansion Space
3. PowerPlay™ Panel Subfloor
4. Recessed Resilient Cushion
5. Anchored Steel Channel Section
6. 25/32" (20mm) MFMA Maple Flooring
7. Vapor Retarder

THRESHOLD



1. 1/4" (6mm) Aluminum Threshold
2. 1 1/2" (38mm) Min. Expansion Space
3. Solid Blocking at Doorway
4. Recessed Resilient Cushion
5. PowerPlay™ Panel Subfloor
6. 25/32" (20mm) MFMA Maple Flooring
7. Vapor Retarder

EQUIPMENT



1. Floor Plate
2. 1 1/2" (38mm) Min. Expansion Space Required at all Insert & Electrical Penetrations
3. Concrete Floor Penetration
4. Solid Blocking at Insert

Anchorage	Sectional Channel
Certified	MFMA PUR COMPLIANT
Green Status and LEED Contributors	• FSC® Certified Maple - MR • FSC® Certified Subfloor Components - MR • Environmental Quality - EQ • Regional Materials - MR
Resilience	3/4" (19mm) Open-Cell Polyurethane Foam
Slab Depression	• 25/32" (20mm) flooring –1 3/4" (44mm)
Optional PowerPlay™ Systems	PowerPlay™ Edge PowerPlay™ Cradle PowerPlay™ Trax PowerPlay™ TP
Subfloor Construction	Pre-manufactured panels
System Type	Fixed Resilient
Testing Laboratory Partners	ASET SERVICES, ISSS, USSL

It is the policy of Infinity Wood Floors to continuously improve its line of products. Therefore, Infinity Wood Floors reserves the right to change, modify or discontinue systems, specifications and accessories of all products at any time without notice or obligation to purchaser.

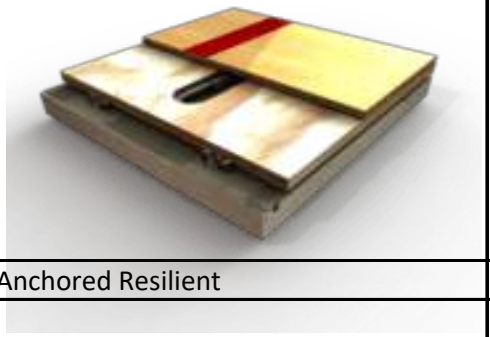
see us at Sweets.com

Jan2024

RFI 119

System Comparison Chart

AACER

Aacer PowerPlay Panel to Robbins Bio-Channel Star SB				
System Feature	Aacer PowerPlay Panel	Robbins Bio-Channel Star SB	Verdict	Comments
Cross Section				
System Type	Anchored Resilient	Anchored Resilient	Equal	Same
Slab Depression	1-3/4" with 25/32" Maple	1-3/4" with 25/32" Maple	Aacer Advantage	Aacer system provides a lower profile
Surface Vapor Retarder	In compliance with product specification	In compliance with product specification	Equal	Same
Resilient Pad	Open cell rebonded polyurethane 8pcf density foam	Open cell rebonded polyurethane 8pcf density foam	Aacer Advantage	Aacer lineal pads allow subfloor wall to wall airflow
Recessed Pad Support	Designed to address heavy non athletic loads. Protected recessed pads create lower profile.	Competitors subfloor doesn't provide recessed component and pad protection	Aacer Advantage	Aacer subfloor system provides pad and sytem support protection under aggressive loads
Steel Channel	16 Gauge Steel Hat Channel with steel anchor pin	16 Gauge Steel Hat Channel with steel anchor pin	Equal	Same
Wood Subfloor	23/32" thick pre-manufactured subfloor panels, MFMA PUR compliant.	23/32" thick pre-manufactured subfloor panels, MFMA PUR compliant.	Equal	Same
Maple Flooring	25/32" MFMA-RL graded and stamped Maple Flooring	25/32" MFMA-FJ graded and stamped Maple Flooring	Equal	Same

RFI 119

System Comparison Chart

AACER

Aacer PowerPlay Panel vs. Robbins Bio-Channel Star				
System Feature	Aacer	Robbins	Verdict	Comments
Sanding	Machine sanded with course, medium and fine paper to a smooth even and uniform surface	Machine sanded with coarse, medium and fine paper to a smooth even and uniform surface	Equal	Both systems are sanded the same
Sealers	oil modified polyurethane	oil modified polyurethane	Equal	Same products
Finishes	oil modified polyurethane	oil modified polyurethane	Equal	Same products
Game lines	game line paint compatible with sealers and finish	game line paint compatible with sealers and finish	Equal	Same products
Wall Base	3" x 4" vented cove base with premolded corners	3" x 4" vented cove base with premolded corners	Equal	Same products
Threshold	6" x 6' or 10' aluminum plate or 8" x 6' or 10' aluminum plate	6" x 6' or 10' aluminum plate or 8" x 6' or 10' aluminum plate	Equal	Same products

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

RFI 167

SUBSTITUTION REQUEST
(During the Bidding/Negotiating Phase)

PROJECT: Greenwich Central Middle School

SUBSTITUTION REQUEST NUMBER: 1

FROM:

TO: Turner Construction

DATE: 10/17/24

A/E PROJECT NUMBER:

RE: Ceiling Substitutions

CONTRACT FOR:

SPECIFICATION TITLE: Acoustical Ceilings

DESCRIPTION: Acoustical Ceilings

SECTION: 09 51 00

PAGE: 2

ARTICLE/PARAGRAPH: 2.1 - A & B

PROPOSED SUBSTITUTION: Utilize Certainteed ceiling tile and grid

MANUFACTURER: Certainteed

ADDRESS: 5015 Oakbrook Pkwy
Norcross, Georgia 30093

PHONE:

TRADE NAME: Acoustical Ceilings

MODEL NO.: Various

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.
Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:
- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

SUBMITTED BY:

SIGNED BY:

FIRM:

ADDRESS:

TELEPHONE:

Approved as Noted – missing the trim pieces we have noted in the spec to provide to create a full system, ie floating ceiling 4" trim etc. 095100 2.5 Accessories. C. - SLAM 10/30/2024

A/E's REVIEW AND RECOMMENDATION:

- ☐ Approve Substitution—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
- ☒ Approve Substitution as noted—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
- ☐ Reject Substitution—Use specified materials.
- ☐ Substitution Request received too late—Use specified materials.

SIGNED BY: Stephen Martocchio - SLAM

SUPPORTING DATA ATTACHED: ☐ Drawings ☒ Product Data ☐ Samples ☐ Tests ☐ Reports ☐

Samples can be provided on request.

RFI 167

USG Ceiling Solutions

USG MARS™ HIGH-NRC/HIGH-CAC ACOUSTICAL PANELS

CLIMAPLUS™ PERFORMANCE WITH PLANT-BASED BINDER[9]

Basis of Design



USG Mars™ High-NRC Acoustical Panels with ClimaPlus™ Performance, and USG Donn® Brand Centricitee™ DXT™ Acoustical Suspension System Lowell Justice Center in Lowell, MA, Architect: Finegold Alexander Architects, Photo: ©Anton Grassi

TO ORDER SAMPLES, GO TO USG.COM OR CGCINC.COM

PREMIUM COLORS

Dawn 3679 | Old Stone 3691 | Sea Shell 3678 | Light Brown 3690 | Nut Brown 3680 | Peat 3682

Shale 3683 | Ocean Ridge 3684 | Atmosphere 3681 | Laguna 3685 | Grass 3688 | Tangy Taleia 3689

Deep Cranberry 3687 | Deep Violet 3686 | Deep Berry 3693 | Deep Blue 3692 | Flat Black 205

STANDARD COLOR

Flat White 050

CUSTOM COLOR

Unlimited Color Options

FEATURES AND BENEFITS

- Balanced Acoustics. Wide range of options. Sound absorption NRC up to 0.90 and sound attenuation CAC up to 40 with 0.95 NRC coming soon.
- High light-reflective finish (LR-0.90 White products).
- Washable and scrubbable finish.[6]
- Impact and scratch resistant.[6]
- Coordinates visually with USG Halcyon™ Acoustical Panels for open- or closed-plan applications.
- Nondirectional, monolithic visual reduces installation time and waste.
- ClimaPlus™ 30-year limited system warranty against visible sag, mold and mildew.
- GREENGUARD Gold certified for low emitting performance.
- USG Mars™ High-NRC/High-CAC Acoustical Panels are part of the Ecoblueprint™ portfolio — meeting today's sustainability standards. For sustainability documentation go to USG.com or CGCInc.com.

APPLICATIONS

- Offices
- Healthcare
- Classrooms and corridors
- Reception areas and lobbies
- Department stores and retail
- Restaurants and hospitality

SUBSTRATE

- Wet-formed mineral fiber

Fine-Textured Panel

USG CGC

IT'S YOUR WORLD. BUILD IT.™

RFI 167

USG MARS™ HIGH-NRC/HIGH-CAC ACOUSTICAL PANELS

CLIMAPLUS™ PERFORMANCE WITH PLANT-BASED BINDER[9]

PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS: UL.COM/GG UL 2818

30 YEAR LIMITED SYSTEM WARRANTY
- No Visible Sag
- Mold/Mildew Protection

BALANCED ACOUSTICS

HRC HIGH RECYCLED CONTENT

PREMIUM COLOR PALETTE

CUSTOM COLOR

Plant-Based Binder

ECOBLUEPRINT

Declare

ORDER SAMPLES/LITERATURE
USG: usg.com or samplit@usg.com
CGC: contact Sales Representative

TECHNICAL SERVICES
800 USG.4YOU (874-4968)

FOR MOST UP-TO-DATE TECHNICAL INFORMATION AND LEED REPORT TOOL
usgdesignstudio.com
cgcdesignstudio.com

	Edge	Panel Size	Fire Rating	Item No.	UL Classified[5] NRC	CAC Min.	LR[2]	Color	Grid Options	VOC Emissions	Anti-Mold & Mildew/Sag Resistance	Recycled Content[1]	Panel Cost
USG MARS™ HIGH-NRC PANELS 95/30 Plant-Based Binder **COMING SOON**	SQ	2′x2′x1.3″	Class A	88280	0.95	30	0.90	White	A, B, C	Low	✓	27%	$$$
		2′x4′x1.3″	Class A	88281	0.95	30	0.90	White	A, B	Low	✓	27%	$$$
		30″x30″x1.3″	Class A	88282	0.95	30	0.90	White	A, B	Low	✓	27%	$$$
	SL	2′x2′x1.3″	Class A	88285	0.95	30	0.90	White	I	Low	✓	27%	$$$
		2′x4′x1.3″	Class A	88286	0.95	30	0.90	White	I	Low	✓	27%	$$$
		30″x30″x1.3″	Class A	88287	0.95	30	0.90	White	I	Low	✓	27%	$$$
	FL	2′x2′x1.3″	Class A	88290	0.95	30	0.90	White	J, K, L, M	Low	✓	27%	$$$
		2′x4′x1.3″	Class A	88291	0.95	30	0.90	White	J, K, L, M	Low	✓	27%	$$$
		30″x30″x1.3″	Class A	88292	0.95	30	0.90	White	J, K, L, M	Low	✓	27%	$$$
USG MARS™ HIGH-NRC PANELS 90/30 Plant-Based Binder	SQ	2′x2′x1″	Class A	88137	0.90	30	0.90	White, color[7]	A,B,C	Low	✓	67%	$$$
		2′x4′x1″	Class A	89137	0.90	30	0.90	White	A,B	Low	✓	67%	$$$
		30″x30″x1″	Class A	80213	0.90	30	0.90	White	A,B	Low	✓	67%	$$$
		30″x60″x1″	Class A	89143	0.90	30	0.90	White	A,B	Low	✓	67%	$$$
	SLT	2′x2′x1″	Class A	88138	0.90	30	0.90	White, color[7]	D	Low	✓	67%	$$$
		2′x4′x1″	Class A	89138	0.90	30	0.90	White	D	Low	✓	67%	$$$
		30″x30″x1″	Class A	80239	0.90	30	0.90	White	D	Low	✓	67%	$$$
		30″x60″x1″	Class A	89144	0.90	30	0.90	White	D	Low	✓	67%	$$$
	FLB	2′x2′x1″	Class A	88139	0.90	30	0.90	White, color[7]	E,F,G,H	Low	✓	67%	$$$
		2′x4′x1″	Class A	89139	0.90	30	0.90	White	E,F,G,H	Low	✓	67%	$$$
		30″x30″x1″	Class A	80265	0.90	30	0.90	White	E,F,G,H	Low	✓	67%	$$$
		30″x60″x1″	Class A	89145	0.90	30	0.90	White	E,F,G,H	Low	✓	67%	$$$
USG MARS™ HIGH-NRC PANELS 85/35 Plant-Based Binder	SQ	2′x2′x7/8″	Class A	88134	0.85	35	0.90	White, color[7]	A,B,C	Low	✓	69%	$$$
		2′x4′x7/8″	Class A	89134	0.85	35	0.90	White	A,B	Low	✓	69%	$$$
		30″x30″x7/8″	Class A	80113	0.85	35	0.90	White	A,B	Low	✓	69%	$$$
		30″x60″x7/8″	Class A	89140	0.85	35	0.90	White	A,B	Low	✓	69%	$$$

Low Emissions (VOC)
Third party (GREENGUARD Gold) certified for low-emitting performance, meets California Department of Public Health's (CDPH) Standard Method v1.2 - 2017 (CA Section 01350). 'Certificates of Compliance' for Low VOC Emissions are available on usg.com and at spot.ul.com.

ClimaPlus™ Warranty Performance[3]
Contains a broad-spectrum antimicrobial additive on the face and back of the panel that provides resistance against the growth of mold and mildew. Includes sag-resistance performance.

High Recycled Content
USG classifies High Recycled Content as greater than 50%. Total recycled content is based on product composition of postconsumer and preconsumer (postindustrial) recycled content per FTC guidelines.

USG CGC

RFI 167

USG MARS™ HIGH-NRC/HIGH-CAC ACOUSTICAL PANELS

CLIMAPLUS™ PERFORMANCE WITH PLANT-BASED BINDER[9]

ORDER SAMPLES/LITERATURE
USG: usg.com or samplit@usg.com
CGC: contact Sales Representative

TECHNICAL SERVICES
800 USG.4YOU (874-4968)

FOR MOST UP-TO-DATE TECHNICAL INFORMATION AND LEED REPORT TOOL
usgdesignstudio.com
cgcdesignstudio.com

PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS: UL.COM/GG UL 2818

30 YEAR LIMITED SYSTEM WARRANTY
• No Visible Sag
• Mold/Mildew Protection

BALANCED ACOUSTICS

HIGH RECYCLED CONTENT

PREMIUM COLOR PALETTE

CUSTOM COLOR

Plant-Based Binder

ECOBLUEPRINT

Declare

UL Classified

Edge	Panel Size	Fire Rating	Item No.	NRC	CAC Min.	LR[2]	Color	Grid Options	VOC Emissions	Anti-Mold & Mildew/Sag Resistance	Recycled Content[1]	Panel Cost	
				NRC	CAC								
USG MARS™ HIGH-NRC PANELS 85/35 Plant-Based Binder													
SLT	**2′x2′x7/8″**	Class A	**88135**	0.85	35	0.90	White, color[7]	D	Low	✓	69%	**$$$**	
	2′x4′x7/8″	Class A	**89135**	0.85	35	0.90	White	D	Low	✓	69%	**$$$**	
	30″x30″x7/8″	Class A	**80139**	0.85	35	0.90	White	D	Low	✓	69%	**$$$**	
	30″x60″x7/8″	Class A	**89141**	0.85	35	0.90	White	D	Low	✓	69%	**$$$**	
FLB	**2′x2′x7/8″**	Class A	**88136**	0.85	35	0.90	White, color[7]	E,F,G,H	Low	✓	69%	**$$$**	APC-3
	2′x4′x7/8″	Class A	**89136**	0.85	35	0.90	White	E,F,G,H	Low	✓	69%	**$$$**	APC-1/4
	30″x30″x7/8″	Class A	**80165**	0.85	35	0.90	White	E,F,G,H	Low	✓	69%	**$$$**	
	30″x60″x7/8″	Class A	**89142**	0.85	35	0.90	White	E,F,G,H	Low	✓	69%	**$$$**	
USG MARS™ HIGH-NRC/ HIGH-CAC PANELS 80/40 Plant-Based Binder													
SQ	**2′x2′x1″**	Class A	**86345**	0.80	40	0.90	White	A,B,C	Low	✓	71%	**$$**	
	2′x4′x1″	Class A	**88345**	0.80	40	0.90	White	A,B	Low	✓	71%	**$$**	
SLT	**2′x2′x1″**	Class A	**86346**	0.80	40	0.90	White	D	Low	✓	71%	**$$**	
	2′x4′x1″	Class A	**88346**	0.80	40	0.90	White	D	Low	✓	71%	**$$**	
FLB	**2′x2′x1″**	Class A	**86347**	0.80	40	0.90	White	E,F,G,H	Low	✓	71%	**$$**	
	2′x4′x1″	Class A	**88347**	0.80	40	0.90	White	E,F,G,H	Low	✓	71%	**$$**	
USG MARS™ HIGH-NRC PANELS 80/35 Plant-Based Binder													
SQ	**2′x2′x7/8″**	Class A	**86100**	0.80	35	0.90	White	A,B,C	Low	✓	70%	**$$**	
	2′x4′x7/8″	Class A	**86300**	0.80	35	0.90	White	A,B	Low	✓	70%	**$$**	
	30″x30″x7/8″	Class A	**86426**	0.80	35	0.90	White	A,B	Low	✓	70%	**$$**	
	30″x60″x7/8″	Class A	**86429**	0.80	35	0.90	White	A,B	Low	✓	70%	**$$**	
SLT	**2′x2′x7/8″**	Class A	**87200**	0.80	35	0.90	White	D	Low	✓	70%	**$$**	
	2′x4′x7/8″	Class A	**89600**	0.80	35	0.90	White	D	Low	✓	70%	**$$**	
	30″x30″x7/8″	Class A	**86500**	0.80	35	0.90	White	D	Low	✓	70%	**$$**	
	30″x60″x7/8″	Class A	**86466**	0.80	35	0.90	White	D	Low	✓	70%	**$$**	
FLB	**2′x2′x7/8″**	Class A	**87100**	0.80	35	0.90	White	E,F,G,H	Low	✓	70%	**$$**	
	2′x4′x7/8″	Class A	**89500**	0.80	35	0.90	White	E,F,G,H	Low	✓	70%	**$$**	
	30″x30″x7/8″	Class A	**86400**	0.80	35	0.90	White	E,F,G,H	Low	✓	70%	**$$**	
	30″x60″x7/8″	Class A	**86497**	0.80	35	0.90	White	E,F,G,H	Low	✓	70%	**$$**	

Low Emissions (VOC)
Third party (GREENGUARD Gold) certified for low-emitting performance, meets California Department of Public Health's (CDPH) Standard Method v1.2 - 2017 (CA Section 01350). 'Certificates of Compliance' for Low VOC Emissions are available on usg.com and at spot.ul.com.

ClimaPlus™ Warranty Performance[3]
Contains a broad-spectrum antimicrobial additive on the face and back of the panel that provides resistance against the growth of mold and mildew. Includes sag-resistance performance.

High Recycled Content
USG classifies High Recycled Content as greater than 50%. Total recycled content is based on product composition of postconsumer and preconsumer (postindustrial) recycled content per FTC guidelines.

USG CGC

RFI 167

USG MARS™ HIGH-NRC/HIGH-CAC ACOUSTICAL PANELS

CLIMAPLUS™ PERFORMANCE WITH PLANT-BASED BINDER[9]

ORDER SAMPLES/LITERATURE
USG: usg.com or samplit@usg.com
CGC: contact Sales Representative

TECHNICAL SERVICES
800 USG.4YOU (874-4968)

FOR MOST UP-TO-DATE TECHNICAL INFORMATION AND LEED REPORT TOOL
usgdesignstudio.com
cgcdesignstudio.com

PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS: UL.COM/GG UL 2818

30 YEAR LIMITED SYSTEM WARRANTY
• No Visible Sag
• Mold/Mildew Protection

BALANCED ACOUSTICS

HIGH RECYCLED CONTENT

PREMIUM COLOR PALETTE

CUSTOM COLOR

Plant-Based Binder

ECOBLUEPRINT

Declare

USG MARS™ HIGH-CAC PANELS 60/40

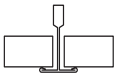
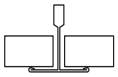
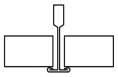
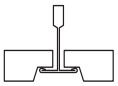
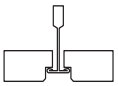
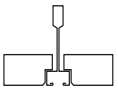
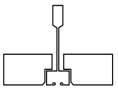
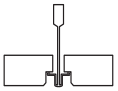
Edge	Panel Size	Fire Rating	Item No.	UL Classified NRC	UL Classified CAC Min.	LR[2]	Color	Grid Options	VOC Emissions	Anti-Mold & Mildew/Sag Resistance	Recycled Content[1]	Panel Cost
SQ	**2'x2'x3/4"**	Class A	**86186**	0.60	40	0.90	White, color[7]	A,B,C	Low	✓	70%	**$$$**
	2'x4'x3/4"	Class A	**87187**	0.60	40	0.90	White	A,B	Low	✓	70%	**$$$**
SLT	**2'x2'x3/4"**	Class A	**86786**	0.60	40	0.90	White, color[7]	D	Low	✓	70%	**$$$**
	2'x4'x3/4"	Class A	**88786**	0.60	40	0.90	White	D	Low	✓	70%	**$$$**
FLB	**2'x2'x3/4"**	Class A	**86986**	0.60	40	0.90	White, color[7]	E,F,G,H	Low	✓	70%	**$$$**
	2'x4'x3/4"	Class A	**88986**	0.60	40	0.90	White	E,F,G,H	Low	✓	70%	**$$$**

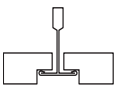
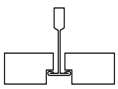
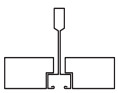
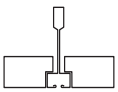
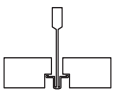
Low Emissions (VOC)
Third party (GREENGUARD Gold) certified for low-emitting performance, meets California Department of Public Health's (CDPH) Standard Method v1.2 - 2017 (CA Section 01350). 'Certificates of Compliance' for Low VOC Emissions are available on usg.com and at spot.ul.com.

ClimaPlus™ Warranty Performance[3]
Contains a broad-spectrum antimicrobial additive on the face and back of the panel that provides resistance against the growth of mold and mildew. Includes sag-resistance performance.

High Recycled Content
USG classifies High Recycled Content as greater than 50%. Total recycled content is based on product composition of postconsumer and preconsumer (postindustrial) recycled content per FTC guidelines.

GRID PROFILE OPTIONS

A **USG DX®**	B **USG DXW™**	C[4] **USG Centricitee™ DXT™**	D **USG DX®**	E **USG Centricitee™ DXT™**	F **USG Fineline® DXF™**	G[8] **USG Fineline® 1/8 DXFF™**	H **USG Identitee® DXI™**
							

I **USG DX®**	J **USG Centricitee™ DXT™**	K **USG Fineline® DXF™**	L **USG Fineline® 1/8 DXFF™**	M **USG Identitee® DXI™**
				

PHYSICAL DATA/ FOOTNOTES

Product literature
Data sheet: SC2487

ASTM E1264 classification
ASTM E1264-22: Type IV, Form 1 and 2, Pattern E, G
ASTM E1264-23: Type A, Form A2.1 and A2.2, Pattern E, G

ASTM E84 and CAN/ULC S102 surface-burning characteristics
Class A
Flame spread: 25 or less
Smoke developed: 50 or less

Weight
1.09 - 1.36 lb./sq.ft.

Online tools
usgdesignstudio.com or cgcdesignstudio.com

Thermal resistance
R-2.2 (3/4" panel)
R-4.5 (1.3" panel)

Maximum backloading
See *USG 30-Year Limited System Warranty Commercial Applications* (SC2102).

Maintenance
Can be cleaned easily with a soft brush or vacuum. To clean white panels, use a clean, white cloth with water or a mild detergent and wipe surface.

Metric sizes available
Contact sales for minimum quantities and lead times.

Notes
1. For details, see USG Sustainability tool at usgdesignstudio.com or cgcdesignstudio.com.
2. LR values are shown as averages.
3. For details, see *USG 30-Year Limited System Warranty Commercial Applications* (SC2102).
4. Maximum 2'x2' with SQ edge panels.
5. Acoustic values are for white only. Colored values are lower depending on specific color selected.
6. White panels only.
7. Available in Premium and Custom Colors.
8. Not available in Premium or Custom Colors.
9. All USG Mars™ High-NRC Acoustical Panels with a "plant-based binder" label contain up to 65% plant-based material in the binder. For more information, please refer to the USG Mars Acoustical Panels Health Product Declaration, available at www.usg.com.

Notice
The information in this document is subject to change without notice. CGC Inc. or USG Corp. assumes no responsibility for any errors that may inadvertently appear in this document.

SC2487/rev. 11-23
© 2023 USG Corporation and/or its affiliates. All rights reserved.
Printed in USA

Manufactured by
USG Interiors, LLC
550 West Adams Street
Chicago, IL 60661

The trademarks USG, CGC, CENTRICITEE, CLIMAPLUS, DONN, DX, DXF, DXFF, DXI, DXT, DXW, ECOBLUEPRINT, FINELINE, HALCYON, IDENTITEE, MARS, IT'S YOUR WORLD. BUILD IT., the USG/CGC logo, the design elements and colors, and related marks are trademarks of USG Corporation or its affiliates.

Safety First! Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment. Read SDS and literature before specification and installation.

USG CGC

RFI 167

USG Ceiling Solutions

USG MARS™ HEALTHCARE ACOUSTICAL PANELS CLIMAPLUS™ PERFORMANCE WITH CLEAN ROOM, HIGH-NRC AND AIRCARE™ COATING OPTIONS



Basis of Design

USG Mars™ Healthcare Acoustical Panels with ClimaPlus™ Performance/USG Donn® Brand DX®/DXL™ Acoustical Suspension System

Photo this page:
Chinook Regional Hospital
Architect: Perkins + Will / KRA / Group2 / Stuart Olson
Photo: © Andrew Latreille

TO ORDER SAMPLES, GO TO USG.COM OR CGCINC.COM

White 050

Fine-Textured Panel

FEATURES AND BENEFITS

- Water-repellent membrane designed to be durable and safe with common disinfectants.**
- Washable and soil-resistant fi nish. Impact and scratch resistant.
- Acoustics and cleanability exceed FGI guidelines for healthcare.
- Meets USDA/FSIS guidelines for use in food-processing areas.
- Achieves FDA standards for smoothness, durability and cleanability.
- Clean Room tested to ISO 5 (Class 100) (Items 86169CR, 88189CR, 86684CR, 88683CR).
- ClimaPlus™ 30-year limited system warranty against visible sag, mold and mildew.
- AirCare™ coating applied to face and back reduces 75% of formaldehyde over a 10-year period.[4]
- GREENGUARD Gold certified for low emitting performance.
- Balanced Acoustics. High-NRC and High-CAC provide excellent sound control that assist in addressing HIPAA standards.
- USG Mars™ Healthcare Acoustical Panels is part of the Ecoblueprint™ portfolio — meeting today's sustainability standards. For sustainability documentation go to USG.com or CGCInc.com.

APPLICATIONS

- Kitchen and food-prep areas
- Lavatories and restrooms
- Laboratories and Clean Rooms
- Nurses' stations/ waiting rooms
- Treatment/patient rooms

SUBSTRATE

- Wet-formed mineral fiber

USG
IT'S YOUR WORLD. BUILD IT.™

RFI 167

USG MARS™ HEALTHCARE ACOUSTICAL PANELS

CLIMAPLUS™ PERFORMANCE — NEW CLEAN ROOM, HIGH-NRC AND AIRCARE™ COATING OPTIONS

ORDER SAMPLES/LITERATURE
USG: usg.com or samplit@usg.com
CGC: contact Sales Representative

TECHNICAL SERVICES
800 USG.4YOU (874-4968)

FOR MOST UP-TO-DATE TECHNICAL INFORMATION AND LEED REPORT TOOL
usgdesignstudio.com
cgcdesignstudio.com

PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS: UL.COM/GG UL 2818

30 YEAR LIMITED SYSTEM WARRANTY
• No Visible Sag
• Mold/Mildew Protection

BALANCED ACOUSTICS

HIGH RECYCLED CONTENT

AIRCARE™

Plant-Based Binder

ECOBLUEPRINT

Declare.

UL Classified

Edge	Panel Size	Fire Rating	Item No.	NRC	CAC Min.	LR[2]	Color	Grid Options	VOC Emissions	Anti-Mold & Mildew/Sag Resistance	Recycled Content[1]	Panel Cost
				NRC	CAC						HRC	$
USG MARS™ HEALTHCARE HIGH-NRC PANELS 85/35 Plant-Based Binder[6]												
SQ	**2′x2′x7/8″**	Class A	**86256**	0.85	35	0.90	White	A,B,C,D,E,F	Low	✓	70%	**$$**
	2′x4′x7/8″	Class A	**88256**	0.85	35	0.90	White	A,B,D,E,F	Low	✓	70%	**$$**
SLT	**2′x2′x7/8″**	Class A	**86257**	0.85	35	0.90	White	G,H,I,J	Low	✓	70%	**$$**
FLB	**2′x2′x7/8″**	Class A	**86258**	0.85	35	0.90	White	K,L,M,N	Low	✓	70%	**$$**
USG MARS™ HEALTHCARE HIGH-NRC/ HIGH-CAC PANELS 80/40 Plant-Based Binder[6]												
SQ	**2′x2′x1″**	Class A	**86115**	0.80	40	0.90	White	A,B,C,D,E,F	Low	✓	71%	**$$**
	2′x4′x1″	Class A	**88115**	0.80	40	0.90	White	A,B,D,E,F	Low	✓	71%	**$$**
SLT	**2′x2′x1″**	Class A	**86343**	0.80	40	0.90	White	G,H,I,J	Low	✓	71%	**$$**
	2′x4′x1″	Class A	**88343**	0.80	40	0.90	White	G,H,I,J	Low	✓	71%	**$$**
FLB	**2′x2′x1″**	Class A	**86344**	0.80	40	0.90	White	K,L,M,N	Low	✓	71%	**$$**
	2′x4′x1″	Class A	**88344**	0.80	40	0.90	White	K,L,M,N	Low	✓	71%	**$$**
USG MARS™ HEALTHCARE HIGH-NRC PANELS 80/35 Plant-Based Binder[6]												
SQ	**2′x2′x7/8″**	Class A	**86152**	0.80	35	0.90	White	A,B,C,D,E,F	Low	✓	70%	**$$**
	2′x4′x7/8″	Class A	**86340**	0.80	35	0.90	White	A,B,D,E,F	Low	✓	70%	**$$**
SLT	**2′x2′x7/8″**	Class A	**86470**	0.80	35	0.90	White	G,H,I,J	Low	✓	70%	**$$**
FLB	**2′x2′x7/8″**	Class A	**86750**	0.80	35	0.90	White	K,L,M,N	Low	✓	70%	**$$**
USG MARS™ HEALTHCARE PANELS 75/35												
SQ	**2′x2′x3/4″**	Class A	**86169**	0.75	35	0.90	White	A,B,C,D,E,F	Low	✓	69%	**$$**
	2′x4′x3/4″	Class A	**88189**	0.75	35	0.90	White	A,B,D,E,F	Low	✓	69%	**$$**
SLT	**2′x2′x3/4″**	Class A	**86684**	0.75	35	0.90	White	G,H,I,J	Low	✓	69%	**$$**
	2′x4′x3/4″	Class A	**88683**	0.75	35	0.90	White	G,H,I,J	Low	✓	69%	**$$**
FLB	**2′x2′x3/4″**	Class A	**86984**	0.75	35	0.90	White	K,L,M,N	Low	✓	69%	**$$**
	2′x4′x3/4″	Class A	**88983**	0.75	35	0.90	White	K,L,M,N	Low	✓	69%	**$$**
USG MARS™ HEALTHCARE HIGH-CAC PANELS 60/40												
SQ	**2′x2′x3/4″**	Class A	**86270**	0.60	40	0.90	White	A,B,C,D,E,F	Low	✓	71%	**$$**
	2′x4′x3/4″	Class A	**88271**	0.60	40	0.90	White	A,B,D,E,F	Low	✓	71%	**$$**
SLT	**2′x2′x3/4″**	Class A	**86272**	0.60	40	0.90	White	G,H,I,J	Low	✓	71%	**$$**
FLB	**2′x2′x3/4″**	Class A	**86273**	0.60	40	0.90	White	K,L,M,N	Low	✓	71%	**$$**
	2′x4′x3/4″	Class A	**88273**	0.60	40	0.90	White	K,L,M,N	Low	✓	71%	**$$**

APC-2

Low Emissions (VOC)
Third party (GREENGUARD Gold) certified for low-emitting performance, meets California Department of Public Health's (CDPH) Standard Method v1.2 - 2017 (CA Section 01350). 'Certificates of Compliance' for Low VOC Emissions are available on usg.com and at spot.ul.com.

ClimaPlus™ Warranty Performance[3]
Contains a broad-spectrum antimicrobial additive on the face and back of the panel that provides resistance against the growth of mold and mildew. Includes sag-resistance performance.

High Recycled Content
USG classifies High Recycled Content as greater than 50%. Total recycled content is based on product composition of postconsumer and preconsumer (postindustrial) recycled content per FTC guidelines.

USG CGC

RFI 167

USG MARS™ HEALTHCARE ACOUSTICAL PANELS

CLIMAPLUS™ PERFORMANCE — NEW CLEAN ROOM, HIGH-NRC AND AIRCARE™ COATING OPTIONS

ORDER SAMPLES/LITERATURE
USG: usg.com or samplit@usg.com
CGC: contact Sales Representative

TECHNICAL SERVICES
800 USG.4YOU (874-4968)

FOR MOST UP-TO-DATE TECHNICAL INFORMATION AND LEED REPORT TOOL
usgdesignstudio.com
cgcdesignstudio.com

PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS: UL.COM/GG UL 2818

30 YEAR LIMITED SYSTEM WARRANTY
• No Visible Sag
• Mold/Mildew Protection

BALANCED ACOUSTICS

HIGH RECYCLED CONTENT

AIRCARE™

Plant-Based Binder

ECOBLUEPRINT

Declare.

UL Classified

	Edge	Panel Size	Fire Rating	Item No.	NRC	CAC Min.	LR[2]	Color	Grid Options	VOC Emissions	Anti-Mold & Mildew/Sag Resistance	Recycled Content[1]	Panel Cost
					NRC	CAC						HRC	$
USG MARS™ HEALTHCARE WITH AIRCARE™ COATING[4] 75/35	SQ	**2′x2′x3/4″**	Class A	**86169AIR**	0.75	35	0.90	White	A,B,C,D,E,F	Low	✓	69%	**$$**
		2′x4′x3/4″	Class A	**88189AIR**	0.75	35	0.90	White	A,B,D,E,F	Low	✓	69%	**$$**
	SLT	**2′x2′x3/4″**	Class A	**86684AIR**	0.75	35	0.90	White	G,H,I,J	Low	✓	69%	**$$**
		2′x4′x3/4″	Class A	**88683AIR**	0.75	35	0.90	White	G,H,I,J	Low	✓	69%	**$$**
	FLB	**2′x2′x3/4″**	Class A	**86984AIR**	0.75	35	0.90	White	K,L,M,N	Low	✓	69%	**$$**
		2′x4′x3/4″	Class A	**88983AIR**	0.75	35	0.90	White	K,L,M,N	Low	✓	69%	**$$**
USG MARS™ HEALTHCARE CLEAN ROOM PANELS 75/35	SQ	**2′x2′x3/4″**	Class A	**86169CR**	0.75	35	0.90	White	O	Low	✓	68%	**$$**
		2′x4′x3/4″	Class A	**88189CR**	0.75	35	0.90	White	O	Low	✓	68%	**$$**
	SLT	**2′x2′x3/4″**	Class A	**86684CR**	0.75	35	0.90	White	P	Low	✓	68%	**$$**
		2′x4′x3/4″	Class A	**88683CR**	0.75	35	0.90	White	P	Low	✓	68%	**$$**

Low Emissions (VOC)
Third party (GREENGUARD Gold) certified for low-emitting performance, meets California Department of Public Health's (CDPH) Standard Method v1.2 - 2017 (CA Section 01350). 'Certificates of Compliance' for Low VOC Emissions are available on usg.com and at spot.ul.com.

ClimaPlus™ Warranty Performance[3]
Contains a broad-spectrum antimicrobial additive on the face and back of the panel that provides resistance against the growth of mold and mildew. Includes sag-resistance performance.

High Recycled Content
USG classifies High Recycled Content as greater than 50%. Total recycled content is based on product composition of postconsumer and preconsumer (postindustrial) recycled content per FTC guidelines.

RFI 167

USG MARS™ HEALTHCARE ACOUSTICAL PANELS

CLIMAPLUS™ PERFORMANCE — NEW CLEAN ROOM, HIGH-NRC AND AIRCARE™ COATING OPTIONS

ORDER SAMPLES/LITERATURE
USG: usg.com or samplit@usg.com
CGC: contact Sales Representative

TECHNICAL SERVICES
800 USG.4YOU (874-4968)

FOR MOST UP-TO-DATE TECHNICAL INFORMATION AND LEED REPORT TOOL
usgdesignstudio.com
cgcdesignstudio.com

PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS: UL.COM/GG UL 2818

30 YEAR LIMITED SYSTEM WARRANTY
- No Visible Sag
- Mold/Mildew Protection

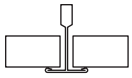
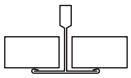
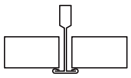
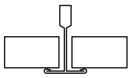
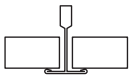
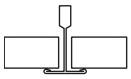
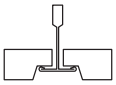
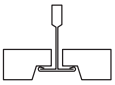
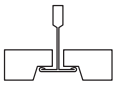
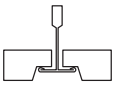
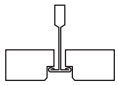
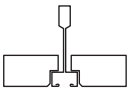
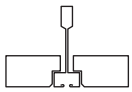
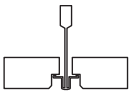
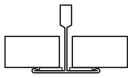
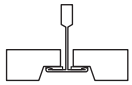
BALANCED ACOUSTICS

HIGH RECYCLED CONTENT

AIRCARE™

Plant-Based Binder

GRID PROFILE OPTIONS

A USG DX®	B USG DXW™	C[5] USG Centricitee™ DXT™	D USG DXLA™
			
E **USG ZXLA™**	**F** **USG AX™**	**G** **USG DX®**	**H** **USG DXLA™**
			
I **USG ZXLA™**	**J** **USG AX™**	**K** **USG Centricitee™ DXT™**	**L** **USG Fineline® DXF™**
			
M **USG Fineline® 1/8 DXFF™**	**N** **USG Identitee® DXI™**	**O** **USG CE™**	**P** **USG DXCE™**
			

PHYSICAL DATA/ FOOTNOTES

Product literature
Data sheet: SC2585

ASTM E1264 classification
ASTM E1264-22 Type IV, Form 1 & 2, Pattern E & G
ASTM E1264-23 Type A, Form A2.1, Pattern E & G

ASTM E84 and CAN/ULC S102 surface-burning characteristics Class A
Flame spread: 25 or less
Smoke developed: 50 or less

Weight
1.03-1.24 lb./sq. ft.

Thermal resistance
R-2.2

Maximum backloading
See *USG 30-Year Limited System Warranty Commercial Applications* (SC2102).

Online tools
usgdesignstudio.com or cgcdesignstudio.com

ASTM D2486 scrubbability test
(standard test)

ASTM D4828 washability test
(modified test)

Water repellency
Cobb method (Tappi T441 om-84) Water Drop Test

****Maintenance**
To clean panel, use a clean, white cloth with water or a mild detergent and wipe surface. To disinfect panel, lightly spray surface and wipe clean with a clean, white cloth. Acceptable colorless disinfectants include:
- Hydrogen peroxide
- Isopropyl alcohol
- Quaternary ammonium
- Sodium hypochlorite

Do not mix cleaners. Follow cleaner manufacturer's recommendations.

USG Mars™ Healthcare Clean Room
- Field-cut edges of USG Mars™ Healthcare Clean Room panels may be sealed with white latex paint. Use square edge panels for all lay-in field-cut perimeter panels.
- Clean Room-rated applications require a suspension system with gasketed tee flanges such as USG Donn® Brand CE™.
- Tested to ISO Class 5 particle emissions, per ISO 14644, by UL Environment. Rating may decrease to ISO Class 7 or greater with airflow above 1 ACH, pressure fluctuations, or vibrations in the ceiling system.
- For more information, please reference test report from UL Environment.

Metric sizes available
Contact sales for minimum quantities and lead times.

Footnotes
1. For details, see USG Sustainability tool at usgdesignstudio.com or cgcdesignstudio.com.
2. LR values are shown as averages.
3. Panel face and back surfaces treated with a proprietary broad-spectrum antimicrobial standard formulation that inhibits and retards the growth of mold and mildew. For details, see *USG 30-Year Limited System Warranty Commercial Applications* (SC2102).
4. AirCare™ coating removes formaldehyde by an average of 75% over 10 years at an average indoor concentration of 13 ppb.
5. Maximum 2'x2' with SQ edge panels.
6. All USG Mars™ High NRC Acoustical Panels with a "plant-based binder" label contain up to 65% plant-based material in the binder. For more information please refer to the USG Mars™ Acoustical Panels Health Product Declaration, available at www.usg.com
7. Mars™ Healthcare should not be mixed with non-Healthcare products in the same ceiling plane.
8. Product with Aircare™ coating should not be mixed with non-Aircare™ coated products.

Notice
The information in this document is subject to change without notice. CGC Inc. or USG Corp. assumes no responsibility for any errors that may inadvertently appear in this document.

SC2585/rev. 03-24
©2024 USG Corporation and/ or its affiliates. All rights reserved. Printed in USA

Manufactured by
USG Interiors, LLC
550 West Adams Street
Chicago, IL 60661

The trademarks USG, CGC, AIRCARE, AX, CE, CENTRICITEE, CLIMAPLUS, DONN, DX, DXF, DXCE, DXFF, DXI, DXL, DXLA, DXT, DXW, ECOBLUEPRINT, FINELINE, IDENTITEE, MARS, ZXLA, IT'S YOUR WORLD. BUILD IT., the USG/CGC logo, the design elements and colors, and related marks are trademarks of USG Corporation or its affiliates.

Safety First! Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment. Read SDS and literature before specification and installation.

RFI 167

SYMPHONY *m* HIGH NRC
SYMPHONY *m* HIGH CAC
SYMPHONY® *m*

Proposed Substitution

MINERAL FIBER
SMOOTH



The Symphony line provides a full range of ultra-durable acoustic solutions with a consistent, smooth visual, coupled with excellent durability.

FEATURES AND BENEFITS

- Excellent sound absorption (NRC 0.75-0.85) and sound blocking (CAC 33-42)
- Certified clean room component to ISO Class 4 (highest among comparable products)
- Tested to 1,000 wash cycles and compatible with most sanitizing solutions
- Exceeds FGI Guidelines for cleanability and acoustic performance (≥ 1.0 lbs/s.f.)
- **SmartFit panels available** – fully fabricated off-the-shelf solution to accommodate linear lighting, ventilation and utility areas with standard components
- **CertaSize® program** – non-standard sizes made to order on select products. Lead time varies. Contact your local sales rep or Customer Support

ATTRIBUTES

NRC UP TO 0.85

SAG RESISTANT

BIOSHIELD® MOLD/MILDEW RESISTANT

LOW VOC
EMISSION COMPLIANT CERTIFIED

WASHABLE W/ SANITIZING CHEMICALS

LR 0.90

CERTIFICATIONS & PRODUCT DECLARATIONS

EPD AVAILABLE

HPD AVAILABLE

USDA CERTIFIED BIOBASED PRODUCT

Declare℠
Living Building Challenge Red List Free®
Declare℠ is a service mark of The International Living Future Institute.

LEED® v4

RECYCLED CONTENT	62%	
	PRE: 60%	POST: 2%

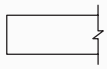
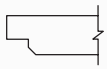
- ✓ EQ: Optimize Energy Performance
- ✓ EA: Prereq. Min. Energy Performance
- ✓ EQ: Interior Lighting
- ✓ MR: PBT Source Reduction (Healthcare)
- ✓ EQ: Acoustic Performance
- ✓ EQ: Prereq. Min. Acoustic Performance (Schools)
- ✓ EQ: Low-Emitting Materials
- ✓ EQ: Daylight
- ✓ MR: Material Ingredients (HPDs)
- ✓ MR: Sourcing Raw Materials
- ✓ MR: Environmental Product Declarations (EPDs)
- ✓ MR: Construction and Demolition Waste Management Planning

LEED® is a registered trademark of the U.S. Green Building Council.

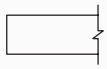
RFI 167

SYMPHONY *m* HIGH NRC | SYMPHONY *m* HIGH CAC
SYMPHONY® *m*

SYMPHONY *m* HIGH NRC

			FORMAT	DIMENSIONS (IN.)	NRC	CAC	RECYCLED CONTENT	PIECES/ CARTON	SQ. FT./ CARTON	LBS./ CARTON	CARTONS/ PALLET	
TRIM												
	NRC .85	1222-85-1	Panels	24 x 24 x 7/8	0.85	35	62%	14	56	64	16	
		1220-85-1	Panels	24 x 48 x 7/8	0.85	35	62%	8	64	74	14	
		1223-85-1	Panels	30 x 30 x 7/8	0.85	35	62%	8	50	58	28	
		1221-85-1	Planks	24 x 60 x 7/8	0.85	35	62%	8	80	92	14	
		1228-85-1	Planks	24 x 72 x 7/8	0.85	35	62%	8	96	110	14	
REVEAL												
	NRC .85	1222BB-85-1	Panels	24 x 24 x 7/8	0.85	35	62%	14	56	64	16	
		1220BB-85-1	Panels	24 x 48 x 7/8	0.85	35	62%	8	64	74	14	
		1221BB-85-1	Planks	24 x 60 x 7/8	0.85	35	62%	8	80	92	14	
		1228BB-85-1	Planks	24 x 72 x 7/8	0.85	35	62%	8	96	110	14	
NARROW REVEAL												
	NRC .85	1222BF-85-1	Panels	24 x 24 x 7/8	0.85	35	62%	14	56	64	16	APC-3
		1220BF-85-1	Panels	24 x 48 x 7/8	0.85	35	62%	8	64	74	14	APC-1/4
		1221BF-85-1	Planks	24 x 60 x 7/8	0.85	35	62%	8	80	92	14	
		1228BF-85-1	Planks	24 x 72 x 7/8	0.85	35	62%	8	96	110	14	

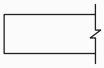
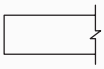
SYMPHONY *m* HIGH CAC

			FORMAT	DIMENSIONS (IN.)	NRC	CAC	RECYCLED CONTENT	PIECES/ CARTON	SQ. FT./ CARTON	LBS./ CARTON	CARTONS/ PALLET
TRIM											
	NRC .80	1222-80-1	Panels	24 x 24 x 7/8	0.80	40	62%	14	56	64	16
		1220-80-1	Panels	24 x 48 x 7/8	0.80	42	62%	8	64	74	14
		1221-80-1	Planks	24 x 60 x 7/8	0.80	42	62%	8	80	92	14
		1228-80-1	Planks	24 x 72 x 7/8	0.80	42	62%	8	96	110	14
		1223-80-1	Panels	30 x 30 x 7x8	0.80	40	62%	8	50	58	28
REVEAL											
	NRC .80	1222BB-80-1	Panels	24 x 24 x 7/8	0.80	40	62%	14	56	64	16
		1220BB-80-1	Panels	24 x 48 x 7/8	0.80	42	62%	8	64	74	14
		1221BB-80-1	Planks	24 x 60 x 7/8	0.80	42	62%	8	80	92	14
		1228BB-80-1	Planks	24 x 72 x 7/8	0.80	42	62%	8	96	110	14
NARROW REVEAL											
	NRC .80	1222BF-80-1	Panels	24 x 24 x 7/8	0.80	40	62%	14	56	64	16
		1220BF-80-1	Panels	24 x 48 x 7/8	0.80	42	62%	8	64	74	14
		1221BF-80-1	Planks	24 x 60 x 7/8	0.80	42	62%	8	80	92	14
		1228BF-80-1	Planks	24 x 72 x 7/8	0.80	42	62%	8	96	110	14

RFI 167

SYMPHONY *m* HIGH NRC | SYMPHONY *m* HIGH CAC
SYMPHONY® *m*

SYMPHONY *m*

			FORMAT	DIMENSIONS (IN.)	NRC	CAC	RECYCLED CONTENT	PIECES/ CARTON	SQ. FT./ CARTON	LBS./ CARTON	CARTONS/ PALLET
TRIM											
	NRC .75	1222-75-1	Panels	24 x 24 x 3/4	0.75	38	62%	14	56	57	16
		1220-75-1	Panels	24 x 48 x 3/4	0.75	40	62%	8	64	65	16
		1223-75-1	Panels	30 x 30 x 3/4	0.75	38	62%	8	50	51	28
		1229-75-1	Panels	30 x 60 x 3/4	0.75	40	62%	8	100	101	16
		12220-60-75-1	Planks	20 x 60 x 3/4	0.75	40	62%	8	66	67	24
		1221-75-1	Planks	24 x 60 x 3/4	0.75	40	62%	8	80	81	16
		1228-75-1	Planks	24 x 72 x 3/4	0.75	40	62%	8	96	97	16
REVEAL											
	NRC .75	1222BB-75-1	Panels	24 x 24 x 3/4	0.75	38	62%	14	56	57	16
		1220BB-75-1	Panels	24 x 48 x 3/4	0.75	40	62%	8	64	65	16
		12220-60BB-75-1	Planks	20 x 60 x 3/4	0.75	40	62%	8	66	67	24
		1221BB-75-1	Planks	24 x 60 x 3/4	0.75	40	62%	8	80	81	16
		1228BB-75-1	Planks	24 x 72 x 3/4	0.75	40	62%	8	96	97	16
NARROW REVEAL											
	NRC .75	1222BF-75-1	Panels	24 x 24 x 3/4	0.75	38	62%	14	56	57	16
		1220BF-75-1	Panels	24 x 48 x 3/4	0.75	40	62%	8	64	65	16
		12220-60BF-75-1	Planks	20 x 60 x 3/4	0.75	40	62%	8	66	67	24
		1221BF-75-1	Planks	24 x 60 x 3/4	0.75	40	62%	8	80	81	16
		1228BF-75-1	Planks	24 x 72 x 3/4	0.75	40	62%	8	96	97	16
METRIC TRIM											
	NRC .75	1220-60-75-1M	Panels	500 x 1500 x 19	0.75	40	62%	8	6	96	16
		1220-75-1M	Panels	600 x 1200 x 19	0.75	40	62%	8	5.8	49	32
		1222-75-1M	Panels	600 x 600 x 19	0.75	38	62%	14	5	55	16
		1229-75-1M	Panels	750 x 1500 x 19	0.75	40	62%	8	9	64	24
		1223-75-1M	Panels	750 x 750 x 19	0.75	38	62%	8	4.5	62	16

APC-2

SYMPHONY *m* SmartFit

			FORMAT	DIMENSIONS (IN.)	RECYCLED CONTENT	PIECES/ CARTON	SQ. FT./ CARTON	LBS./ CARTON	CARTONS/ PALLET
TRIM									
	SMARTFIT	12204-24-FIT-1	SmartFit	4 x 24 x 3/4	62%	84	56	58	16
		12204-48-FIT-1	SmartFit	4 x 48 x 3/4	62%	48	64	66	16
		12204-60-FIT-1	SmartFit	4 x 60 x 3/4	62%	48	80	82	16
		12206-24-FIT-1	SmartFit	6 x 24 x 3/4	62%	56	56	58	16
		12206-48-FIT-1	SmartFit	6 x 48 x 3/4	62%	32	64	66	16
		12206-60-FIT-1	SmartFit	6 x 60 x 3/4	62%	32	80	82	16
		12212-24-FIT-1	SmartFit	12 x 24 x 3/4	62%	28	56	58	16
		12212-48-FIT-1	SmartFit	12 x 48 x 3/4	62%	16	64	66	16
		12212-60-FIT-1	SmartFit	12 x 60 x 3/4	62%	16	80	82	16

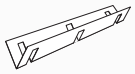
RFI 167

SYMPHONY *m* HIGH NRC | SYMPHONY *m* HIGH CAC
SYMPHONY® *m*

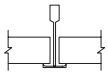
SYMPHONY *m* SmartFit continued

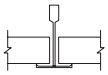
			FORMAT	DIMENSIONS (IN.)	RECYCLED CONTENT	PIECES/ CARTON	SQ. FT./ CARTON	LBS./ CARTON	CARTONS/ PALLET
REVEAL									
	SMARTFIT	12204-24BB-FIT-1	SmartFit	4 x 24 x 3/4	62%	84	56	58	16
		12204-48BB-FIT-1	SmartFit	4 x 48 x 3/4	62%	48	64	66	16
		12204-60BB-FIT-1	SmartFit	4 x 60 x 3/4	62%	48	80	82	16
		12206-24BB-FIT-1	SmartFit	6 x 24 x 3/4	62%	56	56	58	16
		12206-48BB-FIT-1	SmartFit	6 x 48 x 3/4	62%	32	64	66	16
		12206-60BB-FIT-1	SmartFit	6 x 60 x 3/4	62%	32	80	82	16
		12212-24BB-FIT-1	SmartFit	12 x 24 x 3/4	62%	28	56	58	16
		12212-48BB-FIT-1	SmartFit	12 x 48 x 3/4	62%	16	64	66	16
		12212-60BB-FIT-1	SmartFit	12 x 60 x 3/4	62%	16	80	82	16
NARROW REVEAL									
	SMARTFIT	12204-24BF-FIT-1	SmartFit	4 x 24 x 3/4	62%	84	56	58	16
		12204-48BF-FIT-1	SmartFit	4 x 48 x 3/4	62%	48	64	66	16
		12204-60BF-FIT-1	SmartFit	4 x 60 x 3/4	62%	48	80	82	16
		12206-24BF-FIT-1	SmartFit	6 x 24 x 3/4	62%	56	56	58	16
		12206-48BF-FIT-1	SmartFit	6 x 48 x 3/4	62%	32	64	66	16
		12206-60BF-FIT-1	SmartFit	6 x 60 x 3/4	62%	32	80	82	16
		12212-24BF-FIT-1	SmartFit	12 x 24 x 3/4	62%	28	56	58	16
		12212-48BF-FIT-1	SmartFit	12 x 48 x 3/4	62%	16	64	66	16
		12212-60BF-FIT-1	SmartFit	12 x 60 x 3/4	62%	16	80	82	16

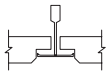
ACCESSORIES

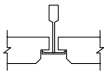
SYMPHONY m ACCESSORIES		PRODUCT NAME	PIECES/ CARTON	USE
	1170-SEL-1	Mineral Fiber Edge Sealant	1	For re-sealing cut edges; 1 quart container
	STBAR-2	2´ Stabilizer Bar	40	Recommended one pc/panel for all 2x5 and 2x6 narrow reveal installations
	STBAR-4	4´Stabilizer Bar	40	Recommended one pc spanning two panels in 2x5 and 2x6 narrow reveal installations

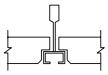
EDGE DETAILS

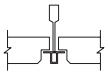

Trim
9/16" EZ Stab
Elite Narrow


Trim
15/16" EZ Stab
Classic


Reveal Corner Bevel
15/16" EZ Stab
Classic


Narrow Reveal
Corner Bevel
9/16" EZ Stab
Elite Narrow


Narrow Reveal
Corner Bevel
9/16" EZ Stab
Bolt Slot


Narrow Reveal
Corner Bevel
9/16" EZ Stab
Tier Drop

PHYSICAL DATA

MATERIAL
Mineral Fiber

FIRE CLASS (ASTM E1264)
All are Class A per ASTM E84 & CAN/ULC S102
Flame Spread: 25 or less
Smoke Developed: 50 or less

ASTM E1264 CLASSIFICATION
Type IV, Form 2, Pattern E

VOC EMISSIONS
Independently certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.2, 2017.

MOLD/MILDEW RESISTANCE
BioShield treatment included for added mold and mildew resistance.

APPLICATION CONSIDERATIONS
Clean panel using a sponge/cloth dampened with water and mild liquid detergent solution. Do not soak panel. Cleanable with sanitizing chemicals.

WARRANTY
10-year 104/90 Limited Warranty increases to 15 years when installed with CertainTeed suspension systems. Full warranty information can be found at certainteed.com/warranty.

SAINT-GOBAIN

CertainTeed ARCHITECTURAL

METAL • WOOD • FELT • FIBERGLASS & MINERAL FIBER • GYPSUM • SUSPENSION & INTEGRATED SYSTEMS

20 Moores Road, Malvern, PA 19355 800-233-8990 certainteed.com/architectural

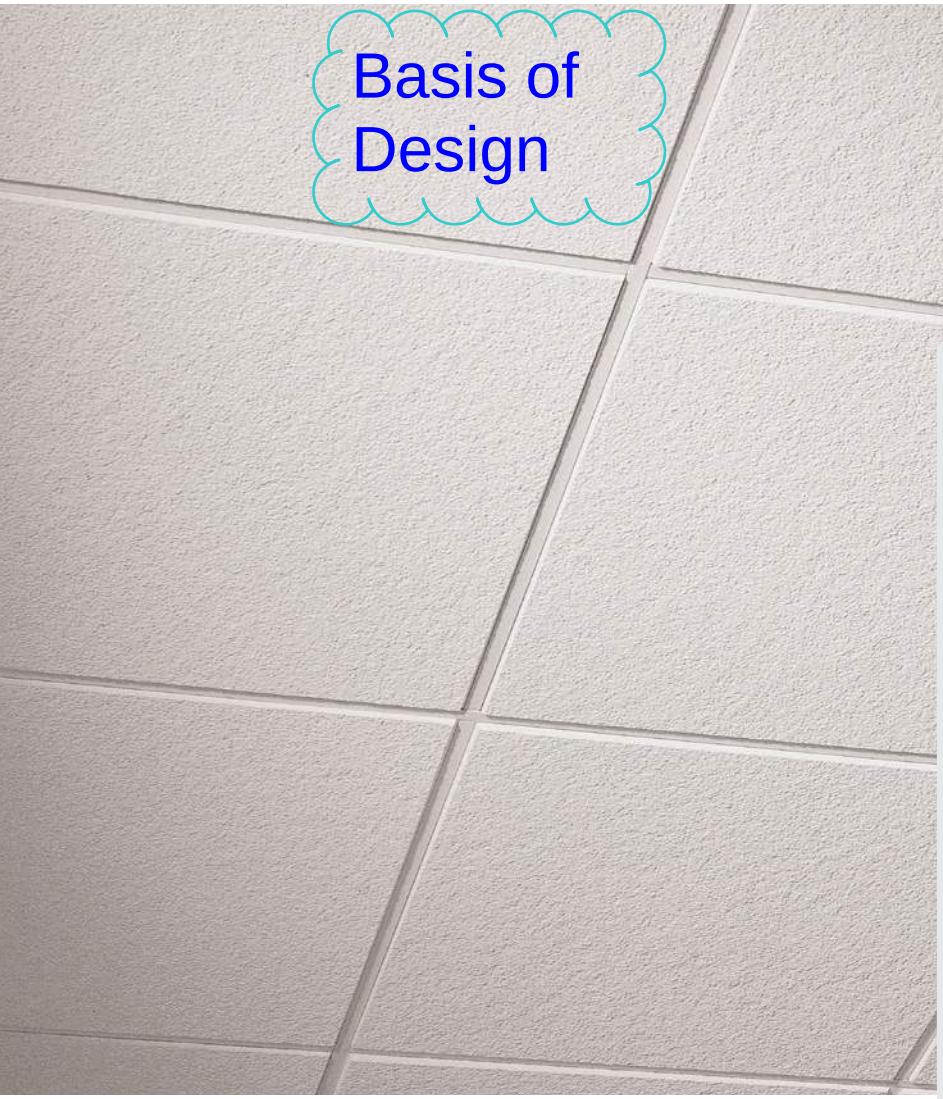
©01/24 CertainTeed, Printed in the USA, Code No. 11-11-552-US-EN

RFI 167

USG Ceiling Solutions

USG DONN® BRAND CENTRICITEE™ DXT™/DXLT™ ACOUSTICAL SUSPENSION SYSTEM

Basis of Design



USG Donn® Brand Centricitee™ DXT™ Acoustical Suspension System/ USG Eclipse™ Acoustical Panels

TO ORDER SAMPLES, GO TO USG.COM OR CGCINC.COM

STANDARD COLORS

Flat White 050 · Parchment 103 · Manila 246 · Straw 143 · Sandstone 090 · Taupe 107 · Charcoal 534

Flat Black 205 · Silver Satin 002 · Reserve White 4250

ADVANTAGE COLORS

Breeze 2659 · Blue Gray 564 · Azure 2660 · Slate 568 · Spruce 567 · Tuscany 2663 · Sorbet 2658

Squash 2661 · Safari 2662 · Redwood 566 · Sienna 565 · Halo 206 · Mist 053 · Nectar 546

Quartz 082 · Beige 142 · Silvertone 052

PREMIUM COLORS

Dawn 3679 · Old Stone 3691 · Sea Shell 3678 · Light Brown 3690 · Nut Brown 3680 · Peat 3682 · Shale 3683

Ocean Ridge 3684 · Atmosphere 3681 · Laguna 3685 · Grass 3688 · Tangy Taleia 3689 · Deep Cranbury 3687 · Deep Violet 3686

Deep Berry 3693 · Deep Blue 3692

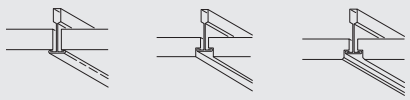
POWDER-COATED FINISH

Powder White 3767

PROFILE



EDGE DETAIL



Square Edge · Fineline · Fineline Bevel

FEATURES AND BENEFITS

- 9/16" exposed grid provides a clean aesthetic.
- Compatible with USG Logix™ Integrated Ceiling Systems.
- Cross-tee override-ends resist twisting and ensure a finished look.
- Proprietary Quick-Release™ cross tees.
- High recycled content (HRC) available.
- Seismic installation designs validated in ICC-ES Evaluation Report ESR-1222.
- Premium and custom colors available.
- Some items available in metric sizes.
- USG Donn® Brand Centricitee™ DXT™/DXLT™ Acoustical Suspension System is part of the Ecoblueprint™ portfolio — meeting today's sustainability standards. For sustainability documentation go to USG.com or CGCInc.com.

APPLICATIONS

- Interior general-use areas
- Fire-rated interior general-use areas
- USG Logix™ Integrated Ceiling Systems

USG CGC

IT'S YOUR WORLD. BUILD IT.™

RFI 167

USG DONN® BRAND CENTRICITEE™ DXT™/DXLT™ ACOUSTICAL SUSPENSION SYSTEM

ORDER SAMPLES/LITERATURE
USG: usg.com or samplit@usg.com
CGC: contact Sales Representative

TECHNICAL SERVICES
800 USG.4YOU (874-4968)

FOR MOST UP-TO-DATE TECHNICAL INFORMATION AND LEED REPORT TOOL
usgdesignstudio.com
cgcdesignstudio.com

30 YEAR LIMITED SYSTEM WARRANTY
• No Visible Sag
• Mold/Mildew Protection

HRC HIGH RECYCLED CONTENT

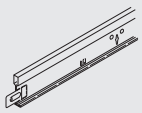
ECOBLUEPRINT

Declare®

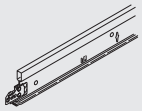
Declare® Labels on select finishes, see usg.com for more details and documentation.

9/16″ TEE SYSTEM[3,4]

Main Tee



Cross Tee 1-1/2″[3,4]



ASTM Class	Length	Height	Item No.	Fire Rating	Color[5]	Seismic Design Category[1,6] IBC	Seismic Design Category[1,6] ICC-ES Evaluated Installation	Rated Load[2] 4′ Hanger Spacing	Rated Load[2] 5′ Hanger Spacing
				🔥			〰		
Intermediate Duty	**10′** 3000 mm	**1-1/2″** 38 mm	**DXT24-10**	Class A	SC, AC, PC	A, C	7/8″ Molding ACM7 Clip	12 lb./LF	6.3 lb./LF
	12′ 3600 mm	**1-1/2″** 38 mm	**DXT24**	Class A	SC, AC, PC	A, C	7/8″ Molding ACM7 Clip	12 lb./LF	6.3 lb./LF
			DXT24HRC HRC						
			DXLT24	🔥	SC, AC, PC	A, C	7/8″ Molding ACM7 Clip		
Heavy Duty	**12′** 3600 mm	**1-5/8″** 42 mm	**DXT26**	Class A	SC, AC, PC	A, F	7/8″ Molding ACM7 Clip	16 lb./LF	8.1 lb./LF
			DXT26HRC HRC						
	1′	**1-1/2″**	**DXT122**	Class A	SC, AC, PC				
	2′ 600 mm	**1-1/2″** 38 mm	**DXT222**	Class A	SC, AC, PC				
			DXT222HRC HRC						
			DXLT222	🔥	SC, AC, PC				
	30″	**1-1/2″**	**DXT3022**	Class A	SC, AC, PC				
	4′ 1200 mm	**1-1/2″** 38 mm	**DXT422**	Class A	SC, AC, PC				
			DXT424	Class A	SC, AC, PC				
			DXT424HRC HRC						
			DXLT424	🔥	SC, AC, PC				
			DXT426	Class A	SC, AC, PC				
	5′	**1-1/2″**	**DXT524**	Class A	SC, AC, PC				
	6′	**1-1/2″**	**DXT624**	Class A	SC, AC, PC				
	8′	**1-1/2″**	**DXT824**	Class A	SC, AC, PC				

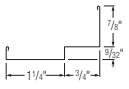
Low Emissions (VOC)
CDPH 01350 v1.2-2017 compliance on select finishes, see usg.com for more details and documentation.

High Recycled Content
USG classifies High Recycled Content as greater than 50%. Total recycled content is based on product composition of postconsumer and preconsumer (postindustrial) recycled content per FTC guidelines.

Firecode®

MOLDING[2]

Shadowline

Wall Angle	Length	Item No.	Color
	**12′** 3600 mm	**M9**	Flat White, Standard, Advantage, Premium
		M9HRC HRC	Flat White, Standard, Advantage, Premium
	**12′**	**MS125**	Flat White, Standard, Advantage, Premium
	**12′**	**MS174**	Flat White, Standard, Advantage, Premium
		MS174HRC HRC	
	**10′**	**MS274** 2″ shelf for seismic	Flat White

PHYSICAL DATA/ FOOTNOTES

Product literature and samples
Data sheet: AC3040, USG Logix™ system guide: IS268 USG Logix™ architectural design guide: IS287, USG Logix™ critical system dimensions: IS609, Sample: 206564

Material
Min. G30 hot-dipped galvanized steel body and cap. Baked on polyester paint or powder-coated finish.

Installation
Install according to ASTM C636, ASTM E580, CISCA and USG requirements. Alternate installation methods may be used when approved by the authority having jurisdiction.

Online tools
usgdesignstudio.com or cgcdesignstudio.com

Air diffusers
Refer to: AC272

Limitations
Refer to specific ceiling panel for limitations with square edge panels.

ICC Evaluation Service, LLC Report Compliance
For areas under ICC jurisdiction, see ICC-ES Evaluation Report ESR-1222 for allowable values and conditions of use. Reports are subject to reexamination, revision and possible cancellation. Refer to usg.com for most current version.

ASTM Load Compliance
Classified as Light, Intermediate or Heavy Duty when tested in accordance with ASTM C635.

Notes
1. All USG main tees, cross tees and main tee-hanger wire connections meet AC 368 and ASTM E580 requirements for tension and compression strength, as tested per ASTM E3090.
2. Rated Load expressed in lb./LF based on simple span tests in accordance with ASTM E3090 with deflection limit of L/360. Duty rating is assigned based on rated load per ASTM C635.
3. Panels must be specified to be field-cut to size and field-revealed to provide as wide a lay-on edge as possible.
4. Metric sizes shown available with standard lead times. Other metric sizes available by RTQ.
5. SC = Standard Color, AC=Advantage Color, PC=Premium Color
6. Seismically tested in accordance with ASTM E3118.

Notice
The information in this document is subject to change without notice. CGC Inc. or USG Corp. assumes no responsibility for any errors that may inadvertently appear in this document.

AC3040/rev. 01-24
© 2024 USG Corporation and/or its affiliates. All rights reserved.
Printed in USA

Manufactured by
USG Interiors, LLC
550 West Adams Street
Chicago, IL 60661

The trademarks USG, CGC, CENTRICITEE, DONN, DXLT, DXT, ECLIPSE, ECOBLUEPRINT, FIRECODE, LOGIX, QUICK-RELEASE, IT'S YOUR WORLD. BUILD IT., the USG/CGC logo, the design elements and colors, and related marks are trademarks of USG Corporation or its affiliates.

Safety First! Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment. Read SDS and literature before specification and installation.

USG CGC

MAI RFI 167



CROSS TEE



9/16" WALL ANGLE



7/8" WALL ANGLE



Suspension Systems

Proposed Substitution

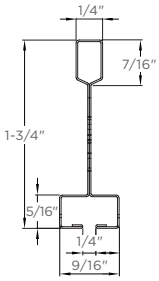
9/16" EZ Stab Elite Narrow System

The slim face width complements modern design and offers flexibility and added strength.

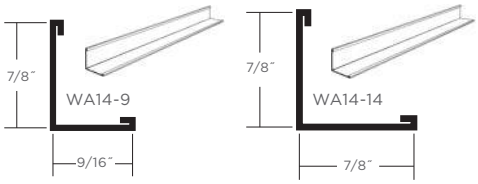
Features & Benefits

- Increased frequency (3" O.C.) of patented Latitude Holes™ provides installation flexibility
- Narrow style 9/16" (15 mm) face integrates with narrow reveal edge panels
- EZ Stab clip technology allows for a fast and strong connection on cross tees with enhanced removability
- Centering tabs prevent gaps around the edge, enabling integration with trim edge panels
- Enhanced stitching increases stiffness, reducing bending or twisting
- Suitable for all seismic applications
- ICC certified (ESR-3336) and City of Los Angeles Building Code compliant via ESR-3336 LABC Supplement
- Grid features G30 hot-dipped galvanized steel web construction for corrosion resistance
- Intermediate- and heavy-duty load-bearing capabilities/classification
- Available in Standard White and Black. Additional color options are offered through our Post-Paint process.

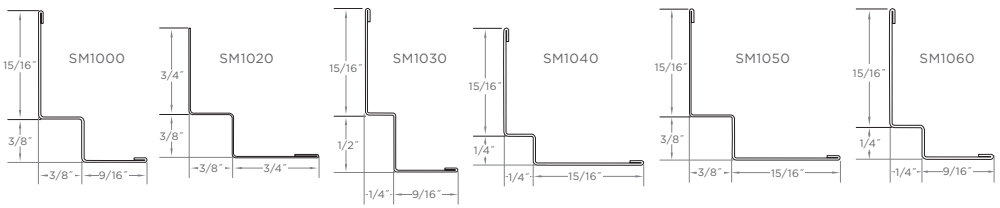
Main Runner



Wall Angle



Shadow Molding



LEED® v4

RECYCLED CONTENT	up to 86%
✓	MR: PBT Source Reduction (Healthcare)
✓	MR: Material Ingredients (HPDs)
✓	EQ: Low-Emitting Material
✓	MR: Sourcing Raw Materials
✓	MR: Environmental Product Declarations (EPDs)
✓	MR: Construction and Demolition Waste Management Planning

LEED® is a registered trademark of the U.S. Green Building Council.

CERTIFICATIONS & PRODUCT DECLARATIONS

UL CERTIFIED ENVIRONMENTAL PRODUCT DECLARATION UL.COM/EPD

EPD AVAILABLE

hpd

HPD AVAILABLE

Declare℠
Living Building Challenge Red List Free®

certainteed
SAINT-GOBAIN

RFI 167

9/16" EZ Stab Elite Narrow System

	GRID FACE (IN.)	DIMENSIONS (IN.)	SLOT SPACING (IN.)	PIECES/ CARTON	FT./ CARTON	SEISMIC DESIGN CATEGORY	STRUCTURAL CLASSIFICATION (ASTM C635)	RECYCLED CONTENT PRE*	RECYCLED CONTENT POST*	RECYCLED CONTENT TOTAL*	ALLOWABLE UNIFORM LOAD (PLF)	ALLOWABLE CONCENTRATED LOAD AT MIDSPAN (LBF)**
Main Runners												
EZES12-12-18	9/16	144 x 1-1/2 x 9/16	6 O.C.	20	240	A-C	ID	25%	35%	60%	13.15	32.88
EZES12-12-19	9/16	144 x 1-11/16 x 9/16	6 O.C.	20	240	A-F	HD	25%	34%	59%	17.97	44.93
Cross Tee												
EZES0.33-12-12	9/16	4 x 1-1/2 x 9/16	—	60	20	—	—	25%	34%	39%	—	—
EZES0.5-12-12	9/16	6 x 1-1/2 x 9/16	—	60	30	—	—	25%	34%	39%	—	—
EZES1-12-12	9/16	12 x 1-1/2 x 9/16	—	60	60	—	—	25%	34%	59%	210.53	131.58
EZES2-12-12	9/16	24 x 1-1/2 x 9/16	—	60	120	—	—	24%	36%	60%	27.97	34.96
EZES2-12-19	9/16	24 x 1-11/16 x 9/16	—	60	120	—	HD	25%	34%	59%	50.00	62.50
EZES2.5-12-12	9/16	30 x 1-1/2 x 9/16	—	60	150	—	—	24%	36%	60%	—	—
EZES4-12-12	9/16	48 x 1-1/2 x 9/16	12 O.C.	60	240	—	—	24%	36%	60%	8.44	21.09
EZES4-12-19	9/16	48 x 1-11/16 x 9/16	12 O.C.	60	240	—	HD	25%	34%	59%	17.97	44.93
EZES5-12-12	9/16	60 x 1-1/2 x 9/16	12 O.C.	20	100	—	—	24%	36%	60%	4.44	13.88
EZES5-12-12-5s	9/16	60 x 1-1/2 x 9/16	6, 20, 30, 40, 54	20	100	—	—	24%	36%	60%	—	—
EZES6-12-12	9/16	72 x 1-1/2 x 9/16	12 O.C.	20	120	—	—	24%	36%	60%	2.76	10.35
EZES8-12-12	9/16	96 x 1-1/2 x 9/16	12 O.C.	20	160	—	—	24%	36%	60%	1.00	5.00
Wall Angle												
WA14-9	9/16	144 x 7/8 x 9/16	—	40	480	—	—	19%	69%	88%	—	—
WA14-14	7/8	144 x 7/8 x 7/8	—	40	480	—	—	19%	69%	88%	—	—
WA14-14-10	7/8	120 x 7/8 x 7/8	—	40	400	—	—	19%	69%	88%	—	—
WA32-32	2	120 x 2 x 2	—	20	200	—	—	19%	69%	88%	—	—
WA32-32-12	2	144 x 2 x 2	—	20	240	—	—	19%	69%	88%	—	—
WA32-15	2	120 x 15/16 x 2	—	20	200	—	—	19%	69%	88%	—	—
WA32-15-12	2	144 x 15/16 x 2	—	20	240	—	—	19%	69%	88%	—	—
Flexible Wall Angle*												
FWA14-9	9/16	96 x 1-1/8 x 9/16	—	63	504	—	—	19%	69%	88%	—	—
FWA14-14	7/8	96 x 1-1/8 x 7/8	—	63	504	—	—	19%	69%	88%	—	—

*Flexible Wall Angle is made of Rigid PVC

Shadow Molding												
SM1000	—	120 x 15/16 x 3/8 x 3/8 x 9/16	—	40	400	—	—	19%	69%	88%	—	—
SM1020†	—	120 x 3/4 x 3/8 x 3/8 x 3/4	—	40	400	—	—	19%	69%	88%	—	—
SM1030	—	120 x 15/16 x 1/2 x 1/4 x 9/16	—	40	400	—	—	9%	44%	53%	—	—
SM1040	—	120 x 15/16 x 1/4 x 1/4 x 15/16	—	40	400	—	—	9%	44%	53%	—	—
SM1050	—	120 x 15/16 x 3/8 x 3/8 x 15/16	—	40	400	—	—	9%	44%	53%	—	—
SM1060	—	120 x 15/16 x 1/4 x 1/4 x 9/16	—	40	400	—	—	9%	44%	53%	—	—

	GRID FACE (MM)	DIMENSIONS (MM)	SLOT SPACING (MM)	PIECES/ CARTON	FT./ CARTON	SEISMIC DESIGN CATEGORY	STRUCTURAL CLASSIFICATION (ASTM C635)	RECYCLED CONTENT PRE*	RECYCLED CONTENT POST*	RECYCLED CONTENT TOTAL*	ALLOWABLE UNIFORM LOAD (PLF)	ALLOWABLE CONCENTRATED LOAD AT MIDSPAN (LBF)**
Main Runner Metric												
EZES3600M-12-18	14	3600 x 38 x 14	150	20	72	—	ID	25%	35%	60%	13.15	32.88
Cross Tee Metric												
EZES1200M-12-12	14	1200 x 38 x 14	300	60	72	—	ID	25%	35%	60%	8.66	21.31
EZES600M-12-12	14	600 x 38 x 14	0	60	36	—	ID	25%	35%	60%	29.68	36.51

†SM1020 is not hemmed along 3/4˝ side
*Maximum recycled content percentage. Recycled content varies by manufacturing location.
**Allowable concentrated loads at midspan are determined in accordance with AC368 Section 3.2.

For each framing member, the allowable concentrated load must not be combined with the allowable uniform load.
To specify Main Runners, Cross Tees, Wall Angles or Shadow Molding in black, order by item number followed by BLK.
Example EZES12-12-18 BLK
Flex Wall Angle will fit a 5-1/2" radius or larger

RFI 167

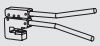
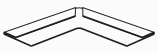
9/16" EZ Stab Elite Narrow System

Maximum Fixture Weight

ITEM NUMBER	CONFIGURATION A	CONFIGURATION B	FIXTURE A	FIXTURE B	HANGER SPACING A	HANGER SPACING B	MAXIMUM WEIGHT A	MAXIMUM WEIGHT B
Main Runner to Main Runner – Drawing Key: Main Runner (|) Cross tee (- - -) Hanger wire (✚)								
EZES4-12-12			24" x 48"	24" x 48"	48"	48"	41.00 lbs.	32.00 lbs.
EZES4-12-19			24" x 48"	24" x 48"	48"	48"	56.00 lbs.	56.00 lbs.
EZES4-12-12			24" x 48"	24" x 48"	48"	48"	41.00 lbs.	32.00 lbs.
EZES4-12-19			24" x 48"	24" x 48"	48"	48"	56.00 lbs.	56.00 lbs.
EZES4-12-12			24" x 24"	24" x 24"	48"	48"	26.00 lbs.	26.00 lbs.
EZES4-12-19			24" x 24"	24" x 24"	48"	48"	53.50 lbs.	56.00 lbs.

Cross tees tested as follows: EZES4-12-12 tested at 8.44 lbs/LF to 1/360 of 4' span; EZES4-12-19 tested at 17.97 lbs/LF to 1/360 of 4' span.

Accessories

		ITEM NUMBER	PRODUCT NAME	DIMENSIONS L" X W" X H" (MM)	COLOR	PIECES/ CARTON	LBS./ CARTON
SEISMIC		SLEEVE916	9/16" Sleeve	4 x 9/16 x 1/64 (102 x 15 x 1)	White	100	1
		CTSPC-2	Seismic Perimeter Clip	3-1/16 x 2-1/4 x 1-1/16 (78 x 58 x 27)	Metal	100	9
		CTSTJ	Seismic Transition Joint Clip	3-1/2 x 3-1/2 x 1-3/16 (89 x 89 x 31)	Metal	100	10
STANDARD		AHD	Adjustable Hold Down Clip	1-1/8 x 1/2 x 1-11/16 (29 x 13 x 43)	Black	1000	16
		HW12	Hanger Wire 12´ (3660 mm) 12 Gage (2.05 mm)	144 x 12 gage x 12 gage (3658 x 12 gage x 12 gage)	Metal	141	50
		EZSLOTTER	Slot Punch	11 x 3-1/4 x 1 (280 x 83 x 26)	Metal	1	2.5
		SFYK	SmartFit Yoke	8.55 x 1.25 x 9.56 (217 x 32 x 243)	Metal	20	9
		IC-9	9/16" Inside Corner	3 x 3 x 1/16 (76 x 76 x 1.52)	White	100	10
		OC-9	9/16" Outside Corner	3 x 3 x 1/16 (76 x 76 x 1.52)	White	100	10

RFI 167

9/16" EZ Stab Elite Narrow System

Physical Data

CROSS TEE/MAIN RUNNER MATERIAL
Hot dipped galvanized steel (G30)

FACE DIMENSION
9/16"

CROSS TEE/MAIN RUNNER INTERFACE
Stepped-end/Override

DUTY CLASSIFICATION
Heavy duty and Intermediate duty per ASTM C635

CROSS TEE/MAIN RUNNER SURFACE FINISH
Painted Steel Cap

PROFILE HEIGHT
ID: 1-1/2"
HD: 1-11/16"

VOC EMISSIONS
Independently certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.2, 2017.

END DETAIL
Main Runner: Integral Stab
Cross Tee: Staked-on Stab Clip

SEISMIC CATEGORY
A, B, C, D, E ,F

WARRANTY
10-year Limited Suspension Systems warranty increases to 30 years when installed with CertainTeed ceiling panels. Full warranty information can be found at certainteed.com/warranty

Seismic Performance

MAIN RUNNERS:
All main runners

MINIMUM LBS. TO PULLOUT COMPRESSION/TENSION:
180 lbs.

CROSS TEES:
All cross tees

ICC Evaluation Service, Inc., Report Compliance

Suspension systems manufactured by CertainTeed ceilings have been reviewed and are approved by listing in ICC-ES Evaluation Report ESR-3336. CertainTeed suspension systems have been reviewed and are approved by listing in the City of Los Angeles Building Code ESR-3336 LABC Supplement. Evaluation Reports are subject to reexamination, revision and possible cancellation. Refer to certainteed.com for current reports.

SAINT-GOBAIN

CertainTeed

CEILINGS • GYPSUM • INSULATION • ROOFING • SIDING • TRIM
20 Moores Road, Malvern, PA 19355 800-233-8990 certainteed.com

© 10/24 CertainTeed, Printed in the USA, Code No. 11-11-155-US-EN

BQ #210 Attachment

SUBSTITUTION REQUEST
(During the Bidding/Negotiating Phase)

CSI

PROJECT: Greenwich Central Middle School

SUBSTITUTION REQUEST NUMBER: 1

FROM:

TO: Turner Construction

DATE:

A/E PROJECT NUMBER:

RE:

CONTRACT FOR:

SPECIFICATION TITLE: Window Shades

DESCRIPTION: Window Shades

SECTION: 12 2401

PAGE: 3

ARTICLE/PARAGRAPH: 2.1 - A, 2.2 - A & B

PROPOSED SUBSTITUTION: Window Shades

MANUFACTURER: Spring Window Fashions

ADDRESS: 8467 Route 405 Highway South montgomery Pa

PHONE: 844 - 782 - 0002

TRADE NAME: Window shades

MODEL NO.: - Z - Wave Motorized - Roller shade manual

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.
Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:
- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

SUBMITTED BY:

SIGNED BY:

FIRM:

ADDRESS:

TELEPHONE:

A/E's REVIEW AND RECOMMENDATION:

- ☐ Approve Substitution—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
- ☐ Approve Substitution as noted—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
- ☒ Reject Substitution—Use specified materials.
- ☐ Substitution Request received too late—Use specified materials.

Roller shades – the proposed product appears to be residential and not of the same quality. The submittal is lacking in detail on materials used for the housing etc. Project Specification lists four acceptable manufacturers - SLAM

SIGNED BY: Stephen Martocchio - SLAM

DATE: 10/30/24

SUPPORTING DATA ATTACHED: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

BQ #210 Attachment

GRABER | DELIGHT IN EVERY DETAIL



Graber Solar Shades
English/US Price Guide

May 2024

BQ #210 Attachment

ROLLER SOLAR

Table of Contents

Features

Features and Benefits . . . 2-3
Fabric Styles and Information: Roller Shade Fabrics . . . 4-5
Light Control and Privacy: Roller Shade Fabrics . . . 6
Solar Shade Fabrics . . . 7
Fabric Styles and Information: Solar Shade Fabrics . . . 8-9
Fabric Recommendations, Fabric Disclaimers, Fabric Width, Light Gap, Cleaning and Care Information, Large Window Sizing, Pattern Alignment, Fabric Certifications . . . 10

Size Considerations

Maximum Shade Size . . . 11
Roller Shade UltraLite Cordless, UltraLite Dual, & Enclosed Loop UltraLite Dual Lift: Maximum Shade Size . . . 12-15
Solar Shade UltraLite Cordless, UltraLite Dual, & Enclosed Loop UltraLite Dual Lift: Maximum Shade Size . . . 16-18
Minimum Shade Size . . . 19
Continuous-Loop Lift or Enclosed Loop Lift: Maximum Shade Size . . . 19-22
Dual Shades or Enclosed Loop Dual Shades: Maximum Shade Size . . . 23-26
Cordless & Smart Pull Lift: Maximum Shade Size . . . 27-28
Enclosed Loop UltraLite Dual Lift: Mounting Depth Illustrations . . . 29

Options

Cordless & Smart Pull Lift: Mounting Depth Illustrations . . . 30
Shade Options, Reverse Roll, Projection Brackets . . . 31
UltraLite Cordless Lift, Enclosed Loop UltraLite Dual Lift (Canada ONLY) . . . 32
UltraLite Dual Lift (U.S. ONLY), Continuous-Loop Lift (U.S. ONLY) . . . 33
Cordless Lift, Enclosed Loop Lift (Canada ONLY) . . . 34
Smart Pull Lift, Motorized Lift . . . 35
Dual Shades . . . 36
Contour Valance, Cassette Valance, Fascia . . . 37
Flat Valance, Hem Bar, Blackout Channels . . . 38
Commercial Solutions, Component Upgrade . . . 39
Roller Shades: Scallop Options, Gimp Option . . . 40
Roller Shades: Bead Trim Option, Fabric Cut Yardage, Trim Cut Yardage . . . 41
Corner Windows . . . 42
Bay Windows . . . 43

General Information

UltraLite Cordless Lift Shade Product Detail . . . 44
Enclosed Loop UltraLite Dual Lift Shade Product Detail (Canada ONLY) . . . 45
UltraLite Dual Lift Shade Product Detail (U.S. ONLY) . . . 46
Cordless Lift Shade Product Detail . . . 47
Enclosed Loop Lift Shade Product Detail (Canada ONLY) . . . 48
Continuous-Loop Lift Shade Product Detail (U.S. ONLY) . . . 49
Smart Pull Lift Shade Product Detail . . . 50
Enclosed Loop Dual Shade Product Detail (Canada ONLY) . . . 51
Control Lengths for Enclosed Loop Cover . . . 51
Dual Shade Product Detail (U.S. ONLY) . . . 52
Color Coordination Chart . . . 53-72

PLEASE NOTE:

Photos and illustrations are for inspiration only.
Not all product configurations are available in all countries.

Window blinds with a damaged or loose tension device or retractable cord that fails to fully retract pose a strangulation risk to children. To avoid this potential strangulation risk, consider purchasing cordless products or products with inaccessible cords.

GRABER®

MAY 2024

(5/24) 24-519200

Features

Summary

Graber® Roller and Solar Shades offer a great selection of light and temperature controlling shades.

Roller Shades
- Wide variety of colors
- Wide variety of textures and designs
- Improved temperature control

Solar Shades
- 1% to 12% openness
- Excellent outward visibility
- Glare control

Features	Benefits
UltraLite Cordless Lift	• Precision placement — lower and raise the shade by moving the hem bar exactly where you want it. Ideal system for aligning shade height for multiple shades on the same wall • Light and smooth lift for all shade sizes • Aesthetically beautiful mounting hardware that hides mechanics • Shade is spring-loaded on each end and will self-center between brackets when installed • Streamlined appearance with no chains; ideal for homes with children or pets • Optional contour valance, cassette valance with fabric insert, fascia, flat valance, or wood cornice
UltraLite Dual Lift (U.S. ONLY)	• Precision placement with two ways to operate the shade — lower and raise the shade by moving the hem bar exactly where you want it, or lower and raise by pulling on the chain or cord • Light and smooth lift for all shade sizes • Choice of bead chain or fabric cord • One pull of the chain will raise the entire shade • Aesthetically beautiful mounting hardware that hides mechanics • Shade is spring-loaded on each end and will self-center between brackets when installed • Beaded chain (or optional cord) remains at same length, regardless of chain position • Choose from five colors for the plastic chain, or stainless steel chain • Hold down device keeps chain taut for enhanced safety • Choose left or right chain or cord location • Optional contour valance, cassette valance with fabric insert, fascia, flat valance, or wood cornice
Enclosed Loop Dual Lift (Canada ONLY)	• Precision placement with two ways to operate the shade: 1) lower and raise shade by moving the hem bar exactly where you want it, or 2) raise the shade by moving the plastic grip toward the top of the window, then hold down the up-arrow button, while simultaneously pulling the grip down. Once you are at the bottom, release the button, reset the grip at the top, and repeat until your shade is at the desired height. To lower the shade, hold the down-arrow button and follow the same instructions. • Light and smooth lift for all shade sizes • Aesthetically beautiful mounting hardware that hides mechanics • Shade is spring-loaded on each end and will self-center between brackets when installed • Beaded chain remains at same length, regardless of chain position • Choose left or right chain location • Optional contour valance, cassette valance with fabric insert, fascia, flat valance, or wood cornice
Enclosed Loop Lift (Canada ONLY)	• Spring-loaded idle for easy install • Enclosed Loop Lift features a cord cover and sliding handle to operate the chain loop easily and safely • Four clutch sizes depending on shade size • Beaded chain remains at same length, regardless of shade position • Choose left or right chain location • Optional contour valance, cassette valance with fabric insert, fascia, flat valance, or wood cornice
Continuous-Loop Lift (U.S. ONLY)	• Spring-loaded idle for easy install • Beaded chain and clutch system make raising and lowering shade easy • Four clutch sizes depending on shade size • Beaded chain remains at same length, regardless of shade position • Choose from five colors for the plastic chain or stainless steel chain • Hold down device keeps chain taut for enhanced safety • Choose left or right chain location • Optional contour valance, cassette valance with fabric insert, fascia, flat valance, or wood cornice

Features

Summary

Graber® Roller and Solar Shades offer a great selection of light and temperature controlling shades.

Roller Shades
- Wide variety of colors
- Wide variety of textures
- Improved temperature control

Solar Shades
- 1% to 12% openness
- Excellent outward visibility
- Glare control

Features	Benefits
Cordless Lift	• Streamlined appearance with no chains; ideal for homes with children or pets • Shade raises and lowers smoothly and easily due to a unique dual braking system • Tension can be manually adjusted so shade always raises at desired speed • Color coordinated tassels facilitate easy operation and keep fabrics clean (wood tassels in Natural, Walnut, and Golden Oak are optional) • Optional clear hem grip available (not available with scallop option) • Optional contour valance, cassette valance with fabric insert, flat valance, or wood cornice
Smart Pull Lift	• Convenient easy glide lift system with a wand • Shade is lowered automatically with a single pull of the wand • Shade is raised to the desired placement with simple pull of the wand • Optional contour valance, cassette valance, flat valance or wood cornice
Motorized Lift	• Window treatments can be operated from virtually anywhere in the home • Provides easy operation of hard-to-reach or larger windows • Operate multiple window treatments simultaneously or individually
Dual Shade (U.S. ONLY) or Enclosed Loop Dual Shade (Canada ONLY)	• Two shades are combined onto one bracket for complete privacy and light control • Each shade may be configured with roller and/or solar fabrics • Maximizes view to the outside with solar or sheer fabrics • Maximizes privacy with roller fabrics • Improves energy efficiency • Optional large cassette
Options	• Each operating system offers multiple valance and cornice options (surcharge applies) • Turning fabric width for height and seaming accommodates larger windows; available on select fabrics • Reverse roll: fabric rolls over the front of tube; standard: material rolls over the back • Hem bar: fabric-wrapped (standard) or sealed (optional with Continuous-Loop Lift, Enclosed Loop Lift and Motorized Lift) • Projection brackets for Smart Pull Lift and Cordless Lift (no charge) • Hold down brackets (no charge) • Bay or corner shade • Motorized Lift • Fascia available in 3" and 4" heights
Commercial Solutions	• Side and sill channels (optional with Enclosed Loop Lift, Continuous-Loop Lift and Motorized Lift) • Low voltage motorized coupled shades • Pockets and closure plates
Total Room Coordination	• Total room fabric coordination of many fabrics for roller, solar, sliding panels, verticals, and pleated shades • Coordinate a room by using a single fabric for a mixture of window types and sliding doors • Cut yardage available
Scallop, Gimp, and Trims	• Create a customized look for roller shades
Warranty	• Limited lifetime warranty; five-year warranty on motorization components

Features

Roller Shade Fabrics

- Offer a solution for light control (sheer to blackout fabrics)
- Any room or decorating style
- Block damaging UV rays
- Coordinate with other product lines (vertical blinds, pleated shades, and sliding panels)
- "Fabric Width" is only a representation of the unfinished roll's usable width. See max/min tables for product size offerings.

Fabric Styles and Information: Roller Shade Fabrics

Style Name	Opacity Level	Fabric Composition	Fabric Width (inches)	Oeko-Tex® Certified	Can be Turned Width for Height	Sealed Hembar Option	Color to Street Side	Color Number	Can be Seamed
Aberdeen BO	Blackout	100% Polyester	92	•			White	All colors	
Aberdeen LF	Light Filtering	100% Polyester	92	•	•		Same front and back	All colors	
Arboretum BO	Blackout	100% Polyester	91¾	•	•		White	All colors	
Arboretum LF	Light Filtering	100% Polyester	91¾	•	•		Base color of front	All colors	
Bravado BO	Blackout	100% Polyester	108¼	•		•	Varies by colorway	All colors	
Bravado LF	Light Filtering	100% Polyester	108¼	•			Same front and back	All colors	
Canyon Ridge BO	Blackout	100% Polyester	92	•			White	All colors	
Canyon Ridge LF	Light Filtering	100% Polyester	92	•	•		Same front and back	All colors	
Cambridge LF	Light Filtering	100% Polyester	76	•	•		Same front and back	11103	
Cambridge LF	Light Filtering	100% Polyester	120	•	•		Same front and back	All colors except 11103 & 11114	
Cambridge RD	Room Darkening	100% Polyester	76	•	•	•	White	11203	
Cambridge RD	Room Darkening	100% Polyester	118	•	•	•	White	All colors except 11203 & 11214	
Cloud Frost	Light Filtering	100% PES	120	•			Same front and back	All colors	
Conservancy LF	Light Filtering	18% cotton/82% polyester	115	•			Same front and back	All colors	
Conservancy BO	Blackout	18% cotton/82% polyester	115	•		•	White	All colors	
Consummate Silk	Blackout	20% Cotton/80% Polyester	77¼				White	All colors	
Debonair	Light Filtering	3.1% Flax/4.3% Cotton/ 92.6% Polyester	106	•			Same front and back	All colors	
Delphine BO	Blackout	100% Polyester	108	•		•	White; except Mythical Gray: gray	All colors	
Delphine LF	Light Filtering	100% Polyester	108	•			Same front and back	All colors	
Destin BO	Blackout	2% Nylon/98% Polyester	114	•			White	All colors	
Emerson	Blackout	100% Polyester	118	•			White	All colors	
Empirical	Light Filtering	100% Polyester	95¾	•			Same front and back	All colors	
Emporium	Light Filtering	100% Polyester	95⅛	•			Same front and back	All colors	
Essential*	Blackout	25% Fiberglass/75% PVC	69⅞		•	•	Varies by colorway	All colors	•
Flock BO	Blackout	100% Polyester	110	•			White	All colors	
Flock LF	Light Filtering	100% Polyester	110	•			Same front and back	All colors	
Gleam	Blackout	100% Polyester	91¾	•		•	White	All colors	
Harmony	Light Filtering	100% Polyester	91¾	•			Same front and back	All colors	
Inkblot	Light Filtering	100% Polyester	120	•			Same front and back	All colors	
Jacinta	Light Filtering	100% Polyester	112	•			Same front and back	All colors	
Kindred	Light Filtering	100% Polyester	112	•			Same front and back	All colors	
Manifest LF	Light Filtering	100% Polyester	92½	•			Same front and back	All colors	
Manifest BO	Blackout	100% Polyester	92½	•			White	All colors	
Mayfair	Sheer	100% Polyester	107	•			Same front and back	All colors	
Northshore	Light Filtering	100% Polyester	110¾	•			Same front and back	All colors	
Paving Stone	Blackout	100% Polyester	117	•	•		White	All colors	
Providence BO	Blackout	100% Polyester	115	•		•	White	All colors	
Providence LF	Light Filtering	100% Polyester	115	•			Same front and back	All colors	
Regent	Sheer	100% Polyester	114¾	•			Same front and back	All colors	
Renaissance	Light Filtering	100% Polyester	91¾	•			Lighter Version of Front	All colors	
Riverbend	Light Filtering	100% Polyester	71½	•			Same front and back	All colors	

*Material is FR rated.
NOTE: A black line may appear on front and back side of shade due to fabric and seaming process.

Features

Roller Shade Fabrics

- Offer a solution for light control (sheer to blackout fabrics)
- Any room or decorating style
- Block damaging UV rays
- Coordinate with other product lines (vertical blinds, pleated shades, and sliding panels)

Fabric Styles and Information: Roller Shade Fabrics

Style Name	Opacity Level	Fabric Composition	Fabric Width (inches)	Oeko-Tex® Certified	Can be Turned Width for Height	Sealed Hembar Option	Color to Street Side	Color Number	Can be Seamed
Sahara Ridge	Light Filtering	95.8% Polyester/ 2.5% Cotton/ 1.7% Flax	106	●			Same front and back	All colors	
Sanguine	Blackout	100% Polyester	78				White	All colors	
Santorini	Light Filtering	100% Polyester	76	●			Same front and back	All colors	
Shadow*	Blackout	100% Polyester	119¼	●		●	White	All colors	●
Sheffield	Light Filtering	100% Polyester	108	●			Same front and back	All colors	
Shiloh	Sheer	100% Polyester	114¾	●			Same front and back	All colors	
Solana BO	Blackout	100% Polyester	113⅜	●			White	All colors	
Spring Bloom	Light Filtering	100% Polyester	92	●			Same front and back	All colors	
Suburban II	Light Filtering	100% Polyester	71½	●	●		Same front and back	All colors	
Tattered Husk BO	Blackout	100% Polyester	111	●			White	All colors	
Tattered Husk LF	Light Filtering	100% Polyester	109				Same front and back	All colors	
Terrain	Light Filtering	100% Polyester	106	●			Same front and back	All colors	
Thesis	Blackout	100% Polyester	69½	●			White	All colors	
Tuvalu	Sheer	100% Polyester	106	●			Same front and back	All colors	
Vancouver	Light Filtering	100% Polyester	110¾	●			Same front and back	All colors	
Wayfarer	Sheer	100% Polyester	91¾	●			Same front and back	All colors	
Whitcomb	Light Filtering	100% Polyester	107½	●			Same front and back	All colors	
Whitehall	Blackout	100% Polyester	120	●	●	●	White	All colors	
Whittaker BO	Blackout	100% Polyester	113⅜	●			White	All colors	

*Material is FR rated.
NOTE: A black line may appear on front and back side of shade due to fabric and seaming process.

Features

Light Control and Privacy: Roller Shade Fabrics

Sheer*: Allows the most amount of light into the room for a minimum amount of privacy and a view to the outside. Objects in the room can be seen quite clearly through shades.
Privacy Level: Minimal

Light Filtering*: Allows light to gently filter through and provides privacy. Images and shapes may be seen through these shades, but details are not visible. Deep fabric colors provide moderate light control, while light colors provide lower light control.
Privacy Level: Moderate

Room Darkening*: Allows some light to filter into the room and provides privacy. Objects in a lit room seen through these shades appear as vague shapes. Deep fabric colors darken a room; light colors filter and diffuse bright sunlight.
Privacy Level: Complete

Blackout: Prohibits light from shining through and provides maximum privacy. Prevents shadows and silhouettes from showing through the fabric. All fabric colors provide maximum light control.
Privacy Level: Complete

Light Gaps: For optimal light and glare control, outside mount is recommended, or you may add a secondary soft window treatment (drapery or curtain) to hide the light gap on an inside mount. (Refer to light gap chart in this section.)
Privacy Level: Moderate

*These fabrics are translucent and their colors may be influenced by changing light conditions. Colors may appear to vary depending upon the time of day and type of lighting, as well as whether the shade is partially or fully lowered.
NOTE: Select roller weaves may have “pinpricks” of light showing through.

Features

Solar Shade Fabrics

Maintain an Outward View
- Filter and diffuse light while maintaining an outward view
- In general, the higher the openness factor and darker the fabric, the clearer the view

Manage Glare
- Minimize glare on televisions and home office computers
- The darker the fabric color, the better the glare control and the better the view to the outside

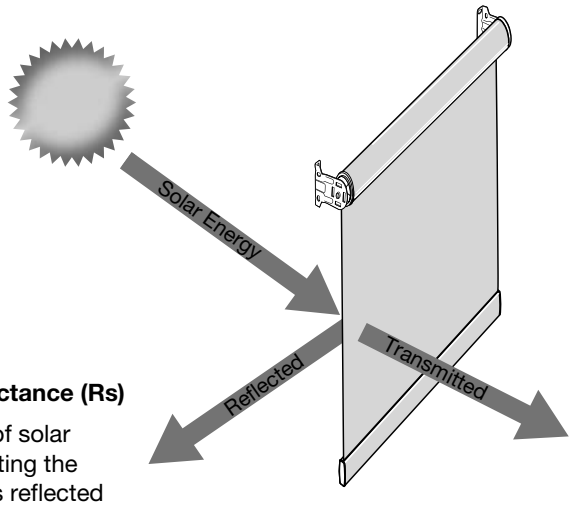
Block Damaging UV Rays
- The amount of UV ray blockage is the inverse of a fabric's openness factor (e.g., a fabric with 10% openness blocks 90% of UV rays)
- Protect your furniture, carpets, artwork, etc., from fading due to harmful UV rays

Reduce the Temperature
- Fabrics reduce heat transmittance, keeping rooms cooler and increasing the comfort level in the home
- The lighter the fabric color, the better the temperature control

NOTE: Solar shades do not offer nighttime privacy; lighted interiors allow inward visibility. If complete privacy is desired, a Dual Shade or secondary treatment is necessary.

Solar Optical Properties

When solar radiation reaches the shading fabric it is either reflected, absorbed, or transmitted. The sum of these values equals 100% of the solar energy hitting the fabric.



Solar Reflectance (Rs)

Proportion of solar radiation hitting the fabric that is reflected by the fabric.

Solar Absorption (As)

Percentage of the solar radiation hitting the fabric that is absorbed by the fabric.

Solar Transmittance (Ts)

Percentage of solar radiation hitting the fabric that is transmitted through the fabric, illuminating the interior space.

Features

Fabric Styles and Information: Solar Shade Fabrics

Style Name	Openness	UV Blockage	Fabric Composition	Fabric Width (inches)	GREENGUARD® Certified	anti-microbial	anti-fungal	FR Rated	Can Be Turned Width for Height	Color Numbers	Can Be Seamed	Sealed Hembar Option
Bradley	8%	92%	16% Polyester/ 84% PVC	96	●	●	●	●		All colors		
Broadcast	1%	99%	25% Polyester/ 75% Vinyl on Polyester	116	●	●	●	●	●	All colors	●	●
Chronicles	4%	96%	15% Polyester/ 85% Vinyl on Polyester	96	●	●	●	●		All colors	●	●
Complex	5%	95%	30% Polyester/ 70% Vinyl on Polyester	96	●	●	●	●		All colors	●	●
Earth Synergy	5%	95%	16% Linen/ 18% Polyester/ 66% PVC	116	●	●	●	●		All colors		●
EcoEncore	5%	95%	100% PET recycled polyester	99½	●			●		All colors		
Ellington 1%	1%	99%	22% Polyester/ 78% PVC	124	●	●	●	●	●	All colors	●	●
Ellington 3%	3%	97%	22% Polyester/ 78% PVC	124	●	●	●	●	●	All colors	●	●
Ellington 5%	5%	95%	22% Polyester/ 78% PVC	124	●	●	●	●		All colors	●	●
EnviroINFUSION	5%	95%	100% Polyester	114¾	●	●	●	●		All colors		
Exposition	8%	92%	26% Polyester/ 74% Vinyl on Polyester	96	●	●	●	●		All colors	●	●
Guildhall	5%	95%	26% Polyester/ 74% Vinyl on Polyester	96	●	●	●	●		All colors	●	●
Harmonics	5%	95%	100% Polyester	114¾	●	●	●	●		All colors		
LiveWell	2%	98%	20% Polyester/ 80% PVC	95 1/8	●	●	●	●	●	All colors		
Merit	4%	96%	15% Polyester/ 85% Vinyl on Polyester	96	●	●	●	●		All colors	●	●
Momentum	5%	95%	17% Polyester/ 83% PVC	94	●	●	●	●		All colors	●	●
Monticello	7%	93%	23.8% Polyester/ 76.2% Vinyl on Polyester	96	●	●	●	●	●	All colors		
Nantucket	8%	92%	17% Polyester/20% PP/63% PVC	96	●					All colors		
Pannier	10%	90%	85% PVC/ 15% Polyester	96	●	●	●	●		All colors		
PlanetSafe	3%	97%	100% PET recycled polyester	103⅛	●			●		All colors		
Plexus 1%	1%	99%	19% Polyester/ 81% Vinyl on Polyester 25% Polyester/ 75% Vinyl on Polyester	116	●	●	●	●	●	47612, 47611 47610, 47604, 47606, 47613, 47609, 47608, 47603, 47602, 47605, 47607	●	●
Plexus 3%	3%	97%	19% Polyester/ 81% Vinyl on Polyester 25% Polyester/ 75% Vinyl on Polyester	116	●	●	●	●	●	47712, 47711 47710, 47704, 47706, 47713, 47709, 47708, 47703, 47702, 47705, 47707	●	●
Plexus 5%	5%	95%	13% Polyester/ 87% Vinyl on Polyester 25% Polyester/ 75% Vinyl on Polyester	116	●	●	●	●	●	47812, 47811 47810, 47804, 47806, 47813, 47809, 47808, 47803, 47802, 47805, 47807	●	●
Porter	11%	89%	16% Polyester/ 84% PVC	96	●	●		●		All colors		
Quintessence	7%	93%	25% Polyester/ 75% PVC	116	●	●	●	●		All colors	●	●
Sabine	3%	97%	25% Polyester/ 75% PVC	96	●	●	●	●		All colors	●	●
SafeSync	12%	88%	16% Polyester/ 84% PVC	96	●	●		●		All colors		
Sakura	5%	95%	28% Polyester/ 72% PVC	96⅜	●	●		●		All colors		

*Oeko-Tex® certified.

Features

Fabric Styles and Information: Solar Shade Fabrics

Style Name	Openness	UV Blockage	Fabric Composition	Fabric Width (inches)	GREENGUARD® Certified	anti-microbial	anti-fungal	FR Rated	Can Be Turned Width for Height	Color Numbers	Can Be Seamed	Sealed Hembar Option
Standard Weave 1%	1%	99%	21% Polyester/ 79% Vinyl on Polyester 24% Polyester/ 76% Vinyl on Polyester 25% Polyester/ 75% Vinyl on Polyester	124	•	•	•	•	•	47907, 47908, 47905 47901, 47906 47902, 47903, 47904	•	•
Standard Weave 3%	3%	97%	18% Polyester/ 82% Vinyl on Polyester 21% Polyester/ 79% Vinyl on Polyester 24% Polyester/ 76% Vinyl on Polyester	124	•	•	•	•	•	48202, 48203, 48204 48207, 48208, 48205 48201, 48206	•	•
Standard Weave 5%	5%	95%	16% Polyester/ 84% Vinyl on Polyester 21% Polyester/ 79% Vinyl on Polyester 24% Polyester/ 76% Vinyl on Polyester	124	•	•	•	•	•	48302, 48303, 48304 48307, 48308, 48305 48301, 48306	•	•
Standard Weave 10%	10%	90%	16% Polyester/ 84% Vinyl on Polyester 21% Polyester/ 79% Vinyl on Polyester 24% Polyester/ 76% Vinyl on Polyester	116	•	•	•	•	•	48402, 48403, 48404 48407, 48408, 48405 48401, 48406	•	•
Steel House	8%	92%	70% PVC/ 30% Polyester	96	•			•		All colors		
Tableaux	1%	99%	23% Polyester/ 77% PVC	96	•	•	•	•		All colors	•	•
Unison	5%	95%	100% Polyester	114¾	•	•	•	•		All colors		
Vanguard 1%	1%	99%	21% Polyester/ 79% Vinyl on Polyester 24% Polyester/ 76% Vinyl on Polyester 25% Polyester/ 75% Vinyl on Polyester	124	•	•	•	•	•	47914, 47912, 47917, 47913, 47918 47909, 47915, 47911, 47916 47910	•	•
Vanguard 3%	3%	97%	18% Polyester/ 82% Vinyl on Polyester 21% Polyester/ 79% Vinyl on Polyester 24% Polyester/ 76% Vinyl on Polyester	124	•	•	•	•	•	48210 48214, 48212, 48217, 48213, 48218 48209, 48215, 48211, 48216	•	•
Vanguard 5%	5%	95%	16% Polyester/ 84% Vinyl on Polyester 21% Polyester/ 79% Vinyl on Polyester 24% Polyester/ 76% Vinyl on Polyester	124	•	•	•	•	•	48310 48314, 48312, 48317, 48313, 48318 48309, 48315, 48311, 48316	•	•

Features

Fabric Recommendations

Order all shades for the same room at the same time to ensure color consistency and minimize dye lot variation.

When displaying multiple shades in the same room, we recommend all shades be ordered with the same fabric orientation for a consistent look.

Fabric Disclaimers

Due to the nature of the weaving process, some imperfections in the weave are normal.

NOTE: Select roller weaves may have "pinpricks" of light showing through.

Roll direction cannot be reversed after a shade is ordered. Fabric appearance can vary based on changing light conditions in the room.

Fabric Width

The fabric width is narrower than the finished shade width of the tube and its components.

Light Gap

Control Type	Light Gap per Side (inches)
UltraLite Cordless Lift	⅜
UltraLite Cordless Lift with Cassette	½
UltraLite Cordless Lift with Contour Valance	⅜
UltraLite Cordless Lift with Fascia	⅜
UltraLite Cordless Lift with Flat Valance	⅜
UltraLite Dual Lift or Enclosed Loop UltraLite Dual Lift	½
UltraLite Dual Lift or Enclosed Loop UltraLite Dual Lift with Cassette	½
UltraLite Dual Lift or Enclosed Loop UltraLite Dual Lift with Contour Valance	½
UltraLite Dual Lift or Enclosed Loop UltraLite Dual Lift with Fascia	½
UltraLite Dual Lift or Enclosed Loop UltraLite Dual Lift with Flat Valance	½
Enclosed Loop Lift or Continuous-Loop Lift	9/16 to ⅞
Enclosed Loop Lift or Continuous-Loop Lift with Contour Valance	9/16 to ⅞
Enclosed Loop Lift or Continuous-Loop Lift with Flat Valance	9/16 to ⅞
Enclosed Loop Lift or Continuous-Loop Lift with Fascia	9/16 to ⅞
Enclosed Loop Lift or Continuous-Loop Lift with Cassette	9/16 to 1 1/16
Dual Shade or Enclosed Loop Dual Shade Lift	9/16 to 1 1/16
Dual Shade or Enclosed Loop Dual Shade with Cassette	9/16 to ⅞
Cordless Lift	⅜ to ¾
Cordless Lift with Contour Valance	⅜ to ¾
Cordless Lift with Flat Valance	⅜ to ¾
Cordless Lift with Cassette	7/16 to 1 3/16
Smart Pull Lift	9/16 to 15/16
Smart Pull Lift with Contour Valance	9/16 to 15/16
Smart Pull with Flat Valance	9/16 to 15/16
Smart Pull Lift with Cassette	⅝ to 1

Cleaning and Care Information

Roller shade fabrics are virtually maintenance free. If the shade is dusty, simply vacuum over it using an upholstery attachment. A dusting cloth can also be used to gently remove dust. Shades may also be gently wiped with a clean damp cloth. Allow the shade to dry completely before raising. Do **NOT** completely immerse.

Solar shade fabrics are virtually maintenance free. Only periodic vacuuming and an occasional cleaning using a mild detergent, soft brushing, and thorough rinsing is required. Allow the shade to dry completely before raising. Do **NOT** completely immerse.

Large Window Sizing

Fabrics can be turned 90° clockwise (width for height) to accommodate wider windows. In these cases some solar fabrics can be seamed for longer heights. Fabrics turned width for height (referred to as railroaded) may curl along the edge. Springs Window Fashions performs extensive testing to ensure our customers receive high quality shades. On extremely wide shades, a slight V shape may appear in the center of the shade. This occurs due to the weight of the fabric and should be considered a normal characteristic.

Seams may be added to solar fabrics to accommodate long shade requirements. Seams are placed as close to the tube as possible; seam location is determined by the manufacturer. Seams may be visible when the shade is fully extended. Seaming is not available for Cordless Lift or Smart Pull Lift shades.

Pattern Alignment

Exact alignment of the fabric pattern across side-by-side shades is not possible. Vertical alignment of the shade fabric with cassettes is not possible. Fabrics with large repeat patterns are not centered on the shade.

Fabric Certifications

GREENGUARD Indoor Air Quality Certified® Fabrics: Many Graber® fabrics have been certified by GREENGUARD Environmental Institute (GEI) to be low chemical- and particle-emitting fabrics, which provides a healthier indoor air quality. The process used for certification complies with established indoor air quality standards and is performed by a third party lab. Please see baliblinds.com for more information.

Cradle to Cradle Certified Design: Cradle to Cradle certification aims to transform all industries through ecologically intelligent design. That means the certified textiles are globally recognized to be safer and more sustainable.

Oeko-Tex® Standard 100 certifies that our fabrics are free of halogen, lead, formaldehyde, allergenic dyes, pesticides, phenols, and heavy metals, and meets all VOC content limits.

GREENGUARD Indoor Air Quality Certified is a registered trademark of the GREENGUARD Environmental Institute.

Oeko-Tex is a registered trademark of the Oeko-Tex Association.

Size Considerations

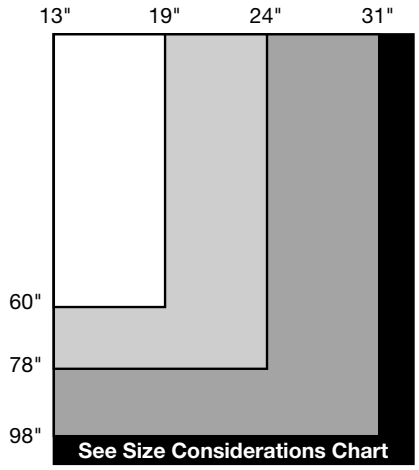
Maximum Shade Size

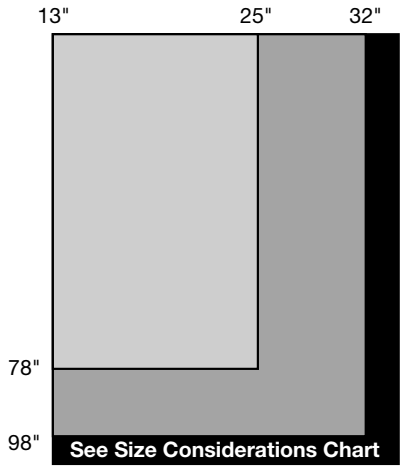
Cordless Lift Shade Maximum Size

If Shade Width Is at Least (inches)	Maximum Height of Shade (inches)
13 but less than or equal to 19	60
19⅛ but less than or equal to 24	78
24⅛ but less than or equal to 31	98
For shades greater than 31", see size considerations charts	

Smart Pull Lift Shade Maximum Size

If Shade Width Is at Least (inches)	Maximum Height of Shade (inches)
13 but less than or equal to 25	78
25⅛ but less than or equal to 32	98
For shades greater than 32", see size considerations charts	





Follow these easy steps to determine maximum shade size and valance size from the maximum shade size tables:

1. Determine your fabric style, shade size, control type, and cassette valance (or no cassette valance) requirement.
2. Find the fabric in the first column.
3. Follow the fabric row to the appropriate control type section (UltraLite Cordless Lift, UltraLite Dual Lift, Enclosed Loop UltraLite Dual Lift, Enclosed Loop Lift, Continuous-Loop Lift, Dual Shade, Motorized Lift, Cordless Lift, or Smart Pull Lift).
4. Determine if your shade size is within the normal fabric orientation size range.
5. Identify the appropriate size valance for your shade size.
6. If your shade size is larger than either the maximum width or height range, your fabric may be able to be turned width for height for larger shades. Use the fabric turned width for height tables to determine this maximum size.

EXAMPLE 1: Determine the maximum allowable shade size and cassette valance for normal orientation shades. The example shade is 72" x 100", Arboretum BO fabric, Cordless Lift, with cassette valance.

1. Go to the Cordless Lift section.
2. Find Arboretum BO in the first column.
3. The maximum width and maximum height available for this configuration is 78" x 120".
   NOTE: Both width and height must be less than the maximum width and height segment to fit the normal shade orientation.
4. Follow this segment to the top of the table. This segment is within the medium cassette valance size, indicating that the smallest segment cassette valance size available for this shade is a medium size cassette valance.

EXAMPLE 2: Determine the maximum allowable shade size and cassette valance for a continuous-loop shade. The example shade is 79" x 80", Exposition fabric, Enclosed Loop Lift with a large cassette valance. First, determine if the shade size is available with the requested fabric and control type.

1. Go to the continuous-loop section.
2. Find Exposition in the first column.
3. The maximum width and maximum height available for this configuration is 96" x 144". The 79" x 80" size does not exceed the Enclosed Loop Lift segment.
4. The 79" x 80" size does not exceed either the medium or large cassette segments. The smallest cassette valance size available for this shade is the medium cassette valance.

Dual Shades

The maximum size for Dual Shades is found using the Dual Shade column. Because two shades must fit into a single cassette valance, the Dual Shade requires the large cassette valance. Small and medium cassette valances are not available for Dual Shades.

Recommendation: For a consistent look in a single room, we recommend the same size cassette valance be used for every shade. Use the largest shade to determine the smallest available cassette valance size for that room. For example, if the largest shade in the room requires a medium cassette valance, then it is recommended all shades in the room use a medium cassette valance. The cassette valance size can be specified during ordering.

BQ #210 Attachment

GRABER | DELIGHT IN EVERY DETAIL



Graber Z-Wave
English/US Price Guide

January 2024

BQ #210 Attachment

MOTORIZATION FEATURING BLUETOOTH AND Z-WAVE TECHNOLOGIES

Motorization Features

Motorized Shades 2
Radio Frequency (RF) 2

Motorization Size Considerations

CrystalPleat® Cellular Shades Motorized Lift 3
Pleated Shades Motorized Lift 4
Fresco® Roman Shades Motorized Lift 5
Tradewinds® Natural Shades Motorized Lift 6
Artisan Roman Shades Motorized Lift 7
Mezzanine Layered Shades Motorized Lift and Light Gap 8
Overture Sheer Shades Motorized Lift and Light Gap 9
Lightweaves® Roller and Solar Shades Motorized Lift 10
Motorized Lift, and Dual Shade: Mounting Depth Illustrations 11

Motorization Options

Lightweaves Roller and Solar Shades: 12-Volt Motor Maximum Shade Size 16-21
Lightweaves Roller and Solar Shades: Dual Shades Maximum Shade Size 20-27
Power Considerations 22-23
Power Components 24
Z-Wave Motorization Controls 25
Standard Remote Mounting Options 26
Single-Channel Remote Mounting Options 26
Multi-Channel Remote Mounting Options 26

GRABER®

MAY 2023

(4/23) 23-426800

Motorization Features

Motorized Shades

Refer to individual product information guide for specific option for the product being ordered. See price charts for pricing.

Radio Frequency (RF)

Graber motorized shades feature advanced Bluetooth and Z-Wave radio technology that provides reliable, effortless operation of window coverings. Graber motorized shades are quiet, simple to install and adjust, and simple to operate. These automated shades also feature:

Bluetooth Radio Frequency Features

Bluetooth technology allows you to control your shades directly from your phone without a hub or gateway. Any iOS or Android device is compatible.

- Control your shades directly from your phone or tablet without a gateway
- Operate your shades within Bluetooth range
- Create and schedule routines to automate your window coverings
- A safer alternative to accessible cords; ideal for homes with children and pets
- Provides easy operation for hard to reach or large windows

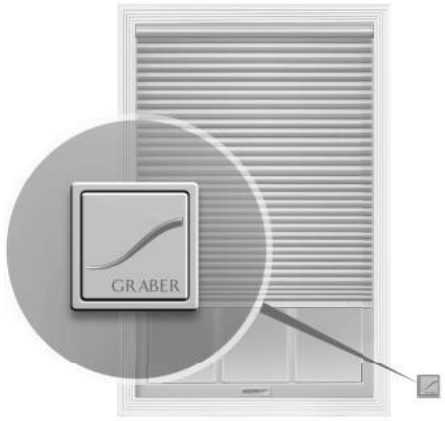
Z-Wave Radio Frequency Features

- Operates your shades virtually anywhere within 65 feet
- Supported by an alliance of countless smart home products and home automation providers making integration simple and inexpensive.
- Easily integrate with voice control devices
- A safer alternative to accessible cords; Ideal for homes with children and pets.
- Provides easy operation for hard to reach or large windows.

Motorization Size Considerations

CrystalPleat® Cellular Shades Motorized Lift

Order Entry: 12V Z-Wave and Bluetooth Motor



Refer to individual product information guide for specific option for the product being ordered.
See page 2 for benefits of using Bluetooth & Z-wave motorization.

Product Specifications

- Motor located on right side within headrail
- Available as corner and bay window application
- Available with Wood Cornice and Valance
- Available with reversible fabric at time of order
- Available with lightblocking strip
- Available with Fabric Wrapped headrail.
- Rail colors can be specifided at time of order
- Available with room-darkening channels
- Not available with top down continuous-loop, sun up/sun down, combination shades, SkyTrack™ Skylight, specialty shapes or multiple shades on one headrail
- Not available with hold down brackets or side mount brackets

Control and Power Options

- Multiple control and power options available; see Z-Wave options for availability

NOTE: Motorization components and accessories have a five-year limited warranty, excluding batteries.

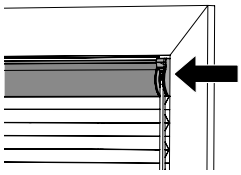
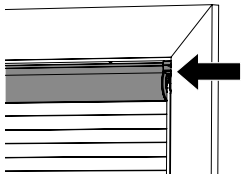
Size Considerations	**Minimum Width‡** (inches)	**Maximum Width** (inches)	**Minimum Height** (inches)	**Maximum Height** (inches)
Cellular Shades	20	144*	9	144 *
Bottom up/Top Down	28 5/8	120	9	86

*This is the shade size maximum limit for this motor type, shades size limit may be smaller based on specific fabric type.

Cell Size	**Collection Name**	**Maximum Shade Size** (square inches)	**Bottom up/Top Down Maximum Shade Size** (square inches)
½" Double Cell	Sanctuary	10,000	6,000
½" Double Cell	Splendor	12,500	8,200
¾" Single Cell	Champagne Toast, Couture LF and BO, Enchantment BO, Infuse LF and BO, Kinsley LF and BO, Montage BO, Prestige BO, Sanctuary, Scroll FR, Valletta BO	12,500	8,200
¾" Single Cell	Enchantment LF, Montage LF, Prestigue LF, Splendor LF	17,000	9,600
¾" Single Cell	Discovery, Endeavor, Simply Sheer, Valletta LF	20,800	10,600
9/16" Single Cell	Discovery	12,500	N/A
9/16" Single Cell	Endeavor	17,000	N/A
1 ¼" Single Cell	Splendor	14,000	9,200
1 ¼" Single Cell	Champagne Toast, Sanctuary, Valletta LF and BO	12,500	8,200

NOTE: For all inside mount applications, ⅜" deduction is taken by manufacturer on overall width.

Depth Requirements

Cell Size	**Headrail Dimensions** (inches)	 Partially recessed headrail in window casing/ molding. **Minimum Depth Mount** (inches)	 Fully recessed headrail in window casing/ molding. **Flush with Casing** (inches)
¾" single cell ½" double cell	1 9/16 x 2⅜	⅝	2⅝
9/16" single cell	1 9/16 x 2⅛	⅝	2⅜
1¼" single cell	1⅝ x 3 3/16	1⅜	3⅜

Size Considerations

Pleated Shades Motorized Lift

Order Entry: 12V Z-Wave and Bluetooth Motor



Refer to individual product information guide for specific option for the product being ordered.
See page 2 for benefits of using Bluetooth & Z-wave motorization.

Product Specifications

- Motor located on right side within headrail
- Available as corner and bay window application
- Available with Wood Cornice and Valance
- Available with Dayliner or Midnight liner
- Available with lightblocking strip
- Rail colors can be specified at time of order
- Not available with bottom up/top down, sun up/sun down, combination shades, SkyTrack™ Skylight, specialty shapes or multiple shades on one headrail
- Not available with hold down brackets, side mount brackets or room-darkening side channels

Control and Power Options

- Multiple control and power options available; see Z-Wave options for availability

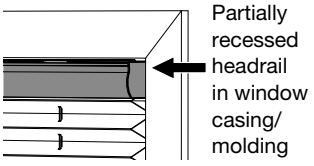
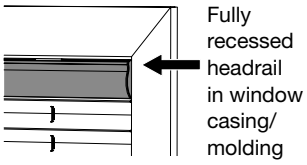
NOTE: Motorization components and accessories have a five-year limited warranty, excluding batteries.

Size Considerations	Minimum Width‡ (inches)	Maximum Width (inches)	Minimum Height (inches)	Maximum Height (inches)
1" FashionPleat®	20	144*†	9	96
1" EvenPleat®	20	120*†	6	96
2" EvenPleat	20	144*†	12	144*

*This is the shade size maximum limit for this motor type, shades size limit may be smaller based on specific fabric type.
†Based on fabric width with overlaps.
‡For all inside mount applications, ⅜" deduction is taken by manufacturer on overall width.

Pleat Size	Collection Name	Maximum Shade Size (square inches)
1" Pleated	Aberdeen, Canyon Ridge, Cloud Metal, Debonair, Desert, Grasscloth, Marina, Prescott, Sahara Ridge, Serendipity, Spring Bloom, Terrain	9,000
1" Pleated	Allure, Inkblot, Sheer Linen	11,500
1" Pleated	Blackout and Privacy Liner Only	13,000
2" Pleated	Aberdeen, Cloud Metal, Debonair, Desert, Sahara Ridge, Serendipity, Spring Bloom, Terrain	7,500
2" Pleated	Sheer Linen	11,500
2" Pleated	Blackout and Privacy Liner Only	13,000

Depth Requirements

Shade Type	Headrail Dimensions (inches)	 Minimum Depth Mount (inches)	 Flush with Casing (inches)
1" Pleat	1 9/16 x 2⅛	⅝	2⅜
2" Pleat	1 9/16 x 2⅜	⅝	2⅝

Size Considerations

Fresco® Roman Shades Motorized Lift

Order Entry: 12V Z-Wave and Bluetooth Motor



Refer to individual product information guide for specific option for the product being ordered.
See page 2 for benefits of using Bluetooth & Z-wave motorization.

Product Specifications

- Motor located on right side within headrail
- Available with both flat and looped styles
- Available as corner and bay window application
- Available with fabric valances and fabric valance trims
- Not available with bottom up/top down or multiple shades on one headrail
- Not available with hold down brackets or side mount brackets

Control and Power Options

- Multiple control and power options available; see Z-Wave options for availability

NOTE: Motorization components and accessories have a five-year limited warranty, excluding batteries.

Roman Size Considerations	**Minimum Width*** (inches)	**Maximum Width** (inches)	**Minimum Height** (inches)	**Maximum Height** (inches)
Roman Shades: Classic Flat or Looped	20	76†	18	96

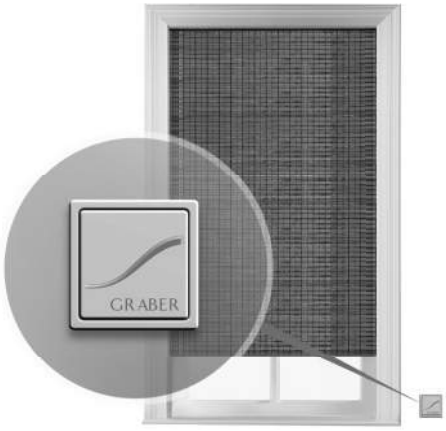
*For all inside mount applications, ⅜" deduction is taken by manufacturer on overall width.
†Based on fabric width.

Lift Option and Shade Style	**Headrail Dimensions** (inches)	 Partially recessed headrail in window casing/ molding **Minimum Depth Mount** (inches)	 Fully recessed headrail in window casing/ molding **Flush with Casing** (inches)
Motorized Lift: Flat	1½ x 2	⅝	2 ½
Motorized Lift: Looped	1½ x 2	⅝ (fabric loops will overhang approximately 3" into the room)	2½ (fabric loops will overhang approximately 3" into the room)

Size Considerations

Tradewinds® Natural Shades Motorized Lift

Order Entry: 12V Z-Wave and Bluetooth Motor



Refer to individual product information guide for specific option for the product being ordered.
See page 2 for benefits of using Bluetooth & Z-wave motorization.

Product Specifications

- Motor located on underside of hardwood headrail on right side
- Available with Standard Roman and Old Stle Roman styles
- Available with multiple shades on one headrail; each panel will have a motor and power source and there will be ½" gap between panels
- Available with 9" standard valance, 9" premiere valance, or 9" deco-trim valance
- Available with: fabric edge banding, hem options, privacy and room-darkening liners
- Available with deco-trim hems and accent gimp
- Available as corner and bay window application
- Available with Wood Cornice and Valance
- Not available with bottom up/top down, cut outs, turned headrail or specialty shapes
- Not available with hold down brackets or side mount brackets

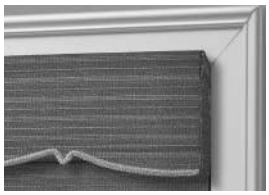
Control and Power Options

- Multiple control and power options available; see Z-Wave options for availability

NOTE: Motorization components and accessories have a five-year limited warranty, excluding batteries.

Natural Shades Size Considerations

Style	Minimum Width (inches)	Maximum Size	
		Shade (square inches)	With Liner (square inches)
Inan, Moniz, Lipo, Revelry, Serenity, Toushan II	18	2,755	2,333
Denver, Brooklyn, Stateside, Reminisce	18	4,493	3,466
Bellamy, Seasons	18	5,194	3,878
Boardwalk, Merino, Sarto	18	6,058	4,330
Bayport, Beachfront, Hadley, Kelton, Oxford, Paralian, Verity, Wild Haven	18	6,854	4,723
Berwick, Cameron, Cherish, Interlude, Olympia, Purcell, Rowen, Saterra, Selene, Ventura, Tatum, Terrestrial, Zishan	18	9,149	5,712

Headrail Dimensions (inches)	 Partially recessed valance in window casing/ molding **Minimum Depth Mount** (inches)	 Fully recessed valance in window casing/ molding **Flush with Casing** (inches)
⅝ x 2¼	¾	Standard valance 3³⁄₁₆

Size Considerations

Artisan Roman Shades Motorized Lift

Order Entry: 12V Z-Wave and Bluetooth Motor



Refer to individual product information guide for specific option for the product being ordered.
See page 2 for benefits of using Bluetooth & Z-wave motorization.

Product Specifications

- Motor located on underside of hardwood headrail on right side
- Fabric wrapped headrail for a beautifully finished look; returns are standard on outside mount shades
- Available as pleat styles: Looped, Classic Flat, Seamless, or Relaxed
- Available with Liner styles: Standard, Water Repellent, Thermal, Flannel-back
- Available finishing options: Inset banding, edge banding, decorative tape
- Not available with multiple shades on one headrail, bottom up/top down, turned headrail, balloon shade or blackout lining
- Not available with hold down brackets or side mount brackets

Control and Power Options

- Multiple control and power options available; see Z-Wave options for availability

NOTE: Motorization components and accessories have a five-year limited warranty, excluding batteries.

Artisan Roman Shades Size Considerations

Width		Length	
Minimum (inches)	**Maximum** (inches)	**Minimum** (inches)	**Maximum** (inches)
24	96	18	Classic Flat, Seamless and Relaxed – 120, Looped – 103

Motorized Maximum Shade Area in Square Inches

Fabric Name	**Standard or Water Repellent** (square inches)	**Thermal** (square inches)	**Flannel-Back** (square inches)
Candor, Cloud Metal, Enchanting, Liana, Meredith, Piazza, Stanton	4,209	3,719	3,450
Absolute, Alea, Arcadia, Artesso, Aspirational, Beach Chalet, Bianca, Bisque, Bloomscape, Brandywine, Brooke, Callahan, Countryside, Diversions, Esperance, Gratitude, Grayson, Harmonious, Heilene, Hypnotic, Iconic, Kazlo, Manning, Newleaf, Pageantry, Palatial, Rainfall, Raleigh, Sea Paisley, Seafront, Spargel, Undertones, Valor, Whimsical	3,569	33,254	3,000
Affinity, Ainslie, Avid, Bountiful, Burnham, Casita, Chalkdust, Conceptual, Confidence, Downpour, Dreamscape, Florabar, Focus, Frond Mist, Gjusta, Hama, Ibiza, Imagination, Kelsey, Kings Garden, Kingsbury, Maisonette, Meadowlark, Mikado, Mysterious, Mystical, Painterly, Pastoral, Posy, Primavera, Reflection, Refuge, Richland, Rutherford, Sustained, Symbiotic, Textile, Tyrell, Uplifting, Venetian, Wonder, Woodblock	2,921	2,859	2,550
Assurance, Athens, Birch, Bursche, Carver, Checkerloom, Circumference, Cloverleaf, Cooperative, EarthWise, EnviroLiving, Environment, Garden, Meditations, Monorail, Skipping Rocks, Soliloquy, Steward, Thistlerock, Wexler	2,489	2,423	2,130

If fabric not listed, it is not avaialble with the motorized lift option.
NOTE: Area is ordered width x ordered height in square inches.

Headrail Dimensions (inches)	 Partially recessed headrail in window casing/ molding **Minimum Depth Mount** (inches)	 Fully recessed headrail in window casing/ molding **Flush with Casing** (inches)
2¼ D x ⅝ L	¾	2⅞

Size Considerations

Mezzanine Layered Shades Motorized Lift

Order Entry: 12V Z-Wave and Bluetooth Motor



Refer to individual product information guide for specific option for the product being ordered.
See page 2 for benefits of using Bluetooth & Z-wave motorization.

Product Specifications

- Motor located on right or left side; standard is on right
- Fabric wrapped cassette standard and creates a cohesive appearance in the window
- Static-guard is necessary during dry conditions to prevent static build up
- Available as corner and bay window application
- Not available with hold down brackets or side mount brackets
- Not available with Wood Cornice or Valance

Control and Power Options

- Multiple control and power options available; see Z-Wave options for availability

NOTE: Motorization components and accessories have a five-year limited warranty, excluding batteries.

Light Gap

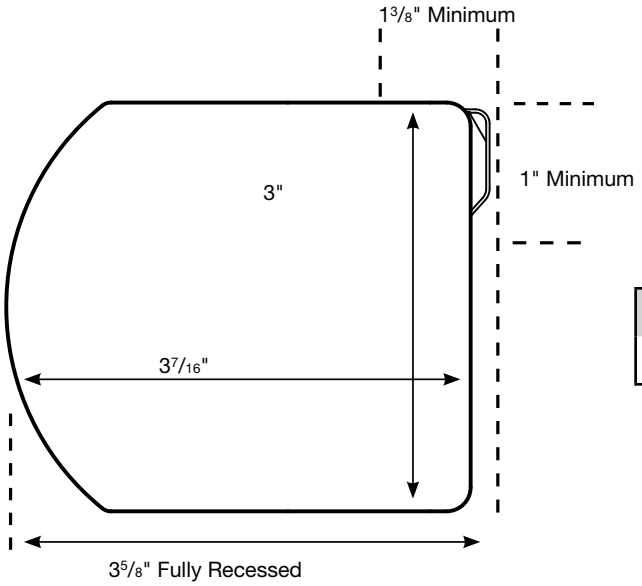
The fabric width is narrower than the finished shade width of the tube and its components. See chart below for light gap.

Motor End		Idle End	
Inside Mount (inches)	**Outside Mount** (inches)	**Inside Mount** (inches)	**Outside Mount** (inches)
11/16	1	3/4	11/16

Layered Shades Size Considerations

Style Name	Maximum Width* (inches)	Maximum Height* (inches)	Style Name	Maximum Width* (inches)	Maximum Height* (inches)
Atlantic Waves	100	75	Herard	97	77
Bernina	96	110	Linen Dream	95	72
Coastal Collection	98	75	Oceanfront	99	60
Coastal Ridge	98	60	Palmetto	97	100
Cordillera	85	75	Papyrus	98	60
Cottonwood	101	100	Refreshed	93	84
Crestones	97	84	Riptide	100	110
Culebra	95	110	Seascape	98	77
Glorieta	98	110	Seaside Resort	99	110
Glorieta Sheen	98	110	Spascape	100	77
Heathered	95	77	Vanoise	91	95

Minimum width: 16".
Minimum length: 12".
*If the height is shorter than the maximum, a slightly larger width may be available to order. Maximum width is 102".



Fabric-Wrapped Cassette

Minimum Mounting Depth	1 3/8"
Minimum Mounting Depth, Flush Mount	3 5/8"

Size Considerations

Overture Sheer Shades Motorized Lift

Order Entry: 12V Z-Wave and Bluetooth Motor



Refer to individual product information guide for specific option for the product being ordered.

See page 2 for benefits of using Bluetooth & Z-wave motorization.

Features

- Motor located on right or left side; standard is on right
- Fabric wrapped cassette standard and creates a cohesive appearance in the window
- Available as corner and bay window application
- Not available with hold down brackets or side mount brackets
- Not available with Wood Cornice or Valance

Control and Power Options

- Multiple control and power options available; see Z-Wave options for availability

NOTE: Motorization components and accessories have a five-year limited warranty, excluding batteries.

Light Gap

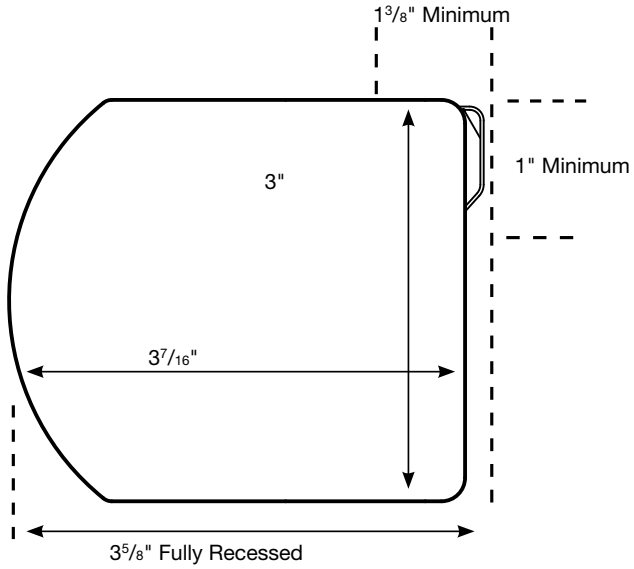
The fabric width is narrower than the finished shade width of the tube and its components. See chart below for light gap.

Motor End		Idle End	
Inside Mount (inches)	**Outside Mount** (inches)	**Inside Mount** (inches)	**Outside Mount** (inches)
1	15/16	11/16	5/8

Sheer Shades Size Considerations

Style Name	Maximum Width* (inches)	Maximum Height* (inches)	Style Name	Maximum Width* (inches)	Maximum Height* (inches)
Alpine 2"	79	110	Modern Grid 1" 5302, 5303, 5304	98	87
Coastal Waves 2"	96	105	Modern Grid 1" 5300	94	75
Deco Diamond 2"	96	105	Roslin 1"	94	75
Deco Diamond 3"	96	65	San Simeon 3"	96	65
Evening Star 2"	71	85	Starlight 2"	96	105
Glessner 2"/Glessner 3"	96	105	Starlight 3"	96	65
Glessner Sheen 2"/Glessner Sheen 3"	98	110	Sun Reflections 2"	96	105
Glessner Woven 2"/Glessner Woven 3"	96	110	Surfside 2"	96	105
Lustrous 1"	102	69	Surfside 3"	96	65
Lustrous 2"	96	105	Winchester 1"	97	87
Marisco 2"/Marisco 2 3/4"	94	99	Winchester Sheen 1"	102	69
Modern Grid 1" 5301	102	69	Winchester Woven 1"	97	87

Minimum width: 16".
Minimum length: 12" .
*If the height is shorter than the maximum, a slightly larger width may be available to order. Maximum width is 102".



Fabric-Wrapped Cassette

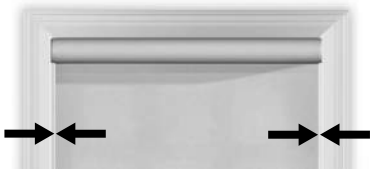
Minimum Mounting Depth	1 3/8"
Minimum Mounting Depth, Flush Mount	3 5/8"

Size Considerations

Lightweaves® Roller and Solar Shades Motorized Lift

Order Entry: 12V Z-Wave and Bluetooth Motor





Inside Mount Light Gap
Refer to Light Gap Chart

Refer to individual product information guide for specific option for the product being ordered.
See page 2 for benefits of using Bluetooth & Z-wave motorization.

Product Specifications

- Motor located on right or left side; standard is on right
- Available with standard or reverse roll; reverse roll not available with any valance option
- Available with valance styles: cassette, contour, fascia, wood valance and wood cornice
- Available as corner and bay window application
- Available with fabric rotated 90° (width for height) and seaming
- Available with as Dual Shade (integrates two fabrics that can be independently raised and lowered as needed); each shade requires a power source)
- Available with finishing options: scallops, gimp trim, bead trim
- Available with side and sill channels and pocket
- Not available with hold down brackets

Control and Power Options

- Multiple control and power options available; see Z-Wave options for availability

NOTE: Motorization components and accessories have a five-year limited warranty, excluding batteries.

Light Gap		
Valance Type	**Motor End (Inside Mount)**	**Idle End (Inside Mount)**
Contour, Fascia, Flat, No Valance	9/16	7/8
Cassette - all sizes	9/16	1
Dual - No Cassette	9/16	7/8
Dual with Cassette	9/16	1

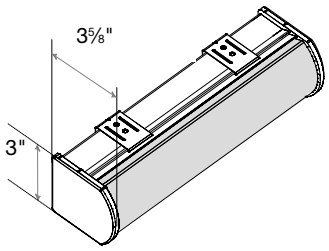
Size Considerations	
Minimum Width (inches)	**Minimum Height** (inches)
16	13

NOTE: See size charts on following pages.

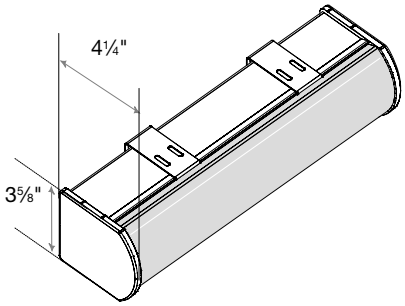
Size Considerations

Motorized Lift, and Dual Shade: Mounting Depth Illustrations

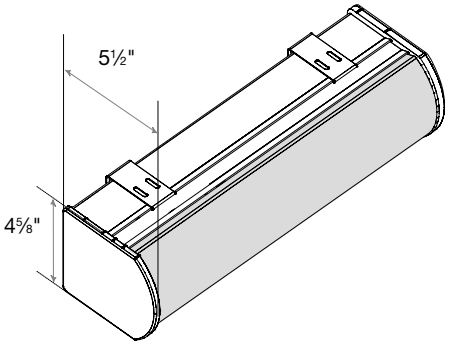
The following diagrams illustrate the mounting depth requirements for shades mounted inside window casements.



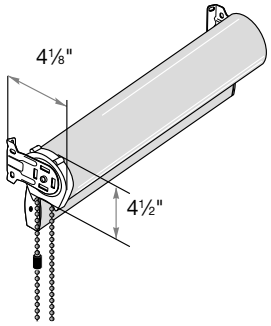
Small Cassette Valance
1⅜" Minimum Inside Mount



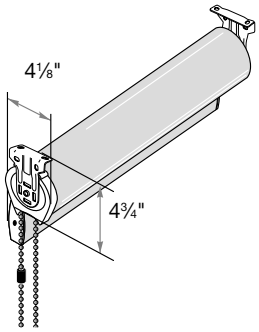
Medium Cassette Valance
1¾" Minimum Inside Mount



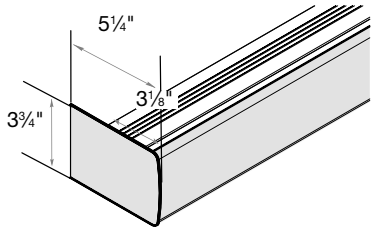
Large/Dual Cassette Valance
1¾" Minimum Inside Mount



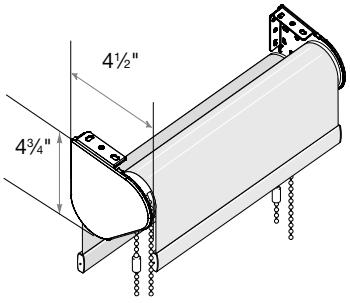
No Valance*
¾" Minimum Inside/Side Mount



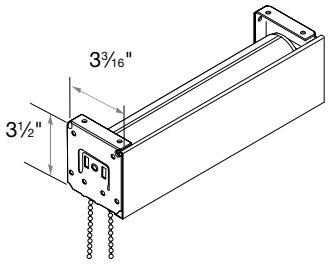
No Valance*
4⅛" Minimum Inside/Top Mount



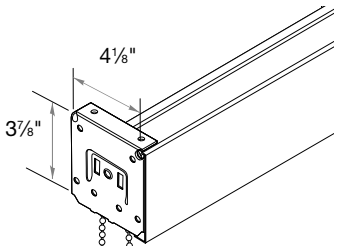
Contour Valance
2⁷⁄₁₆") Minimum Inside Mount
(return can be trimmed)



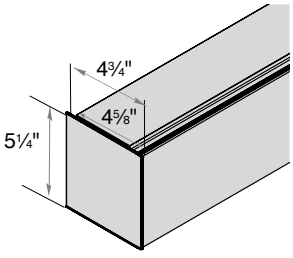
Dual Shade—No Cassette Valance
2" Minimum Inside/Top Mount
¾" Minimum Inside/Side Mount



3" Fascia
2¾" Minimum Inside/Top Mount
¾" Minimum Inside/Side Mount



4" Fascia
3¾" Minimum Inside/Top Mount
1½" Minimum Inside/Side Mount



Flat Valance
2¹⁵⁄₁₆ Minimum Inside Mount
(return can be trimmed)

12V Non-Rechargeable
Non-rechargeable Motor
Minimum Width: 16"
Minimum Height: 13"

Features and Size Considerations

Lightweaves Roller and Solar Shades: 12-Volt Motor Maximum Shade Size

Valance Type	Normal Fabric Orientation										Fabric Turned Width for Height (railroaded)									
	Small Cassette		Medium Cassette		Large Cassette/ Contour Valance/ No Cassette/ No Valance		3" Fascia		4" Fascia		Small Cassette		Medium Cassette		Large Cassette/ Contour Valance/ No Cassette/ No Valance at Maximum Width		3" Fascia		4" Fascia	
Fabric	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)
Aberdeen BO(Ingenue Pearl; Effervescene; Pristine; Dulcet Graphite)	66	114	65	126	65	126	65	126	65	126	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Aberdeen LF(Ingenue Pearl; Effervescene; Pristine; Dulcet Graphite)	92	127	92	137	92	137	92	137	92	137	83	84	83	84	83	84	83	84	83	84
Arboretum BO(Serene; Monarch; Sirius; Distinguished)	87	97	82	131	82	131	82	131	82	131	75	84	75	84	75	84	75	84	75	84
Arboretum LF(Serene; Monarch; Sirius; Distinguished)	90	136	90	136	90	136	90	136	90	136	82	84	82	84	82	84	82	84	82	84
Bradley(Antique Silver; Hearthstone; Midas; Azurine; Majesty; Everest)	71	85	79	111	79	111	81	101	79	111	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Bravado BO(Magnolia; Elusive Ecru; Tumbled Stone; Canterbury Night)	73	93	82	125	82	125	84	111	82	125	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Bravado LF(Magnolia; Elusive Ecru; Tumbled Stone; Canterbury Night)	79	113	91	133	91	133	91	133	91	133	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Broadcast(Constellation; Sonnet; Cashmere; Alfresco; Motif; Taliesin; Austere; Continental; Simplicity; Genuine; Gourmet; Serenade)	70	79	77	100	77	100	79	95	77	100	70	79	77	100	77	100	79	95	77	100
Cambridge LF(White; Off White; Inkwell; Clay; Hawaiian Blue; Academy; Mirage; Vernal Pond; Ivory)	94	121	94	121	94	121	94	121	94	121	95	110	95	110	95	110	95	110	95	110
Cambridge RD(Hawaiian Blue; Academy; Mirage; Vernal Pond; White; Off White; Inkwell ; Clay ; Ivory; Misty)	85	114	82	139	82	139	82	139	82	139	86	108	86	108	86	108	86	108	86	108
Cloud Frost(Fading Nimbus; Shell; Creamy Mocha)	80	120	80	120	80	120	80	120	80	120	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Cloud Frost(Sea Stone)	82	102	80	120	80	120	80	120	80	120	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Complex(Couture; Chance; Oceans; Visage)	71	84	79	110	79	110	80	103	79	110	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Conservancy -LF(Edelweiss; Feather Grass; Golden Morel; Flowering Ash; Silver Maple; Black Peony; Sea Salt)	74	91	72	118	72	118	72	118	72	118	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Conservancy-BO(Edelweiss; Feather Grass; Golden Morel; Flowering Ash; Silver Maple; Black Peony; Sea Salt)	56	87	63	114	63	114	64	103	63	114	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Consummate Silk(Opalescence; Posh Platinum ; Bright Champagne; Pale Gold; Sandstone; Seafoam)	79	96	79	144	79	144	79	138	79	144	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Debonair(Weekender Twill; Tan Gaberdine; Natural White; Harberdasher Gray)	92	106	89	132	89	132	89	132	89	132	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Delphine BO(Mythical Gray; Evocative White; Island Paradise; Dark Earth)	72	101	82	123	82	123	82	120	82	123	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR

NOTES: Due to continuous manufacturing improvements, minimums and maximums are subject to change. Please call customer service for up to date size considerations.See dual shade section for motorization information.

12V Non-Rechargeable
Non-rechargeable Motor
Minimum Width: 16"
Minimum Height: 13"

Features and Size Considerations

Lightweaves Roller and Solar Shades: 12-Volt Motor Maximum Shade Size

Valance Type	Normal Fabric Orientation										Fabric Turned Width for Height (railroaded)									
	Small Cassette		Medium Cassette		Large Cassette/ Contour Valance/ No Cassette/ No Valance		3" Fascia		4" Fascia		Small Cassette		Medium Cassette		Large Cassette/ Contour Valance/ No Cassette/ No Valance at Maximum Width		3" Fascia		4" Fascia	
Fabric	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)
Delphine LF(Mythical Gray; Evocative White; Island Paradise; Dark Earth)	94	118	94	119	94	119	94	119	94	119	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
EcoEncore(Mint Condition; Lunar Light; Cocoa Powder)	95	119	95	119	95	119	95	119	95	119	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Empirical(White Shimmer; Complex Carbon; Modern Gray; Classic Khaki)	93	123	93	123	93	123	93	123	93	123	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Emporium(Bookplate White)	88	120	88	124	88	124	88	124	88	124	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Emporium(Silver Dollar ; Vintage Letterpress ; Sheet Music; Stepping Stone)	74	115	85	133	85	133	85	133	85	133	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Emporium(Sepia Snapshot)	88	98	82	144	82	144	82	141	82	144	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Essential(Classic White; Creamy Beige; Taupe; Smokey; Black; Black on Black; Forest Green; Canyon ; Beige ; Stone; Black)	70	144	70	144	70	144	70	144	70	144	77	62	77	62	77	62	77	62	77	62
Exposition(Consummate; Genesis; Wishlist; Resonance)	75	67	82	104	80	116	71	92	80	116	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Gleam(Gold Rush; Ebony Glimmer; Silver Shine; Glistening Waterfall)	78	106	76	122	76	122	76	122	76	122	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Harmony(Pebble ; Tassel; Marina; Shiplap; Cityscape ; Harvest; Lavender)	91	132	91	133	91	133	91	133	91	133	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
LiveWell(Dew Kissed; Finely Frosted; Succulent; Sandbar; Icelandic; Seaspray)	70	89	79	109	79	109	79	109	79	109	70	87	83	86	83	86	83	86	83	86
Manifest BO(Freshwater Pearl; Flint Rock; Savvy Gray; Lifting Fog; Ciabatta; Cream Filled)	82	140	82	144	82	144	82	144	82	144	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Manifest LF(Freshwater Pearl; Flint Rock; Savvy Gray; Lifting Fog; Ciabatta; Cream Filled)	92	144	92	144	92	144	92	144	92	144	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Momentum(Soft Seashell; Parisian Cream; Luxe Leather; Etched Brown; Brushed Pewter; Toasted Spice)	71	94	80	120	80	120	81	113	80	120	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Monticello(Mist; Burro; Dune; Tikki; Rust)	73	71	79	108	79	109	84	84	79	109	73	71	83	86	83	86	84	84	83	86
Nantucket(Vintage Veil; Taupe Utopia; Rich Sable; Spice)	77	64	84	98	80	122	72	89	80	122	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Pannier(Black Dahlia; Creamy Mocha; Feather White; Riverbed Brown)	75	67	81	104	80	111	71	89	80	111	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Paving Stone BO(Bechamel; Pale Adobe; Eventide; Almond Butter)	81	112	79	126	79	126	79	126	79	126	82	105	82	105	82	105	82	105	82	105
PlanetSafe(French Pastry; Gray Perfection; Cool Cave)	94	122	94	122	94	122	94	122	94	122	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Plexus 1%(Renewal; Provisions; Chalcedony; Stately; Landmark; Travertine; Penumbra; Nutley Pier; Black Granite; Niche)	68	74	72	89	72	89	74	86	72	89	68	74	72	89	72	89	74	86	72	89

NOTES: Due to continuous manufacturing improvements, minimums and maximums are subject to change. Please call customer service for up to date size considerations.
See dual shade section for motorization information.

12V Non-Rechargeable
Non-rechargeable Motor
Minimum Width: 16"
Minimum Height: 13"

Features and Size Considerations

Lightweaves Roller and Solar Shades: 12-Volt Motor Maximum Shade Size

	Normal Fabric Orientation										Fabric Turned Width for Height (railroaded)									
Valance Type	**Small Cassette**		**Medium Cassette**		**Large Cassette/ Contour Valance/ No Cassette/ No Valance**		**3" Fascia**		**4" Fascia**		**Small Cassette**		**Medium Cassette**		**Large Cassette/ Contour Valance/ No Cassette/ No Valance at Maximum Width**		**3" Fascia**		**4" Fascia**	
Fabric	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)
Plexus 3%(Renewal; Provisions; Chalcedony; Stately; Landmark; Travertine; Penumbra; Nutley Pier; Black Granite; Niche)	68	75	73	92	73	92	75	89	73	92	68	75	73	92	73	92	75	89	73	92
Plexus 5%(Renewal; Provisions; Chalcedony; Stately; Landmark; Travertine; Penumbra; Nutley Pier; Black Granite; Niche)	68	82	73	96	73	96	73	96	73	96	68	82	73	96	73	96	73	96	73	96
Quintessence(White Enchantment; Flecked Gray; Gilded Linen; Gray Alloy; Black Facet)	65	96	74	125	74	125	75	114	74	125	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Regent(First Frost; Smoky Taupe; Fossil; Lulling Storm; Magnetic)	95	118	95	125	95	125	95	125	95	125	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Sahara Ridge(Vapor ; Alabaster; Birch Grove)	81	84	89	129	89	130	77	115	89	130	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Sakura(White Lattice; Zen Gray; Craftsman)	67	58	73	89	71	103	63	80	71	103	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Sanguine(Blue Pueblo; White Serenity; Misty Morning; Gray Estate; Montauk Slate)	73	63	78	96	76	100	68	87	76	100	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Santorini(Desert Sands; Unexpected Umber; Evocative Ivory)	76	144	76	144	76	144	76	144	76	144	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Shadow(White; Beige; Tan; Light Gray; Dark Gray)	84	97	80	123	80	123	80	123	80	123	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Sheffield(Chelsea; Henley; Windsor; Tuscon; Eclipse; Weathered; Meadow; Manor)	78	126	91	136	91	136	91	136	91	136	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Solana BO(Drift ; Blue Breeze; Dandelion Wish; Brown Tint; Black Whirlwind; Sweet Dreams)	64	87	72	114	72	114	73	103	72	114	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Spring Bloom(Kissed Olive; Cultivated Kalamata; Tropical Garden; Sunmeadow; Botanical Garden; Cherry Blossom)	92	140	92	140	92	140	92	140	92	140	84	84	84	84	84	84	84	84	84	84
Standard Weave 1%(Calcite; Polished)	83	89	79	116	79	116	79	116	79	116	83	89	80	111	80	111	80	111	80	111
Standard Weave 1%(Veranda; Café Doppio; Chiseled)	82	94	79	112	79	112	79	112	79	112	82	94	79	112	79	112	79	112	79	112
Standard Weave 10%(Calcite; Polished)	84	106	82	124	82	124	82	124	82	124	84	106	84	106	84	106	84	106	84	106
Standard Weave 10%(Veranda; Café Doppio; Chiseled)	84	101	81	121	81	121	81	121	81	121	84	101	83	106	83	106	83	106	83	106
Standard Weave 3%(Calcite; Polished)	83	96	80	120	80	120	80	120	80	120	83	96	81	113	81	113	81	113	81	113
Standard Weave 3%(Veranda; Café Doppio; Chiseled)	82	96	79	116	79	116	79	116	79	116	82	96	79	114	79	114	79	114	79	114
Standard Weave 5%(Calcite; Polished)	84	96	81	121	81	121	81	121	81	121	84	96	82	114	82	114	82	114	82	114
Standard Weave 5%(Veranda; Café Doppio; Chiseled)	82	101	80	120	80	120	80	120	80	120	82	101	81	113	81	113	81	113	81	113
Steel House(Cavern Floor; Cloud ; Buff; Chocolate Souffle)	72	99	82	121	82	121	82	118	82	121	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Tableaux(White Tranquility; Stately Gray ; Gray Opulence; Craftsman Brown; Provincial Plum; Ivory Cameo)	74	55	80	85	72	96	69	77	72	96	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR

NOTES: Due to continuous manufacturing improvements, minimums and maximums are subject to change. Please call customer service for up to date size considerations.
See dual shade section for motorization information.

12V Non-Rechargeable
Non-rechargeable Motor
Minimum Width: 16"
Minimum Height: 13"

Features and Size Considerations

Lightweaves Roller and Solar Shades: 12-Volt Motor Maximum Shade Size

Valance Type	Normal Fabric Orientation										Fabric Turned Width for Height (railroaded)									
	Small Cassette		Medium Cassette		Large Cassette/ Contour Valance/ No Cassette/ No Valance		3" Fascia		4" Fascia		Small Cassette		Medium Cassette		Large Cassette/ Contour Valance/ No Cassette/ No Valance at Maximum Width		3" Fascia		4" Fascia	
Fabric	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)	**Width** (inches)	**Height** (inches)
Terrain(Gray Frost; Pale Adobe ; Pale Rhino)	78	112	89	135	89	135	89	135	89	135	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Thesis(Weathered Stone; Bluebook White; Summer Khakis; Oxford Blue; Macho Macchiato; Dusky Titanium)	70	93	70	142	70	144	70	126	70	144	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Tuvalu(Wisteria White; Silver Tree; Dusky Botanical)	94	121	94	121	94	121	94	121	94	121	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Vanguard 1%(Authentic; Gentle Beige; Chrome; Pendulum)	83	89	79	116	79	116	79	116	79	116	83	89	80	111	80	111	80	111	80	111
Vanguard 1%(Elusive; Macedonia; Dew; Homage; Peloton)	82	94	79	112	79	112	79	112	79	112	82	94	79	112	79	112	79	112	79	112
Vanguard 3%(Authentic; Gentle Beige; Chrome; Pendulum)	83	96	80	120	80	120	80	120	80	120	83	96	81	113	81	113	81	113	81	113
Vanguard 3%(Elusive; Macedonia; Dew; Homage; Peloton)	82	96	79	116	79	116	79	116	79	116	82	96	79	114	79	114	79	114	79	114
Vanguard 5%(Authentic; Gentle Beige; Chrome; Pendulum)	84	96	81	121	81	121	81	121	81	121	84	96	82	114	82	114	82	114	82	114
Vanguard 5%(Elusive; Macedonia; Dew; Homage; Peloton)	82	101	80	120	80	120	80	120	80	120	82	101	81	113	81	113	81	113	81	113
Wayfarer(Sultry White; Maldives Gray)	92	144	92	144	92	144	92	144	92	144	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Whitcomb(Paloverde; Invitation; Juniper)	90	118	89	132	89	132	89	132	89	132	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Whitehall(Veranda; Wolverine; Nectar; Westminster; Seattle Mist)	87	106	82	144	82	144	82	144	82	144	87	106	87	108	87	108	87	108	87	108

NOTES: Due to continuous manufacturing improvements, minimums and maximums are subject to change. Please call customer service for up to date size considerations.
See dual shade section for motorization information.

Features and Size Considerations

This table provides the maximum shade size available by fabric, control type, and valance style.
Fabric turned width for height (railroaded) may curl along its edge. This is not a defect in the product.

Only the large cassette valance is available for the dual shade.
Small and medium cassette valances are not available.

Lightweaves Roller and Solar Shades: Dual Shades Maximum Shade Size

Valance Type	Normal Fabric Orientation				Fabric Turned Width For Height (railroaded)							
	12V Motor No Cassette/ No Valance		12V Motor Large Cassette		12V Motor No Cassette/No Valance at Max Length		12V Motor No Cassette/ No Valance at Max Width		12V Motor Large Cassette at Max Length		12V Motor Large Cassette at Max Width	
Fabric	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)
Aberdeen BO (Ingenue Pearl; Effervescene; Pristine; Dulcet Graphite)	67	108	68	97	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Aberdeen LF (Ingenue Pearl; Effervescene; Pristine; Dulcet Graphite)	92	123	92	109	83	84	98	82	83	84	98	82
Arboretum BO (Serene; Monarch; Sirius; Distinguished)	72	108	73	101	75	84	89	82	75	84	89	82
Arboretum LF (Serene; Monarch; Sirius; Distinguished)	90	136	91	121	82	84	96	82	82	84	96	82
Bradley (Antique Silver; Hearthstone; Midas; Azurine; Majesty; Everest)	71	83	72	75	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Bravado BO (Magnolia; Elusive Ecru; Tumbled Stone; Canterbury Night)	74	90	75	82	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Bravado LF (Magnolia; Elusive Ecru; Tumbled Stone; Canterbury Night)	79	110	81	98	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Broadcast (Constellation; Sonnet; Cashmere; Alfresco; Motif; Taliesin; Austere; Continental; Simplicity; Genuine; Gourmet; Serenade)	70	77	71	70	70	77	87	62	71	70	88	55
Cambridge LF (White; Off White; Inkwell; Clay; Hawaiian Blue; Academy; Mirage; Vernal Pond; Ivory)	94	121	94	121	95	110	95	110	95	110	95	110
Cambridge RD (Hawaiian Blue; Academy; Mirage; Vernal Pond; White; Off White; Inkwell ; Clay ; Ivory; Misty)	86	109	87	97	86	108	86	108	87	97	87	97
Cloud Frost (Fading Nimbus; Shell; Creamy Mocha)	80	120	80	119	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Cloud Frost (Sea Stone)	82	99	83	88	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Complex (Couture; Chance; Oceans; Visage)	71	84	72	76	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR

NOTES: Due to continuous manufacturing improvements, minimums and maximums are subject to change. Please call customer service for up to date size considerations.
Seams may be added to fabrics to accommodate long shade requirements. Seams will be placed as close to the tube as possible; seam location is not selectable. Seams are visible when the shade is fully extended. Not available with RU28 rechargeable motor or RU30 Simple RTS motor.

Features and Size Considerations

This table provides the maximum shade size available by fabric, control type, and valance style.
Fabric turned width for height (railroaded) may curl along its edge. This is not a defect in the product.
Only the large cassette valance is available for the dual shade.
Small and medium cassette valances are not available.

Lightweaves Roller and Solar Shades: Dual Shades Maximum Shade Size

Valance Type	Normal Fabric Orientation				Fabric Turned Width For Height (railroaded)							
	12V Motor No Cassette/ No Valance		12V Motor Large Cassette		12V Motor No Cassette/No Valance at Max Length		12V Motor No Cassette/ No Valance at Max Width		12V Motor Large Cassette at Max Length		12V Motor Large Cassette at Max Width	
Fabric	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)
Conservancy -LF (Edelweiss; Feather Grass; Golden Morel; Flowering Ash; Silver Maple; Black Peony; Sea Salt)	74	88	63	97	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Conservancy-BO (Edelweiss; Feather Grass; Golden Morel; Flowering Ash; Silver Maple; Black Peony; Sea Salt)	56	84	58	74	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Consummate Silk (Opalescence; Posh Platinum ; Bright Champagne; Pale Gold; Sandstone; Seafoam)	71	112	72	102	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Debonair (Weekender Twill; Tan Gaberdine; Natural White; Harberdasher Gray)	76	125	77	113	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Delphine BO (Mythical Gray; Evocative White; Island Paradise; Dark Earth)	72	98	74	88	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Delphine LF (Mythical Gray; Evocative White; Island Paradise; Dark Earth)	95	110	79	126	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
EcoEncore (Mint Condition; Lunar Light; Cocoa Powder)	95	119	95	119	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Empirical (White Shimmer; Complex Carbon; Modern Gray; Classic Khaki)	93	123	93	123	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Emporium (Bookplate White)	89	115	75	119	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Emporium (Silver Dollar ; Vintage Letterpress; Sheet Music; Stepping Stone)	74	115	75	105	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Emporium (Sepia Snapshot)	73	111	74	104	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Essential (Classic White; Creamy Beige; Taupe; Smokey; Black; Black on Black; Forest Green; Canyon; Beige; Stone; Black)	70	144	70	144	77	62	91	60	77	62	91	60
Exposition (Consummate; Genesis; Wishlist; Resonance)	76	65	77	59	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR

NOTES: Due to continuous manufacturing improvements, minimums and maximums are subject to change. Please call customer service for up to date size considerations.
Seams may be added to fabrics to accommodate long shade requirements. Seams will be placed as close to the tube as possible; seam location is not selectable. Seams are visible when the shade is fully extended. Not available with RU28 rechargeable motor or RU30 Simple RTS motor.

Features and Size Considerations

This table provides the maximum shade size available by fabric, control type, and valance style.
Fabric turned width for height (railroaded) may curl along its edge. This is not a defect in the product.

Only the large cassette valance is available for the dual shade.
Small and medium cassette valances are not available.

Lightweaves Roller and Solar Shades: Dual Shades Maximum Shade Size

Valance Type	Normal Fabric Orientation				Fabric Turned Width For Height (railroaded)							
	12V Motor No Cassette/ No Valance		12V Motor Large Cassette		12V Motor No Cassette/No Valance at Max Length		12V Motor No Cassette/ No Valance at Max Width		12V Motor Large Cassette at Max Length		12V Motor Large Cassette at Max Width	
Fabric	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)
Gleam (Gold Rush; Ebony Glimmer; Silver Shine; Glistening Waterfall)	78	102	80	90	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Harmony (Pebble ; Tassel; Marina; Shiplap; Cityscape ; Harvest; Lavender)	92	124	93	112	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
LiveWell (Dew Kissed; Finely Frosted; Succulent; Sandbar; Icelandic; Seaspray)	70	89	71	82	70	87	86	73	71	82	88	65
Manifest BO (Freshwater Pearl; Flint Rock; Savvy Gray; Lifting Fog; Ciabatta; Cream Filled)	84	131	85	119	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Manifest LF (Freshwater Pearl; Flint Rock; Savvy Gray; Lifting Fog; Ciabatta; Cream Filled)	92	144	92	144	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Momentum (Soft Seashell; Parisian Cream; Luxe Leather; Etched Brown; Brushed Pewter; Toasted Spice)	71	92	72	83	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Monticello (Mist; Burro; Dune; Tikki; Rust)	74	68	75	62	74	68	91	54	75	62	92	48
Nantucket (Vintage Veil; Taupe Utopia; Rich Sable; Spice)	77	62	78	56	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Pannier (Black Dahlia; Creamy Mocha; Feather White; Riverbed Brown)	75	65	76	59	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Paving Stone BO(Bechamel; Pale Adobe; Eventide; Almond Butter)	82	106	83	95	82	105	82	105	83	95	83	95
PlanetSafe (French Pastry; Gray Perfection; Cool Cave)	94	122	94	122	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Plexus 1% (Renewal; Provisions; Chalcedony; Stately; Landmark; Travertine; Penumbra; Nutley Pier; Black Granite; Niche)	68	72	70	65	68	72	85	57	70	65	87	50

NOTES: Due to continuous manufacturing improvements, minimums and maximums are subject to change. Please call customer service for up to date size considerations.
Seams may be added to fabrics to accommodate long shade requirements. Seams will be placed as close to the tube as possible; seam location is not selectable. Seams are visible when the shade is fully extended. Not available with RU28 rechargeable motor or RU30 Simple RTS motor.

Features and Size Considerations

This table provides the maximum shade size available by fabric, control type, and valance style.
Fabric turned width for height (railroaded) may curl along its edge. This is not a defect in the product.
Only the large cassette valance is available for the dual shade.
Small and medium cassette valances are not available.

Lightweaves Roller and Solar Shades: Dual Shades Maximum Shade Size

Valance Type	Normal Fabric Orientation				Fabric Turned Width For Height (railroaded)							
	12V Motor No Cassette/ No Valance		12V Motor Large Cassette		12V Motor No Cassette/No Valance at Max Length		12V Motor No Cassette/ No Valance at Max Width		12V Motor Large Cassette at Max Length		12V Motor Large Cassette at Max Width	
Fabric	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)
Plexus 3% (Renewal; Provisions; Chalcedony; Stately; Landmark; Travertine; Penumbra; Nutley Pier; Black Granite; Niche)	69	73	70	66	69	73	85	58	70	66	87	51
Plexus 5% (Renewal; Provisions; Chalcedony; Stately; Landmark; Travertine; Penumbra; Nutley Pier; Black Granite; Niche)	68	80	69	72	68	80	84	64	69	72	86	56
Quintessence (White Enchantment; Flecked Gray; Gilded Linen; Gray Alloy; Black Facet)	66	93	67	84	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Regent (First Frost; Smoky Taupe; Fossil; Lulling Storm; Magnetic)	96	114	81	124	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Sahara Ridge (Vapor; Alabaster; Birch Grove)	81	82	82	74	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Sakura (White Lattice; Zen Gray; Craftsman)	67	56	69	50	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Sanguine (Blue Pueblo; White Serenity; Misty Morning; Gray Estate; Montauk Slate)	74	61	75	54	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Santorini (Desert Sands; Unexpected Umber; Evocative Ivory)	76	144	76	132	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Shadow (White; Beige; Tan; Light Gray; Dark Gray)	84	93	71	97	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Sheffield (Chelsea; Henley; Windsor; Tuscon; Eclipse; Weathered; Meadow; Manor)	78	122	80	109	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Solana BO(Drift ; Blue Breeze; Dandelion Wish; Brown Tint; Black Whirlwind; Sweet Dreams)	64	84	66	76	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Spring Bloom (Kissed Olive; Cultivated Kalamata; Tropical Garden; Sunmeadow; Botanical Garden; Cherry Blossom)	92	140	92	127	84	84	98	82	84	84	98	82

NOTES: Due to continuous manufacturing improvements, minimums and maximums are subject to change. Please call customer service for up to date size considerations.
Seams may be added to fabrics to accommodate long shade requirements. Seams will be placed as close to the tube as possible; seam location is not selectable. Seams are visible when the shade is fully extended. Not available with RU28 rechargeable motor or RU30 Simple RTS motor.

Features and Size Considerations

This table provides the maximum shade size available by fabric, control type, and valance style.
Fabric turned width for height (railroaded) may curl along its edge. This is not a defect in the product.

Only the large cassette valance is available for the dual shade.
Small and medium cassette valances are not available.

Lightweaves Roller and Solar Shades: Dual Shades Maximum Shade Size

Valance Type	Normal Fabric Orientation				Fabric Turned Width For Height (railroaded)							
	12V Motor No Cassette/ No Valance		12V Motor Large Cassette		12V Motor No Cassette/No Valance at Max Length		12V Motor No Cassette/ No Valance at Max Width		12V Motor Large Cassette at Max Length		12V Motor Large Cassette at Max Width	
Fabric	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)
Standard Weave 1% (Calcite; Polished)	84	86	71	87	84	86	84	86	71	87	86	76
Standard Weave 1% (Veranda; Café Doppio; Chiseled)	82	91	68	101	82	91	82	91	68	101	84	80
Standard Weave 10% (Calcite; Polished)	85	102	71	110	85	102	85	102	71	108	87	90
Standard Weave 10% (Veranda; Café Doppio; Chiseled)	84	98	71	101	84	98	84	98	71	101	86	86
Standard Weave 3% (Calcite; Polished)	84	92	70	101	84	92	84	92	70	101	86	82
Standard Weave 3% (Veranda; Café Doppio; Chiseled)	83	92	71	87	83	92	83	92	71	87	85	82
Standard Weave 5% (Calcite; Polished)	85	92	71	101	85	92	85	92	71	101	87	82
Standard Weave 5% (Veranda; Café Doppio; Chiseled)	83	97	85	86	83	97	83	97	85	86	85	86
Steel House (Cavern Floor; Cloud ; Buff; Chocolate Souffle)	72	96	74	87	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Tableaux (White Tranquility; Stately Gray; Gray Opulence; Craftsman Brown; Provincial Plum; Ivory Cameo)	74	53	76	47	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Terrain (Gray Frost; Pale Adobe ; Pale Rhino)	78	110	79	99	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Thesis (Weathered Stone; Bluebook White; Summer Khakis; Oxford Blue; Macho Macchiato; Dusky Titanium)	70	90	70	82	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Tuvalu (Wisteria White; Silver Tree; Dusky Botanical)	94	121	95	107	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Vanguard 1%(Authentic; Gentle Beige; Chrome; Pendulum)	84	86	71	87	84	86	84	86	71	87	86	76
Vanguard 1%(Elusive; Macedonia; Dew; Homage; Peloton)	82	91	68	101	82	91	82	91	68	101	84	80

NOTES: Due to continuous manufacturing improvements, minimums and maximums are subject to change. Please call customer service for up to date size considerations.
Seams may be added to fabrics to accommodate long shade requirements. Seams will be placed as close to the tube as possible; seam location is not selectable. Seams are visible when the shade is fully extended. Not available with RU28 rechargeable motor or RU30 Simple RTS motor.

Features and Size Considerations

This table provides the maximum shade size available by fabric, control type, and valance style.
Fabric turned width for height (railroaded) may curl along its edge. This is not a defect in the product.
Only the large cassette valance is available for the dual shade.
Small and medium cassette valances are not available.

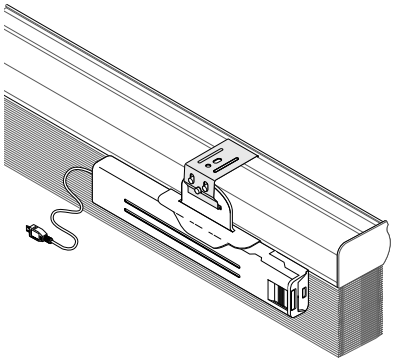
Lightweaves Roller and Solar Shades: Dual Shades Maximum Shade Size

Valance Type	Normal Fabric Orientation				Fabric Turned Width For Height (railroaded)							
	12V Motor No Cassette/ No Valance		12V Motor Large Cassette		12V Motor No Cassette/No Valance at Max Length		12V Motor No Cassette/ No Valance at Max Width		12V Motor Large Cassette at Max Length		12V Motor Large Cassette at Max Width	
Fabric	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)	**W** (in)	**H** (in)
Vanguard 3% (Authentic; Gentle Beige; Chrome; Pendulum)	84	92	70	101	84	92	84	92	70	101	86	82
Vanguard 3% (Elusive; Macedonia; Dew; Homage; Peloton)	83	92	71	87	83	92	83	92	71	87	85	82
Vanguard 5% (Authentic; Gentle Beige; Chrome; Pendulum)	85	92	71	101	85	92	85	92	71	101	87	82
Vanguard 5% (Elusive; Macedonia; Dew; Homage; Peloton)	83	97	85	86	83	97	83	97	85	86	85	86
Wayfarer (Sultry White; Maldives Gray)	92	144	92	144	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Whitcomb (Paloverde; Invitation; Juniper)	91	114	76	126	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR	NO RR
Whitehall (Veranda; Wolverine; Nectar; Westminster; Seattle Mist)	88	102	73	114	88	102	88	102	73	109	89	90

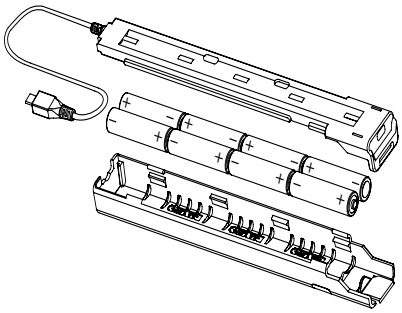
NOTES: Due to continuous manufacturing improvements, minimums and maximums are subject to change. Please call customer service for up to date size considerations.
Seams may be added to fabrics to accommodate long shade requirements. Seams will be placed as close to the tube as possible; seam location is not selectable. Seams are visible when the shade is fully extended. Not available with RU28 rechargeable motor or RU30 Simple RTS motor.

Options

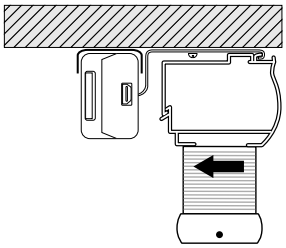
Power Considerations



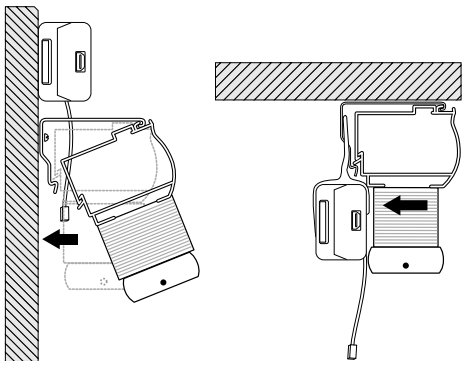
Cellular and Pleated
Battery Consideration



Battery Case (non-rechargeable solution)
Dimensions: 9 1/4" x 1 1/4" x 7/8"

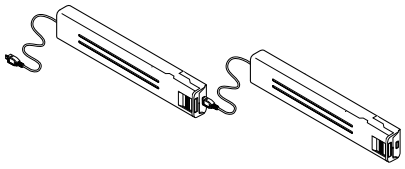


Ceiling/Inside Mount



Outside Mount

Inside Mount



Dual Battery Cases

Motors can be powered by non-rechargeable AA lithium batteries, rechargeable battery pack, plug-in transformer, or multi-motor power supply. Each shade requires a motor and appropriate power source.

Power Considerations
Larger shades consume more power while operating. When choosing the appropriate power source based upon the shade size we recommend the following power sources for the best performance.

Shade Size square inches	**Non-Rechargeable Recommended Power Source**	**Rechargeable Battery Pack Estimated Battery Life Before Recharge* Single Pack Only**
0 to 3,600	Batteries (single or dual), plug-in, or multi-motor power supply	~12 Months
3,600 to 7,200	Dual battery cases, plug-in, or multi-motor power supply	~6-12 Months
>7,200	Plug-in or multi-motor power supply only	~6 Months or Less

Battery Case Considerations
Battery power recommended for maximum of 10 shades for best battery performance.
Battery cases are installed in space outside of the product and can be a challenge to hide in some windows.

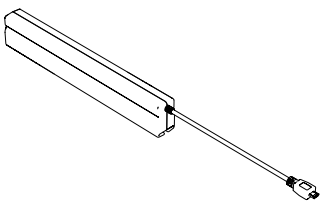
For Inside Mounts
- The cleanest and simplest method available for cellular and pleated shades is the integrated battery case hanger; this hanger attaches directly to a shade bracket to support the battery case while allowing the case to be removed for battery changes; additional recessed space will be needed

For Outside Mounts
- For outside mounts, battery cases can be installed above or to the side of the shade

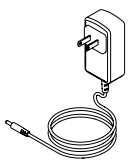
NOTE: For best performance with non-rechargeable solutions, use only AA lithium batteries.

Dual battery cases installed end-to-end: require 21" of space (including connectors)

Battery case minimum recessed space (installed with bracket): product minimum recessed space + ¾"



Rechargeable Battery Pack
Dimensions: 8 9/16" x 1 7/16" x 15/16"



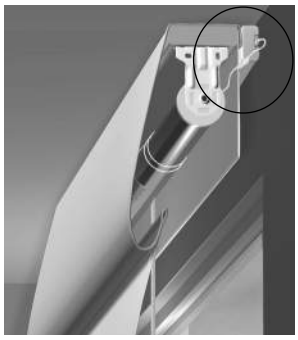
Li-Ion Charger

Options

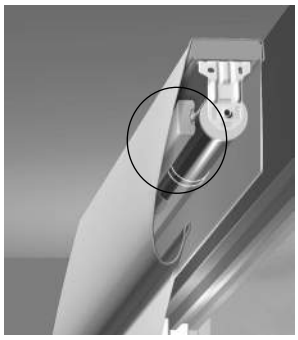
Power Considerations

Solar/Roller, Natural Shades, Artisan Roman, Layered, and Sheer Shade Battery Considerations

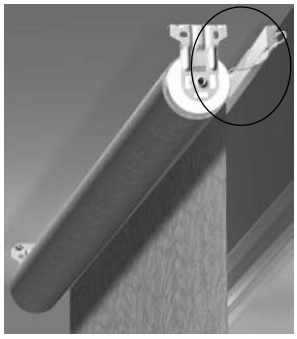




Artisan Roman/Natural Shades
Battery Pack
Mounted Behind



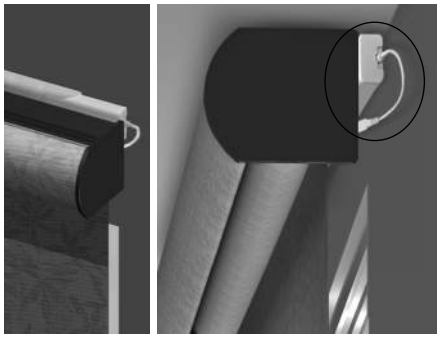
Artisan Roman/Natural Shades
Battery Pack
Mounted on Headrail



Solar Shades
Outside Mount
Battery Pack



Solar Shades
Inside Mount Battery Pack

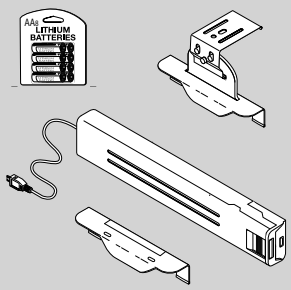


Solar, Layered, and
Sheer Shades with Cassette
Battery Pack

Motorization Power Options

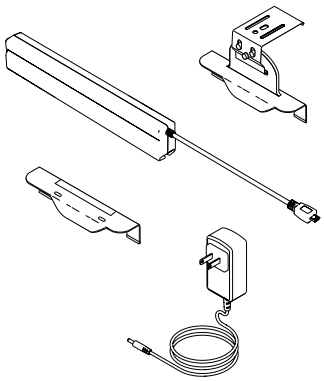
Power Components

NOTE: These power supplies are not compatible with Radio Technology Somfy motors.



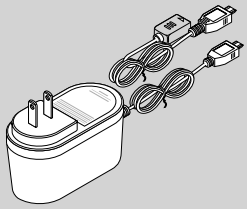
Reloadable Battery Case

- Reloadable: available with or without batteries
- Multiple mounting options provided
- Simple case design allows for easy battery replacement
- Recommend shades greater than 3,600 square inches utilize two single battery cases (dual cases) to extend battery life
- For best performance, use only AA lithium batteries (each case requires 8 AA lithium batteries)
- 48" and 96" extensions available, maximum of 2 per motor
- Battery power recommended for maximum of 10 shades for best battery performance



Rechargeable Battery Pack

- The rechargeable battery pack comes as a sealed pack with the batteries already included. Batteries are charged by plugging the charger into the pack.
- Multiple mounting options provided.
- 48" and 96" motor-to-battery extensions available, maximum of 2 per motor
- Rechargeable battery packs ship at 30% charge and must be fully charged prior to installation
- Dual pack configuration is not available or necessary for the rechargeable battery packs
- One Lithium-Ion Charger is required per order; sold separately
- Lithium-Ion charger cable is 6 feet
- Lithium-Ion charger has an LED that turns red to indicate charging and green to indicate fully charged
- Fully charging the rechargeable battery pack takes an average of 5 hours



Plug-In Transformer

- Eliminates the need for batteries
- Small plug profile
- Cord can be concealed behind curtains or along trim
- 72" power cord and 96" extension cable (power cord and extension cable cannot be cut to length)
- 48" and 96" extensions available, maximum of 2 per motor
- We recommend shades greater than 7,200 square inches utilize a transformer to eliminate changing batteries frequently
- Available in white only

Transformer Dimensions

- 3¼" wide x 2" deep (not including plug) x 1½" tall (as you look at the plug in the outlet)
- Wire management components are not included with your motorized shade system
  - Refer to 12 volt power considerations for further details



Multi-Motor Power Supply

- Used when direct wiring the motorized window coverings
- Each motor is “home run” wired back to the multi-motor power supply using 16 gauge 2 conductor wire (must be purchased locally; Graber® does not supply)
- Power supply includes connectors
- Must be mounted indoors, NEMA rated
- Dimensions: 12" wide x 6" deep x 12" high
- Input: 100-120v AC / 200-240V AC at 3.3 amps
- Output: 10 amps; each shade port - 2 amp fused

NOTE: Due to the many variations of installations, wire management components are not included with your motorized shade system. There are numerous wire management products available at your local hardware store or home improvement center to help disguise the power cord when using a plug-in transformer. An example of a popular wire management accessory is wire channel. Wire channel is a vinyl sheathing that can be placed along the window casing or wall that will house and conceal exposed wiring for a clean and professional appearance.

Z-Wave Control Options

Z-Wave Motorization Controls

NOTE: These controls are not compatible with Radio Technology Somfy motors.



Standard Remote

The standard remote is meant to control an individual shade (one to one). This helps assure simple, reliable control as well as simplifying the process of readjusting pre-set positions should it become necessary—without removing power from adjacent shades. However, the standard remote can be paired to multiple shades to provide group control (onsite programming step).

- Not available for sheer or layered shades
- Includes convenient mounting hardware
- Battery included—CR2430
- Available in white
- Not available with Bottom Up/Top Down



Plus Remote

- Used to control single shades or a group of shades simultaneously
- Set and use an intermediate position for your shades
- Includes convenient mounting hardware
- Battery included—CR2430
- Available in white
- Not available with Bottom Up/Top Down



Plus Remote Decorator Wall Plate Kit (single-channel remote sold separately)

- Provides attractive mounting option to match look of existing light switches
- Locates the remote where most convenient for the user
- Helps prevent misplacing of remote when not in use
- Mounts flush to wall with included anchors, no cutting of drywall needed
- Available in white



Premium Remote (12-channel)

- 12-channel remote, controls up to 24 shades
- Control single shades on each channel or group shade performing the same function
- Control Bottom Up/Top Down cellular shades
- Shades are added to the remote fro the manufacture. Channel assignment will need to be done at time of install.
- Convenient display provides easy programming
- Set and use an intermediate position for your shades
- Includes mounting wall plate and hardware; mounts to wall with anchors (see multi-channel remote mounting options)
- Batteries included—2 AAA
- Available in white





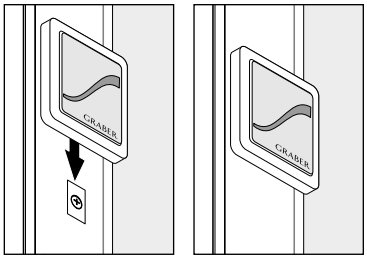
Graber Motorization Gateway

The Graber Motorization Gateway takes your motorized shades to the next level. The gateway allows you to control your shades away from your home, integrate with third party services, and schedule routines based on sunrise and sunset.

- Controls up to 10 devices (shade motors and remotes)
- Average Home Coverage: appox. 2,500 square feet depending on a variety of factors including number of walls and material of walls
- Mulitple gateways can be added to an account on the Graber Motorization App to extend coverage and number of devices
- Control single shades individually with the abiltiy to group shades in rooms for additional functionality
- Integrate directly with Amazon Alexa and Google Assistant for voice control
- Create routines routines to control multiple shades with the ability to schedule based on sunrise and sunset
- Set and use favorite positions
- Compatible with Apple and Android devices
- Gateway (shown in the image to the left) plugs directly into your wall outlet.
- Requires a 2.4Ghz, password protected, Wi-Fi network
- Multiple users can be added to an account with the option to assign different permission levels

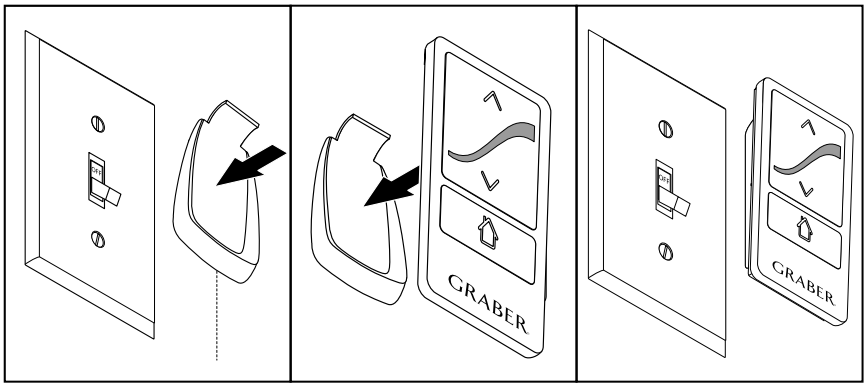
Motorization Features

Standard Remote Mounting Options

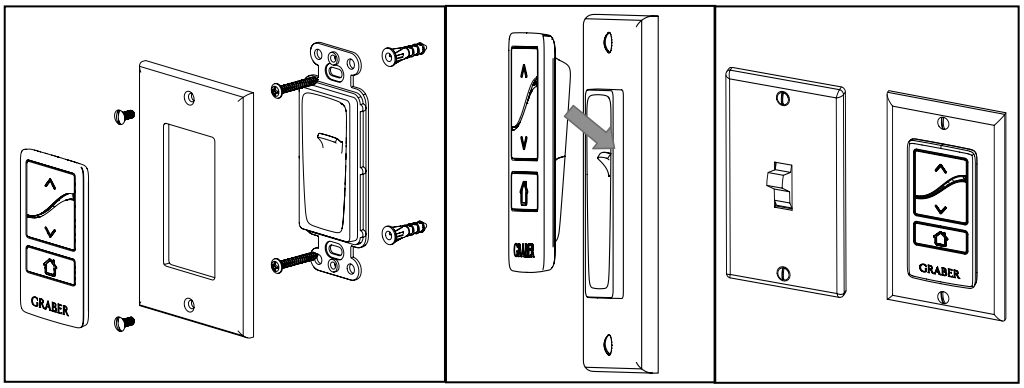


Z-Wave Standard Remote

Single-Channel Remote Mounting Options

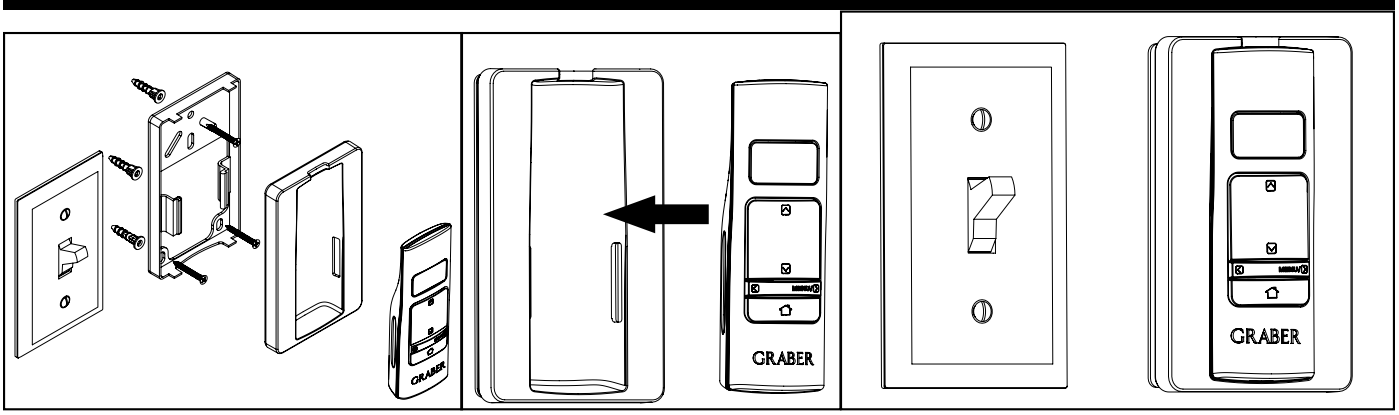


Z-Wave Plus Remote



Optional Decorator Wall Plate Mount
(see options for details)

Multi-Channel Remote Mounting Options



Z-Wave Premium Remote

GRABER

Graber is a brand of Springs Window Fashions, the Best Experience Company

Graber and the Graber logo are registered trademarks of Springs Window Fashions, LLC.

(4/23) 23-426800

GRABER.

Graber Motorization

Designer US Price List — Effective January 2024

Motorization

See product information guide for illustrations of power and control items listed below. Select motor package and add to price of shade.

Motor Pricing

See options section for descriptions and illustrations of items listed below.
For motorized lift dual shades, one (1) motor, and one (1) power source are required for each motorized shade (total of two motors and two power sources if both shades of the dual shade are motorized lift).

A. Motor Pricing

Add price of motor to blind or shade price.
Order Entry: 12V BLE and ZW Motor without Remote (option 14)

Motor Options	
Cellular, Pleated, and Classic Roman Shades	451
Roller, Solar, Layered, Artisan Roman and Sheer Shades	451
Natural Shades*	451
Cellular Bottom Up, Top Down	646

*Motor on a natural shade is priced per panel and can be ordered with multiple shades on one headrail.
NOTE: For all other non-motorization options, see individual price list for specific blind or shade.

B. Motorization Power Sources

Choose one (1) battery option or one (1) transformer per motor.

12-Volt Power Options	
Battery Cases	
Single Non-Rechargeable, Reloadable Battery Case (empty)	48
Single Non-Rechargeable, Reloadable Battery Case (filled) (Includes 8 AA lithium batteries)	115
Dual cases recommended for shades over 3,600 square inches (2.3 square meters) to extend battery life.	
Dual Non-Rechargeable, Reloadable Battery Case (empty)	95
Dual Non-Rechargeable, Reloadable Battery Case (filled) (Includes 16 AA lithium batteries)	230
Other Power Options	
48" (121.9 cm) Extension Cable	21
96" (243.8 cm) Extension Cable	26
12 Volt DC Plug-In Transformer (includes 96" (243.8 cm) extension)	115
Multi-Motor Power Supply Kit (Up to 10 motors per power supply)	1179
12-Volt Rechargeable Power Options	
12-Volt Rechargeable Battery Pack	187
12-Volt 6 foot (1.9 m) Li-ion Charger	21

NOTE: For woven wood shades, surcharge is per panel.

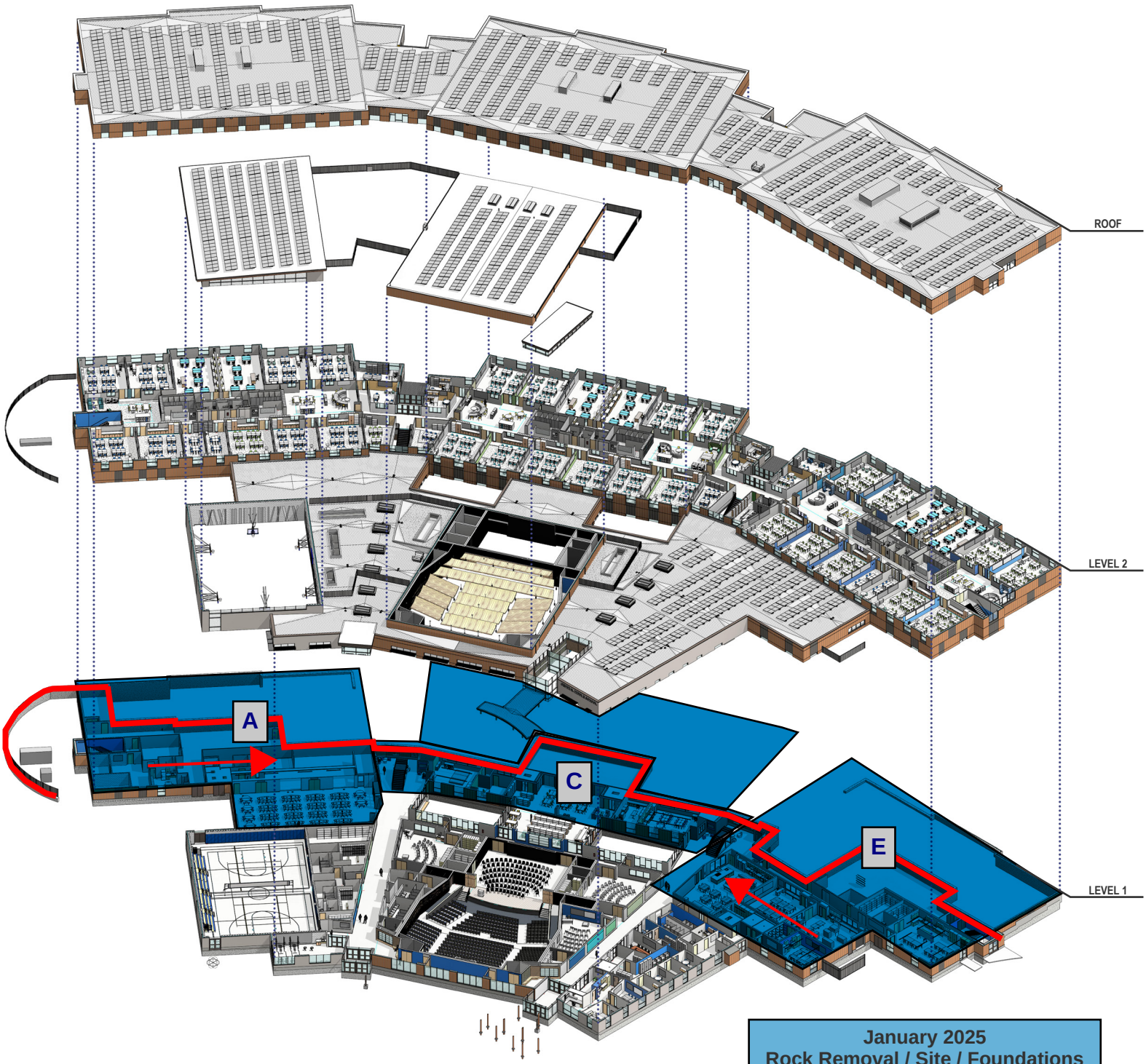
C. Z-Wave Motorization Controls

Choose one or more remotes per order. Controllers are wire-free, battery and mounting hardware is included. App & Gateway are wire-free and do not require batteries.

Radio Frequency Remote Controls	
Standard Remote	152
Plus Remote Single Channel	175
Plus Remote Decorator Wall Plate	18
Premium Remote Multi-Channel (includes wall mount and hardware)	310
Graber Motorization App and Gateway	315

Turner Construction
Greenwich Central Middle School
Crew Flow
10.25.24

Bid RFI #236
Response



January 2025
Rock Removal / Site / Foundations

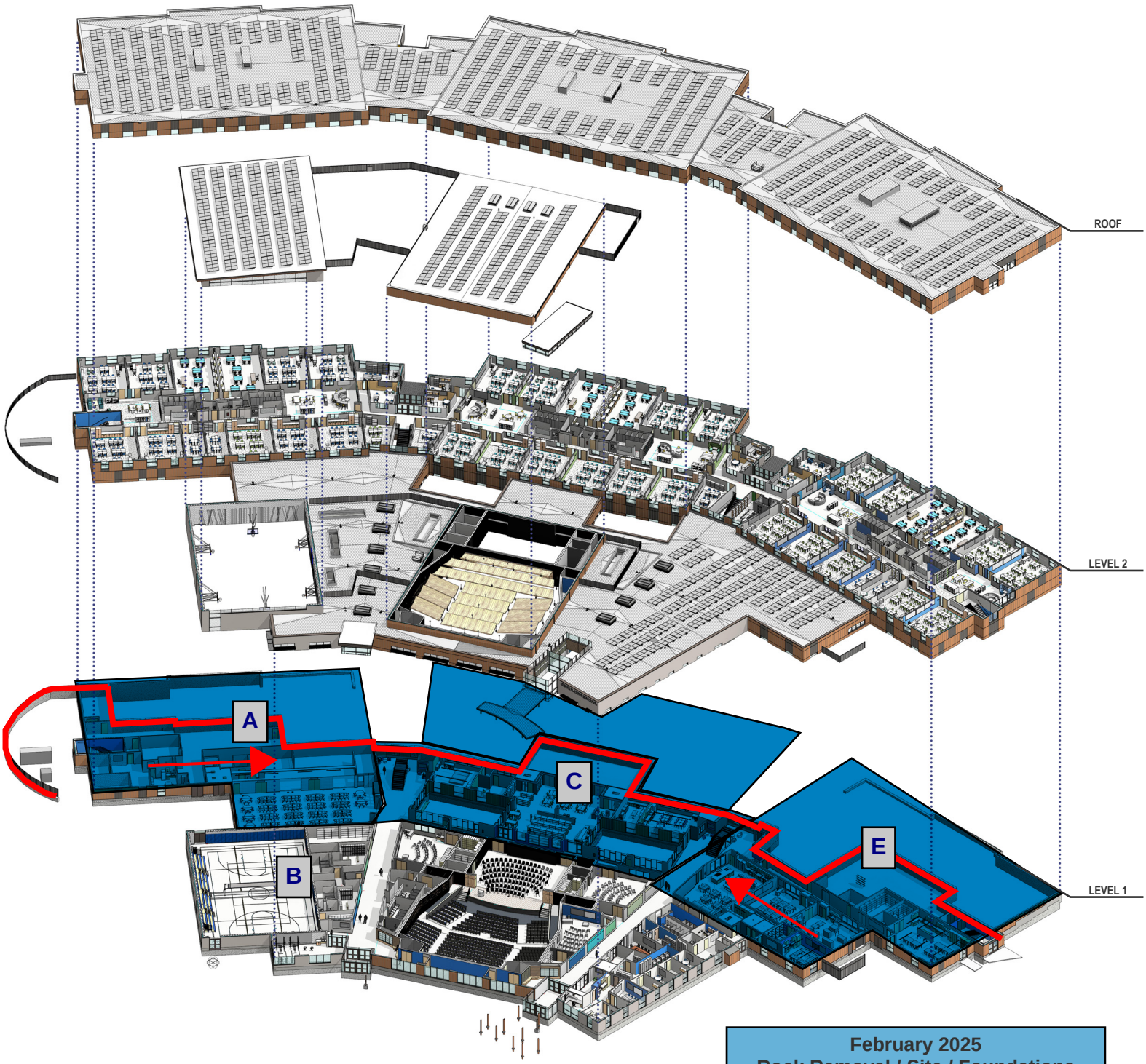
Rock Removal: A / C / E
Excavate: A / E
Retaining Wall: E

Greenwich Central Middle School
New Construction [AXON]

Turner

Turner Construction
Greenwich Central Middle School
Crew Flow
10.25.24

Bid RFI #236
Response



February 2025
Rock Removal / Site / Foundations

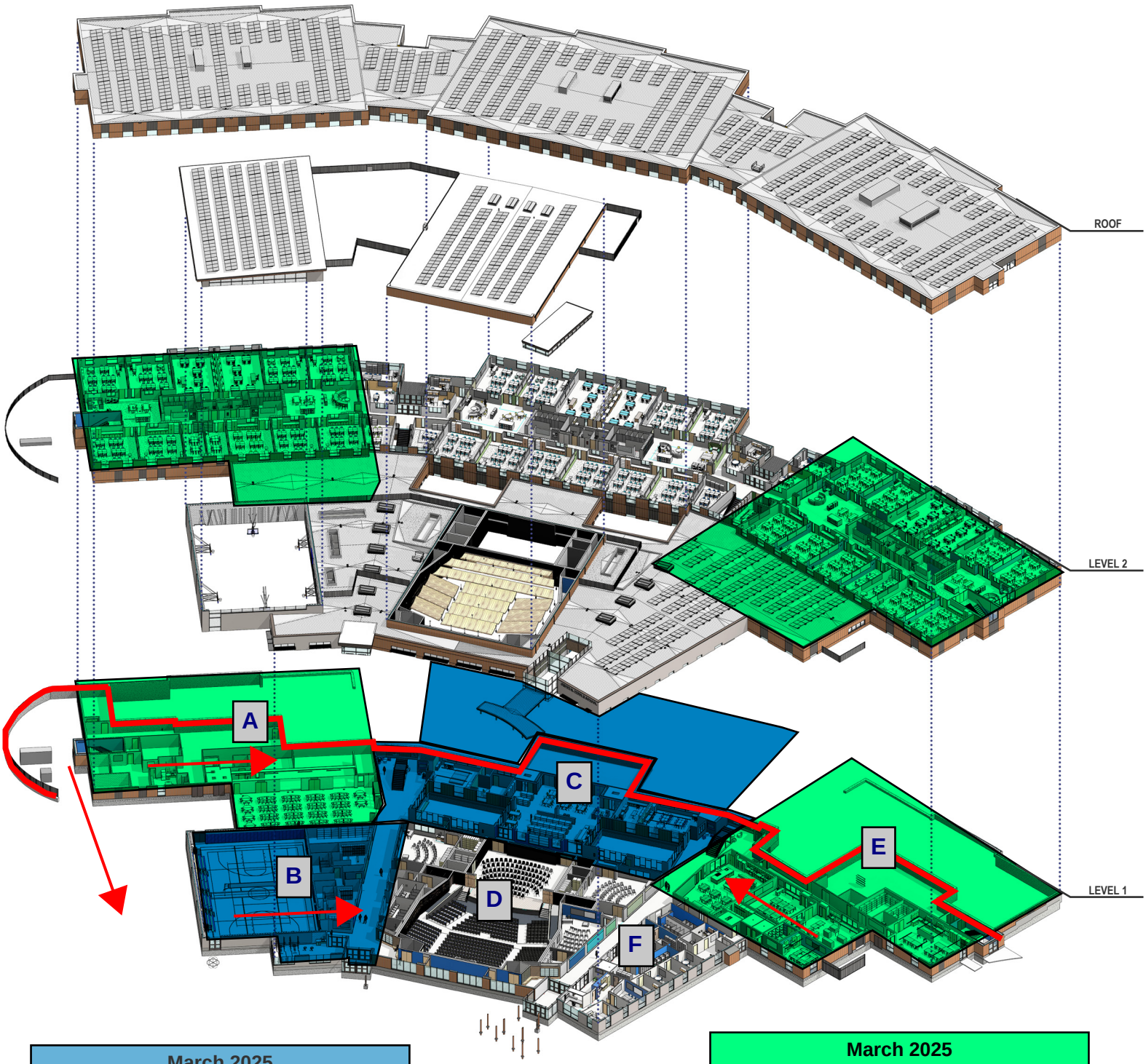
Excavate: A / E / C
Retaining Wall: A / C / E
Foundation Walls & Spread Footings: A / E

Greenwich Central Middle School
New Construction [AXON]

Turner

Turner Construction
Greenwich Central Middle School
Crew Flow
10.25.24

Bid RFI #236
Response



March 2025
Site / Foundations

Excavate: C / B
Foundation Walls & Spread Footings: C

March 2025
Foundations /Backfill / MEP Underground / SOG

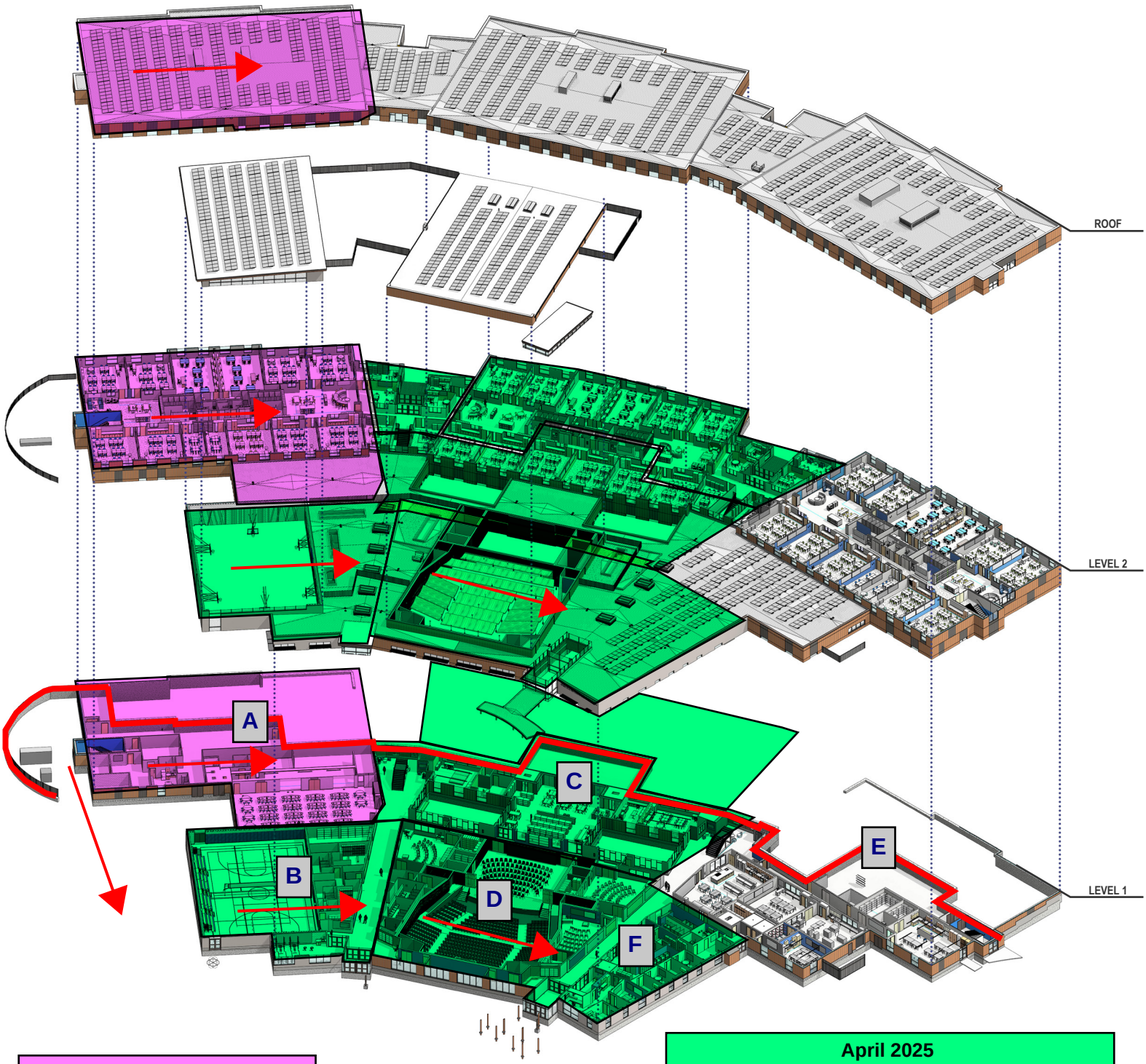
Foundation Walls & Spread Footings: A / E
Backfill: A / E
MEP Underground: A / E
SOG: A / E

Greenwich Central Middle School
New Construction [AXON]

Turner

Turner Construction
Greenwich Central Middle School
Crew Flow
10.25.24

Bid RFI #236
Response



April 2025
Steel Erection

Steel Erection: A

April 2025
Site / Foundations /MEP Underground / SOG

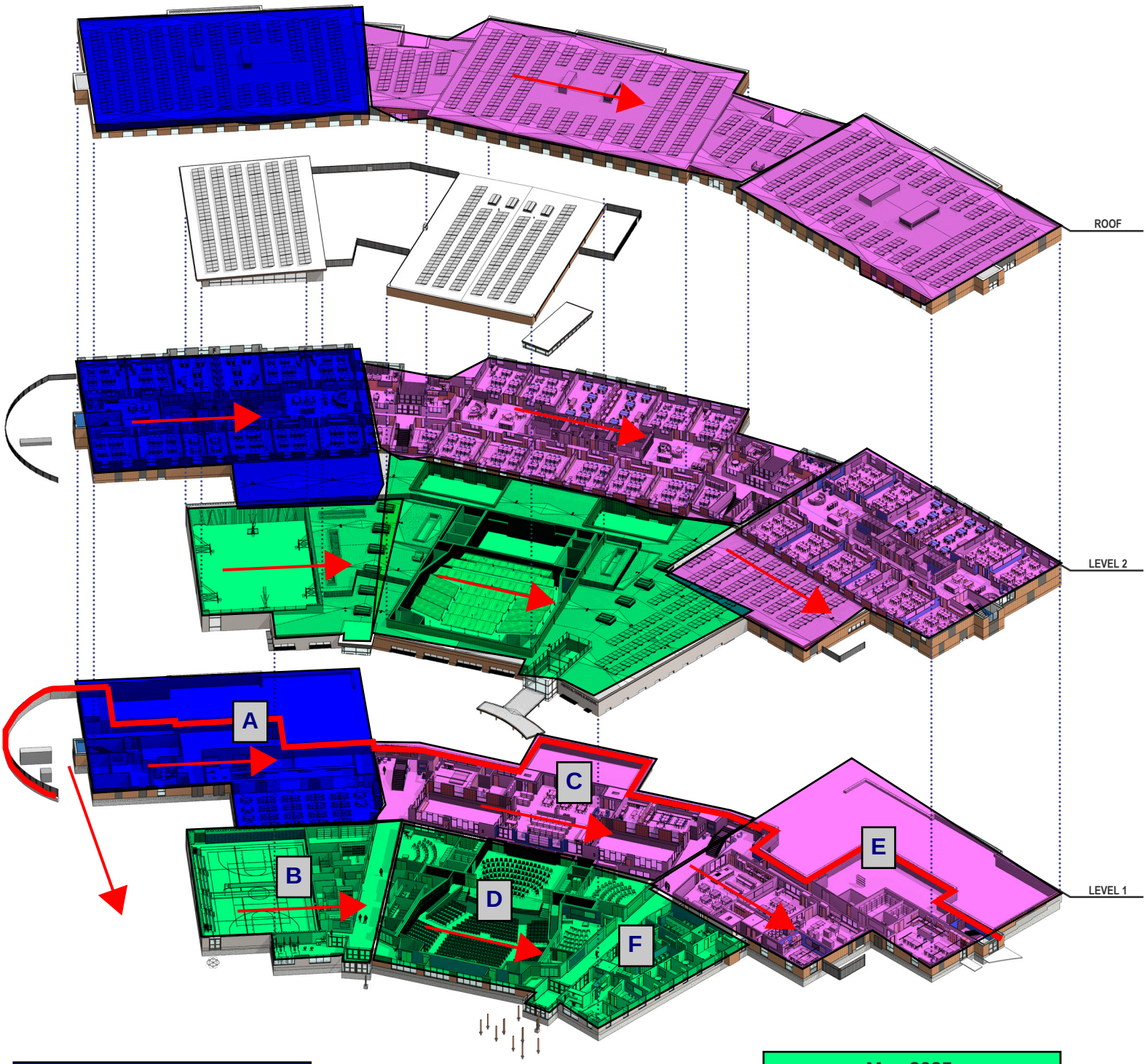
Excavate: D / F
Foundation Walls: B / D / F
Spread Footings: B / D / F
MEP Underground: B
SOG: C

Greenwich Central Middle School
New Construction [AXON]

Turner

Turner Construction
Greenwich Central Middle School
Crew Flow
10.25.24

Bid RFI #236
Response



May 2025
Steel Erection / Slab on Deck
Steel Erection: A
SOD: A

May 2025
Steel Erection
Steel Erection: C/ E

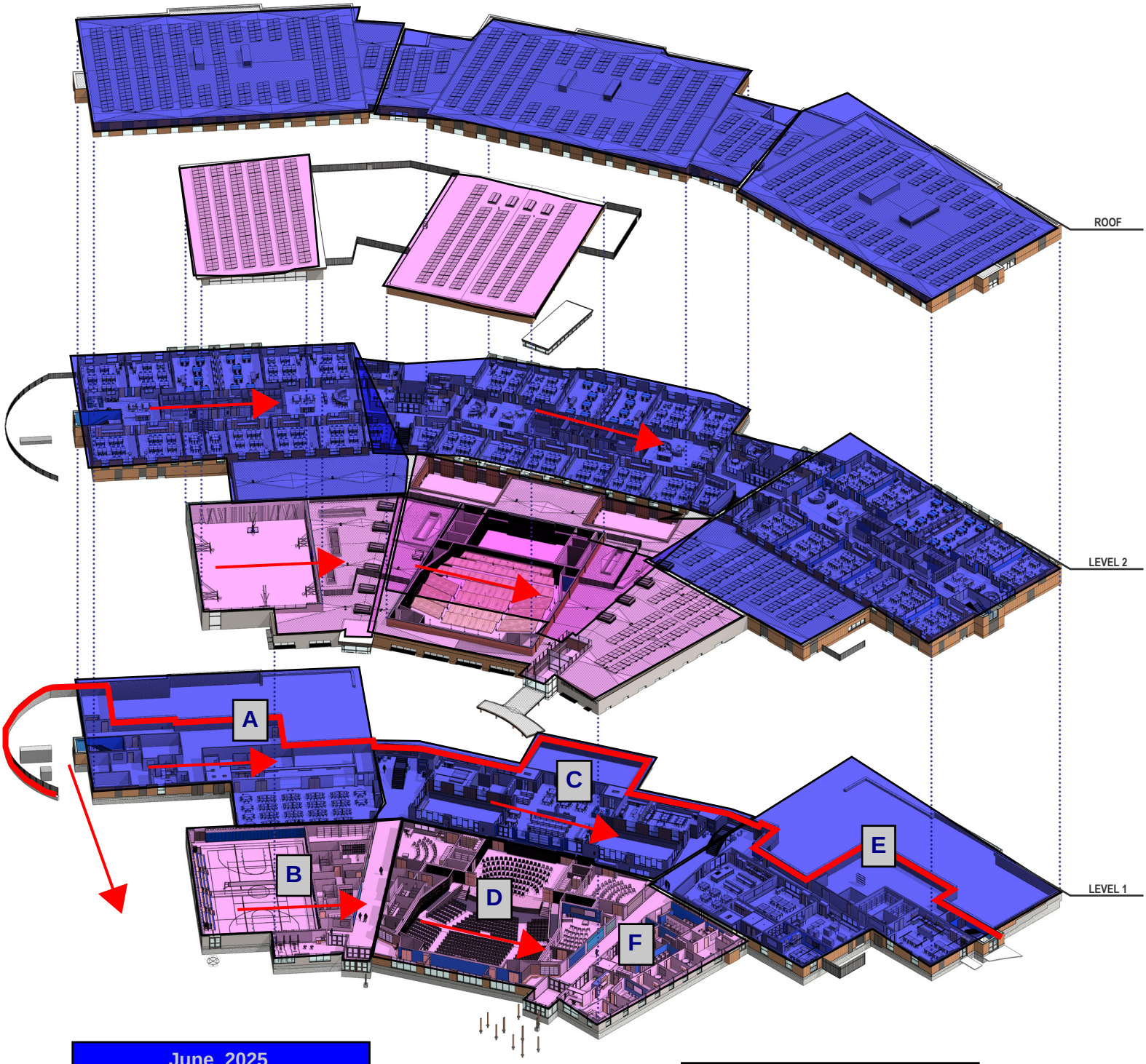
May 2025
Underground MEP / SOG
MEP Underground: B / D / F
SOG: B
Masonry Walls: B

Greenwich Central Middle School
New Construction [AXON]

Turner

Turner Construction
Greenwich Central Middle School
Crew Flow
10.25.24

Bid RFI #236
Response



June 2025
Exterior Envelope / Steel Detailing / SOD

Exterior Envelope: A
Steel Detailing: C / E
SOD: C / E

June / July 2025
SOG / Steel Erection

SOG: D / F
Steel Erection: D / F

Greenwich Central Middle School
New Construction [AXON]

Turner

BQ #267 Attachment

SUBSTITUTION REQUEST
(During the Bidding/Negotiating Phase)

CSI®

PROJECT: Greenwich Central Middle School

SUBSTITUTION REQUEST NUMBER:

FROM:

TO: Bridget Moore

DATE: 10/28/24

Turner Construction

A/E PROJECT NUMBER:

RE: Approved Elevator Manufacturer

CONTRACT FOR: Greenwich Central Middle School

SPECIFICATION TITLE: Electric Traction Elevators

DESCRIPTION: Manufacturers

SECTION: 142100

PAGE: 5

ARTICLE/PARAGRAPH: 2.1/A./1&2

MODEL NO.: 3300 MRL

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.
Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:
- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

SUBMITTED BY:

SIGNED BY:

FIRM:

ADDRESS:

TELEPHONE:

A/E's REVIEW AND RECOMMENDATION:

☐ Approve Substitution—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.

☒ Approve Substitution as noted—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.

☐ Reject Substitution—Use specified materials.

☐ Substitution Request received too late—Use specified materials.

Approved as Noted - needs to meet the full specification, limited information is provided to review other than max weight and travel speed - SLAM

SIGNED BY: Stephen Martocchio - SLAM

DATE: 10/30/24

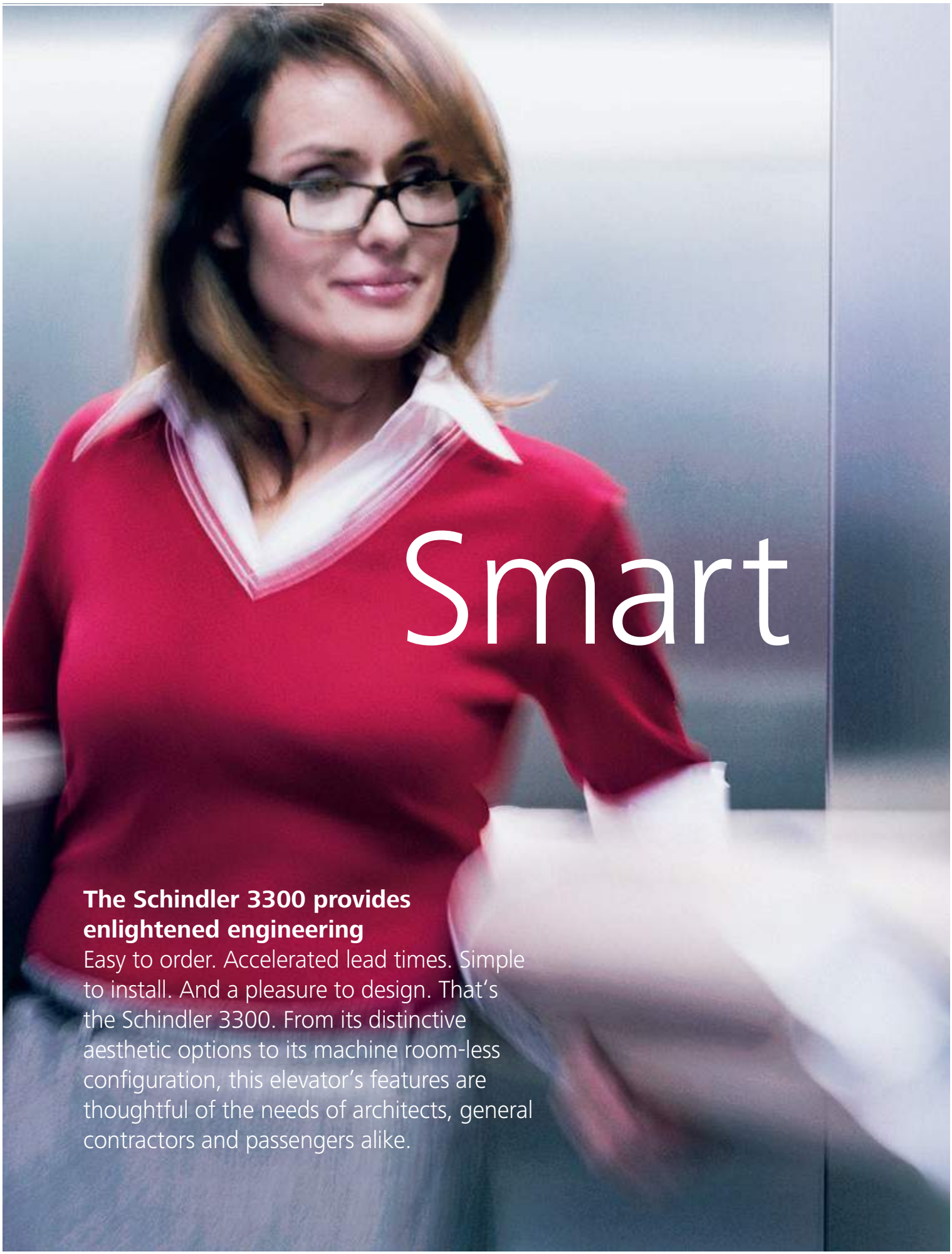
SUPPORTING DATA ATTACHED: ☐ Drawings ☒ Product Data ☐ Samples ☐ Tests ☐ Reports ☐



Schindler 3300

Distinctive design. Cost-effective solution. Green technology made easy.

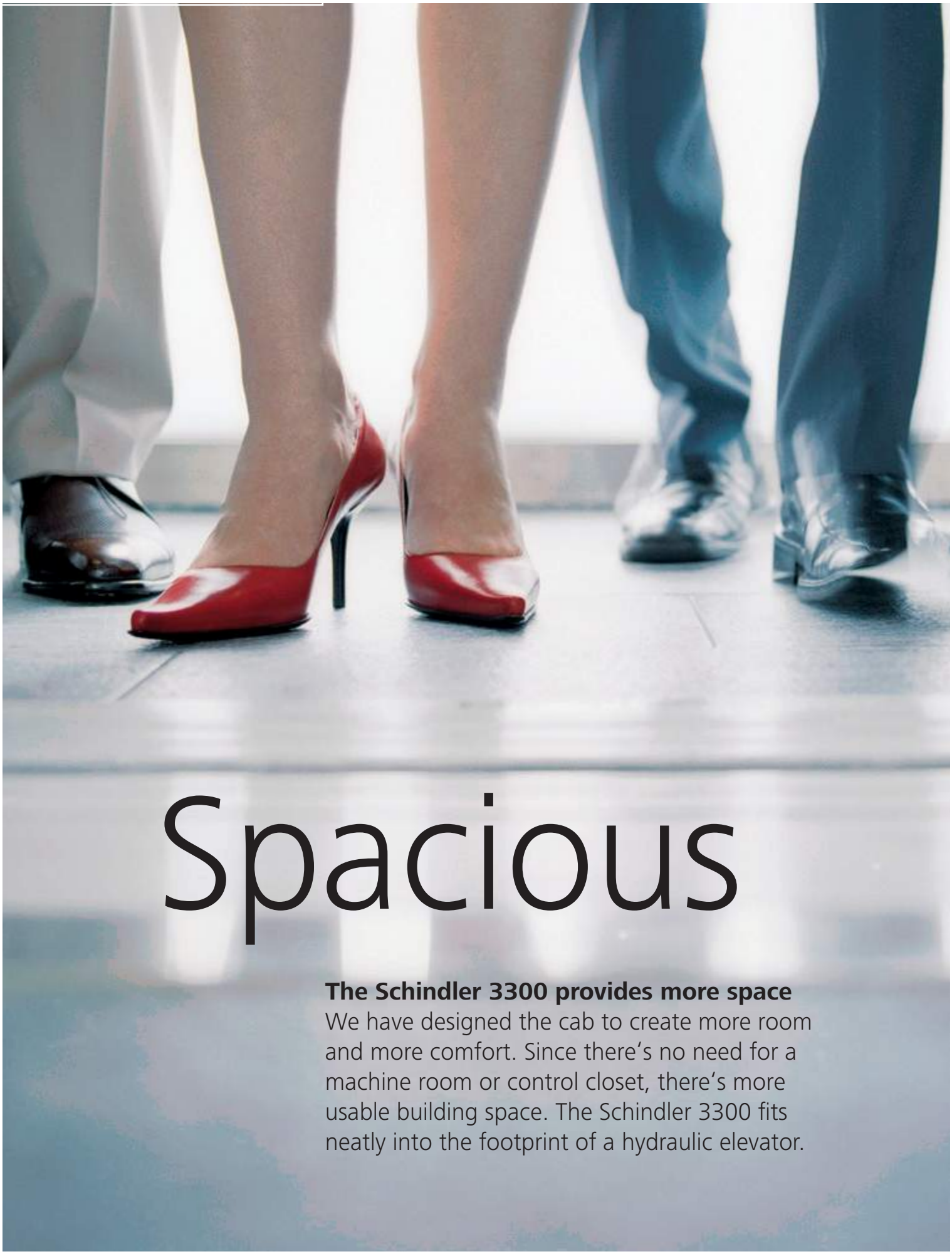
Schindler



Smart

The Schindler 3300 provides enlightened engineering

Easy to order. Accelerated lead times. Simple to install. And a pleasure to design. That's the Schindler 3300. From its distinctive aesthetic options to its machine room-less configuration, this elevator's features are thoughtful of the needs of architects, general contractors and passengers alike.



Spacious

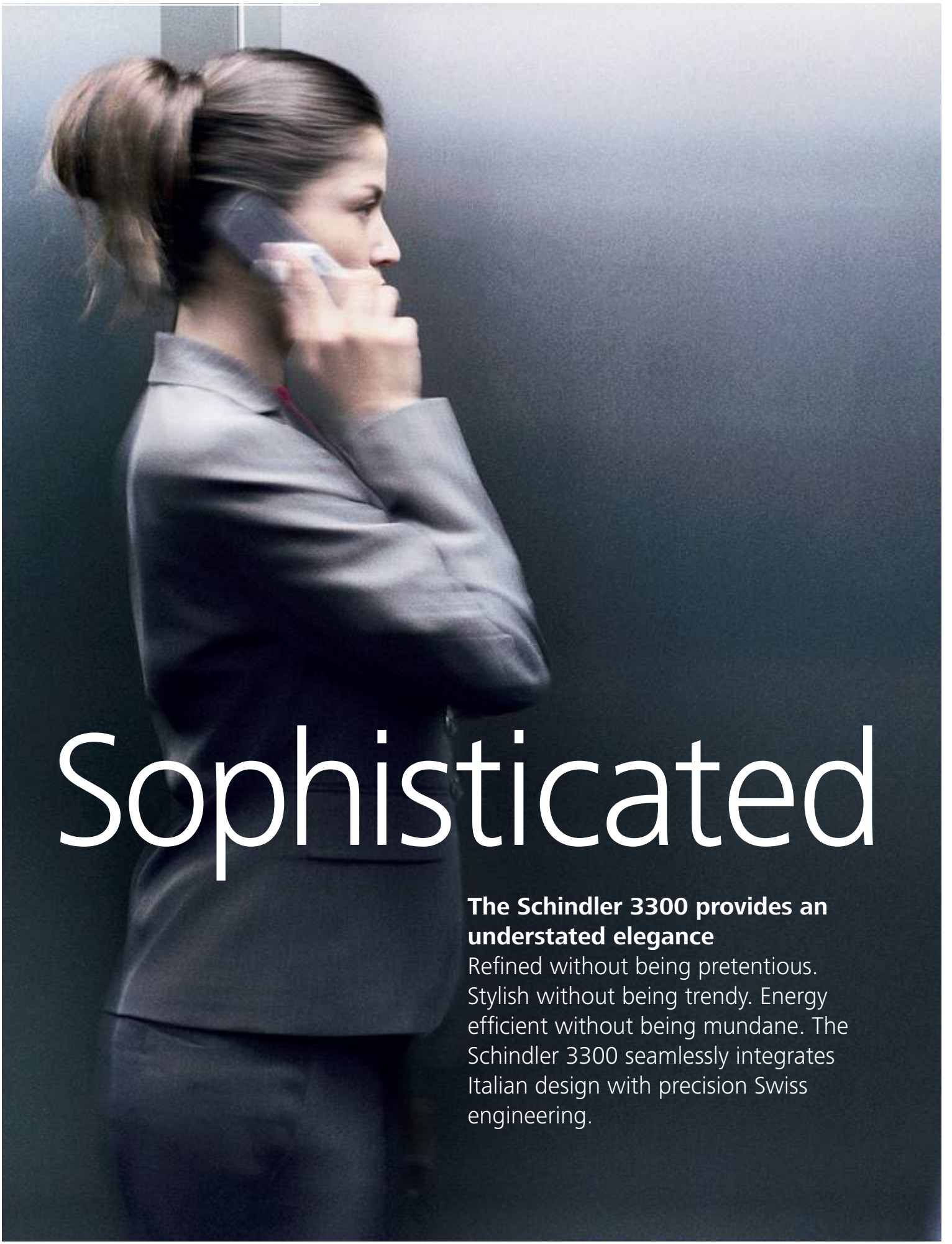
The Schindler 3300 provides more space
We have designed the cab to create more room and more comfort. Since there's no need for a machine room or control closet, there's more usable building space. The Schindler 3300 fits neatly into the footprint of a hydraulic elevator.



Smooth

The Schindler 3300 provides a more comfortable ride

Noticeably quiet. Beautifully fluid. Reliably safe. Schindler's exclusive engineering provides smooth, quiet operation for the most comfortable ride experience – floor by floor, stop by stop.



Sophisticated

The Schindler 3300 provides an understated elegance

Refined without being pretentious. Stylish without being trendy. Energy efficient without being mundane. The Schindler 3300 seamlessly integrates Italian design with precision Swiss engineering.


0
1
0
-1
B

Value has a new, intelligent design

The world's most enlightened elevator
The Schindler 3300 has proven itself globally as the smartest choice for low- to mid-rise commercial and residential buildings.

That's because it is engineered like no other everyday elevator. It offers a distinctive range of design and aesthetic options along with an amazingly smooth performance that uses less energy and makes less noise. All in a smaller, easy to fit footprint.

It's setting the new global standard.

More room. More usable space.
As architects and engineers around the world can attest, the Schindler 3300 is designed to minimize the space required for technical equipment, while maximizing the square footage of the cab interior.

Thanks to our new easy-to-install suspension traction media, hoistways designed for a hydraulic elevator can now accommodate a more spacious traction elevator.

Also, because the control is distributed throughout the system, and inspection and test panels are located in the top landing hoistway door jamb, the Schindler 3300 needs no machine room. What's more, it requires minimum overhead, eliminating unsightly structures on your roof. All told, the Schindler 3300 gives you more space and reduces construction costs.

Smooth to the eyes and ears
Schindler cabs are constructed using only high-quality materials. And with standard palettes that are anything but "standard," we can provide exceptional looks, while keeping lead times and costs down. From stainless steel to a distinctive collection of attractive color laminates, your design choices are easier than ever before.

To add to the aura, we are also working to reduce noise. Our suspension traction media enables the Schindler 3300 to glide peacefully through your building. Elevator movements go virtually unnoticed – which will certainly be appreciated by guests in your building.

Sophisticated design for our passengers and our planet
With automatic evacuation, we've elevated our focus on safety. In the event of a power failure, you will be taken safely to the next floor.

We're also setting a new standard in conservation. The Schindler 3300 is economical in its use of energy, which contributes to lower operating costs and a smaller carbon footprint. The effects are highly visible.

Fast facts

Capacity	2100–3500 lbs., 14-23 passengers
Travel height	Max. 98'-5", max. 8 stops
Door width	36-42 inches
Door height	84 inches
Drive	Gearless/frequency controlled
Speed	100/150 FPM
Control	Selective collective
Interior	Baked enamel, plastic laminate or brushed stainless steel



Efficient mobility
Sustainable technology

In architecture, in engineering, in everyday life, there is a global movement toward sustainability. There is a growing demand for solutions that benefit the planet as much as they do people. At Schindler, we are proud to be at the forefront of this initiative. In every facet of our business, we are looking for ways to become better stewards of the planet.

The Schindler 3300 is the hallmark of our environmental efforts. When designing this elevator, sustainability was not an afterthought, but the driving force behind every decision we made. As a result, the Schindler 3300 offers more eco-friendly features than one might have thought possible.

Drive
- Gearless machine designed to save energy and avoid power loss
- Stable start uses energy more efficiently and reduces electric costs
- Frequency converter with standby power mode allows elevator to return safely to nearest floor in the event of a building power outage
- Compact, lightweight and durable design.

Control
- Controls automatically switch car lights to standby mode to save energy
- Car panel and floor indicators all operate with low power, LED lights
- Multi-bus control architecture reduces cabling, material and waste
- Smart controls provide more efficient passenger transportation.

Cab and hoistway
- Car lighting equipped with energy-efficient lamps
- Central guiding system reduces friction and overall energy consumption
- Door drive with standby mode uses less electricity
- Overall design provides more usable space for enhanced passenger comfort.

Environmentally-responsible company
We are working to make our entire operation more eco-friendly. We have instituted more ecologically responsible production systems and material usage. We are able to manage installations faster and more efficiently. And our products and services are designed to provide energy-efficient and eco-friendly options to architects, contractors, building owners and managers.

What's more, Schindler is a member of the U.S. Green Building Council and supports the LEED® Green Building Rating System.

The following categories of the LEED rating system are areas where Schindler can assist you in obtaining the necessary credits for accreditation.

ISO9001 • ISO14001

LEED RATING SYSTEM VERSIONS 3 AND 2.2

Energy and Atmosphere	Materials and Resources	Indoor Environmental Quality
Prerequisite 1 Fundamental Commissioning of the Building Energy Systems	Credit 2.1 and 2.2 Construction Waste Management	Credit 4.1 Low – Emitting Materials: Adhesives and Sealants
Credit 1 Optimize Energy Performance		Credit 4.2 Low – Emitting Materials: Paints and Coats
		Credit 4.4 Low – Emitting Materials: Composite Wood and Agrifiber Projects

Technology advanced
Perfection attainable

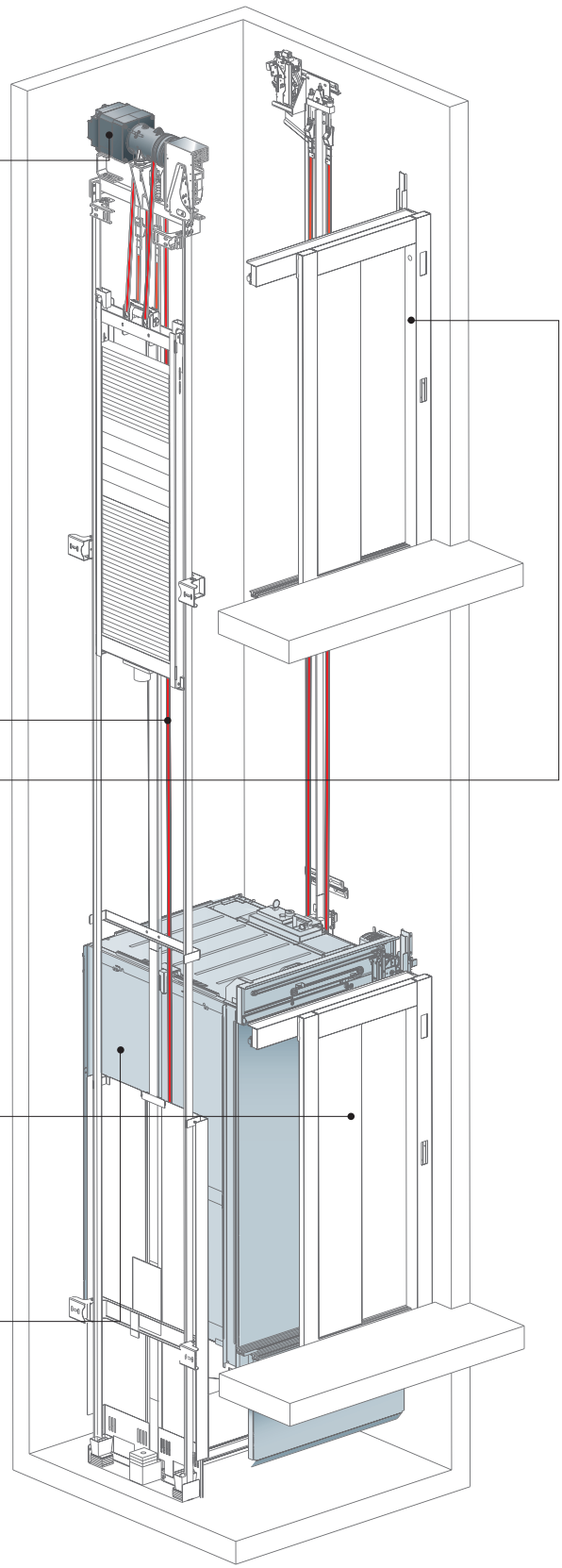
Drive system
The Schindler 3300 requires a small hoist machine and inverter. This saves more space compared to previous drive systems; it is installed directly in the overhead and does not require a separate machine room. The system stops the car with precision. Cab and landing floor line up very accurately to ensure that passengers get in and out safely. The system is economical in energy consumption and causes minimal noise due to the material of the suspension traction media (STM) in the elevator and in the entire building. Real comfort.

Suspension Traction Media (STM)
The STM consists of thin metal cables sheathed in a non-circular EPDM (Ethylene Propylene Diene Monomer) jacket. They replace conventional steel cables, weigh less, require less space and run quieter. Thanks to the STM, there is room for the machine and drive directly in the elevator hoistway, allowing hydraulic-sized shafts to be utilized.

Inspection and test panel
In the Schindler 3300, the inspection and test panel is built directly into a standard door frame at the top landing. This highly functional solution is a vital achievement. It simplifies elevator installation, provides practical handling and saves space.

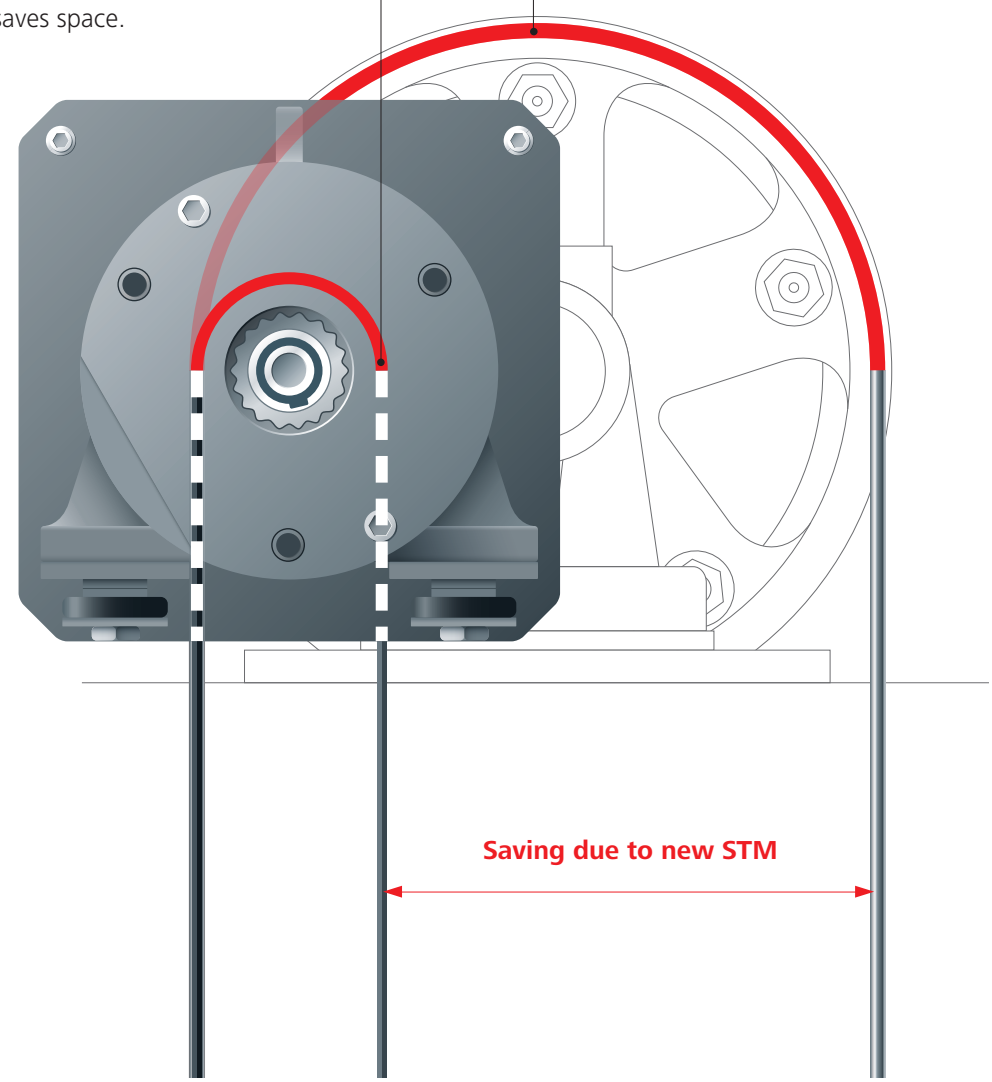
Doors
Doors are equipped with a frequency-controlled drive for fast and reliable operations. Two-speed side-opening doors opening to the left or right, as well as single-speed center-opening doors are available.

Cab
Technology does not take much space in the Schindler 3300. This is an obvious benefit that allows hydraulic elevator-sized shafts to be utilized while providing a larger cab interior. This is a striking advantage.



Previously: steel cables
Steel cables are relatively inelastic. They need a traction sheave diameter of at least 12 inches with the cable diameters required for elevators. The complete conventional motor, including drive gears, must be large enough to match. A system that requires space.

New: Suspension Traction Media (STM)
Suspension traction media are flexible. They use a much smaller traction pulley diameter than steel cables. 4.25 inches is enough, requiring a much smaller motor. A design that saves space.



We put a premium on design, without charging a premium

All around the world, architects and designers are discovering a new creative outlet. Conceptualized by an Italian designer, the Schindler 3300's sleek cab design is impressive yet understated. Simple, yet refined, with design palettes to suit any style or building décor.

– Cab walls are available in stainless steel, baked enamel or a choice of plastic laminates.

– The unique ceiling design is available in a choice of brushed stainless steel or silver-metallic baked enamel.

– Ceiling lighting is refined, yet illuminating, with compact fluorescent light fixtures.

– The elegant curved handrail is available in painted, brushed or polished aluminum finishes.

– Landing doors are available in brushed stainless steel, various colors of durable baked enamel or primer. Doors are available in center-opening or side-opening configurations, with left-hand or right-hand openings.

– Hall fixtures are composed of tempered safety glass panels, back-printed in white, to give the Schindler 3300 a contemporary, modern look.

Note: For more information on the high fashion details we designed into the Schindler 3300, be sure to ask for a copy of our Deco brochure, which includes all décor and accessory options. The car specifications, options and colors in this brochure are representative only and are subject to change. Sample shown may vary from the original in color and material.



Laminate – Long Beach Blue



Brushed stainless steel



Landing doors - Available in 11 baked enamel colors or stainless steel



Ceiling lighting



Hall fixtures



Handrails

If you can envision it, you can create it

From the fun, fresh colors of Tribeca to the subdued natural tones of Willamette, the Schindler 3300 gives you a wide selection of durable baked enamel or colorful laminate finishes, as well as a sleek brushed stainless steel cab. Create a look and feel that is truly one of a kind.

Tribeca

Fresh, flashy and multifaceted



Montreal Blue



Baked enamel colors

South Beach

Warm, distinguished and genuine



Tampa Tangerine



Matte finish laminates with subtle, wavelike design

River Walk

Clean, cool and cutting edge



Miami Bottle Glass



Matte or gloss finish laminates with glassy sheen; swatches are a representation of the gloss finish.

Great Lakes

Steely, sophisticated and elegant



Toronto Grey



Choose from gloss finish laminates with subtle, monochromatic patterns or a distinctive brushed stainless steel cab.

Willamette

Rich, natural and classic



Baltimore Cherry



Matte and gloss finish laminates with rich, wood-grain colors; swatches are a representation of the gloss finish.

The perfect fusion of people-centered design and technology

The features and components of the Schindler 3300 are smartly designed to enhance the rider experience, improve safety and minimize downtime. From the low-energy multiprocessor controls to the stylish, tempered safety glass operating panels, you'll find the latest technological advances.

Control
The control system is based on low-energy multiprocessor technology. The compact main inspection and test panel of the decentralized system is integrated in the door frame.

Control functions
– Miconic® NX microprocessor
– On-board diagnostics, self testing
– Light curtain
– Overload detection
– Two-way, hands-free emergency communication
– Firefighter's Service operation
– Independent service
– Automatic car light
– Automatic evacuation to nearest floor.

Schindler Remote Monitoring™
Supports Schindler predictive maintenance, anticipating difficulties before they occur and allowing rapid response to service calls.

Fixtures
The stylish, tempered safety glass panels are back-printed in white to give the elevator a contemporary, modern look while meeting all applicable codes. Please refer to our deco brochure for more information on all decor and accessory options.



State-of-the-art planning, installation and support



Planning
The Schindler 3300 requires no machine room. For you, this means less planning. Only one space, the elevator shaft, has to be designed. Standardized plans simplify the process, making it fast and efficient.



Order
The design of the Schindler 3300 is sophisticated, yet simple. The key factors are quickly established. Since there are no complicated specifications, it is easy to place an order. You will quickly and effortlessly find the product that fits your needs.



Delivery
We deliver the Schindler 3300 complete and all at once, just in time for when the building is ready for the elevator installation.



Installation
The elevator is quickly installed. No cranes or scaffoldings are required. The system is ready in about two weeks. A well-thought-out process.

Keeping it all running smoothly

The Schindler 3300 combines proven engineering and smooth performance with the best service in the industry, from our integrated maintenance delivery technology to our highly trained technicians. So you can be confident of fewer callbacks, fewer inconveniences and less downtime.

– On-board sensors monitor your equipment 24 hours a day with Schindler Remote Monitoring™ (SRM). It's a powerful diagnostic tool that can identify a problem, map out a solution and dispatch a technician to your site – often before you're even aware of the issue.

– One toll-free call to the Schindler Customer Service Network (SCSN) provides fast dispatching at any time, day or night.

– Schindler FieldLink™ gives your technician unlimited access to virtually any information needed to complete your maintenance quickly and accurately.

– Genuine manufacturer's replacement parts from extensive local and national inventories are available within 24 hours if need be.

– Exclusive Schindler Customer Score Card™ allows you to track trends, view performance reports and service records in real time at www.us.schindler.com.




FIREFIGHTERS'
OPERATION

Ever greener



Keeping the environment in mind

Schindler is committed to helping you reduce the environmental footprint of your buildings and qualify for LEED® certification by incorporating sustainable green features into our elevator and escalator systems. Improving the environmental impact of our products and processes, particularly our consumption of energy and materials, is fundamental to our corporate responsibility as an industry leader. Schindler 3300 is a prime example of our continuing commitment to improve mobility while preserving resources.

LEED is a registered trademark of the U.S. Green Building Council.

For more information, including location of the Schindler office nearest you, please visit:

U.S. Headquarters
Morristown, New Jersey
Tel. 973.397.6500
www.us.schindler.com

Canada Headquarters
Scarborough, Ontario
Tel. 416.332.8280
www.ca.schindler.com

Schindler is a member organization of the U.S. Green Building Council.

Schindler has received renewal to ISO 14001:2004 and ISO 9001:2008 certificates.

Schindler prints with vegetable-based ink on paper containing post-consumer waste fiber.

Mixed Sources
Product group from well-managed forests, controlled sources and recycled wood or fiber
www.fsc.org Cert no. SGS-COC-005547
©1996 Forest Stewardship Council

© Schindler Elevator Corporation

A1105
BRN-1018

SUBSTITUTION REQUEST
(During the Bidding/Negotiating Phase)

CSI®

PROJECT: New Central Middle School Project
State Project No. 057-0114 N

TO: Joseph Phelan
Turner Construction Company

RE: Telescoping Bleachers

SUBSTITUTION REQUEST NUMBER: 1

FROM:

DATE: October 30, 2024

A/E PROJECT NUMBER: 22367.00

CONTRACT FOR: Telescoping Bleachers

SPECIFICATION TITLE: Telescoping Bleachers at Gym

DESCRIPTION: Seating

SECTION: 126613 **PAGE:** 1051 - 1064 **ARTICLE/PARAGRAPH:** 2.7.A

PROPOSED SUBSTITUTION: Telescoping Bleachers

MANUFACTURER: Sheridan Seating Inc. **ADDRESS:** 290 W. St. South Orillia, ON, Canada L3V 5G8 **PHONE:** (705) 326-7463 x238

TRADE NAME: Sheridan Seating Inc. **MODEL NO.:** M200

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.
Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:
- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

SUBMITTED BY:

SIGNED BY:

FIRM:

ADDRESS:

TELEPHONE:

A/E's REVIEW AND RECOMMENDATION:

☐ Approve Substitution—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.

☐ Approve Substitution as noted—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.

☒ Reject Substitution—Use specified materials.

☐ Substitution Request received too late—Use specified materials.

SIGNED BY: Stephen Martocchio **DATE:** 11/6/2024

SUPPORTING DATA ATTACHED: ☒ Drawings ☒ Product Data ☐ Samples ☐ Tests ☐ Reports ☒ See Table of Contents

PRODUCT SUBSTITUTION REQUEST
TABLE OF CONTENTS

3
Telescopic Bleacher Specifications

9
Warranty Information

10
Design and Performance Criteria

12
Dimension Chart

13
Bleacher Industry Data Chart

14
Operation & Maintenance Manual

22
Product Literature

51
Manufacturer Qualifications

Bid RFI #389

SHERIDAN SEATING INC.

TELESCOPIC BLEACHER SPECIFICATIONS

PART 1 GENERAL

1.1 Description

A. Scope

1. Telescopic seating systems comprised of multi-tiered rows of seats, deck components and risers on interconnected, retractable, supporting structure. Telescopic seating operation shall be by means of manual or electric operation. Telescopic seating system shall be wall attached (typically), recessed, telescoping or portable. System shall be floor attached where reverse folding.

B. Manufacturer's Design Criteria

1. Gymnasium seat assembly is designed to support, in addition to its own weight, a live load in excess of 120 lbs. per linear foot or 100 lbs. per square foot (whichever affect is greater), front to rear sway in excess of 10 lbs. per linear foot and a parallel sway load in excess of 24 lbs. per linear foot of row.
2. Guard railings are engineered to withstand a load of 200 lbs. per foot at top rail and an intermediate load of 150 lbs. per foot.
3. Steel structure must be free standing when installed and include 4 steel columns per row, per section. Those manufacturers which only include 2 columns per row, per section are not acceptable.
4. Steel columns must be fabricated from structural high tensile steel tubing; minimum size of tubing will be 1 ½'' x 3'' x 10 ga. Those manufacturers providing formed steel or angle iron columns in place of structural tubing are not acceptable. Maximum spacing between columns shall be 11'-6".
5. Two row locks per row, per bleacher section manufactured from ¼'' hot rolled steel to prevent racking of bleachers as they are retracting are required.
6. Footboards shall be produced from ¾'' plywood with top facing. Voids or boat patching on top facing is not acceptable. Top facing shall receive 3 coats of colored, opaque, catalyzed epoxy coating. Aluminum trim shall be installed on all exposed edges. Extruded aluminum joiners shall be placed between adjacent footboards.
7. Optional Upgrade – Panelam decking on ¾" plywood.
8. Optional Upgrade – Bronzed aluminum decking.

9. Wood seat boards shall be full 4/4" finished size, kiln dried, select pine with rounded edges. Seat boards shall be sealed on all surfaces and three coats of polyurethane on top and sides.
10. Molded seats shall be 18" wide of high density polyethylene structural foam with full perimeter interlock and concealed mounting hardware. End caps shall be provided at all ends, aisle ways and ADA locations. Colors are bright without excessive streaking. "Waterfall" coloring will not be acceptable. Indents for numbers and letters shall be standard.
11. No less than 4" diameter x 1 ¼" soft faced, non marking rubber wheels to support understructure system shall be provided with sintered metal bearings and clips for easy replacement.
12. Nose beam shall be formed from 14 ga. minimum galvanized steel. Steel shall have G90 galvanized coating or better. These will encapsulate ¾" plywood decks.
13. Rear riser shall be formed from 14 ga. minimum galvanized steel. Steel shall have G90 galvanized coating or better.
14. Handicap seating provisions: Provide recoverable first tier cutouts as required by ADA. Include manufacturer's standard front guardrail and closure panel below. Shop drawings will reflect locations.

1.2 Quality Assurance

A. Acceptable Manufacturer

1. The manufacturer shall be a firm experienced in the manufacturing of telescoping bleacher seating systems.
2. The telescopic seating system specified herein shall comply with the International Code 2000 Edition, Standard for Assembly Seating, Tents and Membrane Structures; and specifically with Chapter 5, Folding and Telescopic Seating, except where additional requirements are indicated or imposed by authorities having such jurisdiction.
3. The telescopic seating system manufacturer shall employ a registered, professional engineer to certify that equipment to be supplied meets and/or exceeds the design criteria of these specifications.
4. The telescopic seating system manufacturer shall have all welding done in a CWB/AWB certified shop.
5. It will be the responsibility of the bidder to furnish with his bid a list clarifying any deviation from these specifications, written or implied.

B. Acceptable Installer

1. Installers to be recognized, trained and certified by the telescoping bleacher seating manufacturer.

1.3 Submittals

A. Submit six copies of each of the following:
   1. Manufacturer's shop drawings
   2. Manufacturer's standard 1-year warranty and limited 20 year warranty
   3. Manufacturer's Operation and Maintenance instructions

B. Submit seating and deck samples, as required.

1.4 Warranty

A. Submit manufacturers standard warranty form for Telescopic seating systems.
   1. The manufacturer shall guarantee all work performed under these specifications to be free from defects for a period of one (1) full year.
   2. Replacement structural steel components, nuts, bolts, axles, and wheels as necessary to maintain the integrity of the original installation, will be provided at no charge for a period of twenty (20) years.
   3. The guarantee shall be limited to the fair use of the Telescopic Seating System and shall not include acts of vandalism, fire, flood or other situations that do not fall into the general use requirements of the bleachers.
   4. A yearly inspection and required maintenance must be performed to maintain the extended 20-year warranty.

PART 2 PRODUCT

2.1 Manufacturers

A. The basis of design for the gymnasium seating shown on the plans and detailed in these specifications is by Sheridan Seating Inc. Other manufacturers desiring to bid shall submit detailed product literature and specifications a minimum of ten (10) days prior to bid.
   1. Model: W100 Wood Seats or M200 Molded Seats
   2. Aisle Type: Foot level Aisles with center aisle railings with curved top rail terminations.
   3. End rails: Typically self-storing ready rails.
   4. Operation: Integrally powered friction electric operation or manual operation.
   5. Product Requirements:
      a. System to be wall attached. System shall be floor attached where reverse folding.

b. Bank length as required by specifications.
c. Total number of rows as required by specifications.
d. Row rise: 10'', 11 5/8'', or as required by specifications
e. Row spacing: 22'', 24'', 26'' or as required by specifications.

6. Accessories:
   a. Handicap seating provisions: Provide first tier handicap cutouts to comply with American Disabilities Act (ADA). All handicap cutouts shall have required railings. Double center cutouts will be recoverable.
   b. Scorers table 15'' X 96''. Table shall be self-supporting and portable to be used anywhere within the bleacher system or on the gymnasium floor.
   c. Self–storing End Rails: All railings to receive powder-coating finish (black).
   d. P Rails: Every other deck shall have an intermediate pedestal mounted railing. These railings shall have a round handrail and shall be self-storing without the need of dismantling. Railings to receive powder-coated finish (black).
   e. Obstructions: Note any obstructions (columns, drainage pipes, overhead ducts, etc.) on final shop drawings.

2.2 Fabrication

A. Understructure System

1. Structural high-tensile steel columns fabricated from minimum size 1 ½'' x 3'' x 10-gauge structural tubing.
2. Bracing: 1 ½'' square, structural tubing
3. Row Locks: Provide two per each row, per bleacher section made of ¼'' plate, hot rolled steel.
4. Wheels shall be 4'' diameter x 1 ¼'' width.
5. Maximum spacing between columns shall be 11'–6".
6. Finish: Provide manufacturers black, semi-gloss, machinery enamel

B. Deck System

1. Footboards shall be ¾'' plywood with top facing. All surfaces shall be thoroughly sealed. Top facing shall receive three coats of colored, opaque, catalyzed epoxy coating. Aluminum trim shall be installed on exposed edges. Adjacent foot boards shall be joined by means of extruded aluminum joiner beam sized for ¾'' footboards.
2. Optional Upgrade – Panelam decking on ¾" plywood.
3. Optional Upgrade – Aluminum decking.
4. Provide thru-bolt fastening through galvanized steel riser beams at locations of splices in rear riser. Front deck connection shall be provided using front steel nose beams.

C. Decking and Riser Supports
   1. Decking and riser supports shall form rigid closed deck structure. Tapered deck stiffeners shall be bolted through the front and back.

D. Seat System
   1. Molded Structural Foam: Provide one-piece, high density structural polyethylene foam. Scuff resistant, textured solid color with anatomically correct tops. Color(s) for the seat modules shall be determined by the Architect by providing color charts. Contrasting color effects can be created with custom colors.
   2. Wood: Provide full 4/4" kiln dried, select southern yellow pine with rounded edges. Provide sanding sealer and three coats of clear polyurethane finish on top and sides.

E. Electrical System
   Tractor Drive System: A series of electric drives are located under the first row in sufficient quantities necessary to move the system in and out effortlessly. Each tractor drive consists of two 12" wide x 6" diameter cylinder wheels covered with a specially formulate white 60 durometer soft-faced rubber grooved for positive grip and low wear while reducing stress on floor.

   The tractor is operated by a minimum ¼" HP gear reduction motor built into a height adjustable steel framework and containing additional weight plates for added traction where necessary. These drives operate from one central control box and a single plug-in, hand-held, low-voltage remote pendant controller which has, in addition to an in-and-out button, a left and a right jog button used to always allow for straight and true steering (steering provided where required). The standard system operates with 3 phase, 208 volt, 60 Hz power. Optional power source can be supplied as required.

PART 3 EXECUTION

3.1 General

A. Manufacturer's representative or bleacher system installer shall demonstrate the proper method of operation of the bleacher system to the Owner and Architect upon completion of the work.
B. Telescopic Seating Subcontractor shall verify that all areas are free of impediments interfering with the installation and that substrates are acceptable to receive seating in accordance with the manufacturer's recommendations.

C. Electrical wiring within the building as required for power operation of the bleachers shall be provided by others.

3.2 Installation

A. Seating shall be installed in accordance with the manufacturer's instructions and final shop drawings. Telescopic Seating Subcontractor will install all accessories, anchors, inserts and other items for installation of seating and for permanent attachment to adjoining construction.

B. Adjustment and Cleaning: Upon completion of installation, Telescopic Seating Subcontractor shall adjust each seating assembly to operate in compliance with manufacturer's recommendations. Telescopic Seating Subcontractor shall clean installed seating on exposed or semi-exposed surfaces and touch-up all exposed finishes.

C. The manufacturer reserves the right to incorporate design changes and material substitutions as it sees fit to improve the overall product.

All rights reserved, Sheridan Seating Inc.

Sheridan Seating Warranty

Sheridan Seating Inc., “Sheridan”, warrants, the “Owner” that its new Telescopic Bleachers, “the Product”, will be free from defects in material and workmanship as per the specification for 10 years from Substantial Completion under conditions of normal use and that have been maintained as per Sheridan’s requirements, except as noted below. If such a defect causes failure of the Product or a portion of the product, Sheridan, at its option and sole discretion, will either repair or replace the defective Product or portion of the Product at no charge to the customer. Replacement structural steel components, hardware, axles, and wheels as necessary to maintain integrity of the original installation, will be provided, at no charge, for a period of 20-years.

This guarantee is limited to fair use of the system and does not include vandalism, fire, flood, other acts of dog or situations that do not fall into the general requirements of our bleacher. This guarantee is contingent up the client arranging an annual maintenance program carried out by a Sheridan certified maintenance company.

This warrant is the customer’s exclusive remedy for product defects and does not apply to products altered or modified by the user, or their agents, or to user attached accessories.

There are no warranties except as expressly stated above whether expressed or implied including, but not limited to any warranty of merchantability or fitness for any particular purpose. Sheridan shall not be liable for consequential or incidental damage arising from any product defect.

(705) 326.7463 info@sheridanseating.com sheridanseating.com
290 West Street South, Orillia, ON, Canada, L3V 5G8

Sheridan Product Certification

Sheridan Seating Inc. products meet or exceed the customer specific requirements detailed in the “Bleacher Specifications” distributed to initiate product quotations and the build thereafter.

The product meets or exceeds the applicable codes listed here:

ADA & ABA 2004 USA, IBC 2021 USA, NFPA-102 2021 USA, ANSI-300 2017 USA & CANADA, BOCA USA & CANADA, NFC Canada 2020, NBC Canada 2020, 2017 ICC 300, Accessible Canda Act.

Where requested the product will meet or exceed load requirements and can be verified by 3rd party engineering firms for any State, Province, or Territory in North America.

Robert White
Owner, Director of Quality & Sales
robert@sheridanseating.com

m. (705) 326-7463 Ext. 222
c. (705) 323-4709

290 West Street South, Orillia, ON, Canada, L3V 5G8

www.sheridanseating.com

Sheridan's Understructure Advantage:

- Sheridan seating uses a 4 column freestanding understructure which makes our understructure easier to assemble than many of the competitors in the industry.
- The four vertical columns and connecting braces create a "box-frame" and provide great rigidity to the understructure.
- Sheridan understructure is made with 100% North American steel for unparallelled strength and durability.

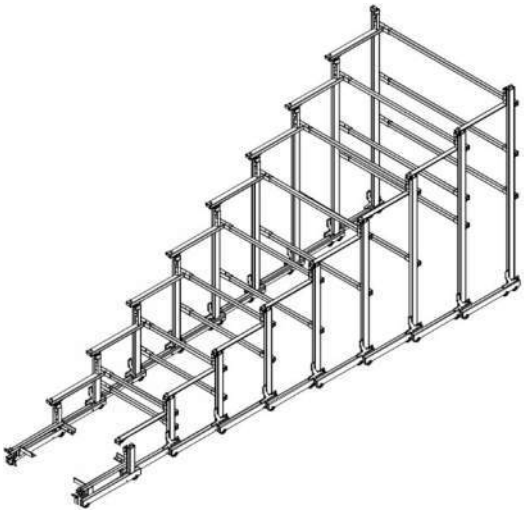


Figure 1:Sheridan 4 Column System

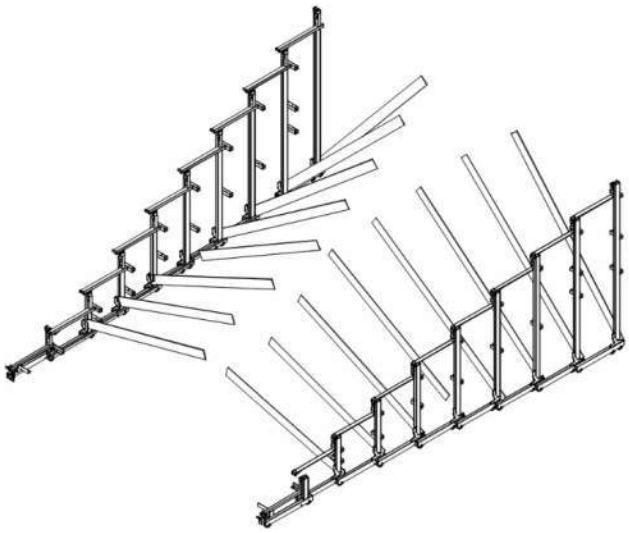


Figure 2: Competitor System

Sheridan's Design Advantage:

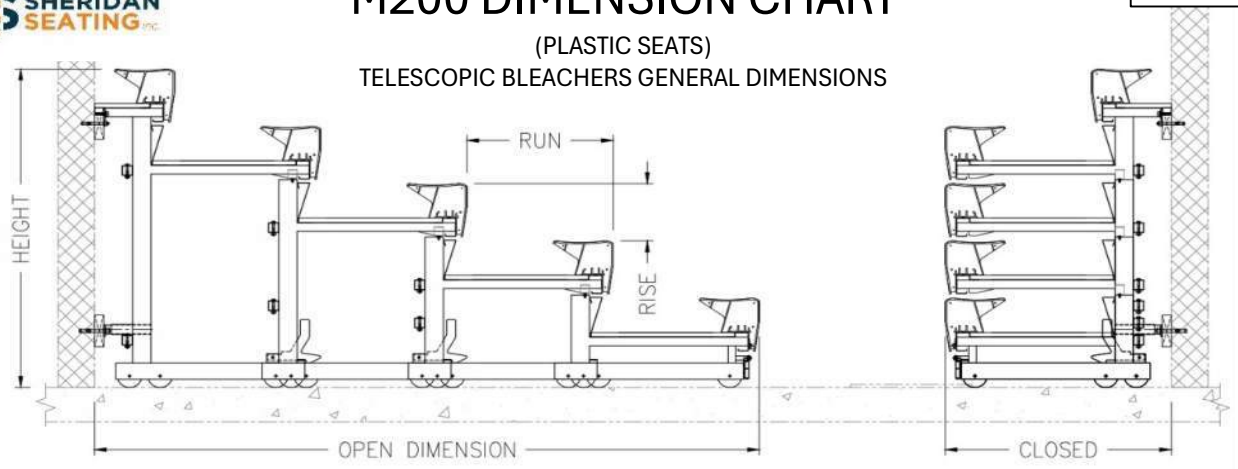
- Every project is unique, and we understand the importance of creating customized solutions for our customers. Our design and fabrication teams work closely with our clients to bring their visions to life.
- Sheridan build and design our products around your facility, we do not drive our customers to design their facility around our designs.
- From selecting the finest materials to incorporating personalized features and finishes, we strive to exceed expectations on every project. Whether it's an intimate auditorium or large arena, we have the expertise and equipment needed to fabricate the perfect solution, every time.
- We would be pleased to help design and set up your new facility. We will provide you with the necessary resources and experience needed to optimize the end results of your project.

M200 DIMENSION CHART

Oct 2024

(PLASTIC SEATS)

TELESCOPIC BLEACHERS GENERAL DIMENSIONS



OPEN DIMENSIONS IMPERIAL (mm)

Row	22" SPACING	24" SPACING	26" SPACING	33" SPACING
3	4' 9 1/8 " (1451)	5' 1 1/8 " (1553)	5' 5 1/16 " (1653)	6' 7 1/16 " (2008)
4	6' 7 1/8 " (2010)	7' 1 1/8 " (2162)	7' 7 1/8 " (2315)	9' 4 1/8 " (2848)
5	8' 5 1/8 " (2569)	9' 1 1/8 " (2772)	9' 9 1/8 " (2975)	12' 1 1/8 " (3686)
6	10' 3 1/8 " (3127)	11' 1 1/8 " (3381)	11' 11 1/8 " (3635)	14' 10 1/8 " (4524)
7	12' 1 1/8 " (3686)	13' 1 1/8 " (3991)	14' 1 1/8 " (4296)	17' 7 1/8 " (5363)
8	13' 11 1/8 " (4245)	15' 1 1/8 " (4601)	16' 3 1/8 " (4956)	20' 4 1/8 " (6201)
9	15' 9 1/8 " (4804)	17' 1 1/8 " (5210)	18' 5 1/8 " (5617)	23' 1 1/8 " (7039)
10	17' 7 1/8 " (5363)	19' 1 1/8 " (5820)	20' 7 1/8 " (6277)	25' 10 1/8 " (7877)
11	19' 5 1/8 " (5921)	21' 1 1/8 " (6429)	22' 9 1/8 " (6937)	28' 7 1/8 " (8715)
12	21' 4 1/8 " (6504)	23' 2 1/8 " (7063)	25' 0 1/8 " (7622)	31' 5 1/8 " (9577)
13	23' 2 1/8 " (7063)	25' 2 1/8 " (7672)	27' 2 1/8 " (8282)	34' 2 1/8 " (10416)
14	25' 0 1/8 " (7622)	27' 2 1/8 " (8283)	29' 4 1/8 " (8942)	36' 11 1/8 " (11268)
15	26' 10 1/8 " (8180)	29' 2 1/8 " (8891)	31' 6 1/8 " (9603)	39' 8 1/8 " (12092)

HEIGHT IMPERIAL (mm)

10" RISE	11 5/8" RISE	16" RISE
2' 11 9/16 " (903)	3' 4 13/16 " (1037)	4' 3 1/8 " (1299)
3' 9 9/16 " (1157)	4' 4 7/16 " (1332)	5' 7 1/8 " (1705)
4' 7 9/16 " (1411)	5' 4 1/16 " (1627)	6' 11 1/8 " (2111)
5' 5 9/16 " (1665)	6' 3 11/16 " (1922)	8' 3 1/8 " (2518)
6' 3 9/16 " (1919)	7' 3 5/16 " (2218)	9' 7 1/8 " (2924)
7' 1 9/16 " (2173)	8' 2 15/16 " (2513)	10' 11 1/8 " (3331)
7' 11 9/16 " (2427)	9' 2 9/16 " (2808)	12' 3 1/8 " (3737)
8' 9 9/16 " (2681)	10' 2 3/16 " (3104)	13' 7 1/8 " (4143)
9' 7 9/16 " (2935)	11' 1 13/16 " (3399)	14' 11 1/8 " (4550)
10' 5 9/16 " (3189)	12' 1 7/16 " (3694)	16' 3 1/8 " (4956)
11' 3 9/16 " (3443)	13' 1 1/16 " (3989)	17' 7 1/8 " (5363)
12' 1 9/16 " (3697)	14' 11/16 " (4285)	18' 11 1/8 " (5769)
12' 11 9/16 " (3951)	15' 5/16 " (4580)	20' 3 1/8 " (6175)

CLOSED DIMENSIONS IMPERIAL (mm)

22" SPACING	24" SPACING	26" SPACING	33" SPACING
2'-11 1/8" (892)	3'-1 1/8" (943)	3'-3 1/8" (994)	3'-10 1/8" (1172)

Notes:

- Wall Obstructions may affect the open and close dimensions.
- Please contact Sheridan Seating for accurate dimensions.
- Reverse fold or portable bleachers may have slight changes.
- Exceeding 15 rows requires additional engineering.

BLEACHER INDUSTRY DATA CHART

CATALOG STANDARDS		SHERIDAN BLEACHERS	IRWIN	HUSSEY	INTERKAL
RISE	BASIC RISE	**10"**	10"	9 5/8"	10 1/4"
	HIGH RISE	**11 5/8"**	12"	11 5/8"	11 1/2"
	VERY HIGH RISE	**CONSULT FACT**	CONSULT FACT	16"	16"
ROW SPACING STANDARD		**22"/24"/26"**	22"/24"/26"	22"/24"/26"	22"/24"/26"
ROW SPACING LARGE		**30"/31"/33"**	31"/33"	30"/32"/33"	30"/32"/33"
MAXIMUM NUMBER OF ROWS		**30**	30	30	30
MAX. "SINGLE STACK" ROWS		**16**	20	20	20
CONTOUR SEAT MATERIAL		**POLYETHYLENE STRUCTURAL FOAM**	BLOW-MOLDED POLYETHYLENE	POLYETHYLENE STRUCTURAL FOAM	POLYETHYLENE STRUCTURAL FOAM
CONTOUR SEAT DEPTH		**10" & 12"**	10" & 12"	10" & 12"	10" & 12"
MAX. CONTOUR SEAT LENGTH		**18"**	18"	18"	18"
FOOT ROOM		**20 1/4"**	22"	20 1/4"	20 1/2"
SEAT SIZE (ACTUAL)		**10" & 12"**	10" & 12"	10" & 12"	10" & 12"
SEAT MATERIAL		**WOOD (5/4)**	WOOD (4/4 or 5/4)	WOOD (4/4)	WOOD (3/4 or 5/4)
SEAT FINISH - WOOD		**POLYURETHANE**	POLYURETHANE	POLYURETHANE	POLYURETHANE
DECKING	THICKNESS & MATL	**3/4" PLYWOOD**	5/8" or 3/4" PLYWOOD	5/8" PLYWOOD	5/8" PLYWOOD
	UPGRADE MATERIAL	**PANLAM, ALUMINUM**	PANLAM, ALUM, CARPET	PANLAM, ALUM, CARPET	
	PLYWOOD GRADE	**AC**	AC	AC	CD
	PLYWOOD FINISH	**MODIFIED URETHANE**	CLEAR URETHANE	CLEAR URETHANE	MODIFIED URETHANE
POST MATERIAL		**STRUCTURAL**	STRUCTURAL	STRUCTURAL	STRUCTURAL
POST SIZE		**TUBE 1 1/2" x 3"**	TUBE 2" x 3"	TUBE 1 1/2" x 3"	TUBE 1 1/2" x 2"
BRACING TYPE		**HORIZ. CROSS TUBES**	X	DIAGONAL	DIAGONAL
DECKING SPLICE		**ALUMINUM "H"**	TONGUE AND GROOVE	TONGUE AND GROOVE	ALUMINUM "H"
WHEEL SIZE		**4" D X 1 1/4" W MINIMUM**	4" X 1"	4" X 1"	3' 1/2" X 1"
STANDARD WHEEL TYPES		**SOFT**	SOFT	SOFT	SOFT
# OF COLUMNS - MANUAL		**4**	2	2	2
# OF COLUMNS - ELECTRIC		**VARIES**	2	2	2
NO. OF WHEELS PER COLUMN		**6**	4 OR MORE	4	4 OR MORE
REAR RISER SHAPES		**MODIFIED Z**	CUSTOMIZED STRAIGHT	CUSTOMIZED STRAIGHT	C
REAR RISER MATERIALS		**GALVANIZED**	GALV./POWDER COAT	GALVANIZED	GALVANIZED
REAR RISER FINISH		**ELECTROPLATED**	ELECTROPLATED		
RAILS		**POWDER COATED**	POWDER COATED	BAKED ENAMEL	POWDER COATED
SEAT HEIGHT (STD. RISE)		**16 1/2"**	16 1/2"	15 1/2"	16 1/2"
MAX. SEC. LENGTH (MANUAL)		**20'**	20'	20'	20'
FOOT LEVEL AISLES		**YES**	YES	YES	YES
AISLE CLOSURES		**YES**	YES	YES	YES
SELF STORING RAILS		**YES**	YES	YES	YES
POWER OPERATION TYPES		**FRICTION ROLLER**	ROLLER	ROLLER	ROLLER & PUSH CHAIN

OPERATION AND MAINTENANCE

INSTRUCTIONS

BOTH OPERATION AND MAINTENANCE SHALL BE TRANSMITTED TO THE OWNER

BY SHERIDAN SEATING INC. OR THEIR REPRESENTATIVE.

SERVICE

OPERATION AND MAINTENANCE OF THE BLEACHER SHALL BE THE

RESPONSIBILITY OF THE OWNER OR THEIR DULY AUTHORIZED

REPRESENTATIVE, AND SHALL INCLUDE THE FOLLOWING:

1. IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

2. ONLY ATTACHMENTS SPECIFICALLY APPROVED BY THE MANUFACTURER FOR

THE SPECIFIC INSTALLATION SHALL BE ATTACHED TO THE BLEACHER.

3. AN ANNUAL INSPECTION AND REQUIRED MAINTENANCE OF EACH BLEACHER SYSTEM SHALL BE PERFORMED TO ENSURE SAFE CONDITIONS. THE INSPECTION SHALL BE PERFORMED BY A TRAINED FACTORY INSTALLER, QUALIFIED SERVICE PERSONNEL OR A REGISTERED BLEACHER INSPECTION COMPANY.OPERATING INSTRUCTIONS FOR ELECTRIC OPERATION

USING PENDANT HAND CONTROL

THE MOST IMPORTANT ASPECT OF OPERATING BLEACHER PLATFORMS IS THERE NOT BE

ANY OBSTRUCTIONS ON THE FLOOR WHILE THE UNITS ARE TRAVELLING IN AND OUT.

TO OPEN BEACHERS

(1) CHECK IN FRONT OF THE BLEACHER PLATFORMS TO ENSURE THAT NO OBSTRUCTIONS ARE

IN THE WAY.

(2) PLUG IN THE PENDANT HAND CONTROL. THE FEMALE PLUG IS LOCATED IN THE CENTRE OF THE BLEACHER IN THE FIRST ROW SKIRTBOARD. CARE SHOULD BE TAKEN WHEN INSERTING THE PENDANT CONTROL PLUG TO ENSURE THAT THE PINS LINE UP CORRECTLY. THERE IS AN ALIGNMENT PIN IN THE PLUG.

(3) STEP BACK AND, HOLDING THE PENDANT CONTROL, TURN THE BUTTON TO THE OUT

POSITION TO PLACE THE BLEACHER IN MOTION. WALK FORWARD WITH THE BLEACHER AS IT MOVES.

(4) AS THE BLEACHER MOVES FORWARD, KEEP YOUR EYES IN LINE WITH THE FIRST ROW TO ENSURE THAT THE BLEACHER IS MOVING OUT IN A STRAIGHT LINE. IT HELPS TO USE THE GAME LINES ON THE FLOOR AS A GUIDE. IN A CASE WHERE THERE ARE NO GAME LINES, IT WILL BE NECESSARY TO USE ALTERNATE MARKINGS. THE FIRST ROW MUST REMAIN PARALLEL TO THE BACK WALL AT ALL TIMES TO PREVENT PLATFORM FROM TRACKING.

(5) THE ROW LOCKS SHOULD RELEASE ONE AT A TIME AND LOCK INTO PLACE WHEN FULLY EXTENDED. THIS ALSO PREVENTS THE BLEACHER FROM TRACKING.

(6) DURING THE OPERATION IT IS POSSIBLE FOR A SECTION TO MOVE MORE QUICKLY ON ONE SIDE THAN THE OTHER DUE TO FLOOR CONDITIONS OR THE MECHANICAL DRAG FACTORS IN THE TELESCOPIC BLEACHER SYSTEM. THIS IS A NATURAL CONDITION TO ALL TELESCOPIC SEATING AND IS OVERCOME BY THE OPERATOR CONTINUOUSLY MONITORING THE MOVEMENT OF THE FIRST ROW TO ENSURE THAT IT IS ALWAYS STRAIGHT. IF THE UNIT BEGINS TO GET OUT OF ALIGNMENT IT WILL BE NECESSARY FOR THE OPERATOR TO USE THE JOG BUTTON TO BRING THE PLATFORM BACK INTO ALIGNMENT. (THE JOG OPTION DOES NOT APPLY TO SYSTEMS UNDER 8 ROWS)

(7) TO JOG THE BLEACHER BACK INTO POSITION, TURN THE PENDANT CONTROL BUTTON TO THE OFF POSITION. THE CONTROLLER IS SPRING LOADED. OUR SYSTEM HAS JOG LEFT AND JOG RIGHT. JOG LEFT WILL MAKE THE MOTORS ON THE LEFT SIDE OF THE PLATFORM RUN FORWARD AND THE MOTORS ON THE RIGHT GO IN REVERSE. THE JOG RIGHT BUTTON WILL DO THE EXACT OPPOSITE. USING THE IN-OUT CONTROL, YOU CAN REVERSE THE MOTOR SEQUENCE. USING THE JOG BUTTONS, IT IS NOW POSSIBLE TO REALIGN THE PLATFORMS. WHEN PLATFORMS ARE MOVED BACK INTO ALGINMENT, YOU CAN SHUT DOWN THE JOG FEATURE AND AGAIN RUN THE PLATFORMS OUT USING THE IN-OUT BUTTON ONLY.

(8) CONTINUE MOVING FORWARD WITH THE BLEACHER UNTIL IT IS FULLY EXTENDED.

(9) REMOVE PENDANT HAND CONTROL AND STORE AWAY.(10) INSTALL REMOVABLE END RAILS. THE END RAILS ARE ALL INTERCHANGEABLE EXCEPT FOR
THE TOP ROW. THEY SLIDE INTO THE RAILING SOCKETS WITH SOME SIDE-TO-SIDE MOTION. WHEN RAILS ARE COMPLETELY INSERTED IN SOCKETS, THERE ARE SET SCREWS AT THE

SIDE OF THE SOCKET THAT REQUIRES TIGHTENING WITH A 3/16” ALLEN KEY.

(11) IF BLEACHER PLATFORMS ARE EQUIPPED WITH SELF-STORING READY RAILS, THEY ARE NOT REMOVED.

(12) IF BLEACHER PLATFORMS ARE EQUIPPED WITH “P” RAILS IN THE AISLES THEY NEED TO BE TURNED 180 DEGREES TO THE USER POSITION. DEPRESS THE LOCK PIN (LOCATED FRONT AND TOP OF POST) AND TURN RAIL. PIN WILL AUTOMATICALLY LOCK INTO CORRECT POSITION.

(13) BEFORE BLEACHER PLATFORMS ARE USED, VISUALLY CHECK THAT ALL ROW LOCKS ARE ENGAGED.

(14) WHEN INTERMEDIATE AISLE STEPS ARE INCLUDED, THE FIRST STEP WILL BE HINGED TO THE NOSING BEAM. FLIP THE STEP DOWN INTO USER POSITION.

(15) FINALLY, SHUT DOWN POWER SOURCE AT DISCONNECT.TO CLOSE BLEACHERS

(1) TO CLOSE THE BLEACHER PLATFORM REVERSE THE PROCESS, STARTING WITH THE REMOVABLE END RAILS. THESE RAILS WILL NEED TO BE STORED.

(2) IF BLEACHER PLATFORMS ARE EQUIPPED WITH SELF-STORING READY RAILS, THEY ARE NOT REMOVED.

(3) IF AISLES HAVE “P” RAILS, THESE NEED TO BE TURNED TO THE NON-USER POSITION. THIS IS AGAIN DONE BY DEPRESSING THE LOCK PIN AND TURNING RAIL 180 DEGREES.

(4) IF AISLES HAVE INTERMEDIATE STEPS, THE FIRST STEP WILL BE HINGED TO THE NOSING BEAM AND WILL NEED TO BE FLIPPED UP INTO POSITION.

(5) MAKE A VISUAL INSPECTION UNDER THE BLEACHERS TO ENSURE THAT THERE ARE NO OBSTACLES IN THE OPERATING AREA.

(6) VISUALLY CHECK THE ROW LOCKS. IT IS IMPERATIVE THAT EACH AND EVERY ROW LOCK IS ENGAGED! IF ONE OR MORE ROW LOCKS ARE NOT IN PLACE, THE BLEACHER WILL NOT

TRACK INTO THE WALL OR POCKET PROPERLY.

(7) TO MAKE SURE ROW LOCKS ARE LOCKED IN PLACE, RUN THE BLEACHER OUT AS FAR AS IT WILL GO.

(8) TURN POWER SOURCE ON AT DISCONNECT.

(9) PLUG IN THE PENDANT HAND CONTROL. FEMALE PLUG IS LOCATED IN CENTRE OF BLEACHER IN FIRST ROW SKIRT BOARD.

(10) STEP BACK AND, HOLDING THE PENDANT HAND CONTROL, TURN THE BUTTON TO THE IN POSITION. THIS WILL PLACE THE BLEACHER INTO MOTION GOING BACK TOWARDS THE WALL.

(11) AS THE BLEACHER MOVES BACK, THE OPERATOR MUST KEEP HIS EYES ON THE FIRST ROW TO ENSURE THE BLEACHER IS MOVING BACK IN A STRAIGHT LINE. AGAIN HE SHOULD USE THE GAME LINES ON THE FLOOR AS A GUIDE (IF THERE ARE NO LINES, IT WILL BE NECESSARY TO USE ALTERNATE MARKINGS). THE FIRST ROW MUST ALWAYS REMAIN PARALLEL TO THE BACK WALL AT ALL TIMES TO PREVENT TRACKING.

(12) THE ROWS MUST RELEASE ONE AT A TIME, STARTING WITH THE FIRST ROW AND GOING BACK. IF, FOR ANY REASON, A ROW FURTHER BACK STARTS TO CLOSE, STOP IMMEDIATELY AND CHECK FOR A ROW LOCK THAT HAS RELEASED PREMATURELY ON THIS ROW. AFTER INSPECTION, THE BLEACHER WILL HAVE TO BE MOVED “FORWARD” COMPLETELY AND THE REVERSING PROCESS STARTED OVER. AGAIN, PLEASE MAKE SURE ALL ROW LOCKS ARE ENGAGING. IF THE ABOVE CONDITION OCCURS, THE OPERATOR SHOULD MAKE A THOROUGH INSPECTION UNDER THE BLEACHER, LOOKING FOR THE OBSTRUCTION OR THE CAUSE WHICH WOULD HAVE MADE THIS CONDITION HAPPEN.

(13) AGAIN, IN THIS CASE, IT IS POSSIBLE FOR ONE SIDE OF THE BLEACHER TO MOVE MORE QUICKLY THAN THE OTHER. THE JOG BUTTON MUST BE USED TO KEEP THE FIRST ROW STRAIGHT AND PREVENT THE PLATFORM FROM RACKING.

(14) CONTINUE MOVING REARWARD WITH THE BLEACHER UNTIL IT IS FULLY CLOSED.

(15) REMOVE THE PENDANT HAND CONTROL AND STORE AWAY.

(16) SHUT DOWN POWER SOURCE AT DISCONNECT.OPERATING INSTRUCTIONS FOR MANUAL OPERATION

(1) TO OPEN BLEACHER PLATFORMS, LIFT THE FRONT RISER BOARD SO THAT THE FRONT ROW LOCKS ARE DEACTIVATED. THE SKIRTBOARD WILL HAVE A CHEST HANDLE TO ASSIST IN LIFTING THE SKIRTBOARD. THE FRONT SKIRTBOARD AND THE FIRST ROW LOCKS ARE MECHANICALLY ATTACHED.

(2) WITH A PERSON AT EACH END AND AN OPERATOR HANDLE INSERTED UNDER THE FRONT SKIRTBOARD, MAKING SURE PULLING CHANNEL IS PULLING ON NOSING BEAM AND NOT SKIRTBOARD, PULL OUT EVENLY. ROWS WILL RELEASE ONE AT A TIME AND ROW LOCKS WILL ACTIVATE. CONTINUE UNTIL BLEACHER PLATFORMS ARE COMPLETELY OUT. PUSH SKIRTBOARD BACK DOWN TO LOCK FRONT ROW LOCK AND SKIRTBOARD IN PLACE.

(3) IT IS NECESSARY TO PULL THE BLEACHER OUT EVENLY TO HELP PREVENT BLEACHER SECTIONS FROM TRACKING.

(4) INSTALL REMOVABLE END RAILS. THE END RAILS ARE ALL INTERCHANGEABLE EXCEPT FOR THE TOP ROW. THEY SLIDE INTO THE RAILING SOCKETS WITH SOME SIDE-TO-SIDE MOTION. WHEN RAILS ARE COMPLETELY INSERTED IN SOCKETS, TIGHTEN THE SET SCREWS AT THE SIDE OF THE SOCKETS WITH A 3/16” ALLEN KEY.

(5) IF BLEACHER PLATFORMS ARE EQUIPPED WITH SELF-STORING READY RAILS, THEY ARE NOT REMOVED.

(6) IF BLEACHER PLATFORMS ARE EQUIPPED WITH “P” RAILS IN THE AISLES, THEY NEED TO BE TURNED 180 DEGREES TO THE USER POSITION. DEPRESS THE LOCK PIN (LOCATED FRONT AND TOP OF POST) AND TURN “P” RAIL. PIN WILL AUTOMATICALLY LOCK INTO CORRECT POSITION.

(7) WHEN INTERMEDIATE AISLE STEPS ARE INCLUDED, THE FIRST STEP WILL BE HINGED TO THE NOSING BEAM. FLIP THE STEP DOWN INTO POSITION.

(8) TO CLOSE BLEACHER PLATFORMS REVERSE PROCEDURE AND PUSH STEADILY SO THAT ROWS ARE STRAIGHT AND NOT JAMMING OR RACKING. CONTINUE UNTIL FULLY CLOSED AND

PUSH DOWN ON RISER TO LOCK IN PLACE.

CAUTION

THE FIRST ROW ACTIVATES THE LOCKING MECHANISM. DO NOT TRY TO PUSH UPPER ROWS AHEAD OF FIRST ROW.

THE USE OF THE OPERATOR HANDLES WILL PROLONG THE LIFE OF THE BLEACHER PLATFORMS AND HELP PREVENT BACK INJURIES TO OPERATORS.MAINTENANCE INSTRUCTIONS FOR TELESCOPIC BLEACHER

IT IS MOST IMPORTANT WITH TELESCOPIC BLEACHERS TO NEVER ALLOW PEOPLE TO CLIMB OR SIT ON THE BLEACHER WHEN IT IS IN A CLOSED POSITION. EACH TIME THE TELESCOPIC BLEACHER IS USED THE FOLLOWING SHOULD BE DONE TO KEEP IT IN A SMOOTH RUNNING CONDITION.

(1) ENSURE THAT NO OBSTRUCTIONS ARE ON THE FLOOR WHILE THE UNIT IS TRAVELLING IN OR OUT.

(2) BEFORE CLOSING THE BLEACHERS, THERE SHOULD BE A VISUAL INSPECTION UNDER THE BLEACHERS TO ENSURE NO OBSTACLES ARE IN THE OPERATING PATH.

(3) THE TOP OF THE PLATFORMS SHOULD ALSO BE VISUALLY INSPECTED BEFORE MOVING.

(4) THE ROWS RELEASE ONE AT A TIME AND LOCK INTO PLACE WHEN FULLY EXTENDED. ROW LOCKS MUST BE VISUALLY CHECKED AND IT IS IMPERATIVE THAT EACH AND EVERY ROW LOCK IS ENGAGED. IF ONE OR MORE ROW LOCK IS NOT IN PLACE, THE BLEACHER WILL NOT TRACK PROPERLY “IN” OR “OUT” FROM THE WALL.

(5) WHEN VISUALLY CHECKING ROW LOCKS, CHECK TO ENSURE ROW LOCK DOES NOT MAKE SIDE-TO-SIDE MOVEMENT.

(6) WHEN CLOSING, IF FOR ANY REASON A ROW FURTHER BACK STARTS TO CLOSE “STOP” IMMEDIATELY AND CHECK FOR A ROW LOCK THAT HAS RELEASED PREMATURELY ON THIS ROW. AFTER INSPECTION, THE BLEACHER WILL HAVE TO BE MOVED “FORWARD”

COMPLETELY AND THE REVERSING PROCESS STARTED OVER. AGAIN, PLEASE MAKE SURE ALL ROW LOCKS ARE ENGAGING. IF THE ABOVE CONDITION DOES OCCUR, THE OPERATOR SHOULD MAKE A THOROUGH INSPECTION UNDER THE BLEACHER, LOOKING FOR THE OBSTRUCTION OR CAUSE WHICH WOULD HAVE MADE THIS CONDITION HAPPEN.

IT IS CONSIDERED GOOD PRACTICE TO INSPECT THE FOLLOWING ON A YEARLY BASIS. THIS WILL ADD TO THE EXPECTED LIFE OF THE BLEACHER AND MUST BE DONE TO INSURE EXTENDED WARRANTIES.

(A) ENSURE THAT ALL CARRIAGE BOLTS USED TO SECURE THE PLYWOOD FLOOR AND LUMBER AREAS ARE CHECKED FOR TIGHTNESS.

(B) ALL BOLTS USED TO FASTEN STEEL-TO-STEEL PIECES ARE CHECKED FOR TIGHTNESS.

.

(C) ALL AREAS WHERE GREASE HAS BEEN PLACED FOR LUBRICATION SHOULD BE WIPED CLEAN AND RE-LUBRICATED. (RUB BARS AND RAMPS)

(D) ALL LUMBER, PLASTIC AND PLYWOOD CAN BE WASHED USING A MILD DETERGENT AND LUKE WARM WATER.

(E) IF ELECTRIC, ALL WIRING CHECKED AND ALL CONNECTIONS CHECKED AND SECURED.

(F) WALL BUCKS ARE SECURE AND NO ANCHORING HAS COME LOOSE.MAINTENANCE INSTRUCTIONS FOR FIXED BLEACHER

ON A YEARLY BASIS:

(A) ENSURE ALL CARRIAGE BOLTS USED TO SECURE PLYWOOD RISERS AND LUMBER AREAS ARE CHECKED FOR TIGHTNESS.

(B) ALL BOLTS USED TO FASTEN STEEL-TO-STEEL PIECES ARE CHECKED FOR TIGHTNESS.

(C) ALL SEATS SHOULD BE INSPECTED FOR MOVEMENT OR VANDALISM AND

TIGHTENED OR REPLACED.

(D) ALL LUMBER AND SEATS CAN BE WASHED USING A MILD DETERGENT AND

LUKE WARM WATER.

(E) WALL BUCKS ARE SECURE AND NO ANCHORING HAS COME LOOSE.

(F) ENSURE RAILINGS ARE INTACT AND FUNCTIONING PROPERLY. IF THERE IS A FUNCTIONAL FAILURE, CALL FACTORY REPRESENTATIVE IMMEDIATELY AND DISCONTINUE USE UNTIL AFTER INSPECTION AND/OR REPAIR.

(705) 326.7463 info@sheridanseating.com sheridanseating.com
290 West Street South, Orillia, ON, Canada, L3V 5G8

SHERIDAN SEATING inc.

SEAT COLOURS & FINISHES

15 Standard Colours. Endless Possibilities.

Available in 15 standard colours and endless custom hues, your venue's formed-poly seats will be the star of the show. Incorporate patterns, symbols or your home team's initials into your seating system design by using contrasting colours of seats.

Standard Colours & Finishes

ORANGE S-07
RED S-08
BURGUNDY S-09
LIGHT BLUE S-10
MED. BLUE S-11
DARK BLUE S-12
PURPLE S-13
GREEN S-14
DARK GREEN S-15

Classic Wood Finishes

Our classic Southern Yellow Pine & Clear Pine bench finishes are triple-sanded and finished with two coats of semi-gloss polyurethane. Sheridan's wooden seats offer a classic look and are tough on wear and tear.



Custom Colours

Choose any custom hue to match your venue's palette, brand or team colours. Available for an additional fee.




S-08 & S-12


S-10, S-11 & S-12


S-08


S-31


S-11 & S-08


S-12

Visit our website for more design ideas!

SHERIDAN SEATING inc.

Sheridan Seating
290 West Street South,
Ontario, Canada L3V 5G8

Phone: 705-326-7463

www.SheridanSeating.com

Get In Touch!
sales@sheridanseating.com

Bid RFI #389

SHERIDAN SEATING inc.

Delivering the best seat in the house for every guest



TELESCOPIC SEATING SOLUTIONS

Bid RFI #389

Delivering the Best Seat in the House

Since 1978, Sheridan Seating has been designing, manufacturing and innovating new seating solutions for venues across North America from our home plant in Ontario, Canada. We're proud to bring that home-town conscientiousness to everything we do. From delivering the best seats in the house for every venue to cheering on the home team in every town, Sheridan Seating is your partner in telescopic seating solutions.

Interested in learning more? Let's keep in touch!

Sheridan Seating Inc.

@SheridanSeating

@SheridanSeating

Your Local Sheridan Seating Dealer:

Sales & Quotes: sales@sheridanseating.com

General Info: info@sheridanseating.com

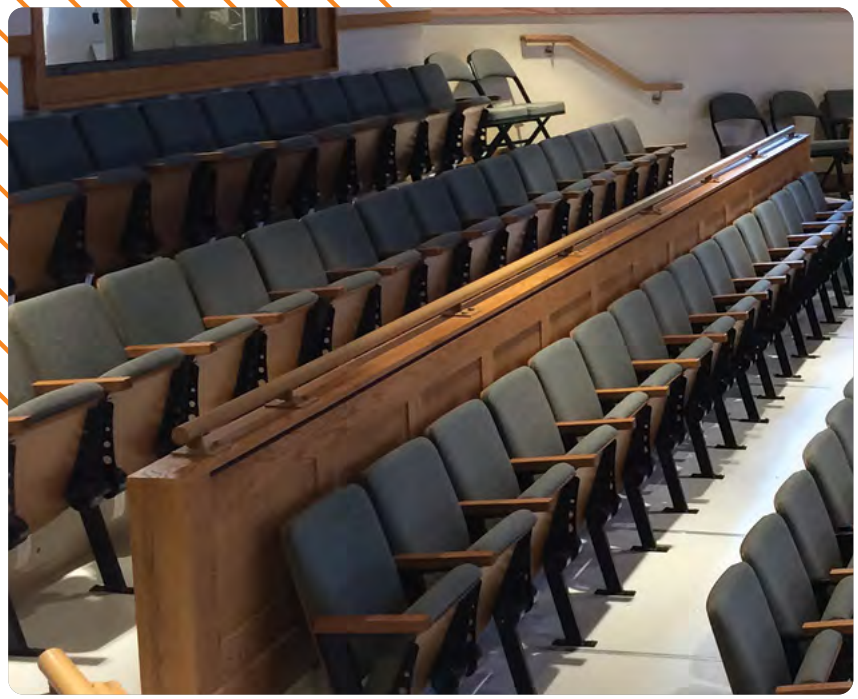
Customer Services: customerservice@sheridanseating.com

SHERIDAN SEATING inc.

Delivering the Best Seat in the House.

At Sheridan Seating, we know that a seat is more than just a chair. It's a place where people sit to learn, worship, support and cheer. A place where they can show up for the home team, hear an idol sing and share in collective experiences.

That's why we're committed to delivering the best seat in the house for every guest, customized to meet your venue's unique needs.





Serving multi-use facilities ranging in size from intimate corporate spaces and local arenas to large theatres, Sheridan Seating's line of high-quality, flexible and fully customizable seating and retractable stage solutions will inspire your audience with style and comfort.

Interested in delivering the best seat in the house for every guest? Let's work together to bring your venue's vision to life.

Bid RFI #389

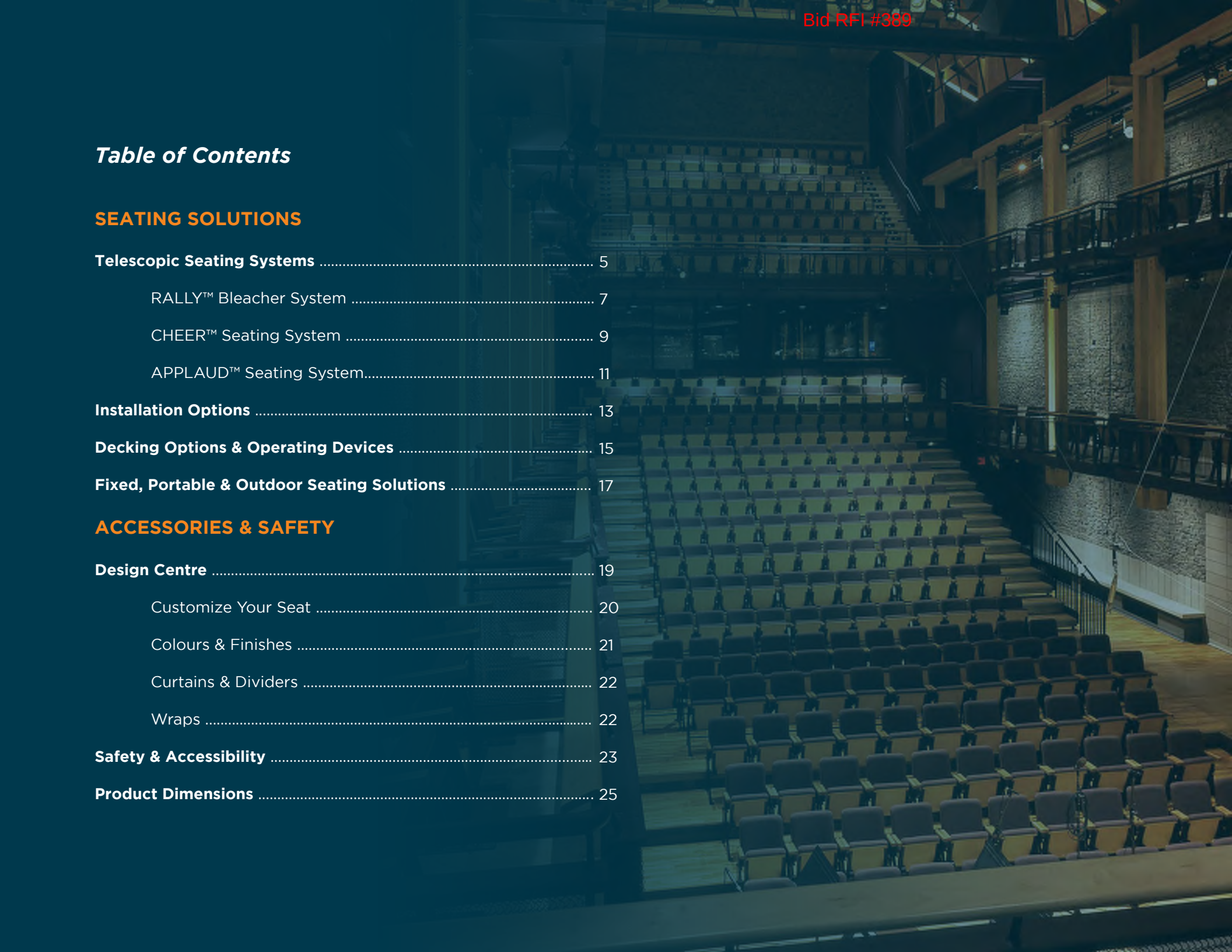


Table of Contents

SEATING SOLUTIONS

Telescopic Seating Systems 5

RALLY™ Bleacher System 7

CHEER™ Seating System 9

APPLAUD™ Seating System 11

Installation Options 13

Decking Options & Operating Devices 15

Fixed, Portable & Outdoor Seating Solutions 17

ACCESSORIES & SAFETY

Design Centre 19

Customize Your Seat 20

Colours & Finishes 21

Curtains & Dividers 22

Wraps 22

Safety & Accessibility 23

Product Dimensions 25

Bid RFI #389

TELESCOPIC SEATING SOLUTIONS

Bid RFI #389



Always Custom.
Never Cookie Cutter.

At Sheridan Seating, we know your space needs a solution that fits. That's why we're committed to delivering a seating system that maximizes flexibility, style and safety.

From schools and auditoriums, to sports arenas and more, our reliable and easy-to-use telescopic seating systems are uniquely designed to play a supporting role in your facility so your performances can shine.

Our seating systems are fully customizable, so you'll never have to design your venue around our products.

The best part? We're proud to back our products with a 20-year warranty. Visit us online for full warranty details.

Rugged Engineering.
North American Made.

We design products that look great and are built to last. We source our materials and components from North American suppliers so that you can feel 100% confident in our products.

Our rugged bleacher understructure is made with 100% North American steel for unparalleled strength and durability. Engineered with 3/4" decking and 10 gauge tubing, and supported by four support columns instead of only two, you'll never question the toughness of your Sheridan Seating system.

All of our telescopic seating systems are powered by an industry-leading 4 horsepower motor so your recoverable space will always be available at the touch of a button.

We proudly design and manufacture our seating systems in our home plant in Ontario, Canada, where we stringently test and inspect each component before it leaves our facility to ensure a safe, top-quality product is delivered and installed every time.

Bid RFI #389

RALLY™ BLEACHER SYSTEM

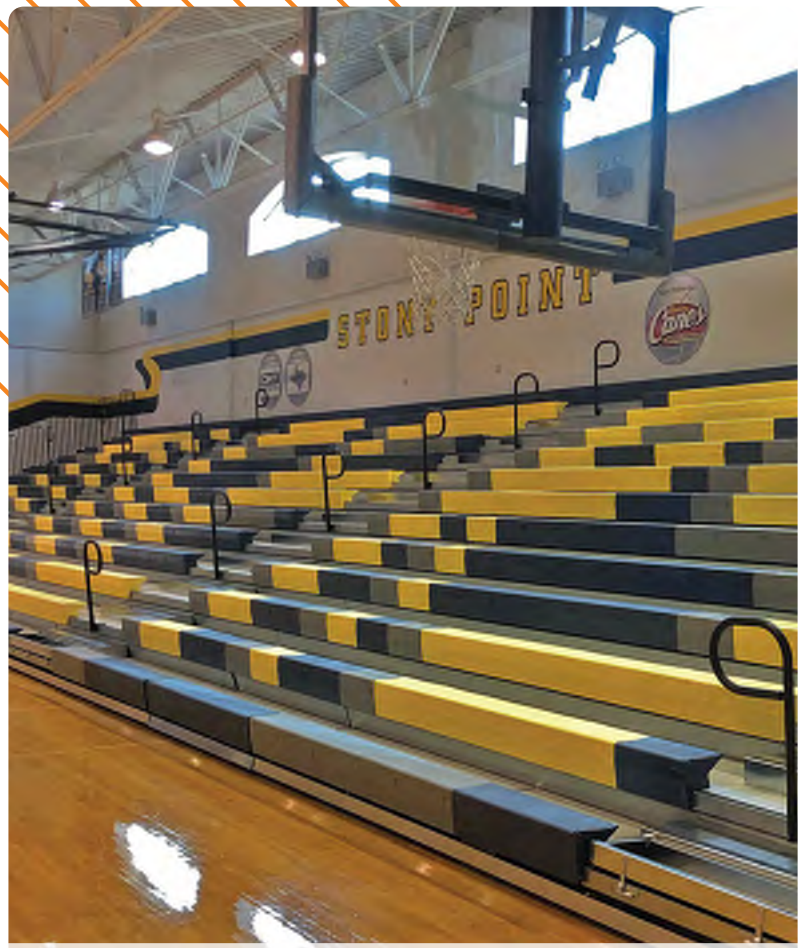
(TL6000, TL6100)

Perfect for:
Gymnasiums, E-sports, Auditoriums, Local Arenas, and more.

At the Front of the Action

Blur the line between fans and action with our fully customizable RALLY™ bleacher seating system.

Budget-friendly and big on style, RALLY™'s sleek bench-style seating handles a crowd with ease and, when performances are over, tucks neatly away to make space for whatever your venue has planned next.



GYMNASIUM, STONY POINT HIGH SCHOOL, ROUND ROCK ISD, TEXAS, US



Durable polyethylene, wood or upholstered bench seats

Optimized rise/run for maximum seating capacity

Narrow profile to recover maximum floor space

Comfortable ergonomic benches & custom backrests

Your most cost-effective seating solution

EASY TO OPERATE CUSTOM BLEACHERS

With great looks and easy operating solutions, and supported by our industry-leading engineering, RALLY™ is available in custom and variable rise and run to maximize seating while still delivering big on experience and durability.

COMFORTABLE ERGONOMIC SEATS

Available in ergonomic formed-polyethylene plastic, stylish wood or plush upholstered bench seats, RALLY™ can be fabricated in custom lengths to suit your needs. If you're looking to amp up comfort for your guests, add a custom backrest to any style bench.



Bid RFI #389

CHEER™ BLEACHER SYSTEM

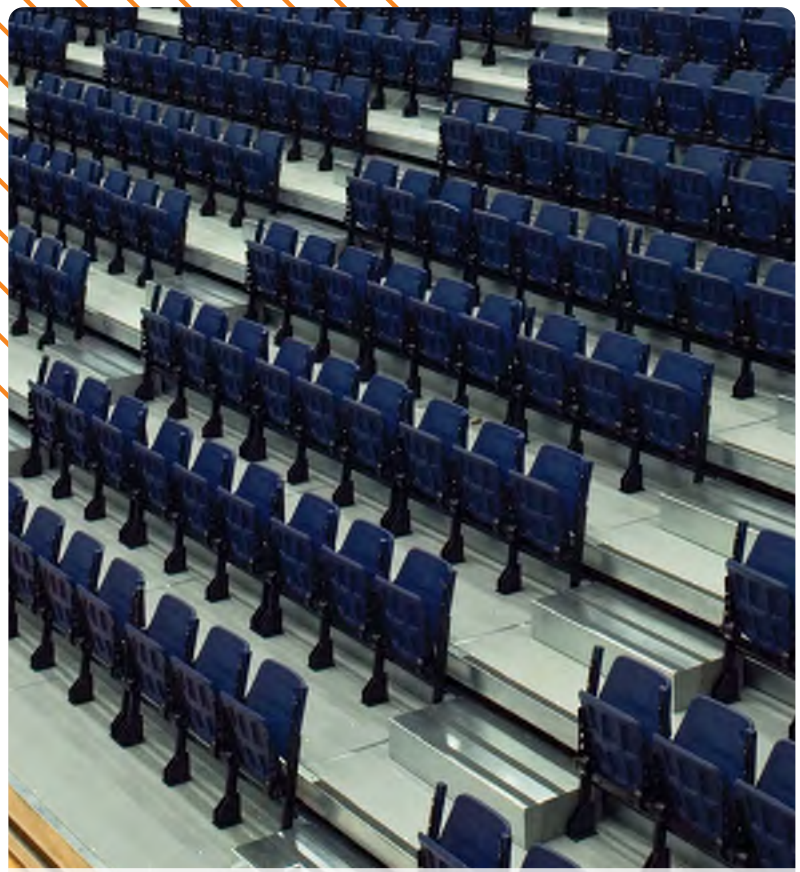
(TL7000)

Perfect for:
Casinos, Arenas, Gathering Spaces, Lecture Halls, and more.

Where Flexibility Meets Style

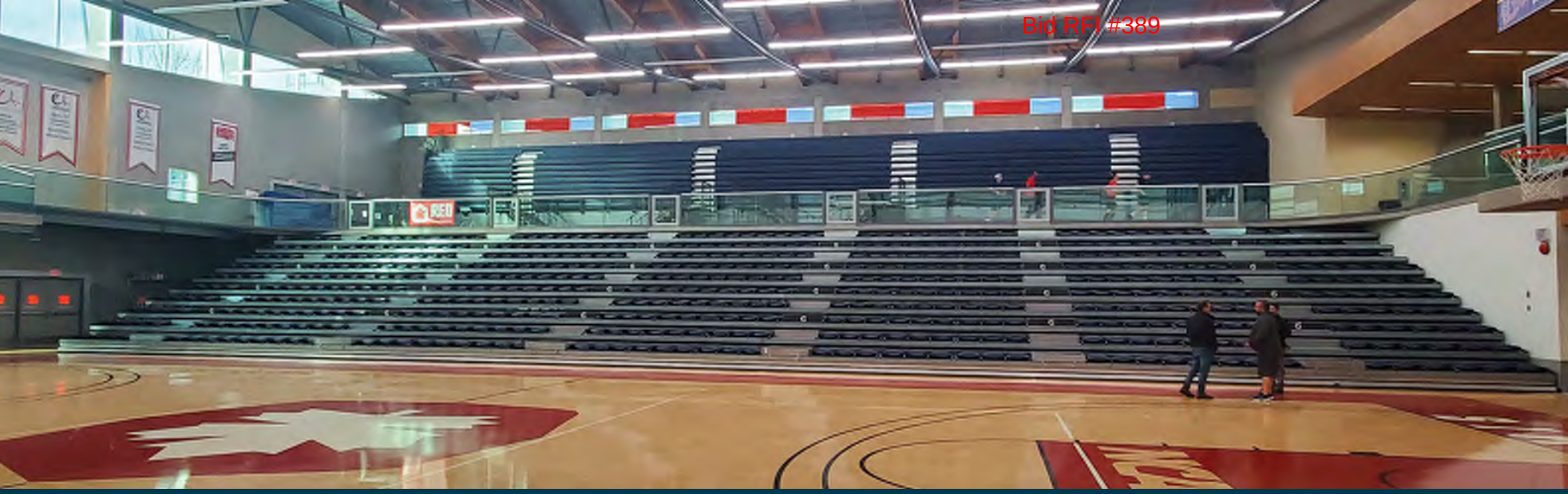
Never sacrifice comfort or functionality with Sheridan Seating's CHEER™ platform seating system. This fully customizable solution is available in a variety of decking, seat and accessory options to suit any sized facility or budget.

Our sales representative would be happy to design a hassle-free operating solution that makes changing the configuration of your venue a breeze.



SIMON FRASER UNIVERSITY,
BRITISH COLUMBIA, CANADA

Bid RFI #389



Durable polyethylene, wood* or upholstered bench or chair

Robust seating capacity with generous leg room

Recover maximum floor space (10% less than the RALLY™ line)

Comfortable ergonomic chairs with armrest or benches

Your most customizable seating solution

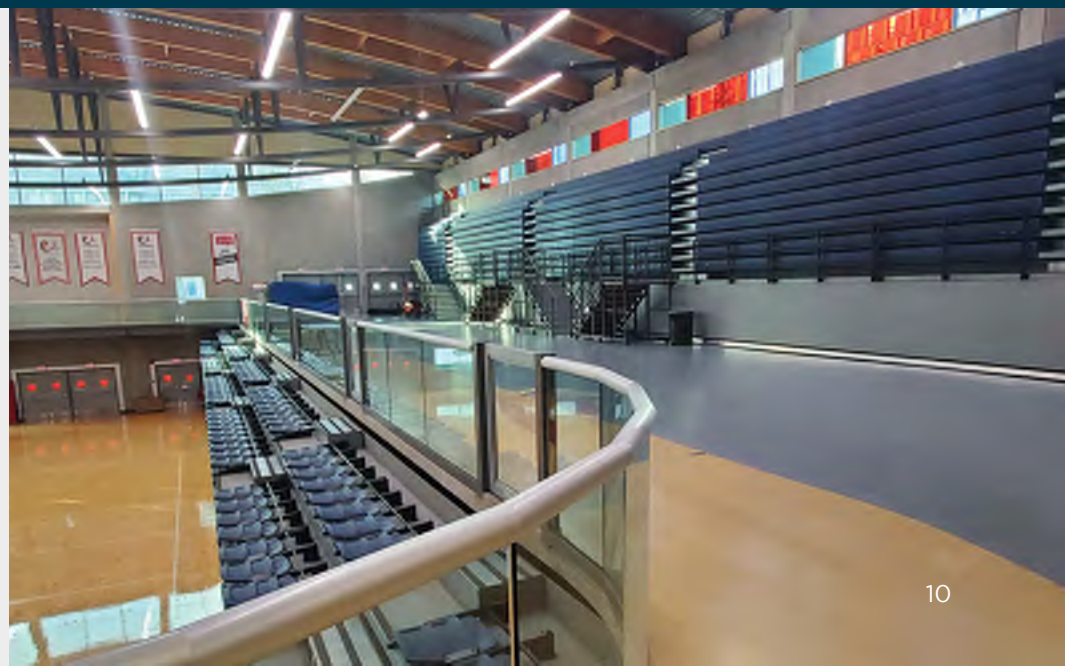
SUPERIOR COMFORT AND SPACIOUS SEATING

Available with our full line of ergonomic modular bench or folding seats, CHEER™ is great for venues looking to offer a more spacious seating experience. Our CHEER™ platform can fit seats that are 10” or 12” wide and are available with or without armrests, meaning superior comfort for your guests and premium flexibility for your multi-use space.

HASSLE-FREE ELECTRIC OPERATING

Take your facility from full capacity to intimate crowd with the touch of a button when you choose an electric operating device for your custom seating solution.

**Wood finish available for bench only.*



Bid RFI #389

APPLAUD™ BLEACHER SYSTEM

(TL8000)

Perfect for:
Performing Arts Centres, Civic Centres, Corporate Spaces, Theatres, and more.

Maximum Comfort and Class

Our largest and most luxurious platform seating solution, APPLAUD™ offers premium comfort and sophisticated style for your guests.

Suitable for even the most refined audience, this system is designed to support the deepest row spacing and most generous legroom while delivering an exceptional seating experience on world-class upholstered seats. Plus, Sheridan Seating's rugged understructure engineering ensures this seating solution is built to last.



CHARLES W. STOCKEY CENTRE AT THE BOBBY ORR HALL OF FAME, ONTARIO, CANADA

IMAGE COPYRIGHT © BONNY ORR HALL OF FAME

Bid RFI #389



Plush & sophisticated with generous seat size

Seating capacity for maximum comfort and leg room

Designed with seating as a priority

Luxurious upholstered chairs with armrests

Delivers the best seating experience

HUNDREDS OF PREMIUM SEAT OPTIONS

With access to world-leading luxury seat suppliers, your Sheridan Seating sales expert or dealer will guide you through the chair selection process so you can find the perfect fit for your venue.

DESIGNED FOR THE BEST SEATING EXPERIENCE

The designer elegance of APPLAUD™ means your seats will impress your audience as much as your venue's atmosphere and talent.



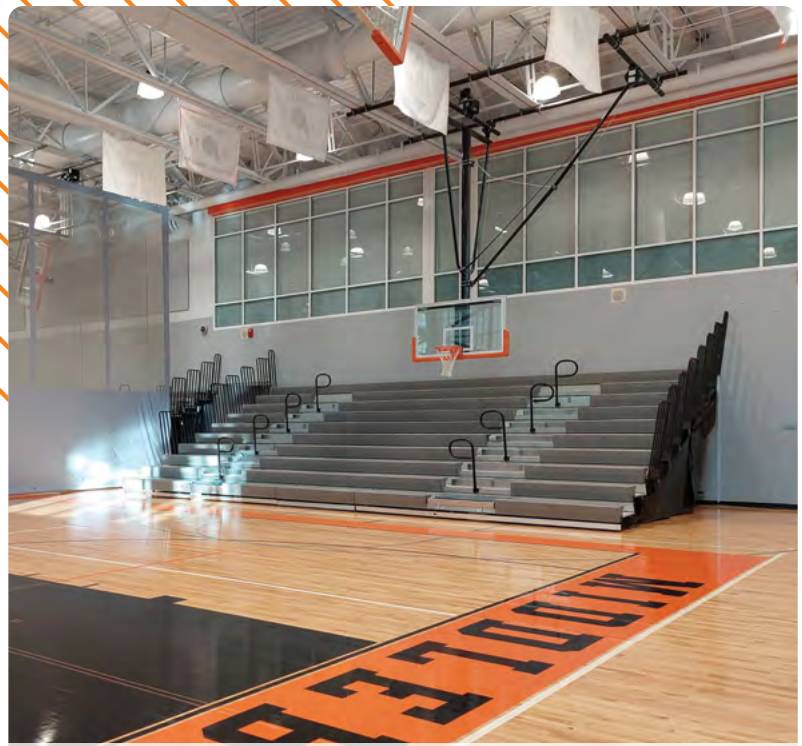
Bid RFI #389

CUSTOM SOLUTIONS FOR YOUR SPACE

DESIGNING A SYSTEM THAT FITS

At Sheridan Seating, we know every venue has unique needs, and we love finding the right solution for the job. From understanding your venue's seating capacity to coordinating with your facility's maintenance team, we excel at putting your needs centre stage and delivering a customized seating system that's designed to last.

We also know that creating a functional space takes creativity and ingenuity. Sheridan Seating's selection of installation options and configurations means that your telescopic seats can function how you need them to – on and off game day.



MIDDLEBOROUGH HIGH SCHOOL, MASSACHUSETTS, US

INSTALLATION OPTIONS

Don't miss out on recoverable space when your seating system is retracted. Choose from one of Sheridan Seating's three installations options designed to maximize your venue's space efficiency. With each option, Sheridan Seating's custom understructure can seamlessly accommodate up to 50 telescoping rows.

Wall Attached: Adaptable and efficient, a wall-attached configuration ensures your space is easily recoverable and quick to turn over so you can get the most out of your facility. Easy to install in an existing venue, this option is great for retrofits and renovations.



Recessed: Hide your closed seats within a discrete wall pocket, such as under a balcony overhang or mezzanine, to maximize floor space and aesthetics when your bleachers or seats are stacked.





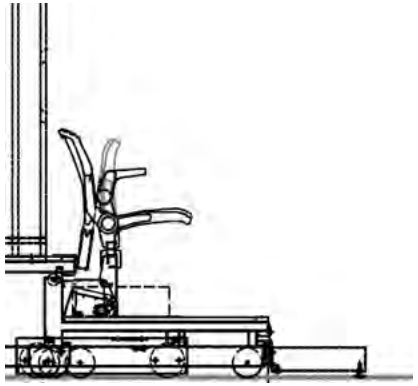
Reverse Fold: Choose a reverse fold configuration when you need to create additional space behind your seating set-up or divide your venue. Think practice space, dressing area or additional storage. Need a cleaner look? Add back panels and end curtains to hide the understructure and mechanics.



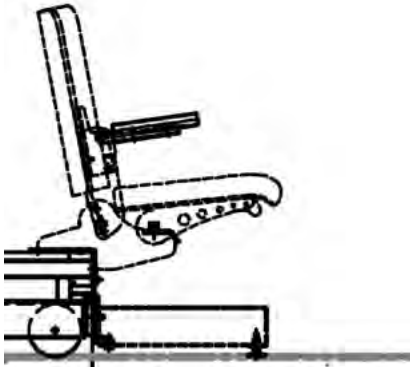
CHAIR MOUNT OPTIONS

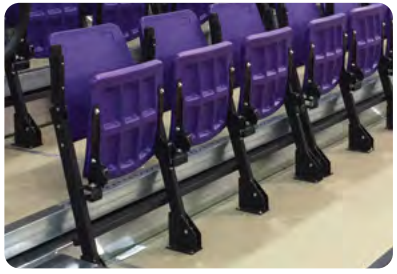
Choose from one of two standard chair mount options designed to meet your venue's space and configuration needs.

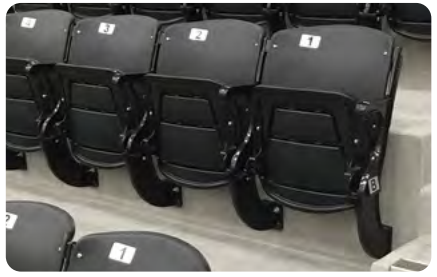
Deck Mount: Mounted on the surface of your platform, this chair style allows for easy folding to stow away seats between rows. Available with an optional semi-automatic fold down device, chairs can be folded as the system is closed. Once opened, chairs are locked into place for safe and secure seating.



Nose Mount: Mounted to the nose of each platform level, these seats offer a chair with ergonomic construction that fits into a narrow envelope for low-rise retractable platforms. Sheridan's upholstered nost mount style allows for additional seat padding for maximum comfort.







Bid RFI #389

FLEXIBLE OPTIONS. EASY OPERATION.

DECKING OPTIONS

Don't let the decking for your telescopic seating system be an afterthought. We provide three decking offerings that give you durability level and price point choices.

Plywood decking is an economical option and is included with standard bleacher systems. Available in Tan, Grey, Clear or Custom Hues.

Looking for more colour options? For a small premium, Panelam decking provides various colour choices, durability and style.

To maximize durability, Sheridan offers a premium aluminum decking option. While the most expensive solution, you know it's built to last.





OPERATING DEVICES

Whether a fully manual or electric drive system is within your vision and budget, Sheridan Seating can recommend and install the best operating device for the job.

Manual:

Manual operation is available for seating systems up to 7 rows deep, and are installed with a standard operator handle. Easy to use, the operator handle hooks under the first row of bleachers and is used to guide the system sections in or out.

Manual systems can be upgraded with an optional Portable Power Tractor Mule. This bleacher mule is a safe and economical way for one person to make the job of opening and closing the bleachers easier and more efficient. Sheridan Seating's Portable Power Tractor Mule operates on standard 115 volt 20 amp service.

Electric Friction Power:

Our most requested operating system, Sheridan Seating's friction drive system is the strongest on the market, able to push or pull up to 8,000 lbs. With higher horsepower and larger than average drive wheels (12" vs. industry-standard 4"), Sheridan's friction drive system will ensure your venue turnover is quick and seamless - every time. Operable from a hand-held pendant control box with 208 volt, 3 phase or 110 volt, single phase, 60 Hz power and a left and right jog button, this option offers straight and true steering when opening or closing the system. Recommended for seating systems over 7 rows.

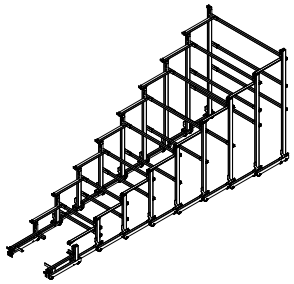
Electric Non-Friction Power:

This fully automated power system operates wall-attached, recessed or reverse-fold telescopic bleachers with the touch of a button. Typically recommended for larger telescopic seating systems, Sheridan's non-friction drive system can move more rows faster and with less hassle than other options on the market - all without the need for traction force on your venue's floor.

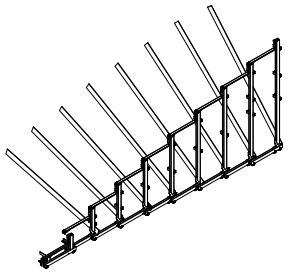
UNDERSTRUCTURE

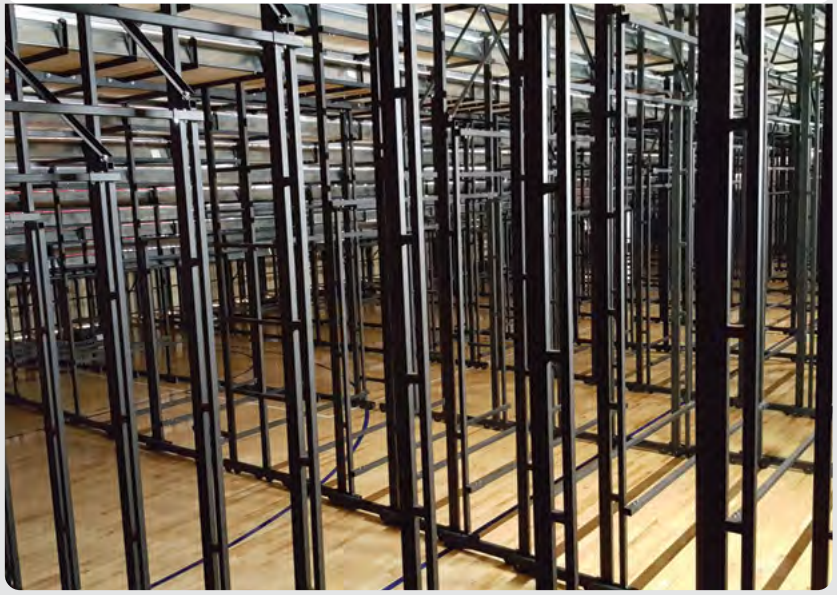
Our rugged understructure is made with 100% North American steel for unparalleled strength and durability. Engineered with 3/4" decking and 10 gauge tubing, and supported by four support columns instead of only two, you'll never question the toughness of your Sheridan Seating system - designed to meet or exceed industry standards.

Sheridan Frame Assembly



Competitor Frame Assembly





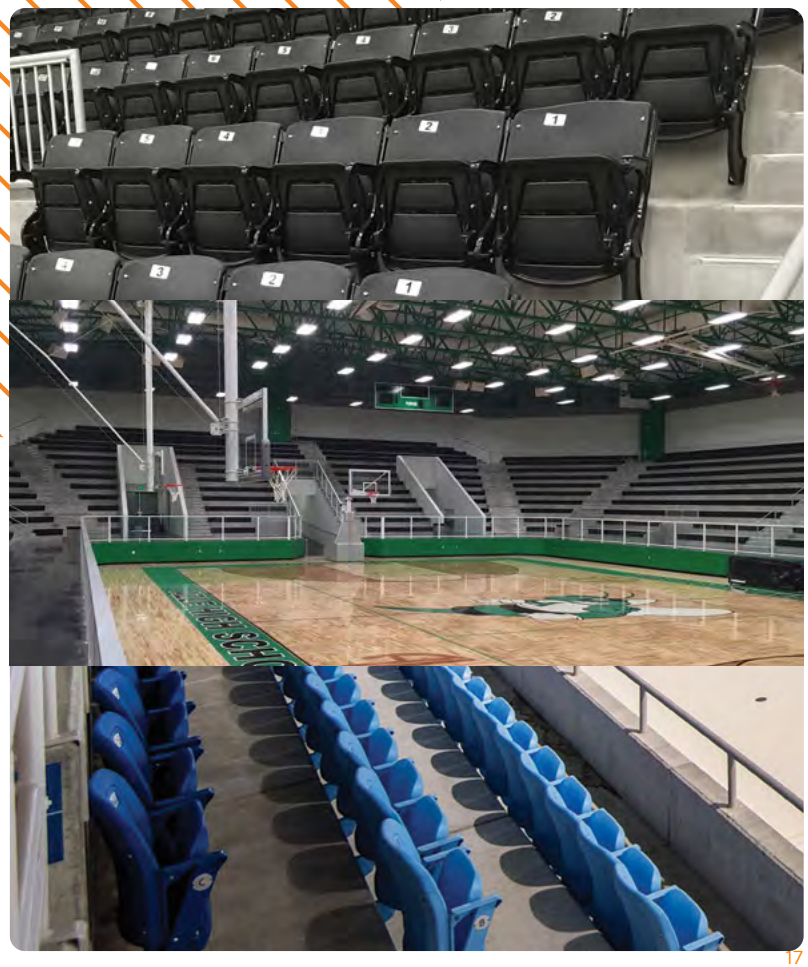
SEATING SYSTEMS

FIXED SEATING FOR A DEPENDABLE AUDIENCE

Whether you're looking to install a new fixed seating system in your venue or replace existing seats on your current steel, wood or concrete platform, Sheridan Seating can help.

From performing arts centres and theaters to casinos and arenas, our fully customizable seating options will fit your venue's needs perfectly - every time.

Available in our full range of seat style and finish options, inspire your guests with a cohesive look and feel from the moment they walk into your venue.



PORTABLE SEATS FOR ENDLESS LAYOUTS

Does your venue need extra seats when hosting bigger events?

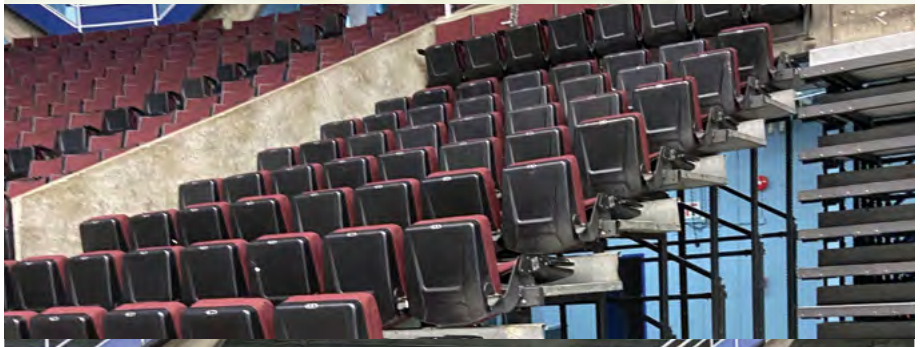
Add portable bleachers or chairs to your facility's seating solution to easily accommodate more guests when and where you want them, creating a custom seating layout for any event.

With Sheridan Seating's portable equipment, you can quickly and easily move and store your additional seats with zero hassle and maximum flexibility.

Available operating devices include:

- Hydraulic Lift Cart
- Portable Power Tractor Mule







SEATING A CROWD OUTDOORS

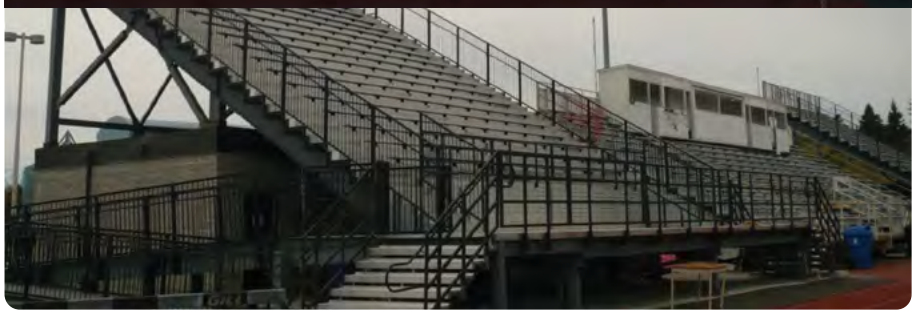
Invite your fans to cheer from the sidelines with Sheridan Seating's fixed outdoor seating system.

Manufactured with our signature galvanized steel understructure with aluminum decking and seats, this rugged system can withstand the wear and tear of the elements and your fans' excitement.

Choose from a nearly endless selection of custom sizes, colours and finishes to really turn up the spirit - on and off the field.







Bid RFI #389

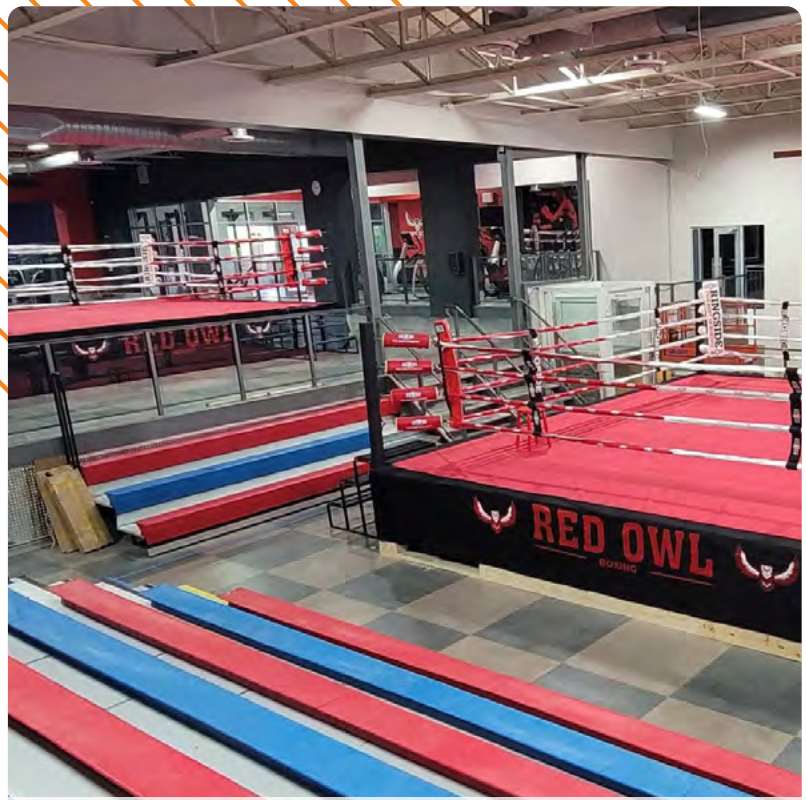
DESIGN CENTRE

Let's bring your venue's vision to life!

DESIGN YOUR SYSTEM IN 4 STEPS

Available in a wide range of styles, colours and finishes, Sheridan Seating's seat and accessory options deliver the finishing touches your venue needs to take it from little league to world class.

With nearly endless customizations available, you'll never have to sacrifice functionality or comfort. Whether your seating system is fixed or telescopic, and no matter which style of seat you choose, your venue's vision will extend from reception hall to centre stage.



RED OWL BOXING BRAMPTON, ONTARIO, CANADA.

IMAGE COPYRIGHT © RED OWL BOXING

Bid RFI #389

Bench

Standard with the RALLY™ seating system, Sheridan Seating's bench-style seats are made from colour-fade and scuff-resistant polyethylene. Ergonomically formed, these polyethylene seats are easy on your bottom and your bottom line. The bench seat's compact design allows for the maximum number of seated guests in your venue. Also available with an optional backrest.





Depth:
10" or 12"
Materials:
Polyethylene Plastic or Wood
Finishes:
15 Standard Colours + Custom Hues
Options:
Backrest, row letters and seat numbers

Available with: RALLY™ Bleacher System, Fixed Seating Systems, Portable Seating Systems

Chair

Sheridan Seating's arena-style seat is available with both the CHEER™ and APPLAUD™ seating systems. With full back and arm rests, the arena seat will fit in almost anywhere - from school auditorium to sophisticated lecture hall.

Available in a wide variety of colours, styles and finishes, this ergonomic option delivers a refined seating experience while efficiently seating guests. Finish options include polyethylene, upholstered and wood, with optional cup holders, row number plates, and more.



Depth:
18"
Materials:
Polyethylene Plastic, Upholstered and Wood
Finishes:
15 Standard Colours + Custom Hues (Plastic)
Options:
Cup holders, row number plates, and more

Available with: CHEER™ Seating System, APPLAUD™ Seating System, Fixed Seating Systems, Portable Seating Systems

Chair XL

Looking for the most luxurious seat on the market? We can help! When manufacturing a custom-built APPLAUD™ seating system for our clients, Sheridan Seating partners with exceptional seat suppliers to source the right chair for the job. With this seat, you can customize every detail, from the finish and fabric stitching right down to the screw holes.



Depth:
22"
Materials:
Wide range of fabric and leather choices
Finishes:
Seat/logo stitching and more
Options:
Cup holders, row letter plates, seat numbers, and more

Available with: APPLAUD™ Seating System, Fixed Seating Systems, Portable Seating Systems

Bid RFI #389

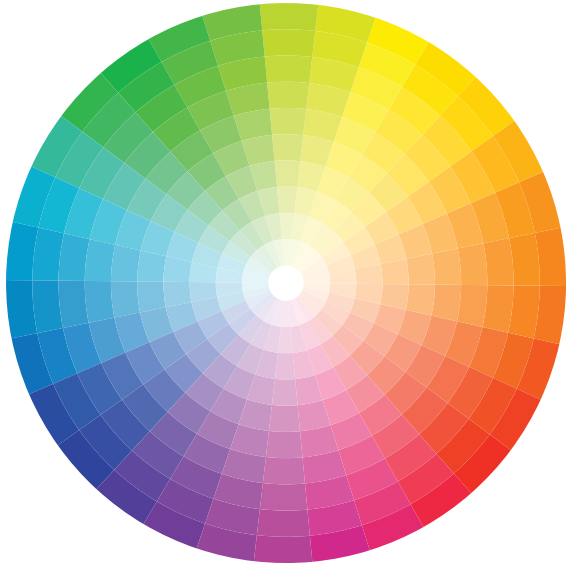
DESIGN CENTRE

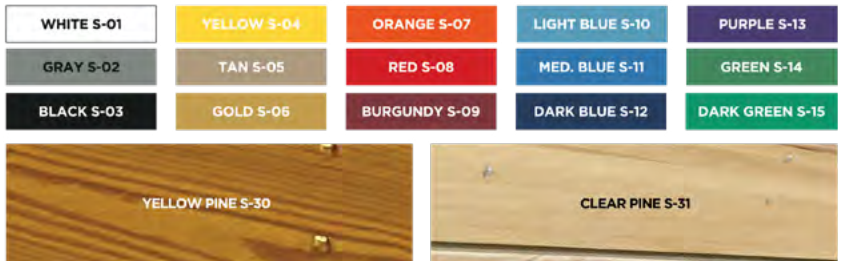
Let's bring your venue's vision to life!

COLOURS & FINISHES

15 Standard colours. Endless possibilities.

Available in 15 standard colours and endless custom hues, your venue's formed-poly seats will be the star of the show. Incorporate patterns, symbols or your home team's initials into your seating system design by using contrasting colours of seats.*





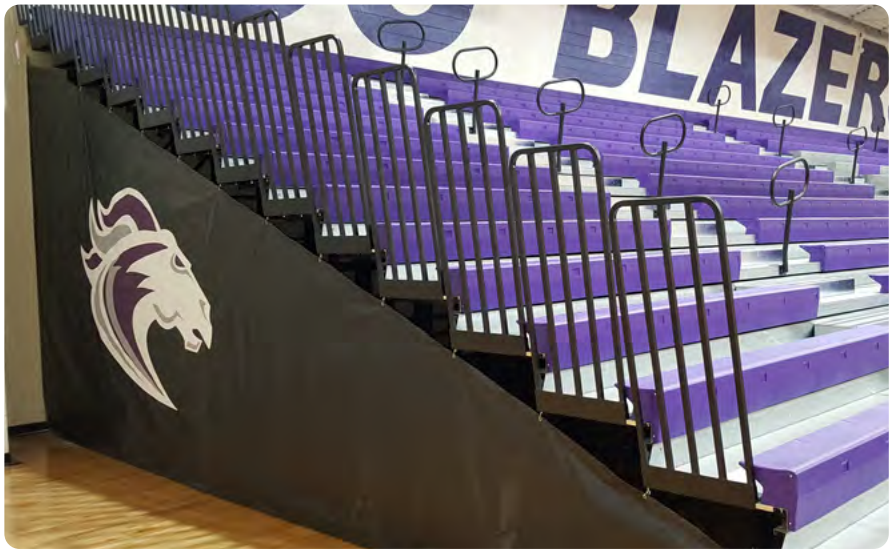
If you're looking for a more traditional look, we offer classic Southern Yellow Pine and Clear Pine bench finishes. Triple-sanded and finished with two coats of semi-gloss polyurethane, Sheridan's wooden seats look great and are tough on wear and tear.

*Available at a premium.

CURTAINS & DIVIDERS

End Curtains

Neatly cap off the end of your telescopic or fixed seating system with an end curtain. Available in 18 oz or 50 oz vinyl fabric and an endless selection of custom colours.



Divider curtains

Easily divide one space into two with a Sheridan Seating divider curtain. Choose from three different styles and endless combinations of vinyl and mesh to enhance the look and feel of your facility. Available in 18 oz or 50 oz vinyl fabric.

Electric Fold-Up Curtain
Sheridan's electric fold-up curtain can be installed onto any existing platform truss - telescopic or fixed. Operated with a key-activated electric switch, the curtain raises or lowers with the touch of a button. Available in single-wall or double-wall models.

Walk-Draw Curtain
The most economical divider curtain to purchase and maintain, Sheridan's walk-draw curtains can be operated and stacked in a small building recess or flat again the wall. Available in vinyl, nylon mesh or any combination of the two.

360° GRAPHICS

Custom Vinyl Wraps

Wrap your venue in 360° of style with Sheridan Seating's custom vinyl wraps. Available in vibrant, full-colour customizations, these eye-catching finishes are sure to inspire every guest.





Bid RFI #389

SAFE SEATING FOR EVERY GUEST

No one should have to miss out on the thrill of a moving performance, game-winning goal or inspiring presentation. That's why Sheridan Seating proudly meets or exceeds industry standards in safety and accessibility on every install.

Not only that, but our fully ADA or RADA-compliant sections are safe and stylish. Available in the painted finish of your choice, your seating system can be accented by a punch of colour in every row, or supporting by safety rails in muted tones that fade into the background.



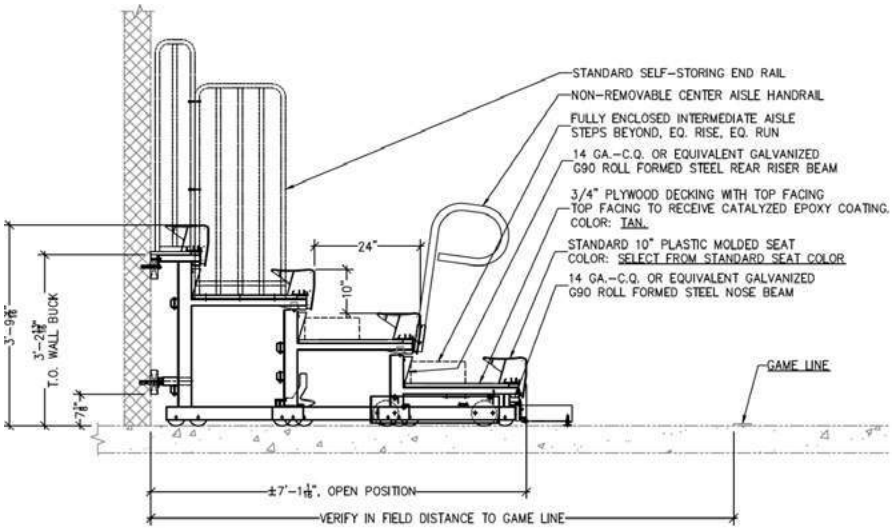
MORTON RANCH HIGH SCHOOL, KATY ISD, TEXAS, US

Bid RFI #389

SAFETY RAILS

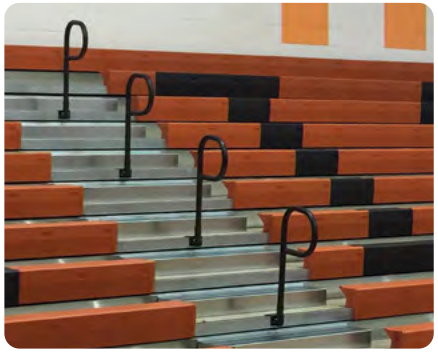
End Rails

Sheridan Seating telescopic seating systems are installed with standard non-removable, self-storing rails for the ends of the bleacher platform systems.



Center Aisle Hand Rails

Available in P or D style, Sheridan Seating's centre aisle hand rails are sturdy and user friendly. No removal required, they're operable with the push of a button or in a simple pick-up and turn model. Removable options available when space limitations are a concern.





Back/Front Rails

Required for use on portable or reverse fold bleachers, back rails fill the space anywhere that the bleacher is not directly against the wall.

Removable ADA Rails

This rail is used for ADA spaces that are recoverable when needed for standard seating. Simply remove the rail and the space can be converted to standard seating.

Non-Removable ADA Rails

The NRADA rail is permanently attached to prevent falls from the deck behind permanent ADA seating. All of Sheridan's ADA rails meet required American Disabilities Act codes.

SAFETY ACCESSORIES

Delay Action Frame

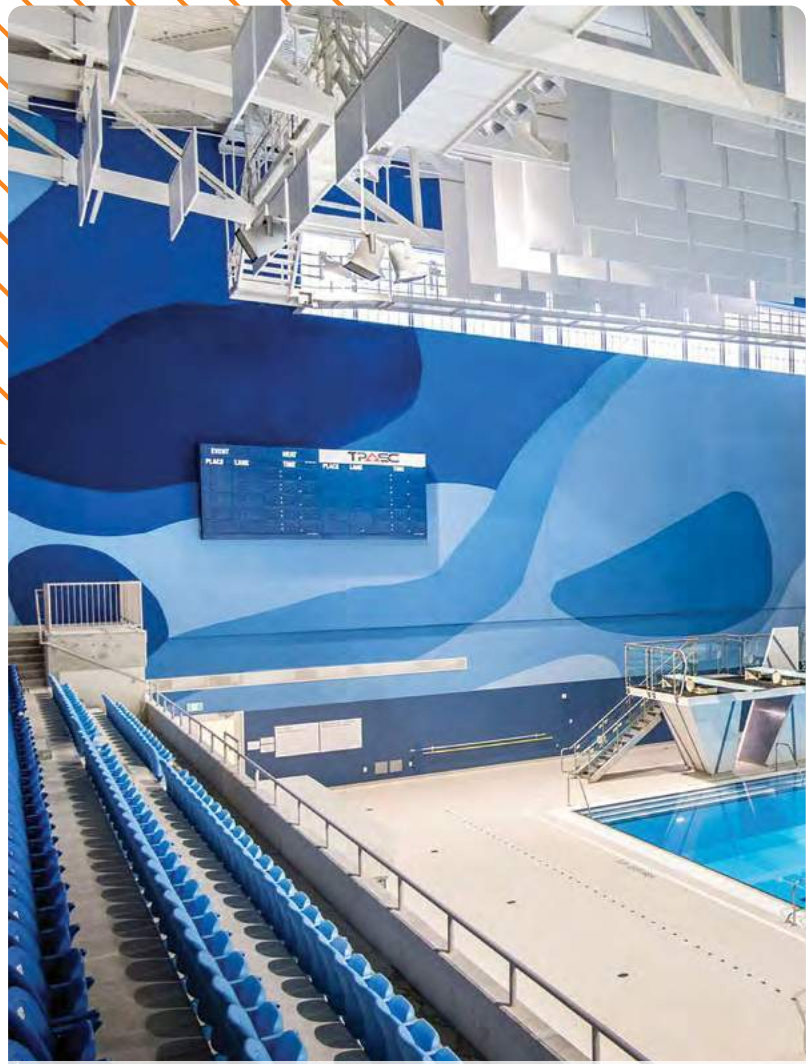
The Delay Action Frame is a great option for venues that want an extra level of protection on their seating system. This frame operates on a time lag before the bleachers begin to move into the open or closed position.

Row Lock

Sheridan's Row Lock is operated by gravity, with no springs needed. The row locking mechanism allows for the securement of any row in the open position so you can choose how many seats you'd like to make available. To prevent unwanted movement, the system is only operable upon unlocking and moving the first row of seats.

PRODUCT DIMENSIONAL DATA

At Sheridan Seating, delivering custom telescopic seating solutions is our specialty. But, to help get you started with your project, our products are available in the following standard sizes, with custom rise and run dimensions available to meet your unique needs.



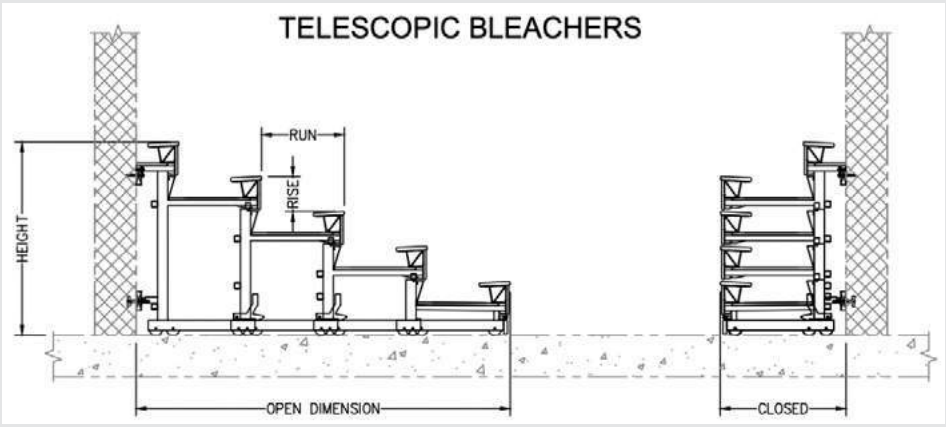
AQUATIC CENTRE, TORONTO PAN AM CENTRE, ONTARIO, CANADA.

IMAGE COPYRIGHT © ENTRO.COM

Dimensional Data

Row	Open Dimensions (mm) 22" Spacing	24" Spacing	26" Spacing	33" Spacing	Height (mm) 10" Rise	11 5/8" Rise	16" Rise
3	4'-9 1/16" (1449)	5'-1 1/16" (1551)	5'-5 1/16" (1653)	6'-7 1/16" (2008)	2'-11 5/8" (905)	3'-4 7/8" (1038)	4'-3 1/8" (1299)
4	6'-7 1/16" (2008)	7'-1 1/16" (2161)	7'-1 1/16" (2313)	9'-4 1/16" (2846)	3'-9 5/8" (1159)	4'-4 1/2" (1334)	5'-7 1/8" (1705)
5	8'-5 1/16" (2567)	9'-1 1/16" (2770)	9'-9 1/16" (2973)	12'-1 1/16" (3685)	4'-7 5/8" (1413)	5'-4 1/8" (1629)	6'-11 1/8" (2111)
6	10'-3 1/16" (3126)	11'-1 1/16" (3380)	11'-11 1/16" (3634)	14'-10 1/16" (4523)	5'-5 1/8" (1667)	6'-3 3/4" (1924)	8'-3 1/8" (2518)
7	12'-1 1/16" (3685)	13'-1 1/16" (3989)	14'-1 1/16" (4294)	17'-7 1/16" (5361)	6'-3 5/8" (1921)	7'-3 3/8" (2219)	9'-7 1/8" (2924)
8	13'-11 1/16" (4243)	15'-1 1/16" (4599)	16'-3 1/16" (4955)	20'- 4 1/16" (6199)	7'-1 3/8" (2175)	8'-3" (2515)	10'-11 1/8" (3331)
9	15'-9 1/16" (4802)	17'-1 1/16" (5209)	18'-5 1/16" (5615)	23'-1 1/16" (7037)	7'-11 5/8" (2429)	9'-2 5/8" (2810)	12'-3 1/8" (3737)
10	17'-7 1/16" (5361)	19'-1 1/16" (5818)	20'-7 1/16" (6275)	25'-10 1/16" (7876)	8'-9 5/8" (2683)	10'-2 1/4" (3105)	13'-7 1/8" (4143)
11	19'-5 1/16" (5920)	21'-1 1/16" (6428)	22'-9 1/16" (6936)	28'-7 1/16" (8714)	9'-7 5/8" (2937)	11'-1 7/8" (3400)	14'-11 1/8" (4550)
12	21'-4 1/16" (6504)	23'- 2 1/16" (7063)	25'-0 1/16" (7622)	31'-5 1/16" (9577)	10'-5 5/8" (3191)	12'-1 1/2" (3696)	16'-2 1/8" (4956)
13	23'-2 1/16" (7063)	25'-2 1/16" (7672)	27'-2 1/16" (8282)	34'-2 1/16" (10416)	11'-3 5/8" (3445)	13'-1 1/8" (3991)	17'-7 1/8" (5363)
14	25'-0 1/16" (7622)	27'-2 1/16" (8283)	29'-4 1/16" (8942)	36'-11 1/16" (11268)	12'-1 5/8" (3699)	14'-0 3/4" (4286)	18'-11 1/8" (5769)
15	26'-10 1/16" (8180)	29'-2 1/16" (8891)	31'-6 1/16" (9603)	39'-8 1/16" (12092)	12'-11 5/8" (3953)	15'-0 3/8" (4582)	20'-3 1/8" (6175)

Closed Dimensions (mm) 22" Spacing	24" Spacing	26" Spacing	33" Spacing
2'-11 1/16" (891)	3'-1 1/16" (941)	3'-3 1/16" (992)	3'-10 1/16" (1170)



Notes

- Open and closed dimensions will be affected by pilasters or other projections in the wall that exceed 3". In these cases, please contact Sheridan Seating for accurate dimensions.

- Reverse fold or portable bleachers may have slightly different open and closed dimensions.

- Exceeding 15 rows may require special engineering. In this case, please contact Sheridan Seating directly to discuss the best solution for your venue.

Our Dealer Network

Ready to get started and bring your venue's vision to life? Sheridan Seating works with experienced vendors across North America who can support you from project conception to installation and beyond. Visit our website to learn more about the areas we serve and to connect with an approved Sheridan Seating dealer near you.

www.sheridanseating.com

Sheridan Seating is proudly certified by the following standards organizations:

Notes

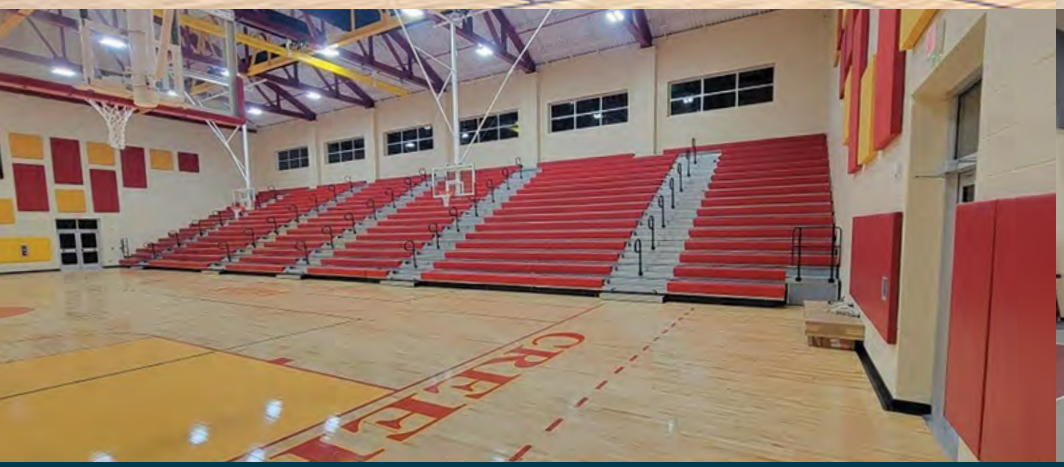
Bid RFI #389

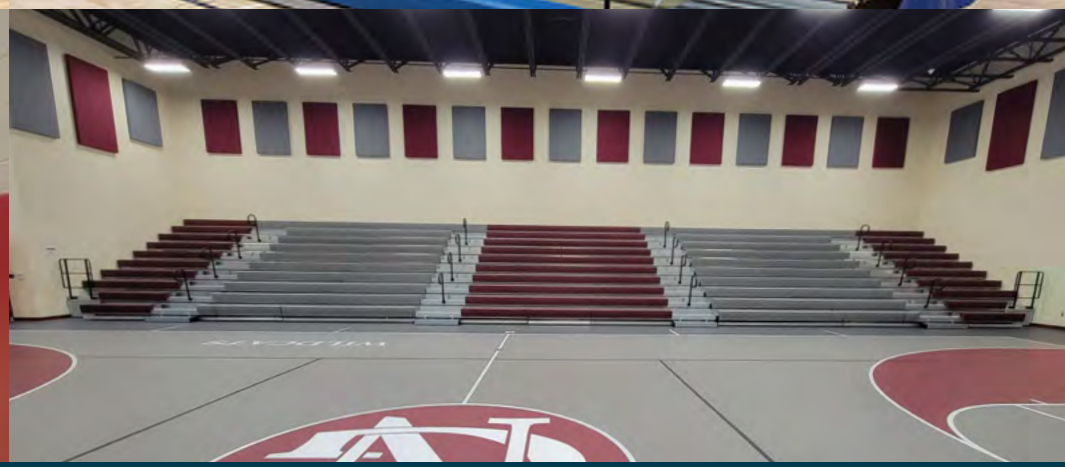












SHERIDAN SEATING inc.

For more bleacher designs inspiration visit us at **sheridanseating.com**

Sheridan Seating Inc. Manufacturer's Qualifications

Sheridan Seating Inc., has been manufacturing Telescopic Bleachers since 1978 for sporting, educational, instutional, places of worship and private facilities throughout North America.

The Sheridan products meet all the North American required standards; ADA & ABA 2004 USA, IBC 2021 USA, NFPA-102 2021 USA, ANSI-300 2017 USA & CANADA, BOCA USA & CANADA, NFC Canada 2020, NBC Canada 2020, 2017 ICC 300, Accessible Canda Act. as well as CWB – Canadian Welding Bureau which is equivalaent to AWS – American Welding Society and all electrical components are UL, UL-C, UL-US certified.

Upon request this letter accompanies a listing of comparable installation completed in the last 5 years.

Should you require further information do not hesitate to contact us.

Thank you.

Robert White
Owner, Director of Quality & Sales
robert@sheridanseating.com
m. (705) 326-7463 Ext. 222

290 West Street South, Orillia, ON, Canada, L3V 5G8
www.sheridanseating.com

SUBSTITUTION REQUEST
(During the Bidding/Negotiating Phase)

PROJECT: New Central Middle School Project
State Project No. 057-0114 N

SUBSTITUTION REQUEST NUMBER: 2

FROM:

TO: Joseph Phelan
Turner Construction Company

DATE: October 30, 2024

A/E PROJECT NUMBER: 22367.00

RE: Fixed Seating Substitution

CONTRACT FOR: Fixed Seating

SPECIFICATION TITLE: Fixed Seating at Gym

DESCRIPTION: The Ovation Seat - Fixed Seating

SECTION: 126100 **PAGE:** 1051 - 1064 **ARTICLE/PARAGRAPH:** 2.7.A

PROPOSED SUBSTITUTION: Fixed Seating

MANUFACTURER: Sheridan Seating Inc. **ADDRESS:** 290 W. St. South **PHONE:** (705) 326-7463 x238

TRADE NAME: Sheridan Seating Inc. Orillia, ON, Canada L3V 5G8 **MODEL NO.:** CT300

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.
Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:
- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

SUBMITTED BY:

SIGNED BY:

FIRM:

ADDRESS:

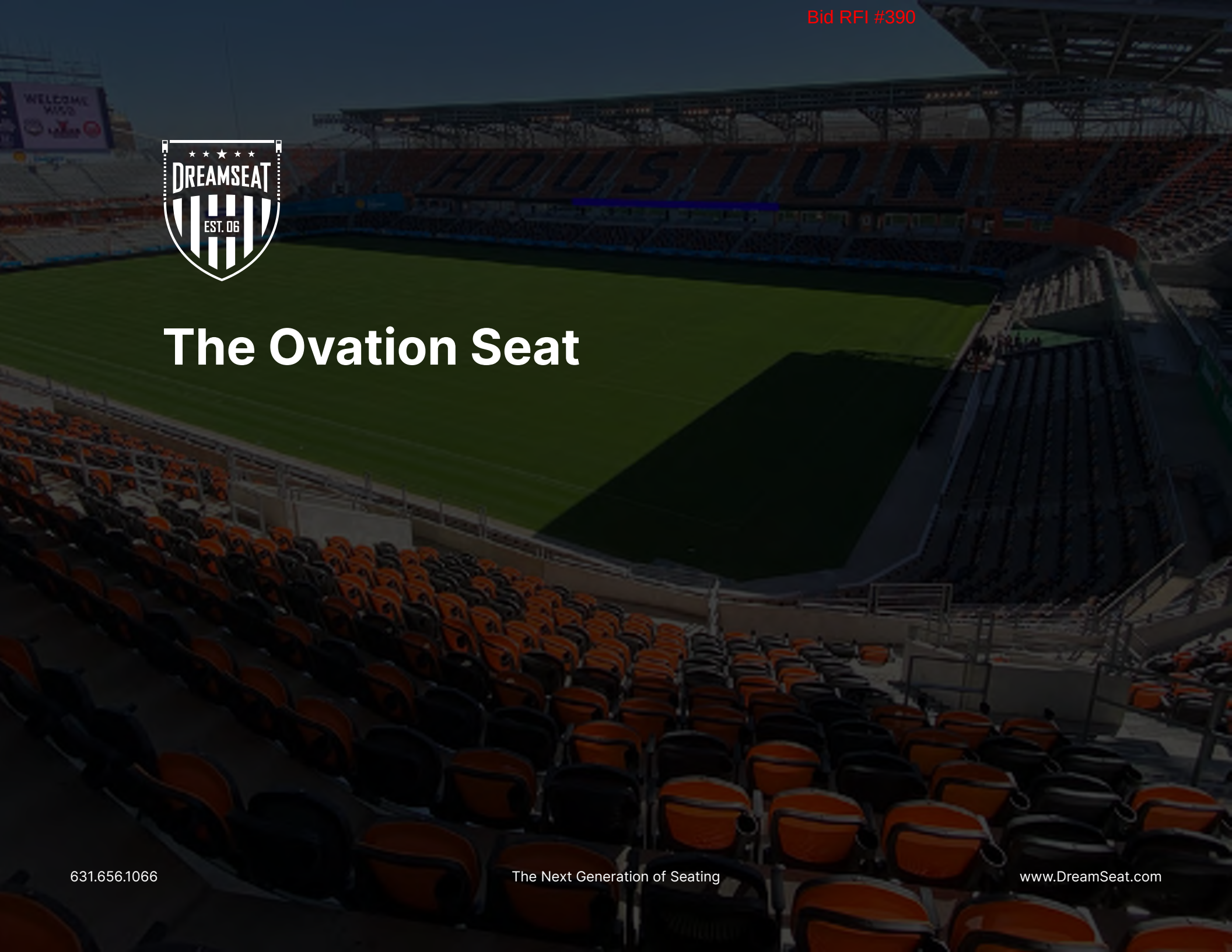
TELEPHONE:

A/E's REVIEW AND RECOMMENDATION:

- ☐ Approve Substitution—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
- ☐ Approve Substitution as noted—Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
- ☒ Reject Substitution—Use specified materials.
- ☐ Substitution Request received too late—Use specified materials.

SIGNED BY: Stephen Martocchio **DATE:** 11/6/2024

SUPPORTING DATA ATTACHED: ☒ Drawings ☒ Product Data ☐ Samples ☐ Tests ☐ Reports ☒ See Table of Contents



The Ovation Seat

Table of Contents

3 — The Ovation Seat

7 — Accessories

8 — Color Options

10 — The Rail System

11 — Power Rail

12 — Perfect Pairings

13 — Gallery

The Ovation Seat

The seat modules are attached to the extruded aluminum rail profile using a simple clamp system, meaning seats can be spaced out evenly during installation before being tightly secured.

The Ovation range is applicable to both stadiums and arena environments. The unit comprises of a seat and backrest molded from premium grade polypropylene co-polymer. Gas injection molding technology is used to create a ridged perimeter to the seat and backrest components which provides unparalleled strength and durability. Spring housings and backrest supports are injection molded from glass reinforced polyamide, and the assembly is designed so that there is no visible fixing hardware.

Available Ovation Models



CT300

Ovation Seat
Plastic Back
Plastic Bottom

Available Sizes:
450mm
460mm
480mm



CT301

Ovation Seat
Plastic Back
Padded Bottom

Available Sizes:
450mm
460mm
480mm



CT302

Ovation Seat
Padded Back
Padded Bottom

Available Sizes:
450mm
460mm
480mm



CT322

High Back Ovation
Padded Back
Padded Bottom

Available Sizes:
450mm
460mm
480mm



CT350

Zephyr
Mesh Back
Mesh Bottom

Available Sizes:
Only 450mm



CT350FXHB

Zephyr Max
Mesh Back
Mesh Bottom

Available Sizes:
450mm
510mm

About The Ovation Seat

— *CT300 / CT301 / CT302*

Ovation is an ergonomic beam mounted stadium chair that is taking the sporting world by storm! More comfortable and cost effective than traditional stadium seats the Ovation provides ease of install and maintenance along with a flexible finished installation. Available for projects large and small the Ovation is a favorite for stadium and arena projects across North America.



Plastic Back and Bottom



Padded Back and Bottom

— *Warranty*

5 year warranty on structural components and mechanical features

— *Available Sizes*

450 mm
460 mm
480 mm

— *Accessories*

Fixed Arm
Tip Up Arm
Rear Mount Cup
Flippy Cup
Armrest With Cup Holder
Seat Lock
Seat Numbers & Row Letters

— *Plastic & Vinyl Colors*



About The High Back Ovation Seat

— *CT322*

The high-back ovation is the more VIP cousin of our budget friendly Ovation chair, utilizing the same beam design and ergonomics but incorporating a thick padded bottom and a higher 39" padded back. This is the perfect seat for a club area or suite where you have tight spaces but are looking for a VIP level seat that will keep your fans coming back. More comfortable and cost effective than traditional stadium seats the Ovation provides ease of install and maintenance along with a flexible finished installation.



— *Warranty*

5 year warranty on structural components and mechanical features

— *Available Sizes*

450 mm
460 mm
480 mm

— *Accessories*

Fixed Arm
Tip Up Arm
Rear Mount Cup
Flippy Cup
Armrest With Cup Holder
XZipit Logo System
Seat Numbers & Row Letters

— *Plastic & Vinyl Colors*

About The Zephyr Seat

— *CT350 / CT350FXHB*

Our newest innovation, the Zephyr, is designed for areas in stadium that get the most sun. Designed to provide air flow and a cooler seated experience, the Zephyr is a welcome addition to the DreamSeat line of offerings.



— *Warranty*

5 year warranty on structural components and mechanical features

— *Available Sizes*

450 mm
510 mm (Zephyr Max Only)

— *Accessories*

Fixed Arm
Tip Up Arm
Rear Mount Cup
Armrest With Cup Holder
Seat Numbers & Row Letters

— *Mesh Colors*



Accessories

Armrests

Ovation has a choice of two armrest options, basic and deluxe. Both options are attached independently to the rail as opposed to the seat module.

Deluxe is a more substantial armrest, its fold back function allows it to be used on telescopic platforms, folding automatically on contact with the deck.

Cup Holders

The only cupholder that's pretty much indestructible, and wont leave your patrons with a bruised leg as an overriding memory of what was an otherwise great event experience.

Our cupholders are moulded from a semi ridged polymer and designed to be – yes, as close as it gets to indestructible!



Fixed Armrest

Available for All Ovation Models



Deluxe Tip Up Armrest

All Ovation Models



Rear Mounted Cup Holder

All Ovation Models



Flippy Cup

Not Available on the Zephyr Model



Armrest with Cup Holder

All Ovation Models



Seat Lock

Only Available for Plastic Ovation Seat



Seat Numbers

Available for All Ovation Models



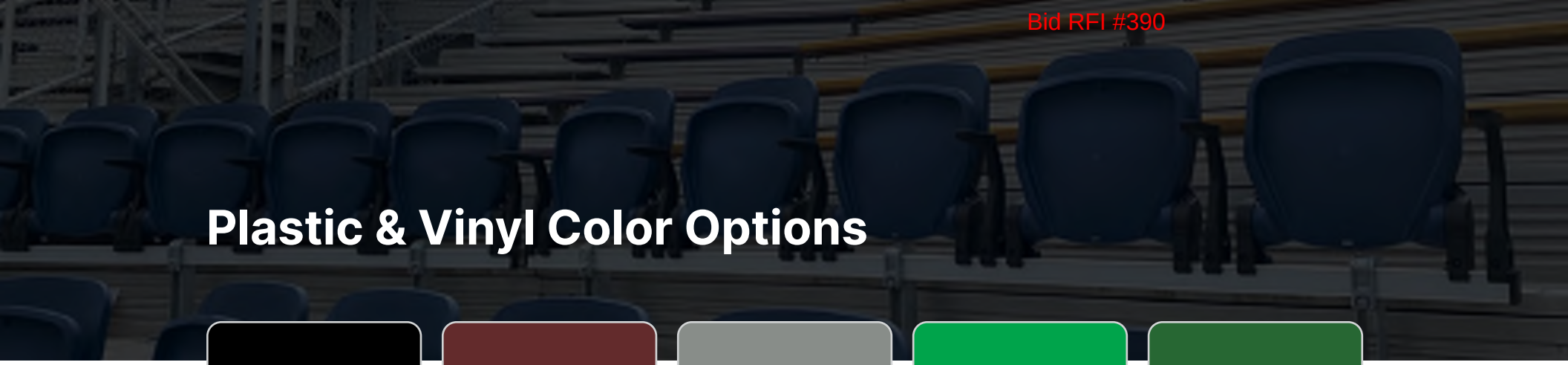
Aisle / Row Letters

Available for All Ovation Models



XZipit Logo System

Available for High Back Ovation Only



Plastic & Vinyl Color Options

C01 Black

C02 Brown

C03 Neutral Grey

C04 Signal Green

C05 Dark Green

C06 Light Blue

C07 Signal Blue

C08 Galaxy Blue

C09 Purple

C10 Burgundy

C11 Cardinal Red

C12 Orange

C13 Gold

C14 Beige

C15 Off White Sand

C16 White

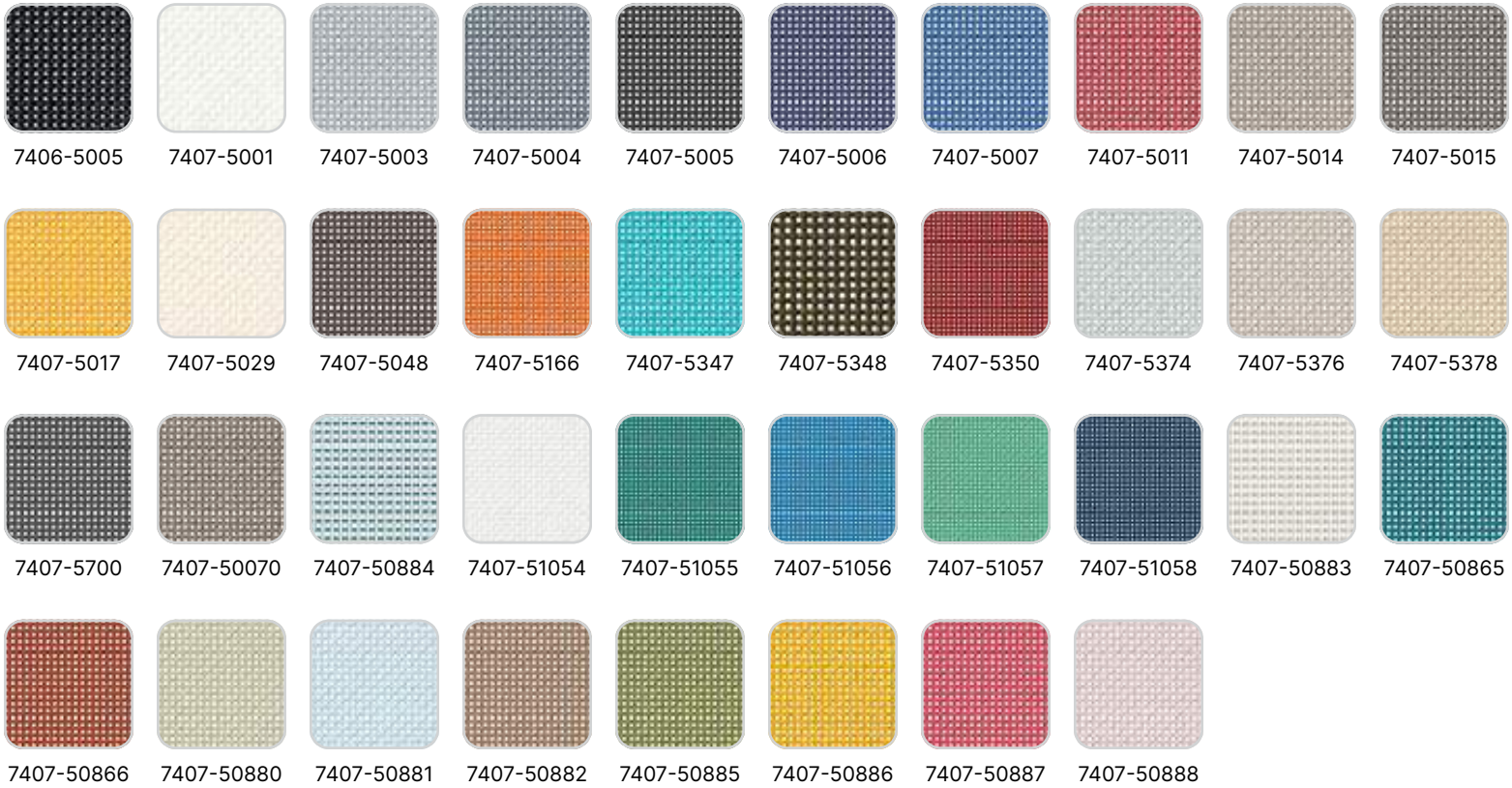
C17 Signal Yellow

Note: Full range of standard plastic colors and custom colors available on large projects.

Mesh Color Options

Note: Only available for the Zephyr model.

Batyline Iso is the industry standard for outdoor sling furniture. Its long life is due to extremely simple implementation, excellent resistance to weather conditions and dimensional stability. This range, stocked in 31 colors (3 in the fire retardant range), is the broadest on the market.



Bid RFI #390

The Rail System

Are all rail mounted seats the same?

Our competitors would like you to believe so!

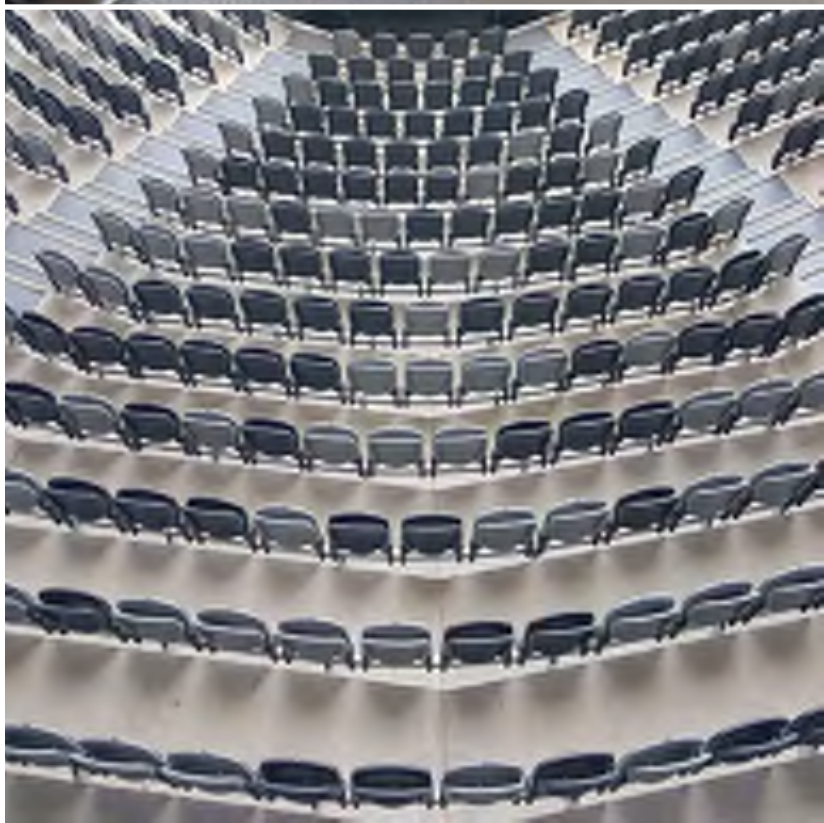
DreamSeat models are fitted to the same rail system, meaning that any Ovation can be interchanged anywhere in the facility, making upgrades and future proofing as simple as switching out the seats.

20+ years of experience and continuous improvement has resulted in, quite simply; the best. Our extruded aluminum rail profile is constrained into support fabrications on all four faces by a galvanised steel clamp.

The only system on the market that can be formed into a curve on the job site...

This has the advantage that the rail does not have to be installed in shorter straight sections, which in turn allows seat modules to be installed with beautifully even spaces between them, the result can be seen in the picture to the right.





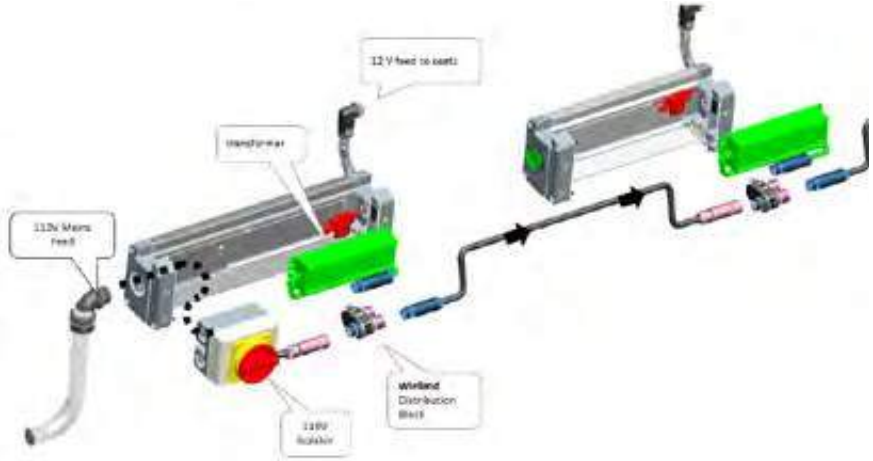


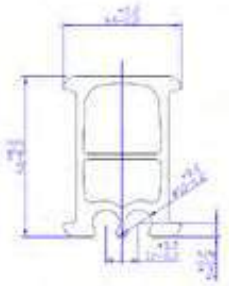


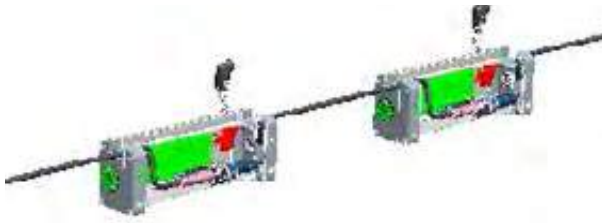
DREAMSEAT

Power Rail

Power Rail Available With USB, USBc, and Traditional Power Outlets







Perfect Pairings For Your Ovation

Grid System

The new design creates an even easier and quicker install experience with a quick glide in install system. The chairs line up straight every time and do not move or serpentine as folding chairs tend to do.

- Chair Locked into Sled Base
- Faster Install than Folding Chairs
- 31.5” of Row Spacing (Customizable)
- Sled Lays Flat On Ground
- 15-20% More Seating In Same Footprint
- Compact Storage Racks

Featured: Fantasy Springs Casino



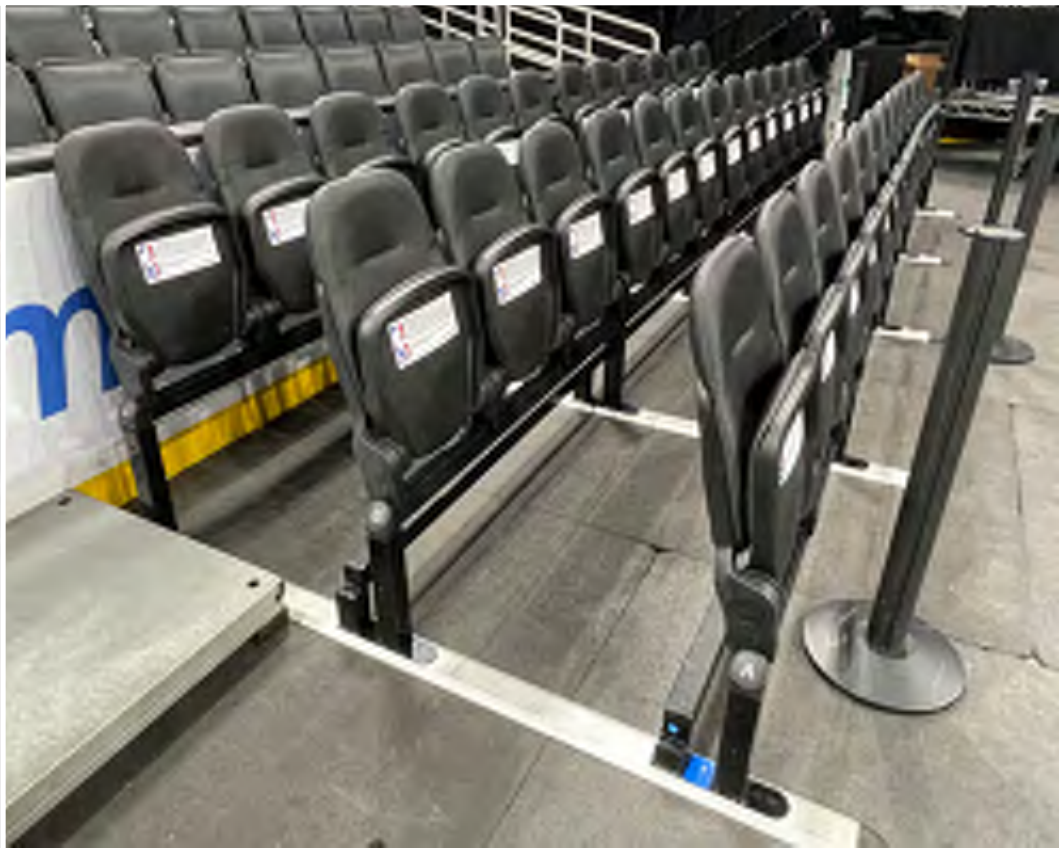
Grid Rise

The Grid Rise is simply the evolution of floor seating and provides the most benefits to both the venue and spectators. It utilizes a patented system that allows venues to implement tip up seats on the floor of the arena while allowing for changes in seat elevation to produce better sightlines.

All features of the Grid System with the addition of:

- Varying Seat Heights without a Platform
- Added Footrest

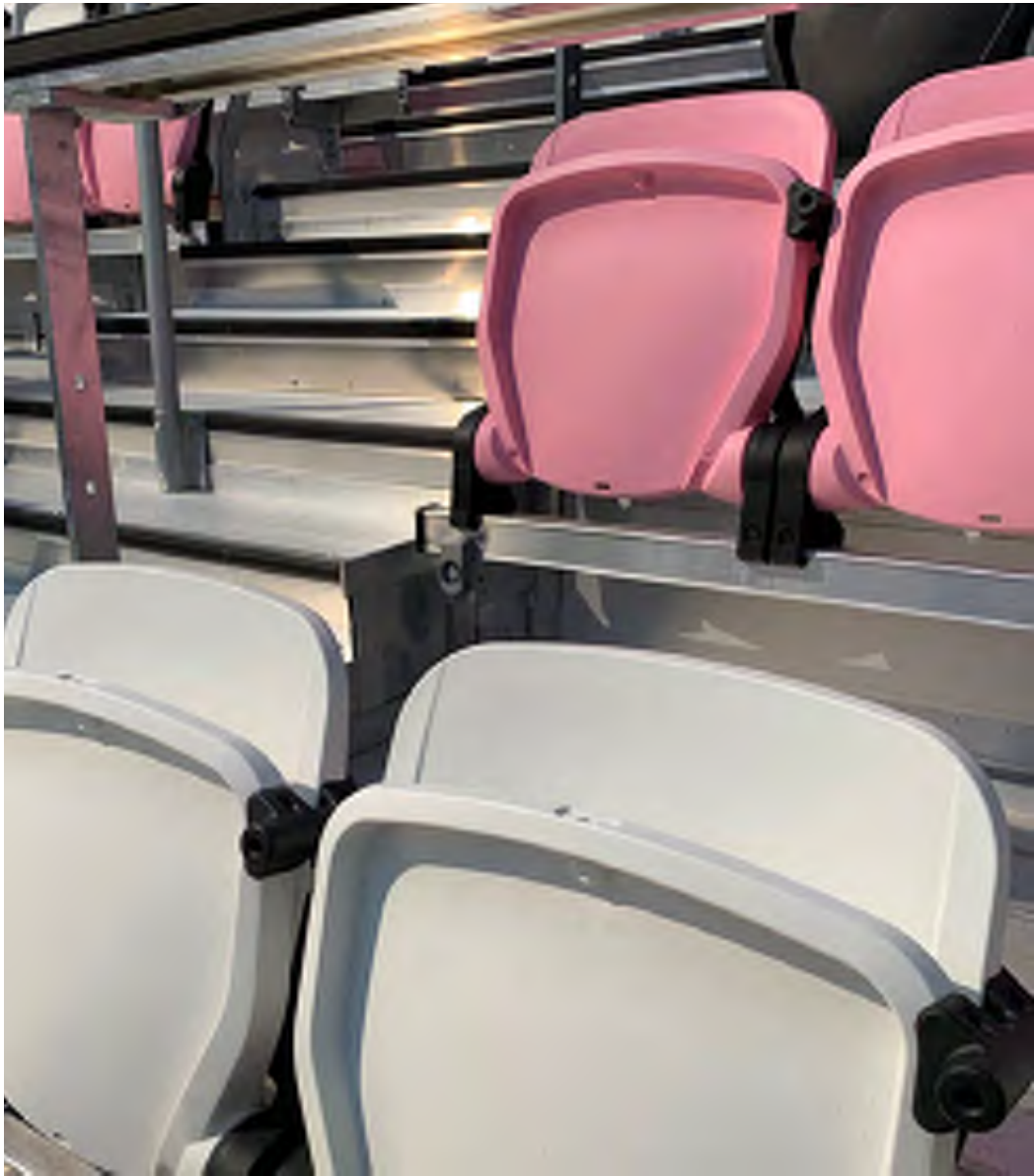
Featured: TD Garden / Boston Celtics



Gallery

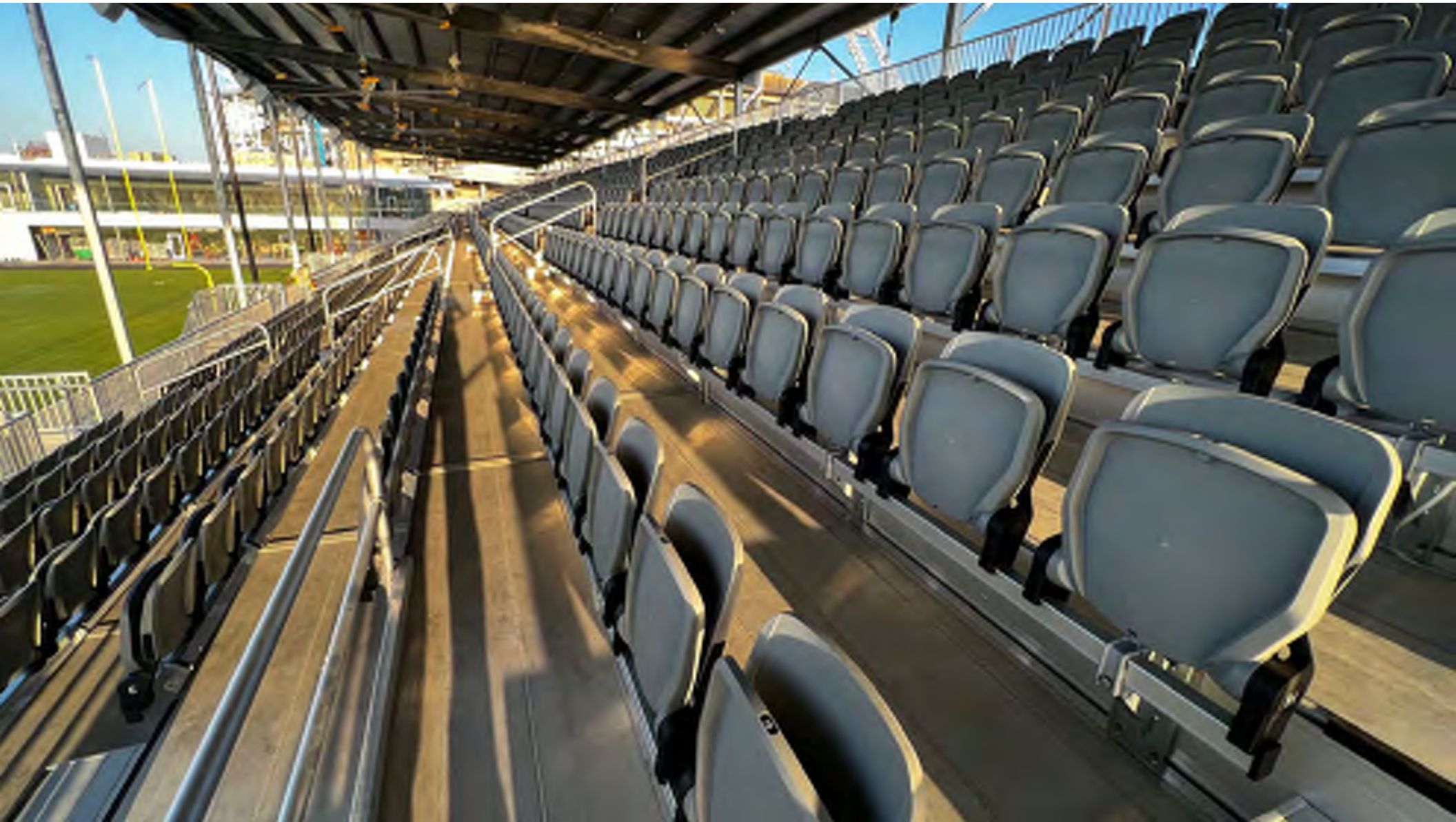
Inter Miami CF
Ovation Seat with Seat Lock Preview





Gallery

Jacksonville Jaguars
Ovation Seat



Gallery

Marshall University
Ovation Seat



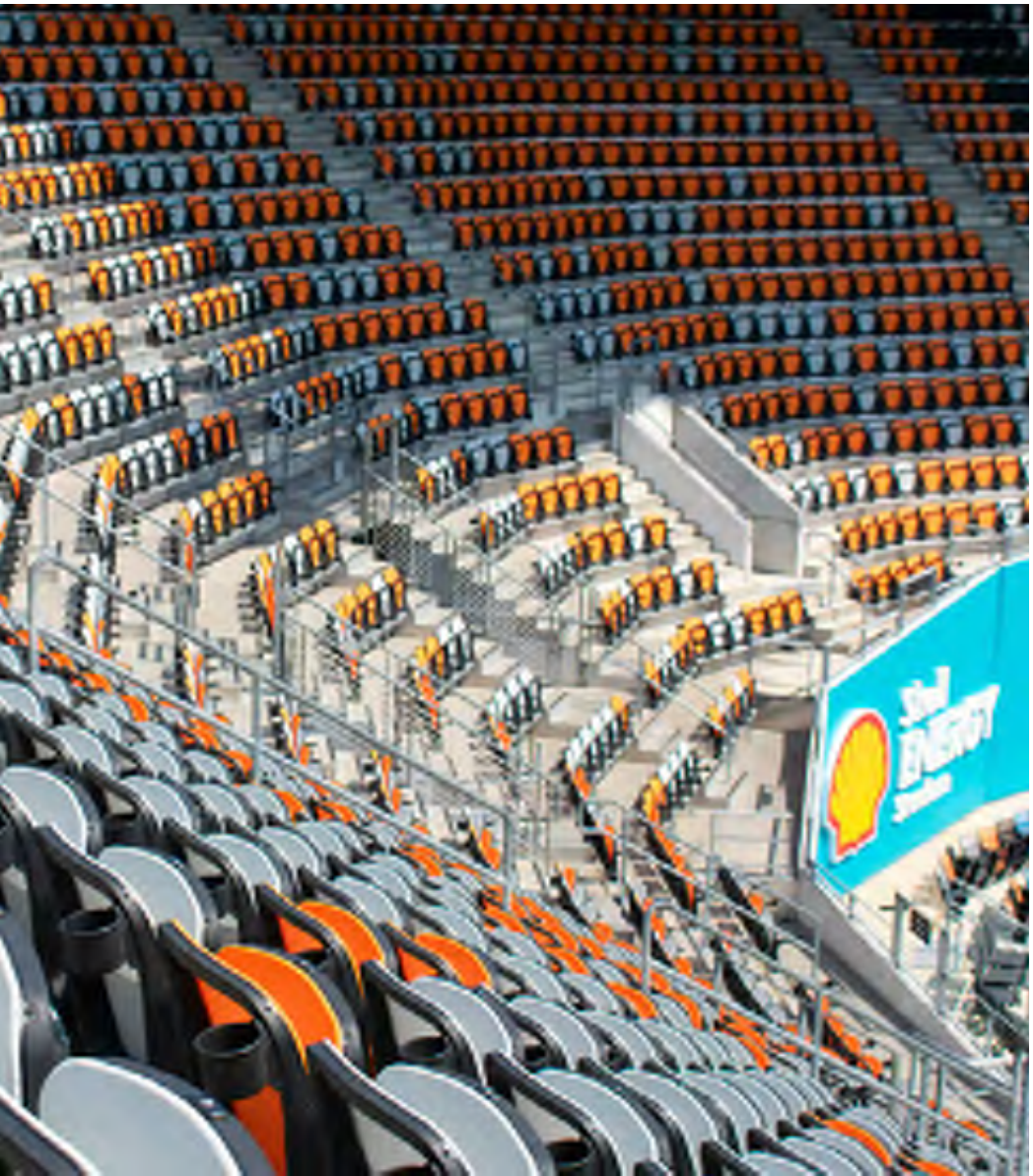
Gallery

Houston Dynamo
Zephyr



Gallery

Houston Dynamo
Zephyr





Gallery

Staten Island Ferry Hawks
High Back Ovation Seat



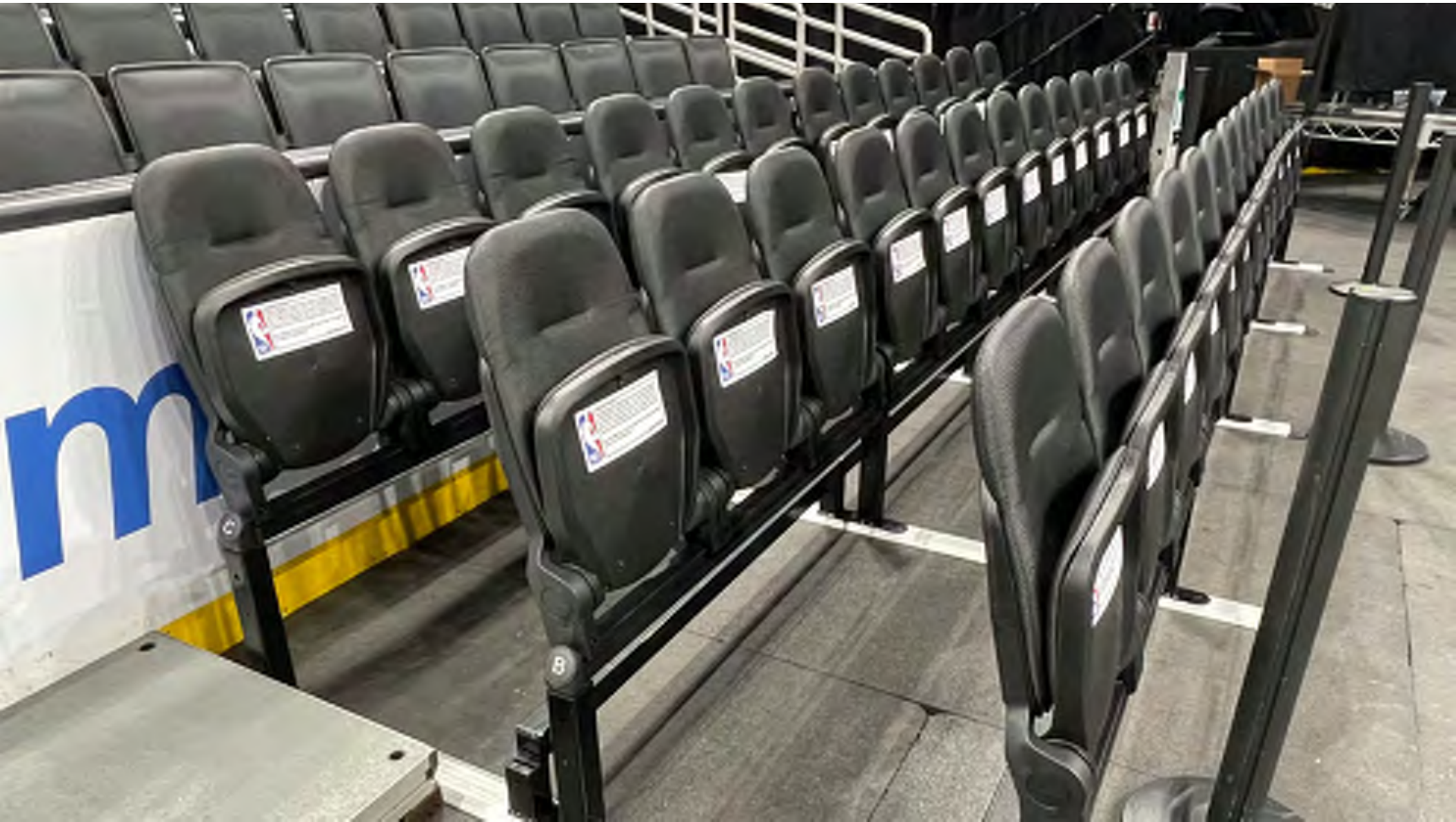
Gallery

Staten Island Ferry Hawks
Ovation Seat



Gallery

Boston Celtics
High Back Ovation Seat



Gallery

St. John’s University
Ovation Seat



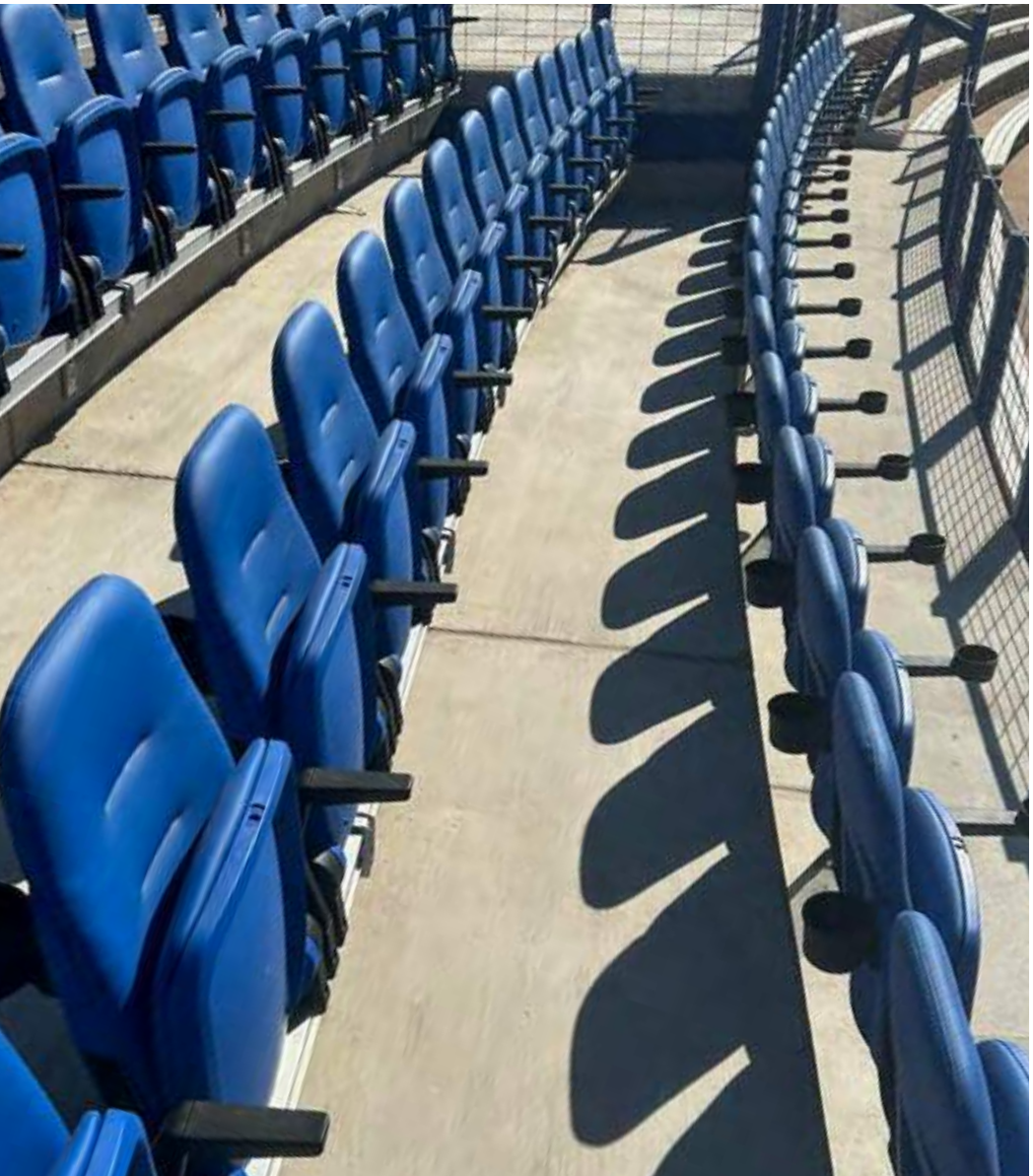
Gallery

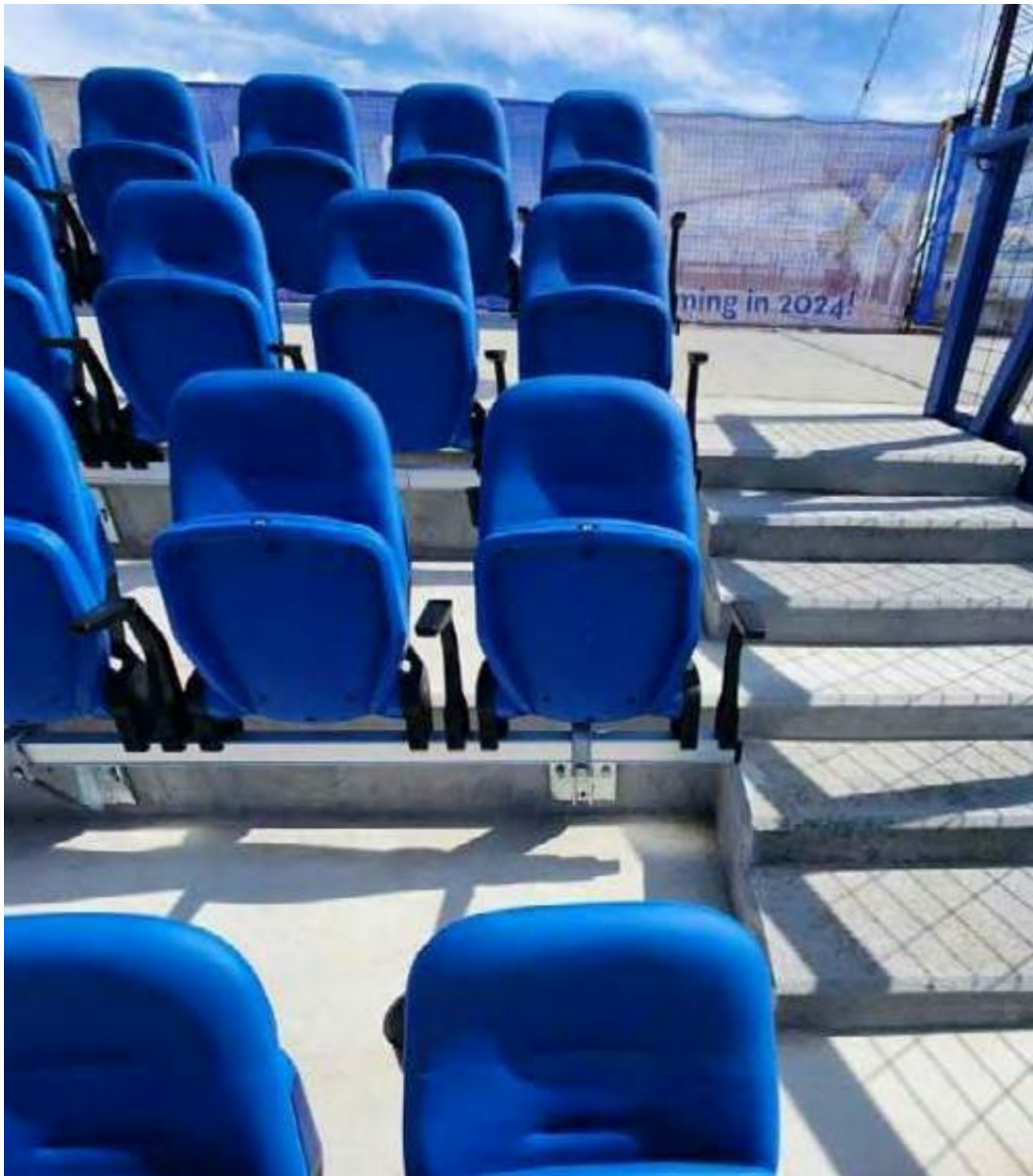
Sporting Kansas City
Ovation Seat



Gallery

United States Air Force Academy
High Back Ovation Seat





Gallery

University of Kansas
Zephyr

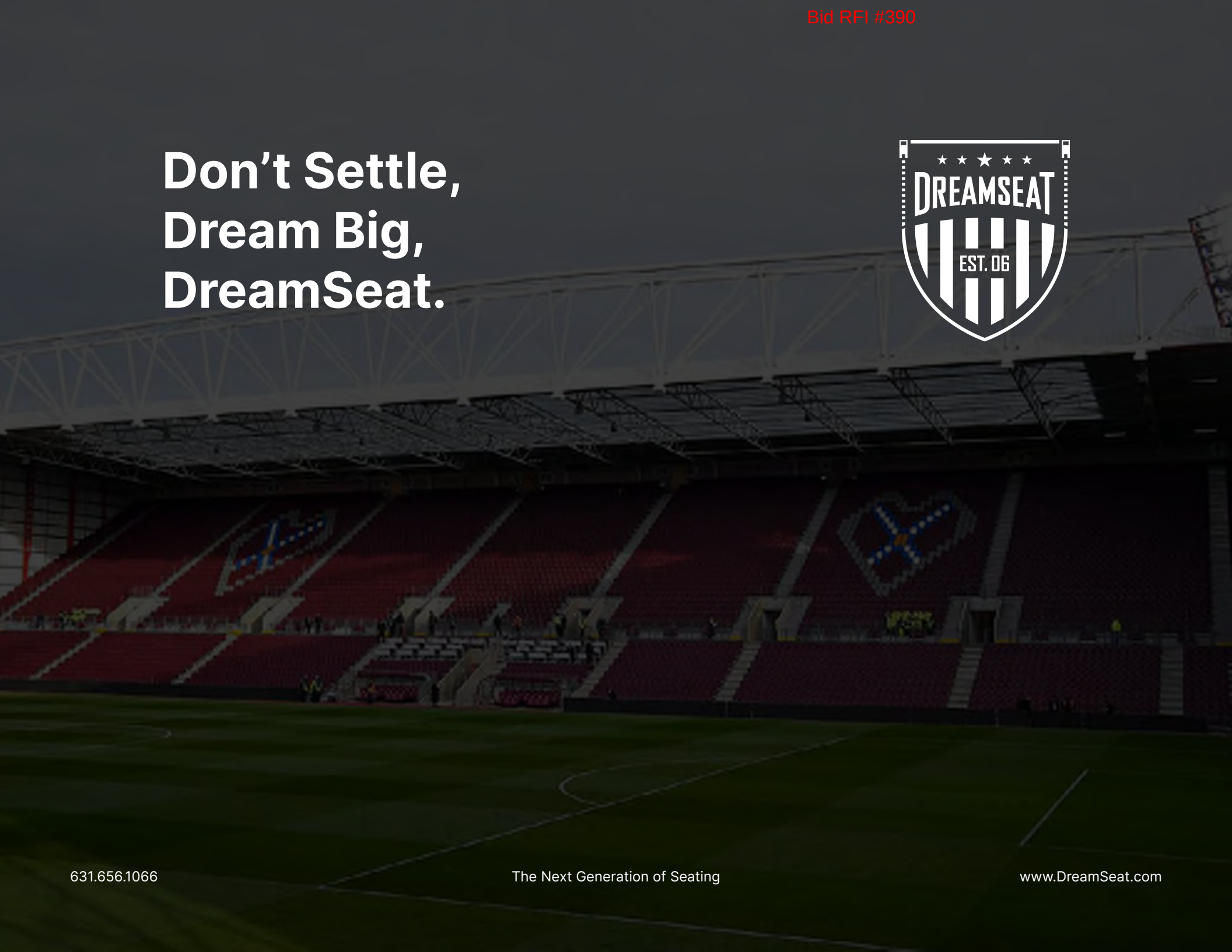


Gallery

Marshall University
Zephyr Max



Don’t Settle, Dream Big, DreamSeat.



BQ #70 & 125 Attachment

NOTE:
6" water main and 3" gas main located on west side of Stanwich Road.

STANWICH ROAD

Edge of existing asphalt pavement

Construct Post & Wire fence 6' high

W.M. Pit

Construct catch basin style "C-1" with trap style "T-2". Connect to manhole with 12" R.C.P.

Adjust manhole head to grade

Walk at street to end 5' wide with back edge 1' from property line

Construct #4 Rapid Drainage Pipe Seepage Drain and connect to manhole.

Construct concrete curb and 2½" asphalt pavement on 6" gravel base

Construct catch basin style "C-1" with trap style "T-2". Connect to manhole with 12" R.C.P.

Construct concrete curb and asphalt drive

Adjust existing sewer manhole to grade

Construct catch basin style "C-1" with trap style "T-2". Connect to manhole with 12" R.C.P.

12" R.C.P. Spur for future connection

WALK TO BE USED AS DRIVEWAY ACCESS TO PARKING AREA

Connect 6" V.T.P. Sewer to existing manhole and rebuild invert

Culvert and headwalls by Town of Greenwich

Construct Post & Wire fence 6' high on property line starting at rock ledge

New road to be constructed by others

PARKING AREA A

PARKING & PLAY AREA

Lawn

Canopy Cover

Construct Asphalt Walk

Flagpole

Lawn Frame

Rock Knoll to remain in natural state except for clearing brush and relocating loose rock as directed.

Carry asphalt walk to rock

Lawn & Plant

See building plans for retaining walls

See building plans for platform and steps

This sewer to be abandoned. Plug at manhole on main sewer

Construct Concrete Platform and Ramp

Construct Asphalt Walk

Construct Asphalt Walk on Gravel Base

Construct catch basin style "C-1" with trap style "T-2". Connect to manhole with 12" R.C.P.

Construct Headwall with screen as per detail

Construct & V.T.P. drain from leaders to 36" R.C.P.

Construct 6" V.T.P. San. Sewer

See Dwg. #850-W1

18" R.C.P. Relief Drain

Concrete Curb

Lawn

Construct catch basin style "C-4" with trap style "T-2".

Construct Asphalt Walk

Rip-rap Slope

15'x15' Pole Vaulting Pit

Construct #4 Rapid Drainage Pipe Seepage Drain

Backstop

SOFT BALL

Stripped Area (Alternate 34.05)

Construct catch basin style "C-1" with trap style "T-2".

Manhole

Construct 12" R.C.P. Seepage Drain as per detail.

Stripped Area (Alternate 34.05)

HARD BALL

Backstop

Manhole F.L. 45.55

Construct catch basin style "C-1" with trap style "T-2". Connect to manhole with 12" R.C.P.

Existing Concrete Pavement

Construct manhole over existing culvert. Tunnel tree roots

Mag. Dek.

True North

BOYS FIELD 240'x150'

GIRLS FIELD 240'x150'

7'x25' Broad Jumping pit (Alternate 34.01)

RUNNING TRACK 355' long

Gravel seepage drains in main drains

Construct catch basin style "C-4" with trap style "T-2".

Backstop

SOFT BALL

Stripped Area (Alternate 34.05)

27" R.C.P.

Bottom of Slope

Construct catch basin style "C-1" with trap style "T-2".

TENNIS COURTS (alternate 34.102)

240'

120'

6 gates

Post & Wire Fence around tennis courts 10' high

Pave courts with 2½" asphalt on 6" Gravel Base

Net strap anchors

Net Posts as per detail set 3' from playing line

ORCHARD STREET

NOTE:
Figures in circles are elevations of finished surface at point indicated.
T.C. = Top of Curb
F.L. = Flow Line of Pipe

SITE & DRAINAGE PLAN

CENTRAL JUNIOR HIGH SCHOOL

L1

30 APR 57 | 1" = 50'-0"

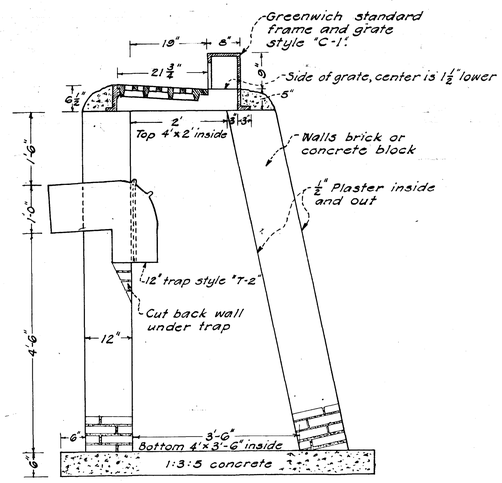
SHERWOOD, WELLS AND SMITH
Architects and Engineers

S.E. MINOR & CO.
CONSULTING ENGINEERS
GREENWICH, CONN.

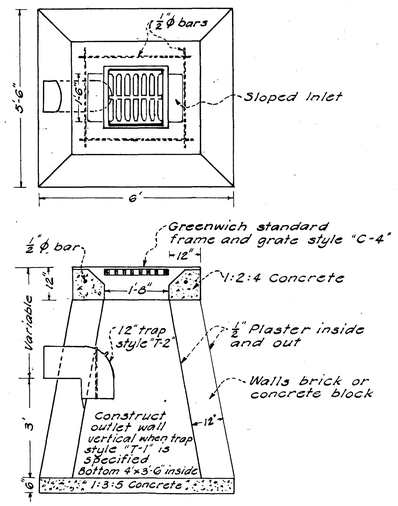
BYE & HERRMANN
LANDSCAPE CONSULTANTS, RYE, N.Y.

46

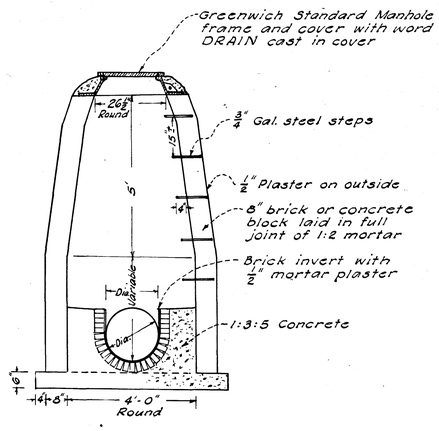
BQ #70 & 125 Attachment



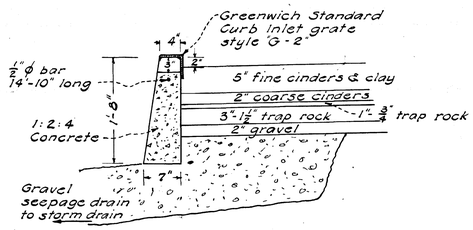
DETAIL OF CATCH BASIN STYLE "C-1"
SCALE: ¾" = 1'-0"

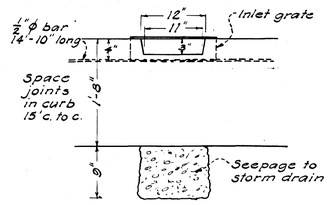


DETAIL OF CATCH BASIN STYLE "C-4"
SCALE: ½" = 1'-0"

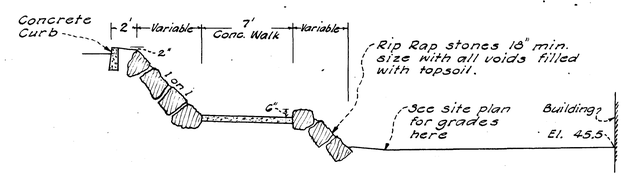


DETAIL OF DRAIN MANHOLE
SCALE: ½" = 1'-0"

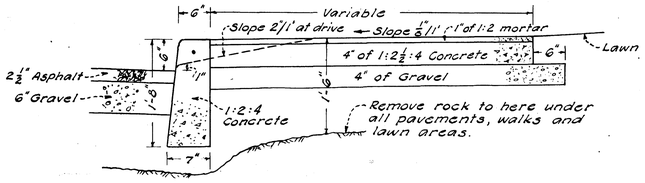




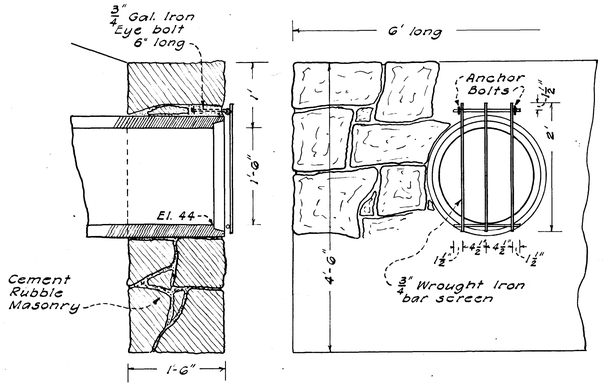
DETAIL OF INLET, CURB & RUNNING TRACK
SCALE: 1" = 1'-0"



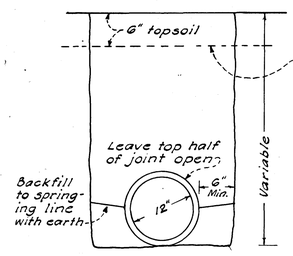
DETAIL OF RIPRAP PAVING AT SECTION A-A
SCALE: 1" = 5'-0"



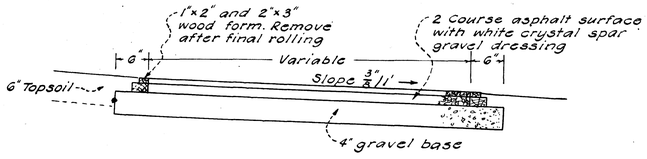
DETAIL OF PAVEMENT, CONCRETE CURB & WALK
SCALE: 1" = 1'-0"



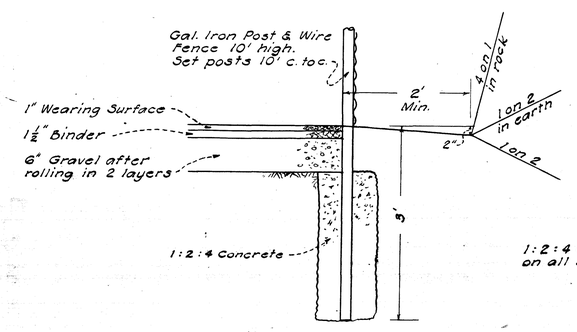
DETAIL OF HEADWALL & SCREEN
SCALE: 1" = 1'-0"



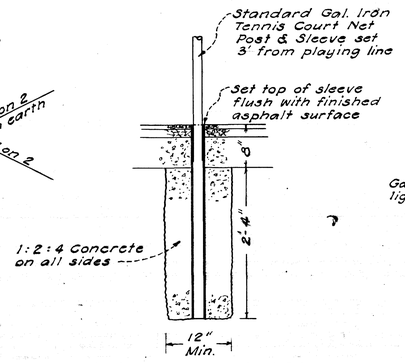
DETAIL OF SEEPAGE DRAIN
SCALE: 1" = 1'-0"



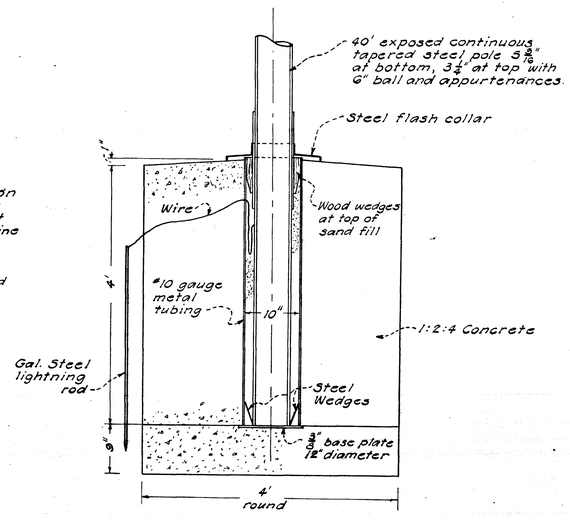
DETAIL OF ASPHALT WALK
SCALE: 1" = 1'-0"



DETAIL OF TENNIS COURT PAVEMENT & FENCE
SCALE: 1" = 1'-0"



DETAIL OF NET POSTS
SCALE: 1" = 1'-0"



DETAIL OF FLAGPOLE
SCALE: 1" = 1'-0"

SITE WORK DETAILS

30APR

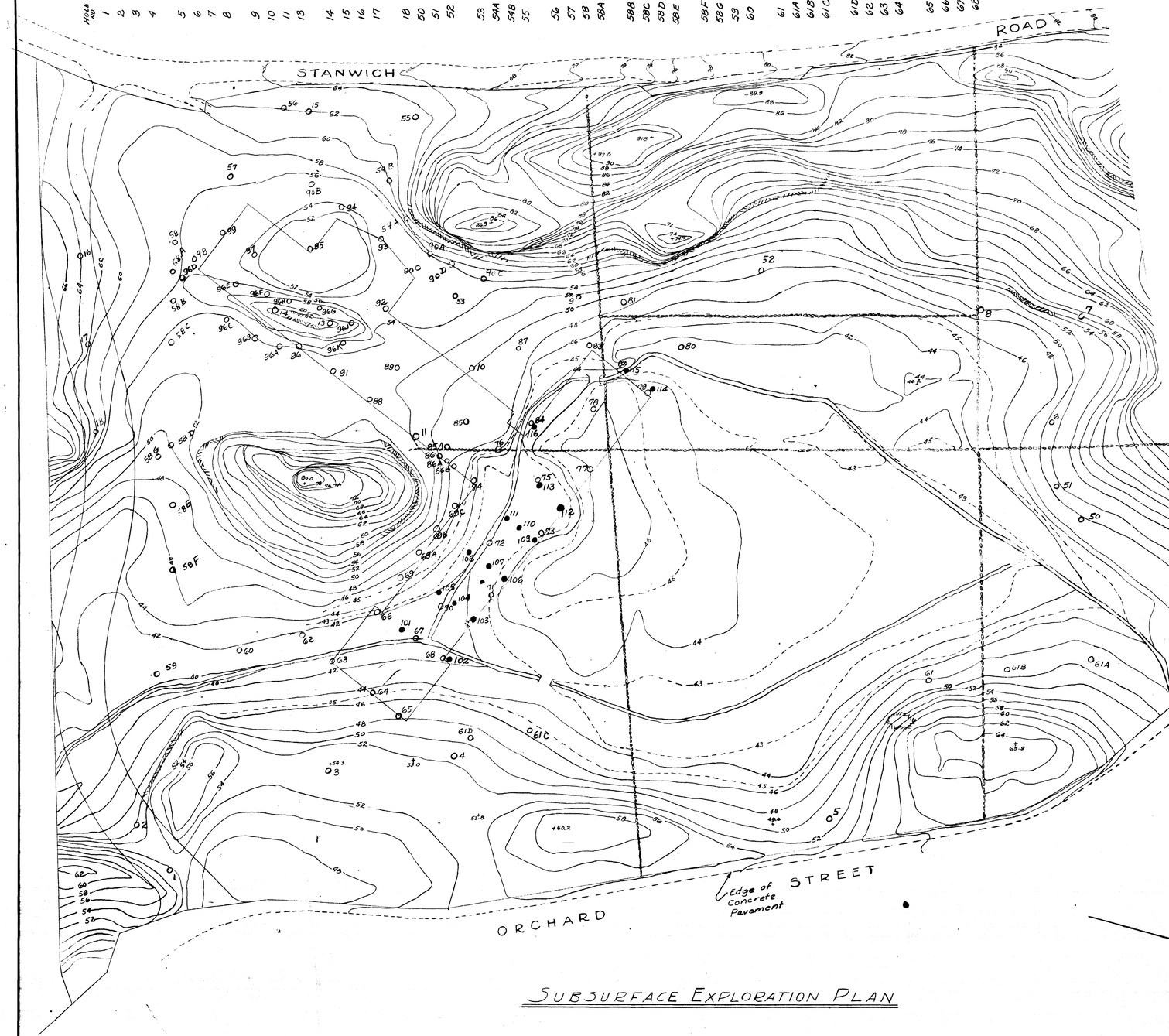
SHERWO
Architects

BQ #70 & 125 Attachment

SOUNDING DATA

NOTE: UNIT PRESSURES WITH 2" PISTON, WATER TABLE N.R. UNLESS NOTED

HOLE NO.	DEPTH TO ROCK	DEPTH OF HOLE
1	4' TO ROCK	6' N.R.
2	4' " "	4' 7" "
3	5' " "	5' TO ROCK
4	6.5' NR	6' 3" "
5	6' TO ROCK	6' 9"
6	1" " "	6' "
7	ROCK EXPOSED	6' "
8	6' TO ROCK	6' "
9	7' TO ROCK	8' N.E.
10	8' N.R.	6' "
11	9.5' TO ROCK	6' "
13	ROCK EXPOSED	6' "
14	ROCK EXPOSED	6' N.E.
15	8' N.R.	6' "
16	4' TO ROCK	6' "
17	7' " "	6' "
18	1' TO ROCK	6' N.E.
50	6' N.E.	6' "
51	2' TO ROCK	6' "
52	3' N.E.	9.5' TO ROCK
53	2.5' 3.5' TO ROCK	9.5' TO ROCK
54A	DRY 1' " "	6' " "
54B	1.2' 4.5' " "	5.5' " "
55	0.5' 5.5' N.E.	9' N.E.
56	3.0' 4.5' TO ROCK	6' N.E.
57	1.7' 3.5' N.E.	DRY 6' "
58	2.0' 7.0' TO ROCK	6' TO ROCK
58A	6.5' " "	5' " "
58B	5' TO ROCK	25' TO ROCK
58C	8' N.E.	25' N.E.
58D	1.5' TO ROCK	6' "
58E	5.5' " "	6' "
58F	5' N.E.	5' TO ROCK
58G	4' TO ROCK	6' N.E.
59	5.5' N.E.	4.5' TO ROCK
60	6' N.E.	6' N.E.
61	4.5' TO ROCK	6' N.E.
61A	5.5' " "	1.5' TO ROCK
61B	6' N.E.	2' " "
61C	6' "	15' " "
61D	4.5' TO ROCK	3' TO ROCK
62	5.5' N.E.	3' " "
63	6' "	5' " "
64	4.1' 5' "	25' " "
65	6' TO ROCK	2.5' TO ROCK
66	1.7' 6' N.E.	4' " "
67	6' "	25' " "
68	6' "	3' " "
90A	DRY 25' TO ROCK	
90B	25' N.E.	
90C	3.0' 6' "	
90D	3.5' 6' "	
91	5' TO ROCK	
92	4.0' 6' N.E.	
93	5.5' N.E.	4.5' TO ROCK
94	0.9' 6' N.E.	
95	6' N.E.	
96	1.5' TO ROCK	
96A	2' " "	
96B	15' " "	
96C	DRY 3' TO ROCK	
96D	3' " "	
96E	5' " "	
96F	25' " "	
96G	2.5' TO ROCK	
96H	4' " "	
96J	25' " "	
96K	DRY 3' " "	
97	1.7' 6' N.E.	
98	6' "	
99	1.1' 6' "	



SUBSURFACE EXPLORATION PLAN

BORINGS

NOTE: ▽ INDICATES GROUND WATER TABLE
VERTICAL SCALE: 1" = 4'

FS = Fine Sand
MS = Medium "
CS = Coarse "

HOLE #115: TOPSOIL; MOTTLED GRAY TAN CLAYEY SILT; GRAY BROWN SAND & GRAVEL & COBBLES

HOLE #114: TOPSOIL & ROOTS; GRAY BROWN SAND, GRAVEL & COBBLES

HOLE #116: TOPSOIL & COBBLES; DARK BLUE GRAY CLAY, SAND & GRAVEL & COBBLES; GRAY-TAN SILT & FS SOME GRAVEL

HOLE #113: ORGANIC CLAY → TOPSOIL; MOTTLED CLAYEY SILT; MOTTLED CLAYEY SILT W/SOME FS, FEW COBBLES; GRAY SILT & FS + THE CLAY GRAVELLY MATERIAL

HOLE #112: TOPSOIL; MOTTLED CLAYEY SILT; ▽ MOTTLED CLAYEY SILT W/SOME FS FEW COBBLES; GRAY SILT & FS LITTLE CLAY (SOFT); GRAVELLY MATERIAL

HOLE #111: TOPSOIL; GRAY FS & SILT; BOULDER

HOLE #110: TOPSOIL; MOTTLED SILT & CLAY; BLACK ORGANIC CLAY; GRAY CLAY & SILT; GRAY FS & SILT

HOLE #109: TOPSOIL; SAND & GRAVEL

HOLE #108: TOPSOIL; GRAY-BROWN SAND & GRAVEL, FEW COBBLES

HOLE #107: TOPSOIL; ORGANIC CLAY; MOTTLED CLAYEY SILT; GRAY BROWN SAND & GRAVEL, FEW COBBLES

HOLE #106: TOPSOIL; GRAY BROWN GRAVEL & SAND (COMPACT)

HOLE #105: TOPSOIL; GRAY CLAY & SILT; SAND & GRAVEL

HOLE #104: TOPSOIL; GRAY CLAY & SILT; GRAY SILT & FS LITTLE GRAVEL; SAND & GRAVEL

HOLE #103: ▽ TOPSOIL; GRAY SILT & FS LITTLE GRAVEL

HOLE #101: TOPSOIL; MOTTLED CLAY & SILT, TRACE ROOTS; M TO FS (FIRM); M TO CS (FIRM)

HOLE #102: TOPSOIL; MOTTLED CLAY & SILT; M TO FS; GRAY-BROWN SILT & FS TRACE ORGANIC



PLAN OF ROCK CONTOURS

This is to certify that the subsurface information on this sheet is substantially correct

Philip Keene
Civil Engineer, "204"

SUBSURFACE EXPLORATION PLAN

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-L4

Date: 30 APR 57 | Scale: 1" = 5

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

PHILIP KEENE
MIDDLETOWN, CONN.

BQ #70 & 125 Attachment

SCHEDULE OF DRAWINGS

830-L1 SITE & DRAINAGE PLAN
830-L2 GRADING PLAN
830-L3 SITE WORK DETAILS
830-L4 SUBSURFACE EXPLORATION PLAN

830-1 ROOF & MODULE PLANS
830-2 BASEMENT PLAN
830-3 FIRST FLOOR PLAN AREA A
830-4 FIRST FLOOR PLAN AREA B
830-5 FIRST FLOOR PLAN AREAS C & D
830-6 ELEVATIONS
830-7 ELEVATIONS
830-8 ELEVATIONS & LETTERING DETAILS
830-9 WALL SECTIONS 1
830-10 WALL SECTIONS 2
830-11 WALL SECTIONS 3
830-12 WALL SECTIONS 4
830-13 STAIRS
830-14 ENTRANCE DETAILS
830-15 TOILET ROOMS
830-16 TYPICAL CLASSROOMS
830-17 CORRIDOR ELEVATIONS
830-18 CORRIDOR ELEVATIONS & DETAILS
830-19 GYMNASIUM DETAILS
830-19A ALTERNATE GYMNASIUM
830-20 AUDITORIUM DETAILS
830-21 SCIENCE ROOMS
830-22 ARTS & CRAFTS ROOMS
830-23 HOMEMAKING ROOMS
830-24 LIBRARY
830-25 KITCHEN
830-26 SHOPS
830-27 MUSIC ROOMS

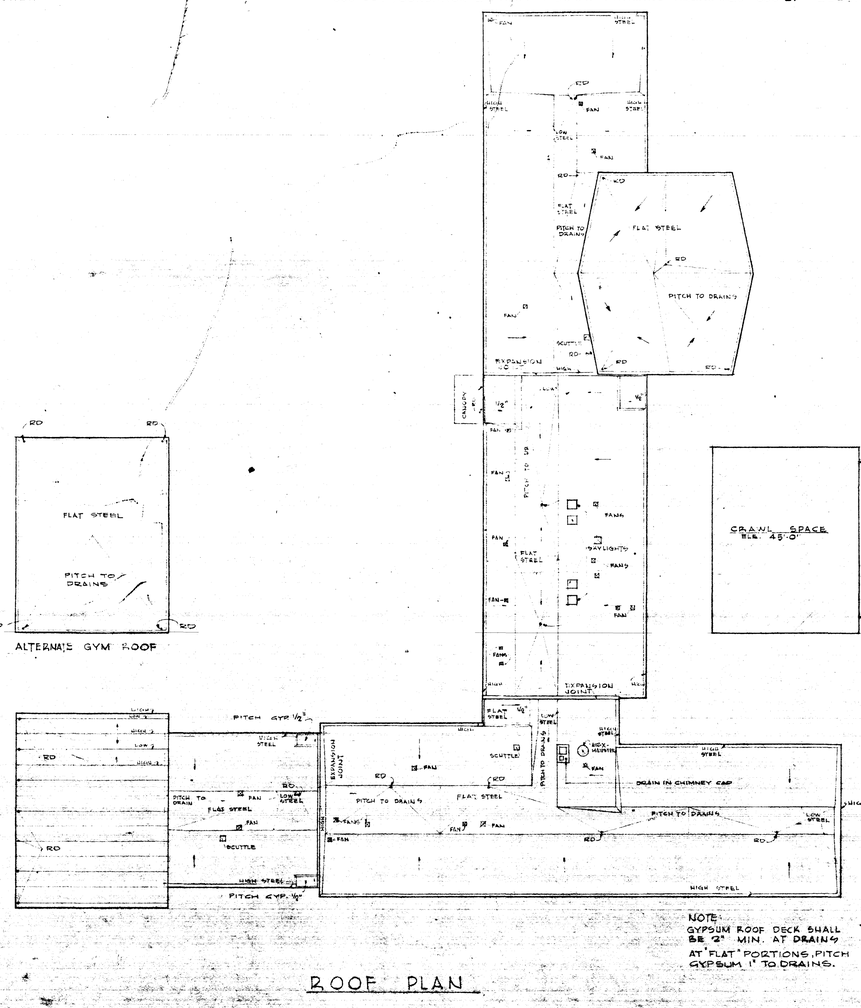
830-D1 WINDOW DETAILS
830-D2 GYMNASIUM WINDOW DETAILS
830-D3 SPECIAL HOLLOW METAL BUCKS & DETAILS
830-D4 DOOR, BUCK & SADDLE TYPES
830-D5 METHODS OF BUCK ATTACHMENT
830-D6 METHODS OF BUCK ATTACHMENT & LIBRARY PART.
830-D7 WOOD BUCK & PARTITION DETAILS
830-D8 DOOR SCHEDULE
830-D9 DOOR SCHEDULE
830-D10 DOOR SCHEDULE
830-D11 DOOR SCHEDULE
830-D12 DOOR SCHEDULE
830-D13 DOOR SCHEDULE
830-D14 DOOR SCHEDULE
830-D15 FINISH SCHEDULE
830-D16 FINISH SCHEDULE
830-D17 FINISH SCHEDULE
830-D18 FINISH SCHEDULE
830-D19 FINISH SCHEDULE
830-D20 FINISH SCHEDULE
830-D21 MISCELLANEOUS DETAILS
830-D22 ADMINISTRATION COUNTER & MAIL BOXES
830-D23 MISCELLANEOUS DETAILS
830-D24 GYMNASIUM COURT MARKING DETAILS

830-S1 FOUNDATION AREA A
830-S2 FOUNDATION & BASEMENT FLOOR FRAMING AREA B
830-S3 FOUNDATION & FIRST FLOOR FRAMING AREAS C&D
830-S4 STRUCTURAL DETAILS & SCHEDULES
830-S5 FIRST FLOOR FRAMING AREA A
830-S6 FIRST FLOOR FRAMING AREA B
830-S7 ROOF FRAMING AREA A
830-S8 ROOF FRAMING AREA B
830-S9 ROOF FRAMING AREAS C & D
830-S10 STRUCTURAL DETAILS

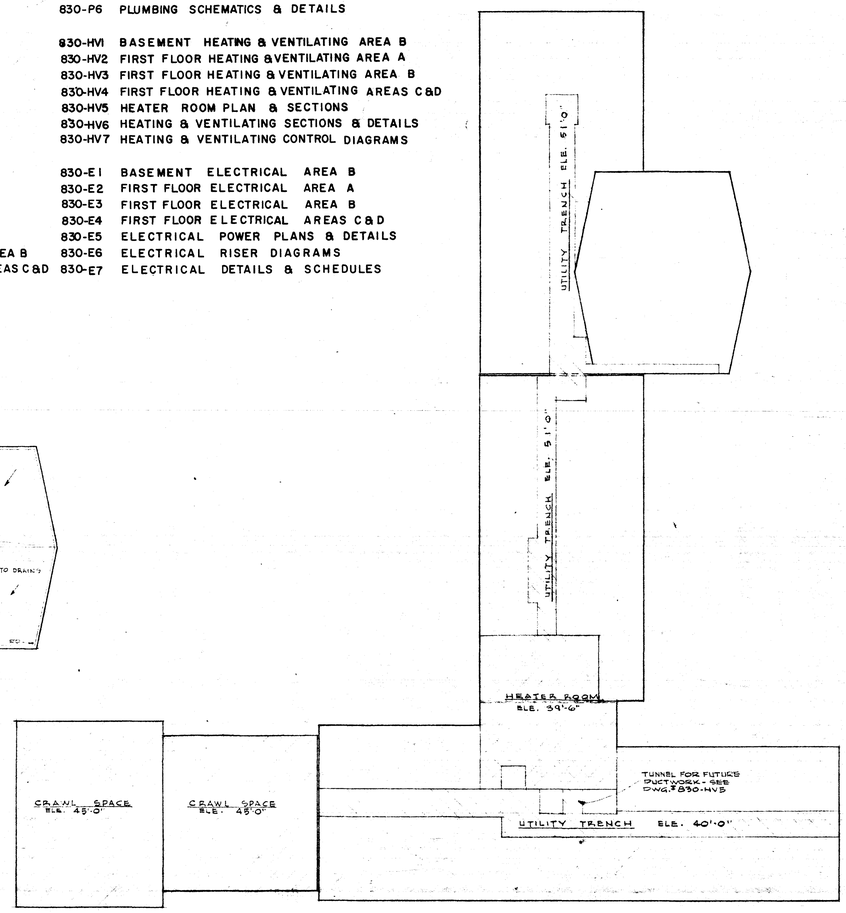
830-U1 SITE UTILITY PLAN
830-P1 BASEMENT PLUMBING AREA B
830-P2 FIRST FLOOR PLUMBING AREA A
830-P3 FIRST FLOOR PLUMBING AREA B
830-P4 FIRST FLOOR PLUMBING AREAS C & D
830-P5 PLUMBING SCHEDULES & KITCHEN PLANS
830-P6 PLUMBING SCHEMATICS & DETAILS

830-HV1 BASEMENT HEATING & VENTILATING AREA B
830-HV2 FIRST FLOOR HEATING & VENTILATING AREA A
830-HV3 FIRST FLOOR HEATING & VENTILATING AREA B
830-HV4 FIRST FLOOR HEATING & VENTILATING AREAS C&D
830-HV5 HEATER ROOM PLAN & SECTIONS
830-HV6 HEATING & VENTILATING SECTIONS & DETAILS
830-HV7 HEATING & VENTILATING CONTROL DIAGRAMS

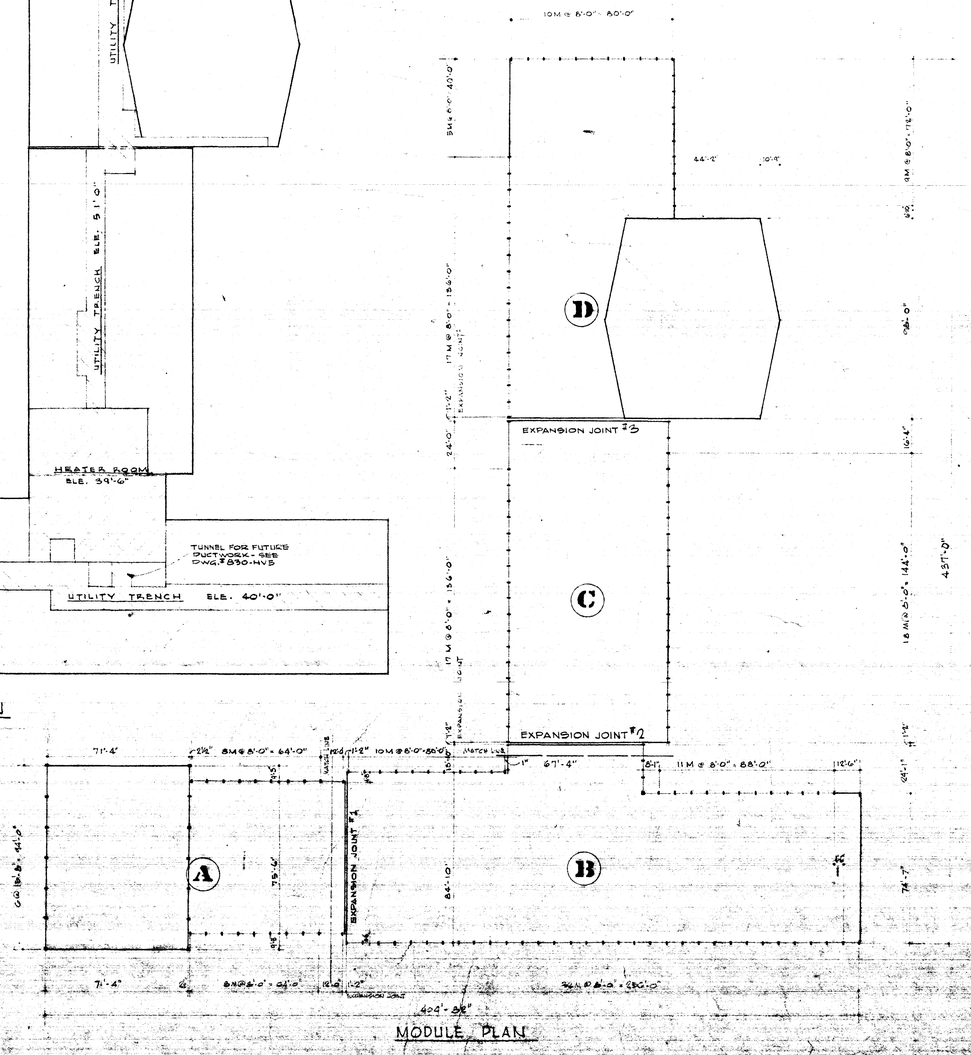
830-E1 BASEMENT ELECTRICAL AREA B
830-E2 FIRST FLOOR ELECTRICAL AREA A
830-E3 FIRST FLOOR ELECTRICAL AREA B
830-E4 FIRST FLOOR ELECTRICAL AREAS C&D
830-E5 ELECTRICAL POWER PLANS & DETAILS
830-E6 ELECTRICAL RISER DIAGRAMS
830-E7 ELECTRICAL DETAILS & SCHEDULES



ROOF PLAN



SUB-FLOOR PLAN



MODULE PLAN

DATE	ISSUE OR REVISION	No.

MATERIAL LEGEND
- CONCRETE
- CONCRETE BLOCK
- BRICK
- STEEL
- FORMBOARD, TILE
- FINISH WOOD
- ROUGH WOOD
- PLYWOOD
- GYPSUM, PLASTER
- INSULATION
- GRAVEL

MODULE PLAN
ROOF PLAN

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-1
Date 30APR 57 Scale 1/32" = 1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Pacific Street, Stamford, Connecticut

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	No.

KEY PLAN

BASEMENT PLAN
AREAS B&C CLASSROOMS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

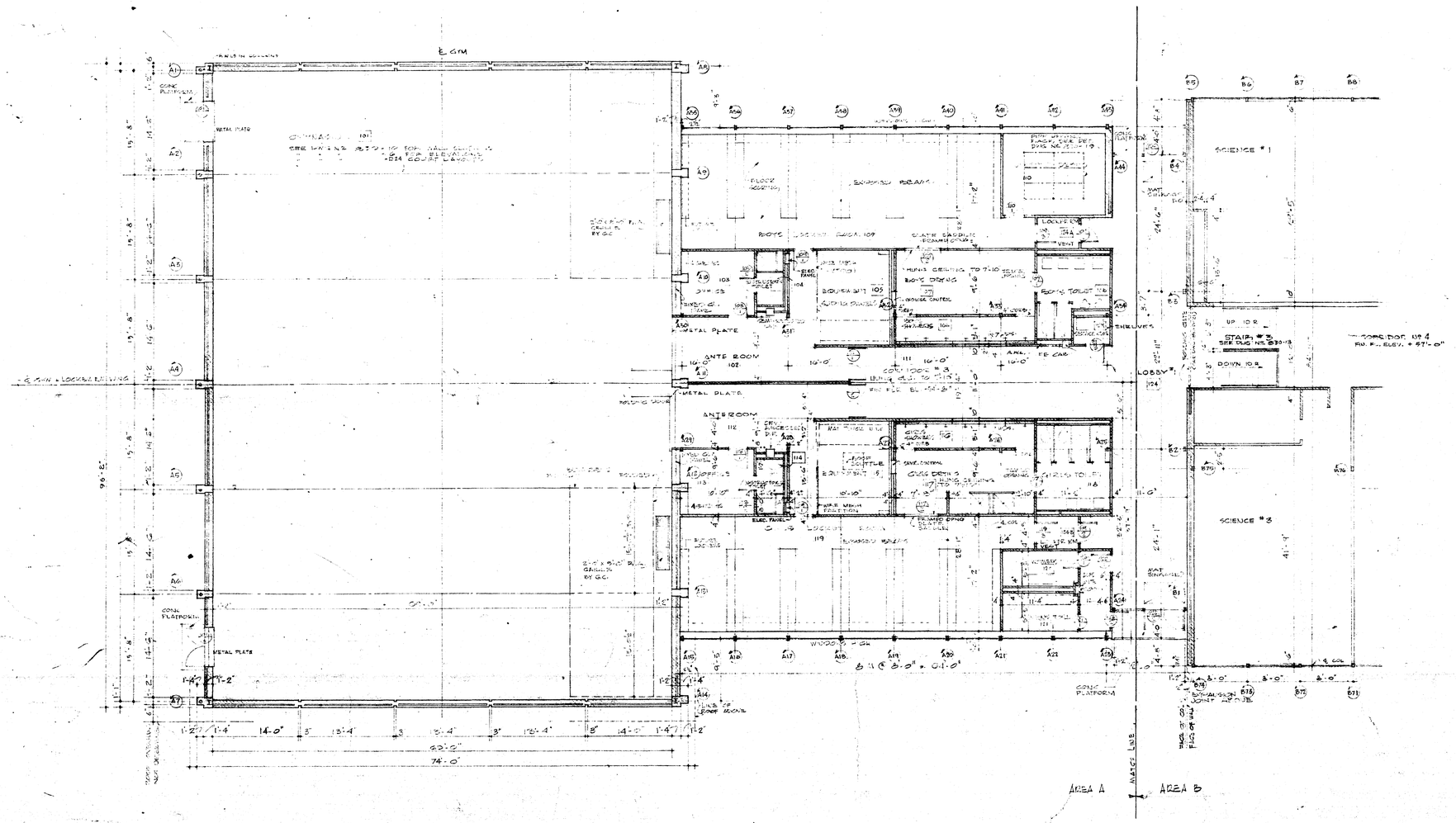
830-2

Date: 30APR 57 | Scale: 1/8" = 1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	No.



KEY PLAN

FIRST FLOOR PLAN
AREA A - GYM + LOCKER RMS.

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

330-3

30 APR57

Scale 1/8" = 1'-0"

SHERWOOD, MILES AND SMITH
Architects 93 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	No.

SCIENCE ROOM No 1 125
SEE DWG 850-21

PREPARATION No 1 127

SCIENCE ROOM No 2 126
SEE DWG 850-21

TEACHER'S CLOSET

DUCT SPACE

TRACHER'S CLOSET

DARK ROOM 128

PAPER T.H. VACT

48 LOCKERS

SCIENCE ROOM No 3 129

LIBRARY 161
SEE DWG 850-24

CONF. No 1 138

CONF. No 2 134

CORRIDOR No 4 156

TRACHERS ROOM 124

TOILET 123

CAFETERIA No 1 162

CLASSROOM No 1 141

CLASSROOM No 2 142

CLASSROOM No 3 143

CLASSROOM No 4 144

CLASSROOM No 5 145

CLASSROOM No 6 146

CLASSROOM No 7 147

CLASSROOM No 8 148

CLASSROOM No 9 149

CLASSROOM No 10 150

CLASSROOM No 11 151

CORRIDOR No 5 155

AREA 'A'

AREA 'B'

KEY PLAN

FIRST FLOOR PLAN
AREA B CLASSROOMS

CENTRAL JUNIOR
HIGH SCHOOL
Greenwich, Connecticut

830-4

Date 30 APR 57

Scale 1/8" = 1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Field Street Stamford, Connecticut

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	No.

KEY PLAN

FIRST FLOOR PLAN
AREAS C & D

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

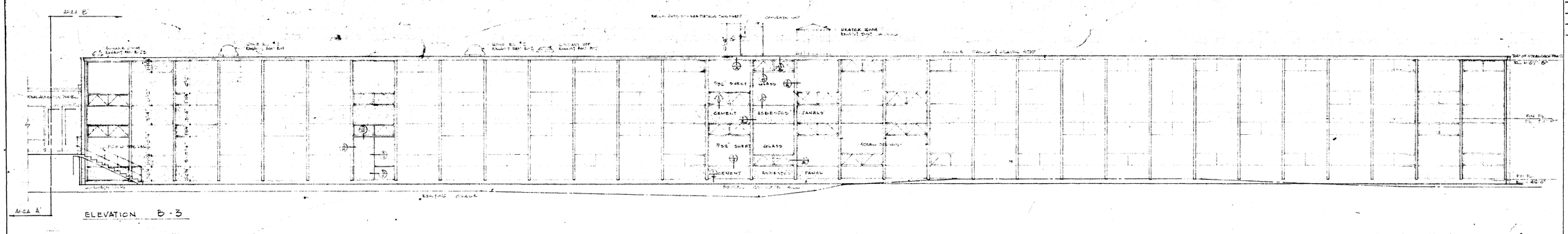
830-5

Date 30APR 57 | Scale 1/8"=1'-0"

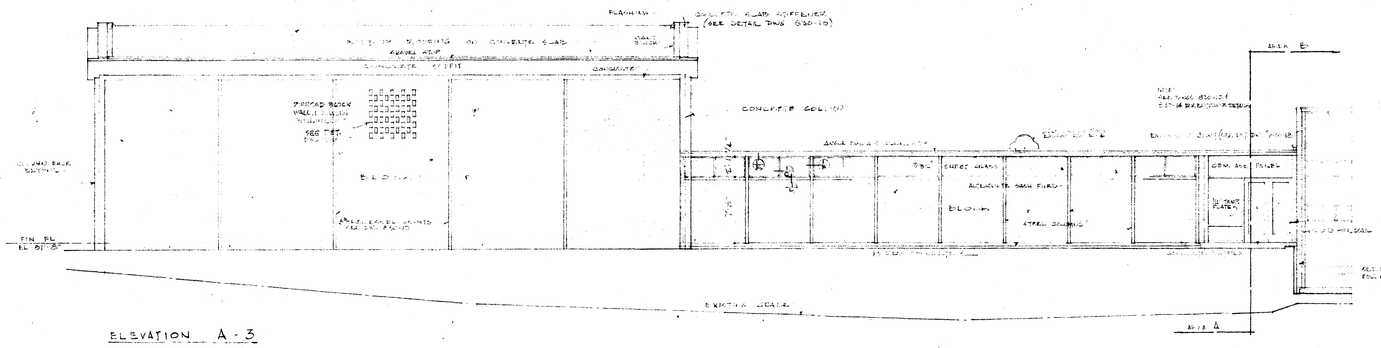
SHERWOOD, WELLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

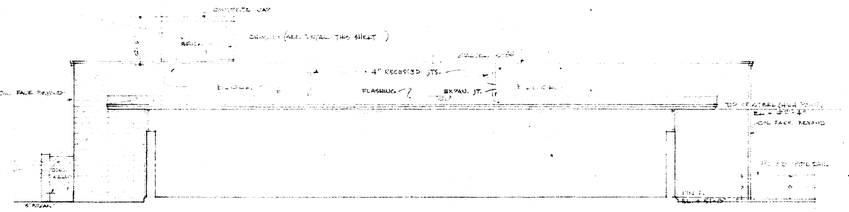
DATE	ISSUE OR REVISION	No.



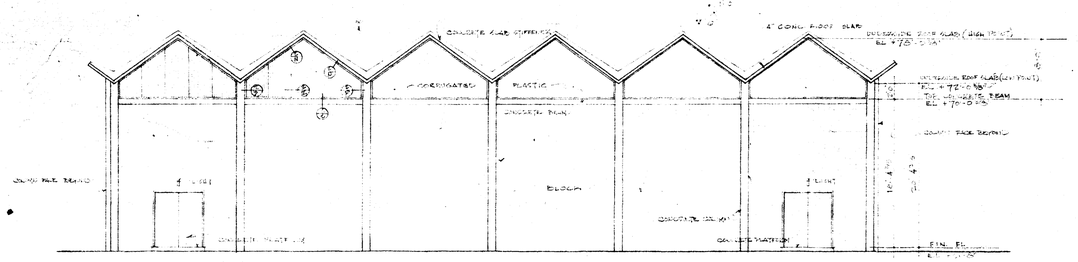
ELEVATION B-3



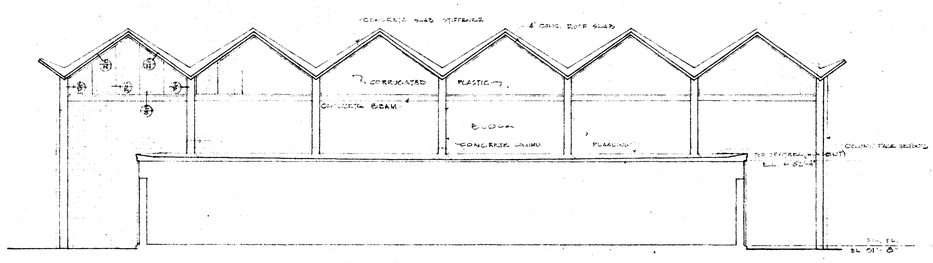
ELEVATION A-3



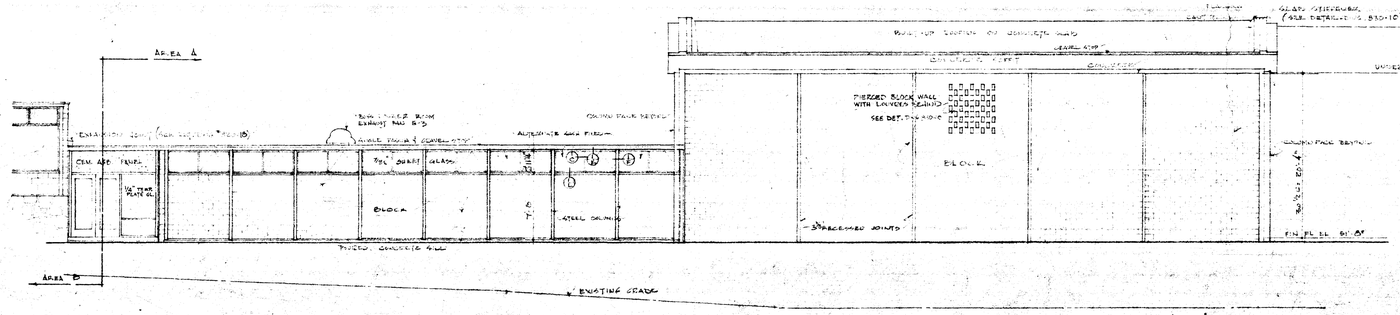
ELEVATION B-2



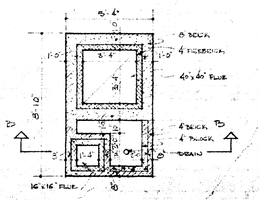
ELEVATION A-2



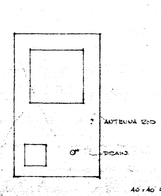
ELEVATION A-4



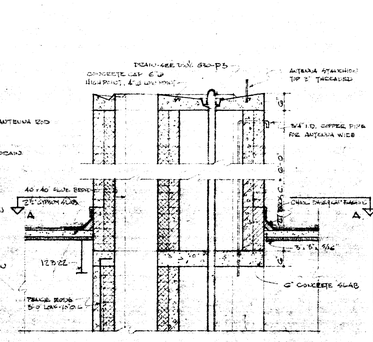
ELEVATION A-1



SECTION A-A
SCALE - 1/4"=1'-0"

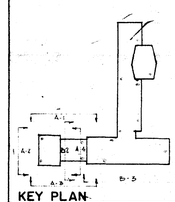


CHIMNEY CAP PLAN
SCALE - 1/4"=1'-0"
NOTE:
GIVE SPLITS AT EDGE OF CHIMNEYS & FLUES. SLOPE TO LEAD POINT @ DRAIN



CHIMNEY DETAILS
SCALE - AS LISTED

SECTION B-B
SCALE 1/2" = 1'-0"



KEY PLAN

ELEVATIONS

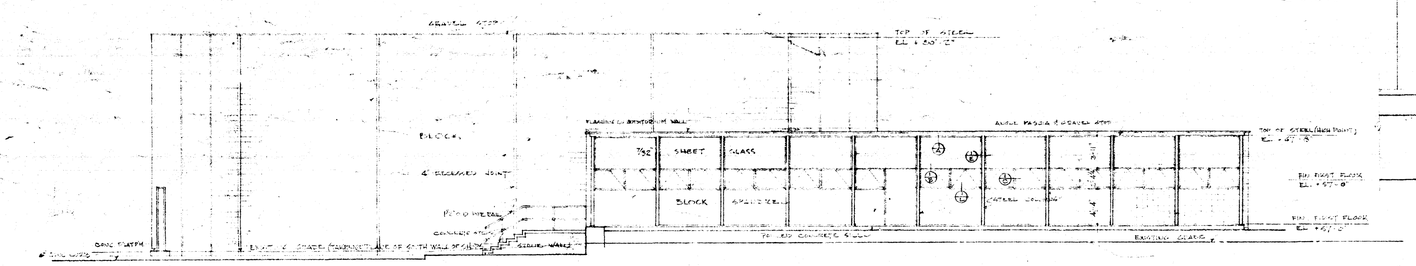
CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-6

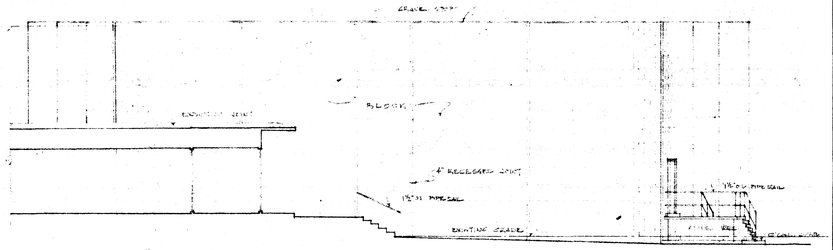
Date: 30 APR 57 | Scale: 1/8"=1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

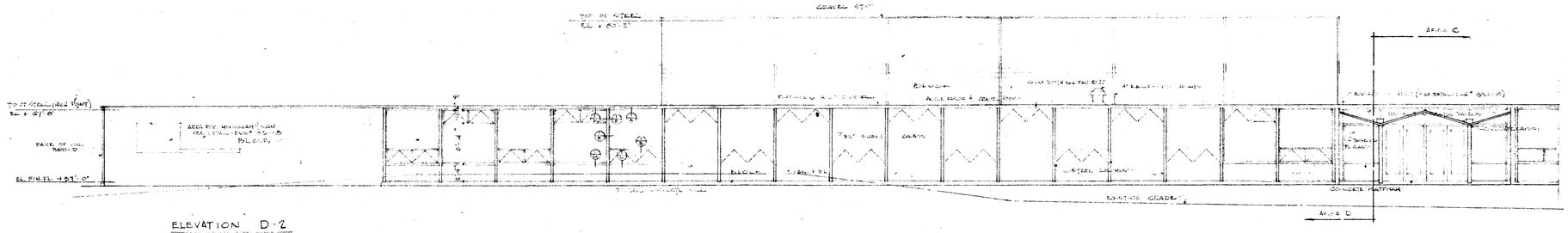
BQ #70 & 125 Attachment



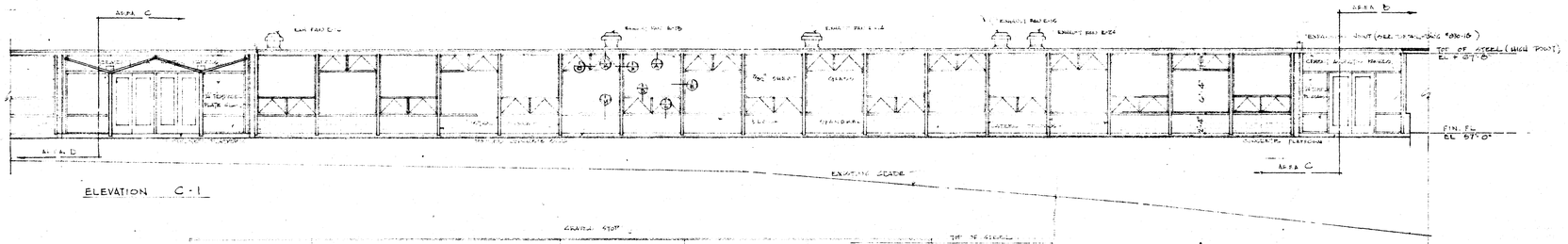
ELEVATION D-1



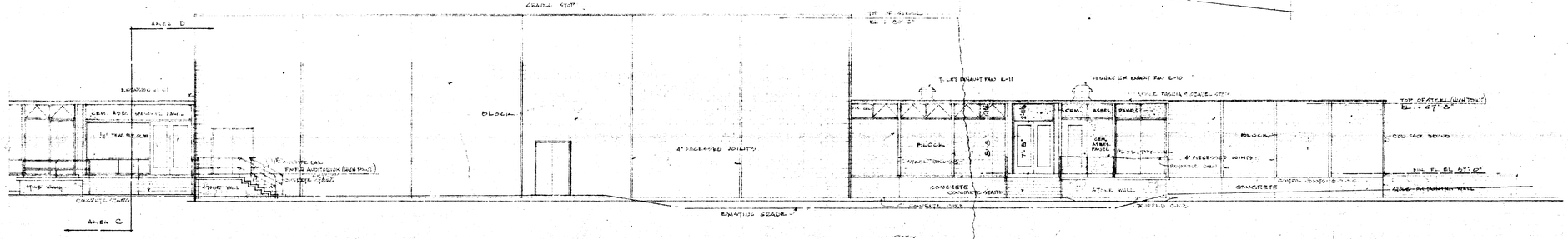
ELEVATION D-3



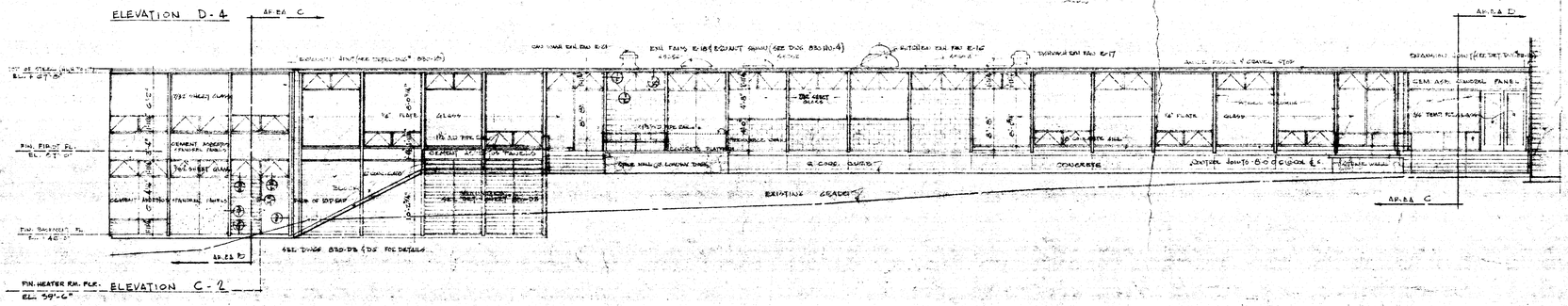
ELEVATION D-2



ELEVATION C-1

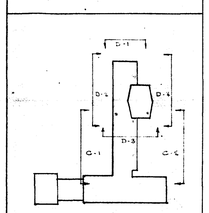


ELEVATION D-4



ELEVATION C-2

DATE	ISSUE OR REVISION	No.



KEY PLAN

ELEVATIONS

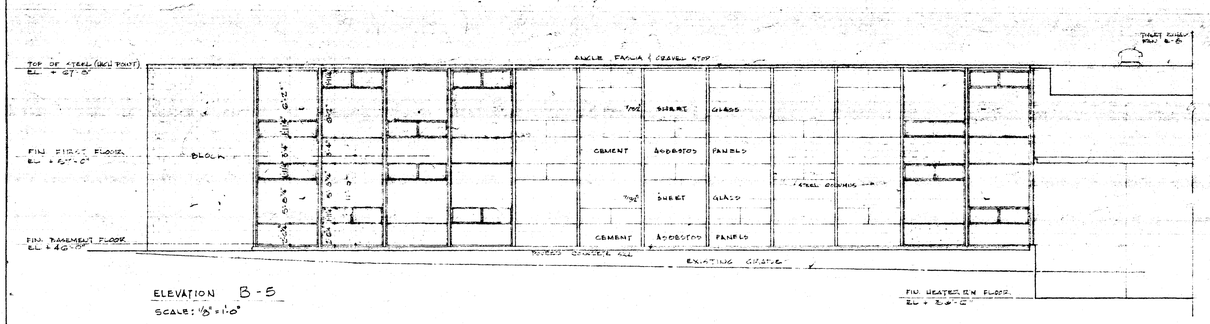
CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-7

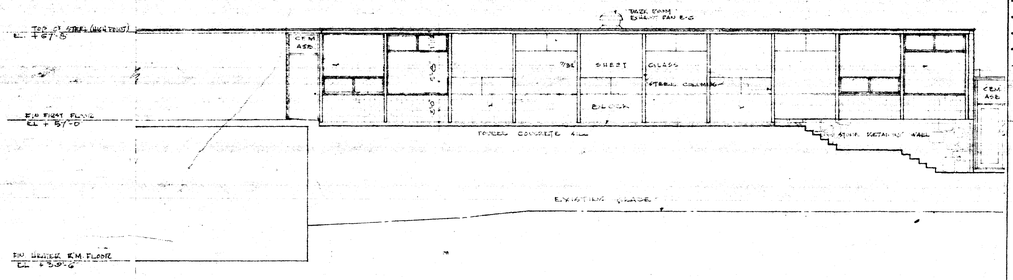
Date	Scale
30APR 57	1/8"=1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

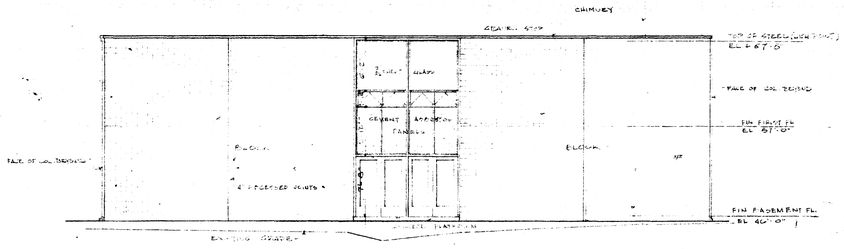
BQ #70 & 125 Attachment



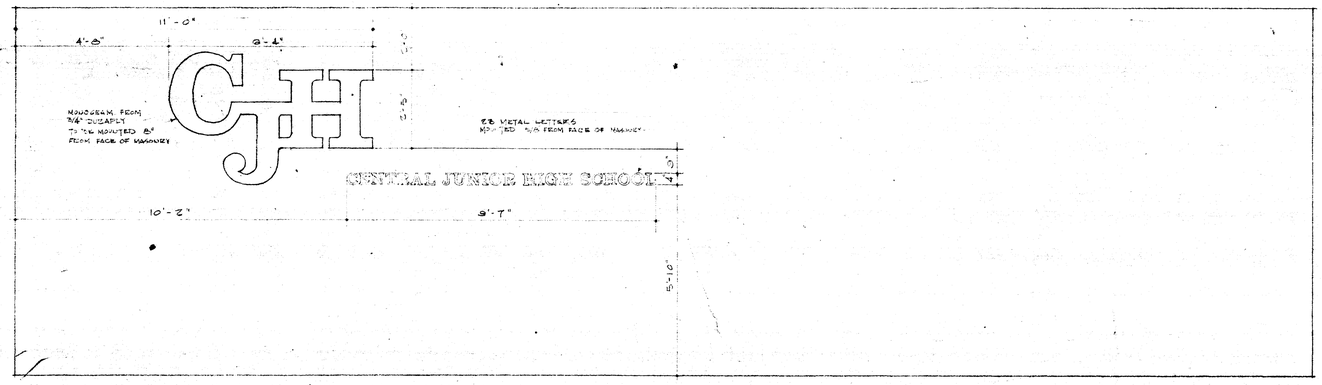
ELEVATION B-5
SCALE: 1/8" = 1'-0"



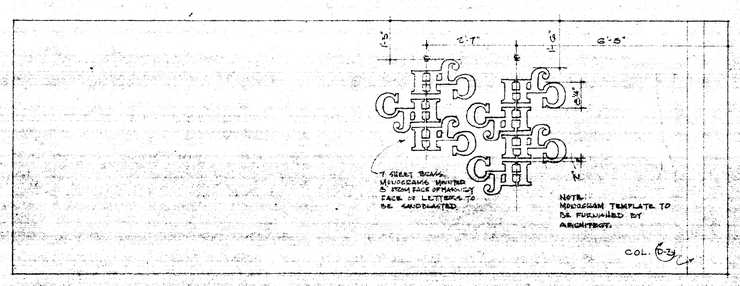
ELEVATION B-1
SCALE: 1/8" = 1'-0"



ELEVATION B-4
SCALE: 1/8" = 1'-0"



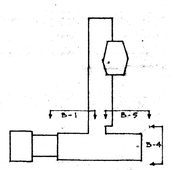
EXTERIOR LETTERING (SEE ELEVATION D-2, DRAWING 830-7)
SCALE 1/2" = 1'-0"



INTERIOR LETTERING (SEE SECTION A-A THROUGH AUDITORIUM LOBBY #2, DRAWING 830-14)
SCALE 1/2" = 1'-0"

DATE	ISSUE OR REVISION	No.





KEY PLAN

ELEVATIONS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-8

Date	Scale
30APR 57	AS NOTED

SHERWOOD, MILLS AND SMITH
Architects, 55 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	No.

DETAIL 830-9-J
3" = 1'-0"

DETAIL 830-9-K
SCALE 3" = 1'-0"

DETAIL 830-9-L
SCALE 3" = 1'-0"

PLAN SECTION A-A
SCALE 3" = 1'-0"

DETAIL 830-9-W
SILL AT WINDOW PANELS
(TO STOP FLUSH WITH 3'-0" DIM. OF COLUMN AT EXTERIOR DOORS)

DETAIL 830-9-X
SILL AT SPANDREL PANELS

DETAIL 830-9-Y
SILL AT KITCHEN BLK PANELS

DETAIL 830-9-Z
PLAN AT EXTERIOR CORNER
(SEE ALSO DETAIL 'S')

ELEVATION OF TYPICAL BLOCK PANEL
3/8"=1'-0"

SCALE OF DETAILS: 1½"=1'-0"

DETAIL 830-9-R
PLAN AT END OF WALL

DETAIL 830-9-S
PLAN AT RECESSES

DETAIL 830-9-T
PLAN AT OUTER VESTIBULE CORS.
(CONDITION AT INNER CORS & COL. = C.4 SIMILAR)

DETAIL 830-9-U
PLAN AT STEEL COLUMNS

DETAIL 830-9-V
PLAN AT PARTITIONS
SEE DET. 830-D1-N.A. CORS. FOR INTERSECTION

DETAIL 830-9-M
SILL AT 12" CAVITY WALL

DETAIL 830-9-N
SILL AT RECESSES

DETAIL 830-9-P
SILL AT OUTER VESTIBULE
(FOR DETAILS AT VESTIBULE #2 SEE DWG. #830-12)

DETAIL 830-9-Q
SILL AT BLOCK PANEL WALL

NOTE:
AT DF CAVITY WALLS USE 8" STANDARD WALL TIES.
AT 12" CAV. WALLS USE SPECIAL 10" WALL TIES WITH LEGS 4" LONG AT ONE END

830-9-A
TYPICAL TWO STORY BLOCK END WALL UNIT "B" CLASSROOMS

830-9-B
TYPICAL TWO STORY SPANDREL PANEL UNIT "B" CLASSROOMS

830-9-C
BLOCK SIDE WALL UNIT "D" SHOPS

830-9-D
BLOCK & WINDOW PANEL WALL UNIT "D" SHOPS

830-9-E
BLOCK & WINDOW PANEL WALL UNITS "C" & "D" ADMIN., ARTS, CHARTS, & MUSIC ROOMS

830-9-F
WINDOW PANEL WALL UNIT "C" CAFETERIA #2 & FACULTY DINING

830-9-G
BLOCK & WINDOW PANEL WALL UNIT "C" KITCHEN

830-9-H
BLOCK & WINDOW PANEL WALL UNIT "B" SCIENCE ROOMS & BSMT STORAGE

KEY PLAN

WALL SECTIONS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-9
Date: 30 APR 57
Scale: 3/4" = 1'-0" AS NOTED

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	No.

STATE OF CONNECTICUT * REGISTERED ARCHITECT * No. 832

STATE OF CONNECTICUT * REGISTERED ARCHITECT * No. 532

STATE OF CONNECTICUT * REGISTERED ARCHITECT * No. 832

KEY PLAN

WALL SECTIONS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-10

Date 30APR 57 | Scale 3/4"-1'-0" & AS NOTED

N

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

830-10-A
NORTH WALL
SOUTH WALL SIMILAR

830-10-B
EAST WALL AT
DOORS #101, 2

830-10-C
WEST WALL AT
ANTEROOM #2

830-10-D
SOUTH WALL BOYS' LOCKER RM
GIRLS' SIMILAR

830-10-E
Boys' SHOWER ROOM
GIRLS' SIMILAR

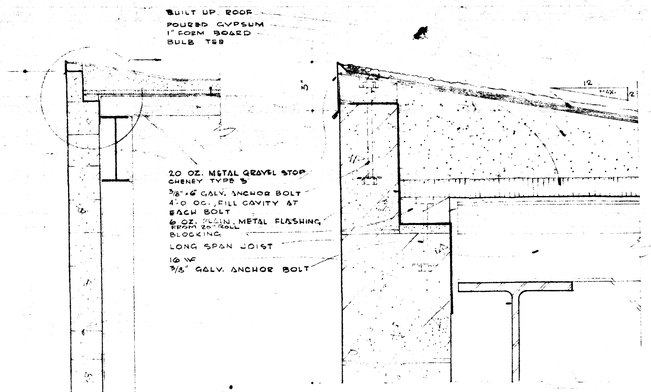
830-10-F
LOBBY #1 AT
STAIR #3

830-10-G
Boys' TOILET #108
& LAUNDRY #1

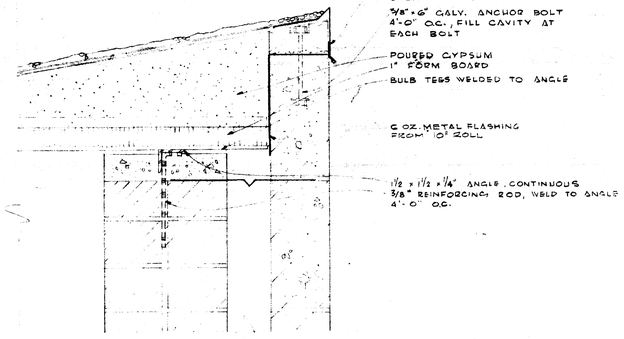
830-10-H
LOBBY #1
& STORAGE #001

BQ #70 & 125 Attachment

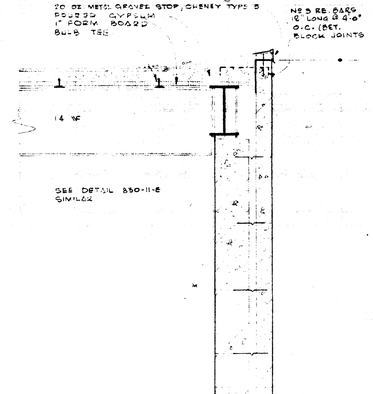
DATE	ISSUE OR REVISION	No.

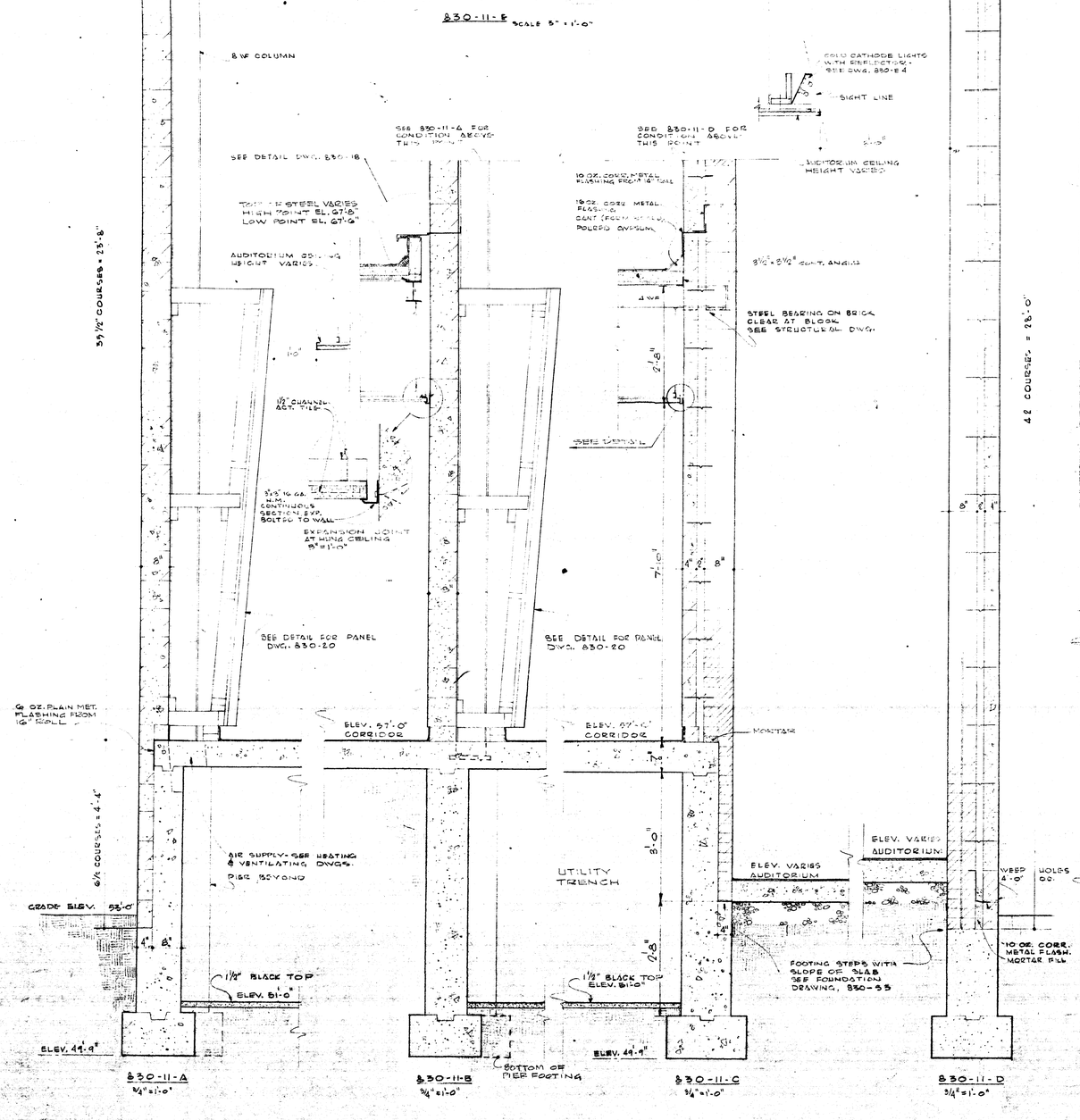


830-11-E SCALE 3" = 1'-0"

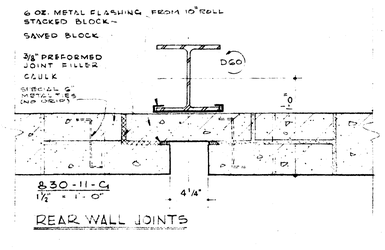


830-11-F SCALE 3" = 1'-0"



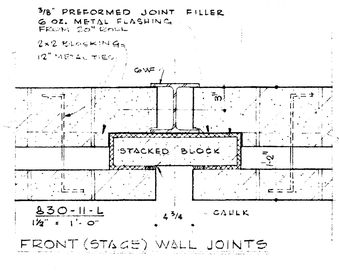


830-11-A 3/4"=1'-0" | 830-11-B 3/4"=1'-0" | 830-11-C 3/4"=1'-0" | 830-11-D 3/4"=1'-0"



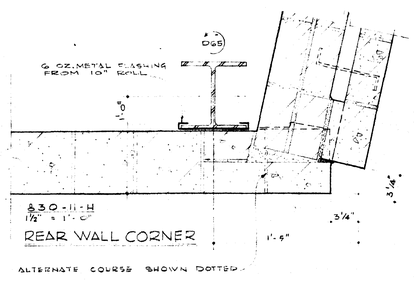
830-11-G 1½" = 1'-0"

REAR WALL JOINTS



830-11-L 1½" = 1'-0"

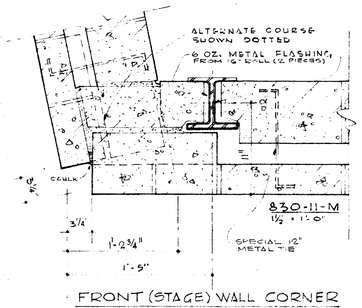
FRONT (STAGE) WALL JOINTS



830-11-H 1½" = 1'-0"

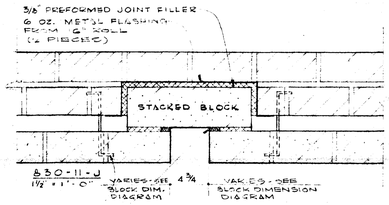
REAR WALL CORNER

ALTERNATE COURSE SHOWN DOTTED



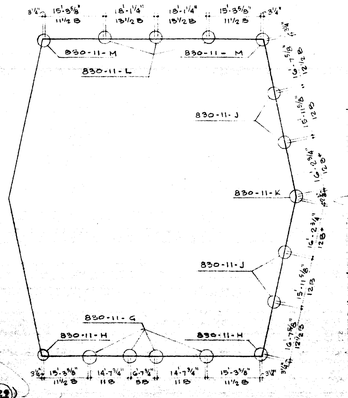
830-11-M 1½" = 1'-0"

FRONT (STAGE) WALL CORNER

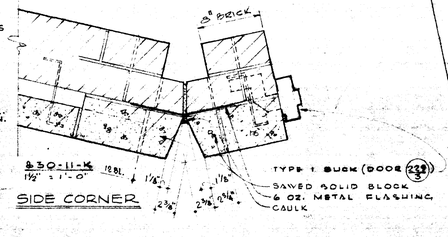


830-11-J 1½" = 1'-0" VARIES-SEE BLOCK DIM. DIAGRAM 4¾ VARIES-SEE BLOCK DIMENSION DIAGRAM

SIDE WALL JOINT

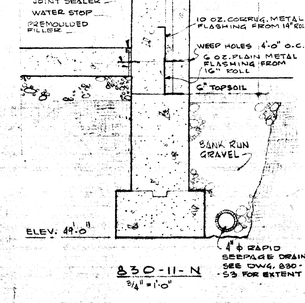


BLOCK DIMENSION DIAGRAM SCALE: 1"=20'-0" (APROX.)



830-11-K 1½" = 1'-0"

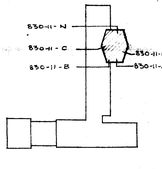
SIDE CORNER



830-11-N 3/4"=1'-0"

NOTE: SEE DET. 830-10-E FOR SIMILAR CONDITION AT ROOF BEYOND





KEY PLAN

WALL SECTIONS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

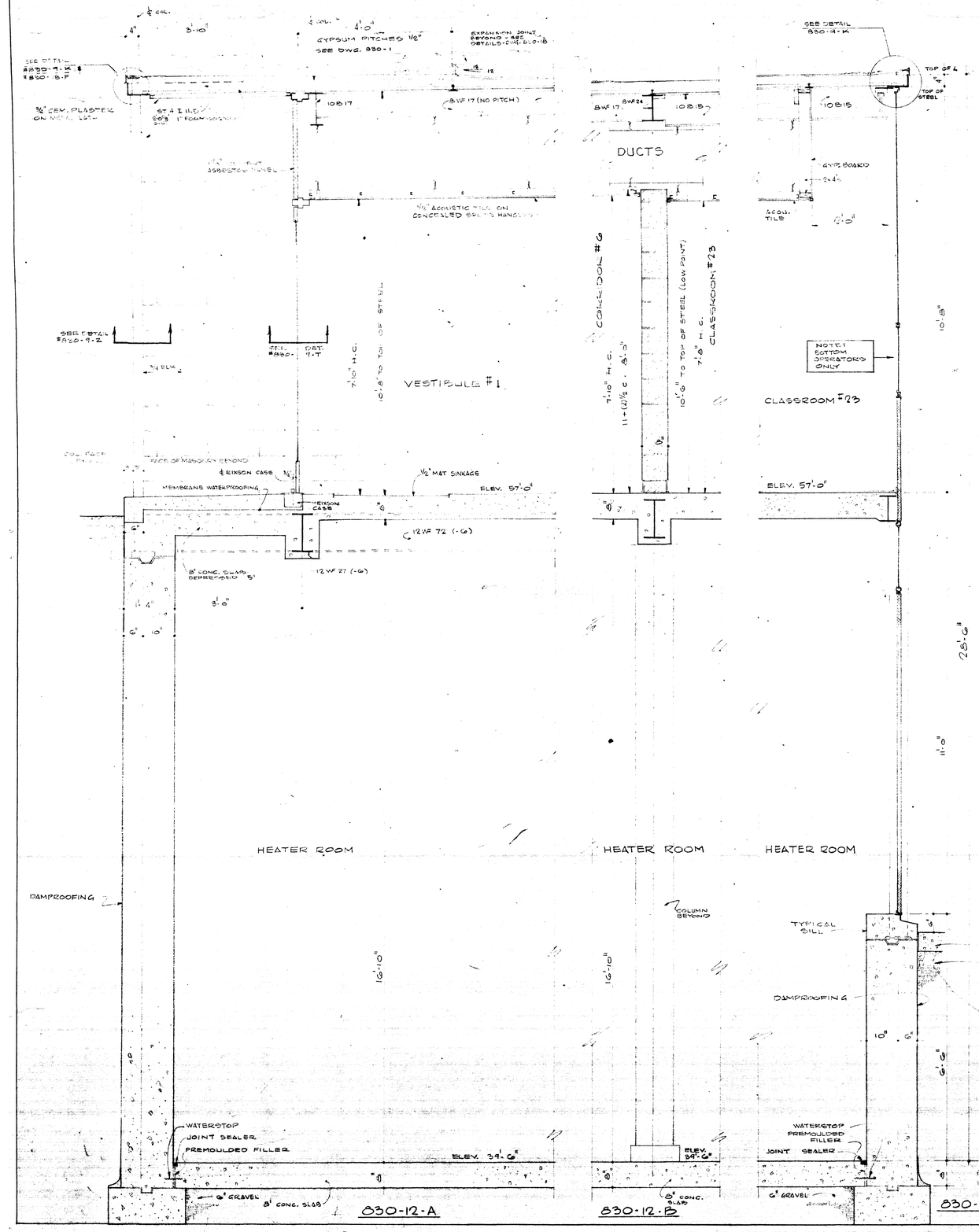
830.11

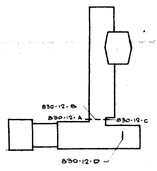
Date 30APR57 Scale AS NOTED

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	No.





KEY PLAN

WALL SECTIONS

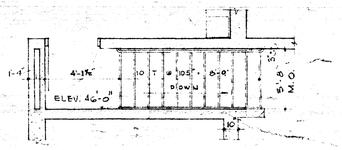
CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-12
Date: 30 APR 57
Scale: 3/4" = 1'-0"

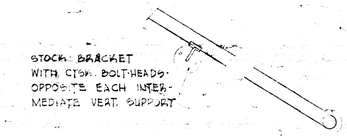
SHERWOOD, MILLS AND SMITH
Architects 69 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	No.

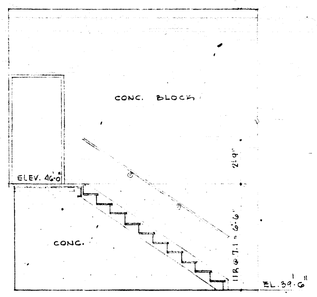


STAIR #4

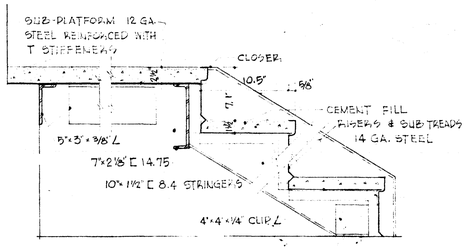


STOCK BRACKET WITH CTSK. BOLTHEADS OPPOSITE EACH INTERMEDIATE VERT. SUPPORT

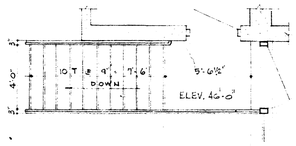
WALL RAIL DETAIL
TYPICAL FOR ALL STAIRS



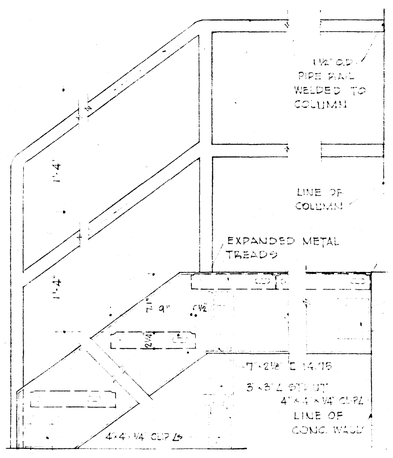
SECTION 4



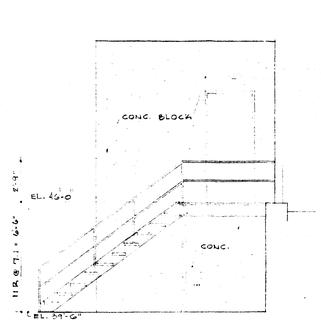
DETAIL SECTION 4



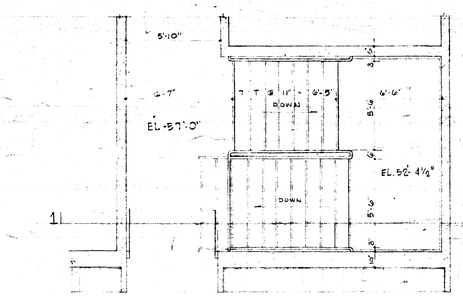
STAIR #5



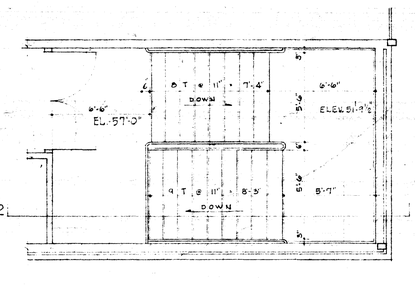
DETAIL SECTION 5



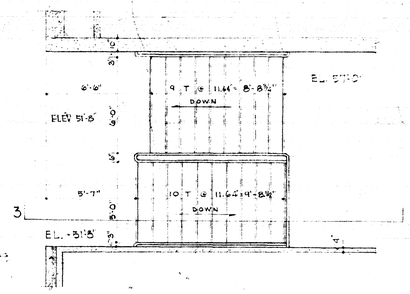
ELEVATION 5



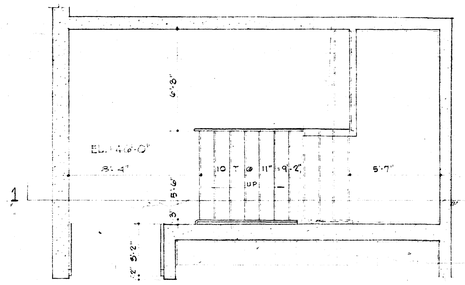
STAIR #1 PLAN AT FIRST FLOOR



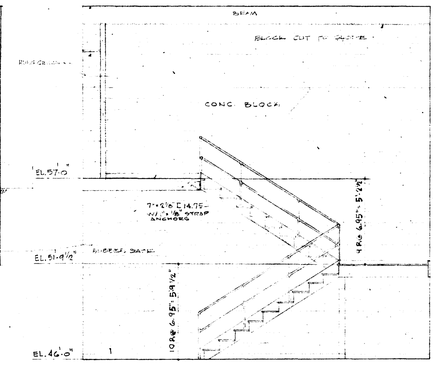
STAIR #2 PLAN AT FIRST FLOOR



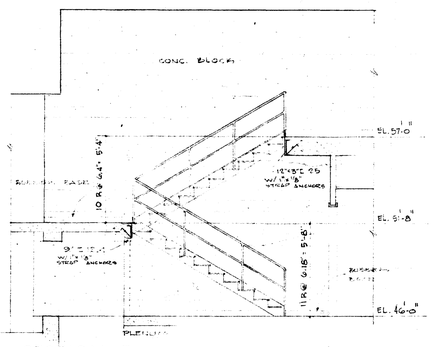
STAIR #3 PLAN AT FIRST FLOOR



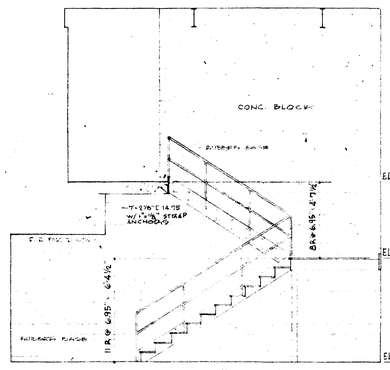
STAIR #1 PLAN AT BASEMENT



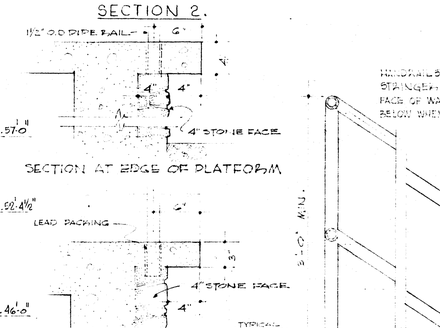
SECTION 2.

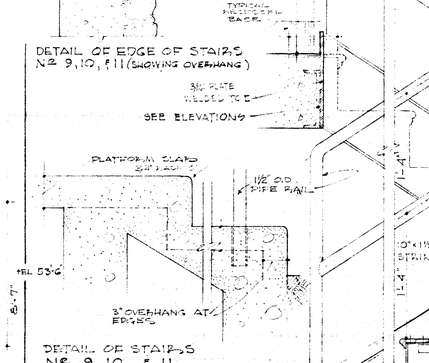


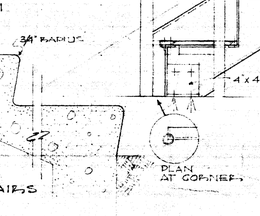
SECTION 3



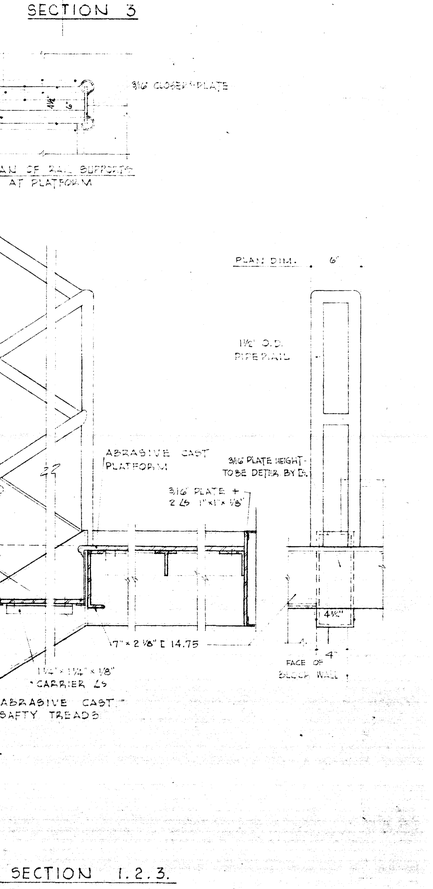
SECTION 1



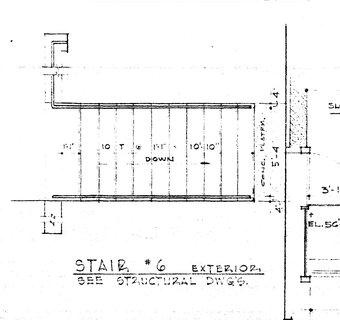




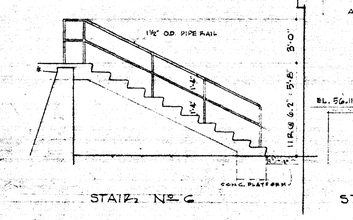
DETAIL OF STAIRS Nº 6, 7 & 8



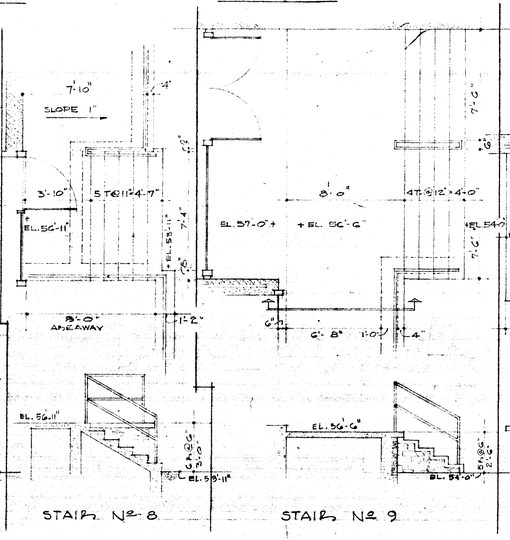
DETAIL SECTION 1.2.3.



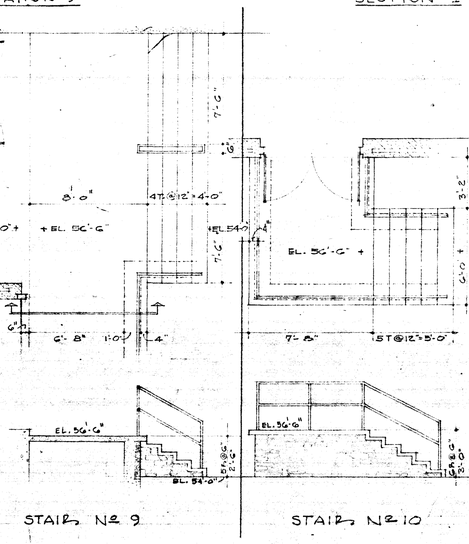
STAIR #6 EXTERIOR
SEE STRUCTURAL DWGS.



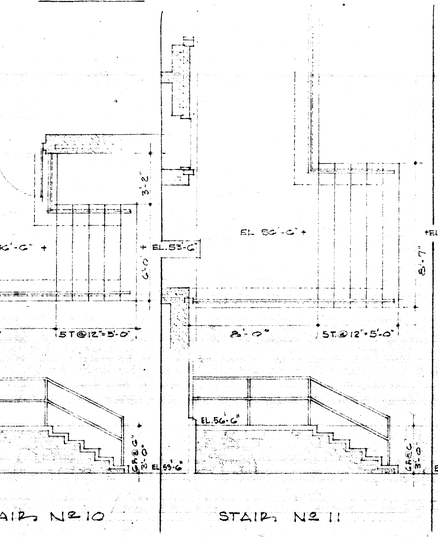
STAIR Nº 6



STAIR Nº 8



STAIR Nº 9



STAIR Nº 10

STAIR Nº 11

NOTE:
STAIR #7 - SEE DWGS. #830-4 & #830-14. SEE DETAIL OF TREAD & RISER AT LEFT.

STAIRS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-13

Date 30APR 57

Scales 1/4" = 1'-0" 1/2" = 1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	No.

AUDITORIUM LOBBY * 2

SECTION "AA" THRU AUDITORIUM LOBBY * 2

ELEVATION "A"
AUDITORIUM LOBBY * 2

NORTH ENTRANCE LOBBY * 1

EXTERIOR ELEV. SOUTH ENTRANCE TO LOBBY * 1

EXTERIOR ELEVATION SOUTH ENTRANCE TO LOBBY * 1

SOUTH ENTRANCE LOBBY * 1

EAST ENTRANCE TO AUDITORIUM LOBBY

WEST ENTRANCE TO AUDITORIUM LOBBY

VESTIBULE * 1

EXTERIOR ELEVATION
VESTIBULE * 1 ENTRANCE

NOTES:
A. TOP OF 4" COURSE OF BLOCK SLICED 3/8" FOR MORTAR JOINT.

ENTRANCE DETAILS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-14

Date 30 APR 57 | Scale 1/4" = 1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	NO

INSTRUCTORS TOILET 104
(INSTL FOR LH SIMILAR TO OPPOSITE HAND)

PRINCIPAL'S TOILET 183
KITCHEN TOILET SIMILAR

CLINIC TOILET 170

WOMEN'S TOILET 161

MEN'S TOILET 199

SHOWER 116
DRYING 117
GIRLS 118
GIRLS GYMNASIUM TOILET
BOYS SIMILAR

WOMEN 120
ANTE ROOM 122
MEN 121

BOYS TOILET 108

PUBLIC TOILETS

DRYING 117-S

GIRLS 118-S

GIRLS 118-N

DRYING 117-N

GIRLS 118-W

119-W

WOMEN 120-W

MEN 121-W

MEN 121-S

GIRLS DRYING 117-E

UNIFORM STORAGE 228
BOYS TOILET 225
SERVICE CLOS 226
GIRLS TOILET 224

GIRLS TOILET 224-N

SERV. CL. 226

BOYS TOILET 225-N

STOR. 225

BOYS TOILET 137
GIRLS TOILET 138
SERVICE CLOS 139
140
SEMI-RECESSED CAB.

BOYS TOILET 137-E

BOYS TOILET 137-S

BOYS TOILET 137-W

GIRLS TOILET 138-E

BOYS TOILET 007
GIRLS TOILET 008

BOYS TOILET 007-S

GIRLS TOILET 008-S

TOILET ROOMS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-15

Date 30APR 57 | Scale 1/4"-1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	No.

ELEVATION 1

ELEVATION 2

ELEVATION 3

ELEVATION 4

TYPICAL 1ST FLOOR CLASSROOM
SCALE 1/4" = 1'-0"

ELEVATION 5

ELEVATION 6

TYPICAL BASEMENT FLOOR CLASSROOM
SCALE 1/4" = 1'-0"

TYPICAL CROSS-SECTION THROUGH AREA "B"
SCALE 1/4" = 1'-0"

TYPICAL SECTION THROUGH CLASSROOM BOOKSHELVES

TYPICAL CLASSROOMS

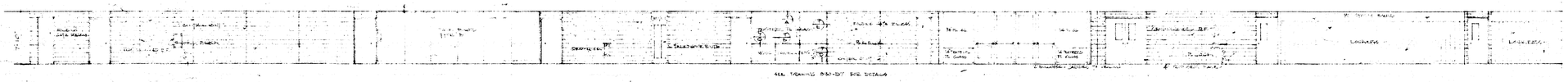
CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-16

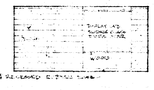
Date: 30APR 57 | Scale: 1/4"=1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 East Main Street, Stamford, Connecticut

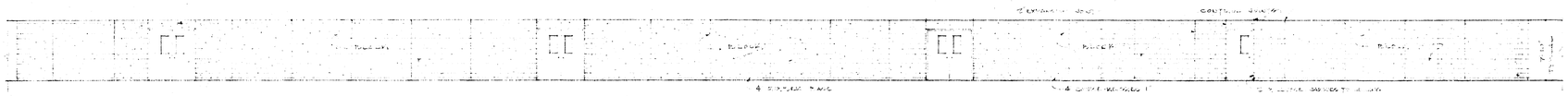
BQ #70 & 125 Attachment



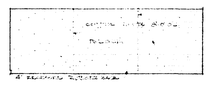
CORRIDOR *147 - EAST WALL - *147



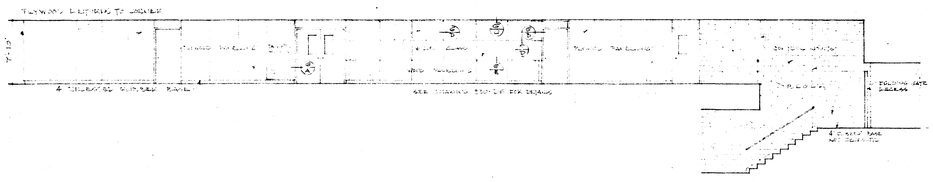
CORRIDOR *3 - SOUTH WALL - *216



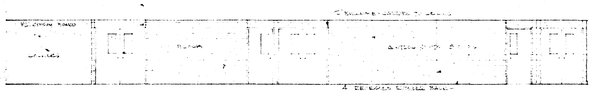
CORRIDOR *3 - WEST WALL - *157



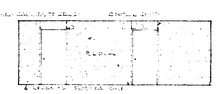
CORRIDOR *6 SOUTH WALL - *220



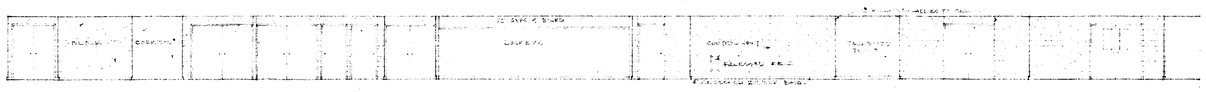
CORRIDOR *4 - NORTH WALL - *176



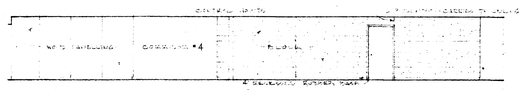
CORRIDOR *7 - EAST WALL - *202



CORRIDOR *6 - NORTH WALL - *220



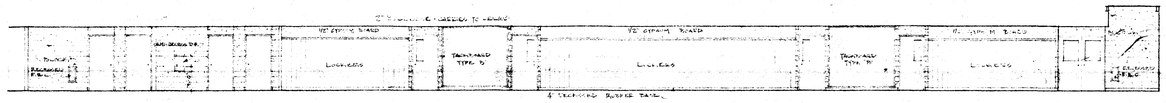
CORRIDOR *7 - WEST WALL - *202



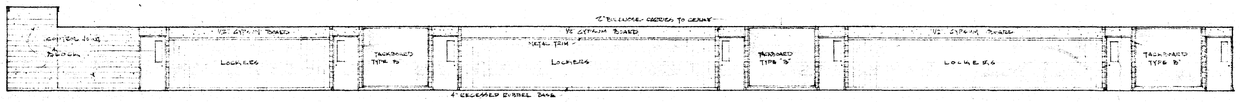
CORRIDOR *5 - EAST WALL - *153



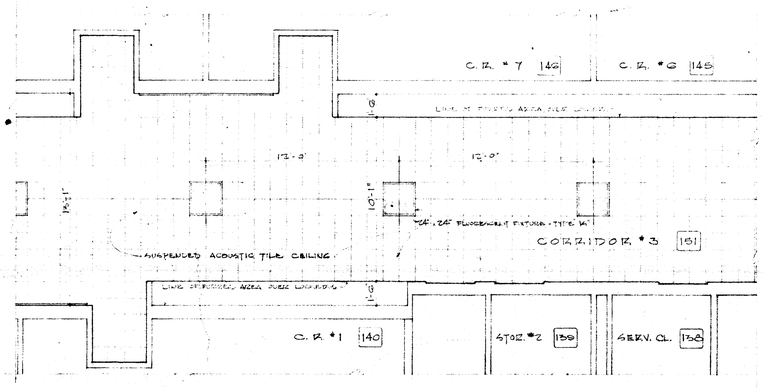
CORRIDOR *4 - SOUTH WALL - *156



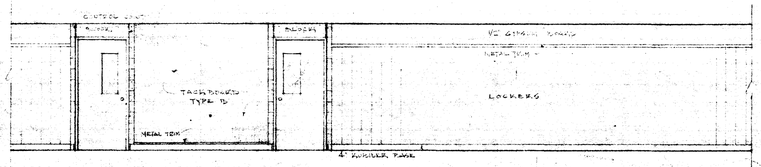
CORRIDOR *5 - SOUTH WALL - *153



CORRIDOR *5 - NORTH WALL - *153



TYPICAL CORRIDOR REFLECTED CEILING PLAN



CORRIDOR ELEVATION @ CLASSROOM ENTRANCE

DATE	ISSUE OR REVISION	No.

CORRIDOR ELEVATIONS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-17

Date 30APR57 | Scale 1/4" = 1'-0" 1/8" = 1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	No.

LOCKER ROOM LOBBY WEST WALL - #124

LOCKER ROOM LOBBY - EAST WALL - #134

CORRIDOR #3 - SOUTH WALL - #111

CORRIDOR #3 - NORTH WALL - #111

SEE DWG #830-B-12 FOR CONTROL JOINT DETAILS

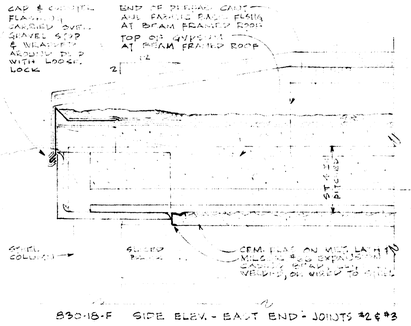
CORRIDOR #1 & #3 - SOUTH WALL - #128

CORRIDOR #1 - NORTH WALL - #128

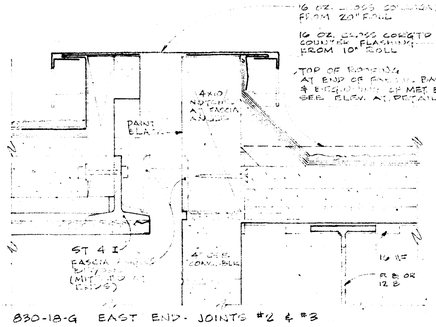
KITCHEN WEST WALL
ELEVATIONS - SCALE: 1/8"=1'-0"

KITCHEN NORTH WALL

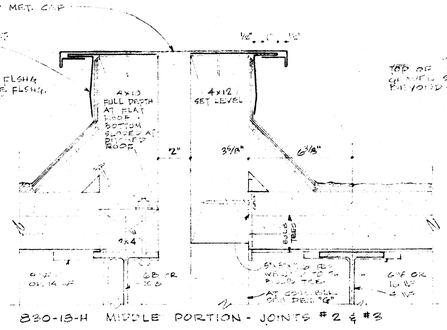
KITCHEN SOUTH WALL



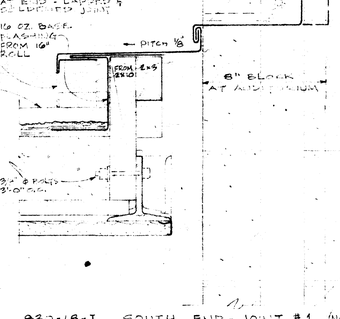
830-18-F SIDE ELEV. - EAST END - JOINTS #2 & #3



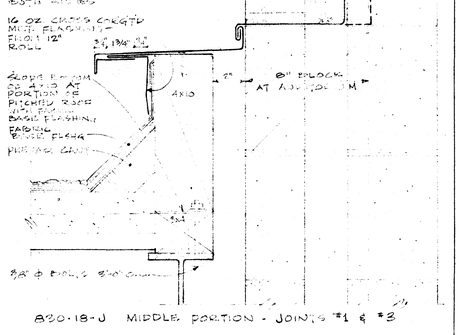
830-18-G EAST END - JOINTS #2 & #3



830-18-H MIDDLE PORTION - JOINTS #2 & #3

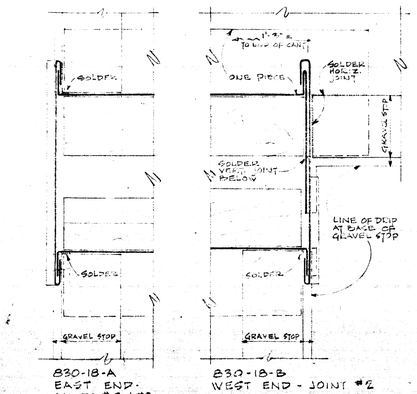


830-18-I SOUTH END - JOINT #1 (NORTH REV.)
WEST END - JOINT #3, REVERSED



830-18-J MIDDLE PORTION - JOINTS #1 & #3

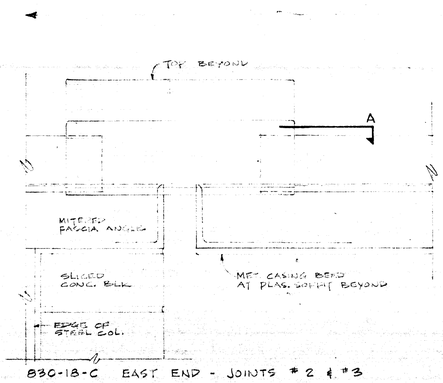
SECTIONS



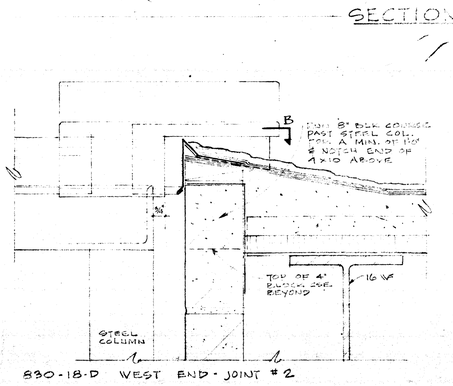
830-18-A
EAST END -
JOINTS #2 & #3

830-18-B
WEST END - JOINT #2

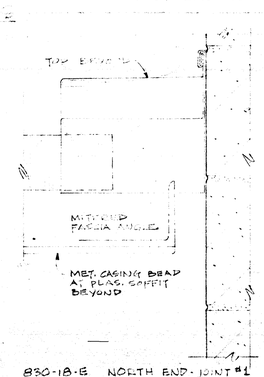
PLAN SECTIONS
ROOFING NOT SHOWN



830-18-C EAST END - JOINTS #2 & #3



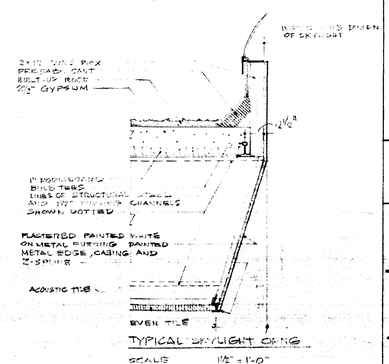
830-18-D WEST END - JOINT #2



830-18-E NORTH END - JOINT #1
(SOUTH REVERSED)
WEST END - JOINT #3

ELEVATIONS

EXPANSION JOINT DETAILS AT ROOF
SCALE: 3"=1'-0"



TYPICAL SKYLIGHT OPNG.
SCALE 1½"=1'-0"

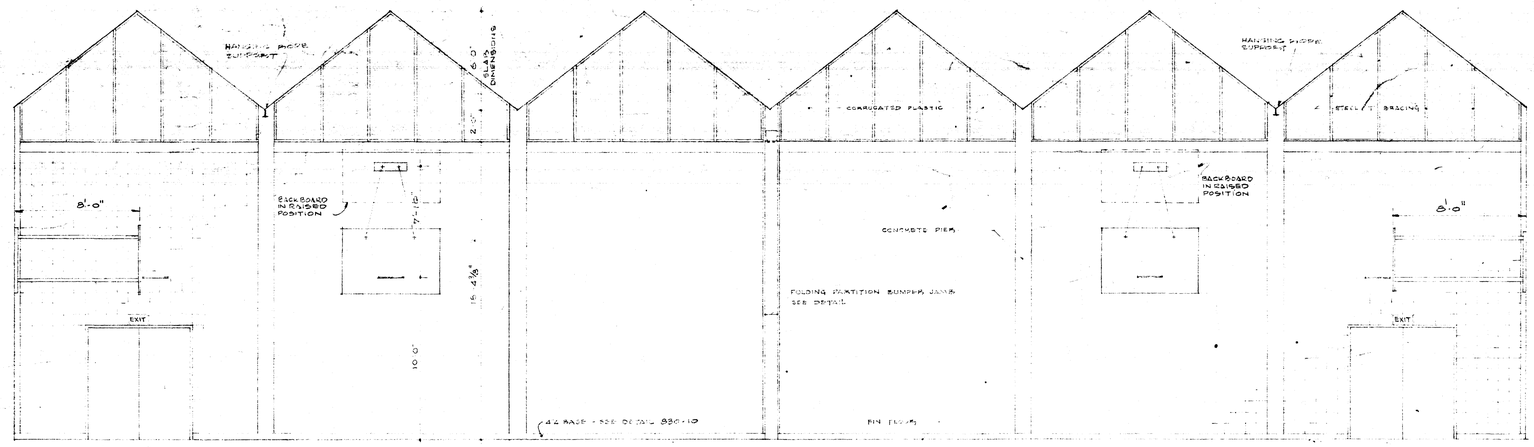
CORRIDOR & ELEVATIONS DETAILS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

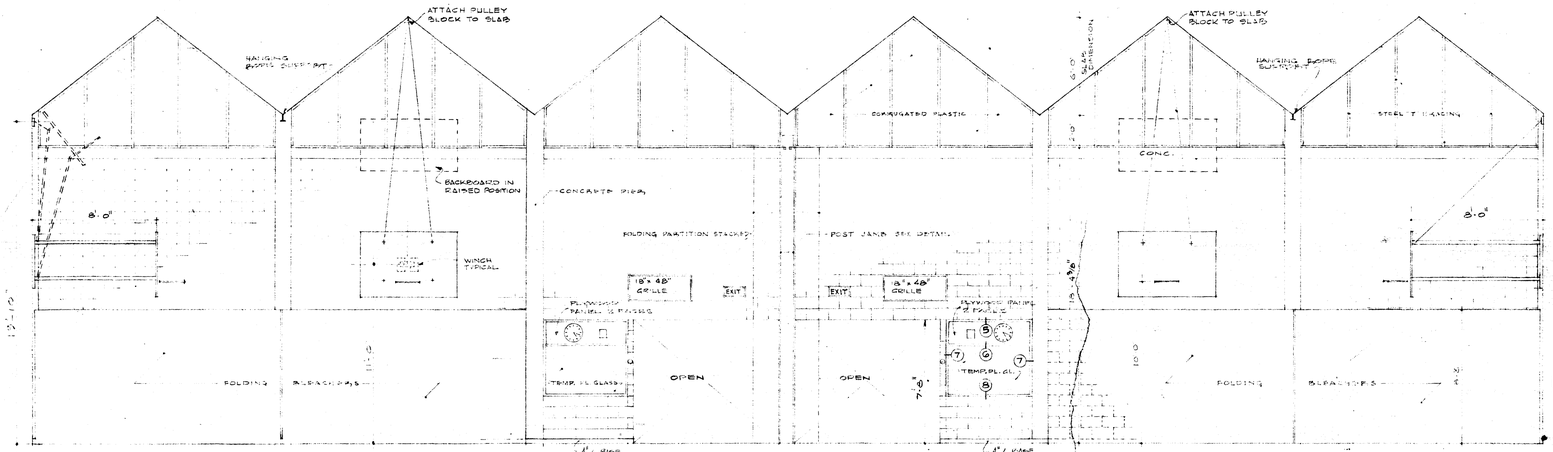
830-18
Date 30APR 57 Scale AS SHOWN

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

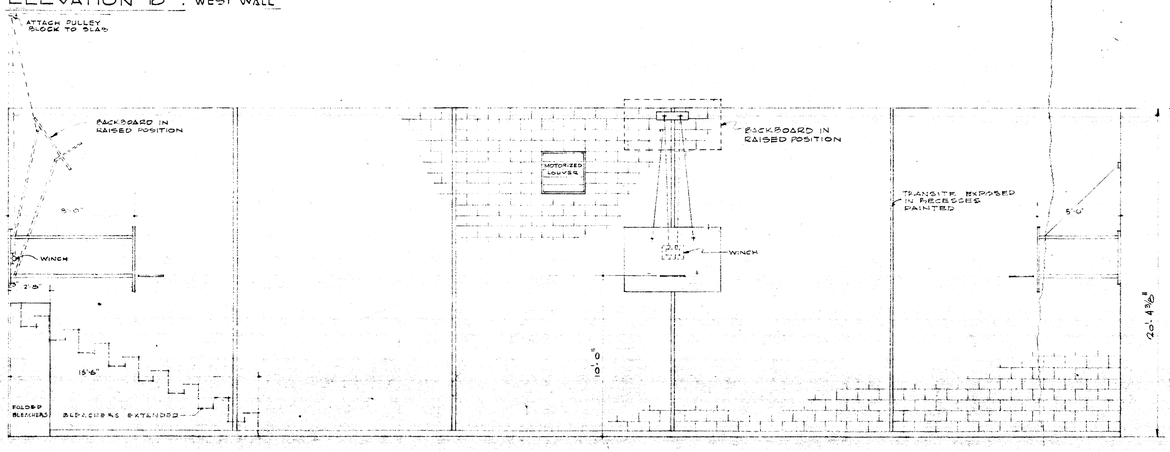
BQ #70 & 125 Attachment



ELEVATION "A" : EAST WALL

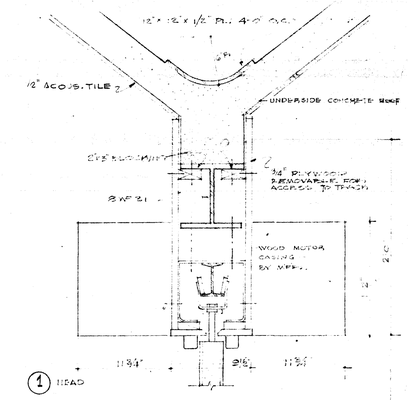


ELEVATION "B" : WEST WALL



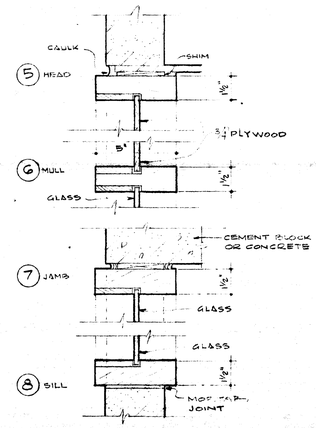
ELEVATION "C" : NORTH WALL SHOWN
SOUTH WALL SIM. TO OPP. HAND

SEE WALL SECTIONS & DETAILS, DWG. 830-10



UNIFORM DRYING RACK
SCALE: ¼"=1'-0" SEE DWG. 830-5 SPACE NO. 119

FOLDING PARTITION DETAILS
SCALE: 1½"=1'-0"



GLASS PARTITION DETAILS
SCALE: 3"=1'-0"

DATE	ISSUE OR REVISION	No.

GYM DETAILS

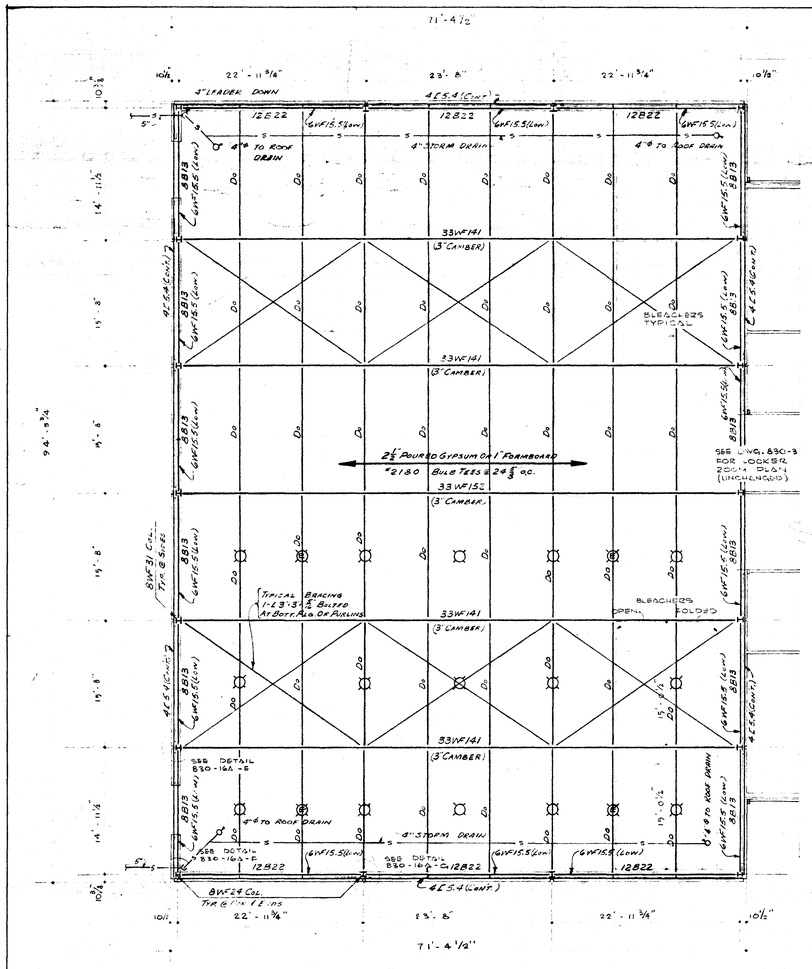
CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

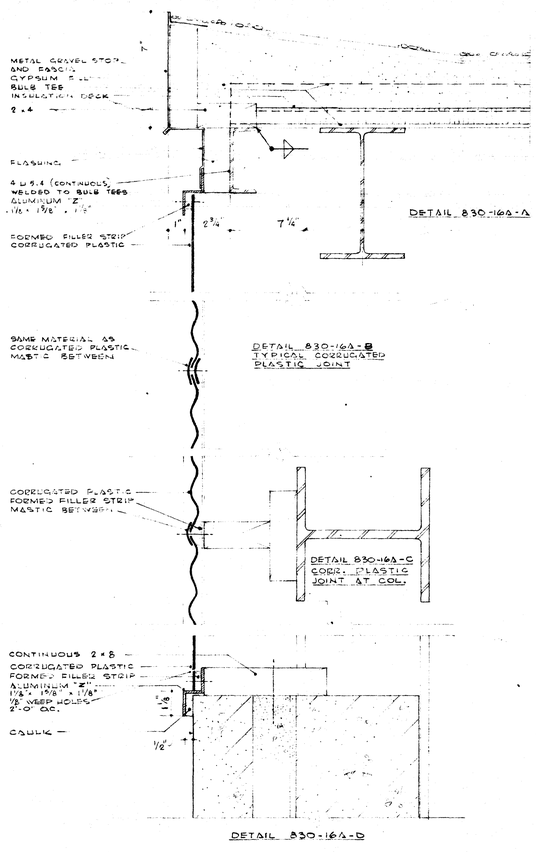
830-19

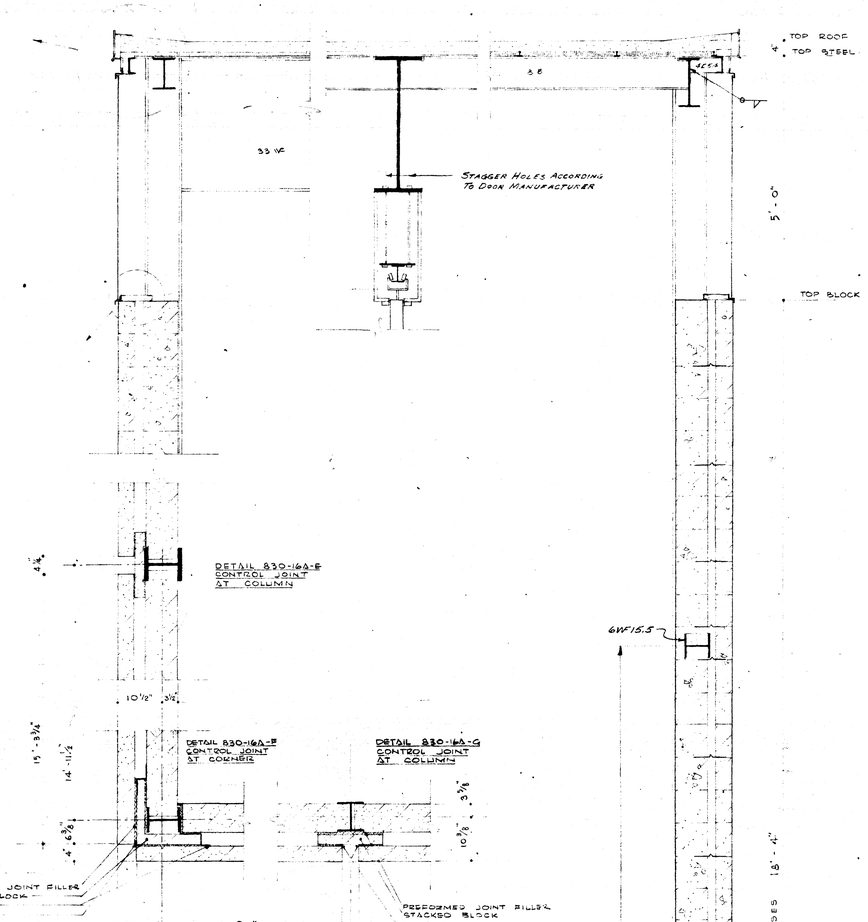
Date: 30 APR 57 | Scale: AS SHOWN

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

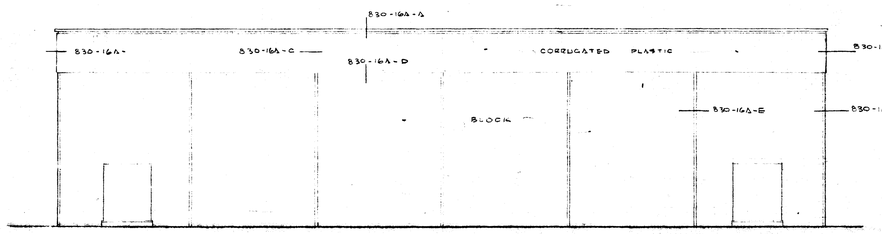




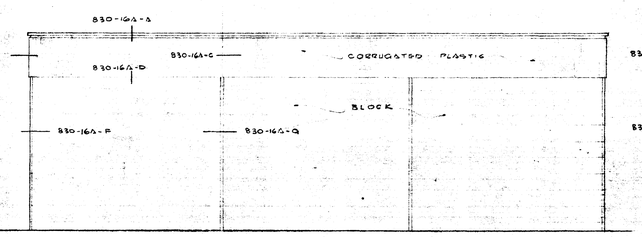


NOTES.

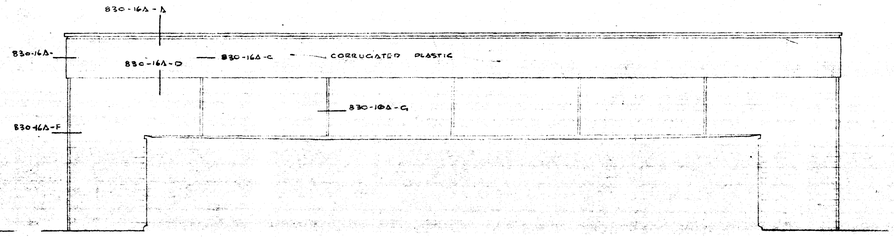
1. THE FOUNDATION PLAN OF GYMNASIUM (DWG. B30-5), MAY BE USED TO SHOW DIMENSIONS & DETAILS FOR THIS ALTERNATE.
2. SHOWN BOILERS, PIPING, AND OTHER EQUIPMENT FOR THIS ALTERNATE ARE SAME AS SHOWN IN BASE BID.
3. HEAT IS INSTALLING NEW CONTROLS FOR THIS ALTERNATE TO MAKE AS SHOWN IN BASE BID.
4. PLUMBING IS AS SHOWN ON THIS DRAWING.
5. LIGHTING PANEL FOR SOUTH SIDE IS SIMILAR TO LIGHTING PANEL FOR NORTH SIDE.
6. CONDITION OF EXISTING SAME AS SHOWN ON DWG. B30-1&2
7. ELECTRICAL CONNECTIONS SHALL CONFORM AND CONNECTED INSOFAR AS SHOWN IN BASE BID.
8. PLUMBING: VERTICAL RAIN LEADERS (2) GALVANIZED IRON PIPE WITH CAST IRON FITTINGS.



ELEVATION "A"



ELEVATION B & C



ELEVATION D

DATE	ISSUE OR REVISION	No.

KEY PLAN

ALTERNATE GYMNASIUM

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

N

830-19A

Date: 30APR 57 | Scale: AS NOTED

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	No

CROSS SECTION OF AUDITORIUM SHOWING WALLS AT WIDEST POINT AND ALL OF SUSPENDED CEILING - LOOKING TOWARD STAGE

SCALE 1/8" = 1'-0"

CENTER LINE SECTION AT XX

SCALE 1/8" = 1'-0"

REFLECTED CEILING PLAN

SCALE 1/8" = 1'-0"

SECTION ATTIC

SCALE 1½" = 1'-0"

PLAN SECTION "A"

SCALE 1½" = 1'-0"

SECTION THROUGH STAGE AT "U"

SCALE 1½" = 1'-0"

SECTION AT "E" THROUGH STAGE STAIRS

SCALE 3/4" = 1'-0"

SECTION AT Y-Y SHOWING REAR WALL

SCALE 3/4" = 1'-0"

SECTION THROUGH REAR WALL OF AUDITORIUM SHOWING ACOUSTIC TREATMENT. SEE SECTION 830-11-A

SCALE 3/4" = 1'-0"

DETAIL OF WOOD BASE AT JUNCTURE OF STAGE FLOOR AND MASONRY WALLS

SCALE 3" = 1'-0"

LOUDSPEAKER ENCLOSURE FOR LOCATION ABOVE AUDITORIUM CEILING

TYPICAL CORNER DETAIL "F"

NOTE: AUDITORIUM SEATING TO BE FURNISHED & INSTALLED BY OWNER. STAGE CURTAINS TO BE FURNISHED & INSTALLED BY OWNER.

AUDITORIUM DETAILS

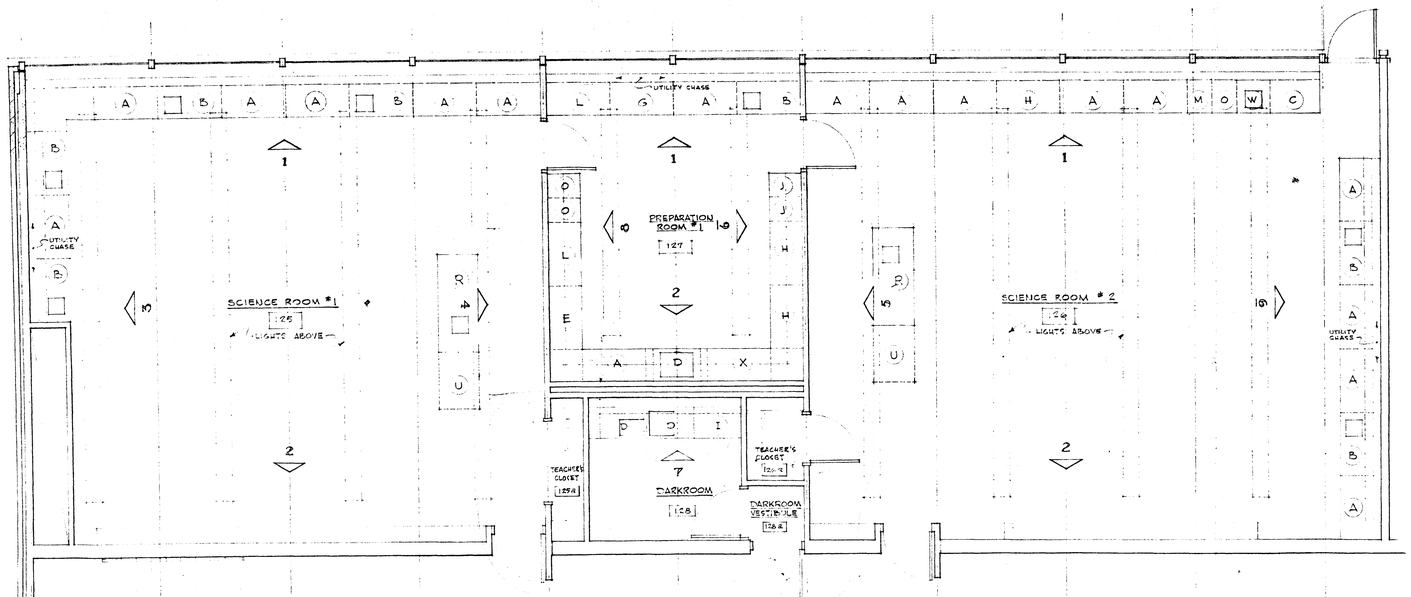
CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-20

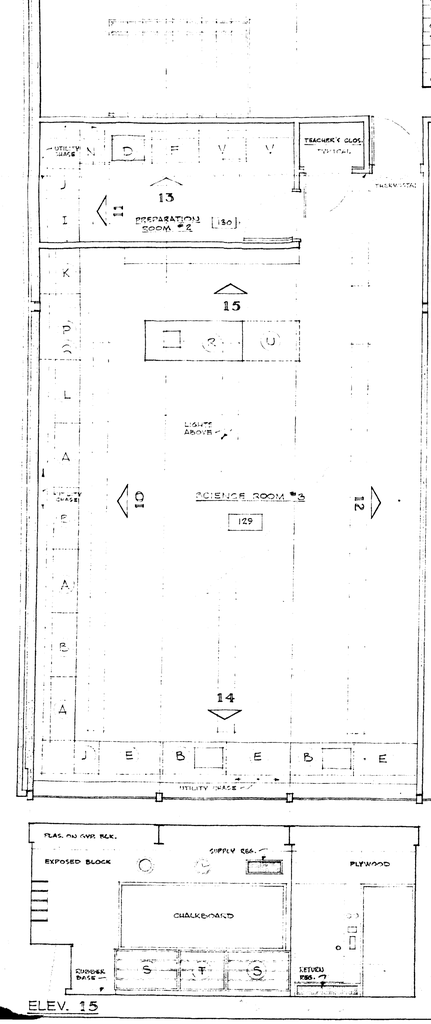
Date 30 APR 57 | Scale AS NOTED

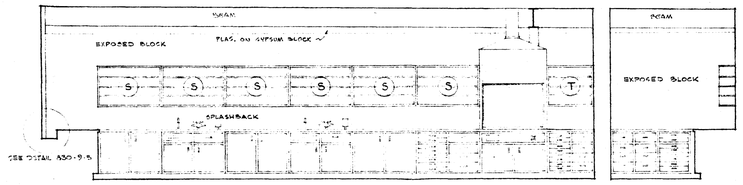
SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

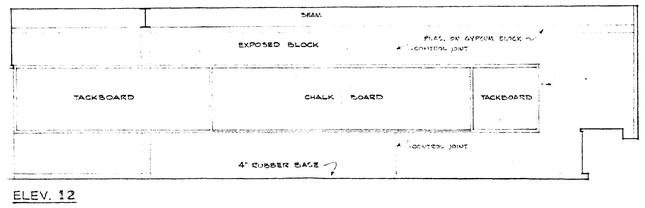
BQ #70 & 125 Attachment

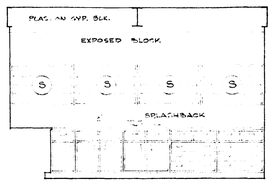


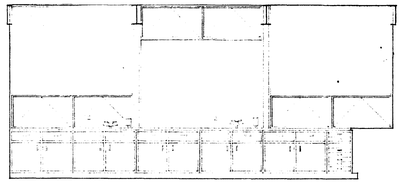
ITEM	DESCRIPTION	FURNISHED BY	CAT. Nº	ITEM	DESCRIPTION	FURNISHED BY	CAT. Nº	ITEM	DESCRIPTION	FURNISHED BY	CAT. Nº	ITEM	DESCRIPTION	FURNISHED BY	CAT. Nº
A	BASE CABINET	EQUIP. MANUF.	#647	H	BASE CABINET	EQUIP. MANUF.	#647	O	BASE CABINET	EQUIP. MANUF.	#8x17	V	BASE CABINET	EQUIP. MANUFACTR.	#937
B	BASE CABINET & SINK	DO	#647	I	DO	DO	#687	P	FUME HOOD	DO	#MCT47	W	BASE CABINET & SINK	DO	#687
C	BASE CABINET	DO	#1347	J	DO	DO	#6M17	Q	FUME HOOD BASE	DO	#FCR47-AS	X	BASE CABINET	DO	#147-AS
D	BASE CABINET & SINK	DO	#2347	K	DO	DO	#6M37	R	INSTRUCTOR'S TABLE	DO	#57CO				
E	BASE CABINET	DO	#347	L	DO	DO	#6M47	S	OPEN SHELVING UNIT	DO	#WC-247-30"h				
F	DO	DO	#337	M	DO	DO	#3x17	T	DO	DO	#WC-235-30"h				
G	DO	DO	#647	N	DO	DO	#3-517	U	INSTRUCTOR'S DESK	OWNER	N.I.C.				

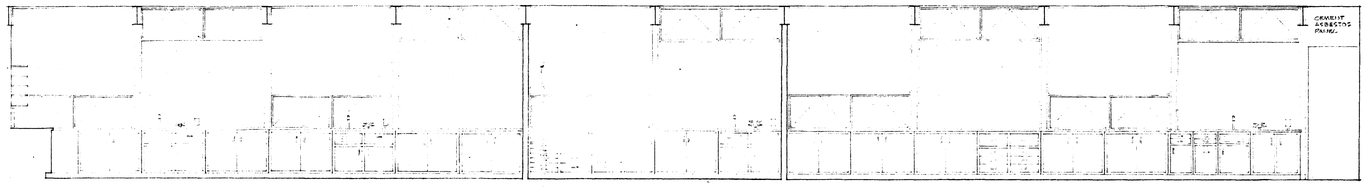


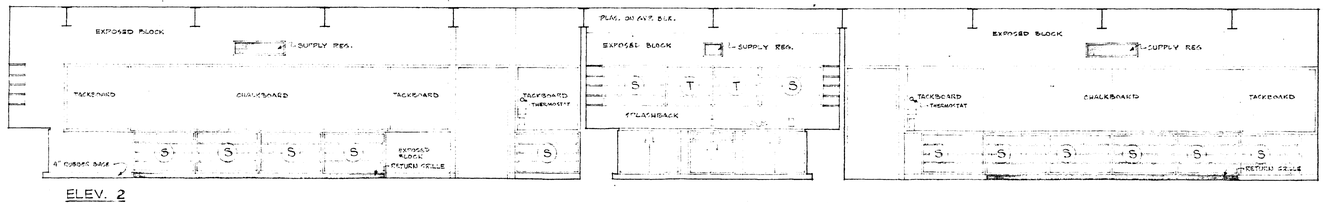


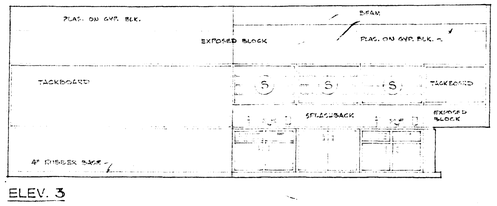


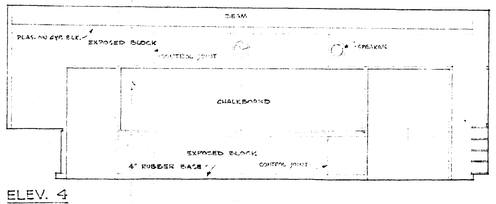


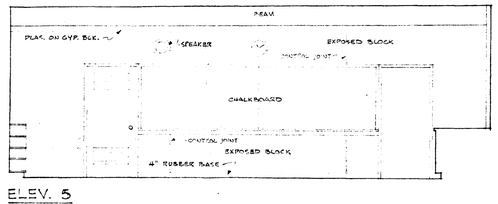


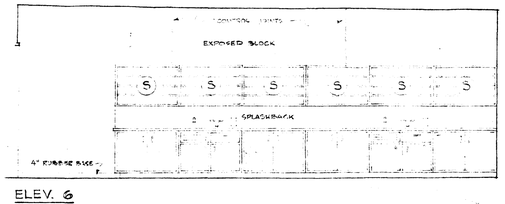


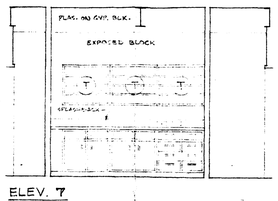


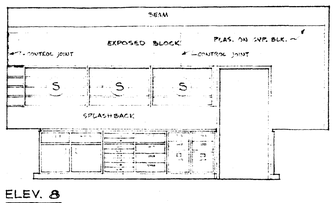


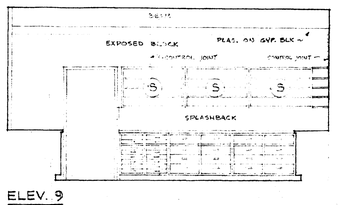












DATE	ISSUE OR REVISION	No.

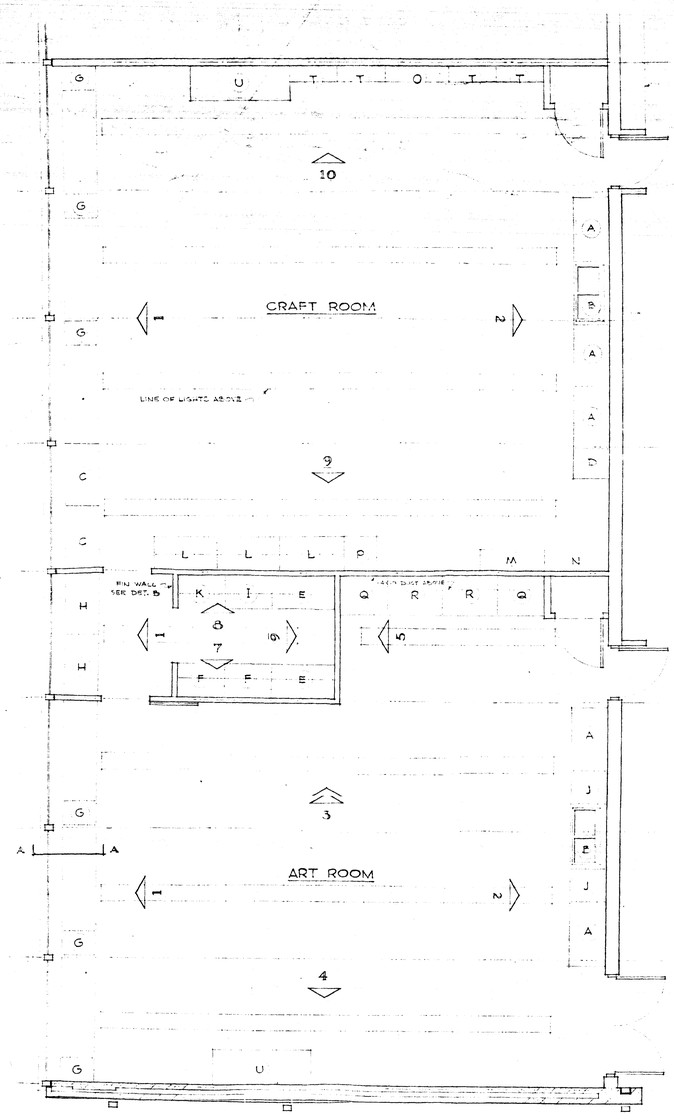
SCIENCE ROOMS

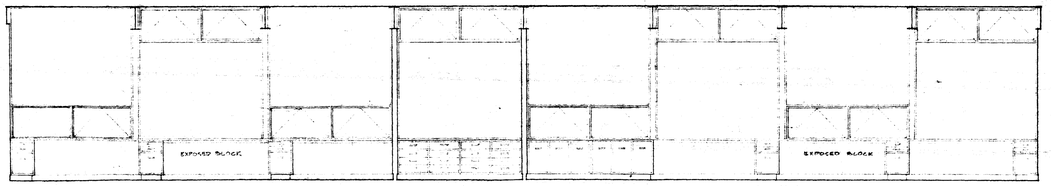
CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

330-21
30APR57
1/4"=1'-0"

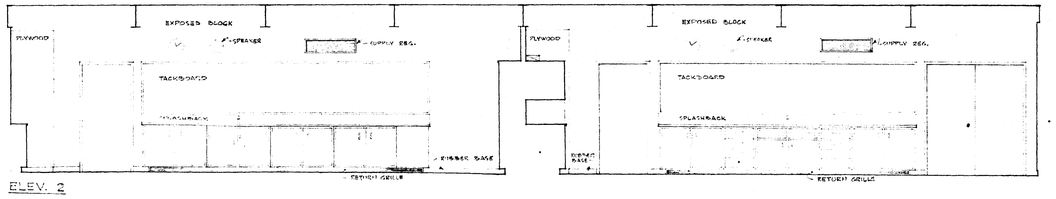
SHERWOOD, MEAD AND SMITH
Architects

BQ #70 & 125 Attachment

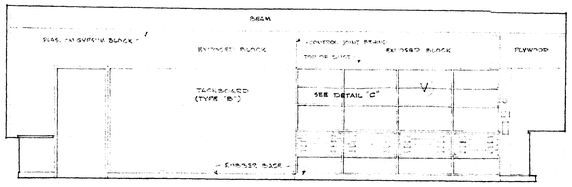




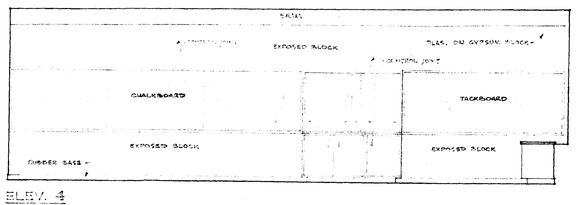
ELEV. 1



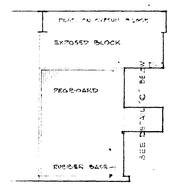
ELEV. 2



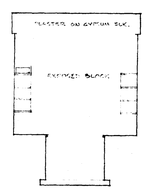
ELEV. 3



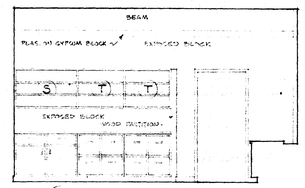
ELEV. 4



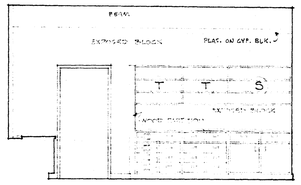
ELEV. 5



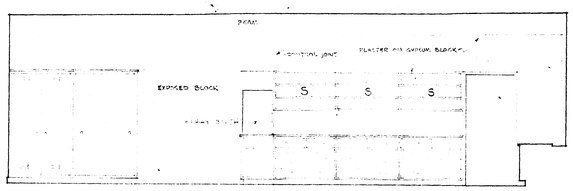
ELEV. 6



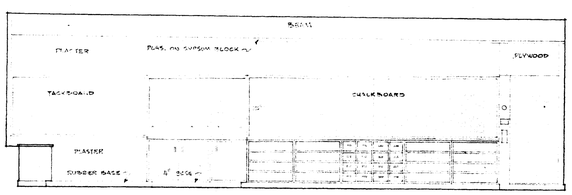
ELEV. 7



ELEV. 8

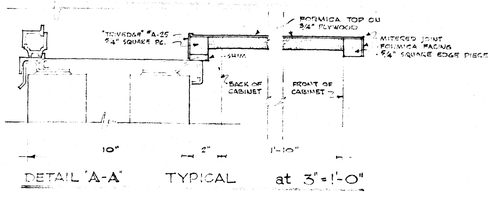


ELEV. 9

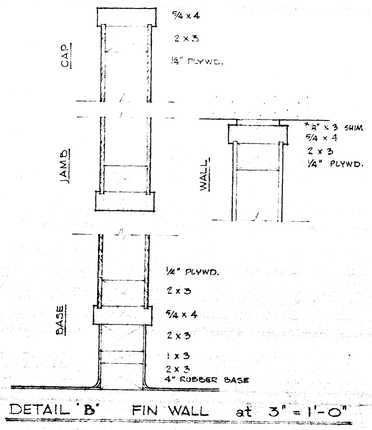


ELEV. 10

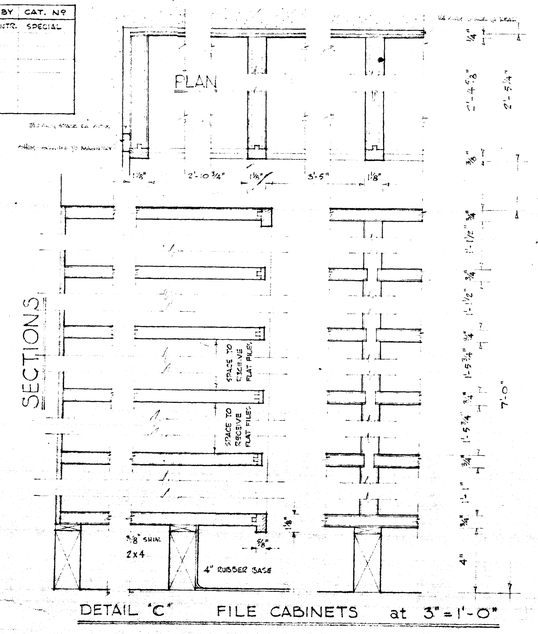
ITEM	DESCRIPTION	FURNISHED BY	CAT. Nº	ITEM	DESCRIPTION	FURNISHED BY	CAT. Nº	ITEM	DESCRIPTION	FURNISHED BY	CAT. Nº	ITEM	DESCRIPTION	FURNISHED BY	CAT. Nº
A	BASE CABINET	EQUIP. MANUF.	#147	H	BASE CABINET	EQUIP. MANUF.	#841	O	BASE CABINET	EQUIP. MANUF.	SPECIAL	V	WOOD SHELVING	GENERAL CONTR.	SPECIAL
B	DO	DO	#247	I	DO	DO	#837	P	SPRAY BOOTH	DO	SPECIAL				
C	DO	DO	#141	J	DO	DO	#827	Q	FLAT FILE		B 2531				
D	DO	DO	SPECIAL	K	DO	DO	#SM37	R	FLAT FILE		B 3726				
E	DO	DO	#347	L	DO	DO	#947	S	OPEN SHELVING	EQUIP. MANUF.	WC-247-30"A				
F	DO	DO	#LD37	M	STORAGE CAB.	DO	#2640	T	DO	DO	WC-235-30"A				
G	DO	DO	#8X11	N	STORAGE CAB.	DO	#2920	U	TEACHING CENTER	DO	SPECIAL				



DETAIL 'A-A' TYPICAL at 3"=1'-0"



DETAIL 'B' FIN WALL at 3"=1'-0"



DETAIL 'C' FILE CABINETS at 3"=1'-0"

DATE	ISSUE OR REVISION

ART & CRAFT ROOMS

CENTRAL JUNIOR HIGH SCHOOL

330-22

30APR57 | 1/4"=1'-0"

SHERWOOD, MILLS AND SMITH

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	No.

NOTE: FOR CONTENTS OF TYPICAL TEACHING CENTER EQUIPMENT CLOTHING ROOM, PLAN & UNIFORM DETAIL - DWG. NO. 5-16

COMMERCIAL 006

HOME MAKING Nº1 003

HOME & FAMILY LIVING CENTER 004

HOME MAKING Nº2 005

KITCHENETTE Nº2-R

KITCHENETTE Nº2-L

KITCHENETTE Nº3-R

KITCHENETTE Nº1

KITCHENETTE Nº3

KITCHENETTE Nº4

ADJ. SHELVES 4 FILE CAB'S

ADJ. SHELVING TO HAVE ¼" PLYWOOD BACK ON 8/4 FURRING STRIPS & ¾ PLYWOOD DIVIDERS

TACKBOARD

LINE OF DROPPED SOFFIT

LINE OF FURRED CEILING - HT 7'-10"

END CABINETWORK WITH LINE OF FURRED CEIL.

LIGHT FIXTURES

LAUNDRY AREA

DWARF PARTITION (SEE DETAIL)

WD STUD PARTITION

BULLETIN BD.

CLOSE BETWEEN FLANGES OF 2CI W/MGA STEEL LOUVRED TO DOOR FRAME

NOTE: FOR ELEVATIONS OF KITCHENETTES IN THIS AREA, SEE HOMEMAKING I Nº2 ELEVS. ALL ARE TO OPP. HAND. ADJUSTMENTS (SINK FUNCTION-WASHER (ITEM J))

ELEVATIONS IN SPACE ARE SIMILAR TO THOSE IN HOMEMAKING Nº2 - BUT OPPOSITE HAND; DIMENSIONS OCCUR WHERE NOTED.

CONTROL JOINT

CEILING REGISTER

VENT

PIPE SPACE

FIRE EXTINGUISHER CAB.

SECTION A-A
(TYPICAL AT FURRED WALLS)
SCALE 3/4"=1'-0"

BLOCKING

ACOUSTICAL TILE

FIN HUNG CLG

GYPSUM BD

4" CONC BLOCK WALL

2x4 WD STUDS

PIPE CHASE

ADJ SHELF

TYPICAL MET. WALL CAB

FORMICA BENDED TO ¾ PLYWOOD

FORMICA TOP

FORMICA EDGE

TYPICAL MET. BASE CAB

ADJ SHELF

OPEN BASE WITH R.A. GRILLE

4" ASPHALT TILE

SECTION B-B
SCALE 3/4"=1'-0"

RETURN FORMICA TOWALL

SCRIBE WD CAP

WD CAP BY G.C.

FORMICA TOP & SPLASHBACK ON ¾ PLYWOOD

POT OF WALL CAB

WASHER

½" PLYWOOD PAINTED

2x4 WD STUD PART

TYPICAL MET. BASE CAB

ASPHALT TILE

OPEN END WITH R.A. GRILLE

ELEV.-1

ELEV.-2

ELEV.-3

ELEV.-4

ELEV.-5

ELEV.-6

ELEV.-7

ELEV. 8

ELEV.-9

ELEV.-10

ELEV.-11

ELEV.-12 (PART.)

ELEV.-13

ELEV.-14

ELEV. 15 (PART.)

ITEM	DESCRIPTION	FURNISHED BY	CAT. Nº	ITEM	DESCRIPTION	FURNISHED BY	CAT Nº
A	BASE CABINET	EQUIP. CONTR.	*50C	W	IRONING BD CAB.	EQUIP. CONTR.	*2484 IB
B	MIXER CABINET	DO	*41 MC	X	WARDROBE CAB.	DO	*4884 WA
C	SINK CABINET	DO	*3066	Y	TOTE TRAY CAB.	DO	*4084 HT
D	UTENSIL CABINET	DO	*8 UT	Z	WARDROBE CAB.	DO	*3084 WA ●
E	BASE CABINET	DO	*12L	A-A	APRON STOR. CAB.	DO	*3084 HA9
F	DO	DO	*24C	B-B	CLEAN. UTENSIL CAB.	DO	*3084 CU
G	SWEEPER CABINET	DO	*48GB	C-C	FOOD STAPLES STOR.	DO	*3084 FS
H	BASE CABINET	DO	*18D	D-D	CHINA STOR. CAB.	DO	*2184 CHS
I	RANGE	OWNER	—	E-E	GLN. STOR. CAB.	DO	*4884 GS
J	DISH WASHER	DO	—	F-F	MIRROR CABINET	DO	*2484 M1
K	SINK CABINET	EQUIP. CONTR.	*3066	G-G	BED STORE CAB.	DO	*4884 WB(NO BASE)
L	UTENSIL CABINET	DO	*12UT	H-H	TEACHING CENTER	DO	*H-3510
				I-I	FITTING STAND	BY OWNER	—
N	BASE CABINET	DO	*18C-K	J-J	WASHER	DO	—
O	REFRIGERATOR	OWNER	—	K-K	DRYER	DO	—
P	VENTED CABINET	EQUIP CONTR	*X-5618 WV				
Q	WALL CABINET	DO	*4830 W				
R	DO	DO	*3030 W				
S	DO	DO	*3618 W				
T	DO	DO	*3630 W				
U	DO	DO	*3018 W				
V	DO	DO	*1830 W-L				

HOMEMAKING ROOMS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-23

Date 30 APR 57

Scale 1/4" = 1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

DATE	ISSUE OR REVISION	No.

SCALE-DETAILS: 1½" = 1'-0"

TACKBOARD, TYPE "B"
METAL TRIM
RUBBER BASE
SECTION A-A

METAL BEAD
TACKBOARD TYPE "B"
TYPICAL CORNER DETAIL

DUCT SPACE
DISPLAY COUNTER, SHELF OVER
OUTLET IN COUNTER
LINE OF HUNG CEILING AT 7'-10"±
ELEC. PANEL
DUCT SPACE
TACKBOARD
CONF. RM. #1
133
DISPLAY CASE SEE DETAIL-C ON DWG. A30-D23
CHALKBOARD
AUDIO-VISUAL STORAGE
135
STEEL ADJUSTABLE SHELVES
CEILING GRILLE
¾" PLYWOOD
2"x4" HARDWD TRIM
STEEL BOOK SHELVES
EXPOSED BEAMS
LIBRARY
131
FUTURE BOOK SHELVES
SHELVES
CONTROL JNT.
LIBRARIAN'S OFFICE & WORK ROOM
132
CONTROL JOINT
DUCT DN.
WOOD ADJUSTABLE SHELVES
COUNTER
SHELVES
SINK
10"x12" VENT ENCLOSURE
CHALKBOARD
TACKBOARD
CONTROL JOINT
CONF. RM. #2
134
SCRIBE TO COLUMNS
8 @ 6'-0" = 64'-0"

TILE PATTERN
6'-0 LONG SURFACE MOUNTED FLUORESCENT FIXTURES
EXHAUST GRILLE & DUCT
ACOUSTIC TILE
12'-0" LONG SURFACE MOUNTED FLUORESCENT FIXTURES
CEILING GRILLE
TILE PATTERN

REFLECTED CEILING PLAN — CONFERENCE ROOM #1 133 & OFFICE & WORK ROOM 132

PLAN

TOP OF STEEL
CORRIDOR HUNG CLG.
14 WF
LINTEL, WELD TO COL.
CONTROL JOINTS
PLASTER
PAINTED BLOCK
METAL STANDARDS & BRACKETS
ADJUSTABLE SHELVING
VINYL TOP
FIXED SHELVES
FIN. FLR.
DISPLAY CASS SEE DETAILS ON DWG. A30-D23
4" RUBBER BASE
PLYWOOD

ELEV. #1

HUNG CLG.
PLYWOOD PANELS
GLASS ¼" HEAVY SHEET
INTERCOM 'PHONE
FIN. FLOOR
4" RUBBER BASE

ELEV. #5

GYPSUM BOARD
METAL TRIM
AIR SUPPLY GRILLE
PLYWOOD
GLASS, ¼" HEAVY SHEET
CHALKBOARD
TACKB'D TYPE "A"
4" RUBBER BASE
RETURN AIR GRILLE BY H & V CONTR.

ELEV. #8

PLASTER
CONTROL JOINTS
PAINTED BLOCK
PLYWOOD
VINYL TOP
FIXED SHELVES
COL.
BOOKSHELVES
WD. ENDS

ELEV. #2

PLYWOOD
FIXED SHELVES
GLASS ¼" HEAVY SHEET
OUTLET
DUCT SPACE
4" RUBBER BASE

ELEV. #6

PAINTED BLOCK
FORMICA BACKSPLASH & COUNTER
PLYWOOD
ADJUSTABLE SHELVES
4" RUBBER BASE

ELEV. #7 (PART.)

1 BTM OF ROOF PLANK; FLANGE OF 14 WF; GYPSUM BOARD; 14 WF PUNCH FOR NAILER
2
3 GYPSUM B'D. IN 134 WITH METAL TRIM; LINE OF JOINT BETWEEN GYP. BD. & PLYWOOD AT 9'-0" IN 134; AC. TILE AT 7'-10" IN 132
4 CAULK AT COUNTER; TOP OF COUNTER IN 132; ¼" PLYWOOD (OR MICARTA IN 132 AT JAMBS)
5 L.M. BUCK AT DR. 132/2
6 ¼" PLYWOOD; RUBBER BASE

WOOD WALL DETAILS
SCALE: 3" = 1'-0"

SPEAKER; CLOCK
AIR SUPPLY GRILLE
GYPSUM BOARD
CONC. BLOCK
PLYWOOD
STEEL BOOK SHELVES
WIRE GLASS
H.M. FRAME SEE DETAILS ON DWG. A30-D6
VINYL TOP
FIXED SHELVES
FLOOR LIGHT
PLYWOOD
TILESMO: ½" POL. DL. GL. SHELVES METAL BRACKETS & STANDARDS
SWITCH
PLYWOOD
4" RUBBER BASE
CONT. RETURN AIR GRILLE IN BASE BY H & V CONTR.

ELEV. #3

VINYL TOP
FIXED SHELVES
4" RUBBER BASE

ELEV. #4

STATE OF CONNECTICUT * REGISTERED ARCHITECT * No. 5522

STATE OF CONNECTICUT * REGISTERED ARCHITECT * No. 5522

STATE OF CONNECTICUT * REGISTERED ARCHITECT * No. 5522

LIBRARY

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-24

Date 30APR 57 | Scale AS SHOWN

SHERWOOD, MILLS AND SMITH
Architects 60 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

K.E.C. DENOTES KITCHEN EQUIPMENT CONTRACTOR
G.C. " GENERAL CONTRACTOR
S/S " STAINLESS STEEL
G/I " GALVANIZED IRON
C/P " CHROMIUM PLATED

SYMBOL & ABBREVIATION SCHEDULE

PLUMBING-HEATING		ELECTRICAL	
C	COLD WATER	HP	MOTOR HORSEPOWER
H	HOT WATER	KW	KILOWATTS
W	WASTE	EO	ELECTRIC CONNECTION
IW	INDIRECT WASTE	EL	ELECTRIC LIGHT
G	GAS	DR	DUPLEX RECEPTACLE
FD	FLOOR DRAIN	SW	SWITCH
S	STEAM SUPPLY	SP	SWITCH AND PILOT LIGHT
R	STEAM RETURN		JUNCTION BOX
AF	ABOVE FINISHED FLOOR		SPECIAL PURPOSE OUTLET

SCHEDULE OF EQUIPMENT AND CONNECTIONS

ITEM NO.	Q'TY	DESCRIPTION	H	C	W	IW	G	HP	KW	EL	EO	DR	VOLT.	PH.	REMARKS
1	3	RANGES, SHELF AND FAUCET	¾"	¾"			15/16								270,000 BTU - FAUCET BY K.E.C.
2	1	OVEN					¾"								88,000 BTU.
3	1	VEGETABLE STEAMER	¾"				¾"								160,000 BTU-¾" STEAM CONNECT
4	1	TILTING KETTLE & FAUCET	¾"	¾"											CONNECTIONS TO #3 BY OTHERS
5	1	MIXER						1				1	208	3	BY OWNER
6	1	HOOD OVER RANGES, OVEN, ETC.							0.8	8	1		120	1	9800 C.F.M. FAN
7	1	COOK'S TABLE & SINK	¾"	¾"	1½"								120	1	CONVEYANCE DR.
8	1	FAN & UTENSIL RACK													CEILING TYPE
9	1	PORTABLE SLICER TABLE													
10	1	SLICER							¼				120	1	CORD & PLUG BY OWNER
11															
12	1	VEGETABLE SINK & DRAINBOARD	3/4"	3/4"	2"										
13	1	PEELER & TRAP		¾"	3"			½			1		120	1	SOLID CONNEC. NON-IW to FD
14	1	TABLE										1	120	1	CONVENIENCE DR.
15	1	POT SINK & DRAINBOARDS	3/4"	3/4"	2"										
16															
17	1	BAKER'S TABLE & PANS										1	120	1	CONVENIENCE DR.
18	2	PASS-THRU REFRIGERATORS			1"		½				2		120	1	CORD & PLUG EACH/BY OWNER
19															
20	2	UPRIGHT FREEZERS					½				2		120	1	CORD & PLUG EACH/BY OWNER
21	1	WALK-IN REFRIGERATOR					¾					1	1 SOL	3	REFRIGERATION UNIT / BY OWNER
													1 SOL	3	BLOWER COIL & MOTOR
22	2	DISHWASHERS	180°F	¾"	2"		½	1			2		208	3	40,000 BTUH EACH WASHING
23	2	HOT WATER BOOSTERS	¾"				15.0				2		208	3	EACH - SOLID CONNECTIONS
24	2	SETS OF DISHTABLES & SINKS	3/4"	3/4"	2½"										EACH SET: SOILED DISH PASS OPENING BOOK & DOOR BY K.E.C.
25	1	HOODS OVER DISHWASHERS													750 CFM EACH
26	2	CAFETERIA COUNTERS													
A	2	TRAY & SILVER SECTIONS													
B	2	HOT FOOD TABLES							3.6		2		120	1	EACH - SOLID CONNECTIONS
C	2	PROTECTOR CASES													
D															
E	2	DISPLAY CASES													
F	2	REFRIGERATED MILK DISPENSERS			1"		½				2		120	1	CORD & PLUG EACH
G	2	CASHIER SECTIONS									2		120	1	CONVENIENCE DRS
H	2	TRAY SLIDE													
27	3	WATER COOLERS		¾"	1½"						1		120	1	CORD & PLUG - EACH
28															
29	1	CAFETERIA COUNTER													
J	1	HOT FOOD TABLE							2.4		1		120	1	SOLID CONNECTION
K	1	PROTECTOR CASE													
L	1	BREAD DRAWER													
M	1	REFRIGERATOR UNDER							¼			1	120	1	CORD & PLUG BY OWNER
N	1	DISPLAY CASE													
P															
Q	1	TRAY SLIDE													
30															
31	3	ICE CREAM CABINETS (BY OTHERS)							¼			1	120	1	BASES BY K.E.C. CORD & PLUG
32	1	CAN RINSER	¾"	¾"											
33	1	HOT STORAGE CABINET													

DATE	ISSUE OR REVISION	No.

SERVING

CAFETERIA #2

DISHWASHING

COOKER ROOM

STORE ROOM
SHELVING BY G.C.

KITCHEN

RECEIVING

TRASH & CAN WASHING

OFFICE
TELEPHONE

DISHWASHING

CAFETERIA #1

FACULTY DINING ROOM

PLAN
SCALE: ¼"=1'-0"

SECTION V-V
¾"=1'-0"

DISPLAY CASE
PROTECTOR CASE
SILVERWARE
ICE CREAM CABINET
REMOV. ACCESS PANEL
REFRIG. MILK DISPENSER
REMOVABLE SHELVES
FIXED
PLATE SHELF
BOTTOM SHELF
SCREENED OPENING
BASE BY K.E.C.

ELEVATION A-A
½"=1'-0"

SLOPED SHELF
FOUR(4) BINS
SCREENED OPENING
TOE BASE

ELEVATION B-B
½"=1'-0"

SECTION C-C
¾"=1'-0"

SECTION D-D

SECTION THRU ¾"=1'-0" ELEVATIONS
SOILED DISH PASS OPENINGS

SECTION Z-Z
1½"=1'-0"

SECTION THRU SOILED DISH TABLE
SIZE AND SHAPE AS SHOWN ON PLAN

SECTION THRU CLEAN DISH TABLE
SIZE AND SHAPE AS SHOWN ON PLAN
¾"=1'-0"

SECTION THRU PRE RINSE SINK

SECTION THRU SINK
¾"=1'-0"

SECTION X X THRU PRE RINSE SINK
¾"=1'-0"

PART ELEVATION OF SINK AND DRAINBOARD
SIZE AND SHAPE AS SHOWN ON PLAN

SECTION THRU RANGE HOOD
¾"=1'-0"

SECTION Y-Y
HALF SIZE

DETAILS SHELVES OVER
1½"=1'-0"

SECTION THRU DISHWASHER HOOD
¾"=1'-0"

SECTION THRU TABLE AT WALLS

WORK TABLE
¾"=1'-0"

PERSPECTIVE

SECTION

CARVING BOARDS
¾"=1'-0"

PERSPECTIVE OF TOOL DRAWER

GENERAL NOTE
THIS PLAN IS AN INSTRUMENT OF SERVICE PREPARED FOR THE CONVENIENCE OF OTHER CONTRACTORS AND IS AS ACCURATE AS CAN BE OBTAINED AT THIS DATE. WE WILL NOT BE RESPONSIBLE FOR ANY DISCREPANCIES WHICH MAY DEVELOP BETWEEN LOCATIONS OF CONNECTIONS SHOWN AND ACTUAL LOCATIONS OF CONNECTIONS OF FIXTURES FURNISHED. CONNECTIONS SHOWN ARE APPROXIMATE LOCATIONS ONLY. FIXTURES VENDOR MAY REQUIRE DIFFERENT STANDARD ALLOWANCES MUST BE MADE FOR TRAPS, VALVES, STRAINERS OR OTHER CONNECTING DEVICES. CONNECTIONS FOR FIXTURES IN FLOOR OR PARTITIONS OR DROP ANS ARE FOR GUIDANCE ONLY. FOR FLOOR AT REAR OF DRIP PAN AND CONNECTIONS FOR FIXTURES AS REQUIRED. LOCATIONS OR CONDITIONS ON FIXTURES ARE MEASURED FROM FINISHED FLOORS, WALLS OR PARTITIONS. IT IS THE CONSULTANT CONTRACTOR WILL FURNISH DIMENSIONED PLANS.

ROTHMAN & FOERST
FOOD SERVICE CONSULTANTS
LONG ISLAND CITY, N.Y. - PASSAIC, NEW JERSEY
HENRY H. ROTHMAN, F.F.E.S. W. E. FOERST

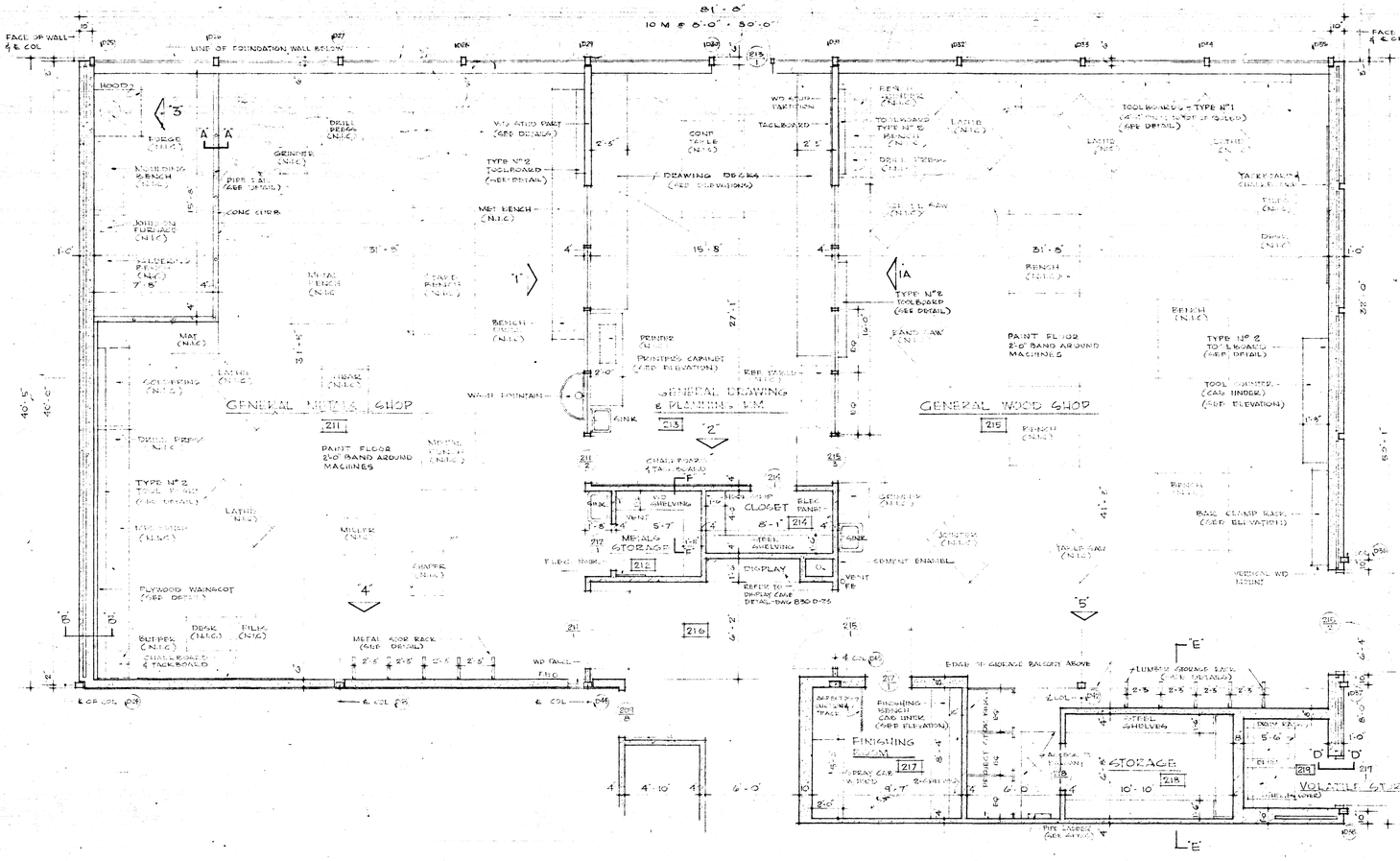
KITCHEN

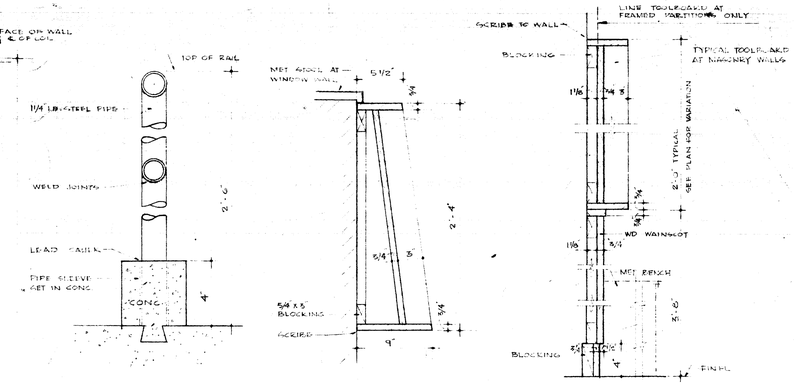
CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-25
Date 30APR 57 Scale AS SHOWN

SHERWOOD, MILLS AND SMITH
Architects and Town Planners, Litchfield, Connecticut

BQ #70 & 125 Attachment

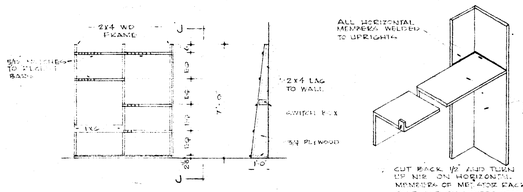




SECTION A-A
SCALE: 1"=1'-0"

SECTION THRU TOOLBOARD TYPE N° 1
SCALE = 1½"=1'-0"

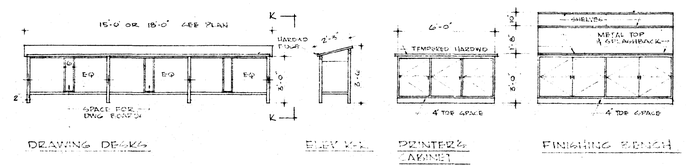
SECTION B-B
TYPE N° 2 TOOLBOARD
(W/O WAINSCOT WHERE NOTED)
SCALE: 1½"=1'-0"



FRONT ELEVATION
BASE CLAMP RACK
SCALE: 1½"=1'-0"

ELEVATION J-J

TYPICAL RACK FRAME DETAIL
SCALE: 3"=1'-0"



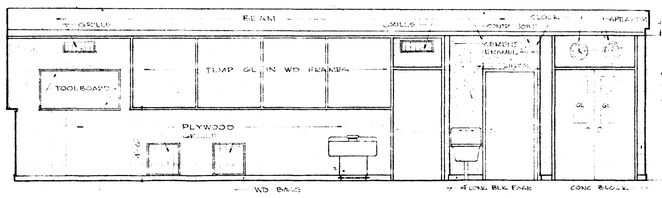
DRAWING DESKS

ELEVATION

PRINTERS CABINET

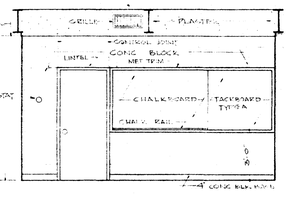
FINISHING BENCH

PLAN & ELEVATIONS
SCALE: 1/4"=1'-0"

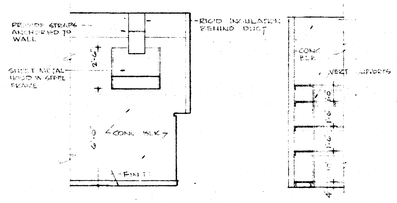


ELEVATION #1

ELEVATION 1A
SIMILAR BUT OPPOSITE HAND

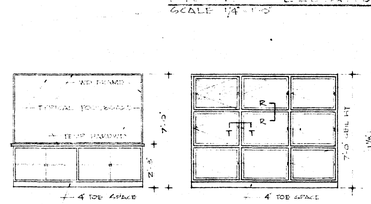


ELEVATION #2



ELEVATION #3
HOOD IN FINISHING RM SIMILAR

SECTION E-E
SCALE: 1/4"=1'-0"

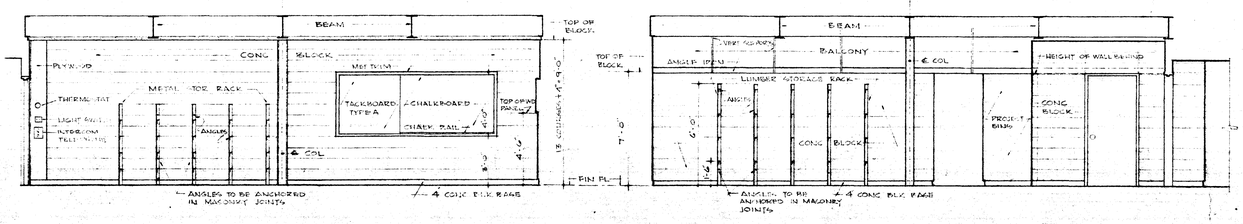


FRONT ELEVATION
TOOL COUNTERS
SCALE: 1/4"=1'-0"

FRONT ELEVATION
PROJECT VISOR RING
SCALE: 1/4"=1'-0"

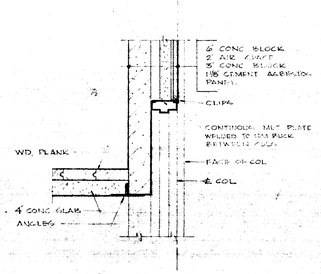
SECTION T-T

SECTION R-R
SCALE: 3"=1'-0"

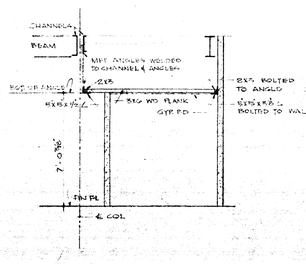


ELEVATION #4

ELEVATION #5



SECTION D-D
SCALE: 3/4"=1'-0"



SECTION E-E
SCALE: 1/4"=1'-0"

DATE	ISSUE OR REVISION	No.

SHOPS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

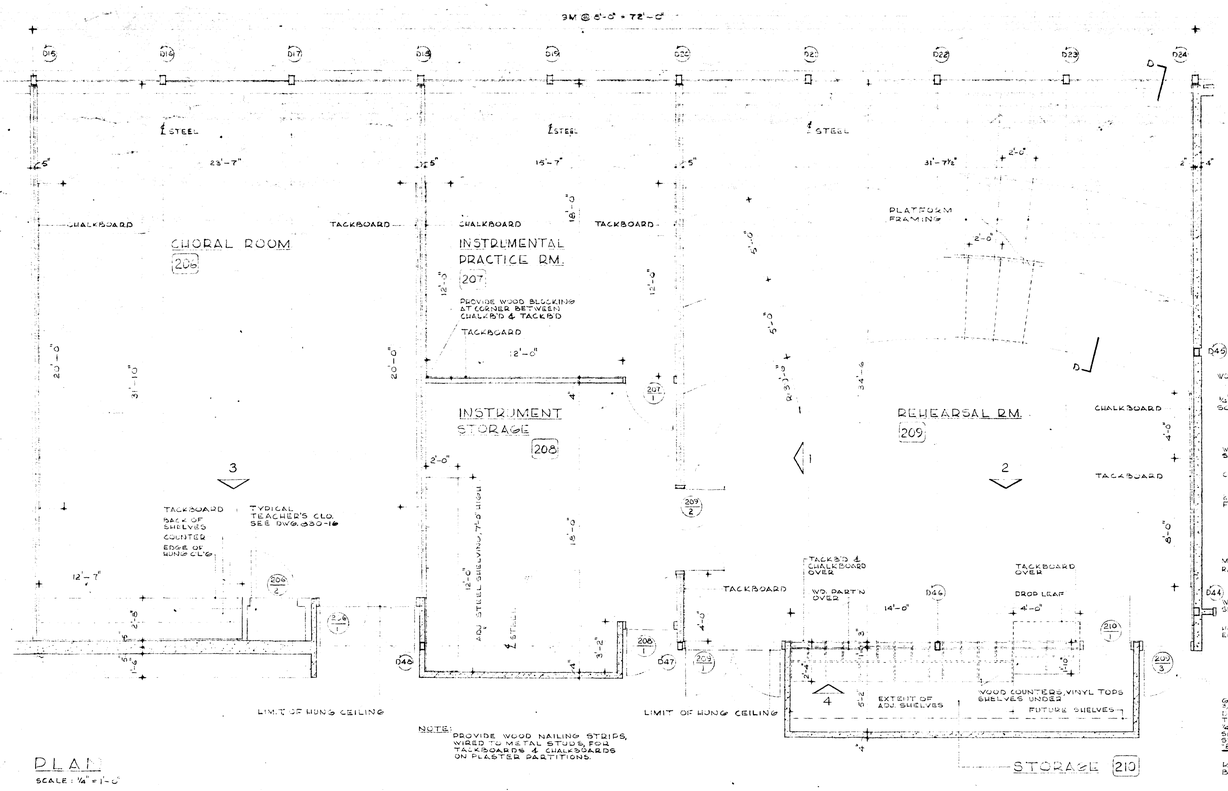
830-26

Date: 30APR 57
Scale: AS SHOWN

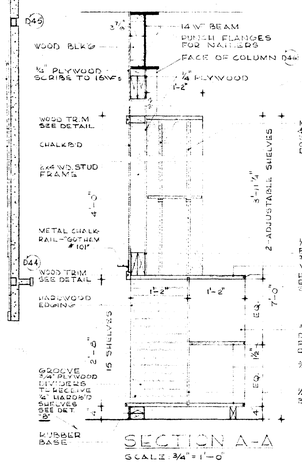
N

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment



PLAN
SCALE: 1/4" = 1'-0"



SECTION A-A
SCALE: 3/4" = 1'-0"

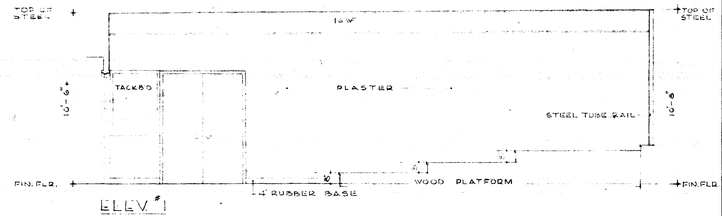
METAL STANDARDS & BRACKETS SURFACE MOUNTED ON INSIDE ¾" PLYWD DIVIDERS, SEE ELEV. #2

¼ PLYWOOD BACK
¾" PLYWOOD, VINYL TOP
HARDWOOD EDGING ON ALL SHELVES

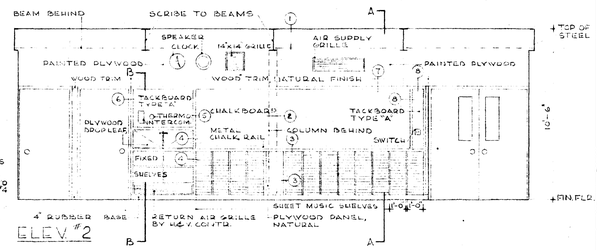
¾" PLYWOOD DIVIDERS SEE PLAN FOR EXTENT OF EACH

¾" PLYWOOD.

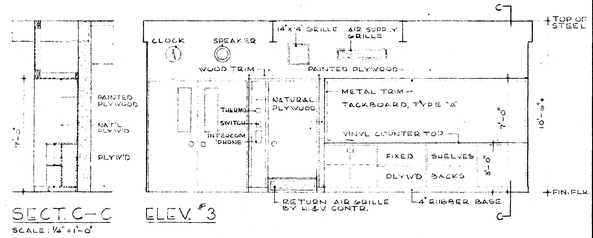
¼ PLYWOOD BACK



ELEV. #1



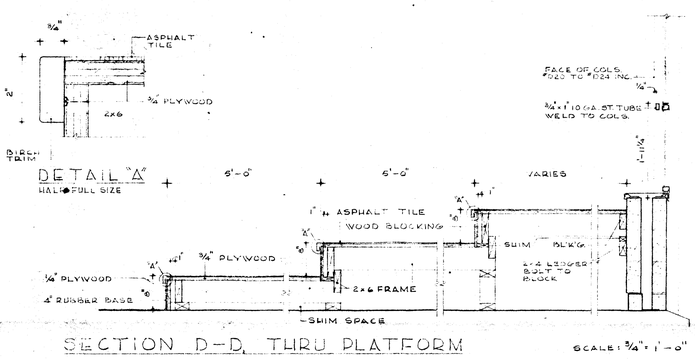
ELEV. #2



SECT. C-C
SCALE: 1/4" = 1'-0"

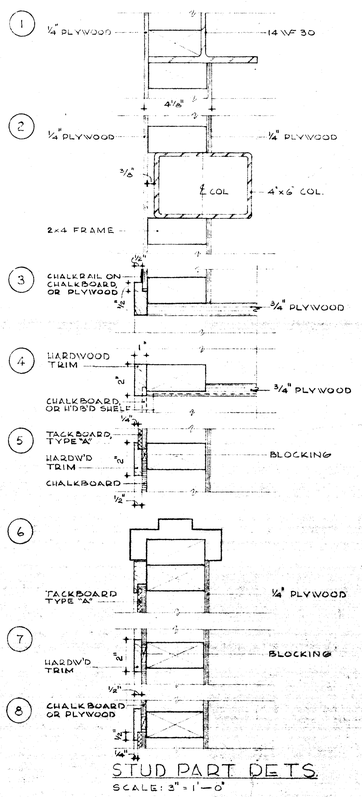
ELEV. #3

NOTE: ELEVS #2 & #3 — HEIGHT ℄ CLOCK & SPEAKERS TO FIN. FLR. = 8'-6"

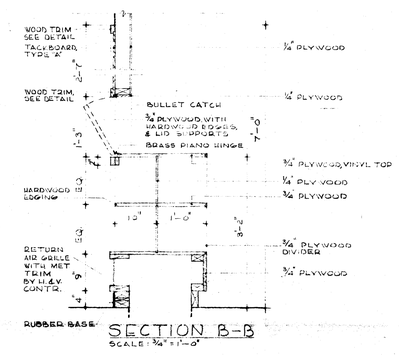


DETAIL "A"
HALF FULL SIZE

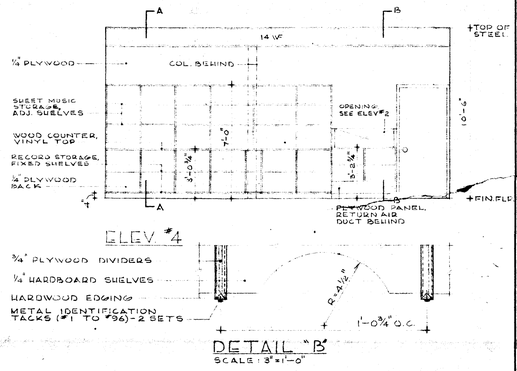
SECTION D-D THRU PLATFORM
SCALE: 3/4" = 1'-0"



STUD PART DETS.
SCALE: 3" = 1'-0"



SECTION B-B
SCALE: 3/4" = 1'-0"



ELEV. #4

DETAIL "B"
SCALE: 3" = 1'-0"

DATE	ISSUE OR REVISION	No

MUSIC ROOMS

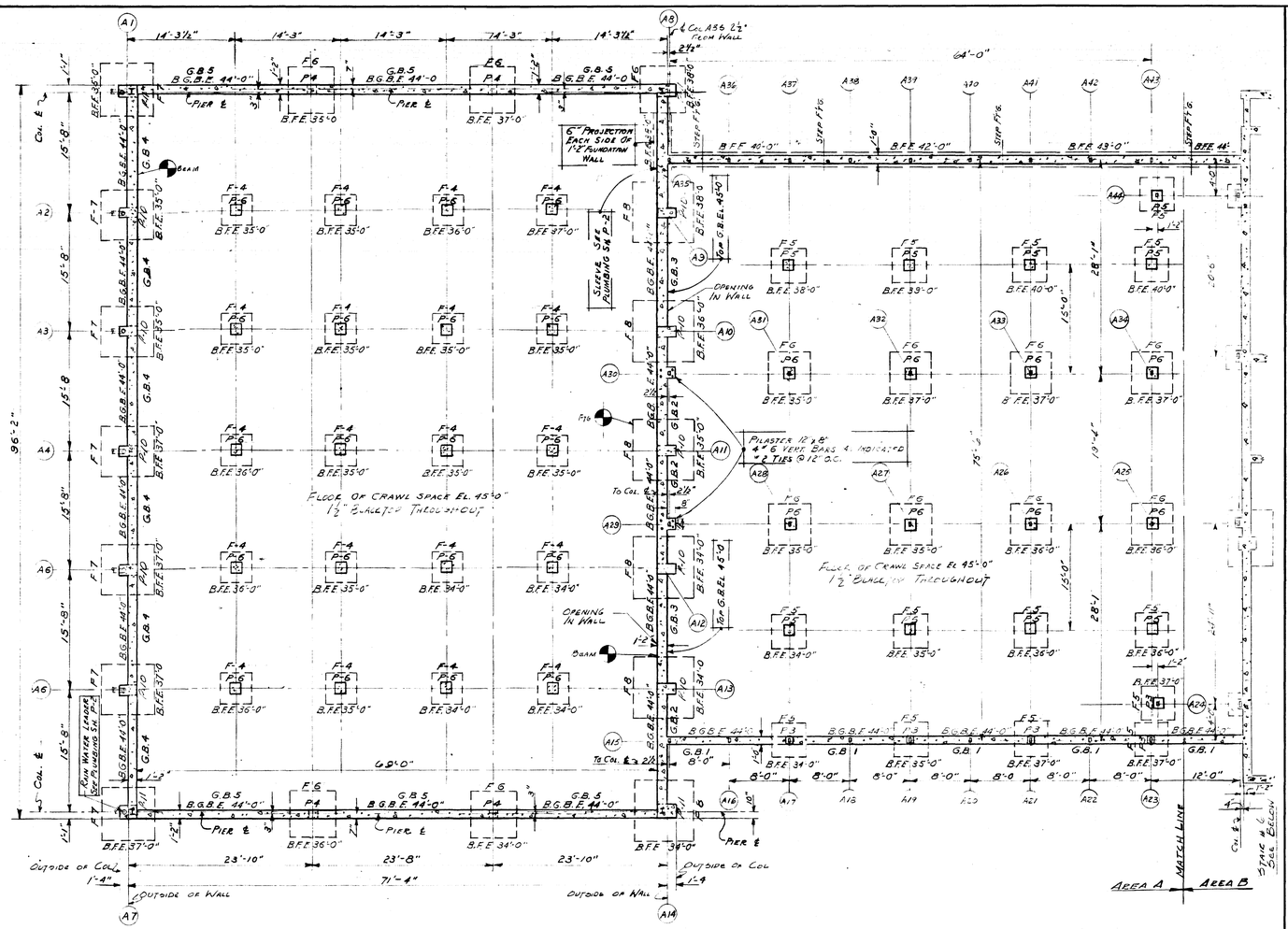
CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-27

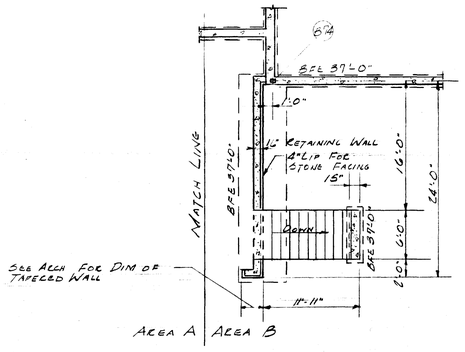
Date: 30 APR 57 | Scale: AS SHOWN

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

BQ #70 & 125 Attachment

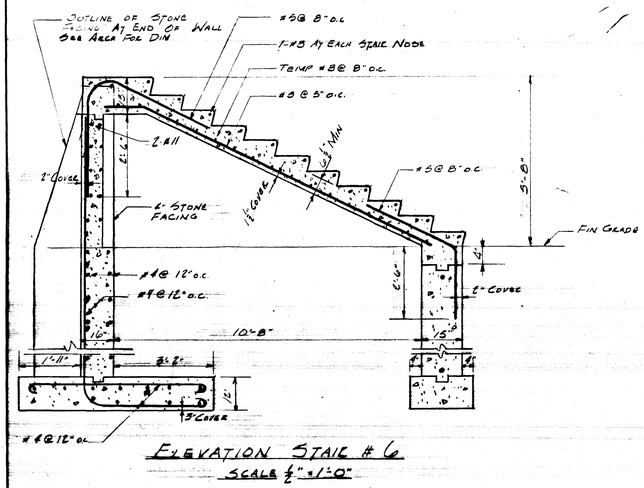


FOUNDATION PLAN

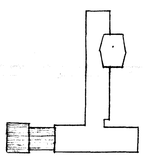


FOUNDATION PLAN
STAIR #6
SCALE 3/8" = 1'-0"

NOTE
SEE STAIR ELEV. THIS SHEET FOR DIMENSIONS & REINFORCEMENT



ELEVATION STAIR #6
SCALE 1/2" = 1'-0"



KEY PLAN

FOUNDATION
AREA A

CENTRAL JUNIOR
HIGH SCHOOL
Greenwich, Connecticut

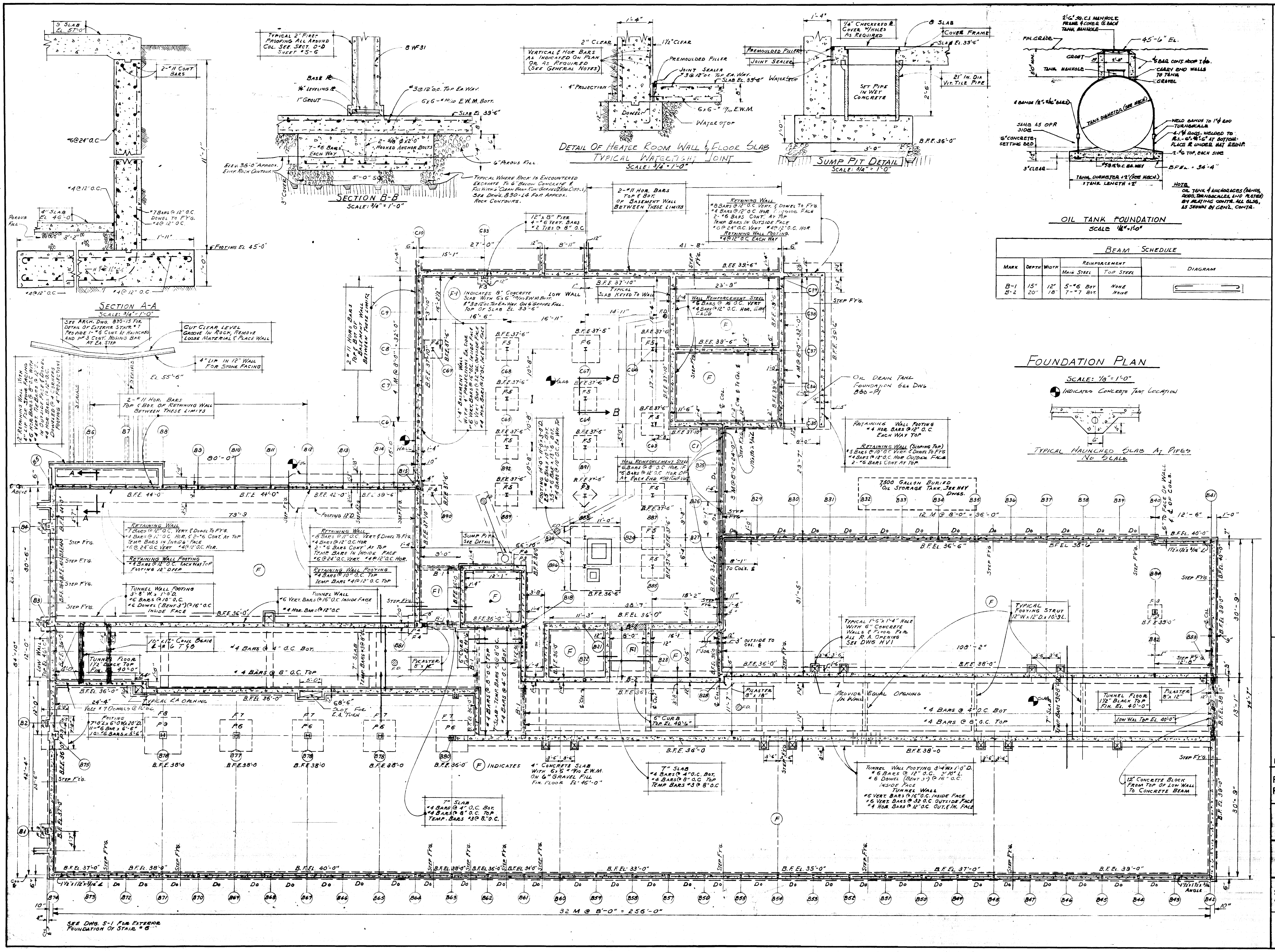
830-51

Date 30 APR 57 | Scale 1/8" = 1'-0"

SHERWOOD, MILLS AND SMITH
Architects, 65 Broad Street, Stamford, Conn.

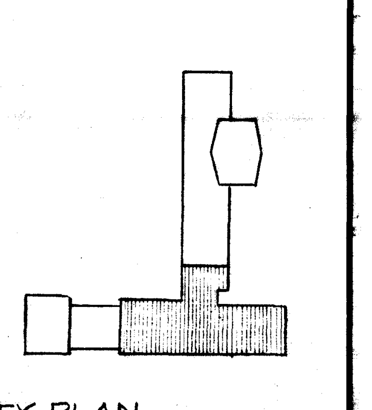
MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment



BEAM SCHEDULE

MARK	DEPTH	WIDTH	REINFORCEMENT MAIN STEEL	REINFORCEMENT TOP STEEL	DIAGRAM
B-1 B-2	15" 20"	12" 18"	5-#6 BOT 7-#7 BOT.	NONE NONE	



KEY PLAN

FOUND. & BSMT. FLOOR
FRAMING AREA B

CENTRAL JUNIOR
HIGH SCHOOL
Greenwich, Connecticut

830-52

Date 30 APR 57
Scale AS NOTED

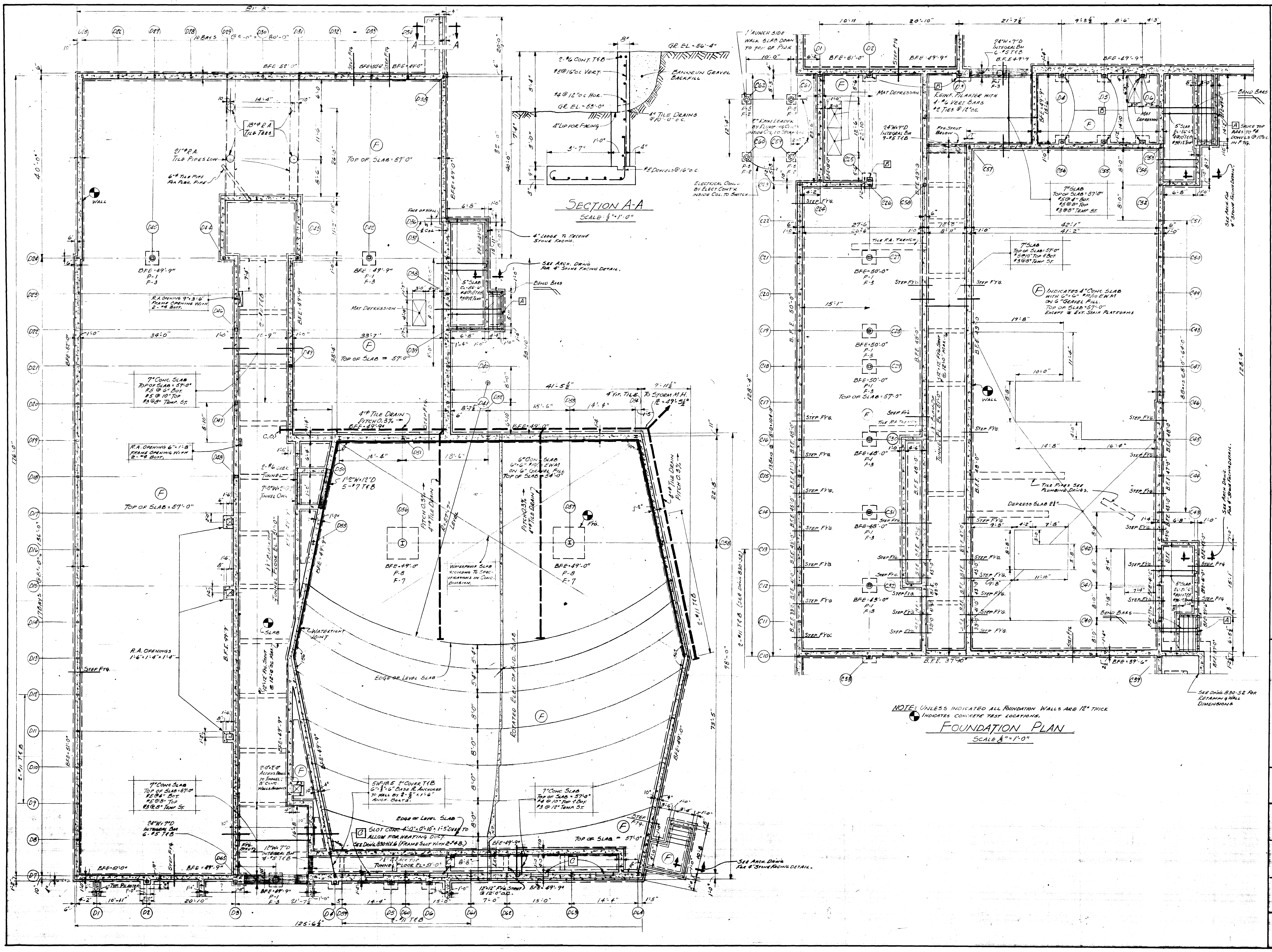
SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

JAMES S. MINGES NO. 2423

CHARLES G. MARCHANT NO. 2385

BQ #70 & 125 Attachment



SECTION A-A

SCALE: ½" = 1'-0"

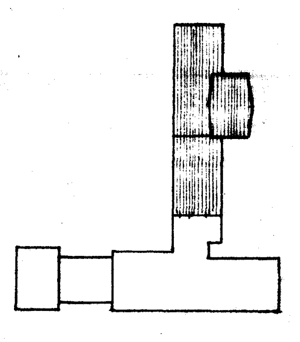
NOTE: UNLESS INDICATED ALL FOUNDATION WALLS ARE 12" THICK
⊕ INDICATES CONCRETE TEST LOCATIONS.

FOUNDATION PLAN

SCALE ⅛" = 1'-0"

JAMES S. MINGES NO. 2423

CHARLES G. MARCHANT NO. 2385



KEY PLAN

FOUND.& 1st FLOOR
FRAMING - AREAS C&D

CENTRAL JUNIOR
HIGH SCHOOL
Greenwich, Connecticut

830-S3

Date 30 APR 57
Scale AS SHOWN

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment

GRADE BEAM SCHEDULE

NOTE: RUN TOP STEEL OF GRADE BEAMS CONTINUOUS AND SEE TYPICAL BAR SPLICE DIAGRAMS FOR GRADE BEAMS AT CORNERS AND INTERSECTIONS. SPLICE TOP BARS AT MIDSPAN AND BOTTOM BARS AT SUPPORTS.

MARK	WIDTH	DEPTH	REINFORCEMENT TOP	REINFORCEMENT BOTTOM	#3 STIRRUPS DIAG.	#3 STIRRUPS	REMARKS
GB-1	12"	6'-10"	3-#6	3-#6	*	NONE	#3@18"o.c. HOR. INSIDE & OUTSIDE FACES #4@18"o.c. VERT. INSIDE & OUTSIDE FACES
GB-2	1'-8"	6'-10"	4-#11	4-#11	*	NONE	NONE
GB-3	1'-8"	18"	2-#5 BOTH ENDS	5-#5	O	NONE	NONE
GB-4	1'-8"	6'-10"	3-#6	3-#6	*	NONE	#6@12"o.c. HOR. INSIDE FACE #6@24"o.c. HOR. OUTSIDE FACE #4@12"o.c. VERT. INSIDE & OUTSIDE FACE
GB-5	1'-8"	6'-10"	4-#10	4-#10	*	NONE	#6@8"o.c. HOR. INSIDE FACE #6@12"o.c. HOR. OUTSIDE FACE #4@12"o.c. VERT. INSIDE & OUTSIDE FACE

PIER SCHEDULE

NOTE: WHEN PIERS ARE 2'-0" OR LESS IN HEIGHT, DOWELS MAY BE USED AS VERTICAL STEEL. INCLUDE TIES.

MARK	SIZE	VERT. REINF	HOR TIES	DIAGRAM
P-1	14"ø	4-#6	#2@10"	
P-2	16"ø	4-#7	#2@10"	
P-3	12"□	4-#6	#2@10"	
P-4	14"□	4-#7	#2@10"	
P-5	16"□	4-#8	#3@16"	
P-6	18"□	6-#7	#2 [a@12" b@12" ALT. #3 a@16" b@16" ALT.	
P-7	20"□	6-#8	#3@16"	
P-8	22"ø	4-#10	#3@18"	
P-9	24"□	8-#8	#3 [a@16" b@16" ALT.	
P-10	14"x30"	10-#8	#3 [a@12" b@12" c@12" ALT.	
P-11	20"x30"	10-#8	Do	

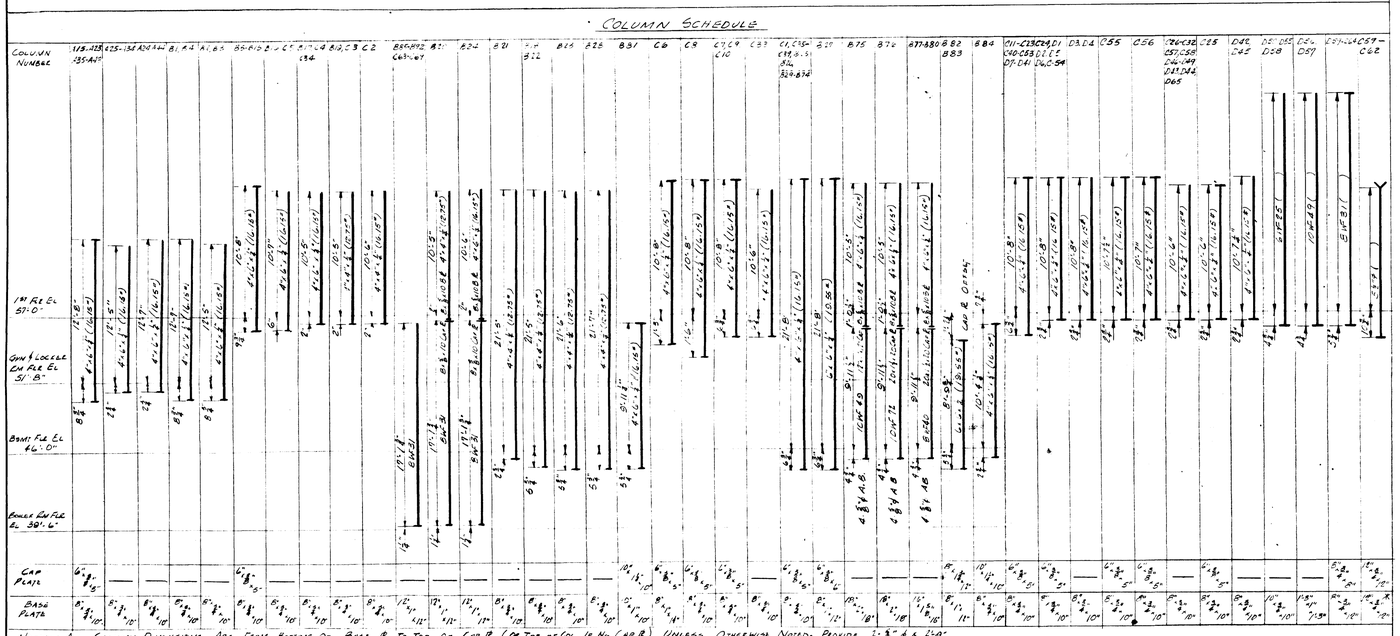
FOOTING SCHEDULE

NOTE: PROVIDE DOWELS SAME NO. AND SIZE AS PIER STEEL. OMIT DOWEL WHERE NO PIER EXISTS.

MARK	SIZE	DEPTH	REINF. EA WAY
F-1	3'-6"□	1'-4"	4-#6
F-2	2'-0"□	1'-0"	NONE
F-3	3'-0"□	1'-4"	4-#6
F-4	4'-0"□	1'-6"	5-#6
F-5	5'-0"□	1'-9"	7-#6
F-6	6'-0"□	1'-5"	10-#6
F-7	7'-0"□	1'-8"	11-#6
F-8	8'-0"□	1'-10"	13-#6

BEND #8 BARS TO ALIGN WITH COL BARS ABOVE. SEE DWG 830-S10

COLUMN SCHEDULE



NOTES: ALL COLUMN DIMENSIONS ARE FROM BOTTOM OF BASE PL TO TOP OF CAP PL (OR TOP OF COL IN NO CAP PL). UNLESS OTHERWISE NOTED, PROVIDE 2-¾" ø x 2'-0" HOOKED ANCHOR BOLTS AT EACH COLUMN BASE.
ALL COLS 8"x6"x⅜", 6"x4"x⅜", OR 5"x3½"x⅜" ARE HOLLOW TUBULAR COLUMNS.
FOR COLUMNS BEARING ON BEAMS USE 4 BOLTS IN BASE PL
SEE SHEET S-7 FOR STEEL & CONC. COL. TYP. A-1, A-2, A-3, A-4, A-5, A-6
* PROVIDE 3" HOLE IN MIDDLE OF BASE PL

STRUCTURAL GENERAL NOTES

GENERAL:

A. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DIMENSIONS AND DETAILS REQUIRED AS STRUCTURAL WORK. BUT WHICH ARE NOT SHOWN ON STRUCTURAL DRAWINGS.
B. EXCEPTIONS TO ITEMS AS OUTLINED IN THESE NOTES ARE SPECIFICALLY NOTED ON PLANS AND SPECIFICATIONS.

SPECIFICATIONS:

A. SEE SPECIFICATIONS GOVERNING DETAILING, FABRICATION, ERECTION, AND INSTALLATION OF ALL STRUCTURAL STEEL, CONCRETE AND WOOD CONSTRUCTION.

DESIGN:

A. LIVE LOADS
Roof ..... 40 psf
Office ..... 50 "
Classrooms & Toilets ..... 60 "
Cafeteria & Wood Shop ..... 80 "
Corr., Exitways, Stairs, Gym & Projection Rm., Assembly .. 100 "
Book Stacking Area ..... 120 "
Retail Shr Storage, Fanroom ..... 150 "
B. FOUNDATION BEARING
2 TSF = 4 KSF
C. CONCRETE STRENGTH: ALSO, SEE SPECS. CONCRETE QUALITY AND STRENGTH:
4000 P.S.I. [illegible]
[illegible]

BEARING ON MASONRY WALLS:

A. CONCRETE OR STEEL BEAMS AND COLUMNS SHALL BEAR ON SOLID BLOCK 3'-0" IN LENGTH
B. CONCRETE OR STEEL JOISTS SHALL BEAR ON SOLID BLOCK
C. FILLED CONCRETE BLOCK WILL NOT BE ACCEPTABLE FOR BEARING.

CONCRETE:

A. FOOTINGS ARE 12" DEEP WITH 4" PROJECTION.
B. EXTERIOR FOUNDATION FOOTINGS SHALL BE CARRIED A MINIMUM OF 4'-0" BELOW FINAL GRADE AND ALL FOOTINGS A MINIMUM OF 21-0" BELOW PRESENT GRADE, BUT TO SOUND GROUND IN ANY CASE.
C. CONCRETE BEAMS ARE CAST MONOLITHICALLY WITH SLABS AND ARE LISTED IN BEAM SCHEDULE. DEPTHS ARE MEASURED FROM TOP OF SLABS TO BOTTOM OF BEAMS.
D. INSTALL #6 BARS, 2 FOR EACH SIDE, FRAMING AROUND FOUR SIDES OF ALL OPENINGS IN CONCRETE WALLS. BARS SHALL EXTEND 2' BEYOND OPENING.
E. INSTALL #4 TOP BARS @ 10" O.C. EXTENDING INTO SLAB TWO FEET EACH SIDE OF BEAM OR WALL WHERE SOLID SLABS ARE PARALLEL TO BEAM OR WALL. WHERE SLAB OCCURS ON ONE SIDE ONLY, PROVIDE STANDARD HOOK.
F. CONCRETE SLABS AND BEAMS SHALL HAVE 8" MINIMUM BEARING ON MASONRY WALLS.
G. SLABS AND BEAMS BEARING LESS THAN 8" REQUIRE BOTTOM BARS HOOKED AT SUPPORTS.
H. TOPS OF CONCRETE WALLS SUPPORTING SLABS SHALL BE KEYED TO RECEIVE SLABS AND TO INSURE LATERAL SUPPORT TO WALLS. ALL FOOTINGS SHALL BE KEYED TO RECEIVE WALLS.
I. PROVIDE 2 #4 TIE BARS IN TOPS OF ALL CONCRETE BEAMS IN ORDER TO FASTEN STIRRUPS WHEN NO TOP STEEL IS DESIGNATED ON PLANS OR BEYOND WHERE DESIGNATED TOP STEEL MIGHT NORMALLY BE DISCONTINUED.
J. WHERE COLUMNS BEAR ON INTERSECTION OF TWO DISCONTINUOUS WALLS, PROVIDE #4 BARS X 8'-0" LONG 1' 12" O.C. CORNER REINFORCEMENT FOR TOP FIVE FEET OF WALLS, 2" CLEAR FROM OUTSIDE FACE.
K. WHEREVER STEEL BEAMS ARE ENCASED IN CONCRETE, THE MINIMUM COVER SHALL BE 2 INCHES.
L. PLACE ALL BASEMENT FLOOR SLABS PRIOR TO BACKFILLING AGAINST ADJACENT WALLS.
M. REINFORCE ALL FOOTINGS WITH 2 #6 BOTTOM BARS EXCEPT FOR FOOTINGS WHICH SUPPORT FOUNDATION WALLS GREATER THAN 2'-0" IN HEIGHT.
N. ALL EXTERIOR AND INTERIOR CONCRETE WALLS OF ALL THICKNESSES SHALL BE REINFORCED AS FOLLOWS:

HEIGHT OF WALL	FOOTING SUPPORTING WALL	EARTH PRESSURE ON WALL	REINFORCEMENT
0' TO 2'-0"	YES	FULL OR PARTIAL EITHER SIDE	1-#6 TOP
0' TO 2'-0"	NO	FULL OR PARTIAL EITHER SIDE	1-#6 TOP AND BOTTOM
2'-0" TO 8'-0"	YES OR NO	FULL OR PARTIAL EITHER SIDE	1-#6 TOP AND BOTTOM
2'-0" TO 12'-0"	YES OR NO	LESS THAN 4'-0" DIFFERENCE BETWEEN SIDES	1-#6 TOP AND BOTTOM
8'-0" TO 12'-0"	YES OR NO	MORE THAN 4'-0" DIFFERENCE BETWEEN SIDES	#6@18" O.C. VERT #4@12" O.C. HORIZ

O. ALL REINFORCING FOR WALLS AND FOOTINGS SHALL BE CONTINUOUS AND LAPPED 30 DIAMETERS AT ALL SPLICES, CORNERS AND INTERSECTIONS. PROVIDE #6 FOOTING DOWELS FOR ALL VERTICAL BARS IN WALLS.
P. METAL REINFORCEMENT SHALL BE PROTECTED BY THE FOLLOWING THICKNESSES OF CONCRETE:
1. WHERE CONCRETE IS DEPOSITED AGAINST GROUND, 3" INCHES.
2. WHERE CONCRETE IS EXPOSED TO THE WEATHER, OR EXPOSED TO THE GROUND AFTER REMOVAL OF THE FORMS, 2" INCHES EXCEPT THAT SLABS WITH #5 BARS OR SMALLER SHALL HAVE ONLY 1-1/2" CLEAR COVER.
3. IN SLABS INCLUDING CONCRETE ROOF CONSTRUCTION, AND WALLS NOT EXPOSED TO THE GROUND OR WEATHER, 3/4" INCHES.
4. IN BEAMS, GIRDERS, AND COLUMNS NOT EXPOSED TO THE WEATHER OR TO THE GROUND, 1-1/2" INCHES.
5. IN ALL CASES THE THICKNESS OF CONCRETE OVER THE REINFORCEMENT SHALL BE AT LEAST EQUAL TO THE DIAMETER OF THE BARS.

STEEL:

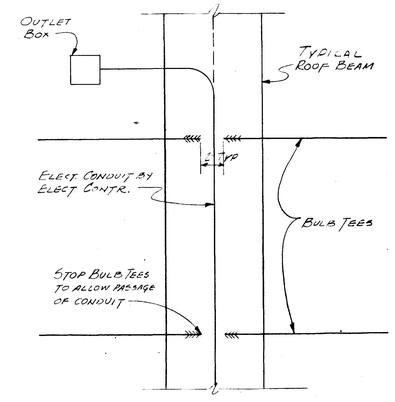
A. FURNISH LOOSE ANGLE LINTELS OVER ALL OPENINGS IN MASONRY WALLS AND PARTITIONS INCLUDING OPENINGS AT DOORS, WINDOWS, RECESSES, DUCTS, VENTS, ETC.
B. PROVIDE ONE ANGLE FOR EACH 4" OF MASONRY THICKNESS AS FOLLOWS:

SPANS	LINTEL
UP TO 4'-6"	L - 3-1/2" X 3-1/2" X 5/16"
4'-6" TO 5'-6"	L - 4" X 3-1/2" X 5/16"
5'-6" TO 6'-6"	L - 5" X 3-1/2" X 5/16"
6'-6" TO 7'-6"	L - 6" X 3-1/2" X 3/8"

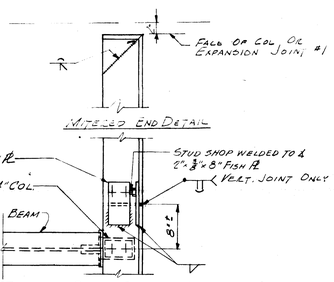
PROVIDE 3" HORIZONTAL LEG ON ANGLES IF REQUIRED AT CERTAIN METAL DOOR BUCKS. WHERE TOTAL THICKNESS OF WALL TO BE SUPPORTED BY LINTEL IS 4" AND ARCHITECTURAL FINISHES REQUIRE EXPOSED MASONRY ON EACH SIDE, LINTEL SHALL BE AN ST3X3.25 WITH 2" OF MASONRY EACH SIDE OF WEB. FURNISH SIMILAR TREATMENT FOR 6" WALLS USING 2 L'S 3-1/2" X 3-1/2" X 5/16" WITH 2" OF MASONRY ON EACH SIDE OF VERTICAL LEGS. ALL STEEL LINTELS SHALL HAVE 8" BEARING ON MASONRY AT EACH END.
C. ALL ROLLED STEEL MEMBERS BEARING ON MASONRY OR CONCRETE WALLS SHALL BE PROVIDED WITH BEARING PLATES AND SHALL BE ANCHORED BY MEANS OF HOOKED ANCHOR BOLTS FOR ALL ROOF ANCHORAGE. WHERE BEAMS FRAME INTO A WALL AND ROOF ANCHORAGE IS NOT NEEDED, GOVERNMENT ANCHORS MAY BE USED. ANCHOR BOLTS SHALL BE ⅝" X 2'-0" (3" HOOK). BEAMS SHALL BE OF SUFFICIENT LENGTH TO BEAR THE FULL WIDTH OF PLATE AT EACH END.
SIZE OF BEARING PLATES FOR BEAMS SHALL BE AS FOLLOWS:

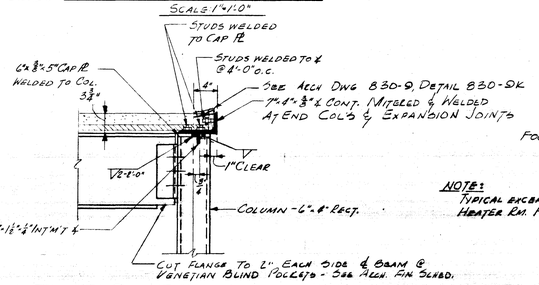
S-SERIES, CHANNELS, TS, AND 4 WF'S	6" X 3/8" X 6"
8 WF	8" X 3/4" X 10"
10 WF, 12 WF	8" X 7/8" X 1'-0"
14 WF, 16 WF, 18 WF	8" X 1" X 1'-2"
21 WF, 24 WF	10" X 1" X 1'-2"

D. PUNCH OR DRILL STEEL FOR ⅞" BOLTS FOR ALL BLOCKING AND ACCESSORIES AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS. SEE ARCHITECTURAL, WHERE NOT SPECIFICALLY INDICATED, STEEL SHALL BE PUNCHED 2'-6" O.C. STAGGERED, FOR BLOCKING.

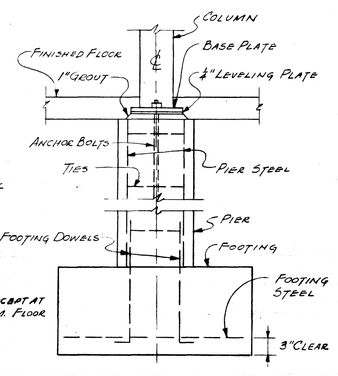


TYPICAL PLAN OF BULB TEE
BREAK FOR PASSAGE OF ELEC. CONDUIT TO OUTLET BOXES IN AREAS OF EXPOSED ROOF CONSTRUCTION
No Scale

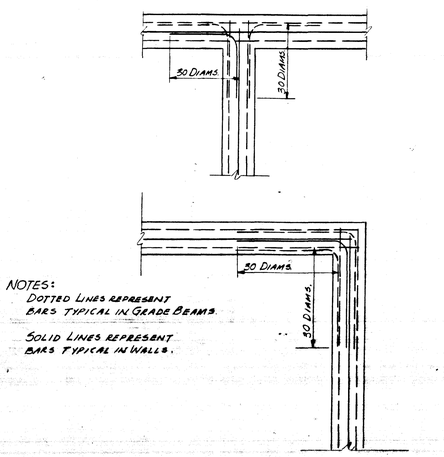




NOTE: TYPICAL EXCEPT AT HEATER RM. FLOOR

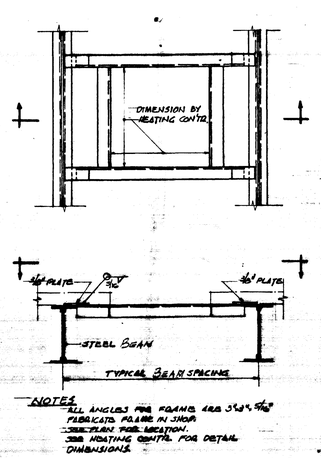


TYPICAL COLUMN BASE, PIER AND FOOTING DETAIL
No Scale
FOR SIZES, SEE KEY NOS. ON PLAN, & SCHEDULE ABOVE



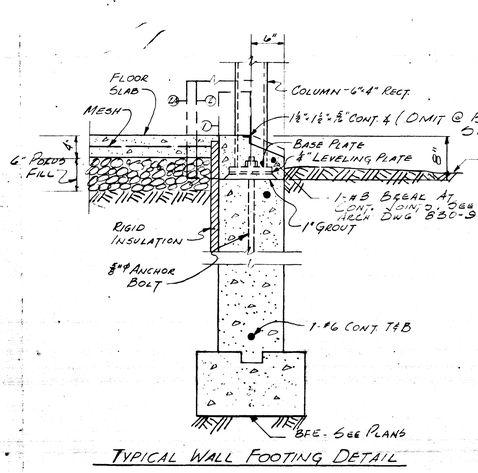
NOTES:
DOTTED LINES REPRESENT BARS TYPICAL IN GRADE BEAMS.
SOLID LINES REPRESENT BARS TYPICAL IN WALLS.

TYPICAL BAR SPLICES AT CORNERS AND INTERSECTIONS OF ALL WALLS AND GRADE BEAMS
No Scale



NOTES:
ALL ANGLES FOR FRAMING ARE 3½"x3½"x5/16" FABRICATED SQUARE IN SHOP.
SEE PLAN FOR LOCATION.
SEE HEATING CONTR. FOR DETAIL DIMENSIONS.

TYPICAL FAN OPENING IN ROOF
SCALE: ½"=1'-0"



TYPICAL WALL FOOTING DETAIL
SCALE: 1"=1'-0"
OTHER CONDITIONS SHOWN DOTTED
① CAFETERIA
② 10" BLOCK SPANDREL
③ 1'-0" BOBBE SPANDREL

STATE OF CONNECTICUT JAMES K. MINGES NO. 2423 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MANCHANT NO. 2389 REGISTERED PROFESSIONAL ENGINEER

STRUCTURAL DET'LS. & SCHEDULES

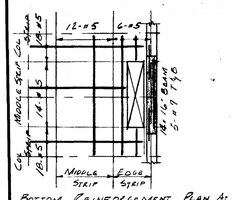
CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-S4
Date: 30 APR 57 | Scale: AS SHOWN

SHERWOOD, MILLS AND SMITH
Architects, 65 Broad Street, Stamford, Connecticut

MANCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment

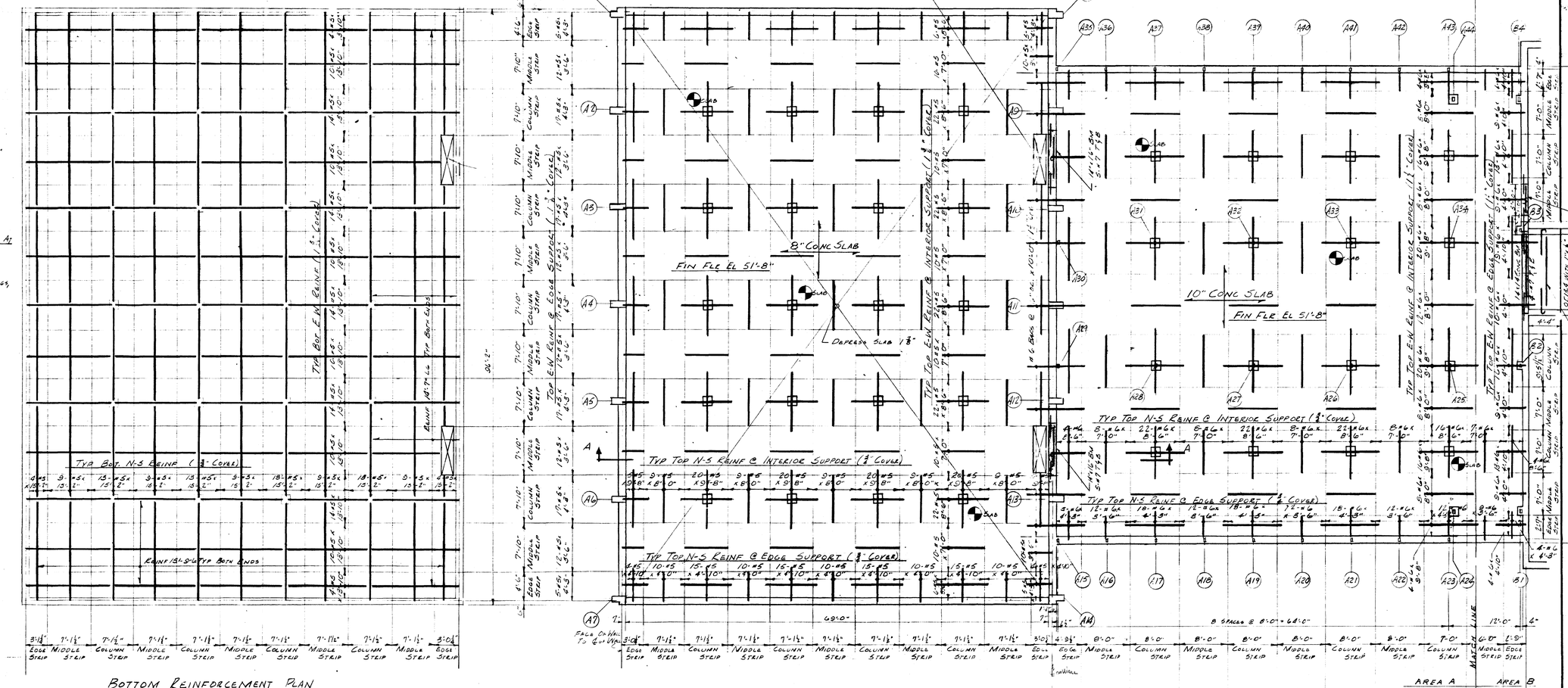


BOTTOM REINFORCEMENT PLAN AT GYM SLAB OPENING

SCALE 3/8" = 1'-0"

NOTES:

TYPICAL TOP STEEL USED AT OPENING, EXCEPT N-S STEEL TO BE 8'-0" LG FOR EDGE STRIP. E-W TOP # 6 BARS TO BE 6'-0" LG & HOOKED AT BEAM.



BOTTOM REINFORCEMENT PLAN

FIRST FLOOR FRAMING PLAN AND TOP REINFORCEMENT PLAN

SCALE 3/8" = 1'-0"

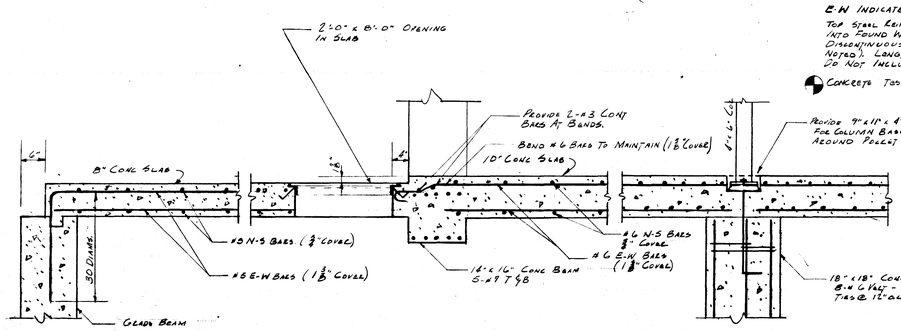
NOTES:

N-S INDICATES NORTH - SOUTH

E-W INDICATES EAST - WEST

TOP STEEL REINF TO BE DOWELED 30 DIAMS INTO FOUND WALL OR GRADE BEAM AT ALL DISCONTINUOUS EDGES (UNLESS OTHERWISE NOTED). LENGTHS OF REINF NOTED ON PLAN DO NOT INCLUDE EDGE DOWEL LENGTH.

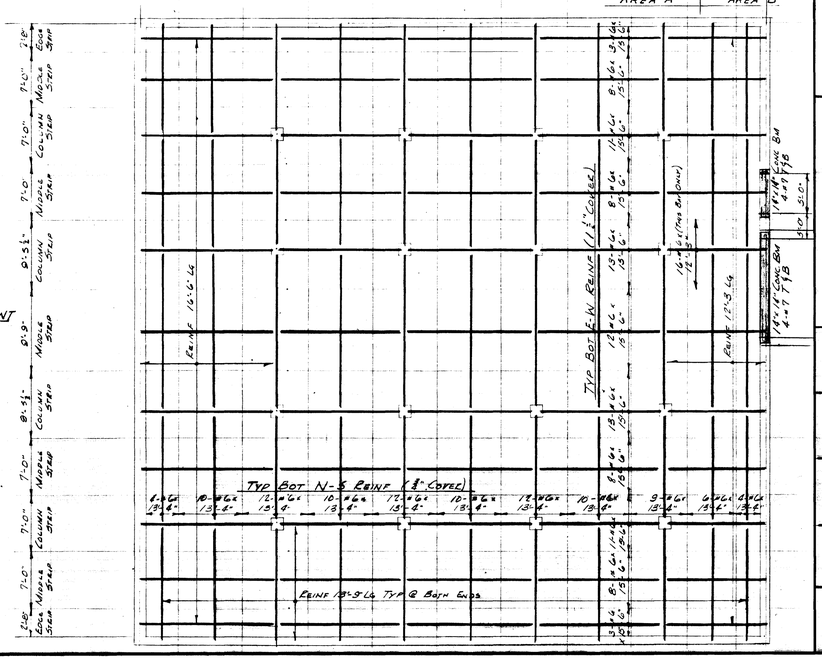
● CONCRETE TEST LOCATIONS



SECTION A-A

SCALE 3/8" = 1'-0"

BOTTOM REINFORCEMENT PLAN



KEY PLAN

I st. FLOOR FR'M'G. AREA A

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830- S5

Date: 30 APR 57 | Scale: AS SHOWN

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

STATE OF CONNECTICUT JAMES S. MINGES NO. 2423 REGISTERED PROFESSIONAL ENGINEER

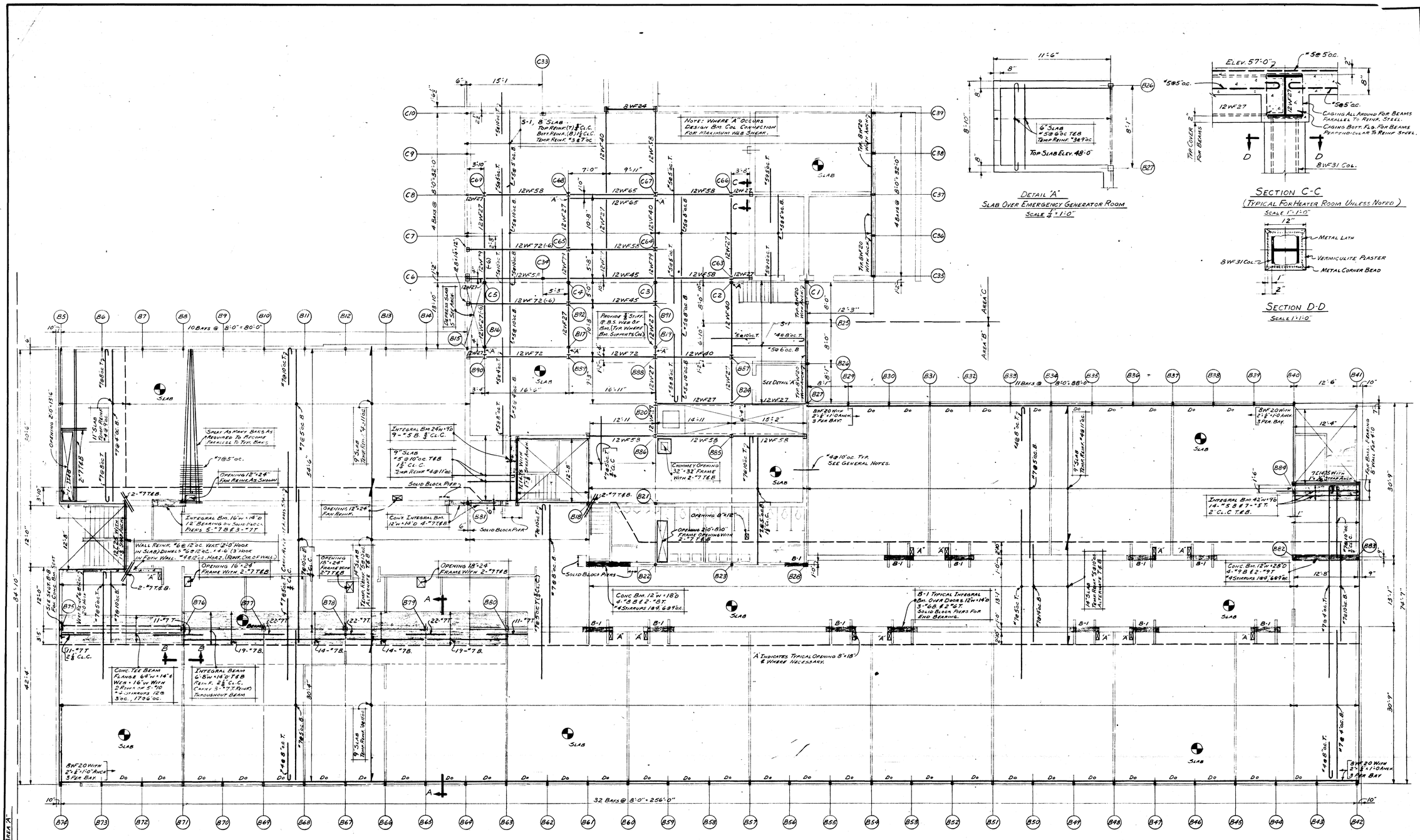
STATE OF CONNECTICUT CHARLES S. MARCHANT NO. 2388 REGISTERED PROFESSIONAL ENGINEER

BQ #70 & 125 Attachment

First Floor Framing Plan Unit "B"

Top Slab Elev. 57:0"

Scale 1/8" = 1:0"



Detail "A"

Slab over Emergency Generator Room

Scale 1/4" = 1:0"

Section C-C

(Typical for Heater Room Unless Noted)

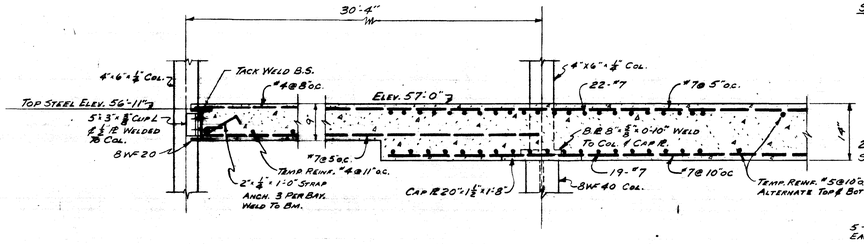
Scale 1"=1'-0"

Section D-D

Scale 1"=1'-0"

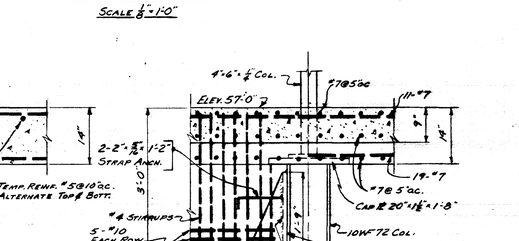
Section A-A

Scale 3/4" = 1:0"



Section B-B

Scale 3/4" = 1:0"



Notes:

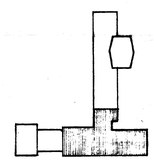
See General Notes for reinforcement not shown on plan.

Top of Conc. Drop Beams same Elev. as Top of Slab.

Top Steel in Heater Room (-2") from Top Slab Elev. 57'-0" unless noted.

Indicates Concrete Test Locations.

KEY PLAN



I st. FLOOR FR'M'G. AREA B

CENTRAL JUNIOR HIGH SCHOOL

Greenwich, Connecticut

830-56

Date 30 APR 57

Scale 1/8 SHOWN

SHERWOOD, MILLS AND SMITH

Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES ENGINEERS

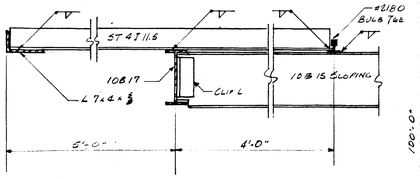
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment

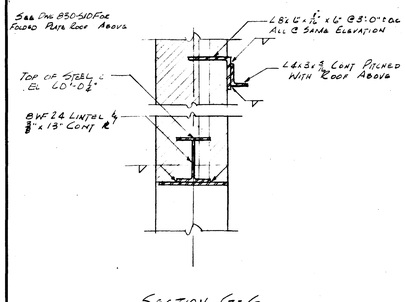
NOTES:

SEE DWG. B30-510 FOR DIMENSIONS & EQUIP FOR CONC. COLUMNS.

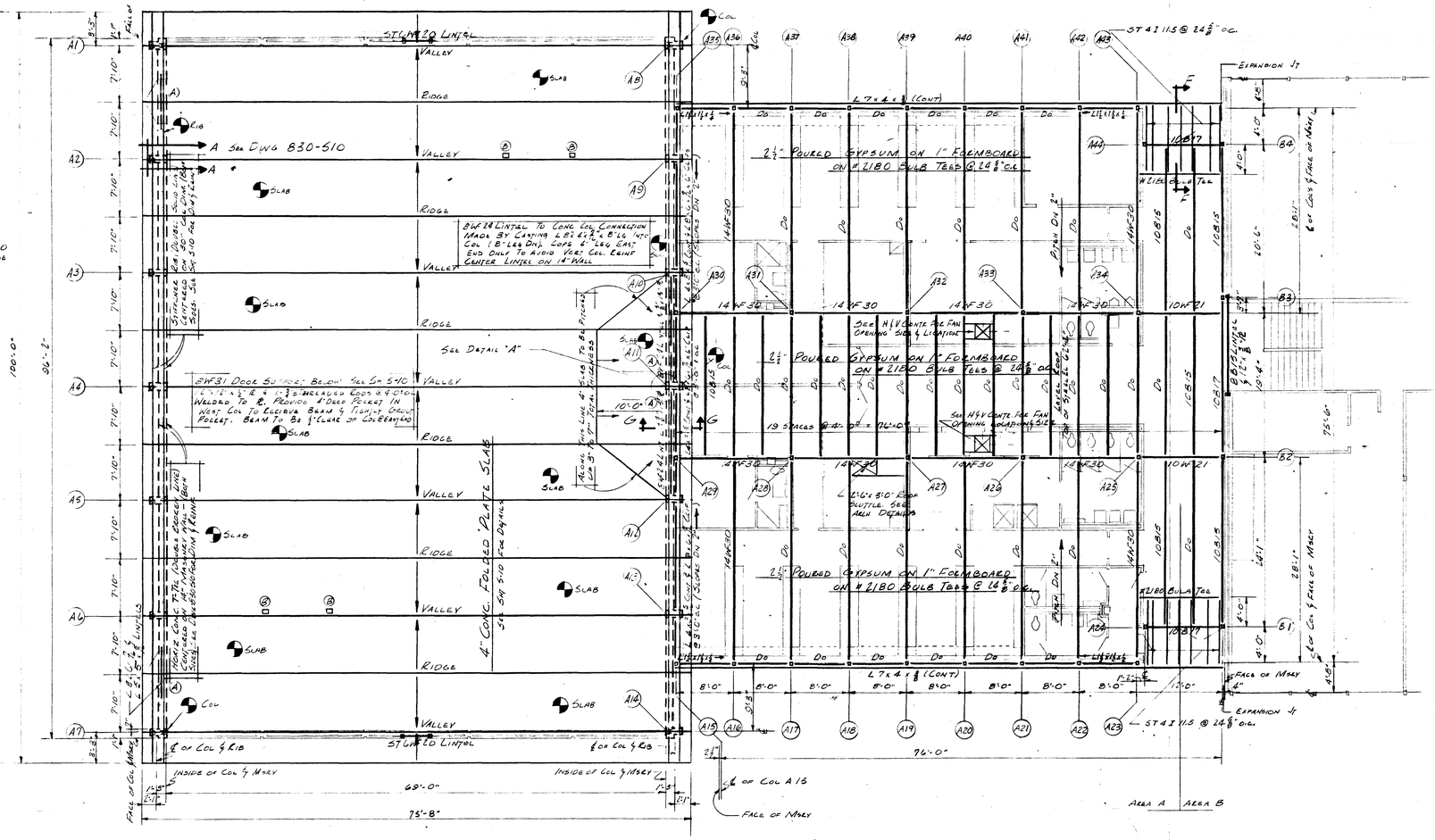
COLUMNS A1, A7, A8, & A14 HAVE INTERIOR STEEL COLUMNS CAST IN CONCRETE SECTION. STEEL COLUMNS CONSIST OF 8WF31 & 6WF15.5 SPLICED AS SHOWN ON DWG. B30-510 PROVIDE 8"x $\frac{3}{8}$"x 8" BASE PL FOR 6WF15.5. USE 2-$\frac{3}{4}$"ø x 1'-9" ANCHOR BOLTS AT EACH COLUMN BASE. BOTTOM BASE PL EL 51'-0"



SECTION F-F
SCALE 1"=1'-0"



SECTION G-G
SCALE 1"=1'-0"



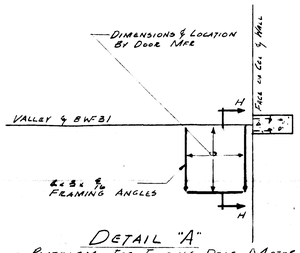
ROOF FRAMING PLAN - UNIT A
SCALE ⅛"=1'-0"

NOTE:

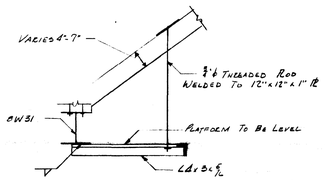
(A) INDICATES LOCATION OF SPECIAL LINTELS (4 PLACES) LINTELS ARE L 8"x 6"x ½" & L 5"x 3½"x ⅜"

(B) INDICATES L 4"x 3½"x ½" PL WITH ¾"ø THREADED STUD SHOT NORMAL INTO 4" CONC PLATE SLAB FOR HANGING ROPE SUPPORT. SEE ARCH FOR LOCATION

CONCRETE TEST LOCATION



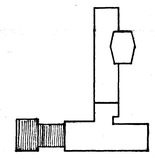
DETAIL "A"
PLATFORM FOR FOLDING DOOR MOTOR
NO SCALE



SECTION H-H
NO SCALE

STATE OF CONNECTICUT JAMES S. MINGES NO. 2423 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT NO. 2385 REGISTERED PROFESSIONAL ENGINEER



KEY PLAN

ROOF FRAMING AREA A

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

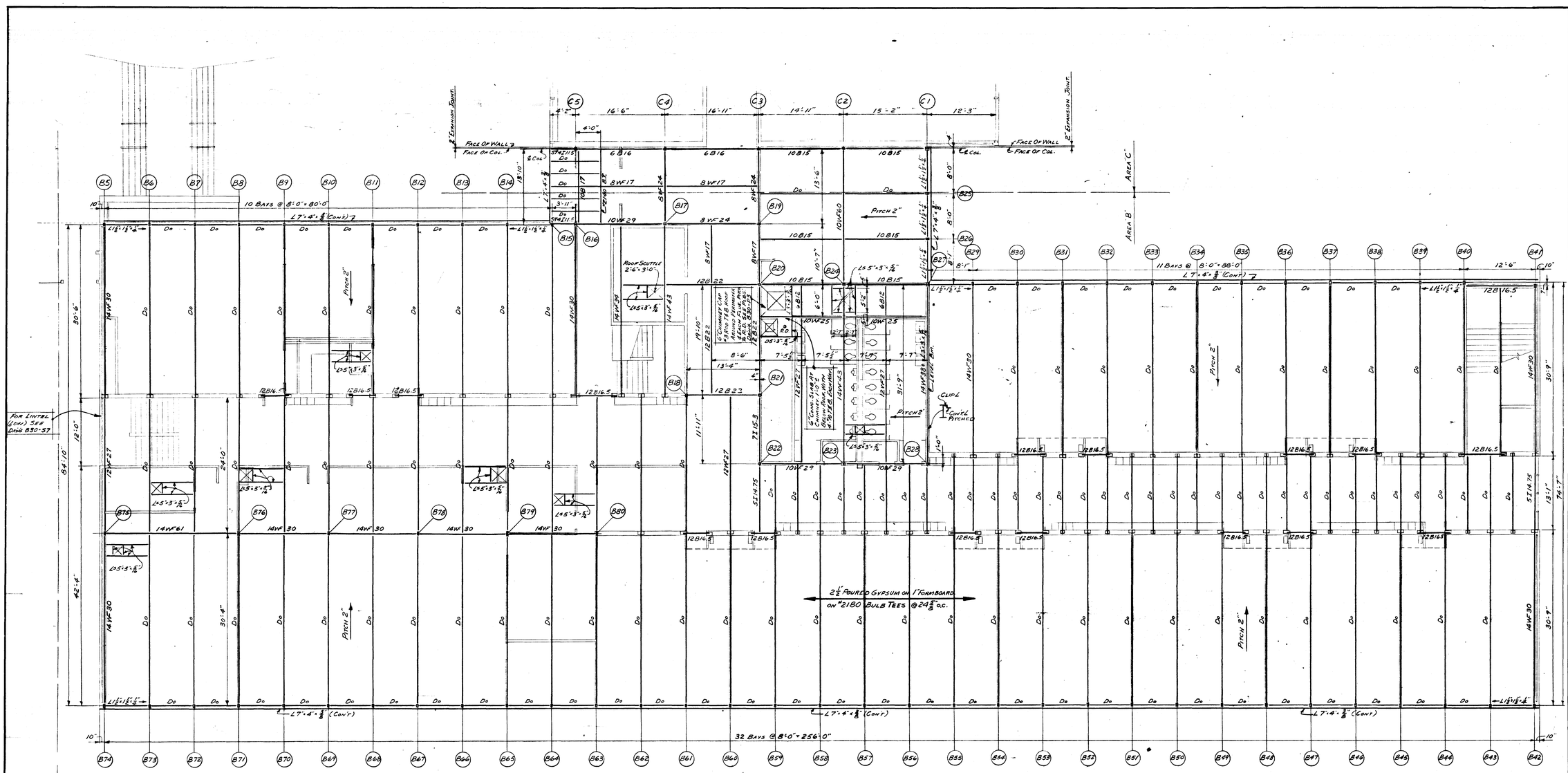
830-57

Date 30 APR 57 | Scale AS SHOWN

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment

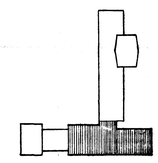


Roof Framing Plan Unit "B"

Scale ⅛" = 1'-0"

General Notes:

Use "2140 Bulb Tees for spanning less than 3 bays continuous. Anchor masonry bearing beams with 1-⅞"ø J310 (3' Hook) Bolts. See H.&V. Contr. for all fan opening dimensions and location.



KEY PLAN

ROOF FRAMING AREA B

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830- 58

Date 30 APR 57 | Scale ⅛" = 1'-0"

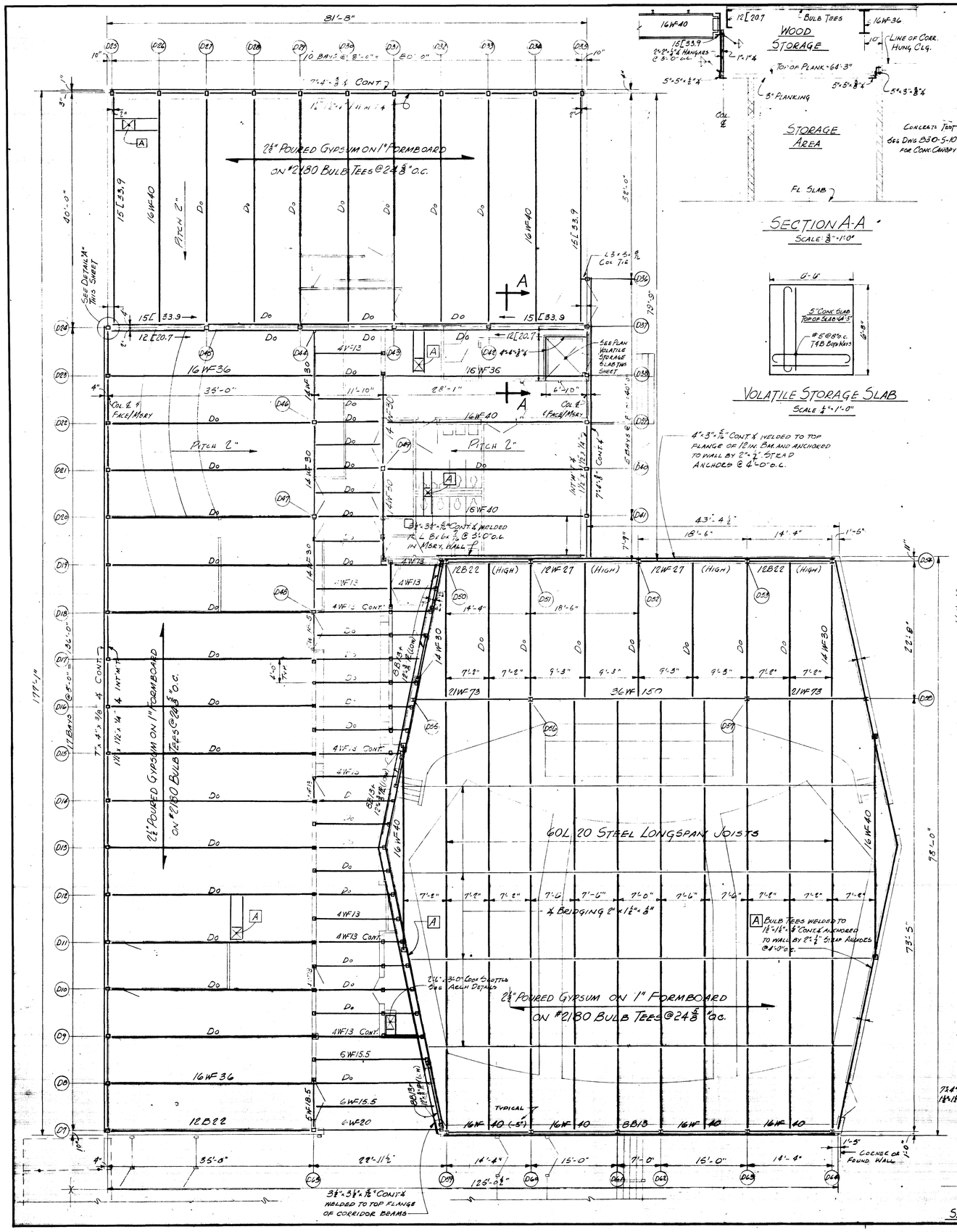
SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

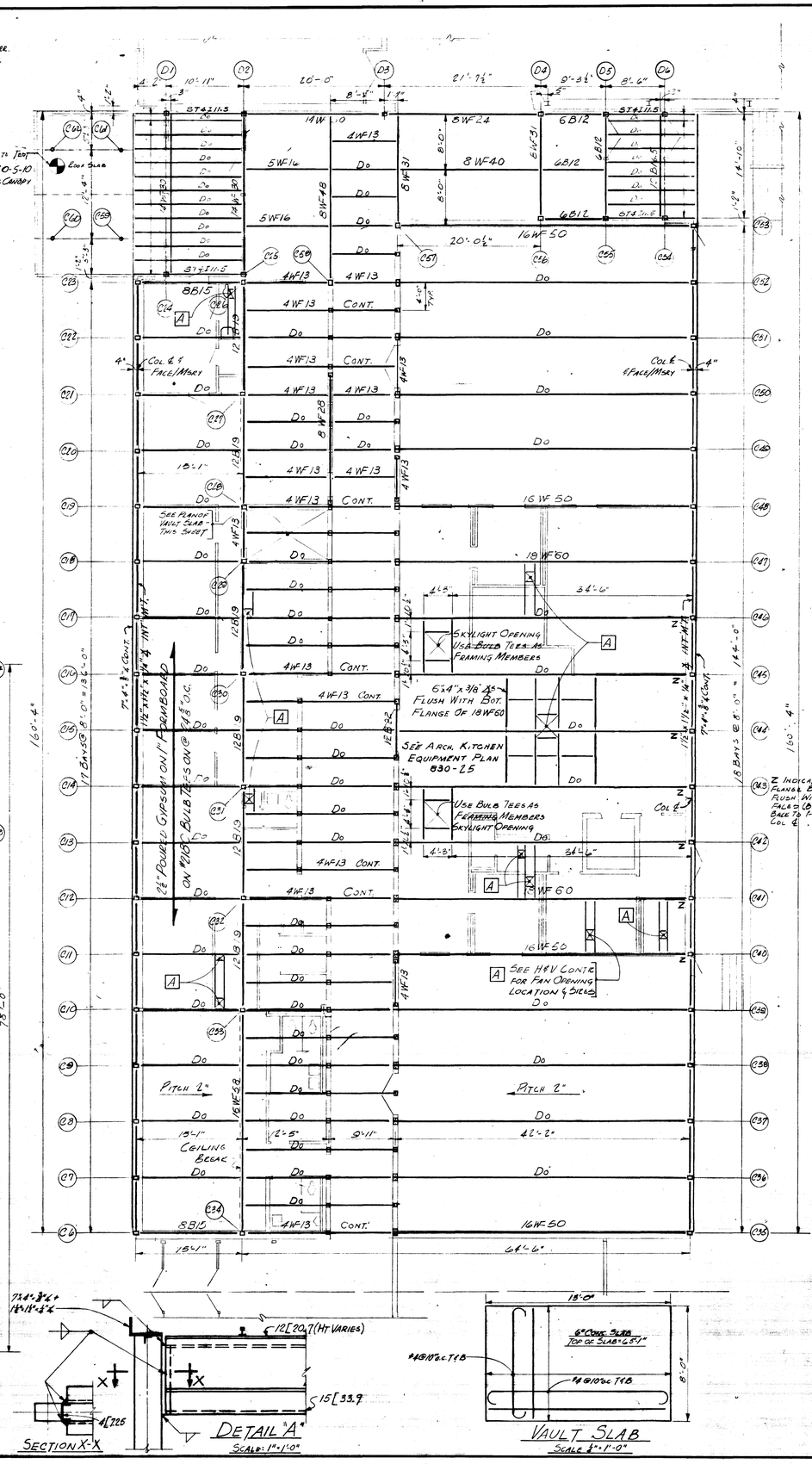
MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

State of Connecticut — James S. Minges — No. 2423 — Registered Professional Engineer

State of Connecticut — Charles G. Marchant — No. 2388 — Registered Professional Engineer

BQ #70 & 125 Attachment





STATE OF CONNECTICUT JAMES S. MINGES NO. 2423 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT NO. 2385 REGISTERED PROFESSIONAL ENGINEER

KEY PLAN

ROOF FRAMING AREAS C&D

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

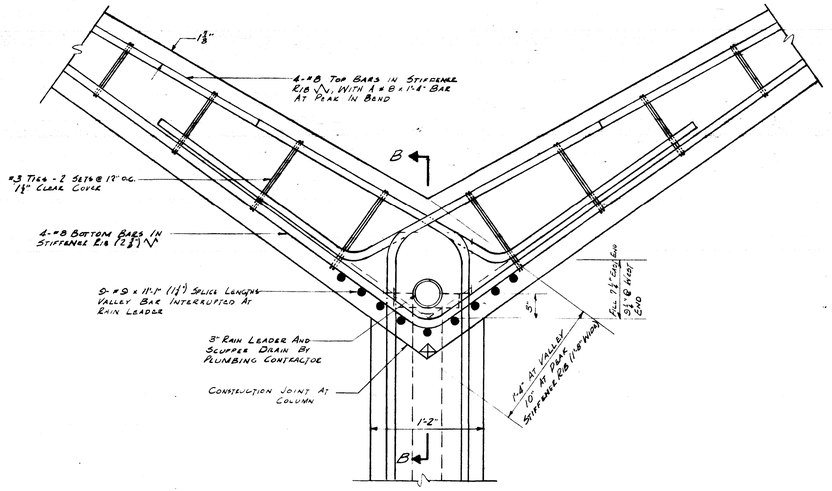
830- S9

Date	Scale
30 APR 57	AS SHOWN

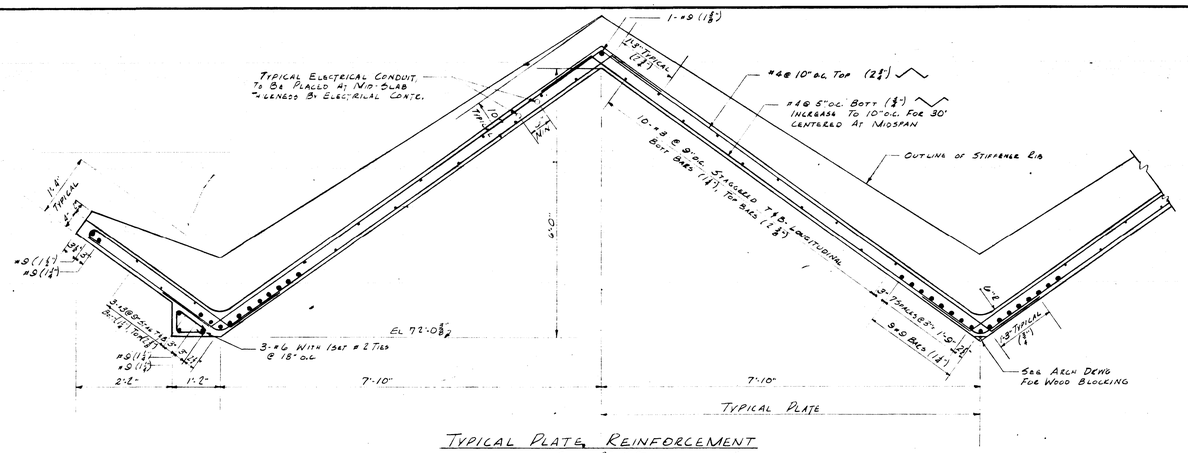
SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment



SECTION A-A
SCALE 1½" = 1'-0"



TYPICAL PLATE REINFORCEMENT
SCALE ¾" = 1'-0"

NOTES:

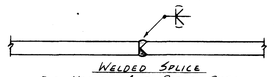
Dimensions In Parenthesis, i.e. (1⅛"), Indicate Support Distance For Bottom Of Bar Above Bottom Of Slab.

Entire Folded Roof Plate Shall Be Placed In Either 2 Or 3 Sections. If 2 Sections Are Prefixed, Locate Construction Joint At Center Valley. If 3 Sections, Locate Construction Joints At Valleys Each Side Of Center.

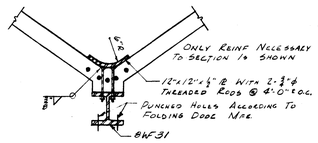
All Forms Must Be Left In Place A Minimum Of 7 Days. Provide 1½" Camber At Midspan. Forms Shall Be Removed In Sections To Insure That Shores In Longitudinal Direction At No Time Exceed 12' O.C., Throughout, For A Duration Not Less Than 28 Days After Final Concrete Placement. Temp Bents Or Longitudinal Shores Shall Compress One At Ridge, One At Midslope, And One At Valley Of Each Plate, Maintaining Proportionate Camber.

Forming, Shoring, And Concrete Sequence Shall Be Subject To Engineer's Approval.

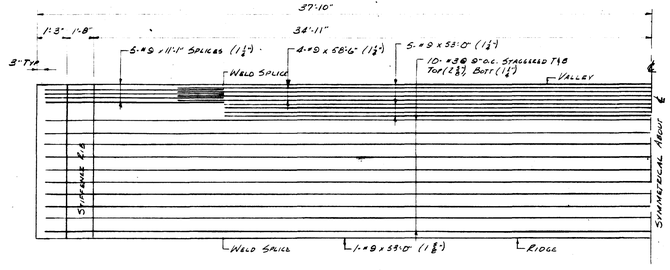
Shores At North And South End Valleys Must Not Be Removed Until Masonry Walls Are Mortared Up Tight.



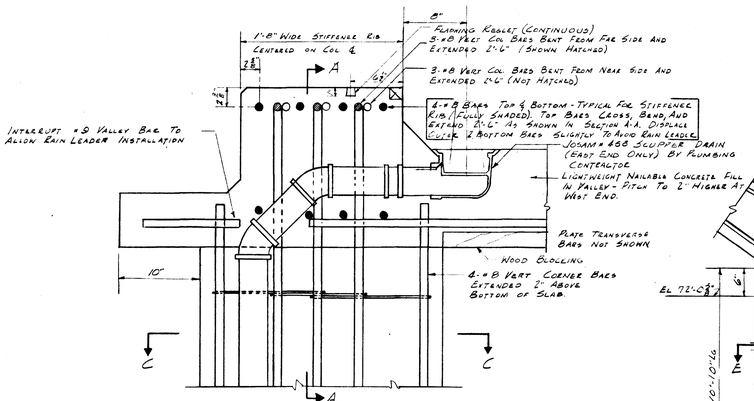
WELDED SPLICE
FOR VALLEY AND RIDGE BARS
NO SCALE



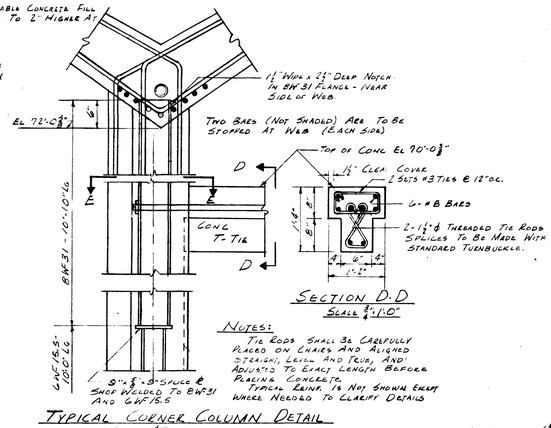
FOLDING DOOR SUPPORT
SCALE ¾" = 1'-0"



PLAN OF LONGITUDINAL STEEL IN PLATE
SCALE ¾" = 1'-0"



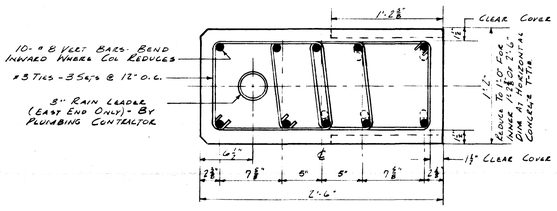
SECTION B-B
SCALE 1½" = 1'-0"



SECTION D-D
SCALE ¾" = 1'-0"

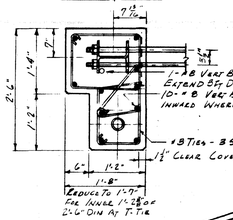
NOTES:

Tie Rods Shall Be Carefully Placed On Chairs And Aligned Straight, Level And True, And Adjusted To Exact Length Before Placing Concrete. Typical Reinf. To Not Shown Except Where Needed To Clarify Details

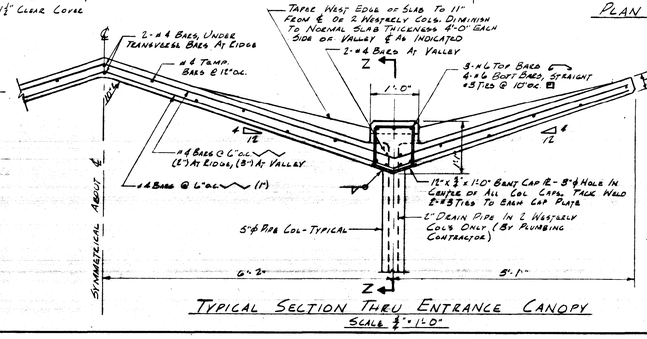


SECTION C-C
SCALE 1½" = 1'-0"

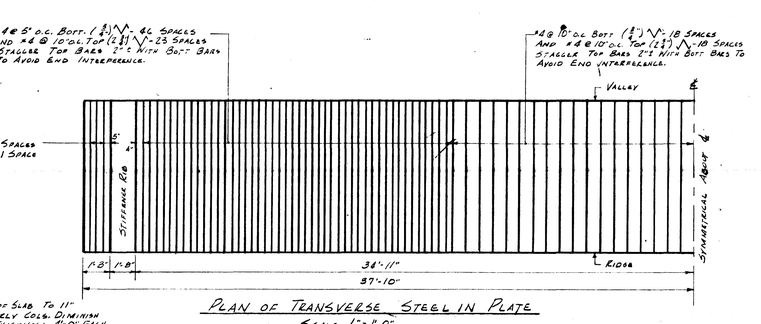
TYPICAL CORNER COLUMN DETAIL
SCALE ¾" = 1'-0"



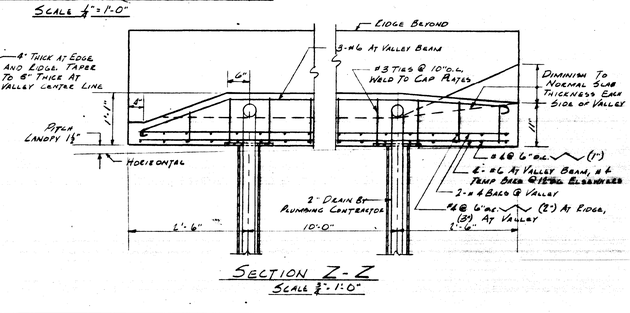
SECTION E-E
SCALE ¾" = 1'-0"



TYPICAL SECTION THRU ENTRANCE CANOPY
SCALE ¾" = 1'-0"



PLAN OF TRANSVERSE STEEL IN PLATE
SCALE ¾" = 1'-0"



SECTION Z-Z
SCALE ¾" = 1'-0"

TYPICAL FOLDED PLATE DETAILS
SCALE AS SHOWN

STATE OF CONNECTICUT JAMES S. MINGES NO. 2423 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT NO. 2388 REGISTERED PROFESSIONAL ENGINEER

STRUCTURAL DETAILS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

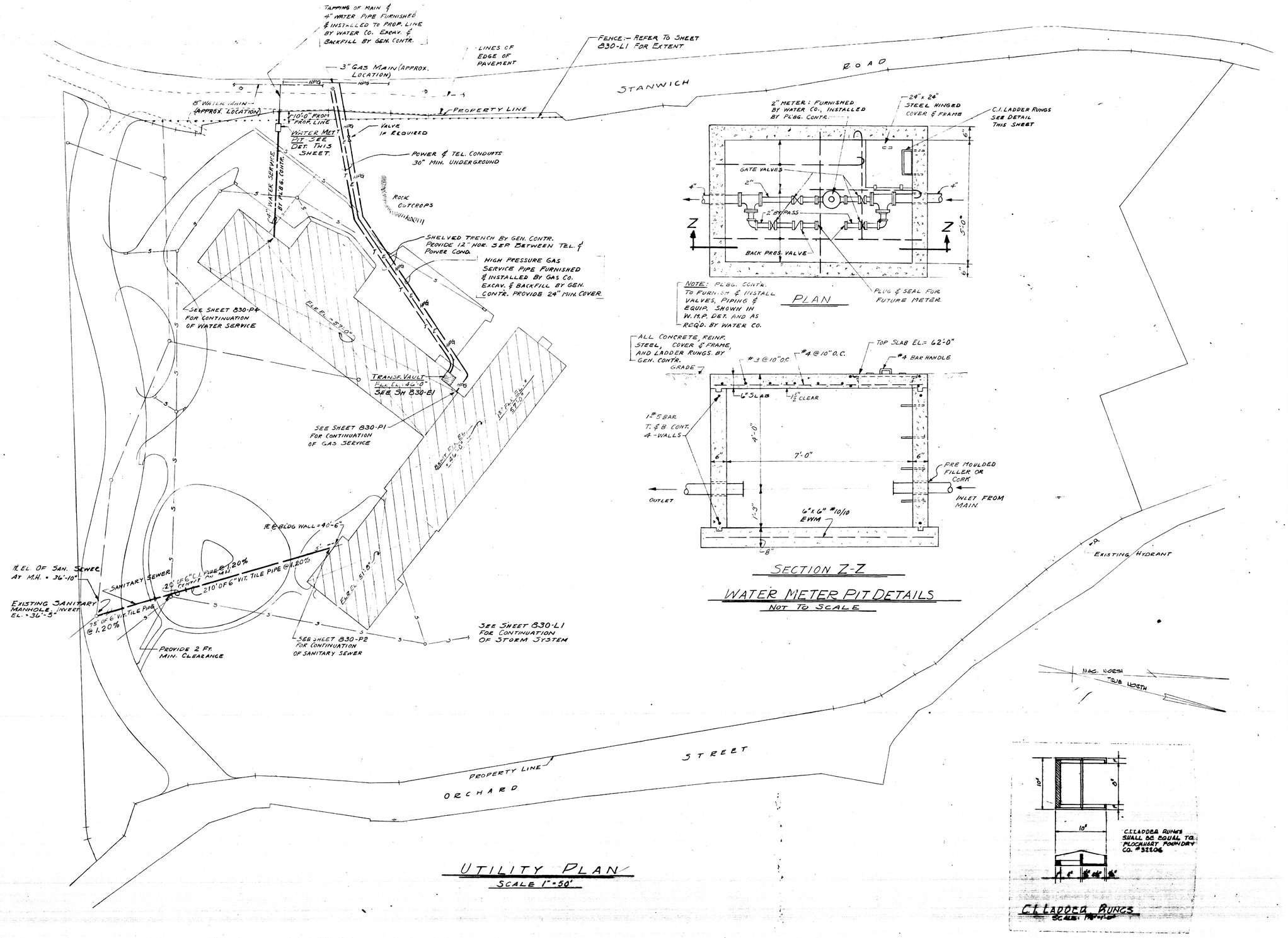
830-510

Date: 30 APR 57 Scale: AS SHOWN

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut.

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment



UTILITY PLAN
SCALE 1"=50'

PLAN

SECTION Z-Z

WATER METER PIT DETAILS
NOT TO SCALE

STATE OF CONNECTICUT FRANK A. NIXON No. 1668 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT JAMES S. MINGES NO. 2428 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT NO. 2369 REGISTERED PROFESSIONAL ENGINEER

SITE & UTILITY PLAN

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-U1

Date: 30 APR 57 | Scale: AS SHOWN

SHERWOOD, MILLS AND SMITH
Architects 66 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment

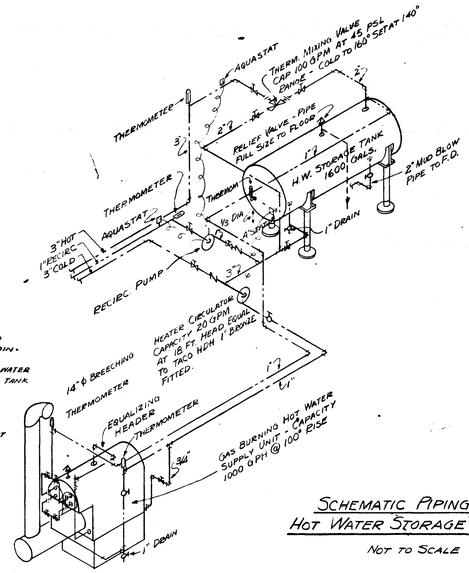
NOTE
RACK PIPING ON EAST WALL AT ENTRANCE TO TUNNEL TO AVOID R.A. DAMPERS. SEE H&V DWGS. FOR SPACE AVAILABLE

NOTE: NO HORIZONTAL PIPING TO BE RUN IN STRUCTURAL BEARING WALLS

6"S BURIED
DROP TO R. ELEV 44'-0"
4"SAN.
2"G, 3/4"R, 2"H, 4"C
3" HOT
1" RECIRC
3" COLD
2" GAS
C.O.
FD-4
HOT WATER STORAGE TANK
FL ELEV 46'-0"
3"C, 2½"H, 3/4"R
3-½"C. STUB OFF FOR CONN. TO HUMIDIFIERS BY H&V CONTR.
3-3/4" GAS STUB OFF FOR CONNECTION BY H&V CONTRACTOR
2" GAS 1"H, 1"C UNDER 72 x 90 DUCT
SWITCH ROOM
TRANSFORMER VAULT
275 GAL. TANK BURIED FOR TRANSF. VAULT DRAIN - SLOPE ANCH. TO P.G.
3" PIPE TO GRADE WITH WATER TIGHT CAP FOR PUMPING TANK
1¼" VENT UP IN WALL ADJACENT TO F.O.V. TERMINATE WITH BRICK VENT
HEATER ROOM
FIN. FL ELEV. 39'-6"
SPACE FOR GAS METER & PRESSURE REDUCING VALVE TO BE FURNISHED & INSTALLED BY GAS CO.
GAS SERVICE TO STREET - SEE DWG. 0-1 FOR CONTINUATION
1¼" GAS - STUB OFF FOR CONNECTION TO EMERGENCY GENERATOR BY ELECTRICAL CONTRACTOR
HOT WATER HEATER
3"C, 2½"H, 3/4"R, 2"GAS
SEE NOTE AT TUNNEL ENTRANCE ABOVE
14" Ø FLUE
3" VENT FOR GAS SERVICE
3" CHIMNEY DRAIN UP TO ROOF
SUBMERSIBLE SUMP PUMP BY PLG. CONTR. IN SUMP PIT BY GEN. CONTR.
STAIR No.1
2½"H, 3"C, 3/4"R, 2"GAS
3"R.L. UP
2"V
4" STACK UP
BOYS' TOILET ROOM
GIRLS' TOILET ROOM
ABOVE CEILING
4" V.T.-F. UP
1"H.C.-2"C TO 2ND FLOOR
CAP TEE FOR FUTURE SAN. R. 43'-0"
FD-4
IN TUNNEL BELOW
2½"C, 1"H, 3/4"R.
2"C, 1"H, 3/4"R.
CORRIDOR No. 2 FIN. FL EL 46'-0" (TUNNEL UNDER FL. EL. 40'-0")
R. 44'-1"
4"R.L.
4"R.L. UP
CAP TEE FOR FUTURE
3¼"C.
3¼" SILLCOCK
1½"C
STAIR #2

1½" A.W., ½"G, ½"C UP
1½" TRAP
½"C & G UP
1½" A.W. UP - 1½" TRAP & 1½" A.W. BELOW FLOOR
STORAGE
2½" A.W. UP
2½"
2½" A.W., ½"C, ½" GAS
C.O.
2½" A.W., 1½"C, ½" GAS
2 "A.W., 3/4"C, 3/4" GAS
4"R.L. UP
2"W UP
2½" A.W., 3/4"C, ½" GAS
2" A.W., 3/4" H&C UP
2½" A.W., 3/4"H, 1"C, ½"G
AT CEILING
R. 42'-5"
IN TUNNEL BELOW
2½"C, 2"H, 3/4"R, 1¼" GAS
CORRIDOR No. 1
FD-4
1"H, ¼"C, 1" GAS
1"H.C.V. GAS
2½"W DN
3" A.W. TO CEILING
1"H&C, 2"H, 1" GAS BEHIND COUNTER
2½"W DN EXPOSED
1½"W DN EXPOSED
TYPE "F" SINK
3"W. DN - 2"V UP
1½" W TO DISHWASHER TRAP & CONN. BY PLBG CONTR.
½" W, ½" H&C UP TO LIBRARY SINK
1"GAS, ½" H&C BEHIND COUNTER
3/4" GAS TO RANGES
½" H&C BEHIND COUNTER
3 TYPE "F" LINKS
½" H&C ABOVE C.O.
3/4" GAS TO RANGES
1½" STANDPIPE WASTE - ½" H&C FOR WASHER TRAP CONNECTIONS BY PLUMBING CONTRACTOR.
1½" A.W. UP & DN
3" A.W. UP & DN
ABOVE C.O.
3/4" C & GAS UP
3" A.W. BURIED

COMMERCIAL
HOMEMAKING No.1
HOME & FAMILY LIVING
HOMEMAKING No. 2
CLASSROOM 16
CLASSROOM 17
CLASSROOM 18
CLASSROOM 19
CLASSROOM 20
CLASSROOM 21
CLASSROOM 22
CLASSROOM 12
CLASSROOM 13
CLASSROOM 14
CLASSROOM 14



SCHEMATIC PIPING DIAGRAM
HOT WATER STORAGE TANK & HEATER
NOT TO SCALE

STATE OF CONNECTICUT JAMES S. MINGES NO. 2423 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT NO. 2385 REGISTERED PROFESSIONAL ENGINEER

KEY PLAN

BASEMENT PLUMBING AREA B

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

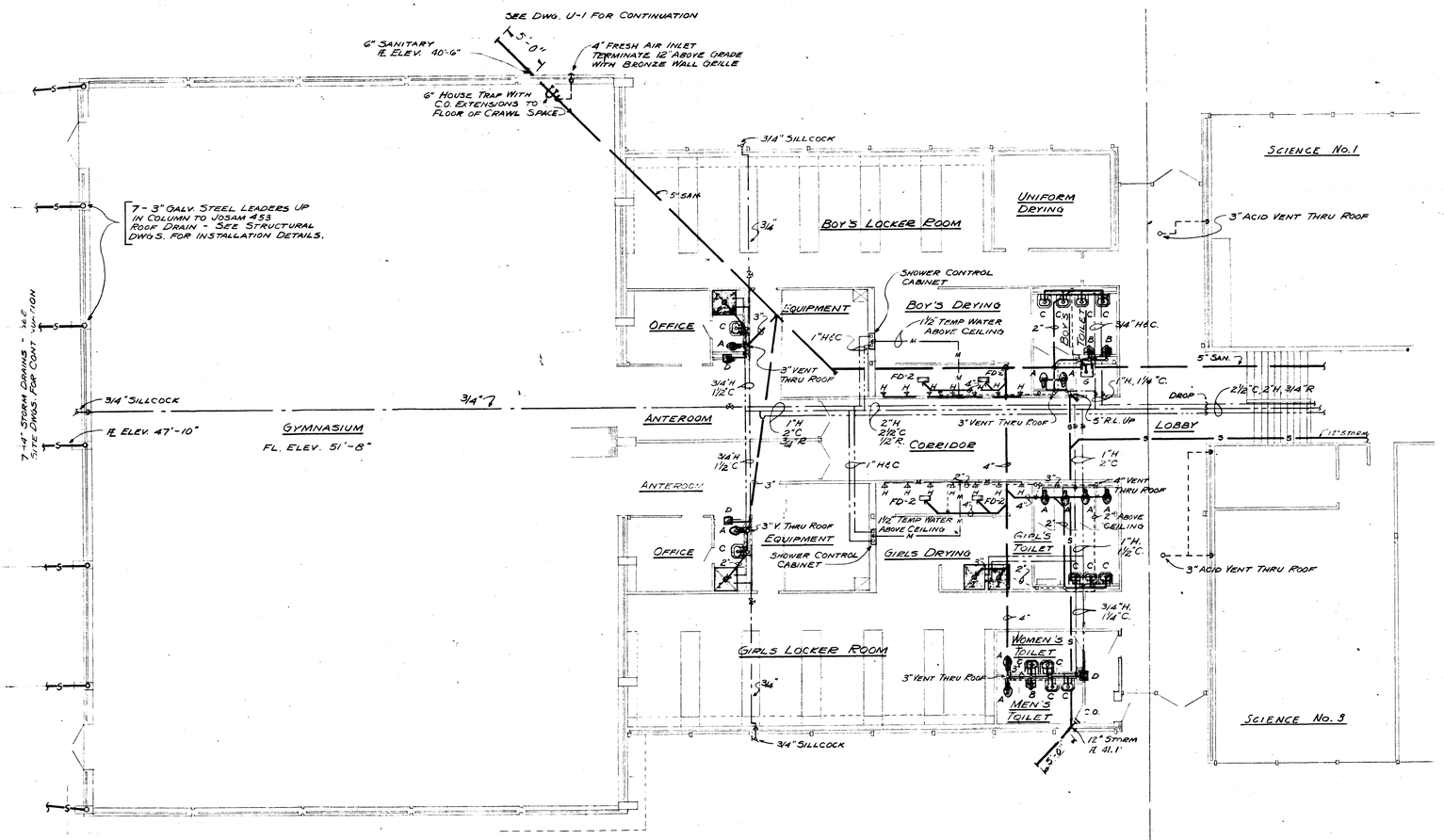
830-P1

Date 30 APR. 57 | Scale 1/8"=1'-0"

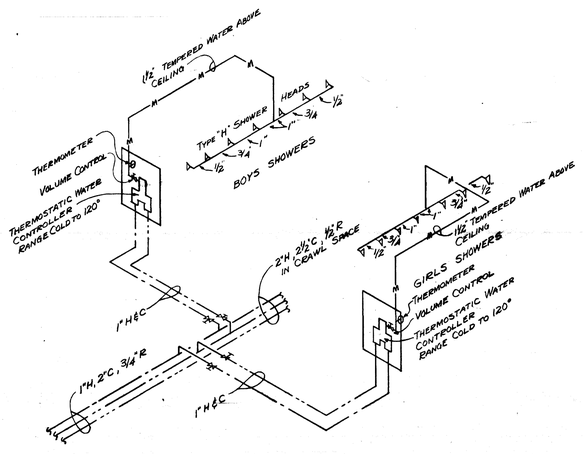
SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

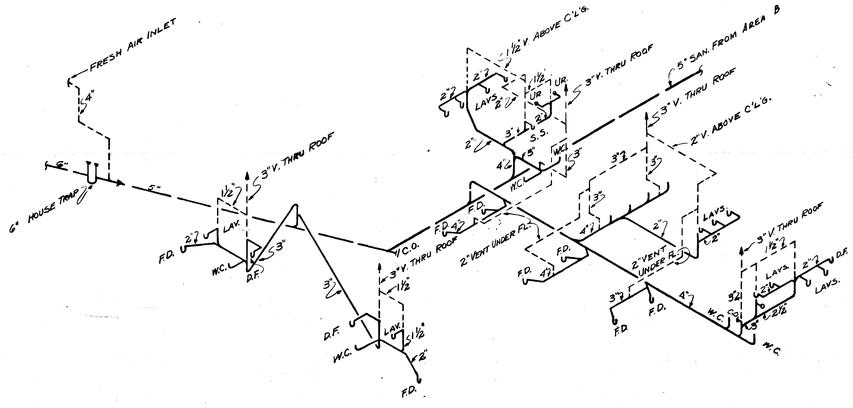
BQ #70 & 125 Attachment



FIRST FLOOR PLAN
SCALE 1/8" = 1'-0"



SCHEMATIC WATER PIPING
BOYS & GIRLS SHOWERS
NOT TO SCALE



SCHEMATIC SOIL, WASTE, & VENT PIPING
LOCKER ROOM AREA
NOT TO SCALE



KEY PLAN

FIRST FLOOR PLUMBING AREA A

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

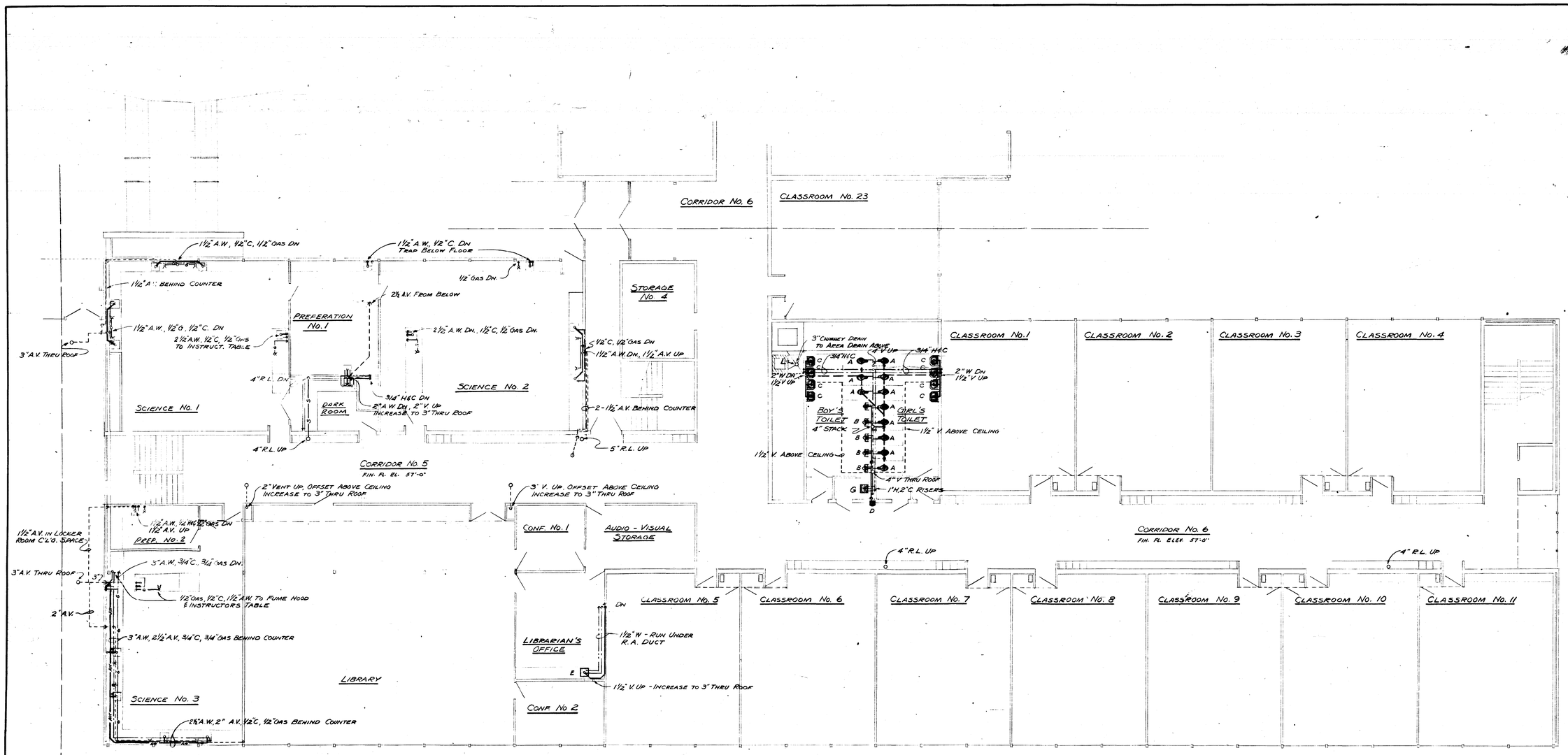
830-P2

Date: 30 APR. 57
Scale: 1/8" = 1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

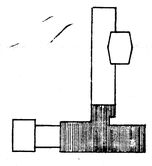
MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment



NOTE

PLUMBING CONTRACTOR TO FURNISH AND INSTALL TRAPS FOR ALL SINKS AND MAKE FINAL GAS AND WATER CONNECTIONS TO ALL OUTLETS IN SCIENCE ROOMS, PREP ROOMS & DARK ROOM.
TRAPS INSTALLED ON ACID WASTE LINES SHALL BE DURIRON OR EQUAL AND 1½" SIZE UNLESS OTHERWISE NOTED.



KEY PLAN

FIRST FLOOR PLUMBING AREA B

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-P3

Date 30 APR. 57 | Scale ⅛"=1'-0"

SHERWOOD, MILLS AND SMITH
A. Hazuts 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment

GEN. DRAWING & PLANNING ROOM
GENERAL METALS
GENERAL WOODSHOP
STORAGE
REHEARSAL
BOY'S TOILET
MEN'S TOILET
CUSTODIAN
INSTRUMENTAL
INSTRUMENT STORAGE
STAGE
CHORAL
CRAFTS
WORK & STORAGE
AUDITORIUM
ARTS
LOBBY
PRINCIPAL
WAITING
OFFICE
VAULT
VICE-PRINCIPAL
STORAGE & WORK
GUID. CONF.
GUIDANCE
NURSE
EXAMINATION
TEACHER'S ROOM
CAFETERIA NO. 2
DISH-WASHING
KITCHEN
STORE ROOM
CAFETERIA NO. 1

KEY PLAN

FIRST FLOOR PLUMBING AREAS C&D

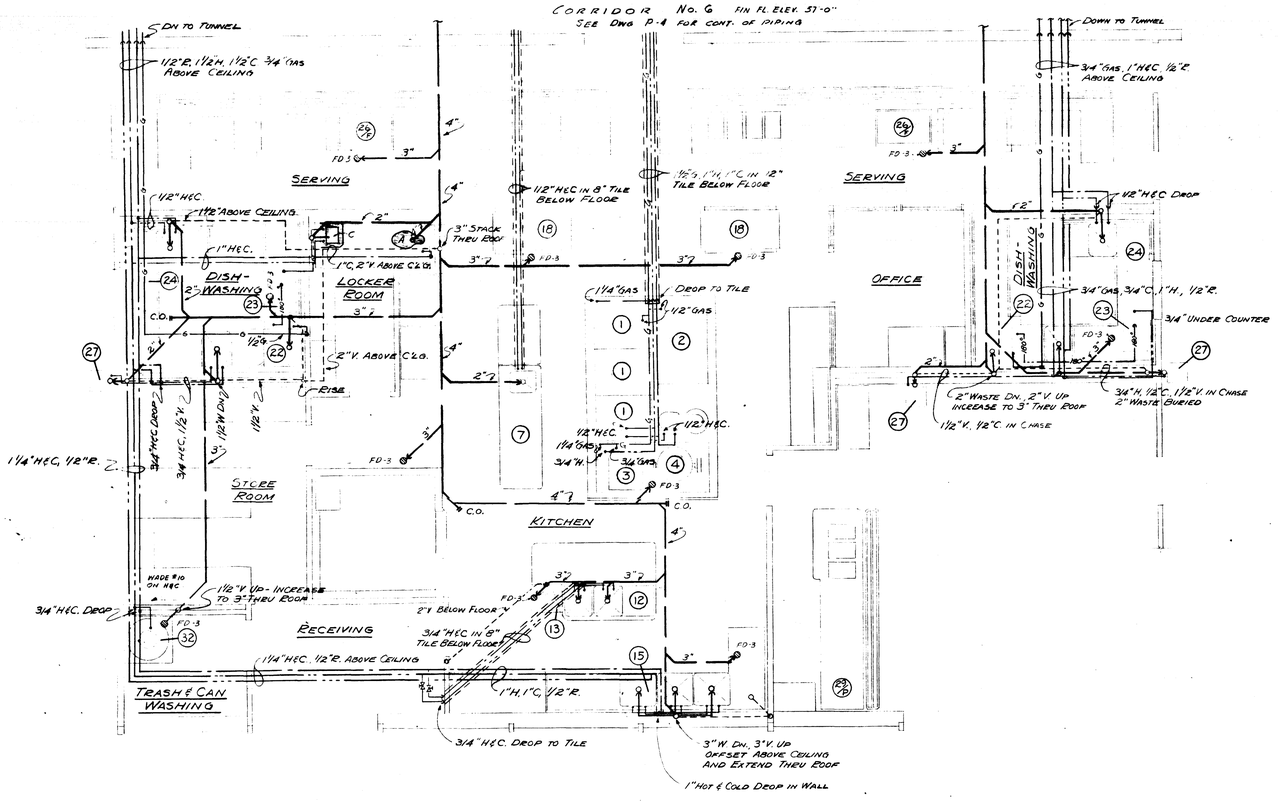
CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830- P4
Date 30 APR 57
Scale 1/8"=1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment



KITCHEN FLOOR PLAN

SCALE 1/4" = 1'-0"

SCHEDULE OF KITCHEN EQUIPMENT AND CONNECTIONS

ITEM NO.	Q'TY	DESCRIPTION	CONNECTIONS BY PLBG CONT. M	C	W	FW	G	FURNISHED AND INSTALLED BY PLUMBING CONTRACTOR
1	3	RANGES, SHELF AND FAUCET	1/2"	1/2"			1 1/2", 1/2"	STOPS ON SUPPLIES
2	1	OVEN					1/2", 1/2"	
3	1	VEGETABLE STEAMER	3/8"				3/4"	STOPS ON SUPPLIES
4	1	TILTING KETTLE & FAUCET	1/2"	1/2"				STOPS ON SUPPLIES
7	1	COOK'S TABLE & SINK	1/2"	1/2"	1 1/2"			STOPS ON SUPPLIES & 2" TRAP BELOW FLOOR
12	1	VEGETABLE SINKS & DRAINBOARD	1/2", 1/2"	1/2", 1/2"	2", 2"			STOPS ON SUPPLIES & 2" TRAP BELOW FLOOR
13	1	PEELER & TRAP		1/2"			1 1/2"	EXTEND WASTE OUTLET TO F.D.
15	1	POT SINK & DRAINBOARDS	1/2", 1/2", 1/2"	1/2", 1/2", 1/4"	2", 2"			TRAP EACH SINK ABOVE FLOOR
18	2	PASS THRU REFRIGERATORS					1"	EXTEND WASTE OUTLET TO F.D.
22	2	DISHWASHERS	3/4"		2"		1/2"	2" TRAP ON OUTLET, AIR BREAK ON INLET, TO BOOSTER CONNECT
23	2	HOT WATER BOOSTER	3/4"					3/4" 180° HOT TO D. WASHER W/ WADE #5 THERMOM; ECO VALVE PECS.
24	2	DISHTABLES & SINKS	1/2", 1/2"	1/2", 1/2"	2", 1 1/2"			TRAP EACH SINK ABOVE FLOOR; STOPS ON SUPPLIES
24/2	2	REFRIGERATED MILK DISPENSERS					1"	EXTEND WASTE OUTLET TO F.D.
27	3	WATER COOLER'S		3/8"	1/4"			TRAP AND STOPS ON SUPPLY
29/2	1	OVEN SECTION						
32	1	CAN RINSER	3/4"	3/4"				STOPS ON SUPPLIES

PLUMBING FIXTURE SCHEDULE

FIXTURE	SYMBOL	SOIL OR WASTE	VENT	COLD WATER	HOT WATER	MOUNTING HEIGHT	SPECIFICATION
Water Closet	A	4	2	1		Floor	"Santon" #3-300 bowl with #110 FIV "Crown" valve; Olsonite #10 Seat, black with check hinge.
Urinal	B	2	1½	3/4		22"	"Correcto" #7-07 urinal with #186 "Crown" valve.
Lavatory	C	1½	1½	½	½	31"	"Norwich" #1-160V 20"x18"; #8-562 supply and drain fitting, #8-410 1 1/4"x1 1/2" trap; #8-304 3/8" supplies with stops. #8-763 porcelain brackets.
Drinking Fountain	D	1½	1½	½	½	36"	"Coolbrook" #6-570, #6-572 supply fitting; #6-813 waste and 1 1/4" trap with G.P. Wall C.O. No substitutes.
Sink	E	2	1½	½	½	Counter	#5-136 24"x21" acid resisting enamaled C.I. sink; #8-101 A supply fitting, #8-365 open strainer, #8-410 1½" rough brass 'P' trap with C.O.; Judee Frame.
Sediment Trap	F	1½	1½				Josam series "H-20 type H-21½ sediment interceptor with gasketed watertight screwed cover and removable perforated screen. Install on each sink outlet in Arts & Crafts Rms.
Service Sink	G	3	1½	½	½		#7-563 22"x18" acid resisting enamaled C.I. sink; #8-101 rough plated supply fitting with hose end and pail hook, #7-620 trap standard, #8-980 rim guard.
Service Sink	G-1	3	1½	½	½		Same as sink G except without rim guard.
Shower	H					Girls-69" Boys-71"	Speakman #S-2260 shower head with key operated volume control and back inlet.
Shower Cabinet	I	2	1½	½	½		Fiat "Cadet" Model 27 76"x36" galv. steel cabinet with baked enamel fin. Terrazzo receptor with integral drain; Speakman #S-2250 Mixometer shower control with renewable seats #S-2250 Model 3 shower head with ball joint, Bent arm and wall flange, furnish plastic curtain, hooks and soap dish.
Wash Fountain	J	2	1½	1	1	Floor	Bradley type CFA 36" semi-circular, foot operated, precast granito wash fountain
Trap	K	1½	1½				Crane # 8-410 rough brass "P" trap with cleanout. Double sinks to be provided with "LK-5" (Elkay) waste fitting #L350.
Area Drain	L	3					Josam series 110 C.I. area drain with loose set grate
Floor Drain	FD-1	3					Josam series 300 C.I. floor drain with brass strainer. Furnish deep seal 'P' trap
Floor Drain	FD-2	3					Josam series 300-R C.I. floor drain with C.P 17"x5" rectangular strainer. Furnish deep seal 'P' trap
Floor Drain	FD-3	3					Josam series 300-350 C.I. floor drain with non clog C.P. strainer and removable sediment bucket. Furnish deep seal 'P' trap.
Floor Drain	FD-4	3					Josam series 200 C.I. floor drain with integral drum type 'P' trap and polished brass strainer.
Roof Drain							Josam series 410 C.I. roof drain with removable high dome and sediment cup.
Roof Drain		3					Josam series 450 C.I. drain with flashing clamp, removable high dome and C.I. flashing clamp device.
Sillcock					3/4		Josam series Y-210 cast brass non-freeze wall hydrant with loose key.
Gas Valve	Gas V. →						Crane #L-2880 hose end needle valve with renewable seat and plastic index button.
Air Valve	Air V. →						Same as gas, valve, except for use with compressed air and with indentifying index button.

MATERIAL SCHEDULE

	SYSTEM	PIPING	JOINTS	SUPPORTS	TEST	REMARKS
A.	BURIED DRAIN & VENT PIPING EXCEPT WHERE NOTED	SUPER SPUN XHCI PIPE, TARRED - XHCI FITTINGS, TARRED	PACKED OAKUM 1" POURED LEAD SECURELY CAULKED	MASONRY PIERS AT LEAST EVERY 5' ON SOLID EARTH	MAINTAIN 10' HEAD IN PRESENCE OF ENGINEER	3" MIN. DRAINS - 2" MIN. VENTS
B.	ABOVE GROUND DRAIN & VENT PIPING	DO	DO	CLEVIS HANGERS 5' O.C. HORIZ. PIPE CLAMP EVERY OTHER FLOOR	CAP SYSTEM AND FILL TO ROOF IN PRESENCE OF ENGINEER	WHERE ALLOWED BY CODE AND APPROVED BY ENGINEER "C", "D" OR "E" MAY BE USED
C.	ABOVE GROUND DRAINAGE - SEE REMARKS FOR "B"	TYPE L COPPER TUBING. COPPER DRAINAGE FITTINGS	SWEAT JOINTS. 50/50 SOLDER. NON-CORROSIVE FLUX	CLEVIS HANGERS 8' O.C. PIPE CLAMP EVERY OTHER FLOOR	DO	
D.	DO	STD. WGT. GAL. W.I. PIPE, GAL. C.I. DRAINAGE FITTINGS	USE NON HARDENING JOINT CEMENT	DO	DO	NO CLOSE NIPPLES
E.	ABOVE GROUND VENTS - SEE REMARKS FOR "B"	STD. WGT. GAL. STEEL. GAL. MALL. VENT FITTINGS	DO	DO	DO	NO CLOSE NIPPLES
F.	ABOVE GROUND WATER PIPING	TYPE L COPPER TUBING. BRONZE SWEAT FITTINGS	SWEAT JOINTS 95/5 SOLDER. NON-CORROSIVE FLUX	DO	MAINTAIN 150 LBS. PRES. FOR 3 HRS. IN PRESENCE OF ENGINEER	GANG HANGER MAY BE USED WHERE APPROVED BY ENGINEER
G.	BURIED WATER PIPE, 2" AND SMALLER	TYPE K SOFT COPPER WITH FLARED COMPRESS. FITTINGS	JOINTS AS RECOMMENDED BY MANUFACTURER	LAY ON 3" FINE SAND OR GRAVEL	DO	NO JOINTS LESS THAN 60' APART ON CONTINUOUS RUNS
H.	BURIED WATER PIPE, 3" AND LARGER	CLASS C BELL & SPIGOT PIPE & FITTINGS - CEMENT LINED	PACKED WITH JUTE, 2" POURED LEAD SECURELY CAULKED	LAY ON SOLID EARTH OR MASONRY PIERS	DO	LEADITE MAY BE USED WHERE APPROVED. ANCHOR AND STRAP AS REQUIRED BY ENGINEER.
I.	DRAIN PIPE OUTSIDE BUILDING	VIT. CLAY PIPE AND FITTINGS	HOT BITUMINOUS COMPOUND	DO	VISUAL INSPECTION BY ENGINEER	TRANSITE MAY BE USED WHERE ALLOWED BY CODE AND APPROVED AS REQUIRED BY ENGINEER.
J.	ACID WASTE AND VENT PIPING	DURIRON PIPE & FITTINGS	SAME AS "B"	SAME AS "B"	SAME AS "B"	OAKUM TO BE COATED WITH BEES WAX
K.	GAS AND AIR PIPING	STD. WGT. BLK. STEEL PIPE. BLK. MALL. PATTERN FITTINGS	USE NON HARDENING JOINT CEMENT NO WICKING	SAME AS "C"	MAINTAIN 150 LBS. PRES. FOR 2 HRS. IN PRESENCE OF ENGINEER	PIPING TO BE INSTALLED AS APPROVED BY LOCAL UTILITY CO.

WATER SUPPLY SIZING SCHEDULE

FIXTURE	RATING IN UNITS	PIPE SIZE	CAPACITY IN UNITS
WATER CLOSET	6	1/2"	3
URINAL	3	3/4"	5
LAVATORY	1	1"	12
SINK	2	1 1/4"	30
D. FOUNTAIN	1	1 1/2"	30
SHOWER HEAD	3	2"	65
SILLCOCK	3	2 1/2"	112

THE ABOVE SCHEDULE TO BE USED FOR SIZING BRANCH WATER PIPING FOR FIXTURES IN BATTERIES. SEE FIXTURE SCHEDULE FOR INDIVIDUAL SUPPLY SIZES.

GENERAL NOTES

1. ALL LINES OF PIPING SHOWN ARE DIAGRAMMATIC ONLY. EXACT LOCATIONS SHALL BE DETERMINED ON THE JOB AND IN CONJUNCTION WITH THE OTHER TRADES.
2. CONTRACTOR SHALL CHECK ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL ROOF LEADERS, FIXTURES AND SPECIAL EQUIPMENT REQUIRING PLUMBING CONNECTIONS. CONTRACTOR SHALL MAKE CONNECTIONS TO ALL SUCH EQUIPMENT.
3. SANITARY LINES SHALL BE LAID OUT TO MAINTAIN A MINIMUM PITCH OF 1/8" PER FT.
4. PROVIDE STOPS ON BOTH HOT AND COLD WATER LINES AT EACH FIXTURE AND OUTLET. PROVIDE GAS SHUTOFF COCK AT EACH GAS OUTLET.
5. RACK ALL PIPING ON TUNNEL WALLS ON PROPER SUPPORTS TO MAINTAIN MAXIMUM PASSAGE.
6. ALL TRAPS INSTALLED UNDER FLOOR SLABS TO BE LOCATED AS CLOSE AS POSSIBLE TO FINISHED FLOOR.
7. ALL PLUMBING SHOWN ON THESE DWGS SHALL CONFORM TO NATIONAL PLUMBING CODE.

PLUMBING SYMBOLS

- SOIL OR WASTE
- SOIL OR WASTE - BURIED
- VENT
- S — S — S — STORM
- S — S — STORM - BURIED
- COLD WATER
- HOT WATER
- H.W. RECIRCULATION
- G — G — G — GAS
- AW — AW — AW — ACID WASTE
- A — A — A — COMPRESSED AIR
- GATE VALVE
- GLOBE VALVE
- CHECK VALVE
- COCK
- TRAP
- CLEANOUT
- UNION
- RELIEF VALVE
- THERMOMETER
- SILLCOCK
- A.V. ACID VENT

STATE OF CONNECTICUT JAMES S. MINGES NO. 2423 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT NO. 2385 REGISTERED PROFESSIONAL ENGINEER

PLUMBING SCHEDULES
KITCHEN PLAN

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-P5

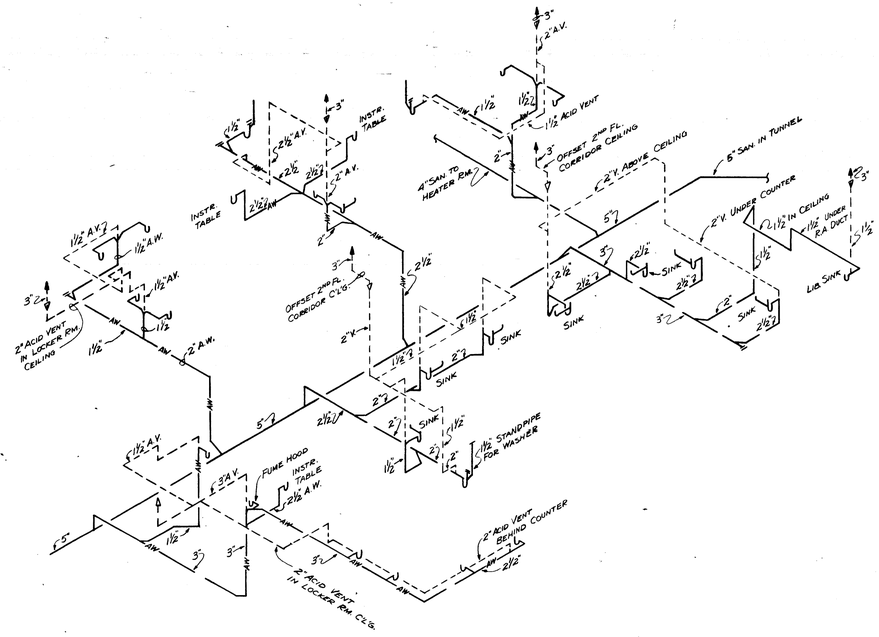
Date: 30 APR 57

Scale: AS NOTED

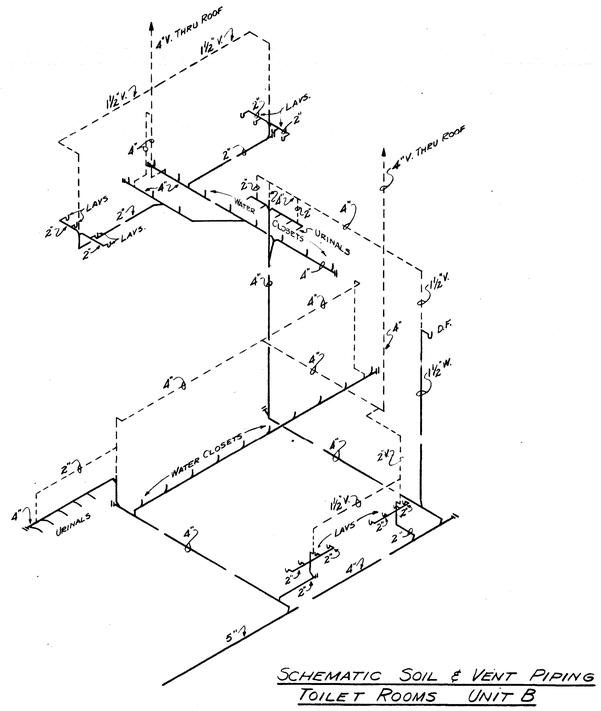
SHERWOOD, MILLS AND SMITH
Architects
45 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

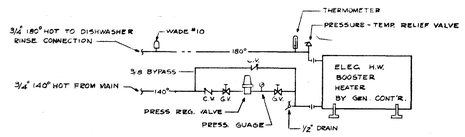
BQ #70 & 125 Attachment



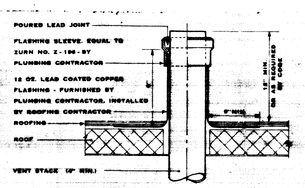
SCHEMATIC SOIL WASTE & VENT PIPING
LABORATORIES UNIT B
NOT TO SCALE



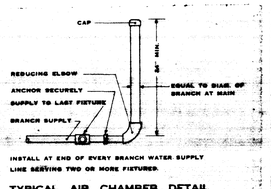
SCHEMATIC SOIL & VENT PIPING
TOILET ROOMS UNIT B
NOT TO SCALE



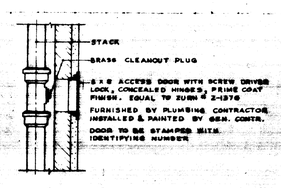
HOT WATER BOOSTER HEATER
SCHEMATIC PIPING DIAGRAM
NOT TO SCALE



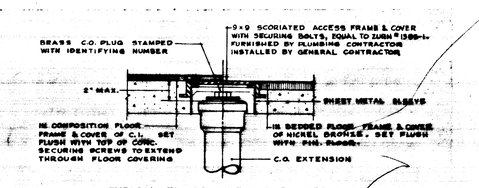
TYPICAL VENT FLASHING DETAIL
NOT TO SCALE



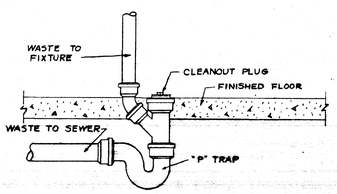
TYPICAL AIR CHAMBER DETAIL
NOT TO SCALE



TYPICAL WALL CLEANOUT DETAIL
NOT TO SCALE



TYPICAL FLOOR CLEANOUT DETAIL
NOT TO SCALE



TYPICAL BURIED TRAP DETAIL
NOT TO SCALE

STATE OF CONNECTICUT
JAMES S. MINGES
NO. 2423
REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT
CHARLES G. MARCHANT
NO. 2388
REGISTERED PROFESSIONAL ENGINEER

PLUMBING SCHEMATICS DETAILS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

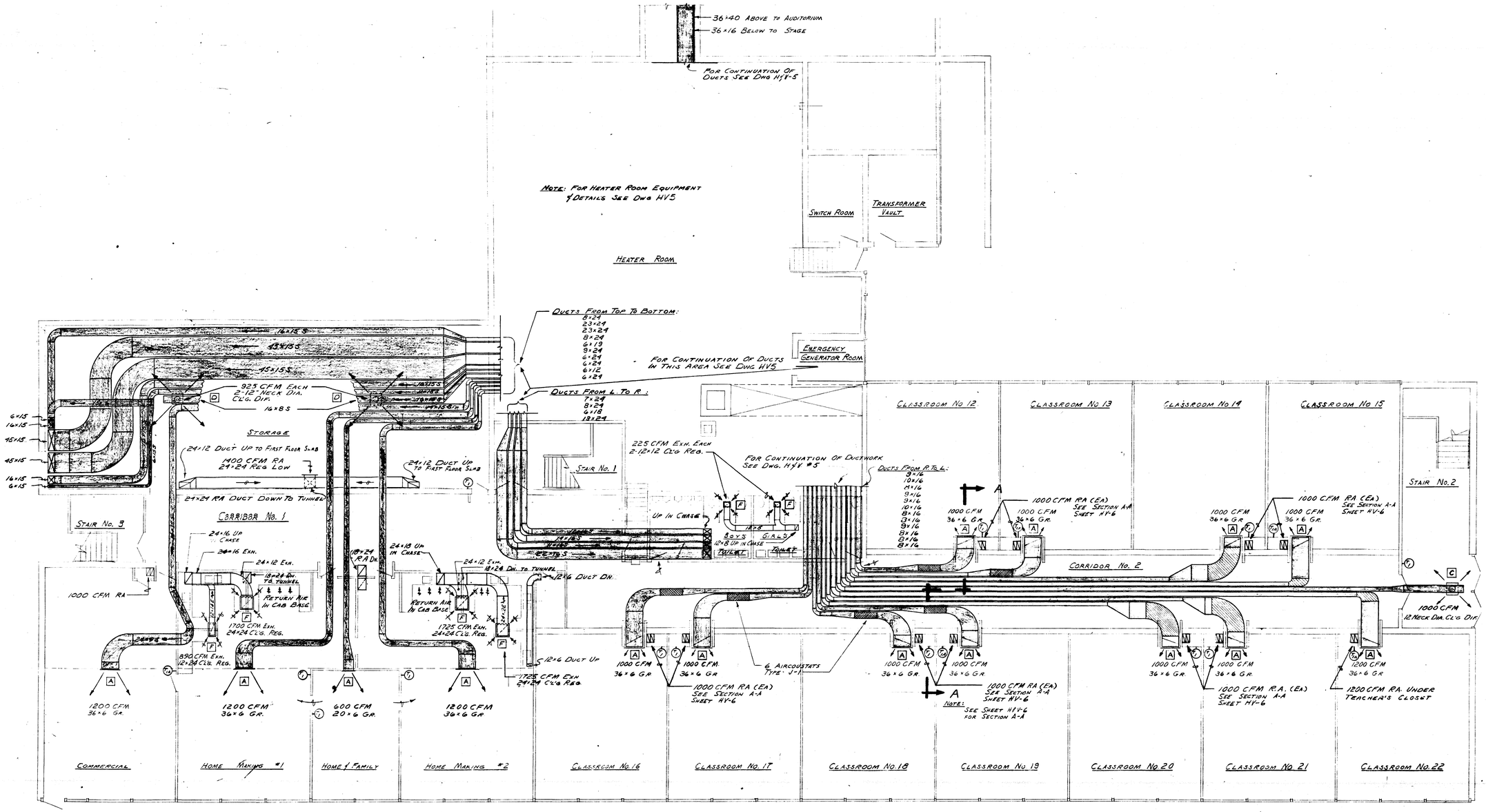
830- P6

Date: 30 APR. 57
Scale: AS NOTED

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment



LOWER CLASSROOM WING PLAN AREA "B"

SCALE: 1/8"=1'-0"

STATE OF CONNECTICUT JAMES S. MINGES NO. 2423 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT NO. 2385 REGISTERED PROFESSIONAL ENGINEER

KEY PLAN

BASEMENT HEATING AND VENTILATING AREA B

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

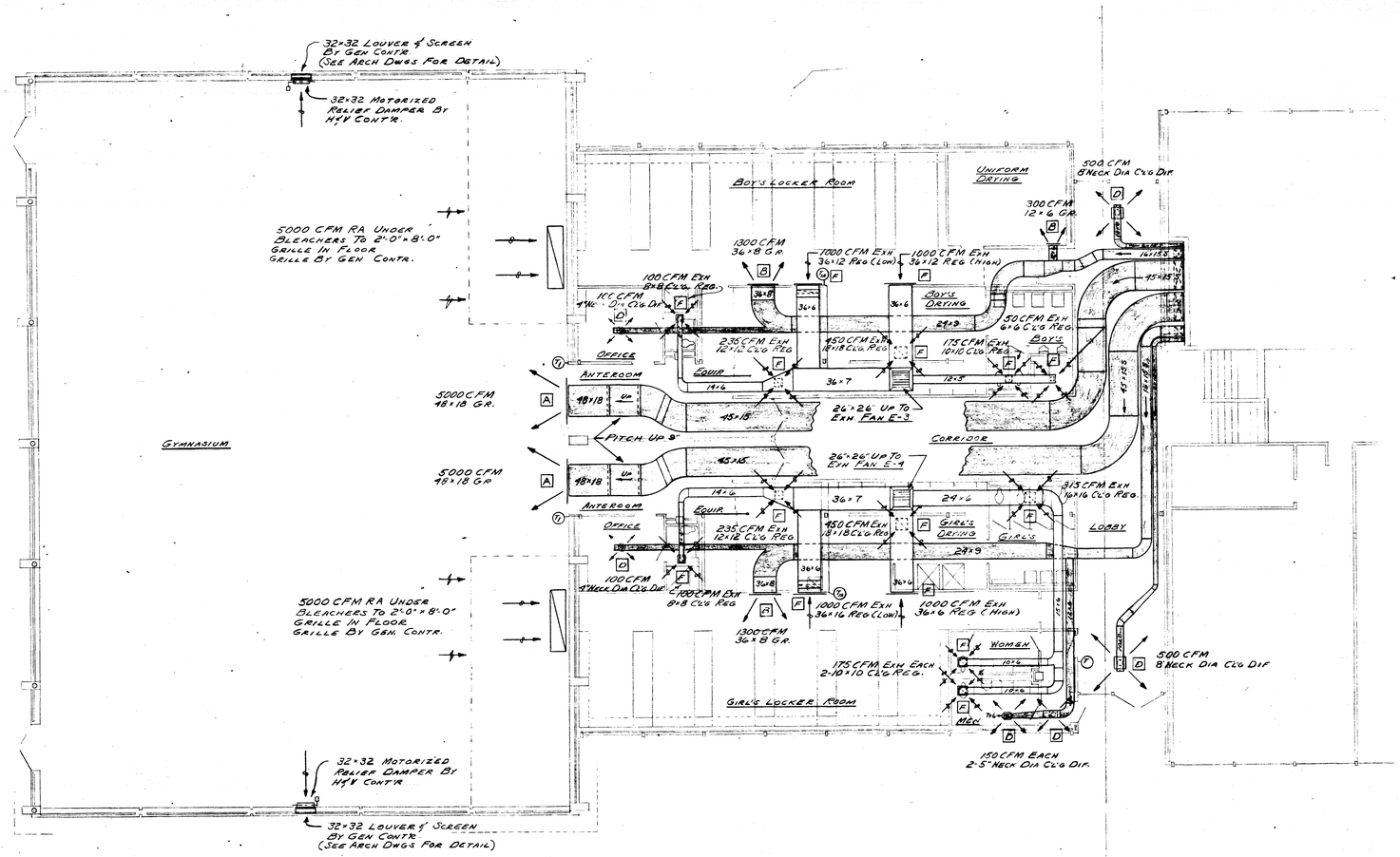
1830 - HV-1

30 APR. 67 1/8"=1'-0"

SHERWOOD, MILLS AND SMITH
Architects 60 Broad Street, Stamford, Connecticut

MARCHANT & MINGES ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment



GYMNASIUM FLOOR PLAN
SCALE: 1/8"=1'-0"

STATE OF CONNECTICUT JAMES S. MINGES NO. 2423 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT NO. 2385 REGISTERED PROFESSIONAL ENGINEER

KEY PLAN

1st FLOOR HEATING & VENTILATING AREA A

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-HV-2

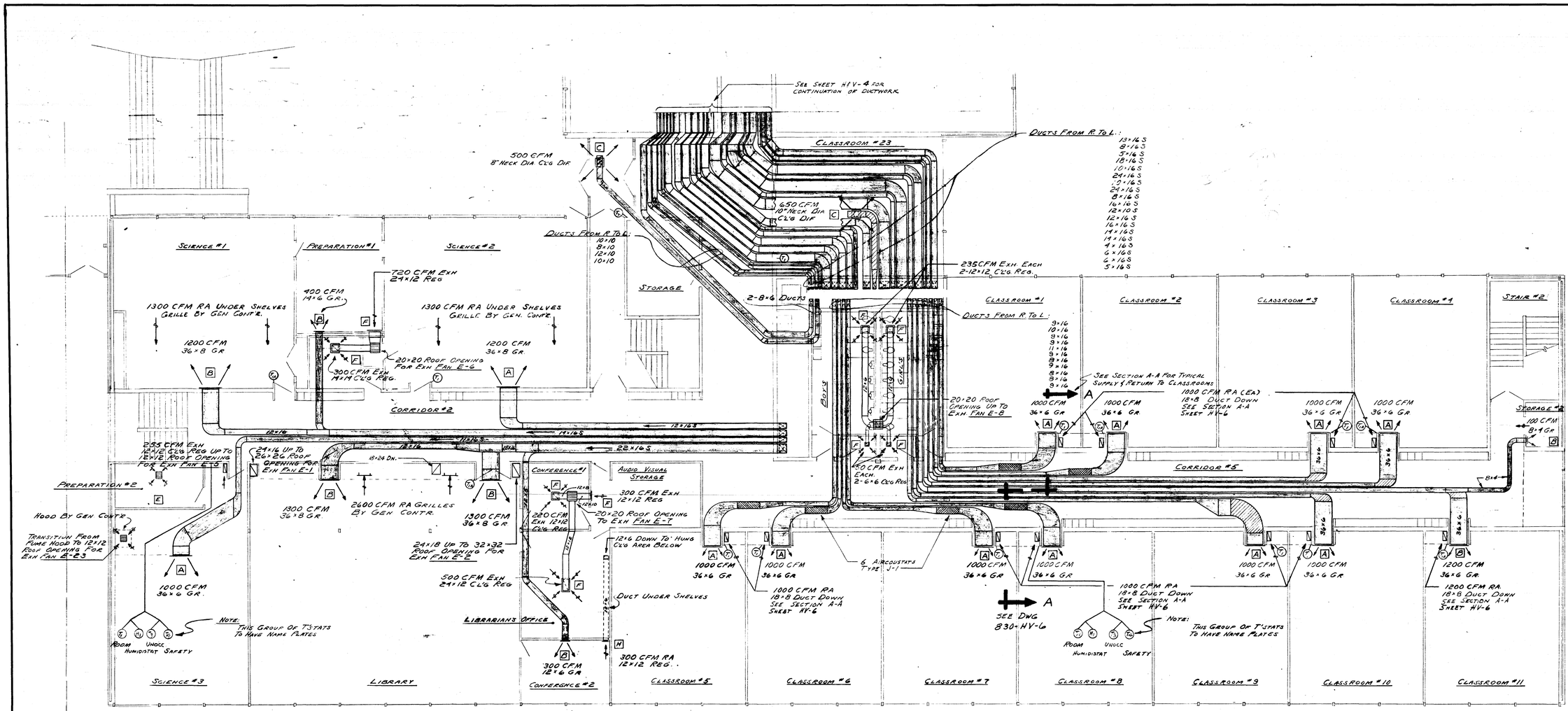
Date 30 APR. 57

Scale 1/8"=1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

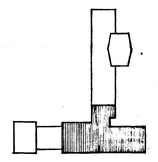
BQ #70 & 125 Attachment



UPPER CLASSROOM WING PLAN
SCALE: 1/8" = 1'-0"

STATE OF CONNECTICUT CHARLES S. MINGES REGISTERED PROFESSIONAL ENGINEER NO. 2423

STATE OF CONNECTICUT CHARLES G. MARCHANT REGISTERED PROFESSIONAL ENGINEER NO. 2385



KEY PLAN

1st. FLOOR HEATING & VENTILATING AREA B

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-HV-3

Date: 20 APR. 57

Scale: 1/8" = 1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment

EXH FAN E-9 TRANSITION DUCT FROM FORGE HOOD UP TO 24"x24" OPNG AT FAN.

2020 CFM EXH.

950 CFM 24×8 GR

950 CFM 24×8 GR

EXPOSED DUCT 3

1050 CFM RA EACH 2-48×12 REGS.

1050 CFM RA EACH 2-48×12 REGS.

METAL SHOP

DRAFTING

WOOD SHOP

600 CFM 20×8 GR

950 CFM 24×8 GR.

950 CFM 24×8 GR.

NOTE: ALL DUCTWORK TO THE RIGHT OF LINE IS UNDER SUPPLY DUCT

DRAFTING

WOOD SHOP

1050 CFM RA EACH 2-12×48 REGS.

FLOOR

21"x18" TEE

21" TILE BY GEN. CONTR.

SECTION C-C
NO SCALE

20×20 UP TO EXH FAN E-10

FINISHING ROOM

STORAGE

VOLATILE STORAGE

50 CFM 8×4 GRILLE

1055 CFM EXH.

PAINT SPRAY HOOD BY GC

250 CFM 7" NECK DIA. C.I.G. DIF.

1400 CFM RA GRILLE IN CAB. BY GEN. CONTR.

1400 CFM 36×8 GR.

REHEARSAL

16×16 UP TO EXH FAN E-11

400 CFM 16×6 GR.

300 CFM EACH 2-14×14 C.I.G. REG.

CUSTODIAN

140 CFM EXH 10×10 C.I.G. REG.

500 CFM 20×6 GR.

20×6 S.

INSTRUMENTAL

INSTRUMENT STOR. ROOM

BLANK PLATE EACH END

3600 CFM CONTINUOUS 4" SECTIONS BASEBOARD SUPPLY GRILLE

CENTERED 18"×3" SLOTS ONE PER SECTION

1050 CFM RA GRILLE IN CAB BY GEN. CONTR.

CHORAL

1050 CFM 20×6 GR.

1400 CFM RA UNDER CLOSET

CRAFTS

NOTE: UNDER STAGE IS RA PLENUM

STAGE

14600 CFM RA

1400 CFM 36×8 GR

TRANSITION DUCT FROM PAINT SPRAY BOOTH TO 12"x12" ROOF OPENING FOR EXH FAN E-22

490 CFM EXH

200 CFM 10×4 GR.

WORK & STORAGE

1400 CFM RA UNDER CLOSET

1200 CFM 36×6 GR.

ARTS

AUDITORIUM

DUCTS FROM R TO L:
8-20S
10-20S
9-20S
18-20S
43-20S
6-20S
10-20S
13-20S
12-20S

3250 CFM EACH 2-48"×20" GRILLES.

3-32×32 MOTORIZED RELIEF DAMPERS. BY H&V CONT'R. CENTERED OVER SUPPLY GRILLES. SEE SECT. 7 ON SH. HV-6

B

SEE DWG. H&V #8 FOR SECTION B-B

12×12 UP TO EXH FAN E-13

255 CFM EXH 10×10 C.I.G. REG.

STORAGE

130 CFM EXH 10×10 C.I.G. REG.

12×12 UP TO EXH FAN E-14

115 CFM EXH 8×8 C.I.G. REG.

NURSE'S OFFICE

550 CFM RA 36×4 REG

12×12 UP TO EXH FAN E-13

115 CFM EXH 8×8 C.I.G. REG

100 CFM EXH 8×8 C.I.G. REG.

160 CFM EXH 10×10 C.I.G. REG.

12×12 UP TO EXH FAN E-24

850 CFM RA UNDER COUNTER

350 CFM EXH 14×14 C.I.G. REG.

TEACHER'S ROOM

140 CFM EXH 10×10 C.I.G. REG

MEN'S TOILET

1000 CFM 12" NECK DIA. C.I.G. DIF.

16×10S

130 CFM EXH 10×10 C.I.G. REG.

12×12 UP TO EXH FAN E-16

250 CFM 12×5 GR.

250 CFM RA 10×4 REG.

OFFICE

650 CFM 24×6 GR.

NOTE: THIS GROUP OF T'STATS TO HAVE JAMB PLATES

HUMIDISTAT UNOCC. SAFETY ROOM

250 CFM 12×5 GR.

VICE PRINCIPAL

125 CFM 8×4 GR.

1275 CFM RA 24×24 REG.

20×4S

125 CFM 8×4 GR.

20×5S

185 CFM 8×4 GR.

NURSE'S OFFICE

300 CFM 14×4 GR.

EXAMINING

250 CFM 12×4 GR.

850 CFM 24×8 GR

TEACHER'S ROOM

MEN'S TOILET

500 CFM 8" NECK DIA C.I.G. DIF.

2200 CFM 48×8 GR

CAFETERIA NO. 2

3200 CFM RA 36×30 REG.

DISHWASHING

12×12 DUCT FROM HOOD TO 16×16 ROOF OPENING FOR EXH FAN E-17

HOOD BY KITCHEN SUPPLIER

790 CFM EXH.

550 CFM 20×6 GR.

20×6 S.

OFFICE

FACULTY DINING ROOM

FOR SECTION C-D SEE H&V DWG #6

HOOD & FILTERS BY KITCHEN SUPPLIER

18 GAUGE STEEL DUCT FROM OPENING IN HOOD TO 38×38 ROOF OPENING FOR EXH FAN E-14

3800 CFM EXH.

700 CFM 10" NECK DIA. C.I.G. DIF.

24×16S

KITCHEN

TOILET

12×12 ROOF OPENING FOR EXH FAN E-15

200 CFM 4" NECK DIA. C.I.G. DIF

130 CFM EXH 12×12 C.I.G. REG.

12×12 DUCT FROM HOOD TO 16×16 ROOF OPENING FOR EXH FAN E-18

100 CFM 12×4 REG

HOOD BY KITCHEN SUPPLIER

COLD STORAGE

130 CFM EXH. 12×12 GR. 4-12×12 ROOF OPENING FOR EXH FAN E-21

790 CFM EXH.

DISHWASHING

CAN WASH

2200 CFM RA 36×30 REG

255 CFM EXH. 14×14 REG TO 12×12 ROOF OPENING FOR EXH FAN E-20

2200 CFM 48×8 GR

CAFETERIA NO 1

5 DUCTS FROM R TO L:
11×20S
7×20S
5×20S
15×20S
8×20S
18×20S
19×20S
19×20S
13×20S
6×20S
10×20S
13×20S
12×20S
12×20S
1×20S
6×20S
6×20S
5×20S
7×20S

MEN'S TOILET

AUDITORIUM WING FLOOR PLAN
SCALE: 1/8"=1'-0"

STATE OF CONNECTICUT CHARLES S. MINGES REGISTERED NO. 2423 PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES S. MARCHANT REGISTERED NO. 2385 PROFESSIONAL ENG.

KEY PLAN

1st. FLOOR HEATING & VENTILATING-AREAS C & D

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830 - HV-4

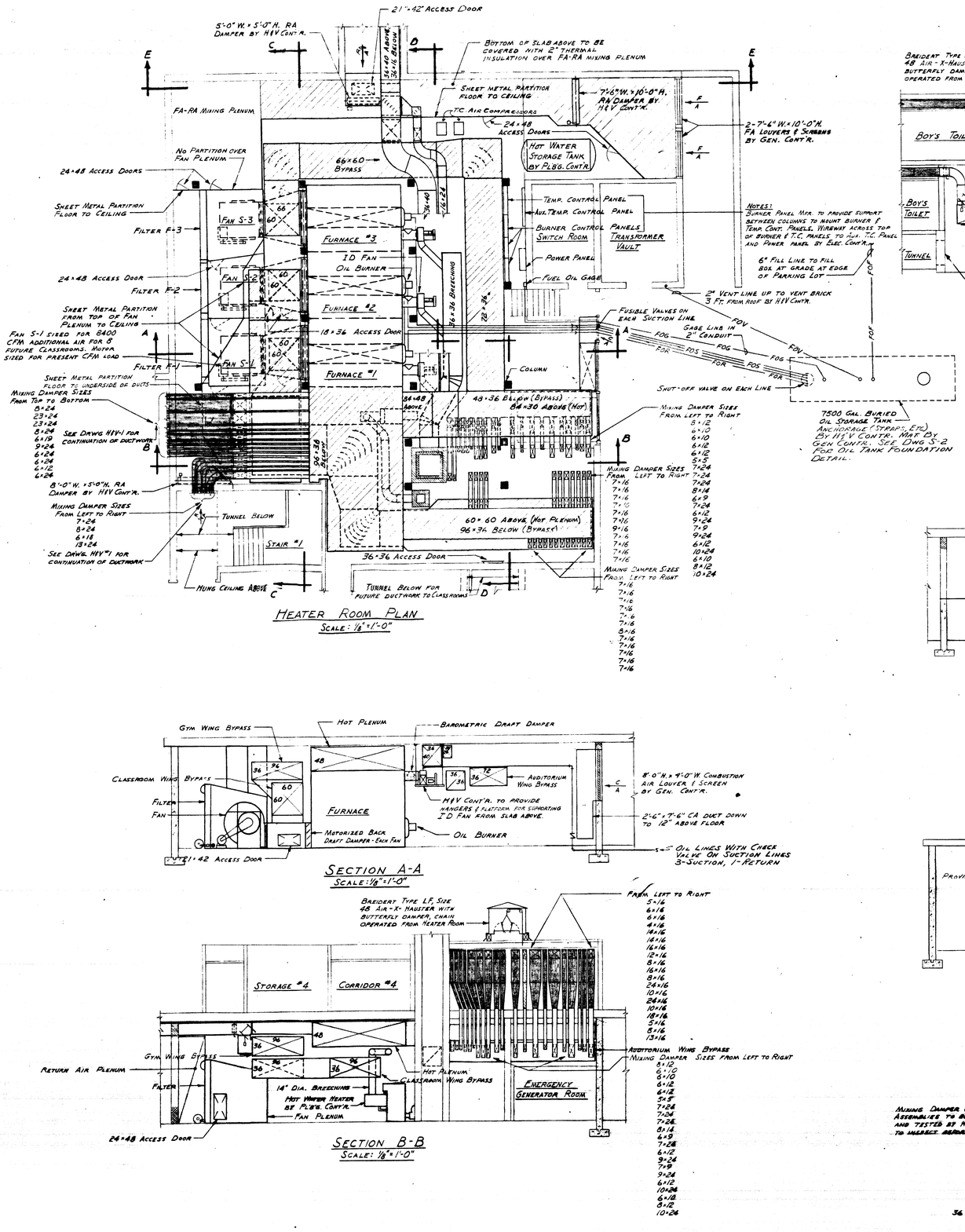
Date 30 APR. '57

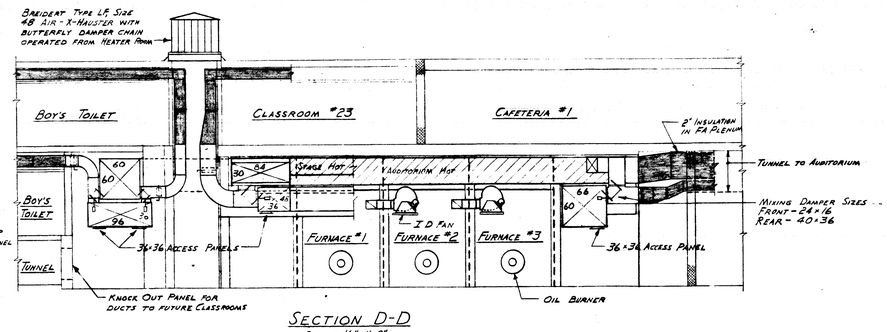
Scale AS NOTED

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

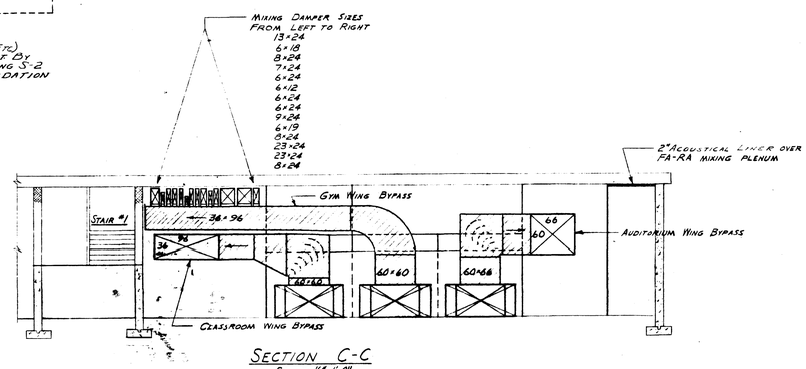
MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment





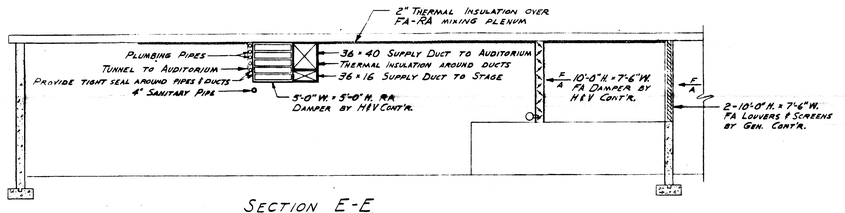
Section D-D
Scale: 1/8" = 1'-0"



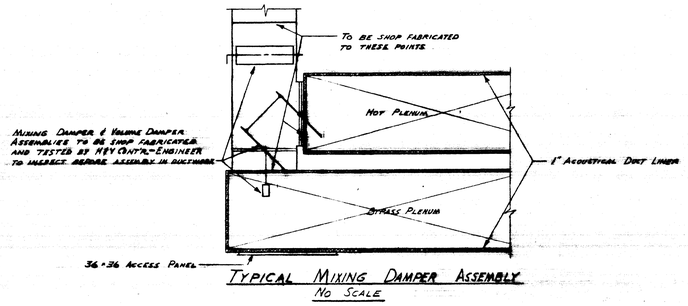
Section C-C
Scale: 1/8" = 1'-0"

Section A-A
Scale: 1/8" = 1'-0"

Section B-B
Scale: 1/8" = 1'-0"



Section E-E
Scale: 1/8" = 1'-0"



Typical Mixing Damper Assembly
No Scale

STATE OF CONNECTICUT JAMES S. MINGES NO. 2423 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT NO. 2385 REGISTERED PROFESSIONAL ENGINEER

HEATER ROOM PLAN & SECTIONS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

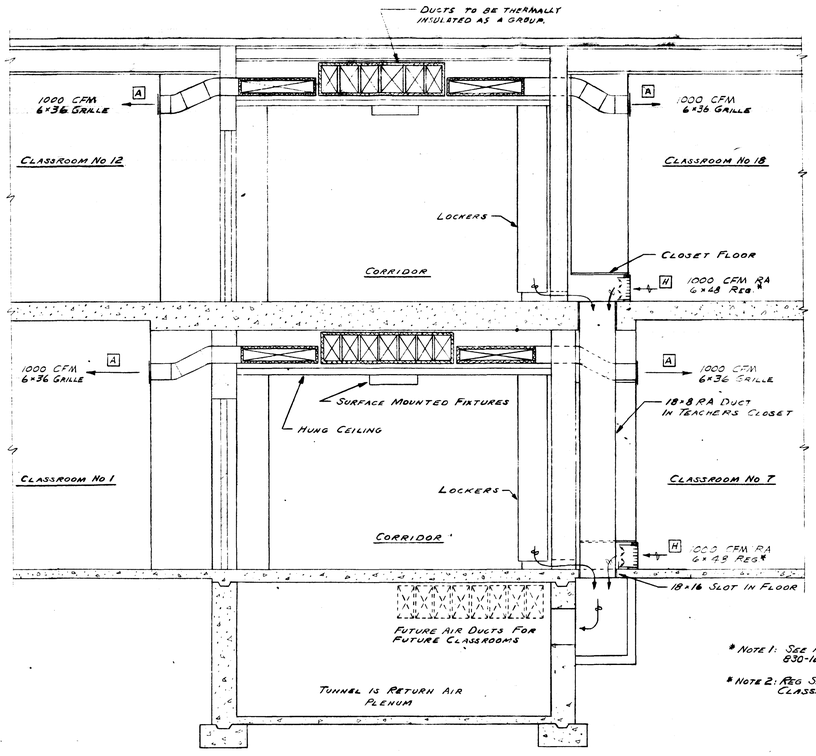
830 - HV-5

Date: 30 APR 57
Scale: As Noted

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

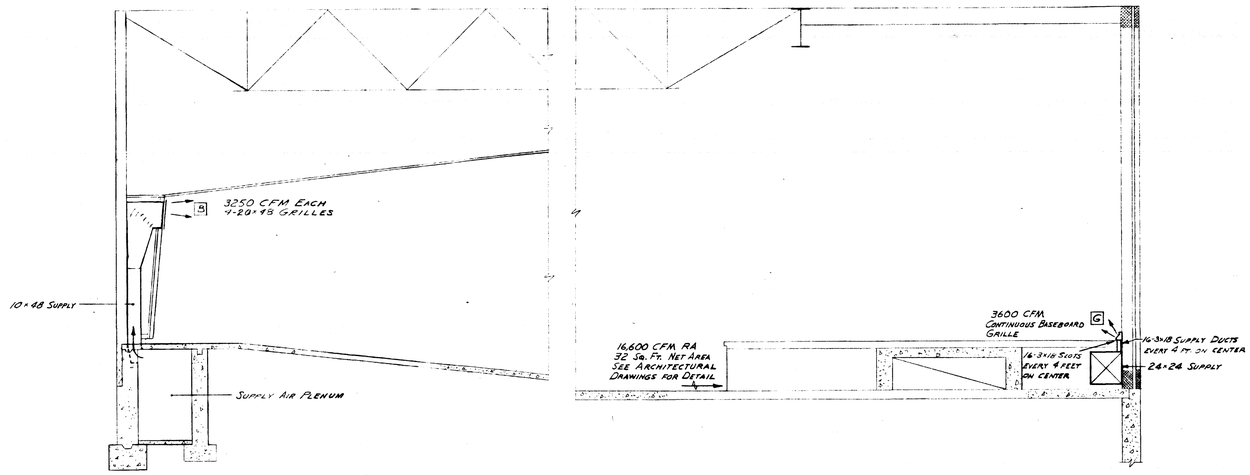
BQ #70 & 125 Attachment



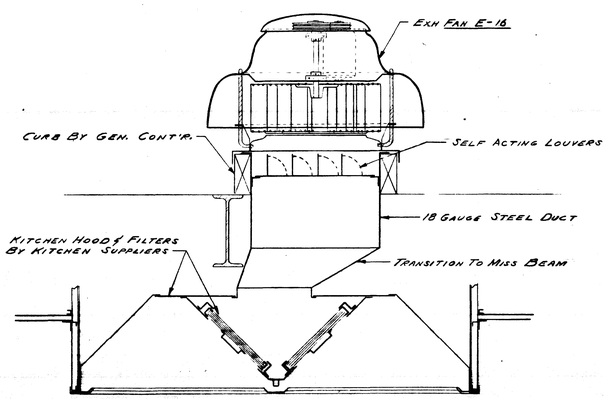
* NOTE 1: SEE ARCHITECTURAL SECTION 830-12-D FOR RA REG DETAIL

* NOTE 2: REG SIZE TO BE 7"×18" IN CLASSROOMS #11 & #22

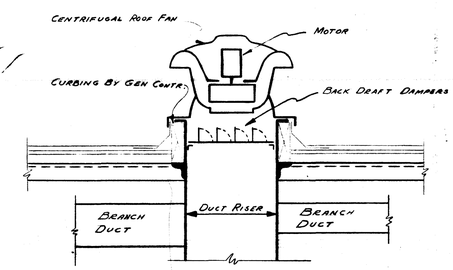
SECTION A-A
TYPICAL CLASSROOM SUPPLY AND RETURN
NO SCALE



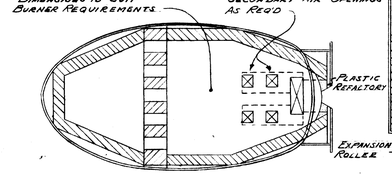
SECTION B-B
SCALE: 1/4"=1'-0"



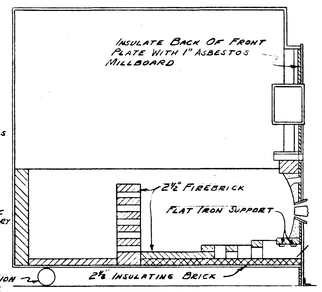
KITCHEN HOOD EXH. FAN DETAIL
SECTION D-D
NO SCALE



TYPICAL ROOF EXHAUST FAN
NO SCALE



PLAN



ELEVATION
COMBUSTION CHAMBER DETAIL
SCALE 1½"=1'-0"

STATE OF CONN. JAMES S. MITCHELL NO. 2423 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT NO. 2385 REGISTERED PROFESSIONAL ENGINEER

HEATING & VENTILATING
SECTIONS & DETAILS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

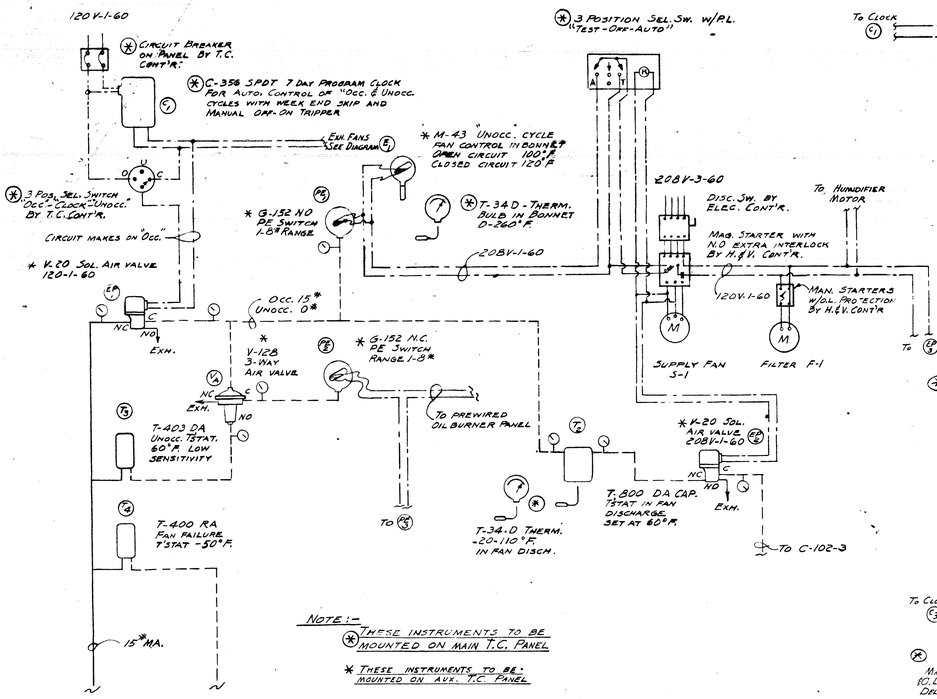
830-HVL

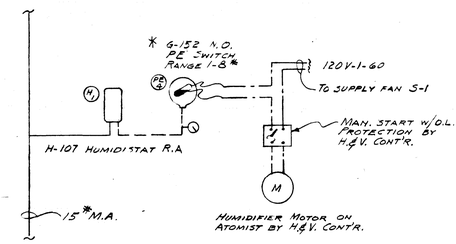
Date: 30 APR. 67 | Scale: AS NOTED

SHERWOOD, MILLS AND SMITH
Architects: 63 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment





Humidity Control — System I

(Systems 2 & 3 Same)

Grilles & Registers

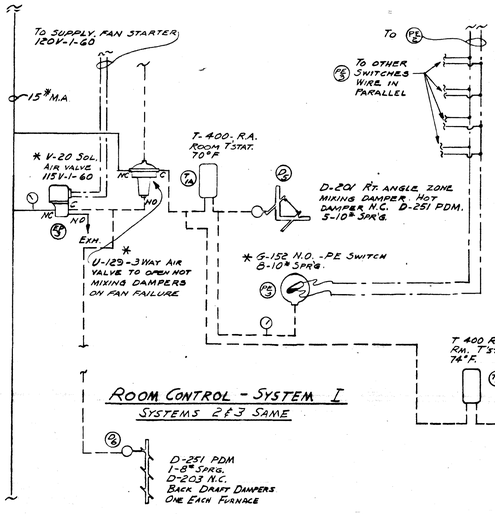
TYPE	DUTY	MFG. & STYLE	FINISH	SPECIAL FEATURES
A	Supply	Tuttle & Bailey #T-64 Grille	Prime	
B	Supply	Tuttle & Bailey #T-647 Grille	Prime	Key operated volume damper
C	Supply	Anemostat Type E-1	Aluminum	Equalizing Deflector
D	Supply	Anemostat Type E-1	Aluminum	Combo Unit Type CU-2
E	Exhaust	Tuttle & Bailey T-70D	Prime	
F	Exhaust	Tuttle & Bailey T-77D	Prime	Key operated volume damper
G	Supply	Standard #B-48 Baseboard Grille	Prime	Dial operated damper
H	RETURN	TUTTLE & BAILEY #T936 W/#T956 FACE	PRIME	KEY OPERATED VOLUME DAMPER

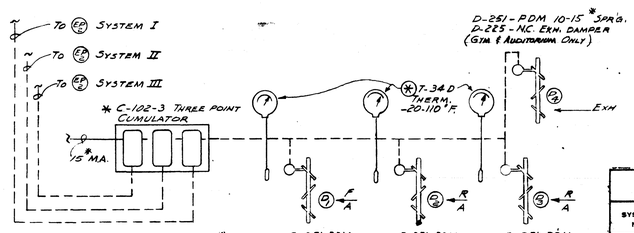
Filter Schedule

SYSTEM NO.	FILTER NO.	MFG. & STYLE	CFM	FILTER SIZE
1	F-1	American Air Filter Roll-O-Matic #8-100	24,650	10'-0" H. x 8'-0" W
2	F-2	American Air Filter Roll-O-Matic #8-100	27,000	10'-0" H. x 8'-0" W
3	F-3	American Air Ficter Roll-O-Matic #12-100	40,000	10'-0" H. x 12'-0" W

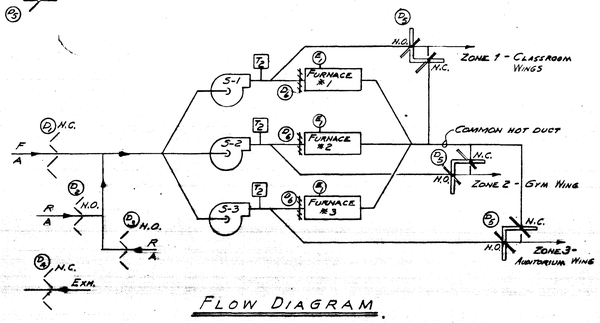
Heating & Ventilating Symbols

FUEL OIL SUCTION	FOS — FOS	FUEL OIL TANK VENT	FOV — FOV
FUEL OIL RETURN	FOR — FOR	FUEL OIL PUMP DISCHARGE	FOD — FOD
		FUEL OIL TANK FILL	FOF — FOF
SUPPLY DUCT (NO INSULATION)	S	THERMALLY (EXTERNALLY) INSULATED DUCTS	
RETURN DUCT (NO INSULATION)	R	ACCOUSTICALLY (INTERNALLY) INSULATED DUCTS	
EXHAUST	E		





Damper Control



Flow Diagram

Fan Schedule

SYSTEM NO.	FAN NO.	SERVICE	LOCATION	CFM	SP	MIN. W.D.	MAX. OV FPM	ARRANGEMENT & DISCHARGE	FAN SIZE & MFG.	RPM	BHP	MOTOR HP SIZE	MOTOR CURRENT	DRIVE TYPE	REMARKS
1	S-1	Supply	Classrooms	24650	1 1/4	44"	1200	Arr. #3 BH Disch.	Trane #44 BIDW	421	6.26	7 1/2	208V-3-60	V-Belt	Fan Sized for additional 8,400 CFM future CR load.
2	S-2	Supply	Gymnasium	27000	1 1/4	40"	1600	Arr. #3 BH Disch.	Trane #40 BIDW	515	7.19	10	208V-3-60	V-Belt	
3	S-3	Supply	Auditorium	40000	1 1/4	49"	1600	Arr. #3 BH Disch.	Trane #49 BIDW	419	10.69	15	208V-3-60	V-Belt	
	E-1	Exhaust	Home Ec. #1	2590	1/8			Roof	Jenn-Air #24 BCR	460		1/4	115V-1-60	V-Belt	Local Sw. & Pl.
	E-2	Exhaust	Home Ec. #2	3450	1/8			Roof	Jenn-Air #27 BCR	430		1/3	115V-1-60	V-Belt	Local Sw. & Pl.
	E-3	Exhaust	Boy's Lockers	3010	1/8			Roof	Jenn-Air #24 BCR	520		1/3	115V-1-60	V-Belt	Local Sw. & Pl. - 2 Speed
	E-4	Exhaust	Girl's Lockers	3450	1/8			Roof	Jenn-Air #27 BCR	430		1/3	115V-1-60	V-Belt	Local Sw. & Pl. - 2 Speed
	E-5	Exhaust	Prep. Rm. #2	255	1/8			Roof	Jenn-Air #70 CR	1550		1/25	115V-1-60	Direct	
	E-6	Exhaust	Dark Rm.	1020	1/8			Roof	Jenn-Air #128 CR	860		1/4	115V-1-60	Direct	
	E-7	Exhaust	Lib. Office	1020	1/8			Roof	Jenn-Air #128 CR	860		1/4	115V-1-60	Direct	
	E-8	Exhaust	Toilets	1020	1/8			Roof	Jenn-Air #128 CR	860		1/4	115V-1-60	Direct	
	E-9	Exhaust	Forge Hood	2020	1/8			Roof	Jenn-Air #24 CW	460		1/4	115V-1-60	V-Belt	Local Sw. & Pl.
	E-10	Exhaust	Paint Spray	1055	1/4			Roof	Jenn-Air #111 CR	1140		1/6	115V-1-60	Direct	Expl. motor-spark resistant fan wheel-Local Sw. & Pl.
	E-11	Exhaust	Toilets	740	1/8			Roof	Jenn-Air #91 CR	1140		1/8	115V-1-60	Direct	
	E-12	Exhaust	Princ. Toilet	130	1/8			Roof	Jenn-Air #71 CR	1550		1/25	115V-1-60	Direct	2 speed Local Sw. & Pl.
	E-13	Exhaust	Storage	255	1/8			Roof	Jenn-Air #70 CR	1550		1/25	115V-1-60	Direct	
	E-14	Exhaust	Nurses Toilet	130	1/8			Roof	Jenn-Air #71 CR	1550		1/25	115V-1-60	Direct	
	E-15	Exhaust	Health	190	1/8			Roof	Jenn-Air #80 CR	1550		1/15	115V-1-60	Direct	
	E-16	Exhaust	Kit. Hood	9800	1/4			Roof	Jenn-Air #36 BCR	500		2	208V-3-60	V-Belt	Local Sw. & Pl.
	E-17	Exhaust	Dishwash #2	740	1/8			Roof	Jenn-Air #91 CR	1140		1/8	115V-1-60	Direct	Local Sw. & Pl.
	E-18	Exhaust	Dishwash #1	740	1/8			Roof	Jenn-Air #91 CR	1140		1/8	115V-1-60	Direct	Local Sw. & Pl.
	E-19	Exhaust	Kit. Toilet	130	1/8			Roof	Jenn-Air #71 CR	1550		1/25	115V-1-60	Direct	
	E-20	Exhaust	Cold Storage	255	1/8			Roof	Jenn-Air #70 CR	1550		1/25	115V-1-60	Direct	
	E-21	Exhaust	Can Wash	130	1/8			Roof	Jenn-Air #71 CR	1550		1/25	115V-1-60	Direct	
	E-22	Exhaust	Grefte Hood	490	1/8			Roof	Jenn-Air #80 CR	1550		1/25	115V-1-60	Direct	Expl. motor spark resistant fan wheel Local Sw. & Pl.
	E-23	Exhaust	Science Rm.	490	1/8			Roof	Jenn-Air #80 CR	1550		1/25	115V-1-60	Direct	Local Sw. & Pl.
	E-24	Exhaust	Teachers Toi.	490	1/8			Roof	Jenn-Air #80 CR	1550		1/25	115V-1-60	Direct	

STATE OF CONNECTICUT JAMES A. WIDELL NO. 2423 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT NO. 2385 REGISTERED PROFESSIONAL ENGINEER

H&V TEMP. CONTROLS DIAGRAMS & SCHEDULES

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

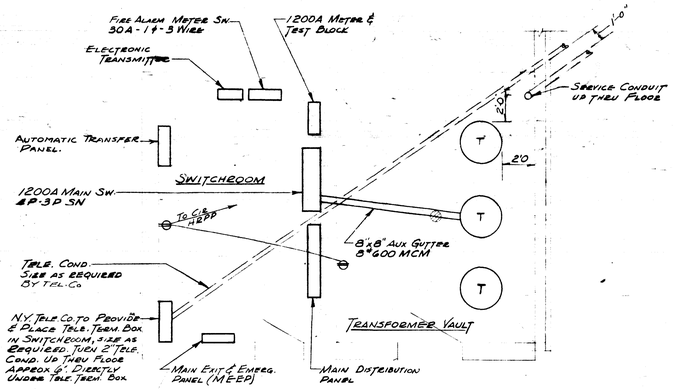
830 - HV-7

Date 30 APR. 57 | Scale No Scale

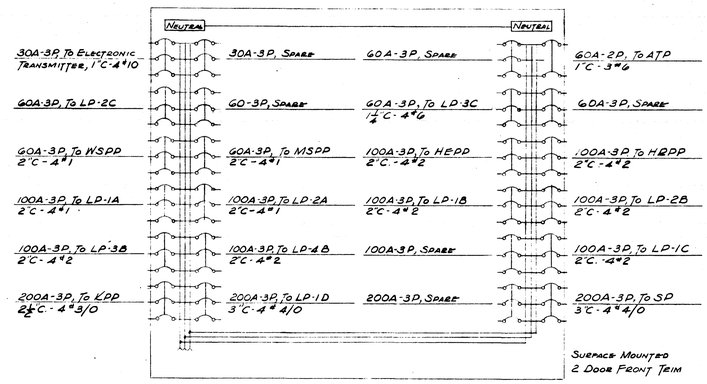
SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

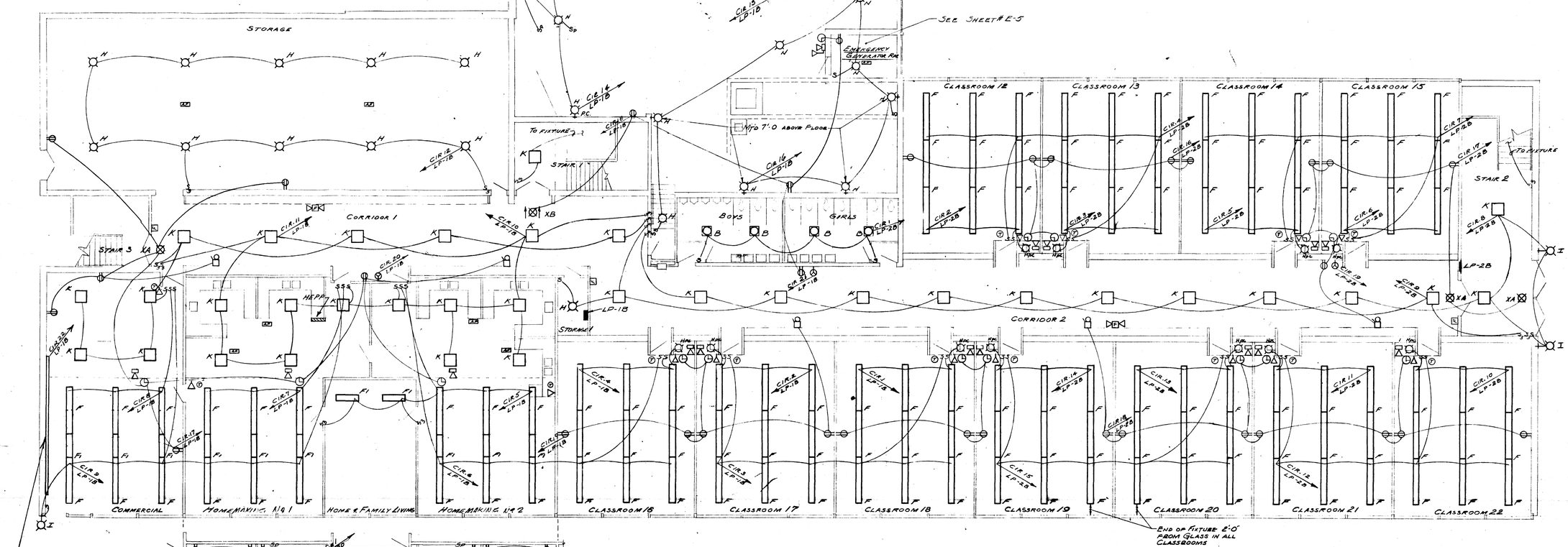
BQ #70 & 125 Attachment



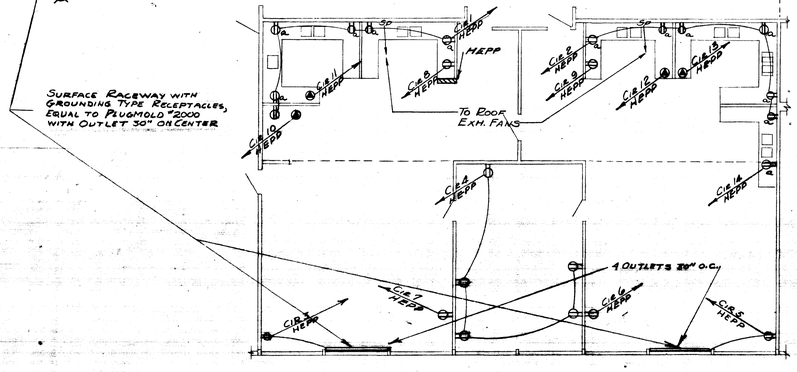
SWITCH ROOM & TRANSFORMER
SCALE 1/4" = 1'-0"



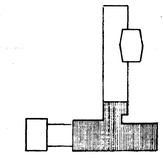
MAIN DISTRIBUTION PANEL DETAIL
SWITCH - FUSE TYPE
208/120 VOLTS, 3 PHASE, 4 WIRES
NO SCALE



BASEMENT PLAN – AREA "B"
SCALE 1/8" = 1'-0"



HOMEMAKING 1 & 2 POWER PLAN
SCALE: 1/8" = 1'-0"



KEY PLAN

BASEMENT ELECTRICAL AREA B

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-E1

Date: 30 APR 57
Scale: AS SHOWN

SHERWOOD, MILLS AND SMITH
Architects 45 Broad Street, Stamford, Connecticut

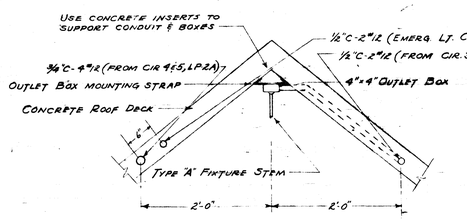
MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

STATE OF CONNECTICUT JAMES S. MINGES No. 1640 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT JAMES S. MARCHANT NO. 2423 REGISTERED PROFESSIONAL ENGINEER

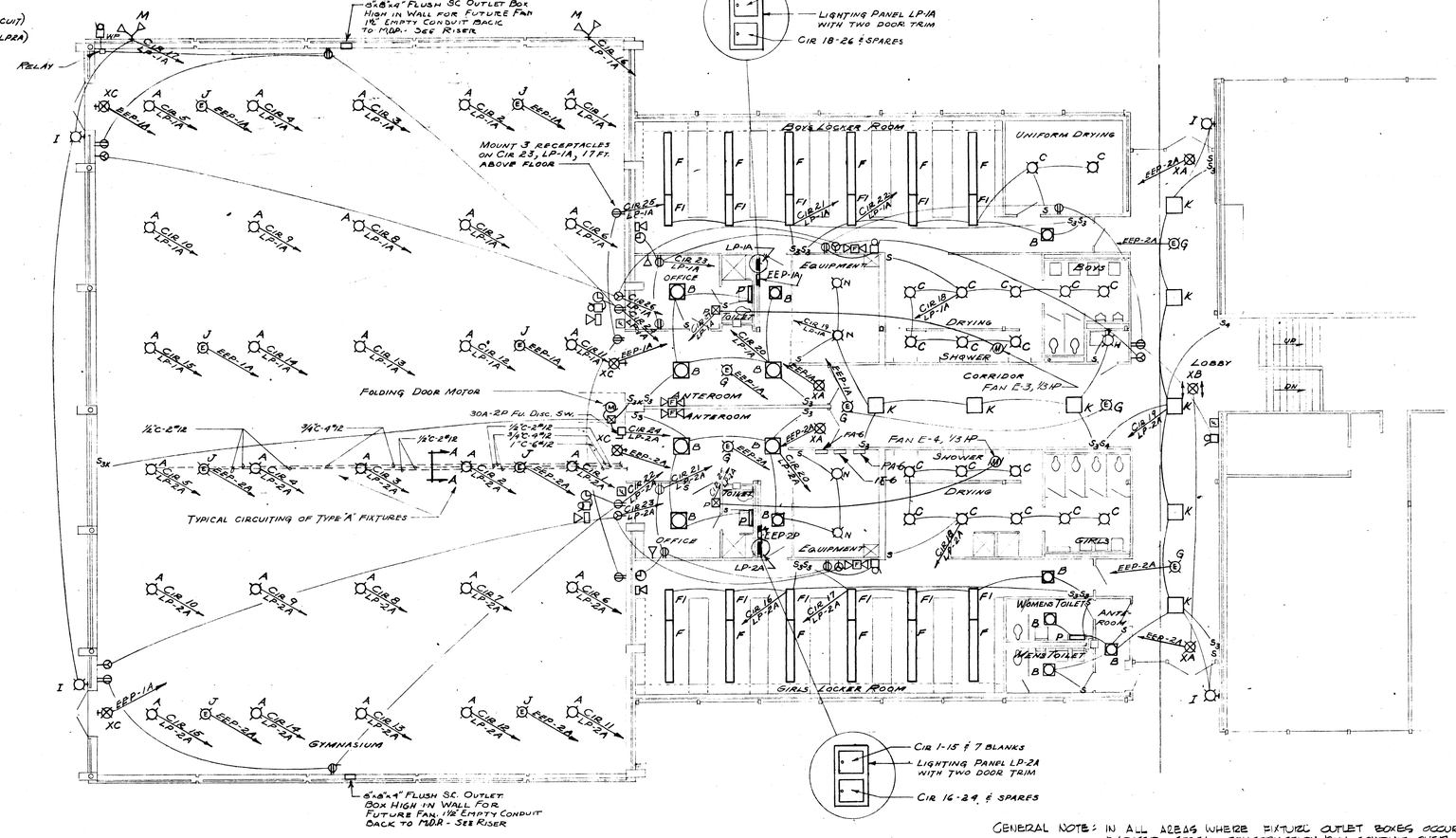
STATE OF CONNECTICUT CHARLES B. MARCHANT NO. 2388 REGISTERED PROFESSIONAL ENGINEER

BQ #70 & 125 Attachment



ELEVATION A-A

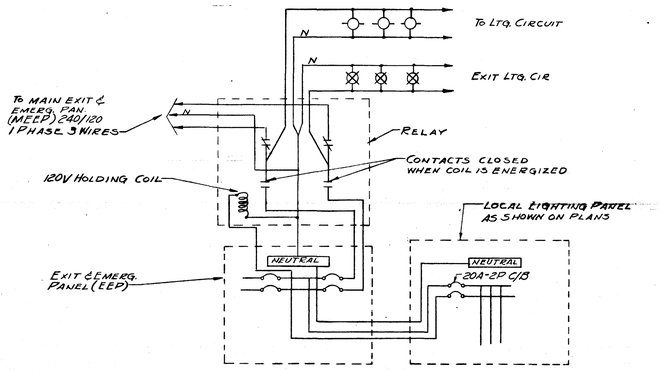
SCALE 1"=1'-0"



FIRST FLOOR PLAN - AREA "A"

SCALE ⅛"=1'-0"

GENERAL NOTES: IN ALL AREAS WHERE FIXTURE OUTLET BOXES OCCUR AT EXPOSED STEEL CONSTRUCTION, RUN CONDUIT OVER BEAMS BETWEEN WELDED BULB TEES. SEE DWG. 830 S4 FOR DETAIL.



TYPICAL CONNECTIONS FOR EXIT & EMERG. LTG.

NO SCALE

SCHEDULE - CLOCK, PROGRAM BELL, RELAY

ROOM OR AREA	CLOCK	BELL	RELAY
AREA "A"			
Gym	2	2	
Gym Outside		1	
Boy's Locker Rm.	1	1	
Girl's Locker Rm.	1	1	
AREA "B"			
Commercial	1		
Home Economics #1	1		
Home Economics #2	1		
Classroom #16	1		
Classroom #17	1		
Classroom #18	1		
Classroom #19	1		
Classroom #20	1		
Classroom #21	1		
Classroom #22	1		
Classroom #12	1		
Classroom #13	1		
Classroom #14	1		
Classroom #15	1		
Corridor		5	
AREA "B" FIRST FLOOR			
Science #3	1		
Library	2		
Classroom 5	1		
Classroom 6	1		
Classroom 7	1		
Classroom 8	1		
Classroom 9	1		
Classroom 10	1		
Classroom 11	1		
Science #1	1		
Science #2	1		
Classroom #23	1		

ROOM OR AREA	CLOCK	BELL	RELAY
AREA "B" FIRST FLOOR CON'T.			
Classroom #1	1		
Classroom #2	1		
Classroom #3	1		
Classroom #4	1		
Corridor #4		2	
Corridor #5		3	
Corridor #6		1	
AREA "C"			
Principal	1		
Gen'l. Off.	Master Clock		
Guidance	1		
Nurse	1		
Teachers' Room	1		
Cafeteria #2	1		
Cafeteria #1	1		
Serving	1		
Corridor #4		2	
Faculty Dining	1		
AREA "D"			
Wood Shop	1	1	
Metal Shop	1	1	
Metal Shop Outside		1	
Rehearsal	1		
Instrumental	1		
Choral	1		
Crafts	1		
Arts	1		
Auditorium	1		
Corridor		2	

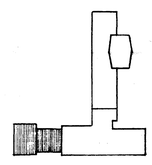
ELECTRICAL SYMBOLS

	CEILING LIGHT OUTLET	F	MANUAL FIRE ALARM STATION
	RECESSED CEILING LIGHT OUTLET	AF	AUTOMATIC FIRE ALARM DETECTOR
	WALL LIGHT OUTLET	FH	FIRE ALARM HORN
	FLOODLIGHT OUTLET	FA	FIRE ALARM JUNCTION BOX
	PILOT LIGHT OUTLET		OUTSIDE TELEPHONE
	EMERGENCY LIGHT OUTLET		LOUD SPEAKER
	EXIT LIGHT OUTLET		INTERCOM. 'PHONE
	FLUORESCENT FIXTURE	PA	P.A. JUNCTION BOX
	DUPLEX CONVENIENCE OUTLET 6" AF TO ℄		CLOCK OUTLET
	OUTLET 2" ABOVE COUNTER TO ℄	M	MOTOR
	SPECIAL OUTLET - SEE PLANS & BELOW	H	HOT WATER HEATER
	OUTLET FURNISHED BY EQUIP. MAN (SCIENCE)	T	TRANSFORMER
	3 WIRE POLARIZED OUTLET		FUSED DISCONNECT SWITCH
WP	WEATHERPROOF OUTLET		CONTROLLER
EP	EXPLOSION-PROOF OUTLET	P	CONTROLLER WITH PILOT LIGHT
	RANGE OUTLET	AQ	AQUASTAT
	FLOOR OUTLET	R	RELAY
M	MICROPHONE OUTLET		PUSH BUTTON
B	SOUND OUTLET	T	THERMOSTAT
V	TELEVISION OUTLET		POWER PANEL
S	SINGLE POLE SWITCH		EXIT & EMERGENCY PANEL
S2	TWO POLE SWITCH		LIGHTING PANEL
S3	THREE WAY SWITCH		DISTRIBUTION PANEL
S4	FOUR WAY SWITCH		BUZZER
SK	KEYED SWITCH	PB	PROGRAM BELL
SKP	KEYED SWITCH WITH PILOT		
SRC	REMOTE CONTROL SWITCH		
SA	SEE KIT POWER PLAN SH. E5		

STATE OF CONNECTICUT JAMES H. MARCHANT No. 1648 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT JAMES S. MINGES NO. 2423 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT NO. 2385 REGISTERED PROFESSIONAL ENGINEER



KEY PLAN

FIRST FLOOR ELECTRICAL AREA A

CENTRAL JUNIOR HIGH SCHOOL

Greenwich, Connecticut

830-E2

Date 30 APR 57 | Scale AS SHOWN

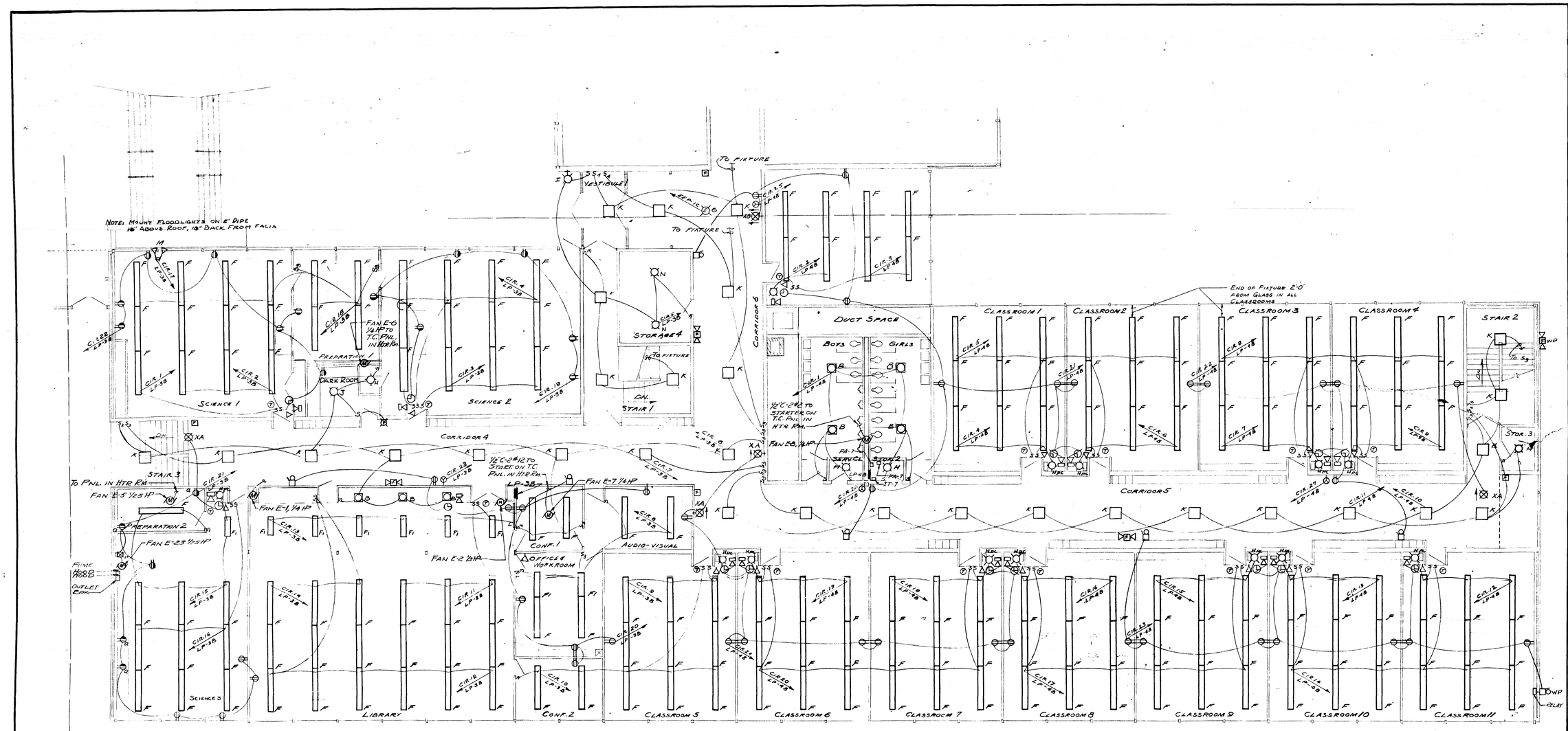
SHERWOOD, MILLS AND SMITH

Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES ENGINEERS

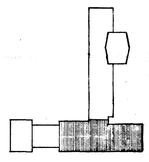
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment



FIRST FLOOR PLAN - AREA "B"

SCALE 1/8" = 1'-0"



KEY PLAN

FIRST FLOOR ELECTRICAL AREA B

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

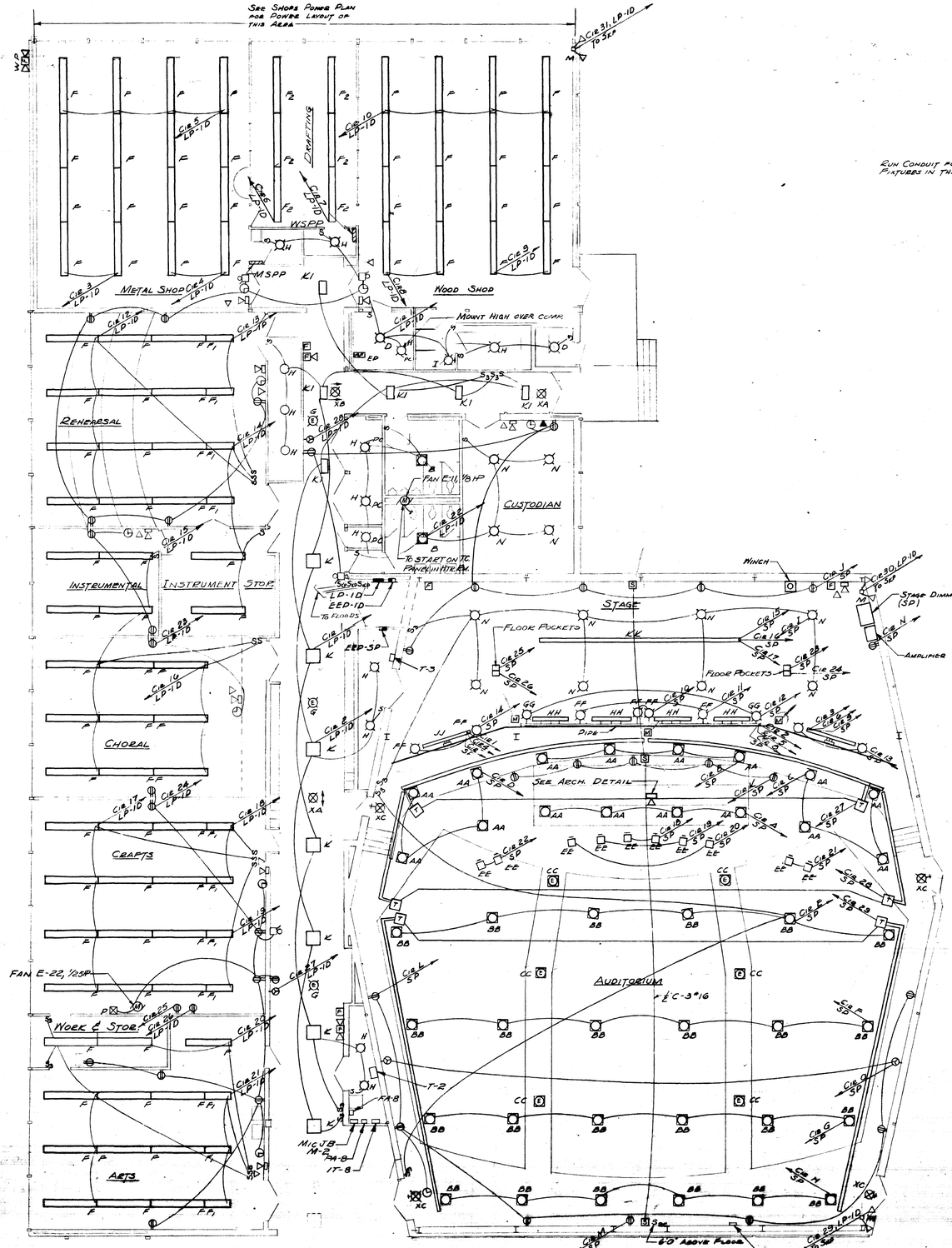
830-E3

Date 30 APR 57 | Scale 1/8" = 1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

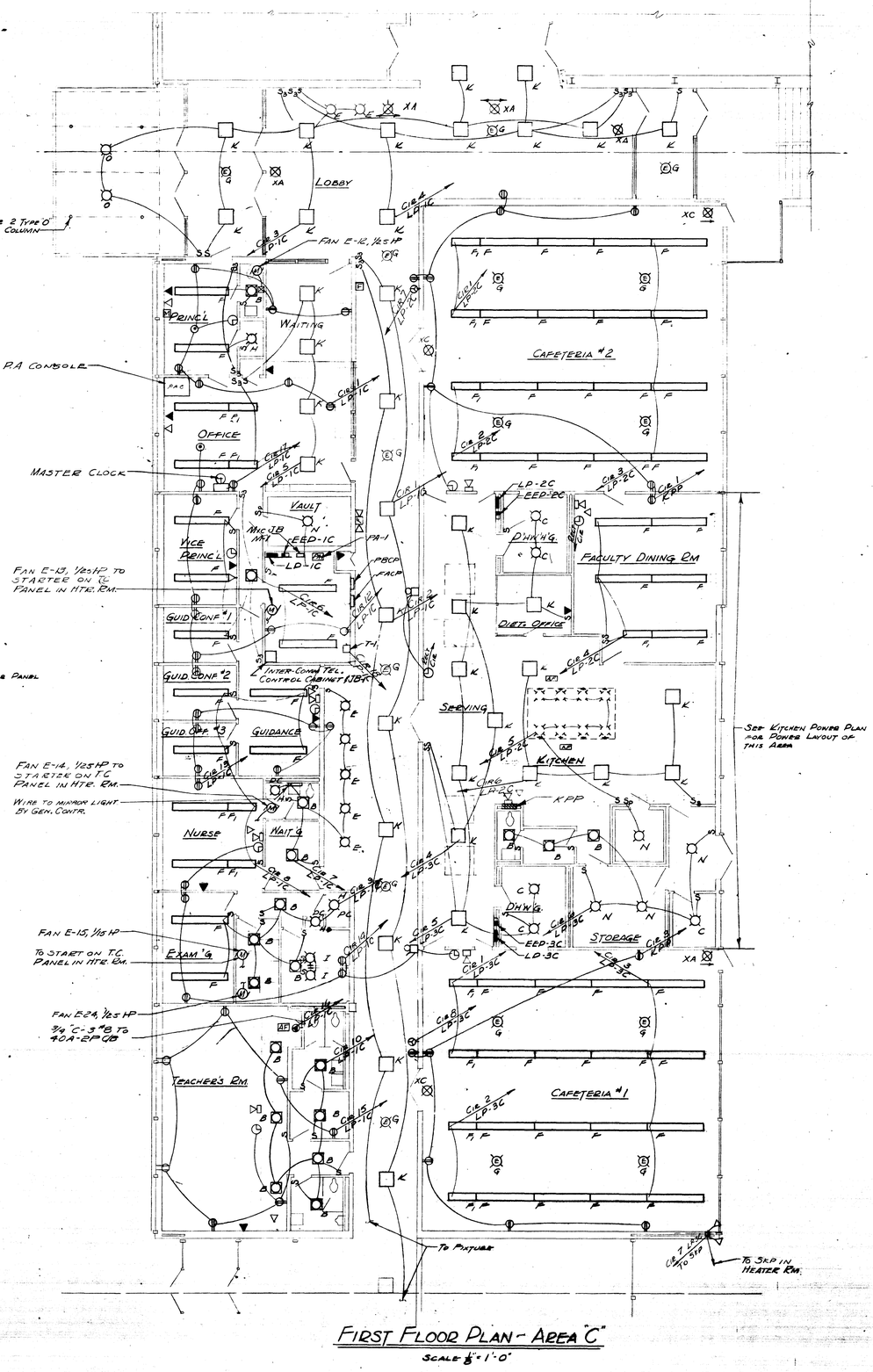
MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment



FIRST FLOOR PLAN - AREA "D"

SCALE ⅛" = 1'-0"



FIRST FLOOR PLAN - AREA "C"

SCALE ⅛" = 1'-0"

STATE OF CONNECTICUT JOHN N. MACDONALD No. 1648 REGISTERED ARCHITECT

STATE OF CONNECTICUT JAMES S. MINGES NO. 2423 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT NO. 2385 REGISTERED PROFESSIONAL ENGINEER

KEY PLAN

FIRST FLOOR ELECTRICAL AREAS C & D

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

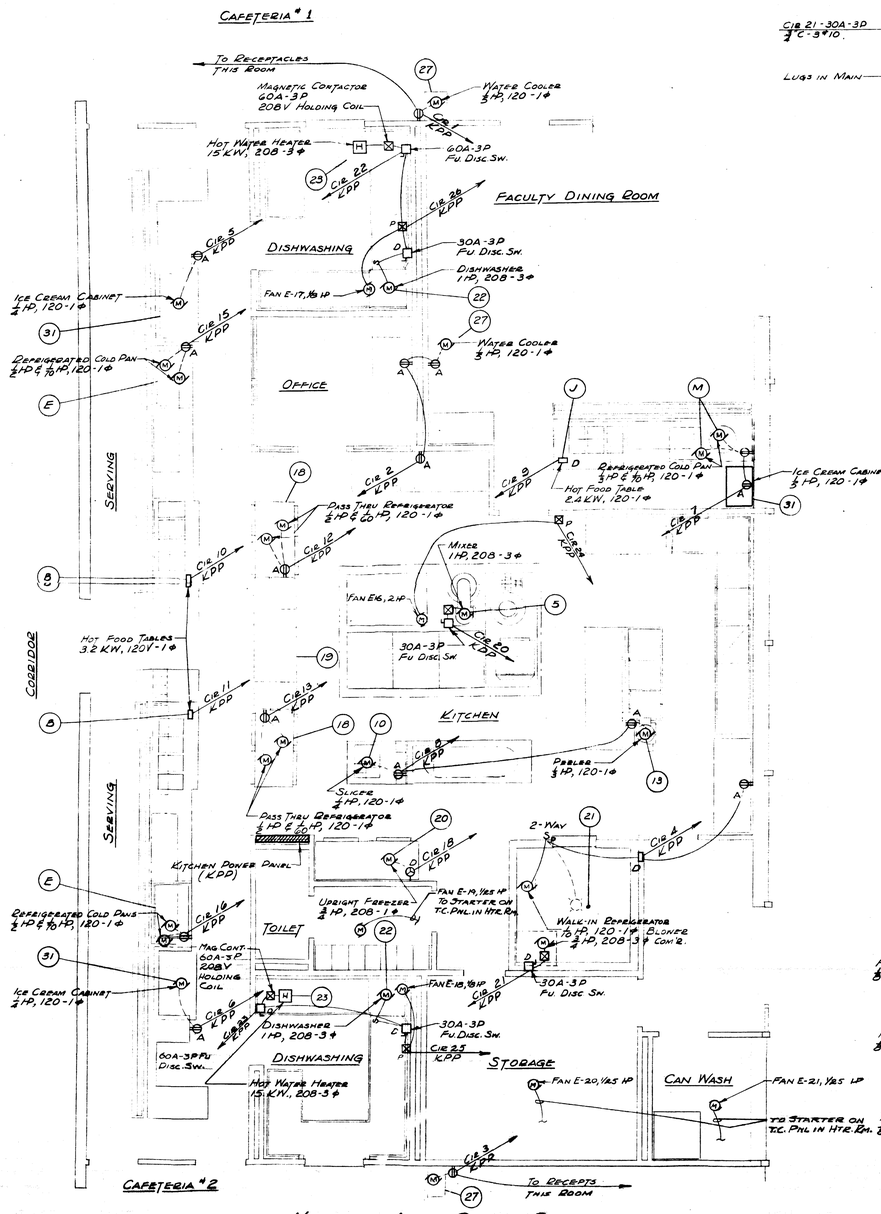
830-E4

Date 30 APR 67 | Scale ⅛" = 1'-0"

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

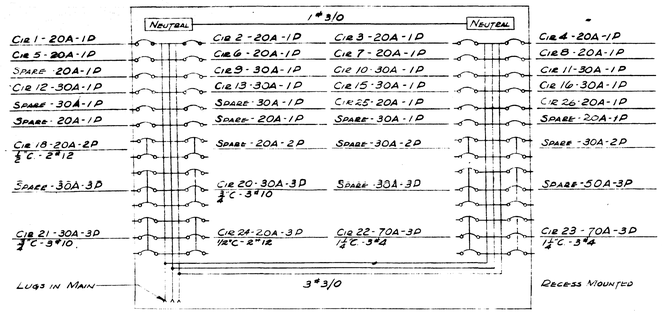
BQ #70 & 125 Attachment



Kitchen Area Power Plan

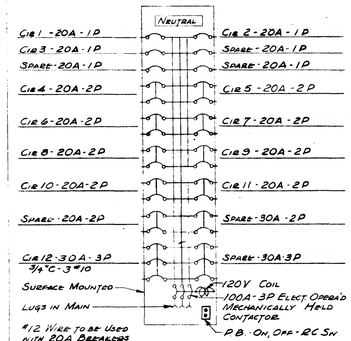
Scale ¼"-1'-0"

Note: Refer to Kitchen Equipment Drwg. (Sheet 330-E5) for Mounting Height of all Receptacles, Junction Boxes, & Disconnect Sws. Item Numbers Refer to Kitchen Equipment Schedule & Detail (Sheet 330-E4) All Symbols with the Letter "A" next to the Symbol, to be Checked on Kitchen Equip. Drwg. for Mounting Height



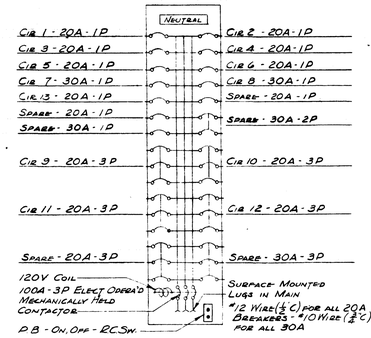
Kitchen Power Panel (KPP)

Circuit Breaker Type
120/208 Volts 3 Phase 4 Wires



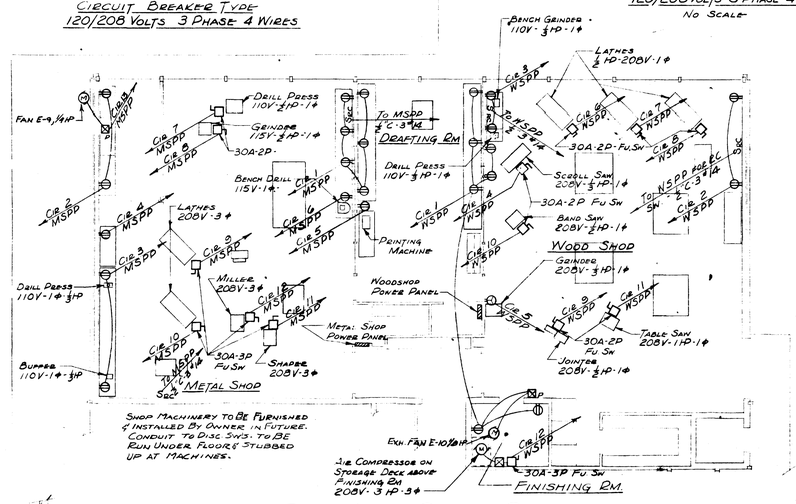
Wood Shop Power Panel

Circuit Breaker Type
120/208 Volts 3 Phase 4 Wires
No Scale



Metal Shop Power Panel

Circuit Breaker Type
120/208 Volts 3 Phase 4 Wires
No Scale

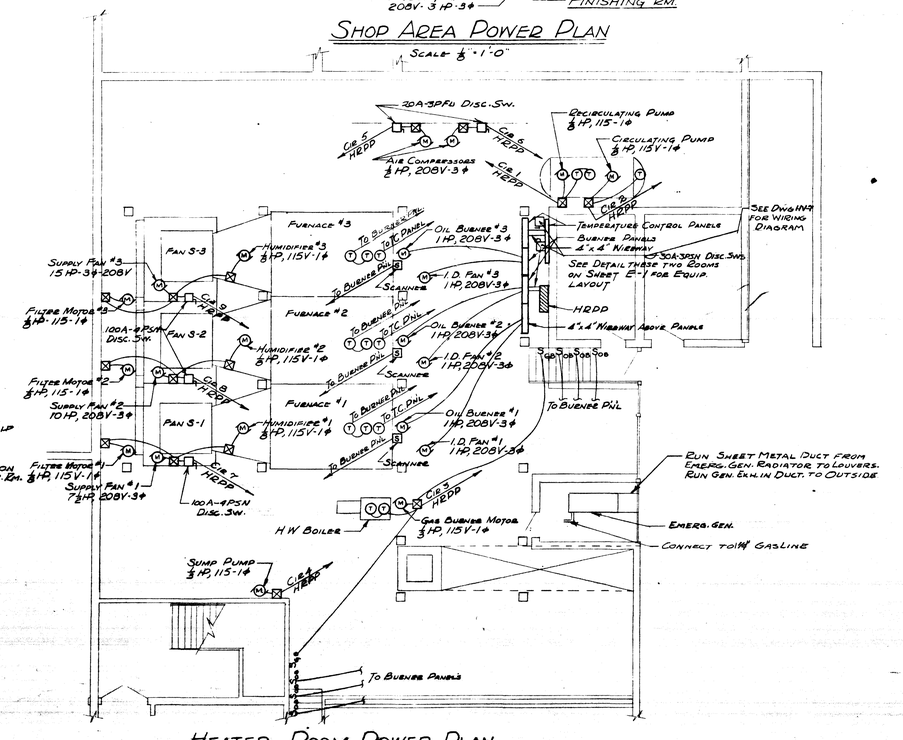


Shop Area Power Plan

Scale ⅛"-1'-0"

Heater Room Power Panel

No Scale



Heater Room Power Panel

Scale ⅛"-1'-0"

ELECTRICAL POWER PLANS & DETAILS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

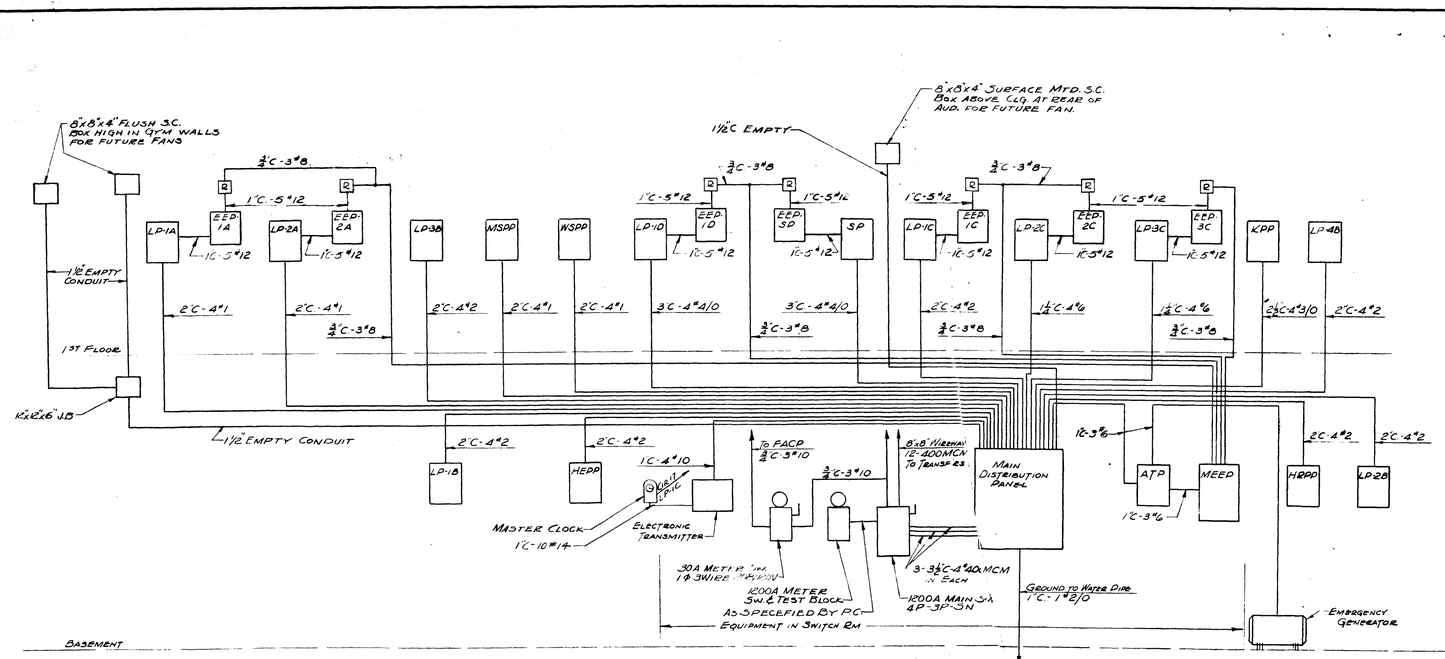
830-E5

Date: 30 APR 57 | Scale: AS SHOWN

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Conn.

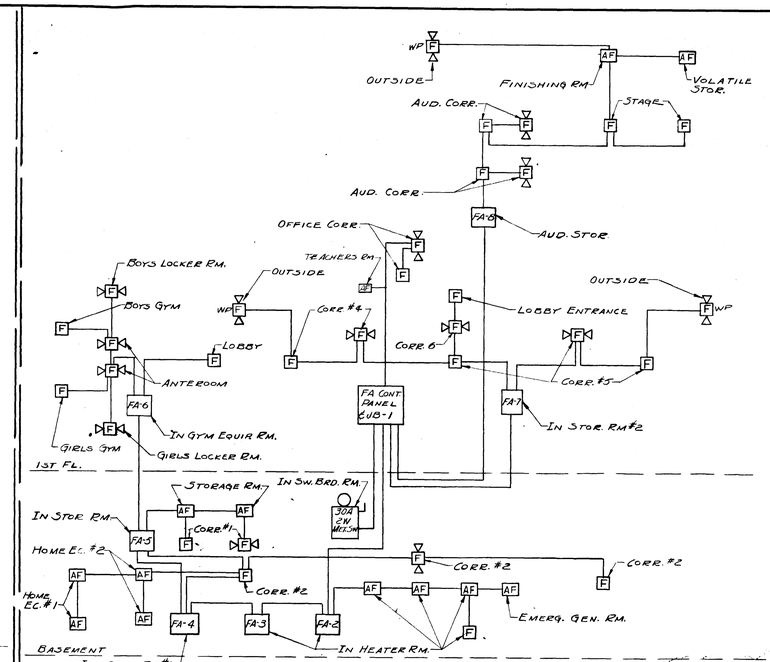
MARCHANT & M... ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment



MAIN LIGHT, POWER, & EMERGENCY SYSTEM RISER DIAGRAM

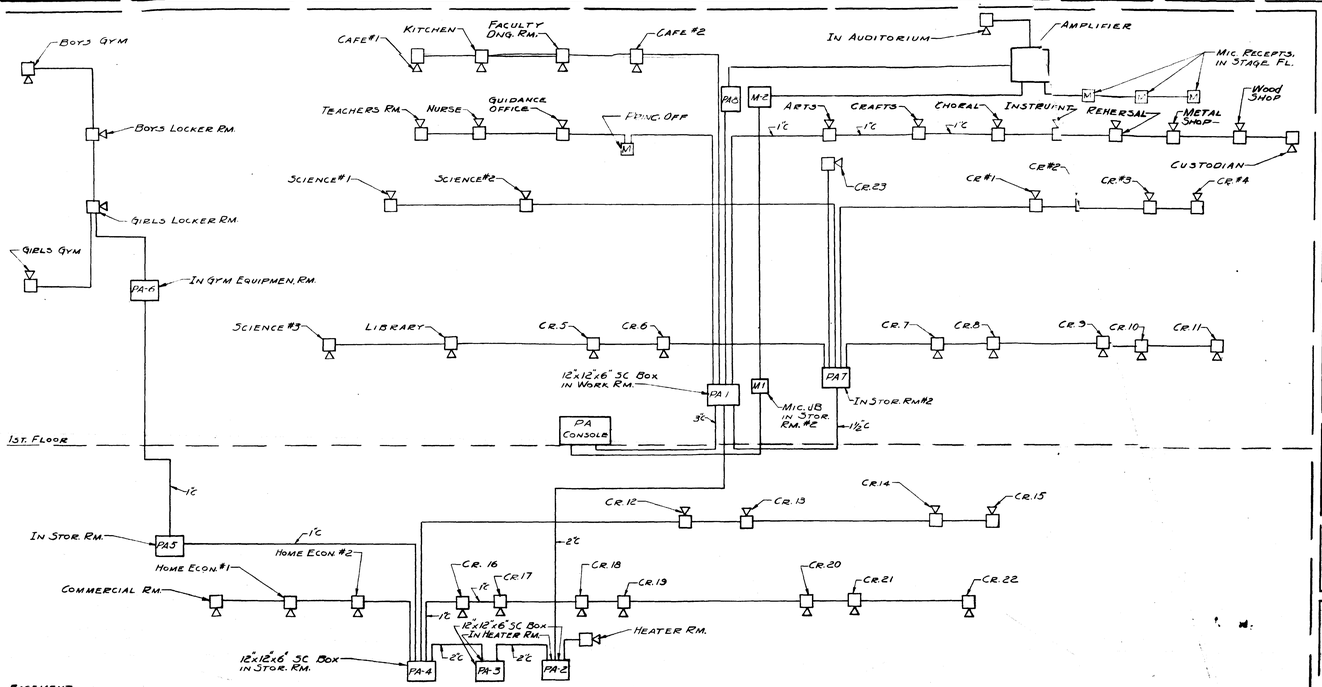
No Scale



NOTE: ALL CONDUITS ¾"

FIRE ALARM RISER DIAGRAM

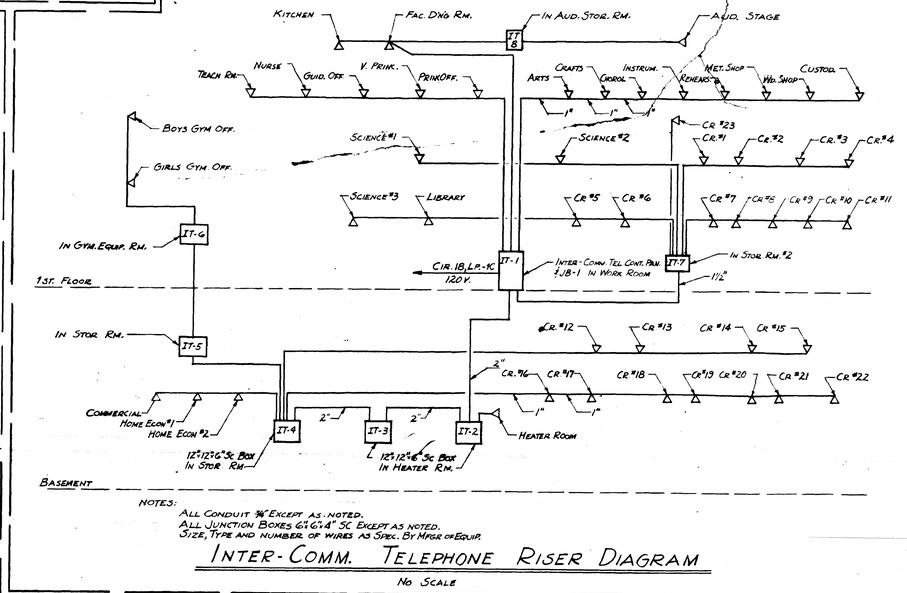
No Scale



NOTE:
ALL CONDUITS ¾" EXCEPT AS NOTED
ALL JUNCTION BOXES 6"x6"x4" SC EXCEPT AS NOTED
SIZES, TYPE AND NUMBER OF CONDUCTORS AS SPECIFIED BY MFGR. OF EQUIP.

PUBLIC ADDRESS AND AUDITORIUM SOUND SYSTEMS RISER DIAGRAM

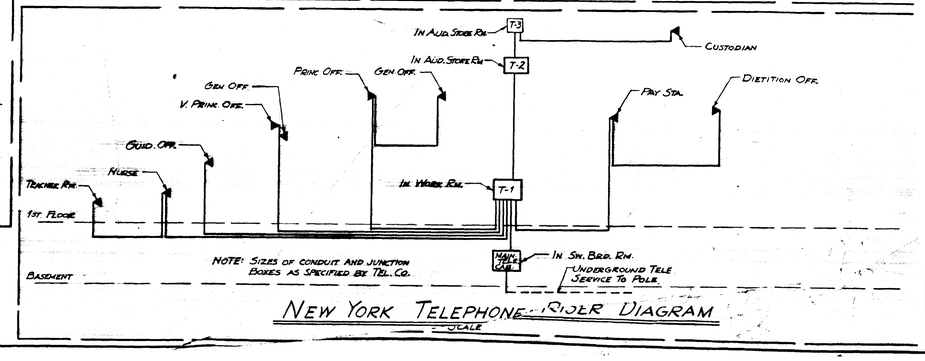
No Scale



NOTES:
ALL CONDUIT ¾" EXCEPT AS NOTED.
ALL JUNCTION BOXES 6"x6"x4" SC EXCEPT AS NOTED.
SIZE, TYPE AND NUMBER OF WIRES AS SPEC. BY MFGR OF EQUIP.

INTER-COMM. TELEPHONE RISER DIAGRAM

No Scale



NOTE: SIZES OF CONDUIT AND JUNCTION BOXES AS SPECIFIED BY TEL. CO.

NEW YORK TELEPHONE RISER DIAGRAM

No Scale

STATE OF CONNECTICUT JOHN W. MINGES REGISTERED PROFESSIONAL ENGINEER No. 1648

STATE OF CONNECTICUT JAMES S. MITCHELL No. 2423 REGISTERED P.E. PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT No. 2385 REGISTERED PROFESSIONAL ENGINEER

ELECTRICAL RISER DIAGRAMS

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

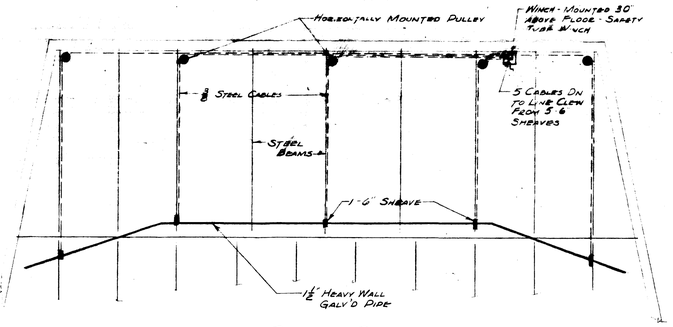
830-E6

Date: 30 APR 57 | Scale: AS SHOWN

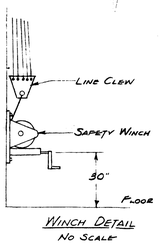
SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

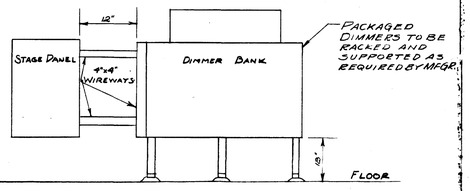
BQ #70 & 125 Attachment



RIGGING PLAN
FOR RAISING & LOWERING OF BORDER LIGHTS
NO SCALE



WINCH DETAIL
NO SCALE

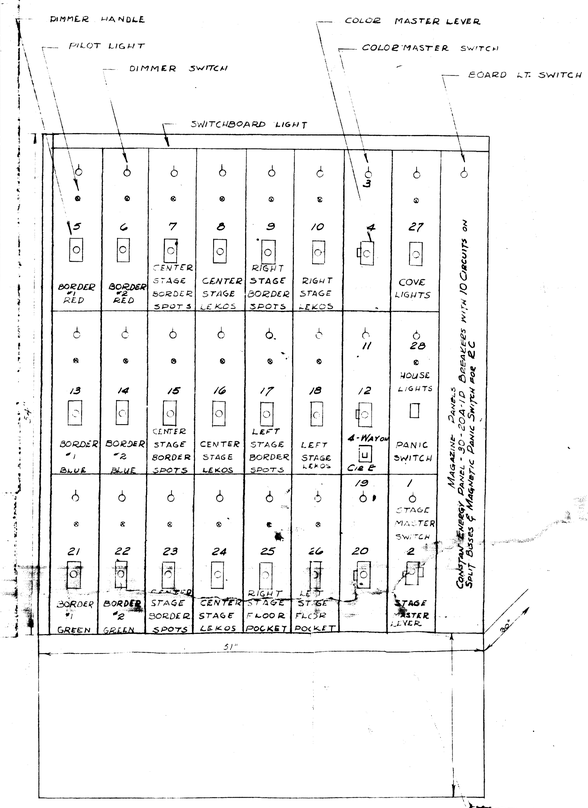


STAGE PANEL (SP) & PACKAGE DIMMER BANK INSTALLATION-ALTERNATE
NO SCALE

LIGHTING FIXTURE SCHEDULE

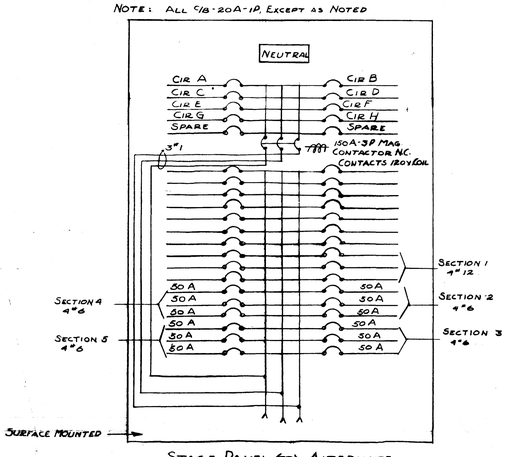
TYPE	MANUFACTURER AND DESCRIPTION	LAMP		MOUNT	REMARKS
A	Holophane #692-AL-HS High Bay unit with #0256 wire guard	I	1-1000W	30"Stem	Swivel on outlet box
B	Litecraft #E312 housing with #E24 opal glass lens and frame	I	1-150W	Ceiling Recess	
C	Perfeclite #1517 vapor proof with aluminum baby and round opal globe	I	2-60W	Ceiling Surface	
D	Russell & Stoll #4510 explosion proof fixture	I	1-150W		
E	Century #942 swivel light with canopy and #948 lauver	I	1-150W R-40FL	Ceiling Surface	
F	Smithcraft #SN2-42Rs "Shearton" with 8 ft. housing with plastic sides and metal louvers. Include necessary stems, clamps & end plates. Use with rapid start lamps	F	4-40W RS	Ceiling	
F_1	Same as "F" except with 4 ft. housing and 2-4ft. lamps	F	2-40W RS	Ceiling	
F_2	Same as "F" except #SN 4-42R Switch 8' housing and 8-4ft. lamps	F	8-40W RS	Ceiling	
G	Miller #MB-150 round aluminum drum with flat glass lens	I	2-15W	Ceiling Surface	Use 2-40W lamps where not on Emerg. System
H	Bryant #5289 porcelain filter with convenience outlet and pull chain	I	1-100W	Ceiling or Wall Surface	
I	Presolite #WB-24 wall bracket with opal glass globe	I	1-100W	Wall Surface	Mount 7'-6" above floor slab
J	Miller #MB-160 satin aluminum tapered drum	I	1-150W R-40FL	Ceiling Surface	
K	Lightolier #13526 "Optiplex" 24" square with plexi-glass diffuser	F	6-20W	Ceiling Surface	
K_1	Same as "K" except #13524, 12"x24"	F	4-2W	do	
L	Progress #1148RS strip with #R-48 adjustable chrome reflector	F	1-40W RS	Under Cabinets	
M	Outside Flod lights - see specifications	I	2-500W	See detail	
N	Miller #PREDD-150 RLM reflector for conduit mounting	I	1-150W	Ceiling Stem	
O	McPhilben #32-88 cast aluminum square, weather-resistant with square opal glass bowl	I	2-100W	Canopy Surface	
XA	Day-Brite #3146 or #3145 single face top or end mounted Exit Lights with solid bottom and metal stencil. Furnish with directional arrows as shown on drawings	I	2-25W	Ceiling or Wall Surface	
XB	Same as "XA" except #3126 or #3125 with double face	I	2-25W	Ceiling or wall Surface	
XC	Same as "XA" except #3106 or #3105 recessed	I	2-25W	Wall Recess	With wire guard in Gym

NOTE:
REFER TO SPECIFICATIONS - DIV. 43 FOR AUDITORIUM & STAGE LIGHTING FIXTURES



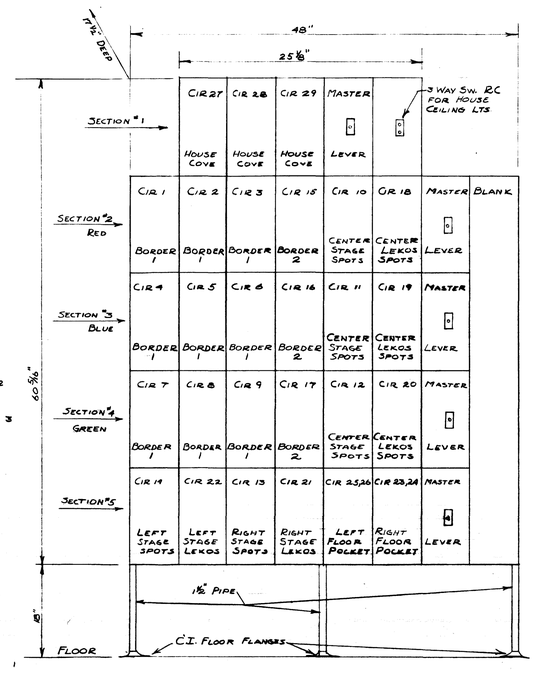
STAGE DIMMER PANEL PLAN
NO SCALE

NOTE: ALL C/B-20A-1P. EXCEPT AS NOTED

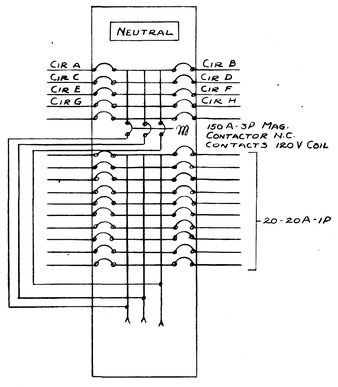


STAGE PANEL (SP) ALTERNATE
CIRCUIT BREAKER TYPE
208-120 VOLTS 3 PHASE 4 WIRE
NO SCALE

ALTERNATE
STAGE PANEL



STAGE DIMMER PANEL SCHEDULE - ALTERNATE
NO SCALE



CONSTANT ENERGY PANEL
BUILT-IN TO MAGAZINE OF DIMMER BOARD
NO SCALE

STAGE DIMMER PANEL SCHEDULE

No	NAME	COLOR	DIMMER WATTS	DIMMER CIR SIZE	No. OF BRANCH CIRCUITS	BRANCH CIRCUIT NUMBERS
1	STAGE MASTER SW					
2	STAGE MASTER LEVER					
3	COLOR MASTER SW	RED				
4	COLOR MASTER LEVER	"				
5	BORDER #1	"	1-6000	50-A	3	1,2,3
6	BORDER #2	"	1-2500	30-A	1	15
7	CENTER STAGE SPOTS	"	1-1000	20-A	1	10
8	CENTER LEKO SPOTS	"	1-2000	20-A	1	18
9	RIGHT STAGE SPOTS	"	1-1000	20-A	1	13
10	RIGHT STAGE LEKOS	"	1-2000	20-A	1	21
11	COLOR MASTER SW	BLUE				
12	COLOR MASTER LEVER	"				
13	BORDER #1	"	1-6000	50-A	3	4,5,6
14	BORDER #2	"	1-2500	30-A	1	16
15	CENTER STAGE SPOTS	"	1-1000	20-A	1	11
16	CENTER LEKO SPOTS	"	1-2000	20-A	1	19
17	LEFT STAGE SPOTS	"	1-1000	20-A	1	14
18	LEFT STAGE LEKOS	"	1-2000	20-A	1	22
19	COLOR MASTER SW	GREEN				
20	COLOR MASTER LEVER	"				
21	BORDER #1	"	1-6000	50-A	3	7,8,9
22	BORDER #2	"	1-2500	30-A	1	17
23	CENTER STAGE SPOTS	"	1-2500	30-A	1	12
24	CENTER STAGE LEKOS	"	1-2000	20-A	1	20
25	RIGHT FLOOR POCKET		1-2000	20-A	2	23,24
26	LEFT FLOOR POCKET		1-2000	20-A	2	25,26
27	HOUSE COVE LIGHTS		1-6000	50A	3	27,28,29
28	HOUSE CEILING LTS.		NONE			A,B,C,D,E,F,G,H

NOTE: CONNECT "LETTERED" CIRCUITS TO CONSTANT ENERGY PANEL. PANIC CONTACTOR 60A-3P-MAGNETIC TYPE, NORMALLY CLOSED CONTACTS (CONNECT TO CIRCUITS "A" TO "H" INCLUSIVE.

STATE OF CONNECTICUT JOHN H. MARCHANT No. 1640 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT JAMES G. MINGES NO. 2423 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT CHARLES G. MARCHANT NO. 2385 REGISTERED PROFESSIONAL ENGINEER

ELECTRICAL DETAILS AND SCHEDULES

CENTRAL JUNIOR HIGH SCHOOL
Greenwich, Connecticut

830-E7

Date 30 APR 57 | Scale NO SCALE

SHERWOOD, MILLS AND SMITH
Architects 65 Broad Street, Stamford, Connecticut

MARCHANT & MINGES
ENGINEERS
WEST HARTFORD, CONN.

BQ #70 & 125 Attachment

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

CENTRAL
MIDDLE
SCHOOL

ESTIMATING

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN
TWO LAFAYETTE SQUARE / BRIDGEPORT, CT 06604-3944 / 203 366 5441 / FAX 367 9540

BID SET

MARCH 16, 1998
FT PROJECT NO. 50950.06

PRINTED BY NATIONAL DIRECT - 618-372-3999 - Illinois - 7/29/98 4:00:00 PM

ABBREVIATIONS

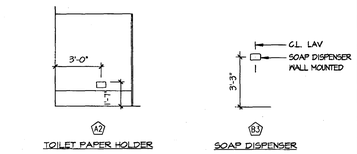
A.DR.	ACCESS DOOR	K.E.C.	KITCHEN EQUIPMENT CONTRACTOR
A.F.F.	ABOVE FINISH FLOOR		
A.F.R.	ABOVE FINISH ROOF	L.P.	LOW POINT
A.P.	ACCESS PANEL	LAB.	LABORATORY
A.S.	ALUMINUM SADDLE	LAD.	LADDER
A.V.	AUDIO VISUAL	LAM.	LAMINATED
AC.	ACOUSTIC, ACOUSTICAL	LAV.	LAVATORY
AC.BD.	ACOUSTICAL BOARD	LDR.	LEADER
AC.T.	ACOUSTICAL TILE	L.F.	LINEAR FEET
ADD.	ADDITIONAL	LKR.	LOCKER
AD.J.	ADJUSTABLE	LOC.	LOCATION
ALT.	ALTERNATE	LT.	LIGHT
ALUM.	ALUMINUM	LTWT.	LIGHTWEIGHT
APPROX.	APPROXIMATE		
ARCH.	ARCHITECTURAL	M.B.	MARKER BOARD
&	AND	M.ER.	MECHANICAL EQUIPMENT ROOM
@	AT	M.O.	MASONRY OPENING
		MACH. RM.	MACHINE ROOM
B	B LABEL DOOR	MAS.	MASONRY
B.M.	BENCH MARK	MAX.	MAXIMUM
B.U.R.	BUILT-UP ROOF	MATL.	MATERIAL
BD.	BOARD	MECH.	MECHANICAL
BIT.	BITUMINOUS	MET.	METAL
BLDG.	BUILDING	MEZZ.	MEZZANINE
BLK.	BLOCK	MFR.	MANUFACTURER
BLKG.	BLOCKING	MIN.	MINIMUM
BM.	BEAM	MISC.	MISCELLANEOUS
BOT.	BOTTOM	MLDG.	MOULDING
BRK.	BRICK	MTD.	MOUNTED
C.	CLEAN, CLOSET	N.	NORTH
C. TO C.	CENTER TO CENTER	N.I.C.	NOT IN CONTRACT
C.B.	CHALK BOARD	N.T.S.	NOT TO SCALE
C.J.	CONTROL JOINT	N.A.	NOT APPLICABLE
C.L. OR ℄	CENTER LINE	NO. OR #	NUMBER
C.M.U.	CONCRETE MASONRY UNIT	NOM.	NOMINAL
CAB.	CABINET		
CEM.	CEMENT	OA.	OVERALL
CHG.	CHANGE	O.D.	OUTSIDE DIAMETER
CLG.	CEILING	OFF.	OFFICE
CLO.	CLOSET	OPNG.	OPENING
CNTR.	COUNTER	OPP.	OPPOSITE
COL.	COLUMN		
CONC.	CONCRETE	P.L.	PROPERTY LINE
CONF.	CONFERENCE	P. LAM.	PLASTIC LAMINATE
CONN.	CONNECTION	PH.	PENTHOUSE
CONST.	CONSTRUCTION	PLAS.	PLASTER
CONT.	CONTINOUS, CONTINUE	PLYWD.	PLYWOOD
CONTR.	CONTRACTOR	PNL.	PANEL
CORR.	CORRIDOR	PREFAB.	PREFABRICATED
CPT.	CARPET	PROP.	PROPERTY
CTR.	CENTER	PRTN.	PARTITION
		PTD.	PAINTED
DEPT.	DEPARTMENT		
DET.	DETAIL	QTR.	QUARTER
DIA.	DIAMETER	QTY.	QUANTITY
DN.	DOWN		
DR.	DOOR	R.	RADIUS
DWG.	DRAWING	R.C.P.	REFLECTED CEILING PLAN
		R.D.	ROOF DRAIN
E.	EAST	R.O.	ROUGH OPENING
EA.	EACH	REC.	RECESS
E.I.F.S.	EXTERIOR INSULATION AND FINISH SYSTEM	REF.	REFRIGERATOR
EL.	ELEVATION	REINF.	REINFORCEMENT
ELEC.	ELECTRIC	RELOC.	RELOCATED
ELEV.	ELEVATOR	REQD.	REQUIRED
ENCL.	ENCLOSURE	RESIL.	RESILIENT
ENT.	ENTRANCE	REV.	REVISION
EQ.	EQUAL	RIS.	RISER
EQUIP.	EQUIPMENT	RM.	ROOM
EXIST.	EXISTING	RUB.	RUBBER
EXP.	EXPANSION		
EXP. JT.	EXPANSION JOINT	S.	SOUTH
EXT.	EXTERIOR	S.S.	STAINLESS STEEL
		S.F.	SQUARE FEET
F.E.	FIRE EXTINGUISHER	SCHED.	SCHEDULED
F.E.C.	FIRE EXTINGUISHER WITH CABINET	SECT.	SECTION
F.H.C.	FIRE HOSE CABINET	SH. MT.	SHEET METAL
F.S.P.	FIRE STANDPIPE	SIM.	SIMILAR
F.D.	FLOOR DRAIN	SK.	SKETCH
FDN.	FOUNDATION	SPEC.	SPECIFICATIONS
FIN.	FINISH, FINISHED	ST.	STREET
FIXT.	FIXTURE	STD.	STANDARD
FL.	FLOOR	STL.	STEEL
FLUOR.	FLUORESCENT	STOR.	STORAGE
FT. OR '	FEET OR FOOT	STRUCT.	STRUCTURAL
FTG.	FOOTING	SUPP.	SUPPORT
FURR.	FURRING	SUSP.	SUSPENDED, SUSPENSION
FUT.	FUTURE		
		T. & G.	TONGUE AND GROOVE
G.C.	GENERAL CONTRACTOR	T.B.	TACK BOARD
GA.	GAGE	T.O.S.	TOP OF STEEL
GALV.	GALVANIZED	T.O.W.	TOP OF WALL
GEN.	GENERAL	TD.	TREAD
G.F.R.G.	GLASS FIBER REINFORCED GYPSUM	TELE. CAB.	TELEPHONE CABINET
G.F.R.G.	GLASS FIBER REINFORCED GYPSUM	TELE.	TELEPHONE
GL.	GLASS, GLAZE	THK.	THICKNESS
GR.	GRADE	THRES.	THRESHOLD
GYP.	GYPSUM	THRU	THROUGH
GYP. BD.	GYPSUM BOARD	TLT.	TOILET ROOM
		TRANS.	TRANSFER
H.C.	HANDICAP, HANDICAPPED	TV.	TELEVISION
H.M.	HOLLOW METAL	TYP.	TYPICAL
H.P.	HIGH POINT		
HDWD.	HARDWOOD	U.N.O.	UNLESS NOTED OTHERWISE
HDWR.	HARDWARE	U.L.	UNDERWRITERS LABORATORY
HGT.	HEIGHT	UR.	URINAL
HORIZ.	HORIZONTAL, HORIZONTALLY	URH.	URINAL HANDICAPPED
H.V.A.C.	HEATING VENTILATING AIR CONDITIONING		
		V.C.T.	VINYL COMPOSITION TILE
I.D.	INSIDE DIAMETER	V.I.F.	VERIFY IN FIELD
I.P.S.	IRON PIPE SIZE	V.W.C.	VINYL WALL COVERING
IN. OR "	INCH OR INCHES	VEST.	VESTIBULE
INCL.	INCLUSIVE, INCLUDE, INCLUDING	VIT.	VITREOUS
INSUL.	INSULATION		
INT.	INTERIOR	W.	WEST
INTER.	INTERMEDIATE	W. GL.	WIRE GLASS
		W.M.	WIRE MESH
JAN.	JANITOR	W/	WITH
JT.	JOINT	W/ANS.	WAINSCOT
		WD.	WOOD

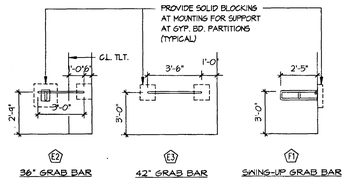
NOTES

1. FOR STRUCTURAL SYMBOLS AND ABBREVIATIONS REFER TO DRAWING S401.
2. FOR MECHANICAL SYMBOLS AND ABBREVIATIONS REFER TO DRAWING M401.
3. FOR FIRE PROTECTION SYMBOLS AND ABBREVIATIONS REFER TO DRAWING FP401.
4. FOR PLUMBING SYMBOLS AND ABBREVIATIONS REFER TO DRAWING P401.
5. FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS REFER TO DRAWING E401.

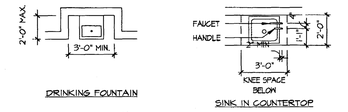
MOUNTING REQUIREMENTS

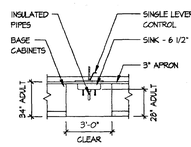
ACCESSORY REQUIREMENTS

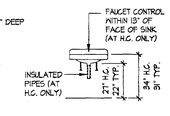


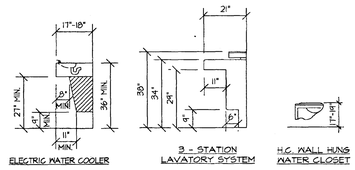


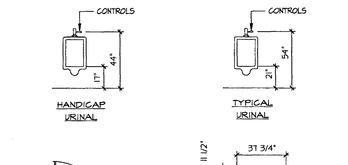
FIXTURE REQUIREMENTS

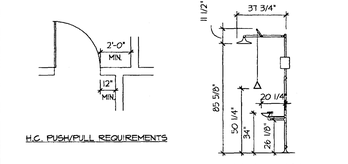






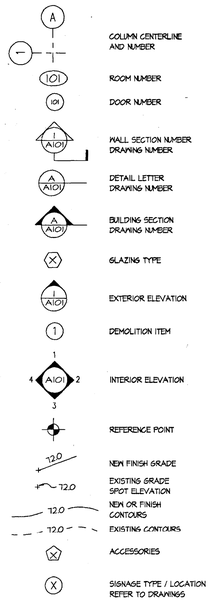




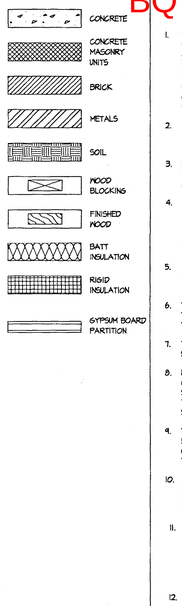


SYMBOLS

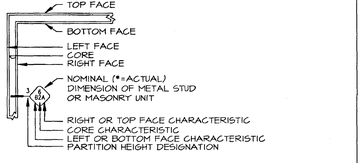
GRAPHIC



MATERIALS



PARTITION TYPE DESCRIPTION



CORE CHARACTERISTICS

1. METAL STUD
2. METAL STUD WITH SOUND ATTENUATION BLANKET
3. 7/8" FURRING
4. METAL Z CHANNEL WITH RIGID INSULATION
5. C-H METAL STUD

FACE CHARACTERISTICS

- NO CHARACTERISTIC
A. SINGLE LAYER- 5/8" GYPSUM BOARD
B. DOUBLE LAYER- 5/8" AND 5/8" GYPSUM BOARD
C. DOUBLE LAYER- 1/2" AND 5/8" GYPSUM BOARD BELOW (ACOUSTIC)
D. DOUBLE LAYER- 3/8" AND 3/8" GYPSUM BOARD (CURVED)
E. DOUBLE LAYER- 5/8" GYPSUM BOARD WITH 3/4" PLYWOOD BELOW
F. ABUSE RESISTANT GYPSUM BOARD
6. MOISTURE RESISTANT GYPSUM BOARD
H. CEMENT BOARD
J. PLASTER AND LATH
K. RESILIENT CHANNELS WITH 5/8" GYPSUM BOARD
L. 1" GYPSUM LINER PANEL
M. EXISTING SURFACE
N. 6" CONCRETE MASONRY UNIT. (SEE NOTE #18)
O. 8" CONCRETE MASONRY UNIT. (SEE NOTE #18)
P. 8" X 8" X 3" SOLID GLASS BLOCK 1 1/2 HR RATED UL DESIGN #R2556.

PARTITION HEIGHT

1. FULL HEIGHT
2. 4" MINIMUM ABOVE FINISHED CEILING
3. UNDERSIDE OF FINISHED CEILING
4. LOW HEIGHT

GYPSUM BOARD PARTITION RATING

1. 1-HR SHAFT-WALL UL DESIGN #468.
2. 1-HR PARTITION UL DESIGN #465.
3. 2-HR PARTITION UL DESIGN #412.
4. 2-HR SHAFT-WALL UL DESIGN #438.

BRICK VENEER W/ SHEATHING METAL STUDS & GYPSUM BOARD

1. 1-HR EXTERIOR WALL CONSTRUCTION UL DESIGN #425. SEE DWG A601 FOR EXTENT.

NOTE:
ADD ADDITIONAL LAYER OF 1/2" RATED GYPSUM BOARD TO SHAFT-WALL WHEN USED HORIZONTALLY TO MEET WARNOCK-HERSEY TESTED AND APPROVED ASSEMBLY # WH-0415-PSH0154-0187.

PARTITION NOTES

1. UNLESS OTHERWISE NOTED ALL MASONRY PARTITIONS SHALL BE FULL HEIGHT UP TO STRUCTURE ABOVE. ALL PENETRATIONS SHALL BE SEALED WITH FIRE-STOPPING MATERIALS. SEE STRUCTURAL DRAWINGS FOR REINFORCING AND BRACING REQUIREMENTS.
2. UNLESS OTHERWISE NOTED ALL GYPSUM BOARD PARTITIONS SHALL BE 3- 5/8" METAL STUDS AT 16" O.C. WITH 1- LAYER 5/8" GYPSUM BOARD ON EACH SIDE. EXTEND FULL HEIGHT UP TO STRUCTURE ABOVE AND SEAL WITH FIRE-STOPPING MATERIAL AT RATED PARTITIONS AND ACOUSTIC SEALANT AT NON-RATED PARTITIONS. PROVIDE SOUND ATTENUATION INSULATION FULL HEIGHT.
3. PROVIDE SOLID BLOCKING AT ALL GYPSUM BOARD PARTITIONS FOR ALL WALL MOUNTED EQUIPMENT INCLUDING THOSE LISTED AS N.I.C.

GENERAL NOTES

BQ #70 & 125 Attachment

1. THE EXISTING CONDITIONS REPRESENTED HEREIN ARE BASED ON THE CONSTRUCTION DRAWINGS PREPARED BY SHERWOOD, MILLS AND SMITH ARCHITECTS DATED 4-30-97, MAITLAND/STRAUSS/BEIRK ARCHITECTS PC DATED 5-4-81 AND SITE SURVEY PREPARED BY CCA DATED 8-27-97. SITE SURVEY IS INCLUDED FOR CONTRACTORS REFERENCE ONLY. FLETCHER THOMPSON CANNOT GAURANTEE THE CORRECTNESS OF THE EXISTING SHOWN AND ASSUMES NO RESPONSIBILITY HEREITOF. INCLUSION OF THESE EXISTING CONDITIONS HEREIN SHALL IN NO WAY ALLEVIATE THE CONTRACTOR OF ITS RESPONSIBILITY TO VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS.
2. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS, DIMENSIONS, FLOOR ELEVATIONS AND MATERIALS IN THE FIELD AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES TWO WEEKS PRIOR TO BID OPENING.
3. EACH TRADE CONTRACTOR IS RESPONSIBLE FOR REVIEWING "THE CONSTRUCTION DRAWINGS" IN COORDINATING HIS WORK WITH THE OTHER TRADE CONTRACTORS AS IS INDICATED ON THE DRAWINGS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL PATCH, REPAIR AND FINISH ALL EXISTING CONSTRUCTION DAMAGED DURING PERFORMANCE OF HIS OR HIS SUB-CONTRACTORS WORK. HE SHALL ALSO PROVIDE ALL OPENINGS IN EXISTING AND NEW CONSTRUCTION REQUIRED BY HIM OR HIS SUB-CONTRACTORS AND SHALL PATCH, REPAIR AND FINISH THE OPENINGS TO MATCH EXISTING OR NEW FINISHES AFTER WORK HAS BEEN COMPLETED.
5. THE CONTRACTOR SHALL SCHEDULE ALL WORK SO AS TO KEEP ALL CORRIDORS, STAIRWAYS AND OTHER EXIT COMPONENTS FREE OF CONSTRUCTION DEBRIS, STAGING, STORED MATERIALS, ETC. DURING NORMAL SCHOOL HOURS.
6. THE CONTRACTOR SHALL COORDINATE ALL WORK IN THE EXISTING BUILDING WITH THE SCHOOL PRINCIPAL AND SHALL PROVIDE A MIN. OF ONE WEEKS NOTICE PRIOR TO PROCEEDING WITH ANY WORK.
7. THE LOCATION OF ALL TRAILERS, STORAGE STRUCTURES AND OTHER TEMPORARY SITE FACILITIES SHALL BE APPROVED BY THE OWNER AND FIRE MARSHAL.
8. WHERE OWNERS FURNITURE IS REQUIRED TO BE MOVED AND/OR STORAGE CLEANED OUT IN ORDER FOR THE CONTRACTOR TO PERFORM HIS WORK, THE CONTRACTOR SHALL COORDINATE THAT PHASE OF WORK WITH THE OWNER A MIN. OF ONE WEEK TO WORK START-UP. ALL OWNERS FURNITURE RELOCATION AND/OR CLEAN-UP SHALL BE PERFORMED BY THE OWNERS WORK FORCE.
9. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER ANY SALVAGE REQUIREMENTS PRIOR TO START-UP OF WORK AND SHALL REMOVE AND TURN OVER TO THE OWNER ANY HARDWARE AND/OR OTHER EQUIPMENT OR MATERIALS THE OWNER WANTS TO RETAIN.
10. THE PLUMBING, HVAC, SPRINKLER AND ELECTRICAL CONTRACTORS SHALL SEAL NEW OPENINGS AROUND PIPE, CONDUITS, DUCTS, ETC. WITH FIRE-STOPPING / SMOKE RESISTANT NON-COMBUSTIBLE MATERIALS AS INDICATED ON CONSTRUCTION DRAWINGS AND IN PROJECT SPECIFICATIONS.
11. ACCESS PANELS WHICH ARE REQUIRED BY THE PLUMBING, HVAC, SPRINKLER OR ELECTRICAL CONTRACTORS WHICH ARE NOT SHOWN ON THE CONSTRUCTION DRAWINGS, BUT ARE REQUIRED FOR ACCESS TO THEIR EQUIPMENT, SHALL BE FURNISHED BY THE RESPECTIVE CONTRACTOR TO THE MASONRY CONTRACTOR FOR INSTALLATION INTO MASONRY WALLS AND TO THE DRYWALL AND CEILING CONTRACTOR FOR INSTALLATION INTO DRYWALL PARTITIONS AND CEILINGS.
12. PROVIDE TRENCHING IN EXISTING BUILDING FOR UNDERFLOOR PIPING AS INDICATED ON PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS.
13. ALL WOOD BLOCKING USED ON THE INTERIOR SHALL BE FIRE RETARDANT TREATED. ALL EXTERIOR WOOD BLOCKING SHALL BE PRESSURE TREATED.
14. ALL CONCRETE MASONRY UNIT WALLS SHALL EXTEND TO THE UNDERSIDE OF CONSTRUCTION ABOVE AND BE SEALED-OFF BETWEEN THE CONSTRUCTION AND TOP OF WALL W/ A NON-COMBUSTIBLE FIRE-STOPPING MATERIAL. SEE SPECIFICATIONS 07210. SEE STRUCTURAL DRAWINGS FOR TYPICAL BRACING AT TOP OF INTERIOR C.M.U. WALLS.
15. REFER TO STRUCTURAL DRAWINGS FOR REINFORCING AND GROUTING REQUIREMENTS OF ALL CONCRETE MASONRY WALLS.
16. BLOCK FOR USE IN (1) & (2) HR FIRE RATED WALLS AND PARTITIONS SHALL HAVE SUCH EQUIVALENT SOLID THICKNESS THAT WHEN INSTALLED THEY WILL PROVIDE FIRE RESISTANCE RATING CONFORMING TO STATE CODE REQUIREMENTS.

    THE PRODUCER OF CONCRETE MASONRY UNITS FOR FIRE RATED WALLS SHALL FURNISH CERTIFICATION FROM AN INDEPENDENT TESTING LABORATORY CONFIRMING ALL 8" WIDE OR LARGER MASONRY UNITS MEET THE REQUIREMENTS OF UL-618, REFERENCING FULL SCALE FIRE TEST REPORTS (ASTM E-119). ALL 4" AND 6" WIDE UNITS SHALL CONFORM TO NATIONAL BUREAU OF STANDARDS AND NATIONAL COUNCIL FULL SCALE FIRE TESTS.
17. FINISH GROUND FLOOR ELEVATION 44'-1".
    FINISH FIRST FLOOR ELEVATION 55'-1".
18. IN ALL NEW CONSTRUCTION WHERE CEILING PLENUMS ARE INDICATED FOR USE AS UNDUCTED RETURN AIR TRANSFER, ALL MATERIALS PROVIDED WITHIN THESE SPACES SHALL BE NON-COMBUSTIBLE. ALL WIRING SHALL BE IN CONDUIT & ALL CABLING FOR FIRE ALARM, P.A., COMPUTERS, T.V., TELEPHONE SYSTEMS SHALL BE RATED FOR PLENUM INSTALLATION.

    IN ALL EXISTING RENOVATED AREAS WHERE CEILING PLENUMS ARE INDICATED FOR USE AS UNDUCTED RETURN AIR TRANSFER, ALL COMBUSTIBLE MATERIALS SHALL BE REMOVED & REPLACED WITH NON-COMBUSTIBLE MATERIALS. ALL WIRING SHALL BE IN CONDUIT & ALL CABLING FOR FIRE ALARM, P.A., COMPUTERS, T.V. TELEPHONE SYSTEMS SHALL BE RATED FOR PLENUM INSTALLATION.

DRAWING NOTES

- REFER TO STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR REINFORCING, GROUTING AND BRACING REQUIREMENTS AT CONCRETE MASONRY UNIT PARTITIONS.
- REFER TO CODE COMPLIANCE AND LIFE SAFETY DRAWINGS FOR SMOKE AND FIRE RESISTANCE REQUIREMENTS FOR PARTITIONS.
- REFER TO GENERAL INFORMATION DRAWING FOR ABBREVIATIONS, SYMBOLS, GENERAL NOTES, AND ACCESSORY MOUNTING HEIGHTS.

TRADE CONTRACTOR'S NOTE

ALL EQUIPMENT SHOWN ON THESE DRAWINGS AND IN PROJECT SPECIFICATION IS BASED ON SPECIFIED MANUFACTURERS. ANY MODIFICATION AND/OR SUBSTITUTION OF SAID EQUIPMENT IS SUBJECT TO COMPLETE COORDINATION OF ALL CONNECTIONS, SERVICES, OPENING SIZES, AND ANY OTHER CONSTRUCTION RELATED REQUIREMENTS BY THE TRADE CONTRACTOR PROVIDING THE EQUIPMENT.

SCHEDULE OF DRAWINGS

DWG. NO.	TITLE
-	COVER SHEET
G1001	GENERAL INFORMATION
Site	
G001	SITE GRADING UTILITY LANDSCAPE AND SOIL
G002	EROSION CONTROL PLAN
	CONSTRUCTION NOTES & DETAILS
1 OF 1	PROPERTY & TOPOGRAPHIC SURVEY (REFERENCE ONLY)
1 OF 2	PROPOSED BUS LANE IMPROVEMENTS
2 OF 2	NOTES & DETAILS BUS LANE IMPROVEMENTS
Architectural	
A001	GROUND FLOOR PLAN CODE COMPLIANCE & LIFE SAFETY
A002	FIRST FLOOR PLAN CODE COMPLIANCE & LIFE SAFETY
A098	GROUND FLOOR DEMOLITION PLAN
A098.1	FIRST FLOOR DEMOLITION PLAN
A100.1	GROUND FLOOR PLAN PART "A"
A100.2	GROUND FLOOR PLAN PART "B"
A101.1	FIRST FLOOR PLAN PART "A"
A101.2	FIRST FLOOR PLAN PART "B"
A110	ROOF PLAN
A110.1	ROOF DETAILS
A201	EXTERIOR ELEVATIONS AND BUILDING SECTIONS
A301	WALL SECTIONS
A302	WALL SECTIONS
A303	WALL SECTIONS
A401	DOOR SCHEDULE
A410	ROOM FINISH SCHEDULE
A411	INTERIOR SIGNAGE
A501	ENLARGED TOILET PLANS
A502	MISCELLANEOUS DETAILS
A503	MISCELLANEOUS DETAILS
A601	STAIR PLANS SECTIONS & DETAILS
A700.1	GROUND FLOOR REFLECTED CEILING PLAN - PART "A"
A700.2	FIRST FLOOR REFLECTED CEILING PLAN - PART "B"
A701.1	FIRST FLOOR REFLECTED CEILING PLAN - PART "A"
A701.2	FIRST FLOOR REFLECTED CEILING PLAN - PART "B"
A801	INTERIOR ELEVATIONS
A802	INTERIOR ELEVATIONS
A803	INTERIOR ELEVATIONS
A804	INTERIOR ELEVATIONS
A805	INTERIOR ELEVATIONS
A901	CASEWORK DETAILS
Structural	
S100.1	FOUNDATION PLAN - PART "A"
S101.1	FIRST FLOOR FRAMING - PART "A"
S102.1	ROOF FRAMING PLAN - PART "A"
S301	FRAMING SECTIONS AND DETAILS
S302	FRAMING SECTIONS AND DETAILS
S401	GENERAL NOTES AND TYPICAL DETAILS
S402	GENERAL NOTES AND TYPICAL DETAILS

DWG. NO.	TITLE
HVAC	
M098.1	GROUND FLOOR DEMOLITION PLAN - HVAC
M098.2	FIRST FLOOR DEMOLITON PLAN - HVAC
M100.1	GROUND FLOOR PLAN PART "A" - HVAC
M100.2	GROUND FLOOR PLAN PART "B" - HVAC
M101.1	FIRST FLOOR PLAN PART "A" - HVAC
M101.2	FIRST FLOOR PLAN PART "B" - HVAC
M110	ROOF PLAN - HVAC
M201	FLOW DIAGRAMS & DETAILS - HVAC
M301	DETAILS - HVAC
M302	DETAILS - HVAC
M401	SCHEDULES & NOTES - HVAC
PLUMBING/FIRE PROTECTION	
P098	GROUND FLOOR DEMOLITION PLAN - PLUMBING
P098.1	FIRST FLOOR DEMOLITION PLAN - PLUMBING
FPP100.1	GROUND FLOOR PLAN PART "A" - PLUMBING & FIRE PROTECTION
FPP100.2	GROUND FLOOR PLAN PART "B" - PLUMBING & FIRE PROTECTION
FPP101.1	FIRST FLOOR PLAN PART "A" - PLUMBING & FIRE PROTECTION
FPP101.2	FIRST FLOOR PLAN PART "B" - PLUMBING & FIRE PROTECTION
P110	ROOF PLAN - PLUMBING
P201	ENLARGED TOILET ROOM LAYOUT AND RISER DIAGRAMS - PLUMBING
P301	DETAILS - PLUMBING
P302	DETAILS - PLUMBING
P401	LEGEND, NOTES AND SCHEDULES - PLUMBING
Electrical	
E001	SITE ELECTRICAL PLAN AND SITE DETAILS
E100	GROUND FLOOR FIRE ALARM PLAN
E100.1	GROUND FLOOR PART "A" ELECTRICAL PLAN
E100.2	GROUND FLOOR PART "B" ELECTRICAL PLAN
E101	FIRST FLOOR FIRE ALARM PLAN
E101.1	FIRST FLOOR PART "A" ELECTRICAL PLAN
E101.2	FIRST FLOOR PART "B" POWER PLAN
E110	NEW ADDITION ROOF ELECTRICAL PLAN
E301	ELECTRICAL HIRING AND RISER DIAGRAMS AND DETAILS
E302	ELECTRICAL HIRING AND RISER DIAGRAMS AND DETAILS
E401	ELECTRICAL SPECIFICATIONS, SCHEDULES AND NOTES
E100.1	GROUND FLOOR PART "A" LIGHTING PLAN
E100.2	GROUND FLOOR PART "B" LIGHTING PLAN
E101.1	FIRST FLOOR PART "A" LIGHTING PLAN
E101.2	FIRST FLOOR PART "B" LIGHTING PLAN

GENERAL LINTEL NOTES

1. Openings for which no specific lintels or lintel sizes are indicated shall have one angle for each 4" of masonry, or an approved equivalent thereof as follows:

ANGLES SIZE	MAX. M.O.	BEARING EACH END
3 1/2" X 3 1/2" X 5/16"	3'-6"	6"
3 1/2" X 4" X 5/16"	5'-0"	6"
3 1/2" X 5" X 5/16"	6'-0"	8"
3 1/2" X 6" X 5/16"	8'-0"	8"

2. For 6" partitions use wt. 7 x 13 for spans up to 7'-0" with 6" bearing each end.
3. Fill two courses directly under lintel bearing with grout for 16" length x 16" depth.
4. See ARCHITECTURAL & MECHANICAL drawings for size and location of openings.
5. When openings occur in bearing walls or the height of masonry above the lintel is less than the opening width or when a control joint is located directly above or within 16" of the jamb opening and drawings do not otherwise indicate a specific lintel design, consult with the architect to confirm lintel requirements.
6. Within the existing building, new openings in concrete masonry walls where no specific lintels or lintel sizes are indicated shall have the following sizes.

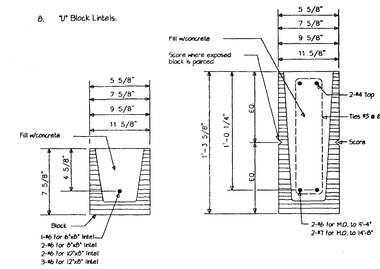
MAX. M.O.	WALL THICKNESS	LINTEL SIZE	BEARING PLATE
6'-0"	8"	(3) 3 1/2"X6"X3/8"(LLV)	7"X8"X1/2"
9'-0"	8"	W8X18 + 5/16" PLATE	7"X8"X1/2"
12'-0"	8"	W8X28 + 5/16" PLATE	7"X8"X1/2"

   Plates indicated in above lintels shall have a width 1" less than the wall thickness.

7. At new shear walls AND NEW exterior wall where no specific lintels or lintel sizes are indicated, provide the following sizes.

MAX. M.O.	WALL THICKNESS	LINTEL SIZE	BEARING PLATE
7'-0"	10" - 14"	W8X13 + 5/16" PLATE	10"X8"X1/2"
12'-0"	10" - 14"	W8X28 + 3/8" PLATE	10"X8"X1/2"

8. "L" Block Lintels.



   6"x8", 8"x8", 10"x8" & 12"x8" lintel for M.O. to 8'-8" 8" bearing (min.) each end See note 3 above

   8"x16", 10"x16" & 12"x16" lintel for M.O. to 14'-8" 12" bearing (min.) each end See note 3 above

9. Lintels over adjacent opening with piers between less than 2'-4" wide shall be continuous over piers. Masonry units of such piers shall be filled with grout for full story height.
10. Connect lintel to structural steel columns when there is less then 16" of masonry between the masonry opening and the outer most face of column.
11. Reference structural drawings for notes and details regarding reinforcing and grouting requirements.
12. For lintels at unit ventilators in building parts "D" and "E", see detail on structural drawings.

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE

ARCHITECT/ENGINEER: S.E. McNEECE

DRAWN BY: J.J. DUBATY

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3904

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106BA

DRAWING TITLE

GENERAL INFORMATION

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998

SCALE: N. T. S.

PROJECT NO.: 50950.06

DRAWING NO.: G1001

BQ #70 & 125 Attachment

SYMBOL LEGEND

- PROPERTY LINE
- 50 — EXISTING CONTOUR LINE
- 40 — PROPOSED CONTOUR LINE
- EX. STONE WALL
- EX. TREELINE
- EX. TREE TO BE REMOVED
- EX. CHAINLINK FENCE
- EX. RETAINING WALL
- EX. WIRE FENCE
- EXISTING CATCH BASIN/MANHOLE
- PROPOSED CATCH BASIN/MANHOLE
- PROPOSED YARD DRAIN
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- E — E — EXISTING ELECTRICAL LINE
- T — T — EXISTING TELEPHONE LINE
- G — G — EXISTING GAS LINE
- W — W — EXISTING WATER LINE
- GV — EXISTING GAS VALVE
- WV — EXISTING WATER VALVE
- GS — PROPOSED GAS SERVICE
- WS — PROPOSED WATER SERVICE
- FS — PROPOSED FIRE SERVICE
- EX. FIRE HYDRANT
- EX. POLE W/ ANCHOR
- EX. STREET SIGN
- EX. BASKETBALL HOOP

CONSTRUCTION NARRATIVE:

THIS PROJECT IS COMPRISED OF THE CONSTRUCTION OF A NEW BUILDING ADDITION TO ADD 12 NEW CLASSROOMS. 11 NEW PARKING SPACES SHALL BE PROVIDED ON THE SOUTH SIDE OF THE WEST PARKING LOT. BUILDING CONSTRUCTION MACHINES AND EQUIPMENT WILL ACCESS THE SITE THROUGH THE WEST PARKING LOT. A 1:1 ROCK SLOPE WILL BE EXCAVATED ON THE WEST SIDE TO PROVIDE ROOM FOR THE NEW BUILDING AND WALKWAY. CONSTRUCTION MATERIAL WILL BE STORED ADJACENT TO THE NEW BUILDING.

GENERAL CONSTRUCTION NOTES:

1. EXISTING UTILITIES, TOPOGRAPHY AND PROPERTY LINE INFORMATION SHOWN ON THIS PLAN IS TAKEN FROM EXISTING RECORDS AND FIELD SURVEY PERFORMED BY CARROCCIO-COVILL AND ASSOCIATES, LLC. REFER TO "PROPERTY & TOPOGRAPHIC SURVEY CENTRAL MIDDLE SCHOOL", DATED AUGUST 27, 1997 FOR ADDITIONAL INFORMATION.
2. EXISTING SUBSURFACE STRUCTURES AND UTILITIES HAVE BEEN DETERMINED FROM EXISTING RECORDS. THESE RECORDS ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. TO AVOID CONFLICT WITH THE PROPOSED WORK AND EXISTING UTILITIES, THE CONTRACTOR SHALL CHECK EXISTING INVERTS AND PERTINENT DATA, EXCAVATE TEST HOLES AND NOTIFY "CALL BEFORE YOU DIG". IF A CONFLICT EXISTS, PROMPTLY NOTIFY THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.
3. ALL SITE CONSTRUCTION SHALL CONFORM TO THE TOWN OF GREENWICH STANDARD SPECIFICATIONS AND THE CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL. IN THE ABSENCE OF TOWN STANDARDS, REFER TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 814.
4. ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP) WITH MORTARED JOINTS. CATCH BASINS AND YARD DRAINS SHALL BE PRECAST CONCRETE WITH 4" SUMPS.
5. WATER SERVICE TO THE PROPOSED BUILDING SHALL BE PROVIDED BY CONNECTICUT AMERICAN WATER COMPANY VIA THE EXISTING WATER SERVICE SERVING THE SCHOOL.
6. SANITARY SEWER, ELECTRIC, TELEPHONE AND OTHER UTILITY SERVICES SHALL BE PROVIDED FROM THE EXISTING SCHOOL BUILDINGS.
7. GENERAL FILL SHALL BE CLEAN, FREE DRAINING AND FREE OF ORGANIC MATERIAL WITH NO STONES LARGER THAN 8 INCHES. APPROVAL OF THE FILL MATERIAL IS REQUIRED BY THE DESIGN ENGINEER.
8. A 4" LAYER OF TOPSOIL SHALL BE SPREAD OVER ALL LAWN, LANDSCAPE AND SLOPE AREAS. FINAL SEEDING OF DISTURBED AREAS SHALL BE COMPLETED AS SOON AS PRACTICABLE AND COVERED WITH HAY TO PREVENT EROSION DURING THE GERMINATION PERIOD.
9. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED PRIOR TO CONSTRUCTION WHENEVER POSSIBLE. REFER TO DRAWING C002 FOR ADDITIONAL SOIL & EROSION CONTROL NOTES.
10. REFER TO DRAWING C002 "CONSTRUCTION NOTES AND DETAILS" FOR ADDITIONAL INFORMATION.

STRUCTURE DATA TABLE

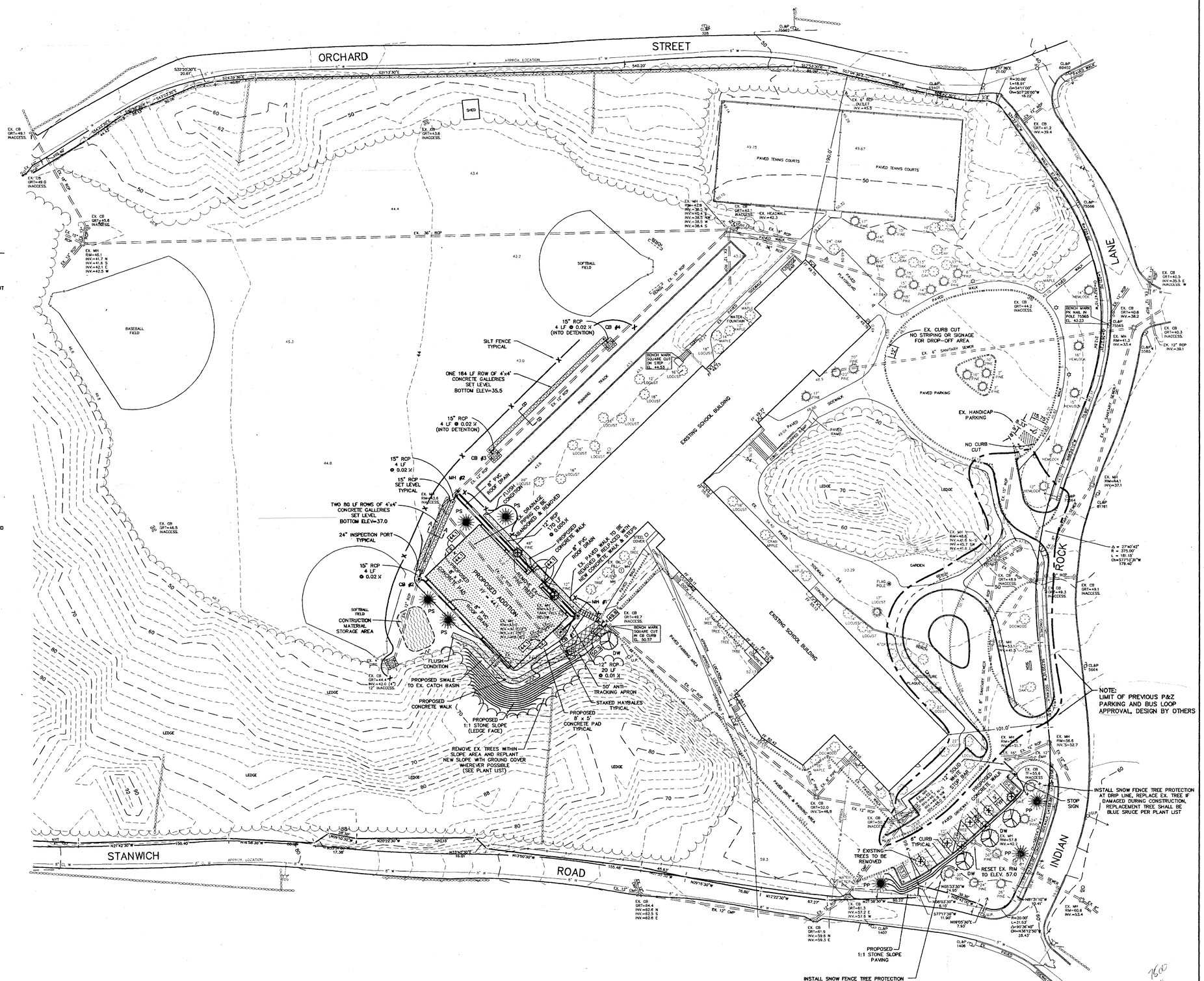
STRUCTURE	GRT/RIM	INV. IN	INV. OUT	TYPE
CB #1	43.5	41.7	41.7	"C-L"
CB #2	43.8	41.0(EX.) 39.6	39.6	"C-L"
CB #3	42.6	41.0(ROOF) 40.4(EX.) 38.2(DET.)	40.3(EX.)	"C-L"(EX.)
CB #4	42.6	39.4(EX.) 38.2(DET.)	39.3(EX.)	"C-L"(EX.)
MH #1	43.9	41.5(CB #1) 41.8(ROOF)	41.5	"STORM"
MH #2	43.1	40.8(ROOF) 40.7(MH #1) 39.4(DET.)	40.6	"STORM"

ZONING DATA TABLE:

LOCATION:		9 INDIAN ROCK LANE
ZONE:		R-12
LOT AREA:		21.72 ACRES (946,123 SQUARE FEET)
BUILDING SQUARE FOOTAGE:	EXISTING:	91,617
	PROPOSED:	19,800
	TOTAL:	111,417
BUILDING FOOTPRINT:	EXISTING:	66,547
	PROPOSED:	9,900
	TOTAL:	76,547
FLOOR AREA RATIO:	ALLOWED:	.35
	EXISTING:	.0968
	PROPOSED:	.1178
SITE COVERAGE:	EXISTING:	128,066(13.53%)
	PROPOSED:	144,184(15.24%)
PARKING SPACES:	EXISTING:	108
	PROPOSED:	121
NUMBER OF FACILTY AND STAFF:	EXISTING:	78
	PROPOSED:	97
NUMBER OF STUDENTS:	EXISTING:	514
	PROPOSED:	692(PEAK @ 2002)
BUILDING HEIGHT:	EXISTING:	21'-8" 27'-0"
	PROPOSED:	24'-4"

PLANT LIST:

QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT
3	PP	Picea pungeus var. glanca	BLUE SPRUCE	8'-10'	B&B
4	DW	Malus "Donald Wyman"	DONALD WYMAN "CRABAPPLE"	8'-10'	B&B
4	PS	Pinus strobus	WHITE PINE	8'-10'	B&B
25	PT	Parthenoussus tricuspidata	BOSTON IVY	1 GAL.	CONT.



This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without consent of the architect.

McChord Engineering Associates, Inc.
Consulting Civil Engineers
78 Danbury Road, Suite 202
Wilton, Ct 06897 (203) 834-0569

PROFESSIONAL SEAL

PRINCIPAL IN CHARGE	L. FREE
PROJECT ENGINEER	H. McCHORD
DRAWN BY	D. SULLA

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN
FLETCHER-THOMPSON, INC.
TWO WORLD TRADE PLAZA
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

SITE GRADING, UTILITY, LAND-SCAPE AND SOIL & EROSION CONTROL PLAN

NO	DATE	REVISION	BY
6	4-28-98	REVISED & ISSUED TO P&Z	HWM
5	3-24-98	ISSUED TO D.O.E.	HWM
4	12-31-97	REVISED & ISSUED TO P&Z	HWM
3	11-12-97	ADDED PREV. APPROVED BUS LOOP/PARKING IMP.	HWM
2	10-20-97	ISSUED TO P&Z	HWM
1	9-22-97	ISSUED FOR SCHEMATIC DESIGN	HWM

DATE	9/22/97
SCALE	1"=40'
PROJECT NO.	50950.06
DRAWING NO.	C001

3

7500
3-4th 11-12
$228,800
Final 325,800

BQ #70 & 125 Attachment

SEDIMENT AND EROSION CONTROL NARRATIVE:

THE PURPOSE OF THE SEDIMENT AND EROSION CONTROL PLAN, DETAILS AND NOTES IS TO OUTLINE A PROGRAM THAT MINIMIZES THE SOIL EROSION DURING CONSTRUCTION. THE PRIMARY POLICIES OF THIS PROGRAM ARE:

A) AVOIDANCE & MINIMIZATION BY RETAINING THE NATURAL VEGETATION WHENEVER FEASIBLE AND EXPOSE THE SMALLEST PRACTICAL AREA AT ONE TIME.
B) TRAPPING PARTICLES AT THE SOURCE BY PROMPTLY STABILIZING AND REVEGETATING DISTURBED AREAS.
C) AVOIDING THE CONCENTRATION OF WATER AND RUNOFF.
D) AVOIDING THE CONTAMINATION OF STORM DRAINS.
E) MAINTAINING THE EROSION CONTROLS TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY BY PERFORMING WEEKLY INSPECTIONS AND AFTER STORM EVENTS.
F) DISPOSAL OF COLLECTED SILT AND SEDIMENT LEGALLY AND IN KEEPING WITH THE INTENT OF THIS PLAN.

CONSTRUCTION SEQUENCE:

A. GENERAL
1. PROJECT START: SPRING 1998
PROJECT COMPLETION: FALL 1999
BASED ON RECEIVING TIMELY APPROVALS
2. THE PROPOSED CONSTRUCTION SEQUENCE IS PROVISIONAL.

B. SITE PREPARATION
1. REVIEW THE SEDIMENT AND EROSION CONTROL PLAN WITH THE CONSTRUCTION TEAM, SITE ENGINEER AND INLAND WETLANDS OFFICER.
2. DELINEATE THE LIMITS OF DISTURBANCE AND ESTABLISH THE STAGING AREAS, CONSTRUCTION TRAILER LOCATIONS AND TEMPORARY UTILITIES.
3. INSTALL THE TRACKING PAD FOR THE CONSTRUCTION ACCESS AND INSTALL SILT FENCE ALONG THE LIMITS OF DISTURBANCE AS SHOWN ON THE PLANS.
4. INSTALL ADDITIONAL SOIL AND EROSION CONTROLS AS REQUIRED.
5. FLAG AND/OR FENCE OFF ALL TREES TO BE PROTECTED.
6. CUT TREES TO BE REMOVED AND GRUB AREAS TO BE CLEARED WITHIN THE DEVELOPMENT ENVELOPE AS APPROPRIATE.
7. STRIP TOPSOIL AND STOCKPILE IN DESIGNATED AREAS. SURROUND TOPSOIL WITH SILT FENCE TO CONTAIN SEDIMENTS.

C. GENERAL SITE CONSTRUCTION:
1. PERFORM GENERAL EARTHWORK ACTIVITIES INCLUDING EXCAVATION AND FILLING AS REQUIRED.
2. ABANDON EXISTING UTILITIES AS MAY BE INDICATED ON THE PLANS.
3. ROUGH GRADE AND EXCAVATE THE BUILDING AREA AND PREPARE THE BUILDING SUBGRADE.
4. INSTALL THE STORM SEWER AND ADDITIONAL SEDIMENT AND EROSION CONTROLS ASSOCIATED WITH THE NEW STORM SEWER.
5. EXCAVATE AND ROUGH GRADE THE PROPOSED PARKING AREA. STABILIZE STEEP SLOPES ADJACENT TO THE NEW PARKING.
6. CONSTRUCT THE LANDSCAPE SLOPES AND SEED AND MULCH ALL LANDSCAPE AREAS.
7. STABILIZE DISTURBED AREAS AS SOON AS PRACTICAL.

D. DUST CONTROL:
1. PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, AND REDUCE THE PRESENCE OF DUST WHICH MAY CAUSE OFF-SITE DAMAGE, BE A HEALTH HAZARD TO HUMANS, WILDLIFE AND PLANTLIFE, OR REDUCE TRAFFIC SAFETY HAZARD.
2. THIS MEASURE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND SOIL MOVEMENT WHERE ON-SITE AND OFF-SITE DAMAGE IS LIKELY TO OCCUR IF PREVENTIVE MEASURES ARE NOT TAKEN.
3. USE TRAFFIC CONTROL TO RESTRICT TRAFFIC TO PREDETERMINED ROUTES. MAINTAIN AS MUCH NATURAL VEGETATION AS IS PRACTICABLE. USE PHASING OF CONSTRUCTION TO REDUCE THE AREA OF LAND DISTURBED AT ANY ONE TIME. THE USE OF TEMPORARY MULCHING, PERMANENT MULCHING, TEMPORARY VEGETATIVE COVER, OR SODDING WILL REDUCE THE NEED FOR DUST CONTROL. USE MECHANICAL SWEEPERS ON PAVED SURFACES WHERE NECESSARY TO PREVENT DUST BUILD UP. STATIONARY SOURCES OF DUST, I.E., ROCK CRUSHERS SHOULD UTILIZE FINE WATER SPRAYS TO CONTROL DUST.
4. INSTALLATION REQUIREMENTS
A. WATER –
THE EXPOSED SOIL SURFACE SHOULD BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.
B. STONE –
COVER SURFACES WITH CRUSHED STONE OR COARSE GRAVEL. IN AREAS ADJACENT TO WATERWAYS USE CHEMICALLY STABLE AGGREGATE.
5. WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHALL BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.

E. GENERAL BUILDING CONSTRUCTION:
1. INSTALL THE BUILDING FOUNDATIONS AND FLOOR SLABS.
2. BACKFILL THE FOUNDATIONS AND CONNECT BUILDING UTILITIES.
3. CONSTRUCT THE BUILDING SUPERSTRUCTURE.
4. FINE GRADE ALL DISTURBED AREAS, STABILIZE AND SEED AS SOON AS PRACTICAL.
5. INSTALL PAVING ON DRIVES AND PARKING AREAS. COMPLETE ALL WALKWAYS AND SITE HARDSCAPE.
6. INSTALL LANDSCAPE PLANTINGS AND SEED.

F. GENERAL CLEAN UP:
1. REMOVE TEMPORARY SEDIMENT AND EROSION CONTROLS.
2. MAINTAIN PERMANENT SEDIMENT AND EROSION CONTROLS.
3. COMPLETE ALL PUNCH LIST ITEMS.

GENERAL SEDIMENT AND EROSION CONTROL NOTES:

1. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.
2. COORDINATE THE CONSTRUCTION PHASING WITH THE TOWN OF GREENWICH INLAND WETLANDS AGENCY STAFF PRIOR TO BEGINNING WORK IN EACH PHASE.
3. EXISTING TREES TO BE SAVED SHALL BE PROTECTED BY FLAGGING AND/OR SNOW FENCING AT THE DRIP LINE WHICH SHALL BE MAINTAINED DURING CONSTRUCTION.
4. ANTI-TRACKING APRONS SHALL BE INSTALLED AT THE START OF CONSTRUCTION AND MAINTAINED THROUGHOUT CONSTRUCTION. APRONS SHALL CONSIST OF 2"- 4" CRUSHED STONE WITH A MINIMUM THICKNESS OF 4 INCHES. EACH APRON SHALL BE APPROXIMATELY 50 FEET LONG AND EXTEND THE WIDTH OF THE CONSTRUCTION ACCESS. THE LOCATION OF THE TRACKING PADS MAY CHANGE DURING THE VARIOUS PHASES OF CONSTRUCTION.
5. SILT FENCE AND OTHER SEDIMENT CONTROL MEASURES MUST BE INSTALLED IN ACCORDANCE WITH THE DRAWINGS AND SPECIFIC MANUFACTURER'S RECOMMENDATIONS.
6. SILT FENCE SHALL BE MIRAFI ENVIROFENCE OR EQUIVALENT APPROVED BY THE DESIGN ENGINEER. FILTER FABRIC SHALL BE MIRAFI 100X OR EQUIVALENT.
7. ADDITIONAL SEDIMENT AND EROSION CONTROLS MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE INSPECTING ENGINEER OR ANY GOVERNING AGENCY.
8. AFTER EACH STORM EVENT OR AT LEAST ONCE WEEKLY, ALL SEDIMENT AND EROSION CONTROLS WILL BE INSPECTED. CORRECTIVE MEASURES TO MITIGATE ENVIRONMENTAL CONCERNS WILL BE ORDERED BY THE DESIGN ENGINEER OR GOVERNING AGENCY IF REQUIRED.
9. ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL MEASURES WILL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK, ALL TEMPORARY SEDIMENT CONTROL DEVICES SHALL BE REMOVED FROM THE SITE AND ANY COLLECTED SEDIMENTS FROM THE DEVICES AND CATCH BASINS SHALL BE DISPOSED OF LEGALLY AND IN KEEPING WITH THE INTENT OF THIS PLAN.
10. DUST CONTROL SHALL BE ACHIEVED WITH WATERING DOWN THE DISTURBED AREAS AS REQUIRED.
11. UPON THE INSTALLATION OF CATCH BASINS, IMMEDIATELY SURROUND THEM WITH HAYBALES AS PER THE DETAIL AND/OR PROVIDE SILT SACKS FOR THE BASIN TOPS.
12. ALL DEWATERING PUMPING MUST HAVE SEDIMENT AND EROSION CONTROL PROVISIONS TO MAINTAIN CLEAR WATER DISCHARGE. IF TRENCH DEWATERING IS REQUIRED, PUMP DISCHARGE SHALL PASS THROUGH A SEDIMENT FILTER TO OBTAIN CLEAR WATER DISCHARGE.
13. LAND DISTURBANCE SHALL BE KEPT TO A MINIMUM. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED.
14. EFFECTED PORTIONS OF OFFSITE ROADS MUST BE SWEPT CLEAN WHEN REQUIRED OR AT LEAST ONCE A WEEK DURING CONSTRUCTION.
15. ALL EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL," DATED JANUARY 1985.

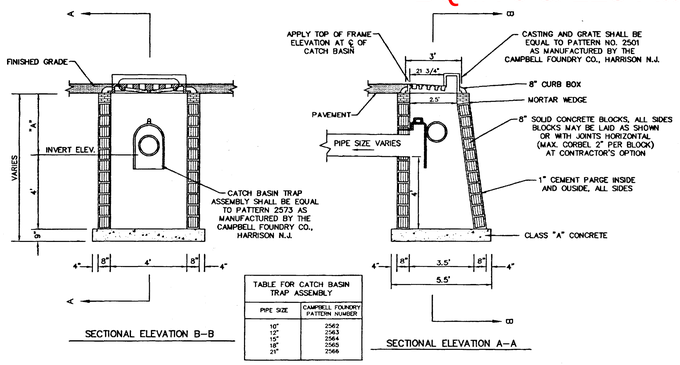
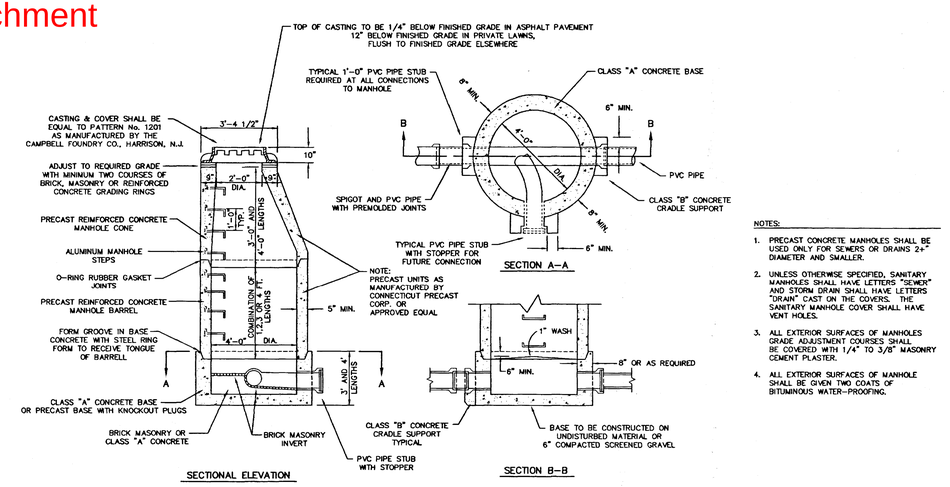


TABLE FOR CATCH BASIN TRAP ASSEMBLY

PIPE SIZE	CAMPBELL FOUNDRY PATTERN NUMBER
10"	2562
12"	2563
15" AND 18"	2564
24"	2565
30"	2566

NOTES:
1. DIMENSION "A" SHALL BE CONSISTENT WITH INVERT ELEVATION SHOWN ON CONTRACT DRAWING. WHEN NO INVERT ELEVATION IS SPECIFIED DIMENSION "A" SHALL BE SUCH AS TO PROVIDE MINIMUM OF 2'-6" COVER OVER PIPE.
2. INCREASE WALL THICKNESS TO 12" FOR THOSE PORTIONS OF WALL AT DEPTHS GREATER THAN 8'. INSIDE DIMENSIONS TO REMAIN THE SAME, FOOTING SIZE TO BE INCREASED 8".

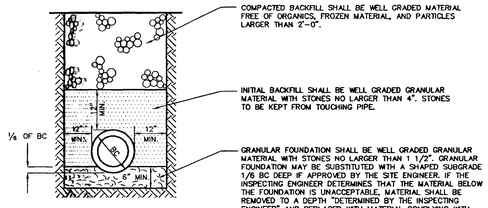
CATCH BASIN TYPE "C-1"
N.T.S.



NOTES:
1. PRECAST CONCRETE MANHOLES SHALL BE USED ONLY FOR SEWERS OR DRAINS 2+" DIAMETER AND SMALLER.
2. UNLESS OTHERWISE SPECIFIED, SANITARY MANHOLES SHALL HAVE LETTERS "SEWER" AND STORM DRAIN SHALL HAVE LETTERS "DRAIN" CAST ON THE COVERS. THE SANITARY MANHOLE COVER SHALL HAVE VENT HOLES.
3. ALL EXTERIOR SURFACES OF MANHOLES GRADE ADJUSTMENT COURSES SHALL BE COVERED WITH 1/4" TO 3/8" MASONRY CEMENT PLASTER.
4. ALL EXTERIOR SURFACES OF MANHOLE SHALL BE GIVEN TWO COATS OF BITUMINOUS WATER-PROOFING.

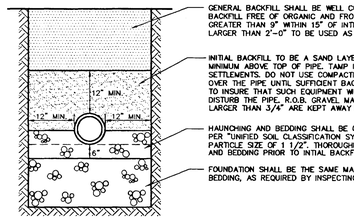
PRECAST CONCRETE MANHOLE TYPE P2
N.T.S.

ALL MATERIAL TO BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 EXCEPT "COMPACTED BACKFILL" NOT UNDER PAVEMENT WHICH SHALL BE COMPACTED TO A DENSITY AT LEAST EQUAL TO THAT OF THE ADJACENT UNDISTURBED MATERIAL.

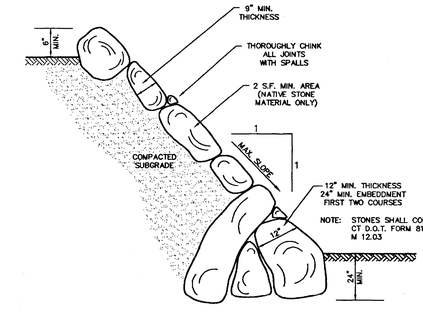


RCP PIPE TRENCH BEDDING DETAIL
N.T.S.

NOTE: GENERAL BACKFILL SHALL BE COMPACTED TO A DENSITY AT LEAST EQUAL TO THAT OF THE ADJACENT UNDISTURBED MATERIAL. ALL OTHER MATERIAL TO BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1577. TAMPING AND COMPACTION TO BE IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION MANUAL AND ASTM D2821. GENERAL BACKFILL UNDER PAVEMENT TO BE COMPACTED TO 95% DENSITY.



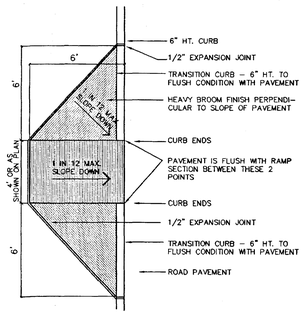
PVC TRENCH BEDDING DETAIL
N.T.S.



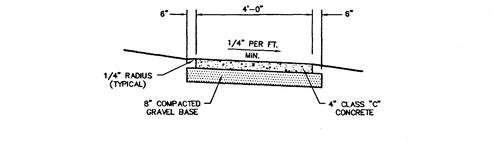
NOTE: STONES SHALL CONFORM TO CT D.O.T. FORM 814, SECTION M 12.03

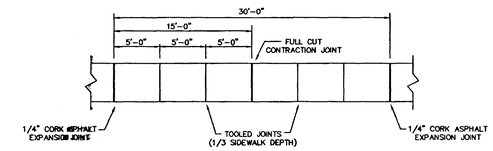
STONE SLOPE PAVING DETAIL
N.T.S.

NOTE: ALL WORK SHALL CONFORM TO CT D.O.T. FORM 814 SECTION 7.05

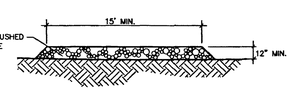


ACCESSIBLE CURB/RAMP
N.T.S.

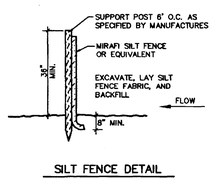




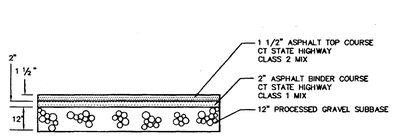
CONCRETE SIDEWALK DETAIL
N.T.S.



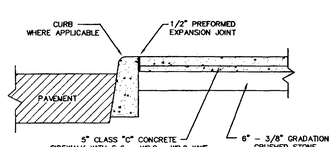
TYPICAL ANTI-TRACKING APRON
N.T.S.



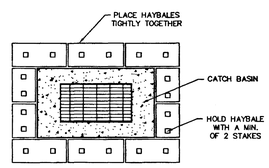
SILT FENCE DETAIL
N.T.S.



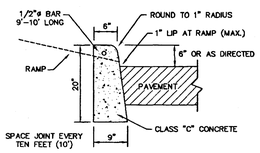
PAVEMENT DETAIL
N.T.S.



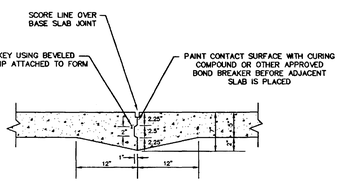
REINFORCED CONCRETE SIDEWALK
N.T.S.



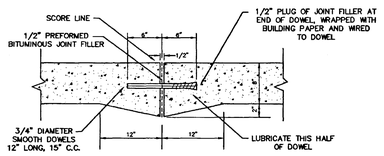
HAYBALE RING DETAIL
N.T.S.



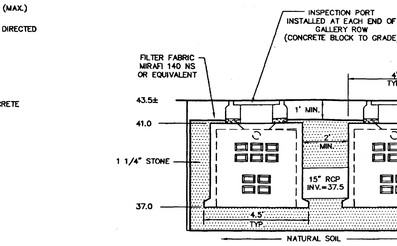
CONCRETE CURB
N.T.S.



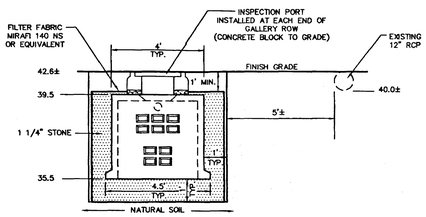
CONTRACTION JOINT DETAIL
N.T.S.



EXPANSION JOINT DETAIL
N.T.S.



YARD DRAIN DETENTION DETAIL SECTION A-A
N.T.S.



YARD DRAIN DETENTION DETAIL SECTION B-B
N.T.S.

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without consent of the architect.

McChord Engineering Associates, Inc.
Consulting Civil Engineers
78 Danbury Road, Suite 202
Wilton, Ct 06897 (203) 834-0569

PROFESSIONAL SEAL

PRINCIPAL IN CHARGE: L. FREE
PROJECT ENGINEER: H. McCHORD
DRAWN BY: D. SULLA

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN
FLETCHER-THOMPSON, INC.
TWO WORLD TRADE PLAZA
BRIDGEPORT, CT 06604-3944

PROJECT TITLE
ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE
CONSTRUCTION NOTES & DETAILS

NO	DATE	REVISION	BY
4	3-24-98	ISSUED TO D.O.E.	HWM
3	12-31-97	REVISED & ISSUED TO P&Z	HWM
2	10-20-97	ISSUED TO P&Z	HWM
1	9-22-97	ISSUED FOR SCHEMATIC DESIGN	HWM

DATE: 9/22/97
SCALE: AS SHOWN
PROJECT NO.: 50950.06
DRAWING NO.: C002
4

PRINTED BY NATIONAL DIRECT - 518-372-9985 - TEMP484.ILL - 11/19/98 4:02:08 PM

file: 551m2

BQ #70 & 125 Attachment

LEGEND

- PROPERTY LINE
- STONE WALL
- CURBING
- MANHOLE (MH)
- SANITARY SEWER MANHOLE (S)
- DRAINAGE MANHOLE (D)
- CATCH BASIN
- GAS VALVE (GV)
- WATER VALVE (WV)
- FIRE HYDRANT
- UTILITY POLE WITH ANCHOR
- STREET SIGN
- TEST BORING
- RETAINING WALL
- CHAIN LINK FENCE
- WOODEN FENCE
- GAS LINE (G)
- WATER LINE (W)
- ELECTRIC LINE (E)
- TELEPHONE LINE (T)
- TREE LINE
- EXISTING CONTOUR (200)
- EXISTING SPOT ELEVATION (202.77)
- BASKETBALL HOOP

PROPERTY & TOPOGRAPHIC SURVEY
CENTRAL MIDDLE SCHOOL
INDIAN ROCK LANE
GREENWICH, CONNECTICUT

NOTES:
- BOUNDARY DETERMINATION CATEGORY: RESURVEY
- VERTICAL DATUM BASED ON N.G.V.D.
- REFER TO TOWN CLERK MAPS 3472, 5728, 4209, 3708, 4108 AND 3483 ON FILE IN GREENWICH LAND RECORDS.
- REFER TO SITE, UTILITY AND DRAINAGE PLANS FOR CENTRAL JUNIOR HIGH SCHOOL GREENWICH, CONN. PREPARED APRIL 1957 BY SHERWOOD, MILLS AND SMITH ARCHITECTS, STAMFORD, CT.
- OFFSETS ARE TO THE FACE OF THE STRUCTURE.

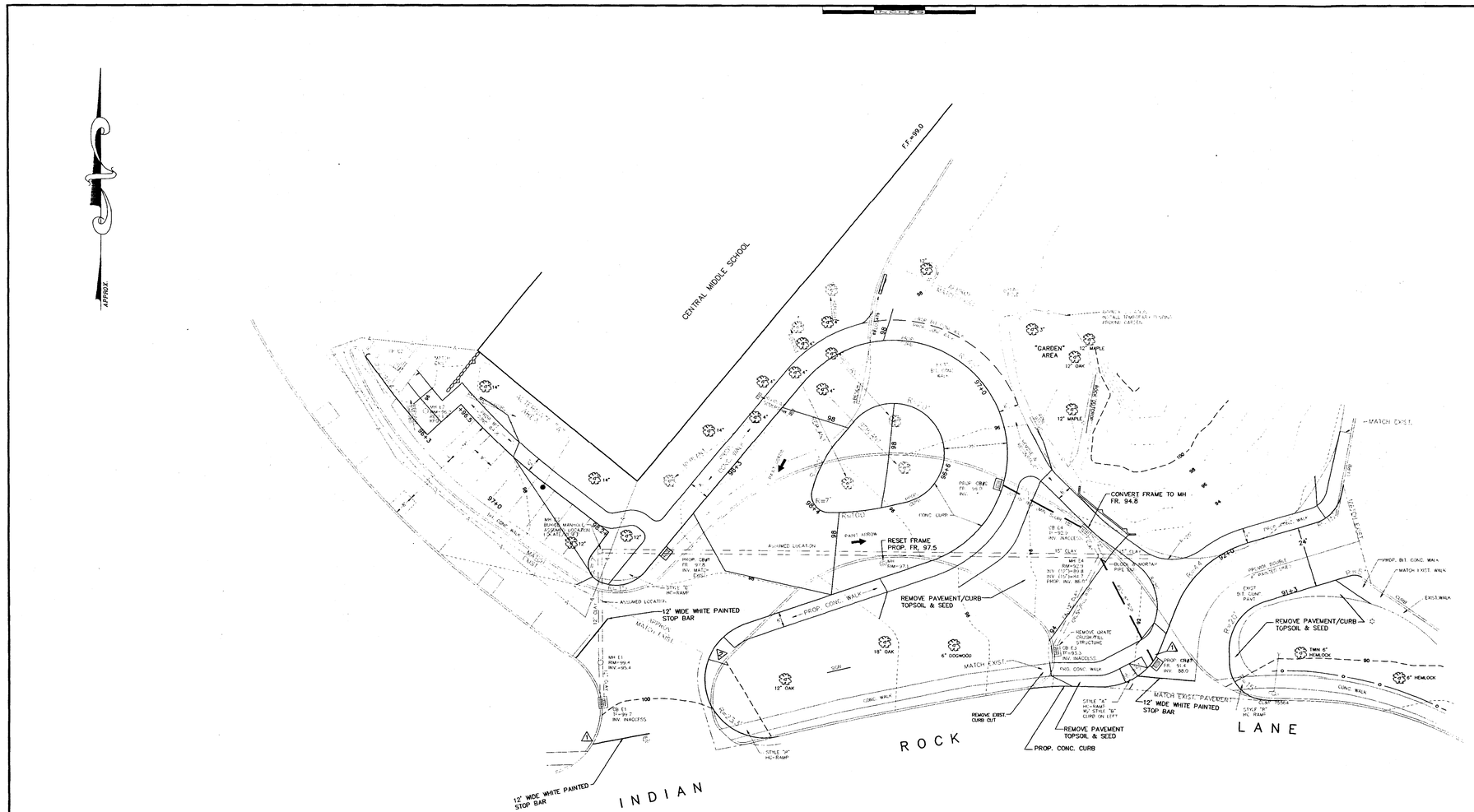
I HEREBY DECLARE THAT TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON. THIS SURVEY CONFORMS TO THE STANDARDS OF A CLASS A-2 SURVEY AND WAS PREPARED IN ACCORDANCE WITH SECTIONS 20-300b-1 THROUGH 20-300b-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES AND THE MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

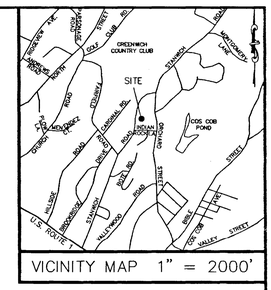
STEPHEN R. LATOUR, R.L.S. CT LIC. #15456
NOT VALID WITHOUT EMBOSSED SEAL

CCA
ENGINEERING-SURVEYING-ENVIRONMENTAL
40 Old New Milford Road, Brookfield, CT 06804, (203) 775-6207
33 Ridge Green Drive, Enfield, CT 06759, (203) 567-3179

By: G.P.O. | Scale: 1" = 40' | Sheet 1 of 1
Date: 8 / 27 / 97 | Project No. 97-199 | Drawing No. 1993

BQ #70 & 125 Attachment





LEGEND

UTILITY POLE W/ANCHOR	
CHAIN FENCE	
STONE WALL	
EXIST. CATCH BASIN	
PROP. CATCH BASIN	
PROP. DRAINAGE	
EXISTING CONTOUR	310
EXISTING SPOT ELEVATION	311.5
PROPOSED CONTOUR	98
PROPOSED SPOT ELEVATION	311+5
ROCK OUTCROP	
MANHOLE	MH
LIGHT POLE	
RETAINING WALL	
"ALTERNATE A" LIMIT	
PROP. TRAFFIC SIGN	

SIGNS

- PROPOSED STANDARD STOP SIGN
- PROPOSED "AUTHORIZED VEHICLES ONLY" SIGN

PROPOSED
BUS LANE IMPROVEMENTS

PREPARED FOR

CENTRAL MIDDLE SCHOOL
GREENWICH , CONNECTICUT

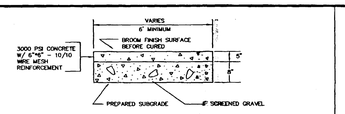
CCA
CARROCCIO-COVILL & ASSOCIATES, INC.
ENGINEERING-SURVEYING-ENVIRONMENTAL
40 Old New Milford Road
Brookfield, CT 06804
(203) 775-6207
33 Village Green Drive
Litchfield, CT 06759
(203) 567-3179

By: R.T.P.	Scale: 1" = 20'	Sheet 1 of 2
Date: 4/18/96	Project No.93-386SP	Drawing No. 1432

NOT VALID WITHOUT

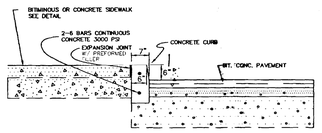
Date	Revisions

ORIGINAL SEAL

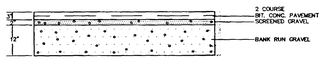


SIDEWALK DETAIL
N.T.S.

- PROVIDE EXPANSION JOINT W/ PREFORMED FILLER EVERY 25' MAXIMUM.
- PROVIDE TROWLED JOINTS EVERY 5'.
- ALL CONSTRUCTION JOINTS TO HAVE A KEY CONSTRUCTED.

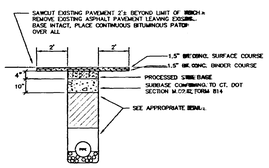


CONCRETE SIDEWALK, PARKING & DRIVEWAY DETAIL
N.T.S.

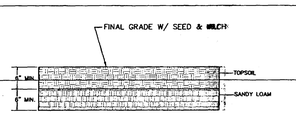


PARKING AND DRIVEWAY DETAIL
N.T.S.

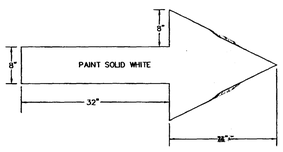
PAVEMENT MATCHING DETAIL
N.T.S.



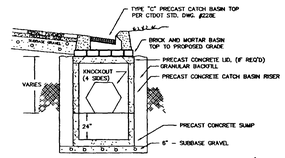
TYPICAL DETAIL
PAVEMENT PATCHING
N.T.S.



TOPSOIL DETAIL IN PAVEMENT REMOVAL AREAS
N.T.S.

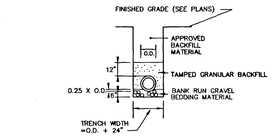


PAVEMENT MARKING DETAIL
N.T.S.



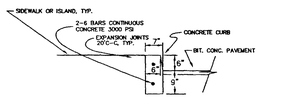
NOTE - 1) ALL PRECAST COMPONENTS TO BE ABLE TO WITHSTAND HS-20 WHEEL LOADING.
- 2) BACKFILL TO BE COMPACTED IN 8" LIFTS AROUND BASIN
- 3) TYPE C-1, OR C-G BASIN TOP MAY SUBSTITUTED ABOVE WHERE CALLED FOR ON THE PLANS.

DETAIL - PRECAST CATCH BASIN
WITH TYPE "C" CATCH BASIN TOP
SCALE 1/4"=1'-0"

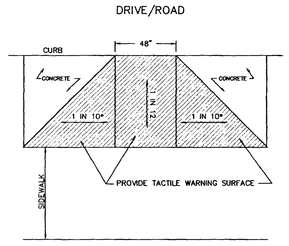


NOTE: 1) - PIPE SECTIONS TO BE JOINED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
2) - INSTALL ADDITIONAL 6" OF BEDDING MATERIAL FOR TRENCH IN LEDGE.

TYPICAL TRENCH SECTION
NTS

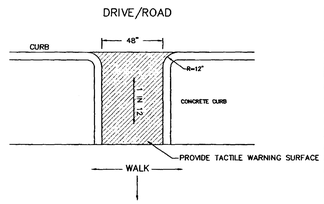


TYPICAL CONCRETE CURB
N.T.S.

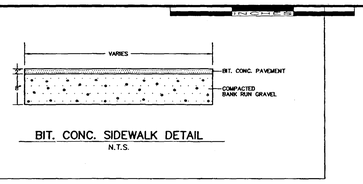


* IF ADJACENT SIDEWALK IS LESS THAN 4' WIDE THIS SLOPE SHALL BE 1IN 12.

CONCRETE HANDICAP RAMP STYLE "A"
N.T.S.



CONCRETE HANDICAP RAMP STYLE "B"
N.T.S.



BIT. CONC. SIDEWALK DETAIL
N.T.S.

NOTES:
- TOPOGRAPHIC AND BOUNDARY SURVEYED BY CCA AND BASED ON AN ASSUMED DATUM
- ALL CURBING TO BE PORTLAND CEMENT CONCRETE.
- PARKING AND DRIVEWAYS TO BE BITUMINOUS CONCRETE.
- CONTRACTOR IS RESPONSIBLE TO CONTACT "CALL BEFORE YOU DIG".
- CONTRACTOR TO CONFIRM LOCATION AND ELEVATION OF EXISTING DRAINAGE INCLUDING DRAINAGE WHOSE INVERTS AND LOCATION WERE INACCESSIBLE OR ASSUMED. ENGINEER TO BE NOTIFIED OF ANY DISCREPANCIES OR NECESSARY REVISIONS.
- ALL WORK TO CONFORM WITH THE REQUIREMENTS OF THE TOWN OF GREENWICH.
- IN ALL AREAS THAT ARE TO BE "MATCHED" INTO EXISTING CONDITIONS THE "MATCHING" TO BE AS SMOOTH A TRANSITION AS POSSIBLE. ALL JOINTS TO BE SEALED.
- MINIMUM DEPTH OF TOPSOIL TO BE 6".
- CONTRACTOR TO PROVIDE SHOP DRAWING FOR RELOCATION OF TREES. TREES SHALL BE STAKED W/ PROTECTION AGAINST CHAFING PROVIDED.
- CONTRACTOR TO PROVIDE AND INSTALL "GEOFOAM" OR EQUIVALENT SEDIMENTATION PROTECTION FOR ALL CATCH BASINS.
- ALL DISTURBED AREAS TO BE TOPSOILED, SEEDED & MULCHED OR LANDSCAPING PLACED AS SOON AS POSSIBLE TO PREVENT EROSION.
- CONTRACTOR TO PROPOSED TYPE OF TEMPORARY FENCING AROUND GARDEN AREA. SUCH FENCING SHALL BE MAINTAINED UNTIL THE END OF CONSTRUCTION. NO DISTURBANCE WITHIN THIS AREA SHALL BE PERMITTED WITHOUT PERMISSION.
- ALL TREES, SHRUBS, ETC TO REMAIN OR BE RELOCATED TO BE PROTECTED WITH FENCING OR BY OTHER APPROVED METHODS.
- CONTRACTOR TO PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY EROSION CONTROLS.
- LAYOUT OF DRIVES, WALKS, ETC. TO BE APPROVED BY OWNER OR OWNER'S REPRESENTIVE.
- OWNER WILL BEING USE THE SITE AND BUILDINGS DURING THE CONSTRUCTION OF THE IMPROVEMENTS. CONTRACTOR TO COORDINATE ACCESS TO BUILDING AND PARKING AREAS.
- "ALTERNATE "A" AREA" REFERS TO AN ALTERNATE CONSTRUCTION OPTION THAT THE OWNER MAY OR MAY NOT CONSTRUCT.

NOTES & DETAILS
BUS LANE IMPROVEMENTS

PREPARED FOR

CENTRAL MIDDLE SCHOOL
GREENWICH , CONNECTICUT

CCA
CARROCCIO-COVILL & ASSOCIATES, INC.
ENGINEERING-SURVEYING-ENVIRONMENTAL
40 Old New Milford Road
Brookfield, CT 06804
(203) 775-6207
33 Village Green Drive
Litchfield, CT 06759
(203) 567-3179

By: R.T.P.	Scale: AS NOTED	Sheet 2 of 2
Date: 4/18/96	Project No.93-386SP	Drawing No. 1432

NOT VALID WITHOUT ORIGINAL SEAL

Date	Revisions

BQ #70 & 125 Attachment

COVERED AREA = 104235 SF

DATA Room #153

DATA Room #211

INTEGRATED COMMUNICATIONS Room # 240.

SEE DWG. A101-2 | SEE DWG. A101-3

SEE DWG. A101-1 | SEE DWG. A101-2

SEE DWG. A101-1 | SEE DWG. A101-4

FIRST FLOOR OVERALL PLAN

SCALE: 1/16" = 1'-0"

NORTH

CONSULTANTS

NOTES:

1. FOR ARCHITECTURAL LEGENDS, ABBREVIATIONS, PARTITION TYPES AND LINTEL SCHEDULE, SEE DRAWINGS 61001 AND 61002.
2. XXXXX
   XXXXX

K:\48 projects\48100\dwg\Arch\A101 4-28-98 6:5

PROGRESS PRINT
NOT FOR CONSTRUCTION

NO	DATE	DESCRIPTION	BY
8	1/5/96	PLAN REV'S.	S.E.M.
6	12/27/95	PLAN REV'S.	S.E.M.
5	12/19/95	PLAN REV'S.	S.E.M.
3	12/11/95	PLAN REV'S.	S.E.M.
2	11/28/95	PLAN REV'S.	S.E.M.
1	11/20/95	PLAN REVISIONS	S.E.M.

FTD	EF	KT	Fcdc
FY	MAY 19		
SS	Connecticut Office		
FILE			

PROJECT MANAGER — P. MYLER

PROJECT ARCHITECT OR ENGINEER — J. KANCPO

DESIGN ARCHITECT — J. A. SELLS

DRAWN BY — S. E. M. NEECE

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without consent of the architect.

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN
FLETCHER-THOMPSON, INC
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

NEW WESTOVER ELEMENTARY SCHOOL

STILLWATER ROAD
STAMFORD, CONNECTICUT

REGIONAL MAGNET SCHOOL
STATE PROJECT NO. 135-178

DRAWING TITLE

FIRST FLOOR OVERALL PLAN

0 16' 32' 56'

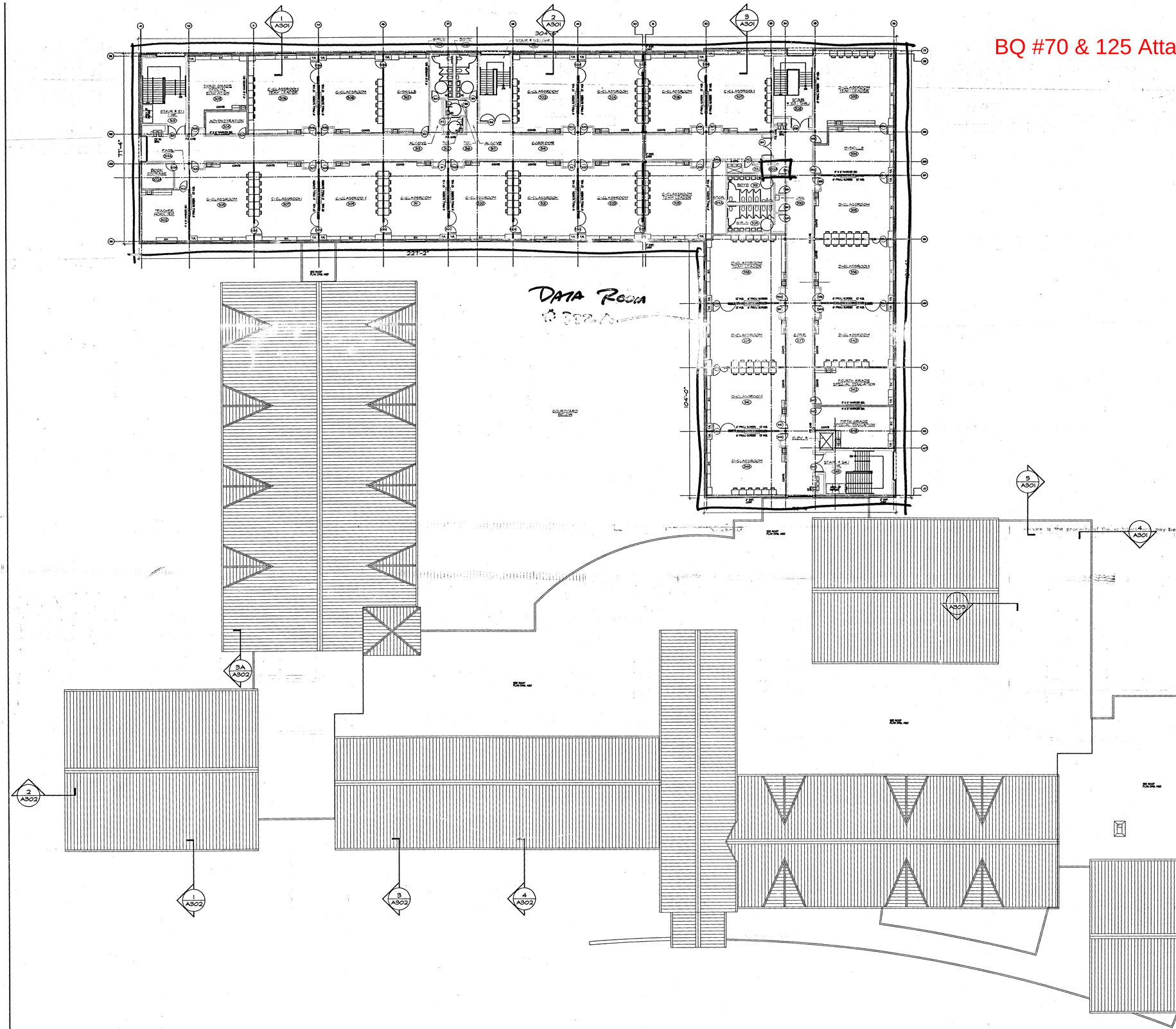
DATE: MARCH 15, 1995

SCALE: 1/16" = 1'-0"

PROJECT NO.: 48100.06

DRAWING NO.: A101

BQ #70 & 125 Attachment



SECOND FLOOR OVERALL PLAN

SCALE: 1/16" = 1'-0"

K:\48 projects\48100\dng\Arch\A102 4-28-98 6:40:00 am EST

:olects\48100\dng\Arch\A102 4-28-98 6:40:00 am EST

CONSULTANTS

NOTES:

1. FOR ARCHITECTURAL ELEVATIONS, PARTITION TYPES AND SCHEDULE, SEE DRAWINGS 6/A7
2. XXXXX XXXXX

K:\48 projects\48100\dng\Arch\A102 4-28-98

PROGRESS PRINT
NOT FOR CONSTRUCTION

NO	DATE	REVISION	BY

J. Michael Driffel & Associates — RECEIVED
JMD | EF | NT | Acctg.
FY | MAY 19 1998 | SS
Connecticut Office
FILE

PROJECT MANAGER: P. MYLER
PROJECT ARCHITECT OR ENGINEER: J. KANCPO
DESIGN ARCHITECT: J. A. SELLS
DRAWN BY: S. E. McNEECE

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without consent of the architect

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN
FLETCHER-THOMPSON, INC
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

NEW WESTOVER ELEMENTARY SCHOOL

STILLWATER ROAD
STAMFORD, CONNECTICUT

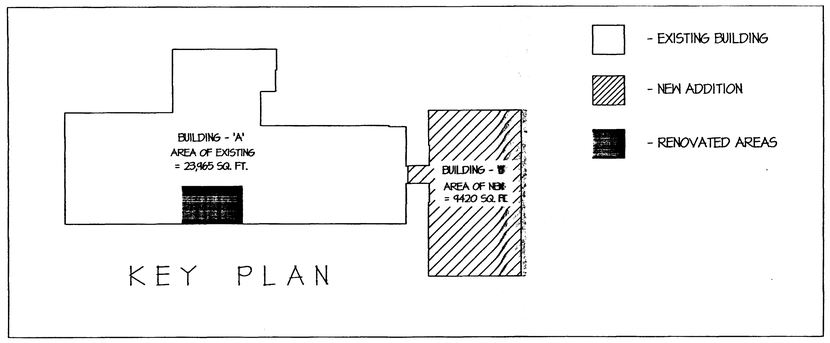
REGIONAL MAGNET SCHOOL
STATE PROJECT NO. 135-178

DRAWING TITLE

SECOND FLOOR OVERALL PLAN

0 16' 32' 56'

DATE: MARCH 15, 1995
SCALE: 1/16" = 1'-0"
PROJECT NO.: 48100.06
DRAWING NO.: A102



KEY PLAN

BQ #70 & 125 Attachment

EXISTING PASSENGER ELEVATOR INFORMATION

THE GROUND AND FIRST FLOOR OF THE ACADEMIC BUILDING IS ACCESSIBLE BY MEANS OF AN EXISTING PASSENGER ELEVATOR. THE PASSENGER ELEVATOR HAS AUTOMATIC OPERATION, SELF-LEVELING WITHIN 1/2-INCH OF THE FLOOR, DOOR REOPENING DEVICE, INTERIOR CAB SIZE OF 51 INCHES IN DEPTH BY 69 INCHES IN WIDTH AND A LEFT SIDE CAB DOOR WITH A CLEAR OPENING WIDTH OF 36 INCHES. THE CAR CONTROLS ARE LOCATED ON THE FRONT WALL RIGHT OF THE CAB DOOR, 3/4 INCHES IN SIZE WITH RAISED BUTTONS WHICH LIGHT WHEN CALL IS REGISTERED AND EXTINGUISHED WHEN ANSWERED, AND ARE IDENTIFIED WITH RAISED ARABIC CHARACTERS FOR NUMBERS WITH BRAILLE RIGHT OF THE BUTTON. THE VISUAL CAR POSITION INDICATOR IS LOCATED ABOVE THE CAR CONTROL PANEL. THE HALL CALL BUTTON IS KEY AND BUTTON OPERATION (3/4 INCHES IN SIZE WITH RAISED BUTTONS WHICH LIGHT WHEN CALL IS REGISTERED AND EXTINGUISHED WHEN ANSWERED) LOCATED ON THE WALL ADJACENT TO THE ELEVATOR HOISTWAY JAMBS AT 46 INCHES TO CENTERLINE ABOVE THE FLOOR. THE VISUAL SIGNALS ARE LOCATED ON THE WALL ABOVE THE CAB DOOR AND ARE ARROWS WHICH INDICATE THE DIRECTION OF TRAVEL. RAISED 2-INCH HIGH ALPHABET OR ARABIC CHARACTERS AND BRAILLE FLOOR DESIGNATIONS ARE PROVIDED AT 60 INCHES ABOVE THE FLOOR ON ONE SIDE OF THE HOISTWAY JAMB.

SYMBOLS LEGEND

CLASSROOM — ROOM NAME

(XXX) — ROOM NUMBER

154 / 20 = 30 P — ROOM OCCUPANCY LOAD
AREA IN SQUARE FEET
OCCUPANCY LOAD FACTOR

EXIT CAPACITY
36 / 165 — ACTUAL EGRESS OCCUPANCY OF DOOR OR STAIR
MAXIMUM ALLOWABLE EGRESS OCCUPANCY OF DOOR OR STAIR

AREA OF REFUGE
DIRECTIONAL SIGNAGE
WITH BATTERY BACKUP

—15— DIRECTION OF TRAVEL
WITH ACCUMULATED LOAD

—145'— MAXIMUM TRAVEL DISTANCE
FROM FURTHEST POINT

1 (ONE) HOUR FIRE RATED WALL
(TIGHT TO DECK ABOVE WHERE REQUIRED)

2 (TWO) HOUR FIRE RATED WALL
(TIGHT TO DECK ABOVE WHERE REQUIRED)
2 HOUR FIRE WALL WHERE NOTED

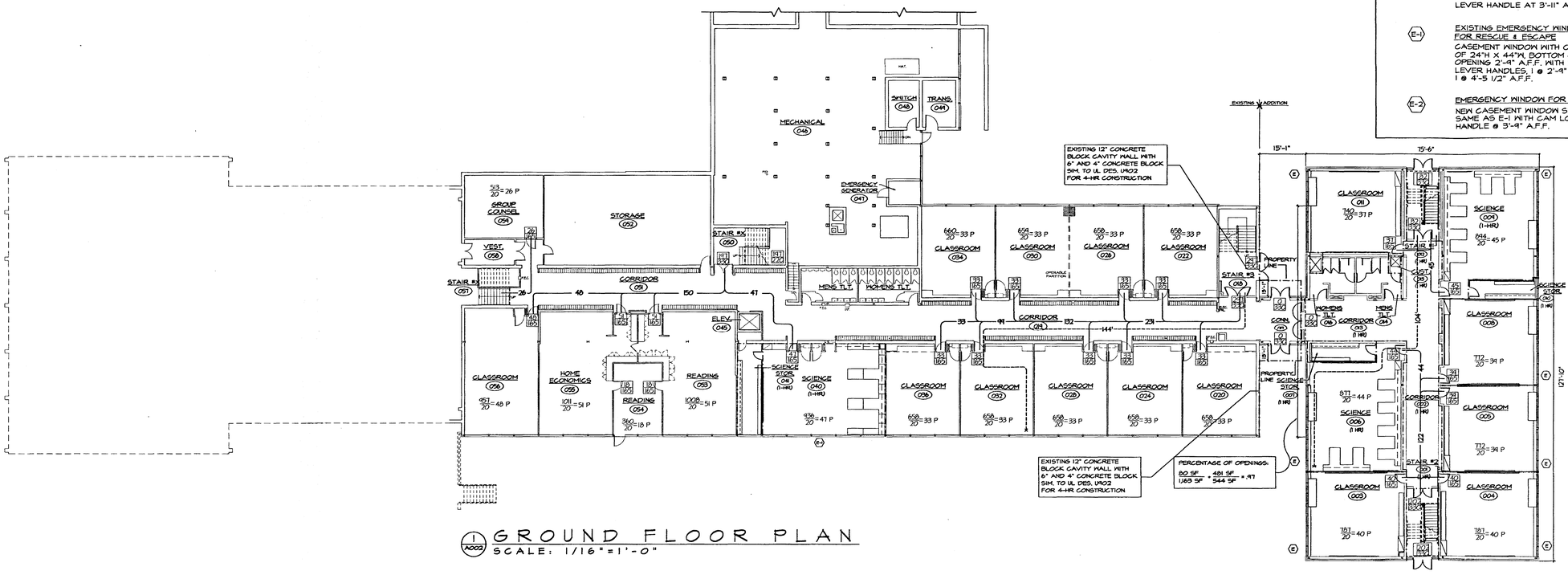
SMOKE BARRIER

PARTITION TO PREVENT THE PASSAGE OF SMOKE
REFER TO SHEET G1001 NOTE #16

(E) EMERGENCY WINDOW FOR RESCUE & ESCAPE
CASEMENT WINDOW WITH CLEAR OPENING OF 24"H X 36"W, BOTTOM OF CLEAR OPENING 2'-11" A.F.F. WITH CAM LOCKING LEVER HANDLE AT 3'-11" A.F.F.

(E-1) EXISTING EMERGENCY WINDOW FOR RESCUE & ESCAPE
CASEMENT WINDOW WITH CLEAR OPENING OF 24"H X 44"W, BOTTOM OF CLEAR OPENING 2'-9" A.F.F. WITH 2-CAM LOCKING LEVER HANDLES, 1 @ 2'-9" A.F.F. AND 1 @ 4'-5 1/2" A.F.F.

(E-2) EMERGENCY WINDOW FOR RESCUE & ESCAPE
NEW CASEMENT WINDOW SIZE AND HEIGHT SAME AS E-1 WITH CAM LOCKING LEVER HANDLE @ 3'-9" A.F.F.



(1/A002) GROUND FLOOR PLAN
SCALE: 1/16" = 1'-0"

CODE INFORMATION

BUILDING "A" - EXISTING

DATE OF ORIGINAL CONSTRUCTION: 1957 - (APPROX.)

1. USE GROUP CLASSIFICATION (302.0 - 313.0)
(Primary) USE GROUP "E" EDUCATIONAL
(Incidental) USE GROUP "A3" ASSEMBLEY
2. CONSTRUCTION TYPE (401.0)
TYPE 2-C UNPROTECTED, NON COMBUSTIBLE
Non Construction — TYPE 2-C UNPROTECTED, NON-COMBUSTIBLE
3. BUILDING HEIGHT (501.0, 503.0)
Existing Height (story/feet) — 2 STORIES / 22'-4"
4. BUILDING AREA (501.0 - 503.0)
Gross Building Area (Per Floor)

	EXISTING
Ground Floor	23,965 SF
First Floor	63,338 SF
Total	87,303 SF

5. EXISTING BUILDING IS NON-CONFORMING

BUILDING "B" - NEW

1. USE GROUP CLASSIFICATION (302.0 - 313.0)
(Primary) USE GROUP "E" EDUCATIONAL
2. CONSTRUCTION TYPE (401.0)
Minimum Type Required: TYPE 2-C UNPROTECTED, NON-COMBUSTIBLE
Actual Type Provided: TYPE 2-C UNPROTECTED, NON-COMBUSTIBLE
3. BUILDING HEIGHT (501.0, 503.0)
Allowable Height (story/feet) — 2 STORIES / 30'-0"
Actual Height (story/feet) — 2 STORIES / 22'-4"
4. BUILDING AREA (501.0 - 503.0)
Ground Floor 9,420 SF
Ground Floor 9,420 SF
Total 18,840 SF

5. AREA TABULATION - BUILDING "B"

Open Space:	75 FT N	112 FT E	128 FT W	75 FT S	
PERIMETER: 406 FT	OPEN PERIMETER:		390 FT (390/406 FT) =		79%
% Perimeter = (Open Perimeter/ Perimeter)					
% Tabular Area Increase 2 x (% Open Perimeter - 25%) =			(2)(79% - 25%) =		106%
% of Allowable Tabular Area (Table 501)					100%
% Reduction for Height (501.4)					-0%
% Increase for Open Perimeter (502.2)					+106%
% Increase for Full Fire Suppression (502.3)					+0%
Total Percentage Factor					=206%
Conversion Factor (% Factor/100)					2.06

A) Adjusted Tabular Area: 4,573 SF
(Actual Floor Area/Conversion Factor)(7,500/1.96)
B) Allowable Building Area per Floor:
(Conversion Factor x Tabular Area)
USE GROUP E-EDUCATIONAL (14,400 X 2.06) 29,664 SF
C) Actual Floor Area: (largest floor) 9,420 SF

6. MIXED-USE / SEPARATED USES (313.0):
NO MIXED USE

7. OCCUPANCY LOAD

DESIGN GROUND FLOOR	284 PERSONS
DESIGN FIRST FLOOR	205 PERSONS
DESIGN TOTAL FOR BUILDING	484 PERSONS

EXIT CAPACITY

GROUND FLOOR	990 PERSONS
FIRST FLOOR	660 PERSONS
TOTAL FOR BUILDING	1,650 PERSONS

NUMBER OF EXITS	# Required	# Provided
GROUND FLOOR:	2	3
FIRST FLOOR:	2	3
TOTAL:	4	6

TRAVEL DISTANCE

Allowable	150 FT
Provided	144 FT (MAX)

8. FIRE RESISTANT RATING OF STRUCTURE ELEMENTS - CONSTRUCTION TYPE 2-C

A) Exterior Walls (Load Bearing)	0 HRS
B) Fire Walls	2 HRS
C) Fire Separations	2 HRS
D) Smoke Barriers	1 HRS
E) Enclosures of Exits	1 HRS
F) Shafts	1 HRS
G) Exit Access Corridors	1 HRS
H) Separations	1 HRS
I) Interior Bearing Walls and Columns	0 HRS
J) Structural Members Supporting Wall	0 HRS
K) Floor Construction including Beams	0 HRS
L) Roof Construction	0 HRS

9. FIRE PROTECTION SYSTEMS
A) Suppression System ____ Full __X__ Limited
If limited, where: NEW JANITORS CLOSETS & STORAGE ROOMS
B) Notification/ Alarms
SPEAKER/STROBE , VOICE EVACUATION
C) Detection
SMOKE AND HEAT

10. MODIFICATIONS
A) Existing/ Approved — __X__ NONE
____ __X__ NONE

11. ACCESSIBLE BUILDING — __X__ Designated ____ Non-designated

12. MINIMUM PLUMBING FIXTURE COUNT (P-1202)

	REQUIRED	PROVIDED
W/C	10	14
LAVS	10	14
URN		
D/F	5	6

13. CODES TO WHICH THIS PROJECT WAS DESIGNED

	DATED
STATE BUILDING CODE W/SUPPLEMENT(S) (BUILDING, MECHANICAL & PLUMBING)	BOCA 1990, 1992(SUPP.), 1994 CT(SUPP.)
(ELECTRIC CODE)	1993, 1994(SUPP.)
STATE FIRE CODE W/SUPPLEMENT(S)	NFPA 101-1991, 1994(SUPP.)
STATE HEALTH CODE	1992
OSHA	TITLE 29/LABOR
SECTION 504	REHABILITATION ACT, 1973

14. THRESHOLD LIMIT BUILDING — ____ YES __X__ NO
If yes, why?

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

N

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	S.E. McNEECE
DRAWN BY	J.C. OTTO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN
FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

GROUND FLOOR PLAN CODE COMPLIANCE & LIFE SAFETY

0 8' 16' 32'
SCALE: 1/16" = 1'-0"

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: 1/16" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: A001

PRINTED BY NATIONAL DIRECT - 618-372-3495 - (EMP#48) (LL - 7/15/98 4:16:49 PM)

K:\50 projects\50450\dwg\Arch\A001 6-19-98 9:50:18 am EST

BQ #70 & 125 Attachment

SYMBOLS LEGEND

CLASSROOM — ROOM NAME

(XXX) — ROOM NUMBER

ROOM OCCUPANCY LOAD
- 134 = 38 P — AREA IN SQUARE FEET
- 20 — OCCUPANCY LOAD FACTOR

EXIT CAPACITY
- 38 — ACTUAL EGRESS OCCUPANCY OF DOOR OR STAIR
- 165 — MAXIMUM ALLOWABLE EGRESS OCCUPANCY OF DOOR OR STAIR

AREA OF REFUSE DIRECTIONAL SIGNAGE WITH BATTERY BACKUP

15 — DIRECTION OF TRAVEL WITH ACCUMULATED LOAD

145' — MAXIMUM TRAVEL DISTANCE FROM FURTHEST POINT

1 (ONE) HOUR FIRE RATED WALL (TIGHT TO DECK ABOVE WHERE REQUIRED)

2 (TWO) HOUR FIRE RATED WALL (TIGHT TO DECK ABOVE WHERE REQUIRED) 2 HOUR FIRE WALL WHERE NOTED

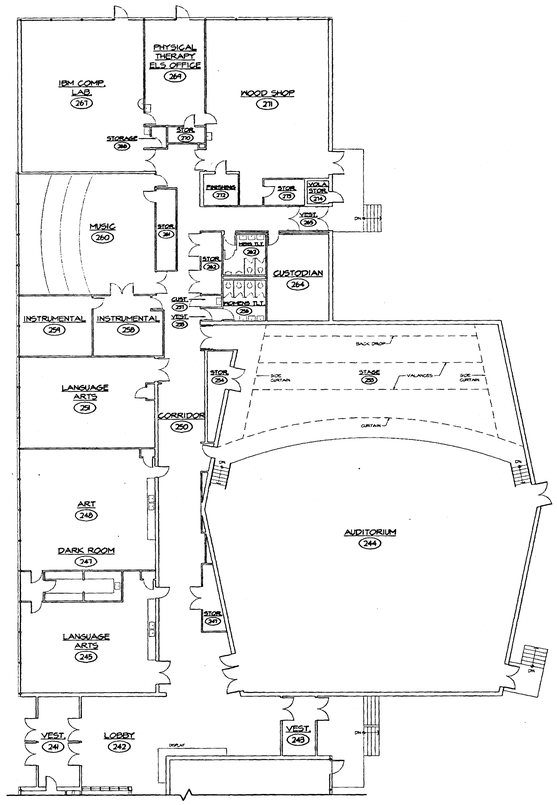
SMOKE BARRIER

PARTITION TO PREVENT THE PASSAGE OF SMOKE — REFER TO SHEET G1001 NOTE #16

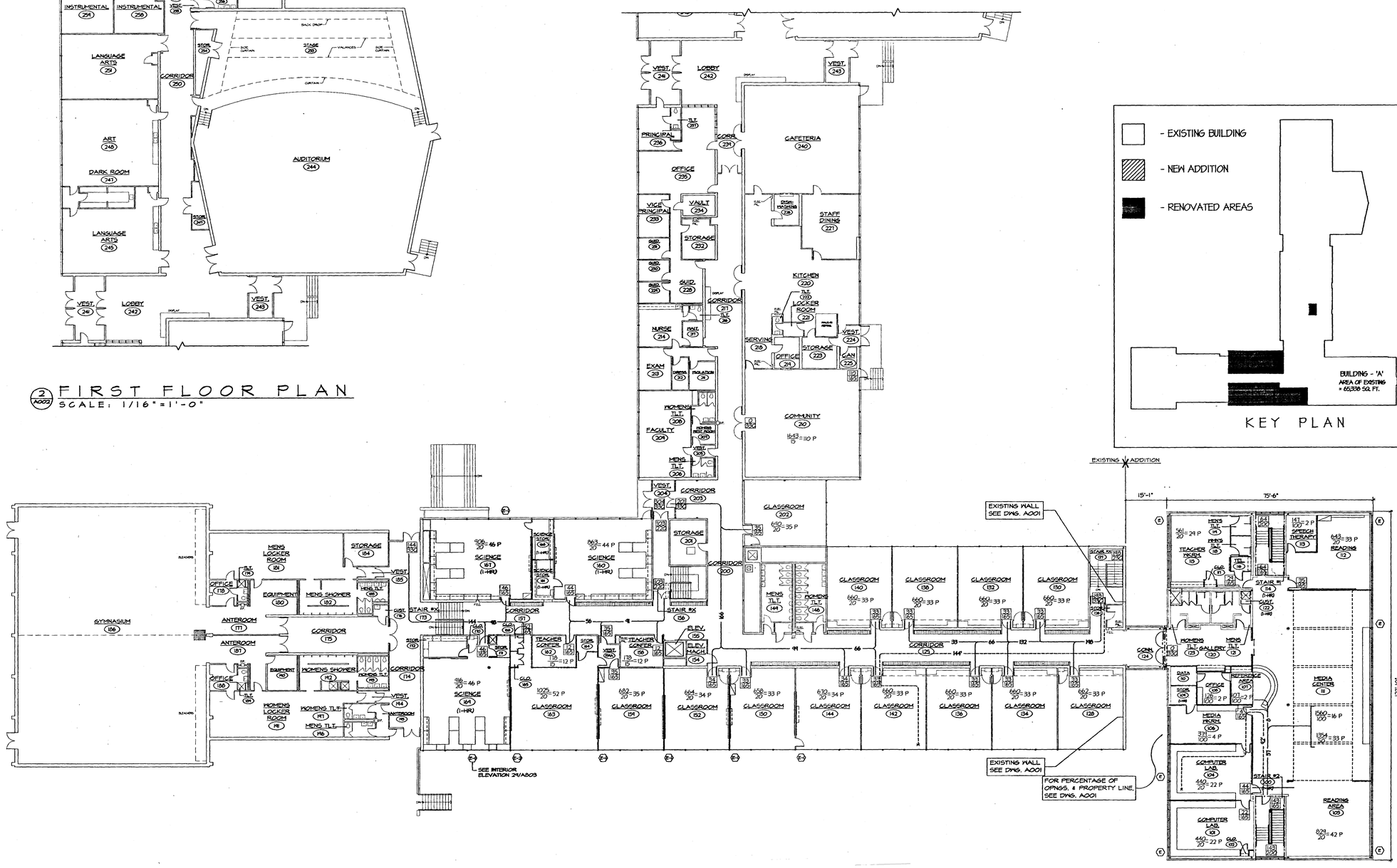
(E) — EMERGENCY WINDOW FOR RESCUE & ESCAPE: CASEMENT WINDOW WITH CLEAR OPENING OF 24"H X 36"W, BOTTOM OF CLEAR OPENING 2'-11" A.F.F. WITH CAM LOCKING LEVER HANDLE AT 3'-11" A.F.F.

(E-1) — EXISTING EMERGENCY WINDOW FOR RESCUE & ESCAPE: CASEMENT WINDOW WITH CLEAR OPENING OF 24"H X 44"W, BOTTOM OF CLEAR OPENING 2'-9" A.F.F. WITH 2-CAM LOCKING LEVER HANDLES, 1 @ 2'-9" A.F.F. AND 1 @ 4'-5 1/2" A.F.F.

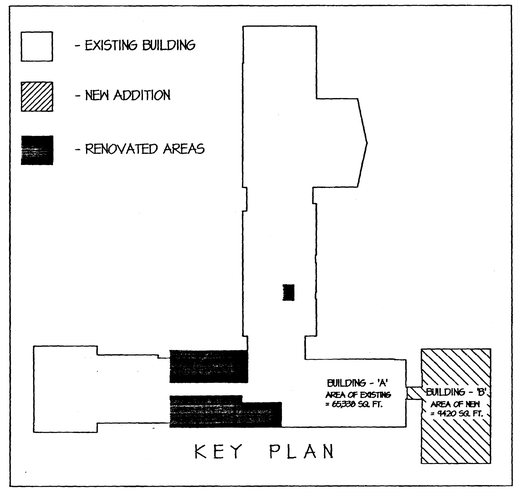
(E-2) — EMERGENCY WINDOW FOR RESCUE & ESCAPE: NEW CASEMENT WINDOW SIZE AND HEIGHT SAME AS E-1 WITH CAM LOCKING LEVER HANDLE @ 3'-9" A.F.F.



2 A002 FIRST FLOOR PLAN
SCALE: 1/16"=1'-0"



1 A002 FIRST FLOOR PLAN
SCALE: 1/16"=1'-0"



KEY PLAN

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E. McNEECE
DRAWN BY: J.C. OTTO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR PLAN CODE COMPLIANCE & LIFE SAFETY

0 8' 16' 32'
SCALE: 1/16" = 1'-0"

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: 1/16" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: A002

K:\50 projects\50950\dwg\Arch\A002 6-19-98 9:58:11 am EST

BQ #70 & 125 Attachment

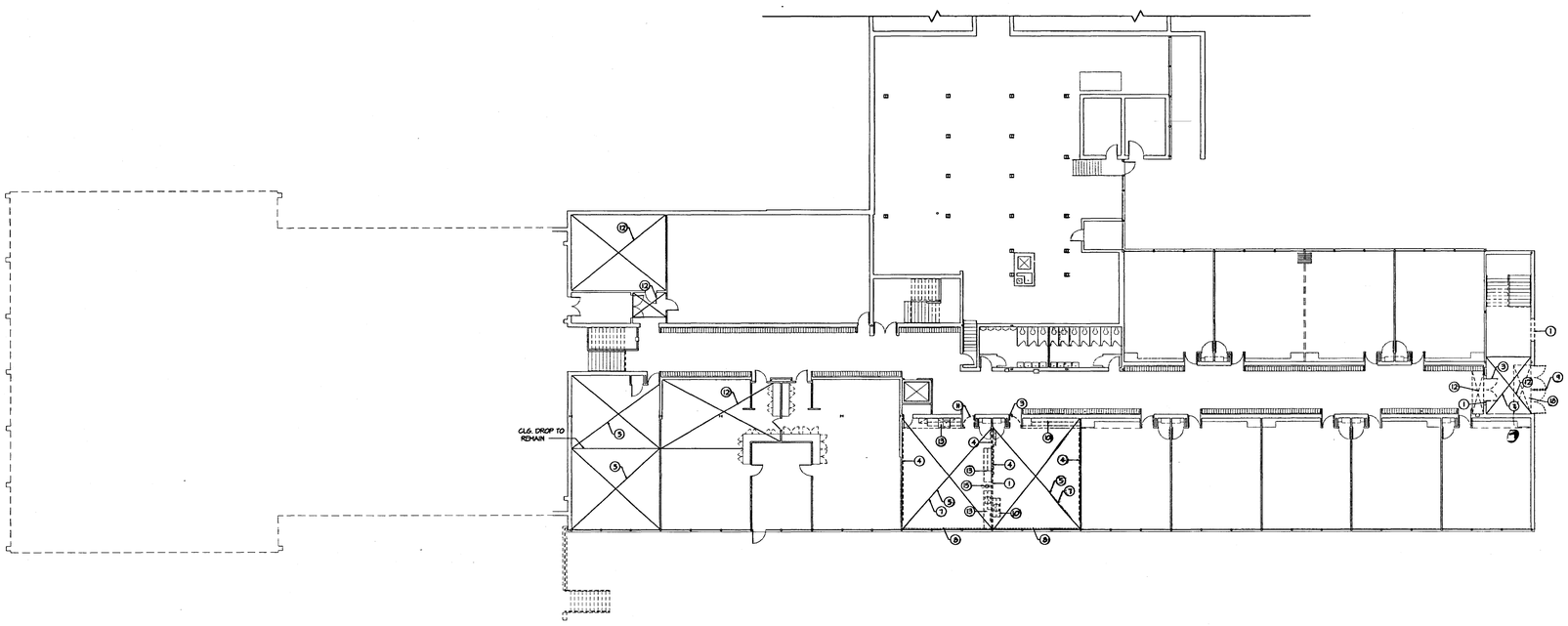
GENERAL DEMOLITION NOTES:

1. THE DEMOLITION NOTES ARE FOR A DESCRIPTIVE GUIDE ONLY. IT IS NOT THE INTENT TO POINT TO EACH AND EVERY ITEM. THE G.C. WILL BE RESPONSIBLE FOR REMOVING ALL QUANTITIES OF EACH ITEM. WHERE NEW WORK IS RUN THROUGH EXISTING AREAS, THE G.C. IS TO DO ALL CUTTING AND PATCHING FOR ALL TRADES OF ALL ADJACENT SURFACES. COORDINATE W/ STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
2. COORDINATE DEMOLITION WITH CONSTRUCTION DOCUMENTS. DO NOT OVERDEMOLISH
3. SEE SPECIFICATIONS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
4. SEE MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL DEMOLITION REQUIREMENTS PERTAINING TO THEIR TRADES.
5. DASHED LINES INDICATE CONSTRUCTION TO BE DEMOLISHED AND REMOVED.
6. PROVIDE SAW CUTTING AND SLAB REMOVAL FOR NEW BELOW FLOOR SANITARY, STORM, WATER-LINES, AND DRAINS. SEE PLUMBING DRAWINGS FOR EXTENT AND LOCATION.
7. SEE FLOOR PLANS FOR NEW LOCATIONS OF EXISTING EQUIPMENT / SHELVING / FURNITURE NOTED TO BE RELOCATED.
8. VERIFY EXISTING CONSTRUCTION IN THE FIELD.
9. PRIOR TO STARTING DEMOLITION COORDINATE WITH OWNER ANY SALVAGE REQUIREMENTS OF EQUIPMENT, MATERIALS, ETC.
10. IN ALL SPACES WHERE DEMOLITION IS INDICATED REMOVE WINDOW BLINDS AND PROJECTION SCREENS.
11. WHERE ONE WALL IS BEING REMOVED AND AN ADJACENT ONE IS TO REMAIN, THE CONTRACTOR SHALL PATCH THE WALL TO REMAIN TO MATCH EXISTING CONSTRUCTION.
12. SOME DEMOLITION OF MATERIALS INDICATED ON THIS DRAWING MAY BE INCLUDED IN THE HAZARDOUS MATERIALS DEMOLITION SECTION OF THE SPECIFICATIONS. THE CONTRACTOR SHALL COORDINATE THIS WORK PRIOR TO SUBMITTING HIS BID.

DEMOLITION NOTES:

ITEMS TO BE DEMOLISHED AND REMOVED

1. MASONRY WALLS
2. METAL/WOOD STUDS - GYPSUM OR PLASTER PARTITION
3. DOOR, FRAME, GLAZING AND ASSOCIATED HARDWARE
4. BLACKBOARD/ TACKBOARD
5. 1' X 1' CEILING TILE AND ASSOCIATED WOOD FURRING, SUPPORTS / SUSPENSION SYSTEM
6. CARPET, BASE, ADHESIVE, & V.A.T. / ADHESIVE BELOW CARPET
7. VINYL FLOORING, BASE, ADHESIVE
8. WINDOW BLINDS AND HARDWARE
9. EXTERIOR WINDOW AND DOOR SYSTEM
10. WALL HUNG AND/OR FLOOR MOUNTED WOOD CASEWORK
11. DOORS AND HARDWARE (FRAME REMAINS)
12. SUSPENDED ACOUSTIC TILE CEILING SYSTEM
13. SCIENCE ROOM WALL HUNG AND/OR FLOOR MOUNTED CASEWORK INCLUDING MECHANICAL UTILITIES
14. NOT USED
15. EMERGENCY SHOWER/EYE WASH AND ASSOCIATED PIPING
16. FUME HOOD AND ASSOCIATED DUCTWORK
17. DOOR, FRAME, SIDELIGHTS, GLASS AND ASSOCIATED HARDWARE
18. RECESSED MAT AND FRAME



1 / A099 GROUND FLOOR DEMOLITION PLAN

SCALE: 1/16" = 1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E. McNEECE
DRAWN BY: J. OTTO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

GROUND FLOOR DEMOLITION PLAN

0 8' 16' 32'
SCALE: 1/16" = 1'-0"

NO	DATE	REVISION	BY
1	6/19/98	D.O.E. REVISIONS	J. C.

DATE: **MARCH 16, 1998**
SCALE: **1/16" = 1'-0"**
PROJECT NO.: **50950.06**
DRAWING NO.: **A099**

K:\50 projects\50950\dwg\Arch\A099 6-17-98 12:30:35 pm EST

BQ #70 & 125 Attachment

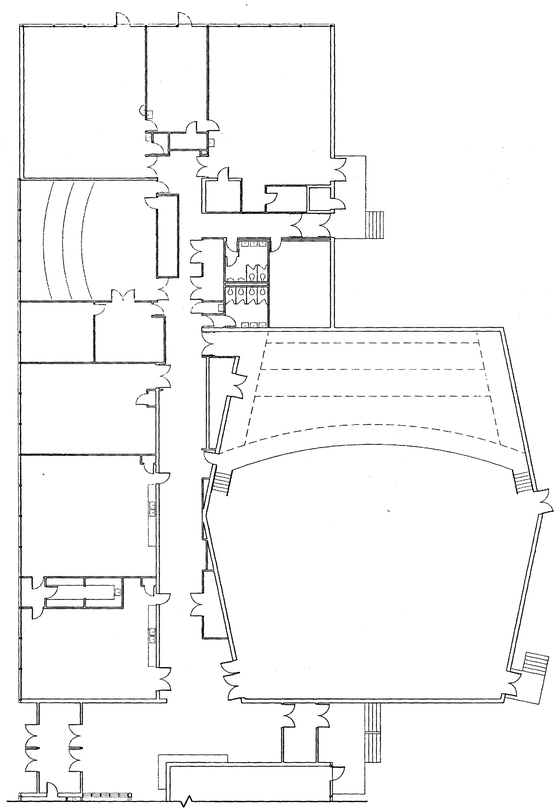
GENERAL DEMOLITION NOTES:

1. THE DEMOLITION NOTES ARE FOR A DESCRIPTIVE GUIDE ONLY. IT IS NOT THE INTENT TO POINT TO EACH AND EVERY ITEM. THE G.C. WILL BE RESPONSIBLE FOR REMOVING ALL QUANTITIES OF EACH ITEM. WHERE NEW WORK IS RUN THROUGH EXISTING AREAS, THE G.C. IS TO DO ALL CUTTING AND PATCHING FOR ALL TRADES OF ALL ADJACENT SURFACES. COORDINATE W/ STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
2. COORDINATE DEMOLITION WITH CONSTRUCTION DOCUMENTS. DO NOT OVERDEMOLISH
3. SEE SPECIFICATIONS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
4. SEE MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL DEMOLITION REQUIREMENTS PERTAINING TO THEIR TRADES.
5. DASHED LINES INDICATE CONSTRUCTION TO BE DEMOLISHED AND REMOVED.
6. PROVIDE SAW CUTTING AND SLAB REMOVAL FOR NEW BELOW FLOOR SANITARY, STORM, WATER LINES, AND DRAINS. SEE PLUMBING DRAWINGS FOR EXTENT AND LOCATION.
7. SEE FLOOR PLANS FOR NEW LOCATIONS OF EXISTING EQUIPMENT / SHELVING / FURNITURE NOTED TO BE RELOCATED.
8. VERIFY EXISTING CONSTRUCTION IN THE FIELD.
9. PRIOR TO STARTING DEMOLITION COORDINATE WITH OWNER ANY SALVAGE REQUIREMENTS OF EQUIPMENT, MATERIALS, ETC.
10. IN ALL SPACES WHERE DEMOLITION IS INDICATED REMOVE WINDOW BLINDS AND PROJECTION SCREENS.
11. WHERE ONE WALL IS BEING REMOVED AND AN ADJACENT ONE IS TO REMAIN, THE CONTRACTOR SHALL PATCH THE WALL TO REMAIN TO MATCH EXISTING CONSTRUCTION.
12. SOME DEMOLITION OF MATERIALS INDICATED ON THIS DRAWING MAY BE INCLUDED IN THE HAZARDOUS MATERIALS DEMOLITION SECTION OF THE SPECIFICATIONS. THE CONTRACTOR SHALL COORDINATE THIS WORK PRIOR TO SUBMITTING HIS BID.

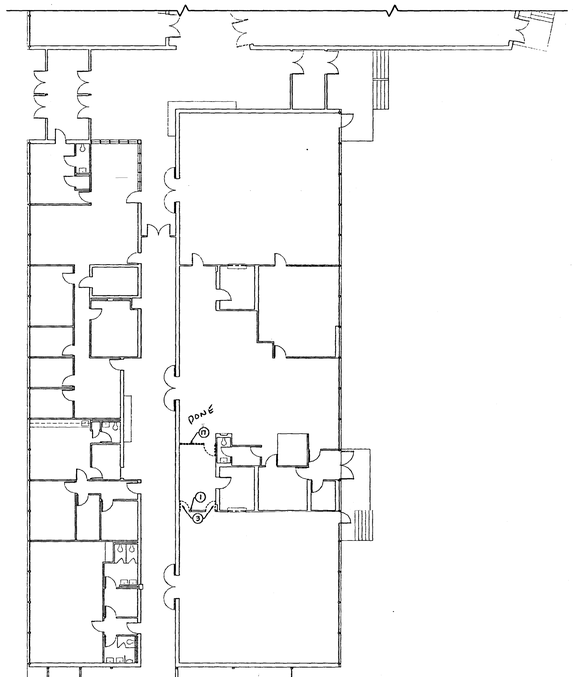
DEMOLITION NOTES:

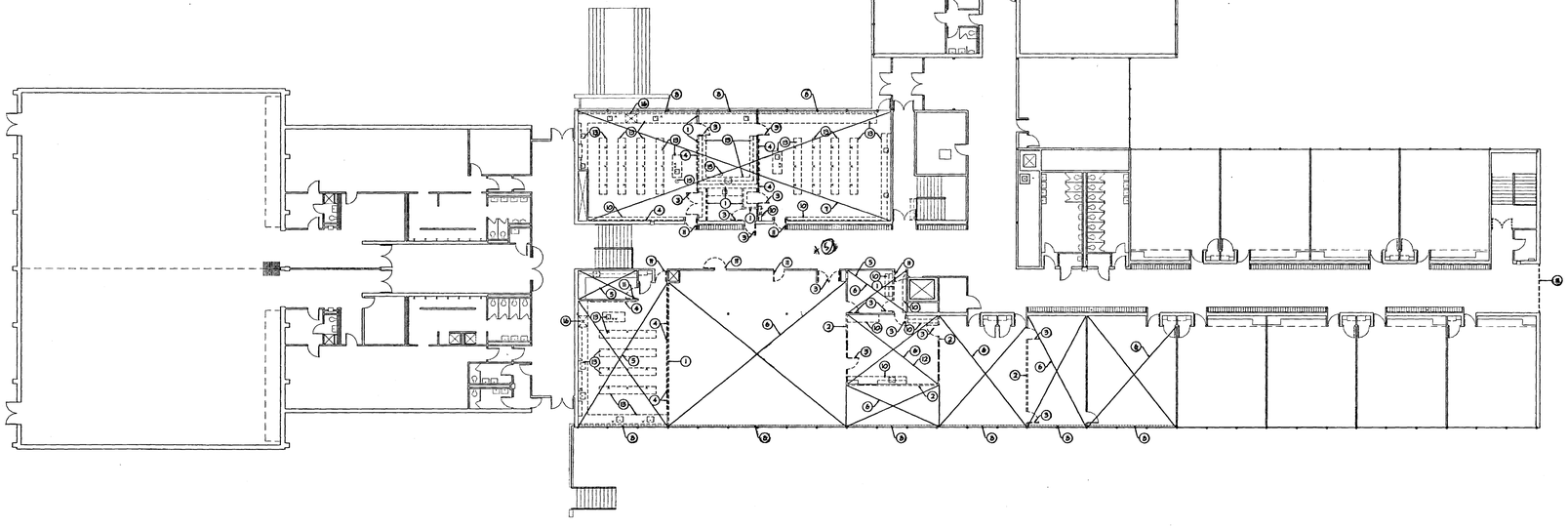
ITEMS TO BE DEMOLISHED AND REMOVED

1. MASONRY WALLS
2. METAL/WOOD STUDS - GYPSUM OR PLASTER PARTITION
3. DOOR, FRAME, GLAZING AND ASSOCIATED HARDWARE
4. BLACKBOARD/ TACKBOARD
5. 1' X 1' CEILING TILE AND ASSOCIATED WOOD FURRING, SUPPORTS / SUSPENSION SYSTEM
6. CARPET, BASE, ADHESIVE, & V.A.T. / ADHESIVE BELOW CARPET
7. VINYL FLOORING, BASE, ADHESIVE
8. WINDOW BLINDS AND HARDWARE
9. EXTERIOR WINDOW AND DOOR SYSTEM
10. WALL HUNG AND/OR FLOOR MOUNTED WOOD CASEWORK
11. DOORS AND HARDWARE (FRAME REMAINS)
12. SUSPENDED ACOUSTIC TILE CEILING SYSTEM
13. SCIENCE ROOM WALL HUNG AND/OR FLOOR MOUNTED CASEWORK INCLUDING MECHANICAL UTILITIES
14. NOT USED
15. EMERGENCY SHOWER/EYE WASH AND ASSOCIATED PIPING
16. FUME HOOD AND ASSOCIATED DUCTWORK
17. DOOR, FRAME, SIDELIGHTS, GLASS AND ASSOCIATED HARDWARE



(2/A099.1) FIRST FLOOR DEMOLITION PLAN
SCALE: 1/16"=1'-0"





(1/A099.1) FIRST FLOOR DEMOLITION PLAN
SCALE: 1/16"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E. McNEECE
DRAWN BY: J.C. OTTO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR DEMOLITION PLAN

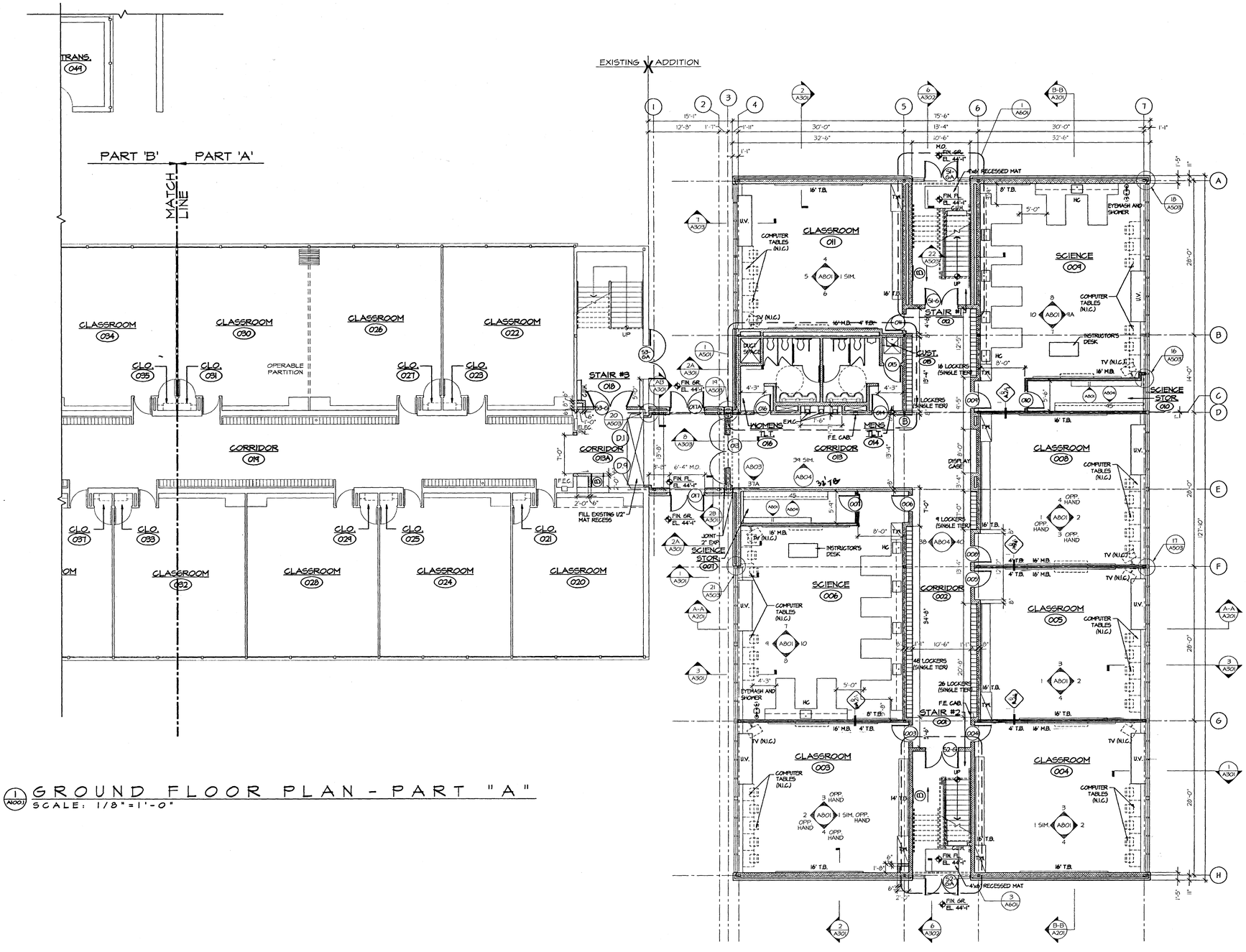
0 8' 16' 32'
SCALE: 1/16" = 1'-0"

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: 1/16" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: A099.1

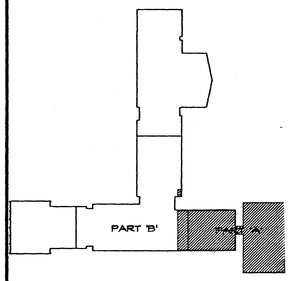
K:\50 projects\50950\dwg\Arch\A099.1 6-19-98 10:50:17 am EST

BQ #70 & 125 Attachment



1 A100.1 GROUND FLOOR PLAN - PART "A"
SCALE: 1/8"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	S.E. McNEECE
DRAWN BY	S. FENNELL

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

GROUND FLOOR PLAN PART "A"

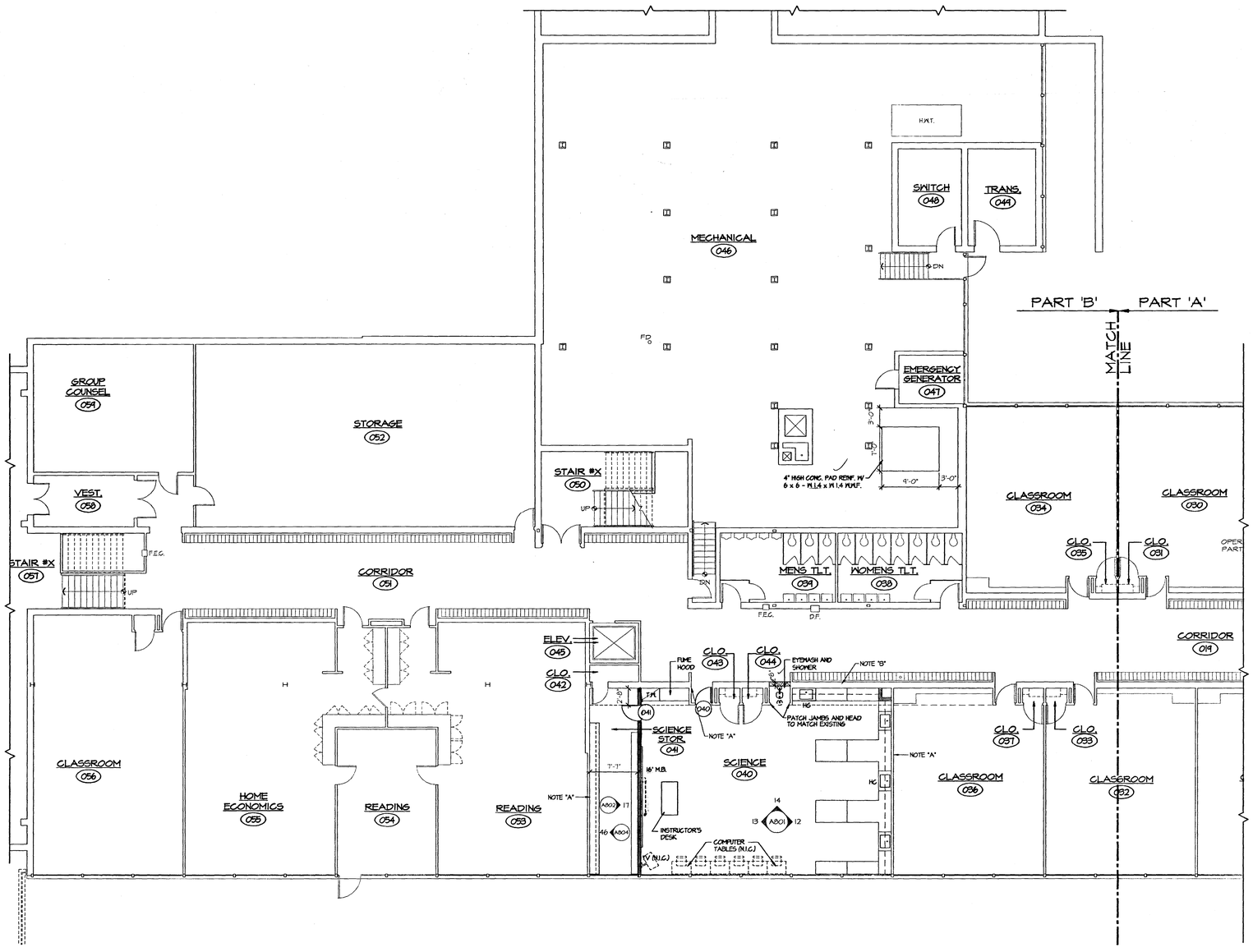
0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY
1	6/19/98	D.O.E. REVISIONS	J. C.

DATE	MARCH 16, 1998
SCALE	1/8" = 1'-0"
PROJECT NO.	50950.06
DRAWING NO.	A100.1

K:\50 projects\50950\dwg\Arch\A100-1 6-22-98 2:43:50 pm EST

BQ #70 & 125 Attachment



1 A100.2 GROUND FLOOR PLAN - PART "B"
SCALE: 1/8" = 1'-0"

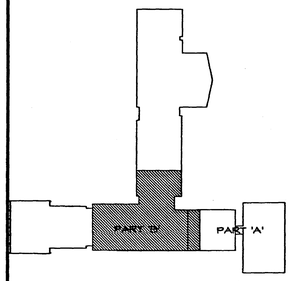
NOTE "A"

EXISTING 4" CONCRETE BLOCK WALL SIM. TO 1-HOUR RATED 4", 3 CORE REGULAR CONCRETE BLOCK PER "FIRE RATINGS FOR MASONRY UNITS", USING EQUIVALENT THICKNESS METHOD CONFORMING TO "BASIC NATIONAL BUILDING CODE (BOCA), BUILDING OFFICIALS CONFERENCE OF AMERICA INC." 1988.

NOTE "B"

EXISTING 10" CONCRETE BLOCK WALL SIM. TO UL DESIGN U906 FOR 2-HR. CONSTRUCTION.

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E. McNEECE
DRAWN BY: S. FENNELL

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

GROUND FLOOR PLAN PART "B"

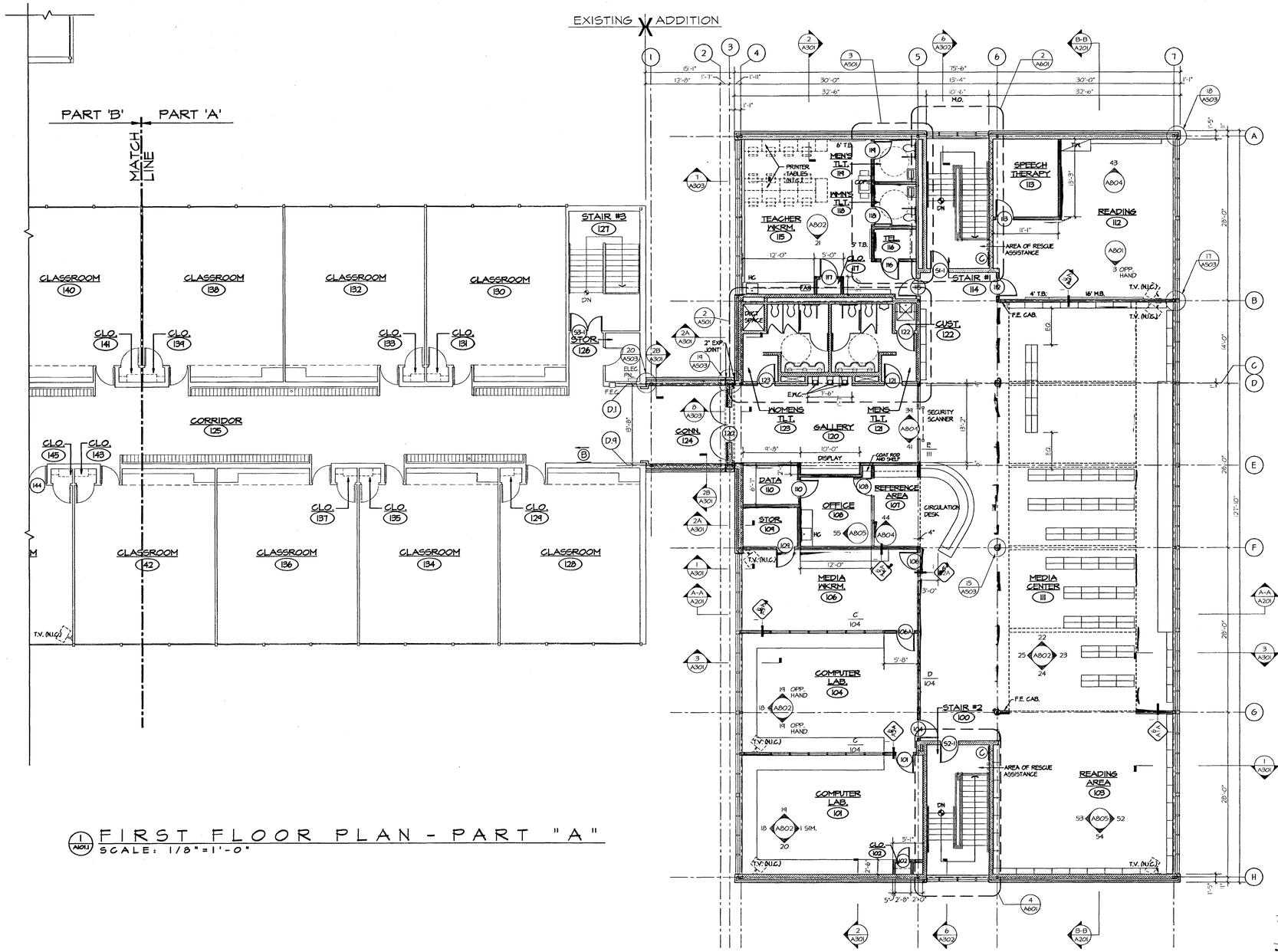
0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY
1	6/19/98	D.O.E. REVISIONS	J.C.

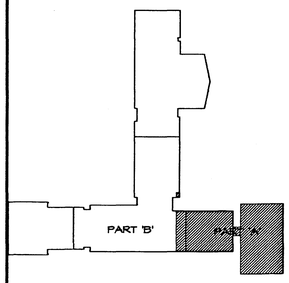
DATE: MARCH 16, 1998
SCALE: 1/8" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: A100.2

K:\50 projects\50950\dwg\Arch\A100-2 6-22-98 2:34:54 pm EST

BQ #70 & 125 Attachment



1 A101.1 FIRST FLOOR PLAN - PART "A"
SCALE: 1/8"=1'-0"



KEY PLAN

N

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E. McNEECE
DRAWN BY: S. FENNELL

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR PLAN PART "A"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY
1	6/19/98	D.O.E. REVISIONS	J.C.

DATE: MARCH 16, 1998
SCALE: 1/8" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: A101.1

270
37
6
51 3

PRINTED BY NATIONAL DIRECT - 518-372-3995 - TEMP014.TLC - //turbo 4.02:00 TM

NOTE "A"

EXISTING 4" CONCRETE BLOCK WALL SIM. TO 1-HOUR RATED 4", 3 CORE REGULAR CONCRETE BLOCK PER "FIRE RATINGS FOR MASONRY UNITS" USING EQUIVALENT THICKNESS METHOD CONFORMING TO "BASIC NATIONAL BUILDING CODE (BOCA), BUILDING OFFICIALS CONFERENCE OF AMERICA INC." 1988.

NOTE "B"

EXISTING 10" CONCRETE BLOCK WALL SIM. TO UL DESIGN U906 FOR 2-HR. CONSTRUCTION.

NOTE "C"

EXISTING 6" CONCRETE BLOCK WALL, UL DES. SIM. TO U906 FOR 2-HOUR CONSTRUCTION.

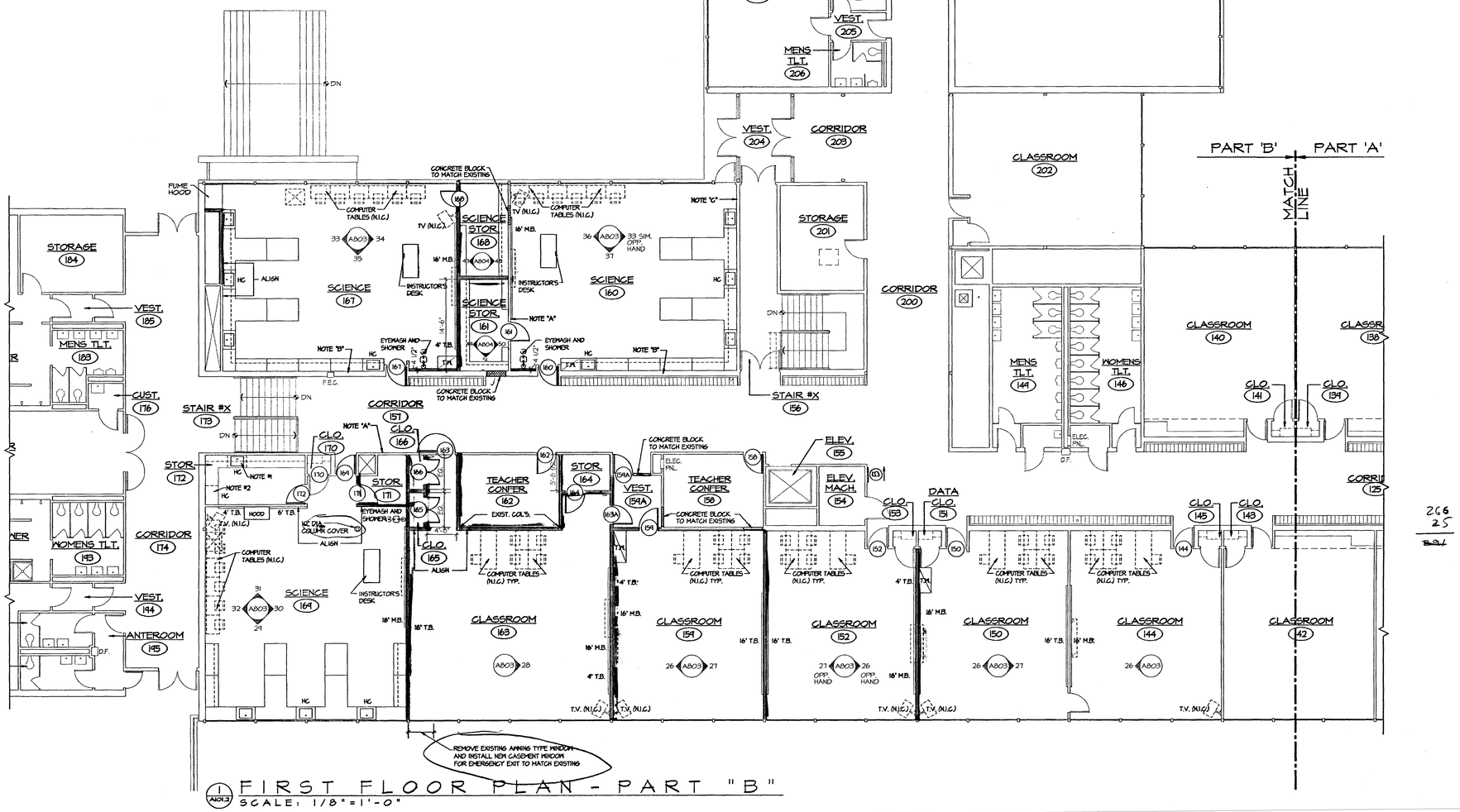
NOTE #1

REMOVE EXISTING SINK AND BASE CABINET. INSTALL NEW SINK AND CONTROLS, SEE PLUMBING DRAWINGS. INSTALL NEW END PANELS AT EXISTING ADJACENT BASE CABINETS. MIN. KNEE SPACE 36" WIDE X 27" HIGH. PATCH WALL, FLOOR AND INSTALL NEW BASE.

NOTE #2

SAME AS NOTE #1, EXCEPT NO SINK REQUIRED.

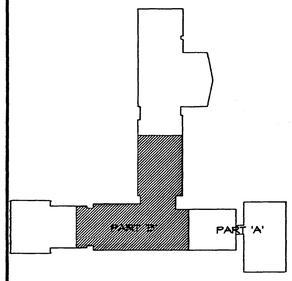
BQ #70 & 125 Attachment



1 / A101.2 FIRST FLOOR PLAN - PART "B"
SCALE: 1/8" = 1'-0"

266
25
B-21

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E. McNEECE
DRAWN BY: S. FENNELL

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR PLAN PART "B"

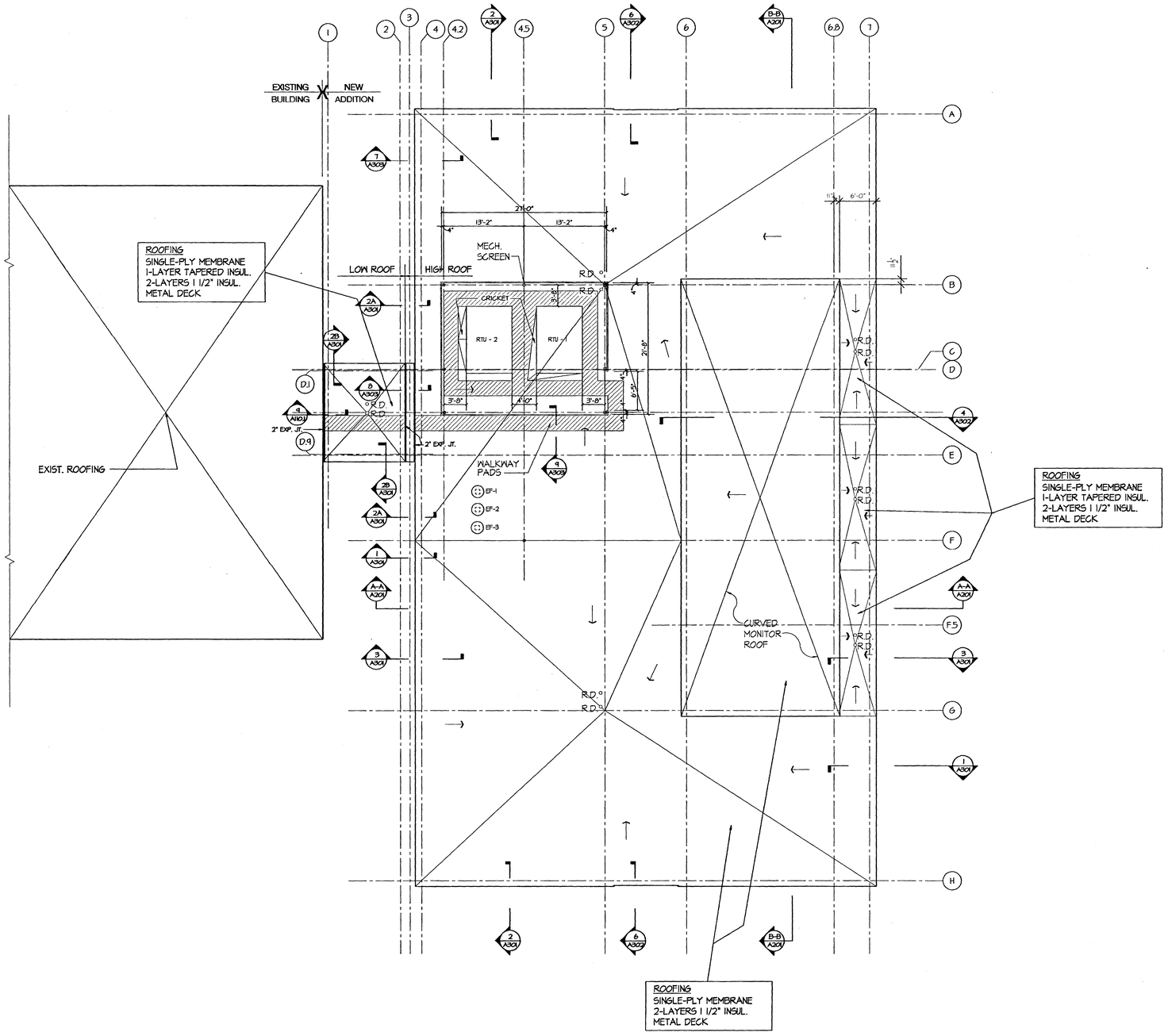
0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY
1	6/19/98	D.O.E. REVISIONS	J.C.

DATE: MARCH 16, 1998
SCALE: 1/8" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: A101.2

K:\50 projects\50950\dwg\Arch\A101-2 8-19-98 10:24:01 am EST

BQ #70 & 125 Attachment



1 A110 ROOF PLAN
SCALE: 1/8"=1'-0"

This drawing and details on it, as an instrument of servic is the property of the architect and may be used for th specific project and shall not be loaned, copied reproduced without written consent of the architect.

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E. McNEECE
DRAWN BY: J.C. OTTO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

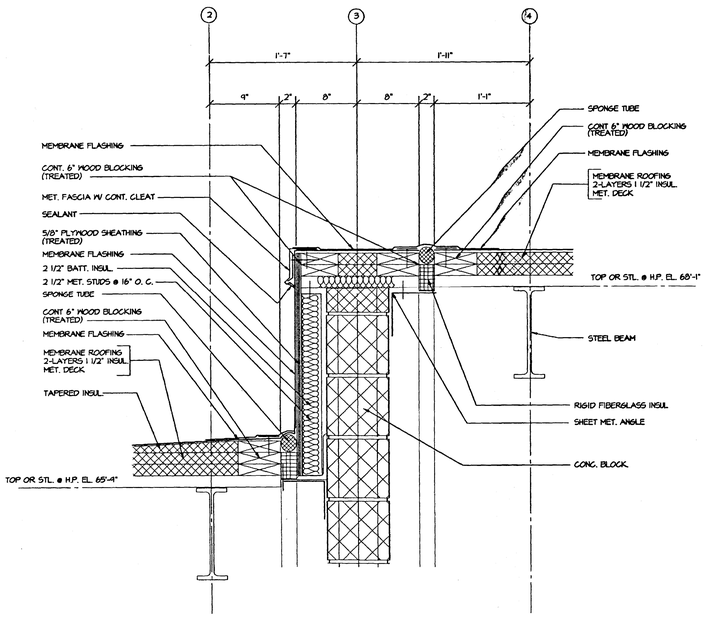
ROOF PLAN

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

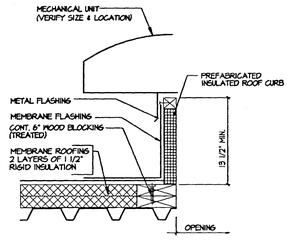
DATE: **MARCH 16, 1998**
SCALE: **1/8" = 1'-0"**
PROJECT NO.: **50950.06**
DRAWING NO.: **A110**

BQ #70 & 125 Attachment

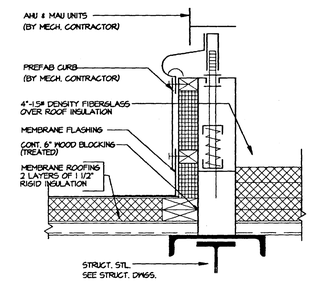


1 A110.1 ROOF EXPANSION JOINT DETAIL
SCALE: 1 1/2" = 1'-0"

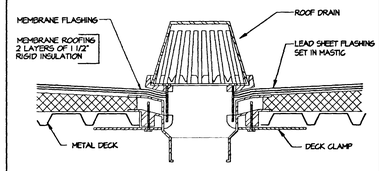
NOTE
PROVIDE NEW FLASHING AT 3 - NEW FUME HOOD EXHAUST FANS IN EXISTING BUILDING. NEW FLASHING SHALL BE COMPATIBLE WITH EXISTING FOAM ROOFING.



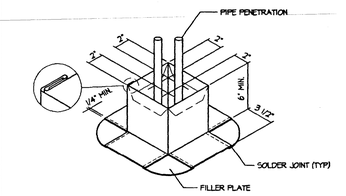
2 A110.1 TYPICAL MECHANICAL CURB DETAIL
SCALE: 1 1/2" = 1'-0"



3 A110.1 MECH. ROOF TOP UNIT CURB DETAIL
SCALE: 1 1/2" = 1'-0"



4 A110.1 TYPICAL ROOF DRAIN DETAILS
SCALE: 1 1/2" = 1'-0"



ISOMETRIC VIEW

5 A110.1 PENETRATION POCKET DETAIL
SCALE: 1 1/2" = 1'-0"

6 A110.1 TYPICAL PENETRATION POCKET DETAIL
SCALE: 1 1/2" = 1'-0"

7 A110.1 TYPICAL PENETRATION POCKET DETAIL
SCALE: 1 1/2" = 1'-0"

8 A110.1 TYPICAL VENT STACK DETAIL
SCALE: 1 1/2" = 1'-0"

9 A110.1 EXPANSION JT. DETAIL
SCALE: 1 1/2" = 1'-0"

This drawing and details on it, as an instrument of service is the property of the architect and may be used for this specific project and shall not be loaned, copied o reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E. McNEECE
DRAWN BY: J. CZUBATYJ

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

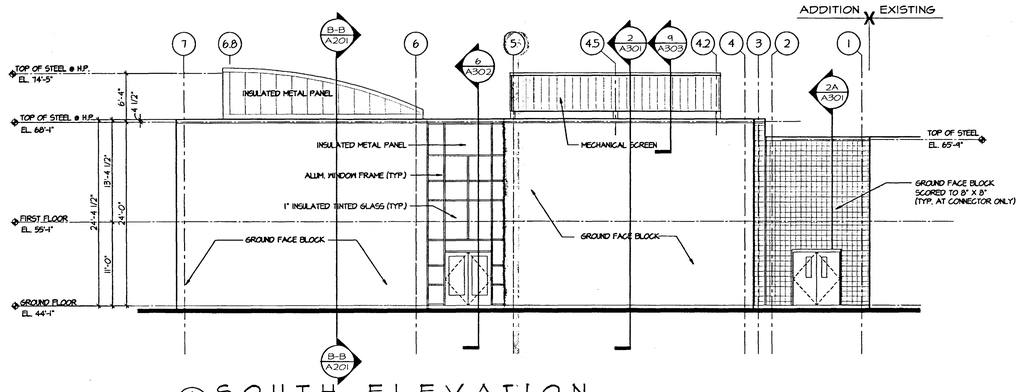
STATE PROJECT NO. 057-106EA

DRAWING TITLE

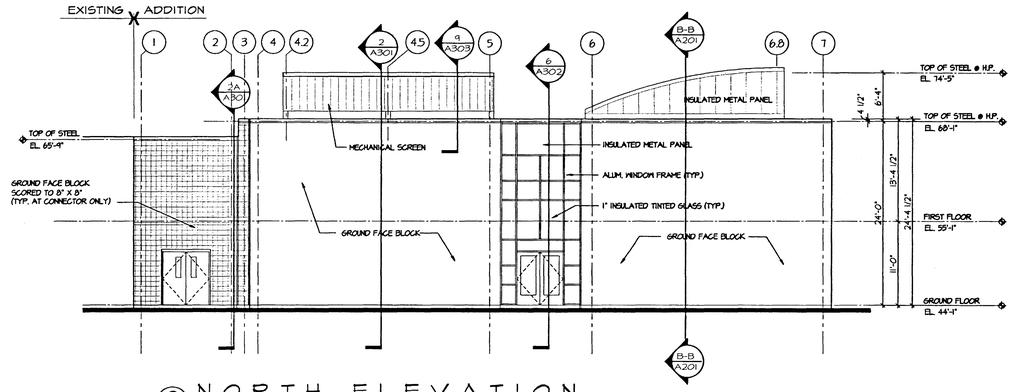
ROOFING DETAILS

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: 1 1/2" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: A110.1

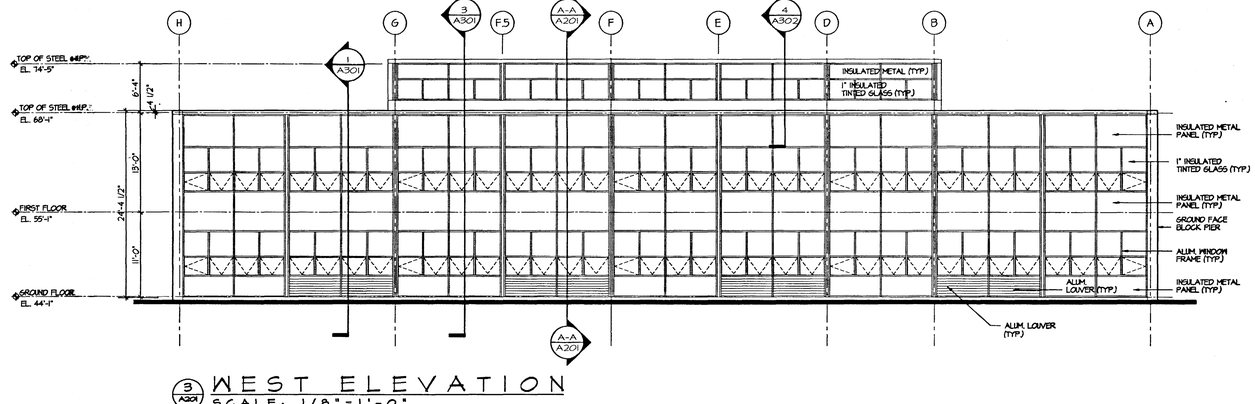


1 A201 SOUTH ELEVATION
SCALE: 1/8"=1'-0"

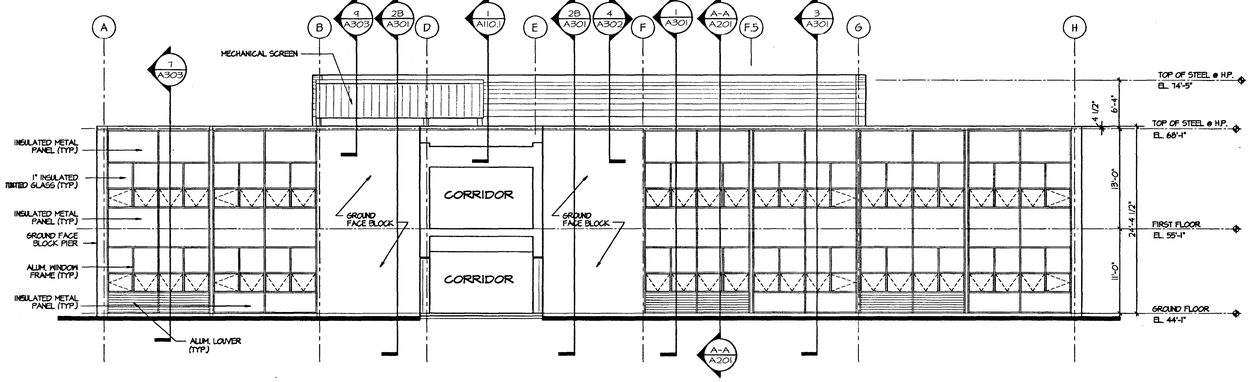


2 A201 NORTH ELEVATION
SCALE: 1/8"=1'-0"

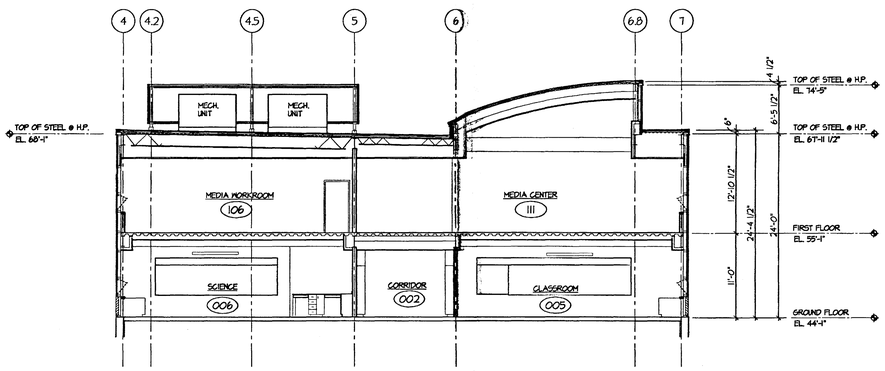
BQ #70 & 125 Attachment



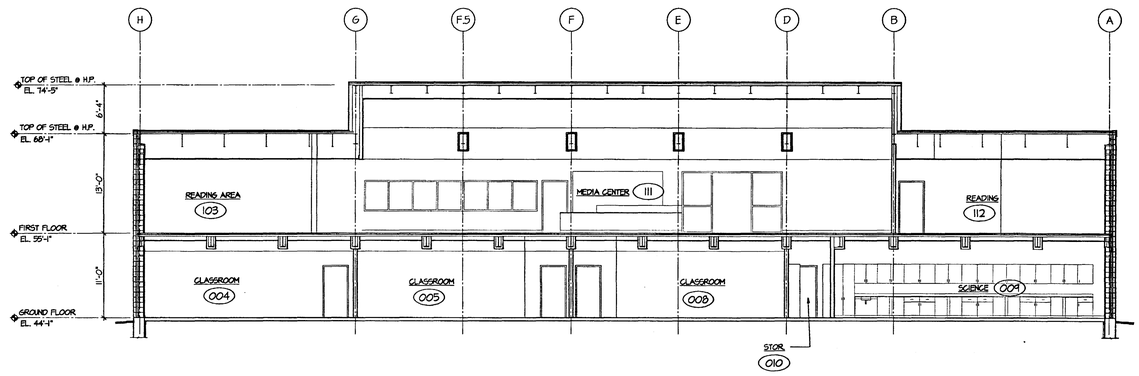
3 A201 WEST ELEVATION
SCALE: 1/8"=1'-0"



4 A201 EAST ELEVATION
SCALE: 1/8"=1'-0"



A-A A201 BUILDING SECTION
SCALE: 1/8"=1'-0"



B-B A201 BUILDING SECTION
SCALE: 1/8"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E. McNEECE
DRAWN BY: S.E. McNEECE

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

EXTERIOR ELEVATIONS & BUILDING SECTIONS

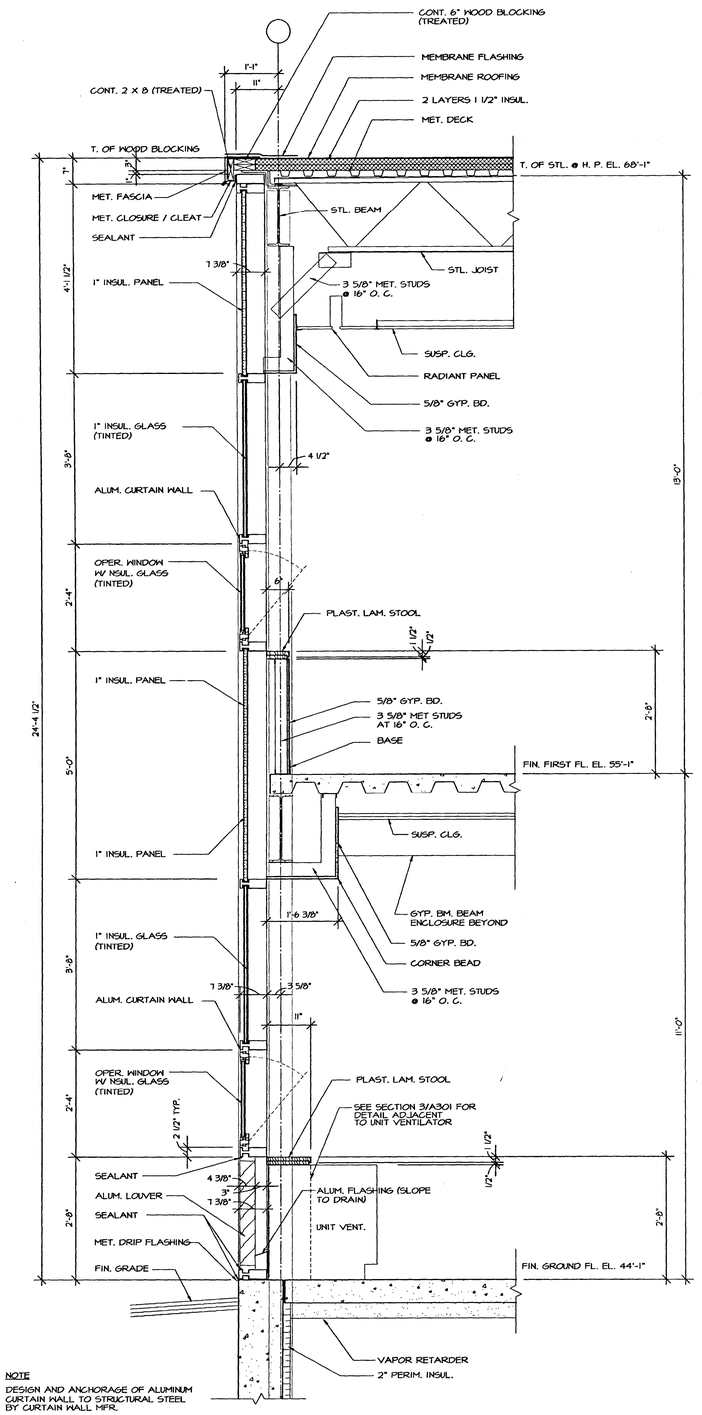
NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: 1/8" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: A201

PRINTED BY NATIONAL DIRECT - 618-372-9885 - TLW#918.ILC - 7/15/98 4:02:00 PM

K:\50 projects\50950\dwg\Arch\A201 6-18-98 1:26:33 pm EST

BQ #70 & 125 Attachment

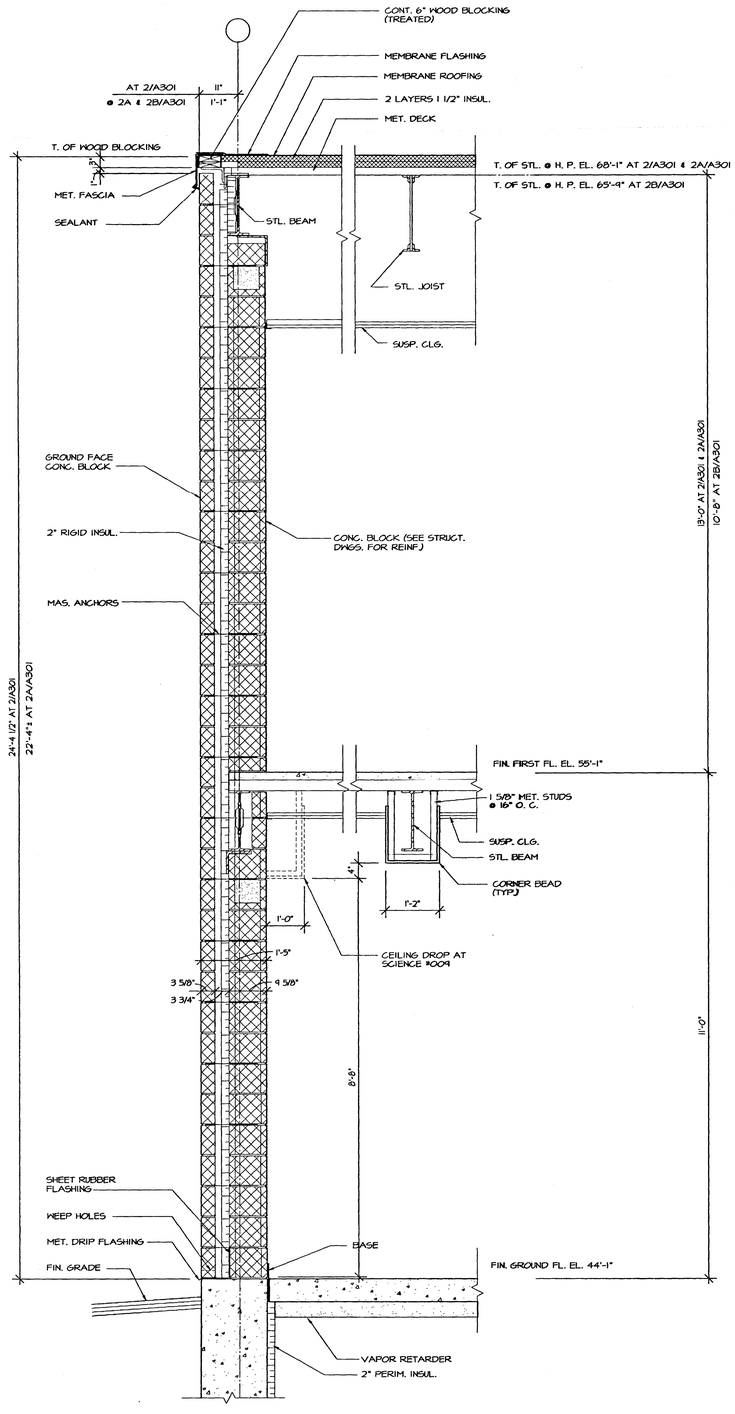


NOTE

DESIGN AND ANCHORAGE OF ALUMINUM CURTAIN WALL TO STRUCTURAL STEEL BY CURTAIN WALL MFR.

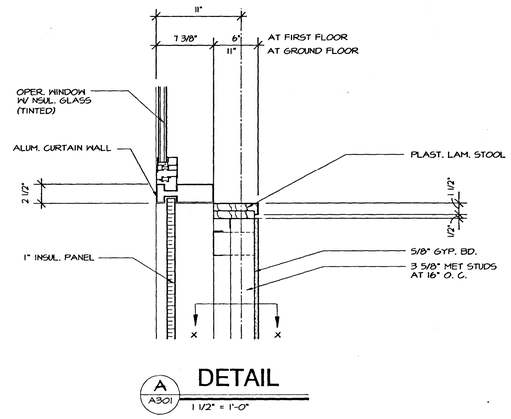
1/A301 SECTION

3/4" = 1'-0"



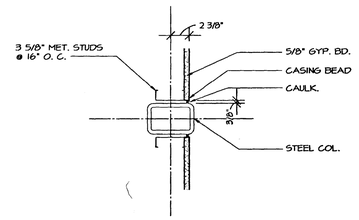
2/A301 & 2A/A301 & 2B/A301 SECTION

3/4" = 1'-0"



A/A301 DETAIL

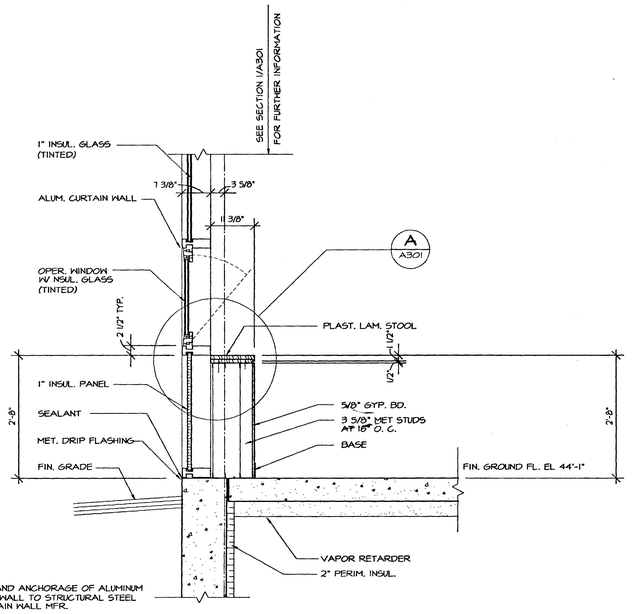
1 1/2" = 1'-0"



SECTION X-X

3" = 1'-0"

(AT FIRST FLOOR)



NOTE

DESIGN AND ANCHORAGE OF ALUMINUM CURTAIN WALL TO STRUCTURAL STEEL BY CURTAIN WALL MFR.

3/A301 SECTION

3/4" = 1'-0"

This drawing and details on it, as an instrument of service is the property of the architect and may be used for the specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE

ARCHITECT/ENGINEER: S.E.McNEECE

DRAWN BY: J. CZUBATY

FLETCHER THOMPSON

ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

WALL SECTIONS

NO	DATE	REVISION	BY

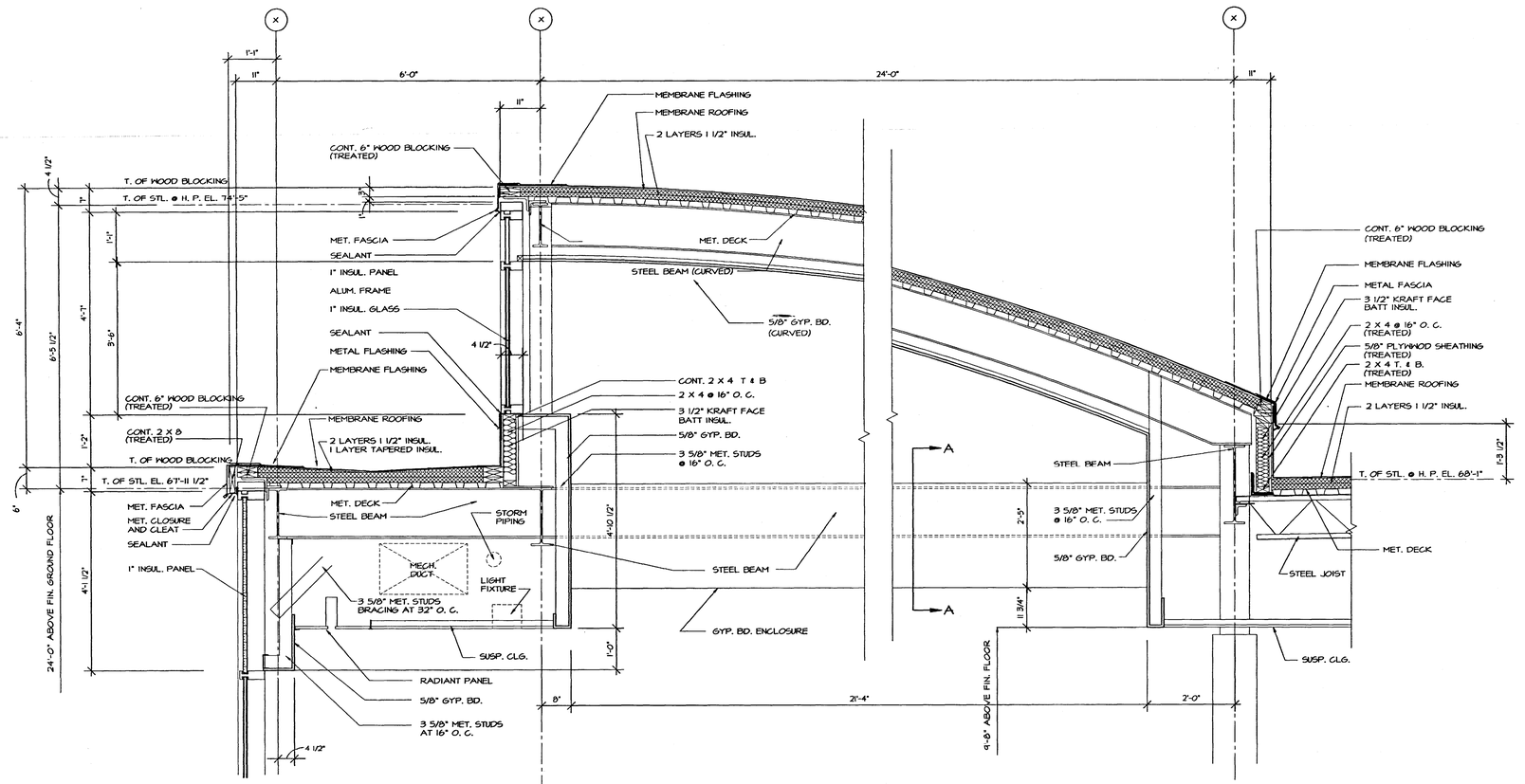
DATE: MARCH 16, 1998

SCALE: AS NOTED

PROJECT NO.: 50950.06

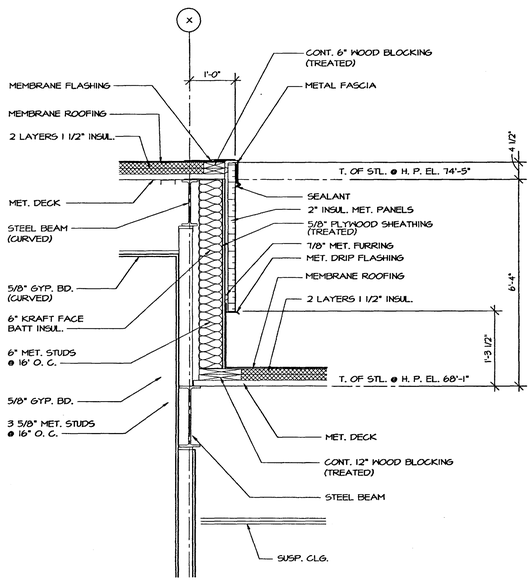
DRAWING NO.: A301

BQ #70 & 125 Attachment



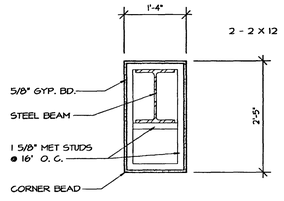
4 / A302 SECTION

3/4" = 1'-0"



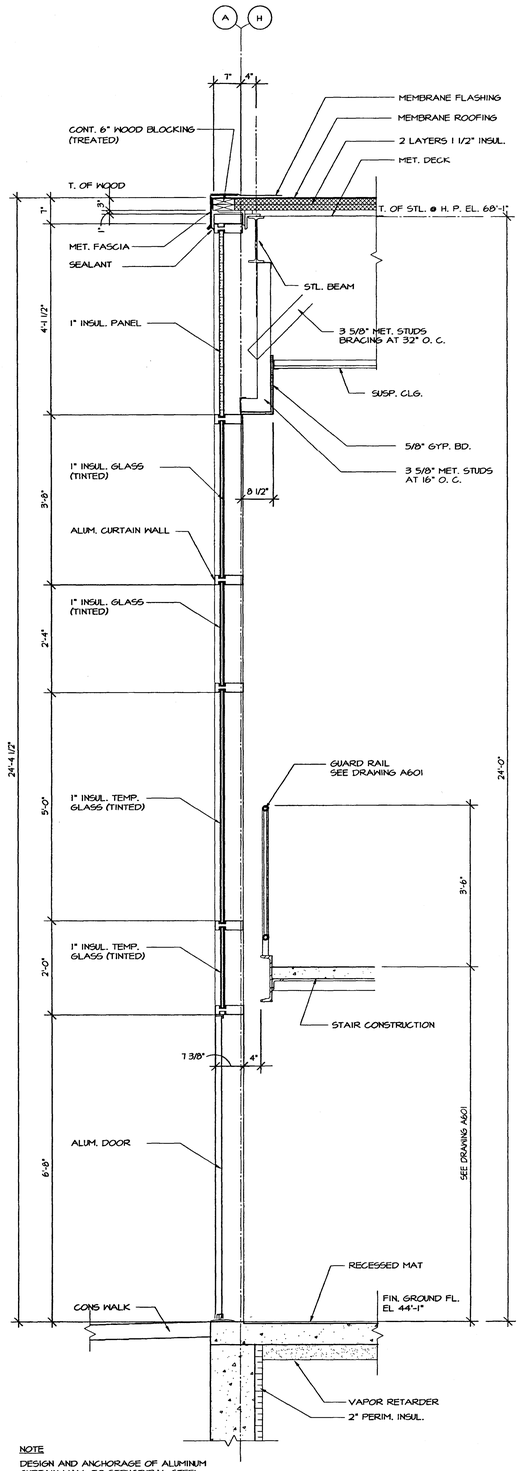
5 / A302 SECTION

3/4" = 1'-0"



SECTION A - A

3/4" = 1'-0"



NOTE

DESIGN AND ANCHORAGE OF ALUMINUM CURTAIN WALL TO STRUCTURAL STEEL BY CURTAIN WALL MFR.

6 / A302 SECTION

3/4" = 1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE

ARCHITECT/ENGINEER: S.E.McNEECE

DRAWN BY: J. CZUBATYJ

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

WALL SECTIONS

NO	DATE	REVISION	BY

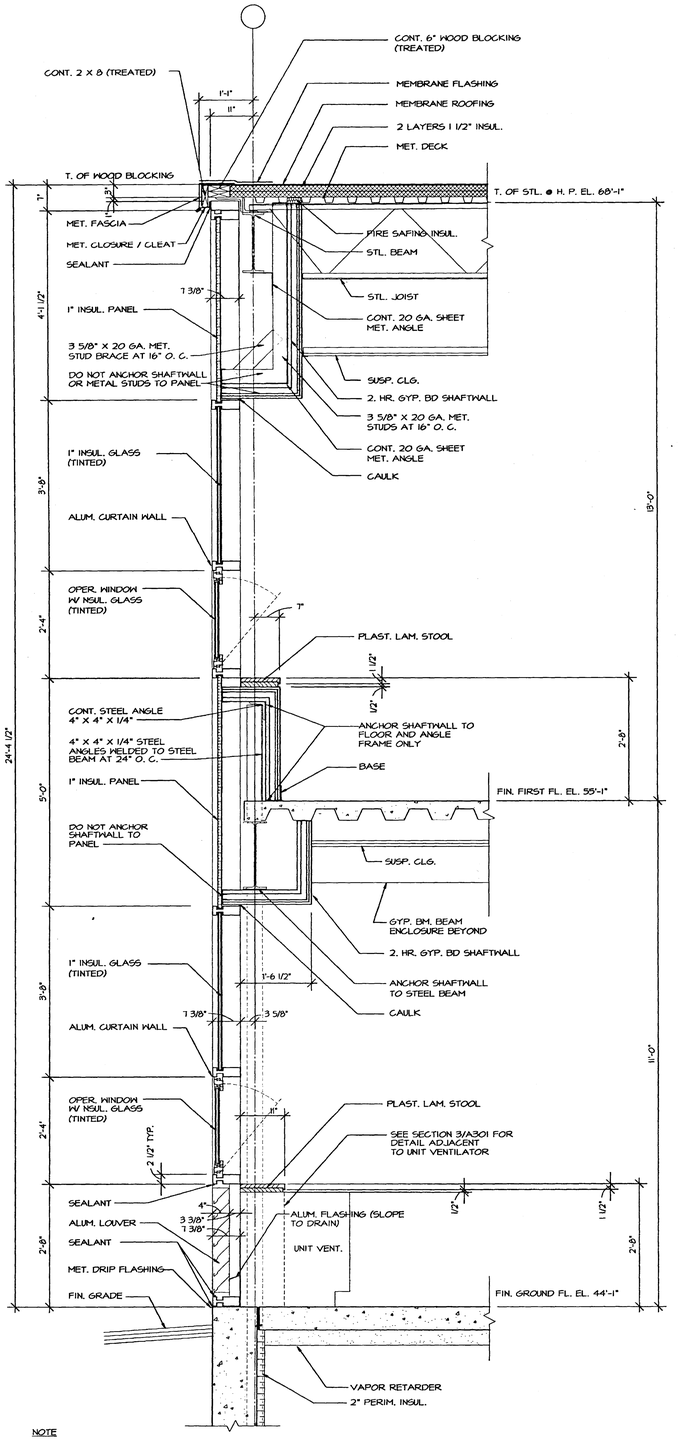
DATE: MARCH 16, 1998

SCALE: 3/4" = 1'-0"

PROJECT NO.: 50950.06

DRAWING NO.: A302

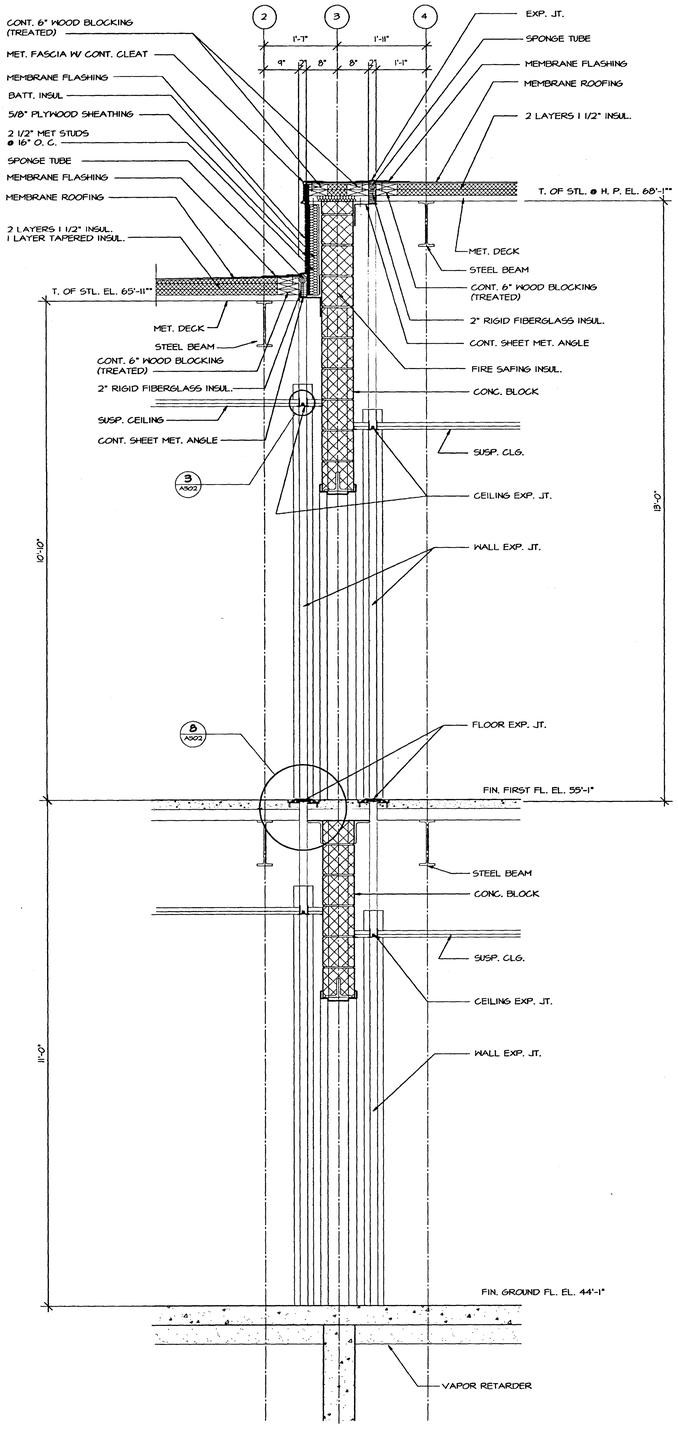
BQ #70 & 125 Attachment



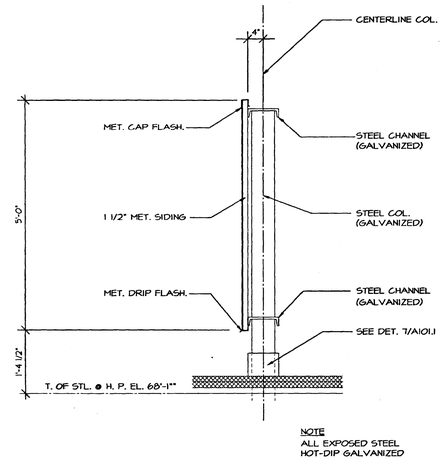
NOTE
DESIGN AND ANCHORAGE OF ALUMINUM CURTAIN WALL TO STRUCTURAL STEEL BY CURTAIN WALL MFR.

7 / A303 SECTION
3/4" = 1'-0"

TYP. AT EXTERIOR WALL
OF CLASSROOM #011
& TEACHERS WORKROOM #115



8 / A303 SECTION
3/4" = 1'-0"
2 - HR. FIRE WALL



NOTE
ALL EXPOSED STEEL
HOT-DIP GALVANIZED

9 / A303 SECTION
3/4" = 1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	S.E.McNEECE
DRAWN BY	J. CZUBATY

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

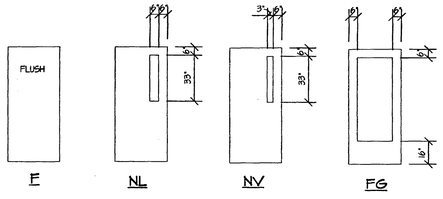
WALL SECTIONS

NO	DATE	REVISION	BY

DATE	MARCH 16, 1998
SCALE	3/4" = 1'-0"
PROJECT NO.	50950.06
DRAWING NO.	A303

DOOR SCHEDULE

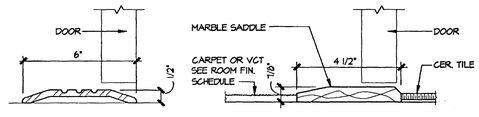
FLOOR DESIGNATION	DRAWING DESIGNATION	DOOR NUMBER	DOOR: DOOR SIZE: DOUBLE LEAF DOOR	4'-0"W X 6'-8"H	3'-0"W X 6'-8"H	14'-0"W X 6'-10"H	3'-0"W X 7'-1 3/4"H	2'-6"W X 6'-8"H	TYPE / MATERIAL: TYPE	MATERIAL	FRAME: DETAIL/SHEET NUMBER: TYPE - SEE FRAME ELEV.	HEAD DETAIL	JAMB DETAIL	SADDLE DETAIL	FIRE RATING: 20 MINUTES	45 MINUTES	60 MINUTES	90 MINUTES	HARDWARE: FIRE CODE: PANIC RELEASE LATCH	LATCHING	AUTOMATIC CLOSER	ELECTRO-MAG. H.O.	DELAYED ACTION CLOSER	PUSH / PULL ADA	PHYSICALLY CHALLENGED: LEVER HANDLES	KICK PLATES	TACTILE WARNING	ACCESSIBLE THRESHOLD	180 DEGREE HINGES	VERTICAL PULL ADA	VT. PULL W/ THUMBLATCH	SIGNAGE TYPE	SIGNAGE MOUNTING HEIGHT: 60" A.F.F.	HARDWARE SET	REMARKS
GROUND FLOOR — PART - 'A'		003		●					NL	WD	A	1	1	-		●			●	●				●							A	Classroom	2	1/4" WIRE GL.
		004		●					NL	WD	A	1	1	-		●			●	●				●							A	Classroom	2	1/4" WIRE GL.
		005		●					NL	WD	A	1	1	-		●			●	●				●							A	Classroom	2	1/4" WIRE GL.
		006		●					NL	WD	A	1	1	-			●		●	●				●							A	Science	2	1/4" WIRE GL.
		007		●					F	WD	A	2	2	-			●		●	●				●		●					A	Storage	2	1/4" WIRE GL. 3/4" UNDERCUT
		008		●					NL	WD	A	1	1	-		●			●	●				●							A	Classroom	2	1/4" WIRE GL.
		009		●					NL	WD	A	1	1	-			●		●	●				●							A	Science	2	1/4" WIRE GL.
		010		●					F	WD	A	1	1	-			●		●	●				●		●					A	Storage	2	3/4" UNDERCUT
		011		●					NL	WD	A	1	1	-		●			●	●				●							A	Classroom	2	1/4" WIRE GL.
		013	●	●					F	WD	A	1	1	-				●	●	●	●			●	●			●			-		4	1/4" WIRE GL.
		014		●					F	WD	A	1	1	C.B						●			●	●		●				A & F	Men's Toilet	5	3/4" UNDERCUT
		015		●					F	WD	A	1	1	-			●		●	●				●	●						A	Custodian Closet	3	3/4" UNDERCUT
		016		●					F	WD	A	1	1	B						●			●	●		●				A & F	Women's Toilet	5	3/4" UNDERCUT
		017	●				●		NL	HM	A	3	4	A					●	●	●			●	●		●				-		6	1/4" TEMP. GL. (TINTED)
		017A	●				●		NL	HM	A	3	4	A					●	●	●			●	●		●				-		6	1/4" TEMP. GL. (TINTED)
		51-6	●	●					NV	WD	A	1	1	-				●	●	●	●			●	●						A	Stair	7	1/4" WIRE GL.
		51-6A	●	●					FG	AL	-	SECT 6/A302	SECT 6/A302	A					●	●	●			●	●		●						14	1" INSUL. TEMP. GL. (TINTED)
		52-6	●	●					NV	WD	A	1	1	-				●	●	●	●			●	●						A	Stair	7	1/4" WIRE GL.
		52-6A	●	●					FG	AL	-	SECT 6/A302	SECT 6/A302	A					●	●	●			●	●		●						14	1" INSUL. TEMP. GL. (TINTED)
		53-6	●	●					NV	WD	A	1	1	-				●	●	●	●			●	●						A	Stair	7	1/4" WIRE GL.
		53-6A	●			●			NV	HM	A	SIM. 3	SIM. 4	A					●	●	●			●	●		●				-		6	1/4" WIRE GL.
		040		●					NL	WD	-	-	-	-				●	●		●			●	●						A	Science	2	1/4" WIRE GL. EXIST. FRAME (VERIFY SIZE IN FIELD)
		041		●					F	WD	A	2	2	-				●	●		●			●		●							2	3/4" UNDERCUT
		101		●					NL	WD	A	2	2	-					●					●							A	Computer Lab	1	1/4" TEMP. GL.
		102				●			F	WD	A	2	2	-					●					●							-		1	
		104		●					NL	WD	A	2	2	-					●					●							A	Computer Lab	1	1/4" TEMP. GL.
		106		●					NL	WD	A	2	2	-					●					●							A	Media Mark Room	1	1/4" TEMP. GL.
		106A		●					NL	WD	A	2	2	-					●					●							A	Media Mark Room	1	1/4" TEMP. GL.
		108		●					F	WD	B	2	2	-					●					●							A	Office	12	
		109		●					F	WD	A	2	2	-		●			●	●				●		●					A	Storage	3	
		110		●					F	WD	A	2	2	-					●					●							A	Data	1	
		112		●					NL	WD	A	2	2	-					●					●							A	Reading	1	1/4" TEMP. GL.
		113		●					F	WD	A	2	2	-					●					●							A	Speech Therapy	1	
		115		●					NL	WD	A	1	1	-					●					●							A	Teacher's Workroom	1	1/4" TEMP. GL.
		116		●					F	WD	A	2	2	-					●					●							A	Telephone	8	
		117		●					F	WD	A	2	2	-					●					●									1	
		118		●					F	WD	A	2	2	B					●					●	●		●				A & F	Women's Toilet	9	3/4" UNDERCUT
		119		●					F	WD	A	2	2	B					●					●	●		●				A & F	Men's Toilet	9	3/4" UNDERCUT
		120	●	●					F	WD	A	1	1	-				●	●	●	●			●	●			●			-		4	1/4" WIRE GL.
		121		●					F	WD	A	1	1	B						●			●	●		●				A & F	Women's Toilet	5	3/4" UNDERCUT
		122		●					F	WD	A	1	1	-		●			●	●				●		●					A	Custodian Closet	3	3/4" UNDERCUT
		123		●					F	WD	A	1	1	B						●			●	●		●				A & F	Men's Toilet	5	3/4" UNDERCUT
		51-1		●					NV	WD	A	1	1	-				●	●	●	●			●	●						A & D	Stair	11	1/4" WIRE GL. - SECURITY ALARM LOCKABLE FROM STAIR SIDE
		52-1		●					NV	WD	A	1	1	-				●	●	●	●			●	●						A & D	Stair	11	1/4" WIRE GL. - SECURITY ALARM LOCKABLE FROM STAIR SIDE
		53-1	●	●		●			NV	WD	-	-	-	-				●	●	●	●			●	●						A	Stair	7	1/4" WIRE GL. EXIST. FRAME (VERIFY SIZE IN FIELD)
		144		○					-	-	-	-	-	-					●					●							A	Classroom 144	13	REMOVE EXIST. LOCKSET
		150		○					-	-	-	-	-	-					●					●							A	Classroom 150	13	REMOVE EXIST. LOCKSET
		152		○					-	-	-	-	-	-					●					●							A	Classroom 152	13	REMOVE EXIST. LOCKSET
		158		●					F	WD	A	1	1	-		●			●	●				●							A	Conference Room	2	
		159		●					NL	WD	A	2	2	-					●					●							A	Classroom	1	1/4" TEMP. GL.
		159A		●					NL	WD	A	1	1	-		●			●	●				●							A	Classroom	2	1/4" WIRE GL.
		160		●					NL	WD	-	-	-	-			●		●	●				●							A	Science	2	1/4" WIRE GL. EXIST. FRAME (VERIFY SIZE IN FIELD)
		161		●					F	WD	A	1	1	-			●		●	●				●		●					A	Storage	2	3/4" UNDERCUT
		162		●					F	WD	-	-	-	-		●			●	●				●							A	Conference Room	2	EXIST. FRAME (VERIFY SIZE IN FIELD)
		163		●					NL	WD	-	-	-	-		●			●	●				●							A	Classroom	2	1/4" WIRE GL. EXIST. FRAME (VERIFY SIZE IN FIELD)
		163A		●					NL	WD	A	2	2	-					●					●							A	Classroom	1	1/4" TEMP. GL.
		164		●					F	WD	A	2	2	-		●			●	●				●		●					A	Storage	2	3/4" UNDERCUT
		165	●	●					F	WD	A	2	2	-					●					●									10	
		166	●	●					F	WD	A	2	2	-					●					●							-		10	
		167		●					NL	WD	-	-	-	-			●		●	●				●							A	Science	2	1/4" WIRE GL. EXIST. FRAME (VERIFY SIZE IN FIELD)
		168		●					F	WD	A	2	2	-		●			●	●				●		●					A	Storage	2	3/4" UNDERCUT
		169		●					NL	WD	-	-	-	-		●			●	●				●							A	Science	2	1/4" WIRE GL. EXIST. FRAME (VERIFY SIZE IN FIELD)
		170		●					NL	WD	-	-	-	-		●			●	●				●							A	Science	2	1/4" WIRE GL. EXIST. FRAME (VERIFY SIZE IN FIELD)
		171		●					F	WD	A	2	2	-					●	●				●	●						A	Storage	2	3/4" UNDERCUT
		172		●					F	WD	-	-	-	-		●			●	●				●	●						A	Storage	2	3/4" UNDERCUT EXIST. FRAME (VERIFY SIZE IN FIELD)
FIRST FLOOR — PART - 'B'		218		●					F	WD	A	1	1	-					●	●				●	●						A	Serving	2	



F NL NV FG

DOOR TYPES

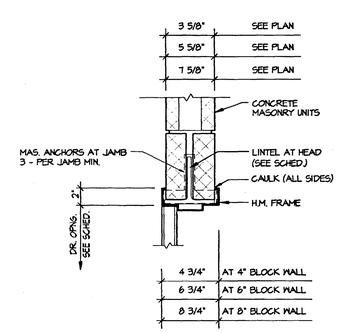
SCALE: 1/4" = 1'-0"



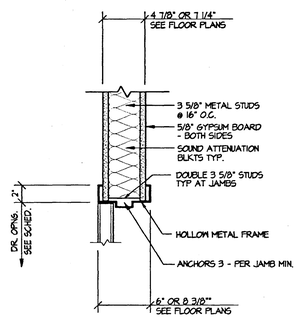
A B

SADDLE TYPES

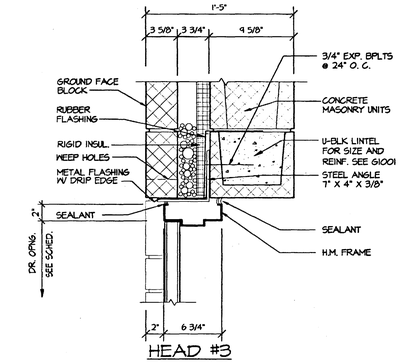
N.T.S.



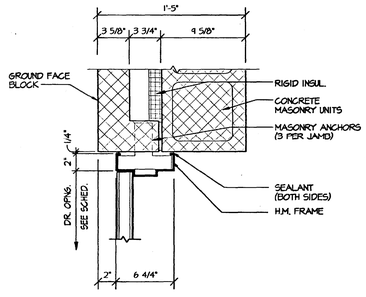
HEAD #1
JAMB #1 SIMILAR



HEAD #2
JAMB #2 SIMILAR



HEAD #3

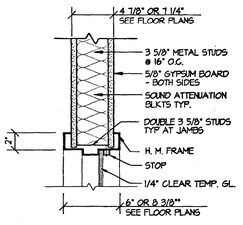


JAMB #4

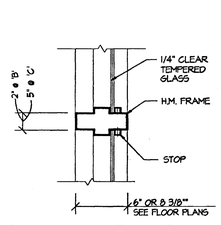
HEAD & JAMB DETAILS

SCALE: 1 1/2" = 1'-0"

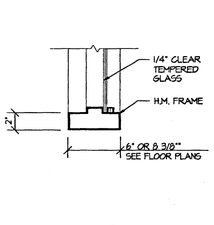
BQ #70 & 125 Attachment



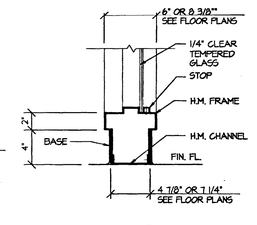
DET. A



DET. B & C



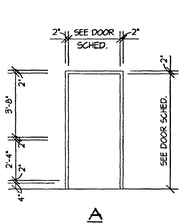
DET. D



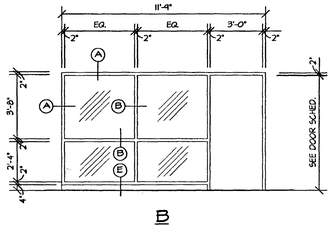
DET. E

FRAME DETAILS

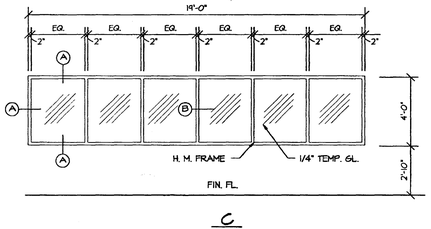
SCALE: 1 1/2" = 1'-0"



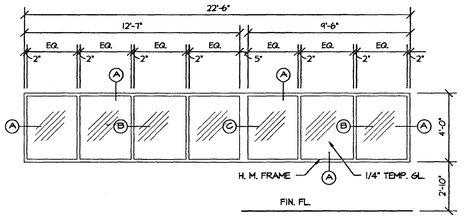
A



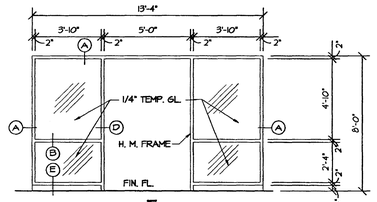
B



C
104



D
104



E
111

HOLLOW METAL FRAME ELEVATIONS

SCALE: 1/4" = 1'-0"

This drawing and details on it, as an instrument of service is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

LEGEND

● - NEW WORK 101A - DOOR NUMBER
○ - EXISTING

GENERAL DOOR NOTES

1. ALL DOORS SHALL BE 1 3/4" THICK UNLESS OTHERWISE NOTED
2. ALL RATED DOORS AND DOORS FRONTING CORRIDORS EXCEPT RESTROOM DOORS SHALL HAVE POSITIVE LATCHING LOCKSETS OR LATCHSETS AND CLOSERS.
3. ALL RATED DOORS AND DOORS TO HAZARDOUS AREAS SHALL HAVE POSITIVE LATCHING LOCKSETS OR LATCHSETS AND CLOSERS.
4. ALL DOORS LEADING TO HAZARDOUS SPACES SHALL HAVE TACTILE MARKING.
5. ALL DOORS EXITING 100 OR MORE PERSONS SHALL HAVE PANIC EXIT DEVICES.
6. DOOR HARDWARE ACCESSIBLE TO PERSONS WITH DISABILITIES SHALL BE PROVIDED TO COMPLY WITH UNIFORM FEDERAL ACCESSIBILITY STANDARDS.
7. HAZARDOUS AREAS INCLUDE: CUSTODIAN SPACES, STORAGE ROOMS, MECHANICAL ROOMS, ELECTRICAL ROOMS, DOOR OPERATIONAL HARDWARE TO STUDENT SPACES DOES NOT REQUIRE TACTILE MARKINGS, HOWEVER, SOME STAGE DOORS DO.
8. THE CONTRACTOR SHALL INSURE THAT 1 THROUGH 5 ARE IMPLEMENTED IN NEW BUILDING AREAS.
9. ALL HOLLOW METAL DOORS AND FRAMES SHALL BE PAINTED.
10. ALL EXTERIOR DOORS SHALL HAVE WEATHERSTRIPPING.
11. DOORS 013, 120, 163 SHALL HAVE 180 DEGREE CLOSERS.
12. SEE EXTERIOR ELEVATION DRAWING # A403 FOR GLAZING TY
13. ALL CEILING HIGH ALUM. AND HOLLOW METAL FRAMES WITH NO WALL ABOVE SHALL BE BRACED TO STRUCTURE ABOVE WITH 3 5/8" METAL STUDS AT 16" O.C.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E.McNEECE
DRAWN BY: J. CZUBATY

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

DOOR SCHEDULE AND DETAILS

NO	DATE	REVISION	BY
1	6/19/98	D. O. E. REVISIONS	J.C.

DATE: MARCH 16, 1998
SCALE: AS NOTED
PROJECT NO.: 50950.06
DRAWING NO.: A401

K:\50 projects\50950\dwg\Arch\A401 6-22-98 8:31:32 am EST

BQ #70 & 125 Attachment

ROOM FINISH SCHEDULE

	ROOM NO.	DESIGNATION	FLOOR TYPE	BASE TYPE	WALL TYPE	CEILING TYPE	CEILING HEIGHT	REMARKS
GROUND FLOOR PART 'A'	001	STAIR #2	1, 4 & 5	1	1	-	-	
	002	CORRIDOR	1	1	3	2	8'-0"	
	003	CLASSROOM	2	1	1	1 & 4	10'-0"	
	004	CLASSROOM	2	1	1	1 & 4	10'-0"	
	005	CLASSROOM	2	1	1	1 & 4	10'-0"	
	006	SCIENCE	1	1	1	1 & 4	10'-0"	
	007	SCIENCE STOR.	1	1	1	1	8'-8"	
	008	CLASSROOM	2	1	1	1 & 4	10'-0"	
	009	SCIENCE	1	1	1	1 & 4	10'-0"	
	010	SCIENCE STOR.	1	1	1	1	8'-8"	
	011	CLASSROOM	2	1	1	1 & 4	10'-0"	
	012	STAIR #1	1, 4 & 5	1	1	-	-	
	013	CORRIDOR	1	1	2	2	8'-0"	
	013A	CORRIDOR	1	1	3	2	8'-0"	
	014	MEN'S TOILET	3	2	2 & 3	1	8'-0"	
	015	CUSTODIAN	3	2	2 & 3	1	8'-0"	
	016	WOMEN'S TOILET	3	2	2 & 3	1	8'-0"	
	017	CONN.	1	1	1	2	8'-6"	
	018	STAIR #3	*1	**1	**1	2	-	* PATCH TO MATCH EXIST. ** ON NEW CONSTRUCTION TO MATCH EXIST.
PART 'B'	040	SCIENCE	1	1	1	1	9'-6"	
	041	SCIENCE STORAGE	1	1	1	1	8'-8"	
	051	CORRIDOR	0	0	0	1	7'-10"	
	055	HOME ECON.	0	0	0	5	7'-6"	
	056	CLASSROOM	0	0	0	1	7'-6" / 9'-6"	
	059	GROUP COUNCIL	0	0	0	1	7'-4"	
FIRST FLOOR PART 'A'	100	STAIR #2	1 & 4	1	1	2	9'-8"	
	101	COMPUTER LAB	2	1	1	3	8'-8"	
	102	CLOSET	2	1	1	1	8'-0"	
	103	READING AREA	2	1	1	3	9'-8"	
	104	COMPUTER LAB	2	1	1	3	9'-8"	
	106	MEDIA WORKROOM	2	1	1	1	9'-8"	
	107	REFERENCE AREA	2	1	1	3	8'-0"	
	108	OFFICE	2	1	1	3	8'-0"	
	109	STORAGE	1	1	1	1	8'-0"	
	110	DATA	1	1	1	1	8'-0"	
	111	MEDIA CENTER	2	1	1	3	9'-8"	
	112	READING CLASSROOM	2	1	1	3	9'-8"	
	113	SPEECH THERAPY	2	1	1	1	8'-0"	
	114	STAIR #1	1 & 4	1	1	2	9'-8"	
	115	TEACHERS WORKROOM	1 & 2	1	1	1	9'-8"	
	116	TELEPHONE	2	1	1	1	8'-0"	
	117	CLOSET	2	1	1	1	8'-0"	
	118	WOMEN'S TOILET	3	2	2 & 3	1	8'-0"	
	119	MEN'S TOILET	3	2	2 & 3	1	8'-0"	
	120	GALLERY	2	1	1 & 4	3	8'-0" / 10'-6"	FABRIC WALL COV. ON NORTH WALL
	121	MEN'S TOILET	3	2	2 & 3	1	8'-0"	
	122	CUSTODIAN CLOSET	3	2	2 & 3	1	8'-0"	
	123	WOMEN'S TOILET	3	2	2 & 3	1	8'-0"	
	124	CONN.	1	1	1	2	8'-6"	
PART 'B'	144	CLASSROOM	2	1	1	1 & 4	9'-6"	
	145	CLOSET	2	1	1	1	8'-0"	
	150	CLASSROOM	2	1	1	1 & 4	9'-6"	
	151	DATA CLOSET	2	1	1	1	8'-0"	
	152	CLASSROOM	2	1	1	1 & 4	9'-6"	
	153	CLOSET	2	1	1	1	8'-0"	
	158	TEACHERS CONFERENCE	2	1	1	1	8'-0"	
	159	CLASSROOM	2	1	1	1 & 4	9'-6"	
	159A	VESTIBULE	2	1	1	1	8'-0"	
	160	SCIENCE	1	1	1	1 & 4	9'-6"	
	161	SCIENCE STORAGE	1	1	1	1	8'-8"	
	162	TEACHERS CONFERENCE	2	1	1	1	8'-0"	
	163	CLASSROOM	2	1	1	1 & 4	9'-6"	
	164	STORAGE	1	1	1	1	8'-0"	
	165	CLOSET	2	1	1	1	8'-0"	
	166	CLOSET	2	1	1	1	8'-0"	
	167	SCIENCE	1	1	1	1 & 4	9'-6"	
	168	SCIENCE STORAGE	1	1	1	1	8'-8"	
	169	SCIENCE	1	1	1	1 & 4	9'-6"	
	170	CLOSET	1	1	1	1	8'-0"	
	171	STORAGE	1	1	1	1	8'-8"	
	172	SCIENCE STORAGE	1	1	1	1	8'-8"	
	213	SERVING	0	0	1	4	-	SEE DD CEILING DROP AT SKYLIGHT
	219	OFFICE	1	1	1	1	8'-8"	

ROOM FINISH LEGEND

FLOOR TYPES

0. - EXISTING TO REMAIN
1. - VINYL COMPOSITION TILE
2. - CARPET
3. - CERAMIC TILE
4. - RUBBER NOSING, TREAD, & RISER
5. - RECESSED ENTRANCE MAT

BASE TYPES

0. - EXISTING TO REMAIN
1. - RUBBER
2. - CERAMIC TILE

WALL TYPES

0. - EXISTING TO REMAIN
1. - PAINTED
2. - VITREOUS WALL SURFACING
3. - CERAMIC TILE WAINSCOT 4'-0" HIGH
4. - VINYL WALL COVERING

CEILING TYPES

0. - EXISTING TO REMAIN
1. - 2' X 4' ACOUSTICAL CLG. BD. (TYPE - 1)
2. - 2' X 4' ACOUSTICAL CLG. BD. - (TYPE - 2)
3. - 2' X 4' ACOUSTICAL CLG. BD. (TYPE - 3)
4. - PAINTED GYPSUM BOARD
5. - 2' X 2' ACOUSTICAL CLG. BD. TO MATCH EXIST.

GENERAL NOTES

1. INTERIOR FINISHES IN ALL EXITS SHALL BE CLASS "A".
2. INTERIOR FINISHES AT ALL ACCESS TO EXITS SHALL BE CLASS "A OR CLASS "B".
3. INTERIOR FINISHES AT ALL OTHER SPACES SHALL BE CLASS "A OR CLASS "B".
4. WHERE WALLS, CEILINGS & EXPOSED CONSTRUCTION ARE INDICATED ON ROOM FINISH SCHEDULE TO BE PAINTED, ALL NEW MISCELLANEOUS METAL, INCLUDING STAIR CONSTRUCTION, HANDRAILS, EXPOSED LINTELS, PRIMED FINISH MECH'L EQUIPMENT, EXPOSED PIPING, DUCTWORK, CONDUIT, ETC., SHALL ALSO BE PAINTED.
5. IN SPACES WHERE NO NEW FINISHES ARE INDICATED, FINISH NEW OR PATCHED CONSTRUCTION TO MATCH EXISTING.
6. ALL GYP. BD. CEILING DROPS, BEAM ENCLOSURES, ETC. SHALL BE PAINTED.

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE

ARCHITECT/ENGINEER: S.E.McNEECE

DRAWN BY: J. CZUBATY

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

ROOM FINISH SCHEDULE

NO	DATE	REVISION	BY

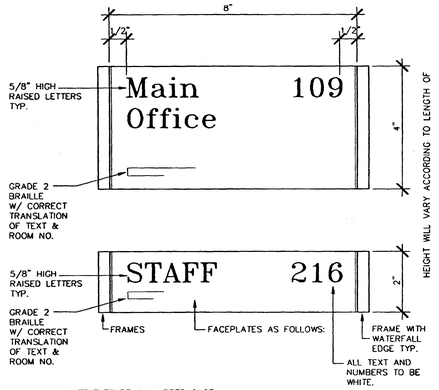
DATE: **MARCH 16, 1998**

SCALE: **AS NOTED**

PROJECT NO.: **50950.06**

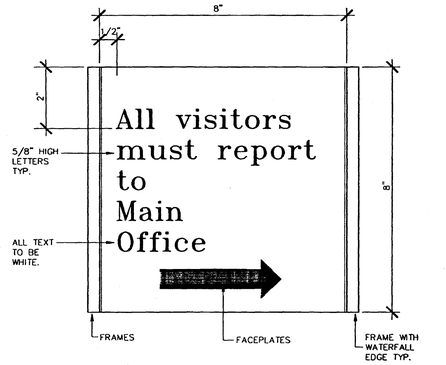
DRAWING NO.: **A410**

K:\50 projects\50950\dwg\Arch\A410 6-18-98 7:43:59 am EST



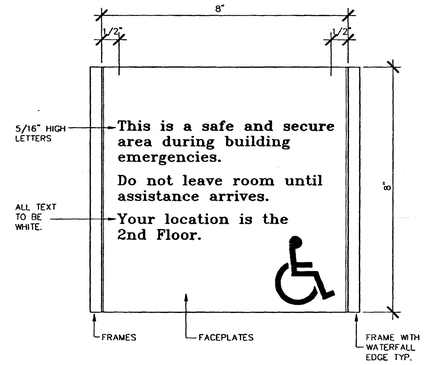
- TEXT TO BE ALL UPPER CASE.
- ROOM NAME TO BE LEFT JUSTIFIED, ROOM NUMBER TO BE RIGHT JUSTIFIED.
- TEXT SHOWN ON THIS SHEET ARE NOT REPRESENTATIVE OF ANY ACTUAL SIGN. REFER TO SCHEDULE FOR MESSAGES.
- COORDINATE WITH OWNER ACTUAL NUMBERS OF ROOMS.

SIGN TYPE A



- TEXT TO BE ALL UPPER AND LOWER CASE AS SHOWN.
- TEXT SHOWN IS REPRESENTATIVE OF ACTUAL SIGN MESSAGE.
- SEE FLOOR PLANS FOR ARROW DIRECTION.

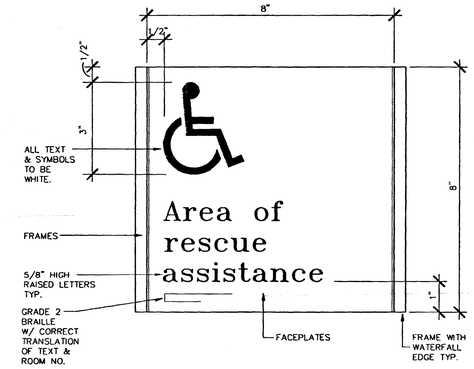
SIGN TYPE B



- TEXT TO BE ALL UPPER AND LOWER CASE AS SHOWN.
- TEXT SHOWN IS REPRESENTATIVE OF ACTUAL SIGN MESSAGE

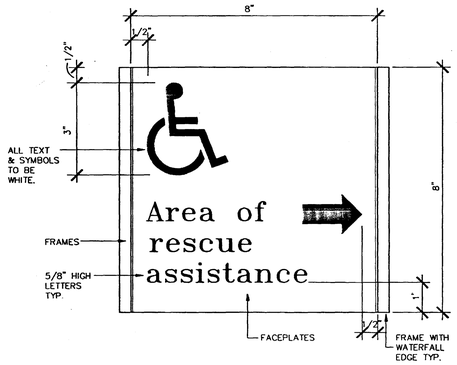
SIGN TYPE C

BQ #70 & 125 Attachment



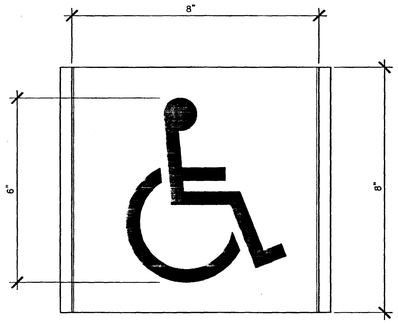
- TEXT TO BE ALL UPPER AND LOWER CASE AS SHOWN.
- TEXT TO BE RIGHT JUSTIFIED.
- TEXT SHOWN IS REPRESENTATIVE OF ACTUAL SIGN MESSAGE.

SIGN TYPE D

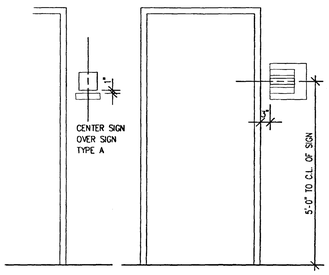


- TEXT TO BE ALL UPPER AND LOWER CASE AS SHOWN.
- TEXT TO BE RIGHT JUSTIFIED.
- SEE FLOOR PLAN FOR ARROW DIRECTION.

SIGN TYPE E



SIGN TYPE F



- SIGNS TO BE INSTALLED ON LATCH SIDE OF DOOR.
- DO NOT INSTALL SIGN ON GLASS.
- WHERE THERE IS NO WALL SPACE TO THE LATCH SIDE OF THE DOOR, SIGNS SHALL BE PLACED ON NEAREST ADJACENT WALL.
- SEE DOOR SCHEDULE A401 FOR LOCATIONS OF SIGN TYPES A, D AND F.
- SEE FLOOR PLANS FOR LOCATIONS OF SIGNAGE NOT LOCATED ON DOOR SCHEDULES
- FRAME AS SELECTED BY ARCHITECT COLOR OF TEXT AS INDICATED. CONTRASTING COLOR FOR FACEPLATE
- FINAL ROOM NUMBERING AND TEXT TO BE VERIFIED BY OWNER.
- SIGNAGE LOCATED ON FLOOR PLANS SHOWN THUS (B)

1/A411 **DOOR INFORMATION**

This drawing and details on it, as an instrument of service is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	S.E. McNEECE
DRAWN BY	J. CZUBATY

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

INTERIOR SIGNAGE

NO	DATE	REVISION	BY
1	6/19/98	D. O. E. REVISIONS	J. C.

DATE: MARCH 16, 1998

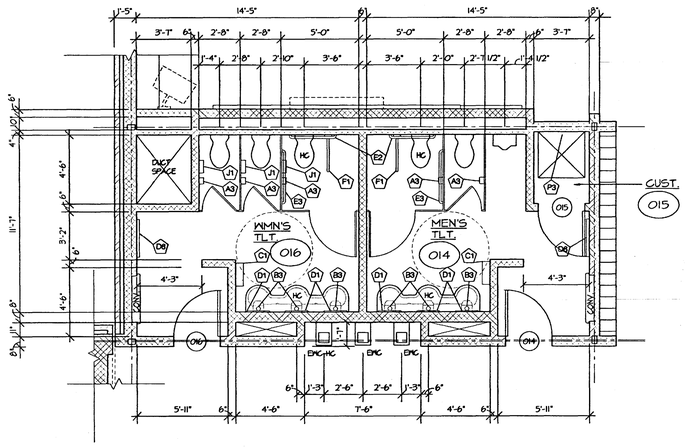
SCALE: N. T. S.

PROJECT NO.: 50950.06

DRAWING NO.: A411

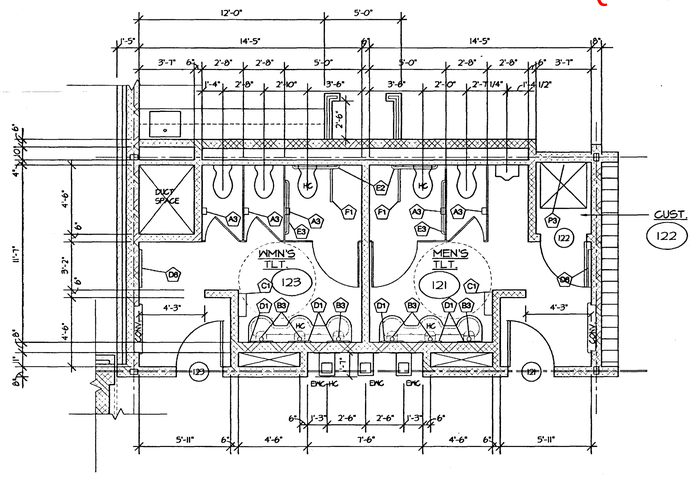
K:\50 projects\50950\dwg\Arch\A411 6-18-98 7:45:22 am EST

BQ #70 & 125 Attachment



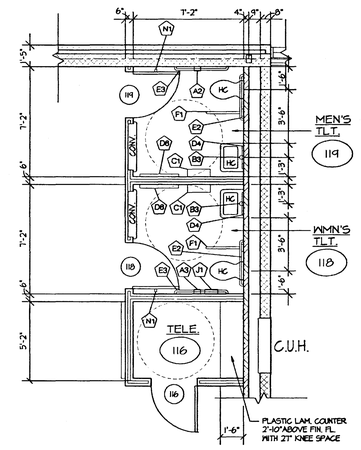
1 A501 PLAN AT TOILET ROOMS #014 & #016

1/4" = 1'-0"



2 A501 PLAN AT TOILET ROOMS #121 & # 123

1/4" = 1'-0"



3 A501 PLAN AT TOILET ROOMS #118 & 119

1/4" = 1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

TOILET ACCESSORIES LEGEND

- A2 - JUMBO ROLL TOILET PAPER HOLDER
- B3 - SOAP DISPENSER
- C1 - PAPER TOWEL DISPENSER
- D1 - SMALL MIRROR
- D4 - HANDICAP MIRROR
- D8 - FULL HEIGHT MIRROR
- E2 - 36" GRAB BAR
- E3 - 42" GRAB BAR
- F1 - SWING UP GRAB BAR
- J1 - SANITARY NAPKIN DISPOSAL UNIT
- N1 - SINGLE HOOK
- P3 - JANITORIAL MOP RACK

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE

ARCHITECT/ENGINEER: S.E. McNEECE

DRAWN BY: J.C. OTTO

FLETCHER THOMPSON

ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

ENLARGED TOILET PLANS

NO	DATE	REVISION	BY
1	6/19/98	D. O. E. REVISIONS	J.C.

DATE: **MARCH 16, 1998**

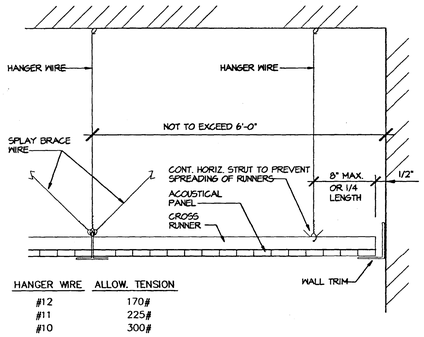
SCALE: **1/4" = 1'-0"**

PROJECT NO.: **50950.06**

DRAWING NO.: **A501**

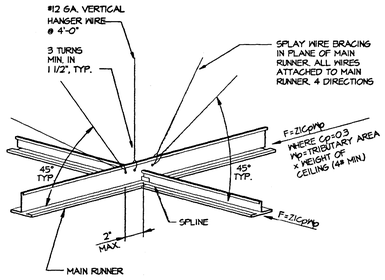
K:\50 projects\50950\dwg\Arch\A501 6-19-98 9:26:36 am EST

BQ #70 & 125 Attachment

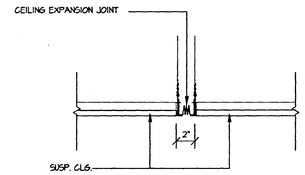


HANGER WIRE	ALLOW. TENSION
#12	170#
#11	225#
#10	300#

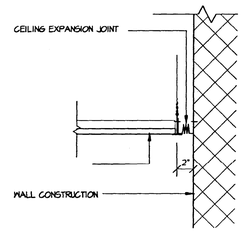
1 A502 CEILING BRACING DETAIL
SCALE 1 1/2" = 1'-0"



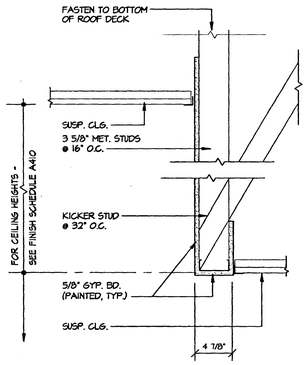
2 A502 CEILING BRACING DETAIL
SCALE 1 1/2" = 1'-0"



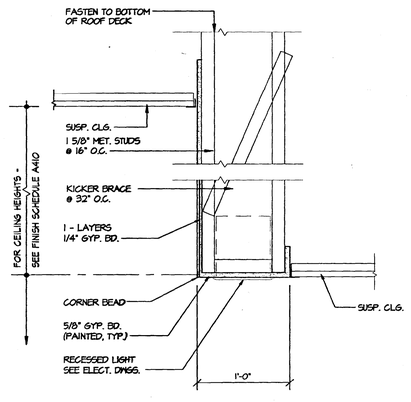
3 A502 CEILING EXP. JT. DETAIL
SCALE 3/4" = 1'-0"



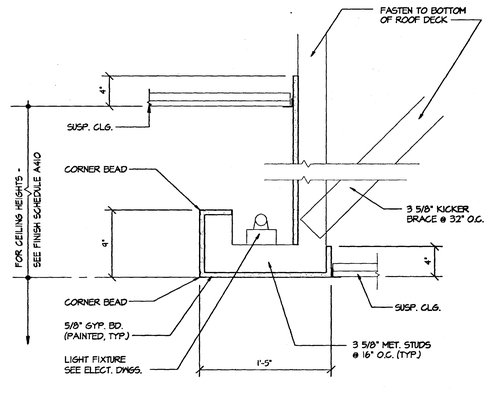
4 A502 CEILING EXP. JT. DETAIL
SCALE 3/4" = 1'-0"



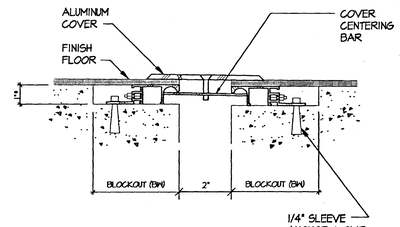
5 A502 CEILING DROP DETAIL
SCALE 1 1/2" = 1'-0"



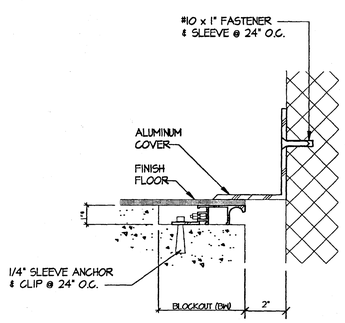
6 A502 CLG. DROP DET. @ MEDIA CENTER CIRCULATION DESK
SCALE 1 1/2" = 1'-0"



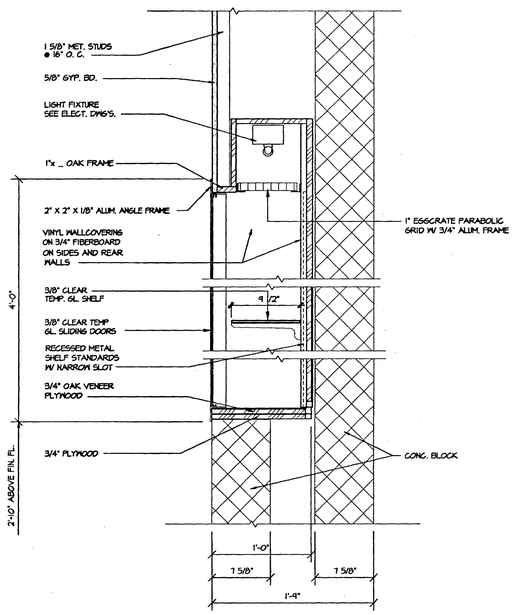
7 A502 CLG. DROP DET. @ GALLERY #120
SCALE 1 1/2" = 1'-0"



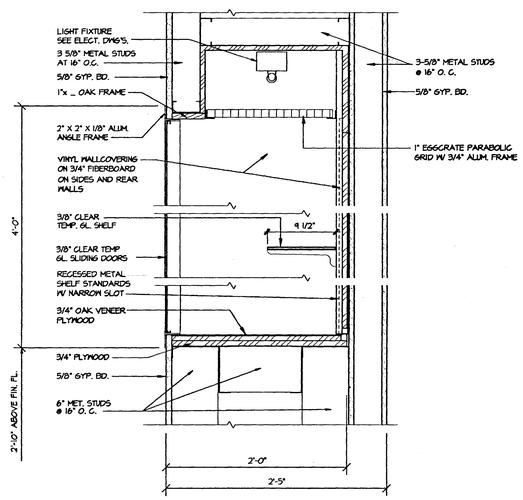
8 A502 SEISMIC FLOOR EXP. JT. DETAIL
SCALE 3"=1'-0"



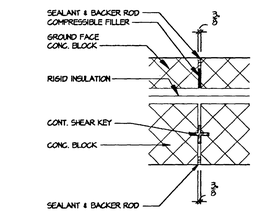
9 A502 SEISMIC FLOOR EXP. JT. AT WALL DETAIL
SCALE 3"=1'-0"



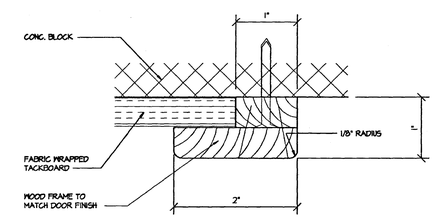
10 A502 DISPLAY CASE DETAIL IN CORRIDOR #002
SCALE 1 1/2" = 1'-0"



11 A502 DISPLAY CASE DETAIL IN GALLERY 120
SCALE 1 1/2" = 1'-0"



12 A502 TYP. CONTROL JOINT DETAIL (CJ)
SCALE 1 1/2" = 1'-0"



13 A502 TACKBOARD FRAME DETAIL
FULL SIZE

This drawing and details on it, as an instrument of service is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E. McNEECE
DRAWN BY: J. CZUBATYJ

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

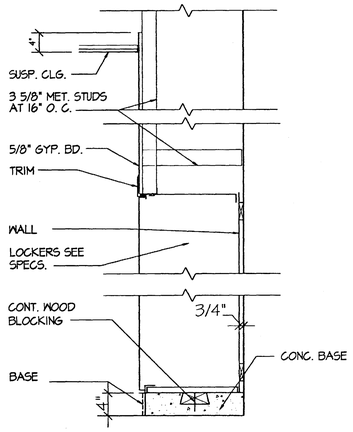
DRAWING TITLE

MISCELANEOUS DETAILS

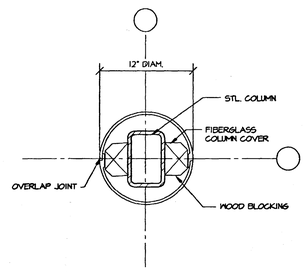
NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: AS NOTED
PROJECT NO.: 50950.06
DRAWING NO.: A502

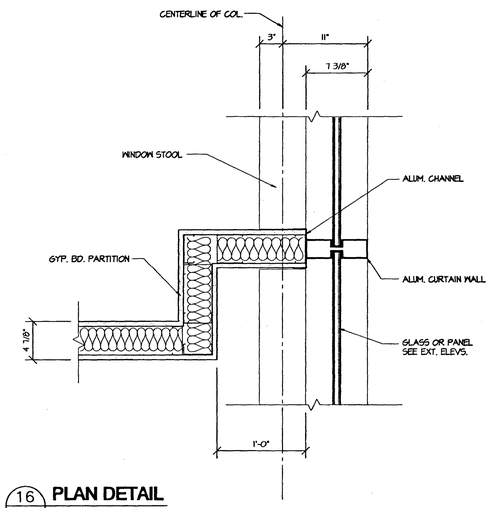
BQ #70 & 125 Attachment



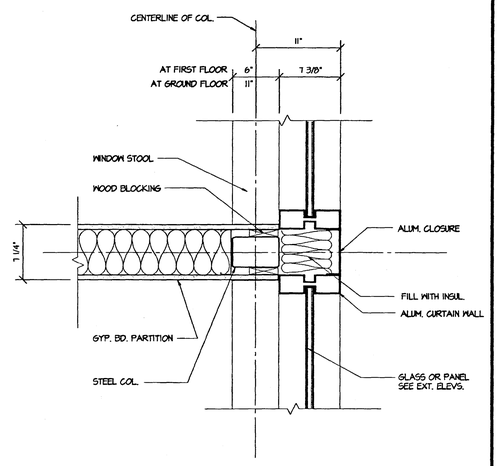
14 A503 **TYP. LOCKER DETAIL**
SCALE 1 1/2" = 1'-0"



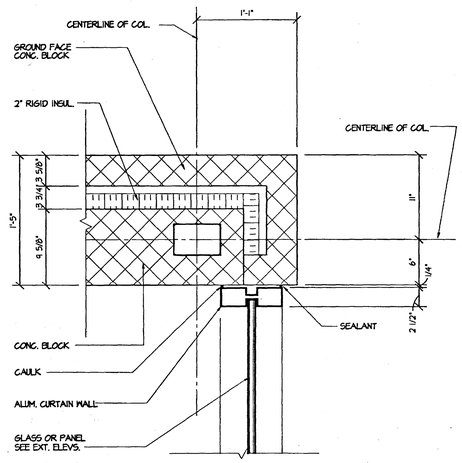
15 A503 **FIBERGLASS COLUMN COVER**
SCALE 1 1/2" = 1'-0"



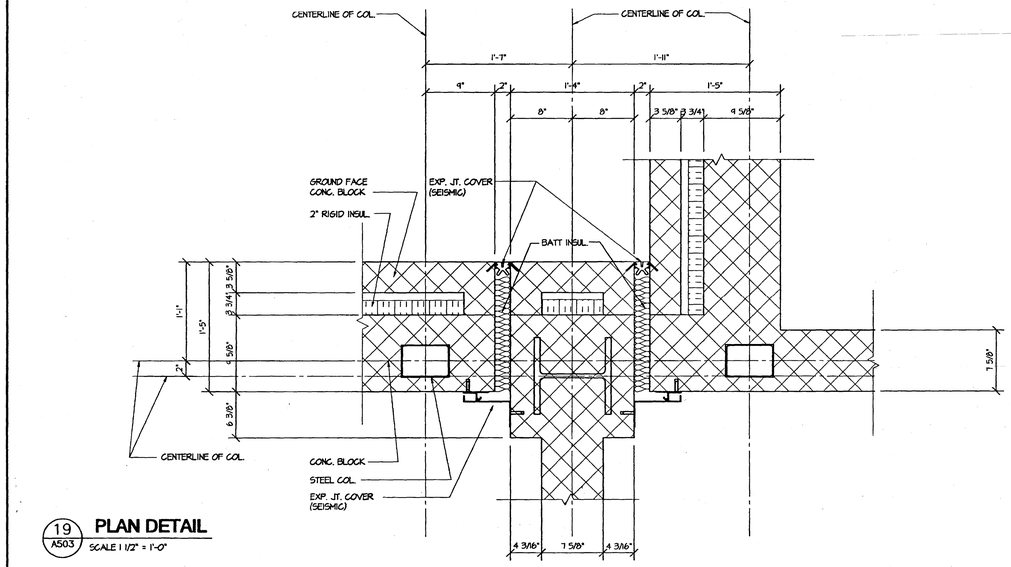
16 A503 **PLAN DETAIL**
SCALE 1 1/2" = 1'-0"



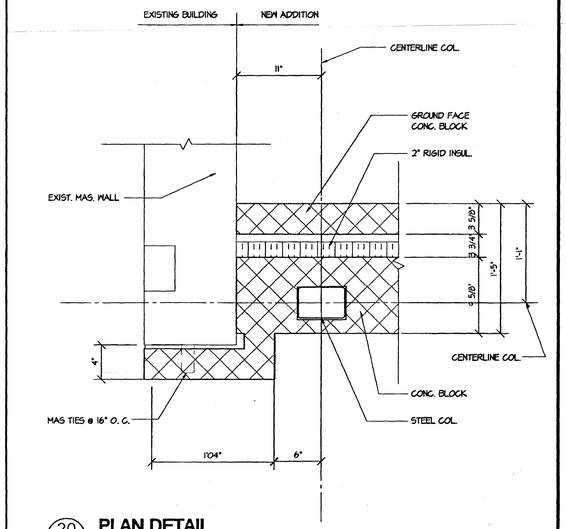
17 A503 **PLAN DETAIL**
SCALE 1 1/2" = 1'-0"



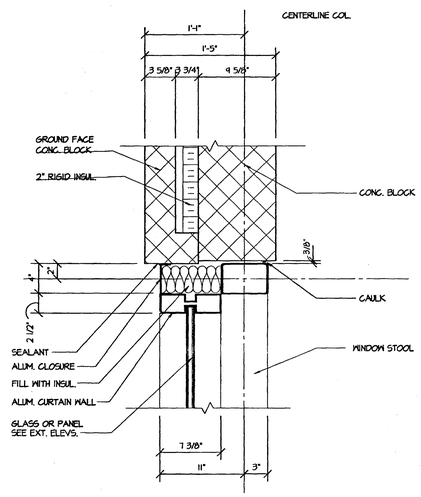
18 A503 **PLAN DETAIL**
SCALE 1 1/2" = 1'-0"



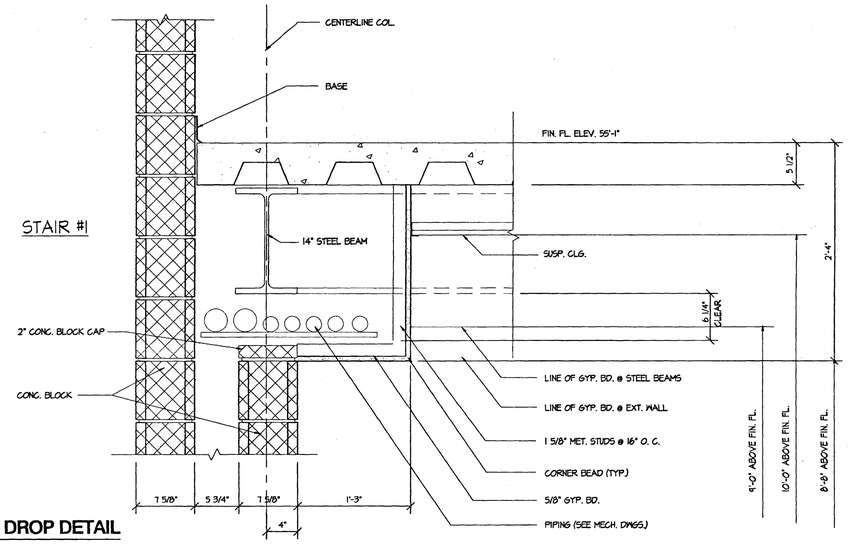
19 A503 **PLAN DETAIL**
SCALE 1 1/2" = 1'-0"



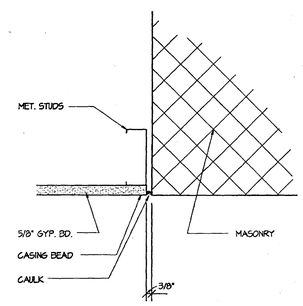
20 A503 **PLAN DETAIL**
SCALE 1 1/2" = 1'-0"



21 A503 **PLAN DETAIL**
SCALE 1 1/2" = 1'-0"



22 A503 **CEILING DROP DETAIL**
SCALE 1 1/2" = 1'-0"



23 A503 **GYP. BD. / MAS. DETAIL**
SCALE 3" = 1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E. McNEECE
DRAWN BY: J. CZUBATYJ

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

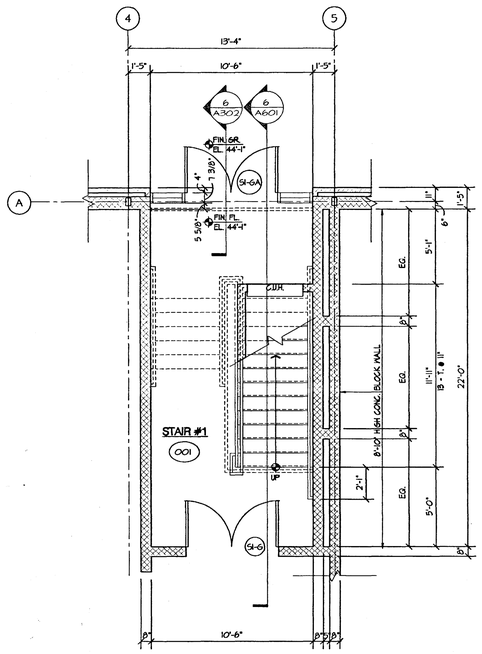
MISCELANEOUS DETAILS

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: AS NOTED
PROJECT NO.: 50950.06
DRAWING NO.: **A503**

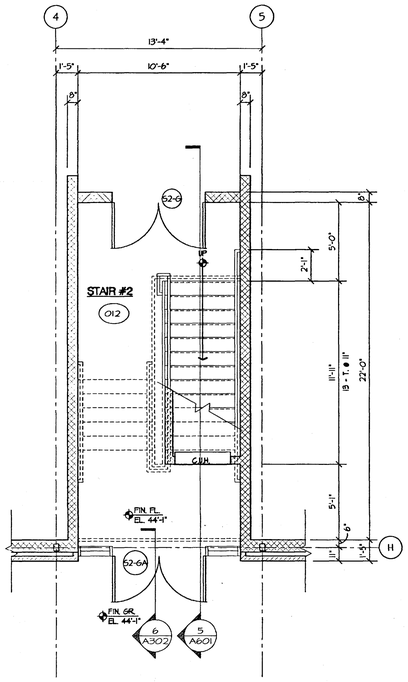
K:\50 projects\50950\dwg\Arch\A503 6-29-98 10:15:20 am EST

BQ #70 & 125 Attachment



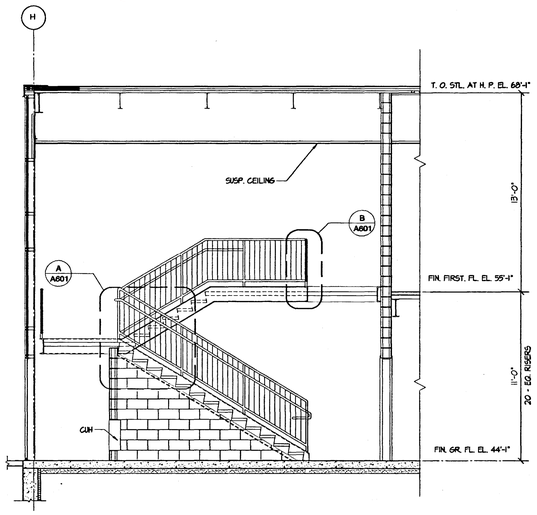
1 A601 STAIR #1 - GROUND FLOOR

1/4" = 1'-0"



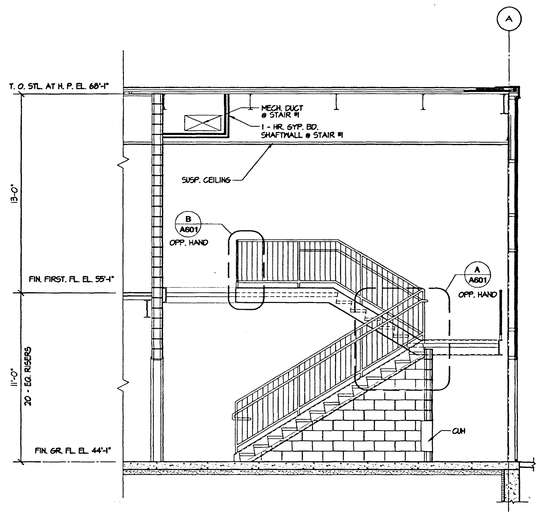
3 A601 STAIR #2 - GROUND FLOOR

1/4" = 1'-0"



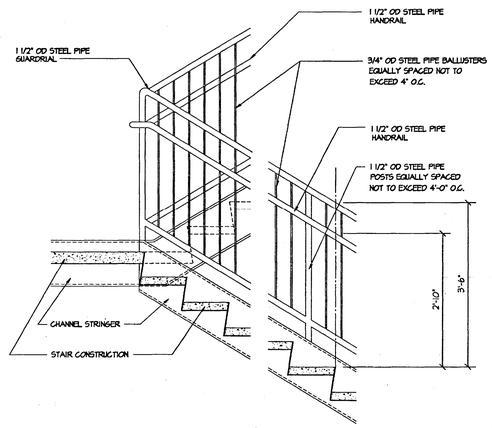
5 A601 SECTION - STAIR #2

1/4" = 1'-0"



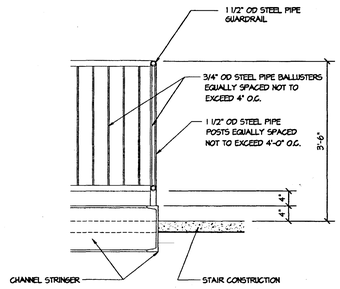
6 A601 SECTION - STAIR #1

1/4" = 1'-0"



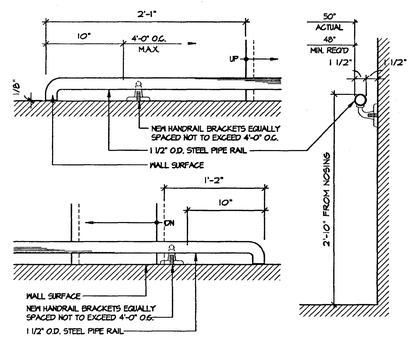
A A601 DETAIL

3/4" = 1'-0"



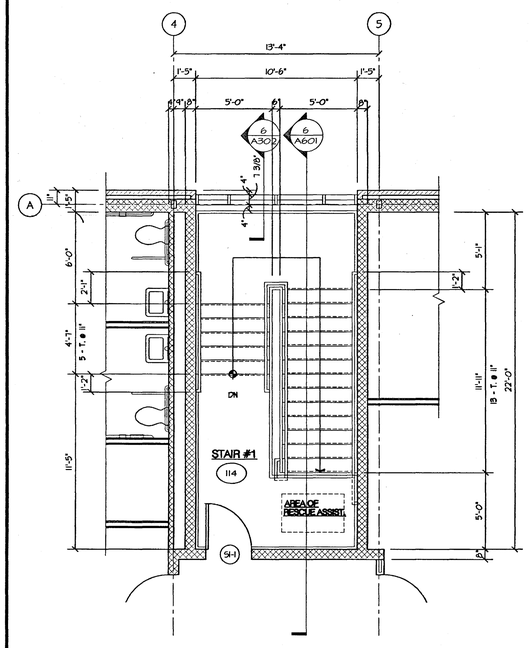
B A601 DETAIL

3/4" = 1'-0"



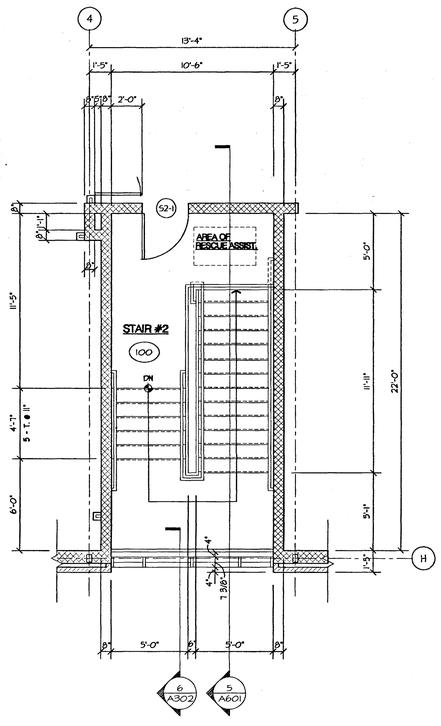
C A601 TYPICAL HANDRAIL DETAIL

1 1/2" = 1'-0"



2 A601 STAIR #1 - FIRST FLOOR

1/4" = 1'-0"



4 A601 STAIR #2 - FIRST FLOOR

1/4" = 1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER L.J. FREE

ARCHITECT/ENGINEER S.E. McNEECE

DRAWN BY J.C. OTTO

FLETCHER THOMPSON

ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106A

DRAWING TITLE

STAIR PLANS, SECTIONS & DETAILS

NO	DATE	REVISION	BY
1	6/19/98	D.O.E. REVISIONS	J.C.

DATE MARCH 16, 1998

SCALE 1/4" = 1'-0"

PROJECT NO. 50950.06

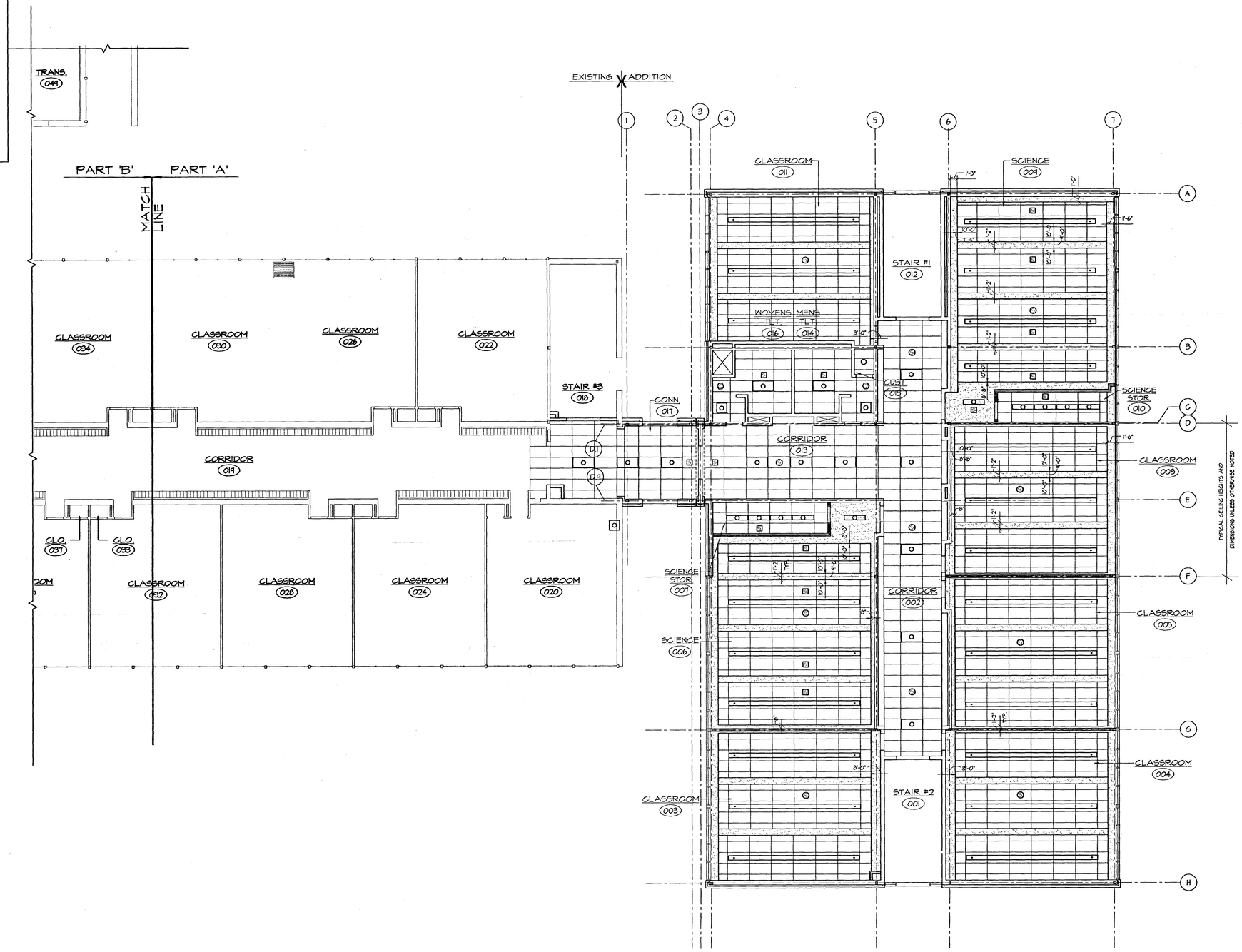
DRAWING NO. A601

K:\50 projects\50950\dwg\Arch\A601 6-19-98 9:44:56 am EST

BQ #70 & 125 Attachment

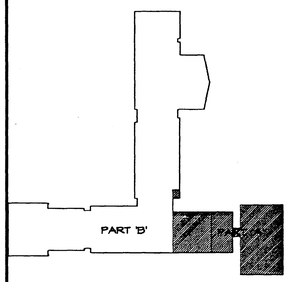
LEGEND

- LIGHT FIXTURES (SEE ELECTRICAL DWGS)
- DIFFUSERS, REGISTERS, GRILLES (SEE HVAC DWGS)
- SPRINKLER
- EXIT SIGN
- SPEAKER
- SMOKE DETECTOR
- HEAT DETECTOR
- OCCUPANCY SENSOR
- POWER REEL
- E.I.F.S.
- RELOCATED EXIST'G TRACKS
- ACOUSTICAL SUSPENDED CEILING
- GYPSUM BOARD



1 A700.1 GROUND FLOOR PLAN - PART "A"
SCALE: 1/8" = 1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E. McNEECE
DRAWN BY: J.C. OTTO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

GROUND FLOOR REFLECTED CEILING PLAN - PART "A"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

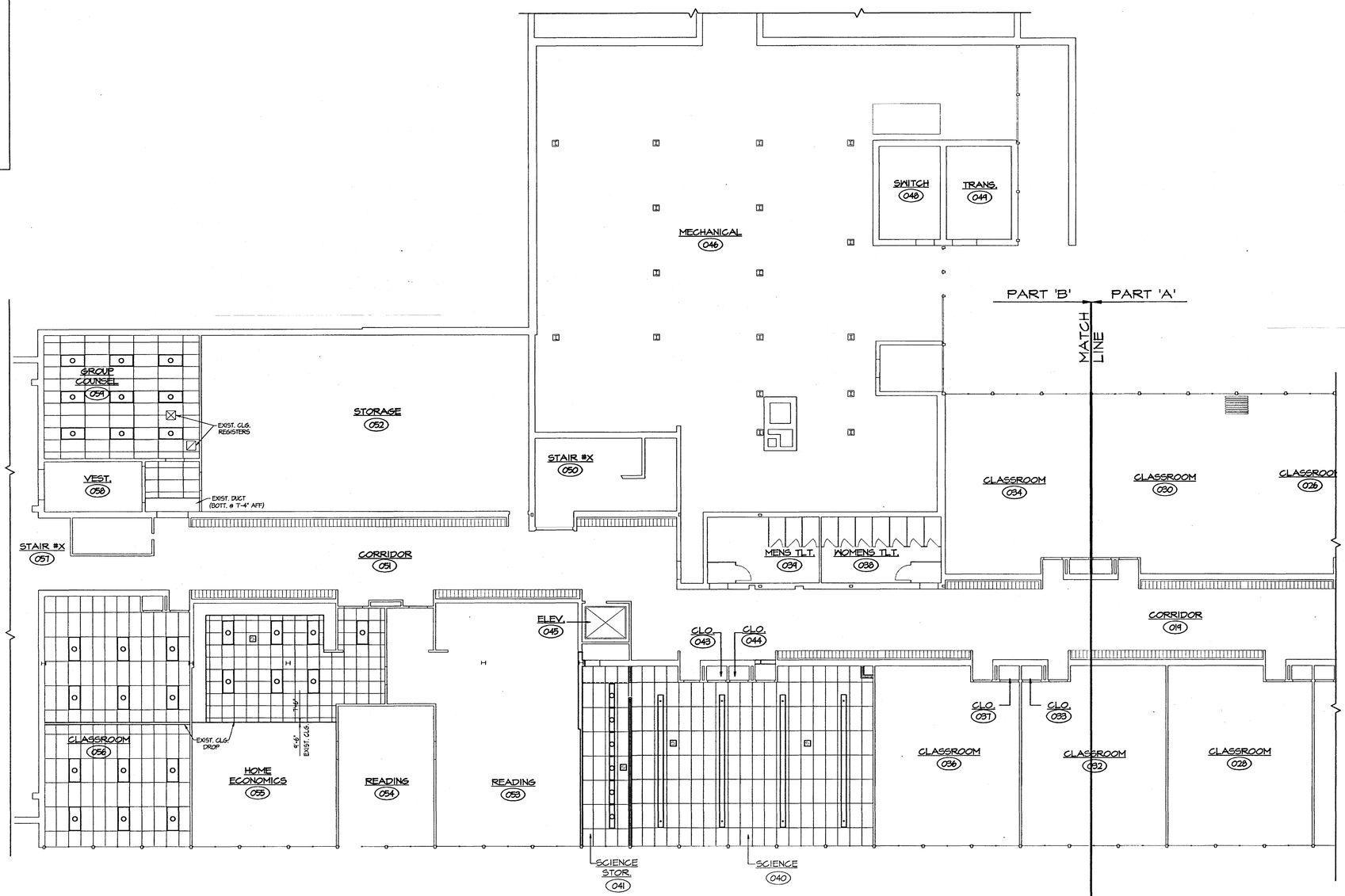
NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: 1/8" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: A700.1

BQ #70 & 125 Attachment

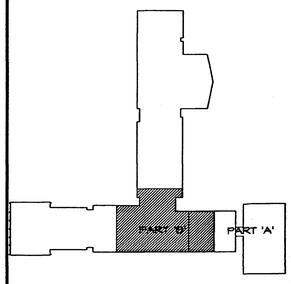
LEGEND

- LIGHT FIXTURES (SEE ELECTRICAL DWGS)
- DIFFUSERS, REGISTERS, GRILLES (SEE HVAC DWGS)
- SPRINKLER
- EXIT SIGN
- SPEAKER
- SMOKE DETECTOR
- HEAT DETECTOR
- OCCUPANCY SENSOR
- POWER REEL
- E.I.F.S.
- RELOCATED EXISTG TRACKS
- ACOUSTICAL SUSPENDED CEILING
- GYPSUM BOARD



1 A700.2 GROUND FLOOR PLAN-PART "B"
SCALE: 1/8"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	S.E. McNEECE
DRAWN BY	J.C. OTTO

FLETCHER THOMPSON

ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

GROUND FLOOR REFLECTED CEILING PLAN - PART "B"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

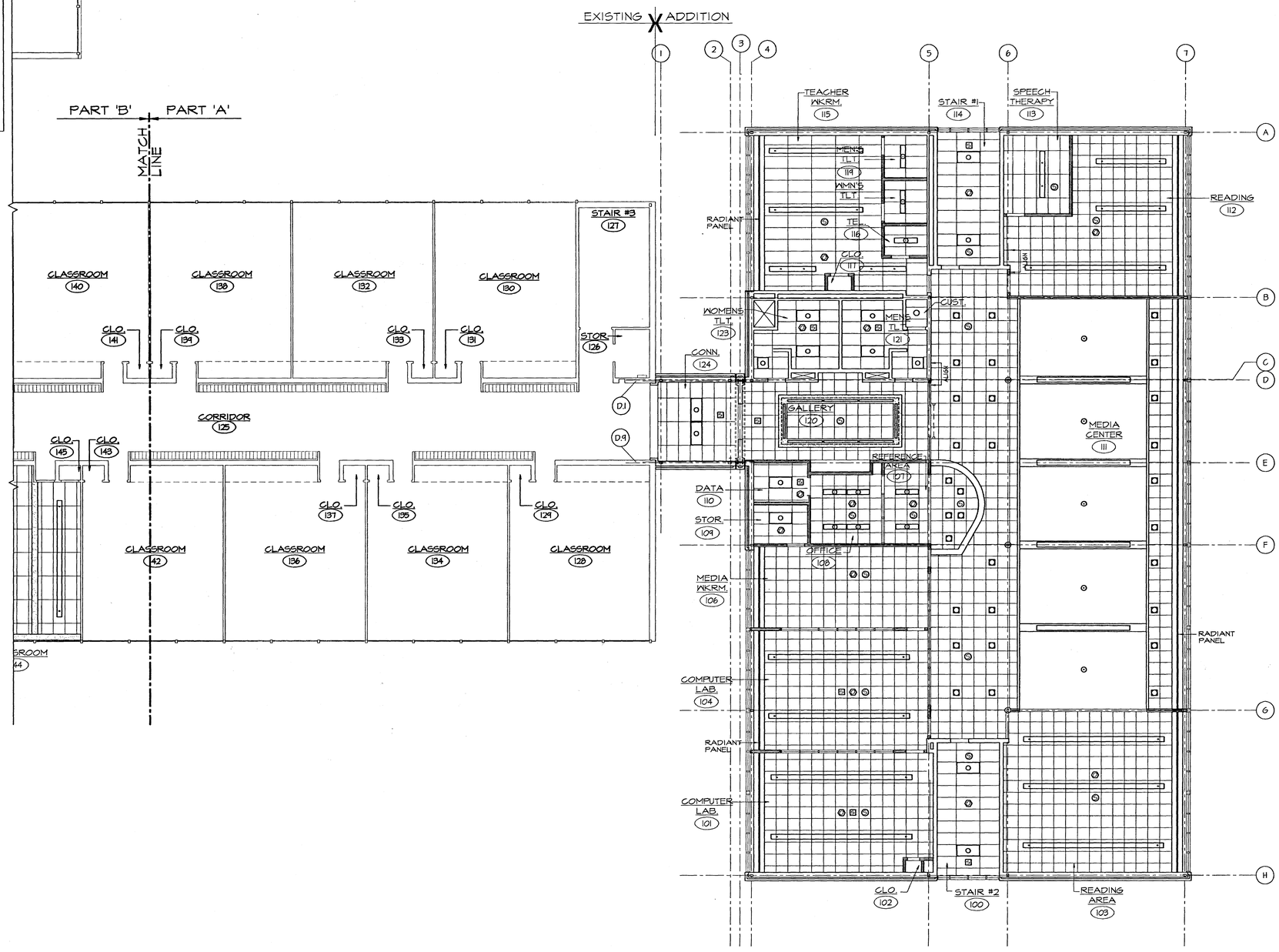
DATE	MARCH 16, 1998
SCALE	1/8" = 1'-0"
PROJECT NO.	50950.06
DRAWING NO.	A700.2

PRINTED BY NATIONAL DIRECT - 818-372-3946 - TEMP90.TEC - 7/1/98 11:00:58 AM

BQ #70 & 125 Attachment

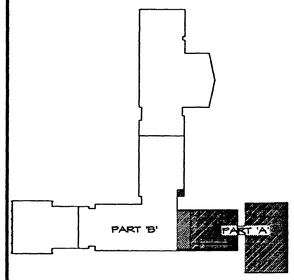
LEGEND

- LIGHT FIXTURES (SEE ELECTRICAL DWGS)
- DIFFUSERS, REGISTERS, GRILLES (SEE HVAC DWGS)
- SPRINKLER
- EXIT SIGN
- SPEAKER
- SMOKE DETECTOR
- HEAT DETECTOR
- OCCUPANCY SENSOR
- POWER REEL
- E.I.F.S.
- RELOCATED EXISTG TRACKS
- ACOUSTICAL SUSPENDED CEILING
- GYPSUM BOARD



1 A701.1 FIRST FLOOR PLAN - PART "A"
SCALE: 1/8" = 1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	S.E. McNEECE
DRAWN BY	J.C. OTTO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR REFLECTED CEILING PLAN - PART "A"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

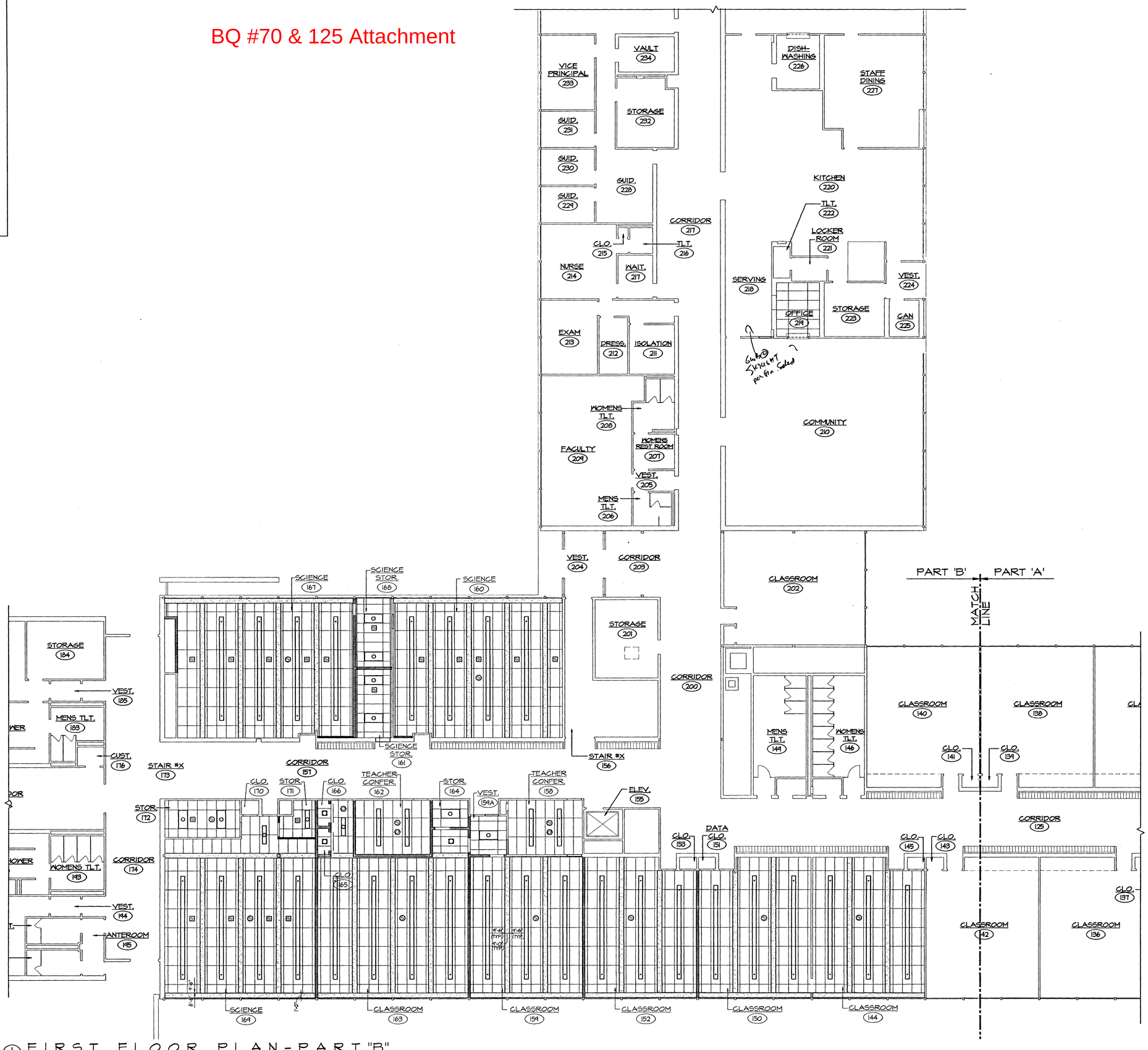
DATE	MARCH 16, 1998
SCALE	1/8" = 1'-0"
PROJECT NO.	50950.06
DRAWING NO.	A701.1

K:\50 projects\50950\dwg\A701.1 6-19-98 10:35:37 am EST

BQ #70 & 125 Attachment

LEGEND

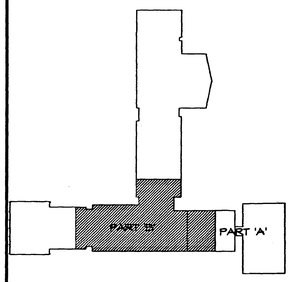
- LIGHT FIXTURES (SEE ELECTRICAL DWGS)
- DIFFUSERS, REGISTERS, GRILLES (SEE HVAC DWGS)
- SPRINKLER
- EXIT SIGN
- SPEAKER
- SMOKE DETECTOR
- HEAT DETECTOR
- OCCUPANCY SENSOR
- POWER REEL
- E.I.F.S.
- RELOCATED EXISTG TRACKS
- ACOUSTICAL SUSPENDED CEILING
- GYPSUM BOARD



1 / A701.2 FIRST FLOOR PLAN - PART "B"
SCALE: 1/8" = 1'-0"

K:\50 projects\50950\dwg\Arch\A701.2 6-19-98 10:36:57 am EST

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E. McNEECE
DRAWN BY: J.C. OTTO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

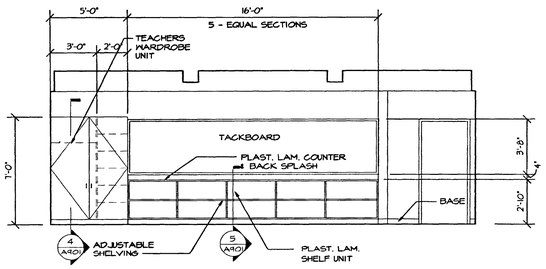
FIRST FLOOR REFLECTED CEILING PLAN - PART "B"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

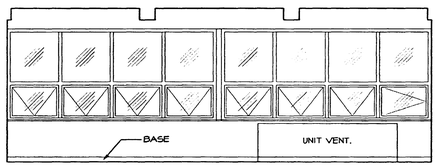
NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: 1/8" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: A701.2

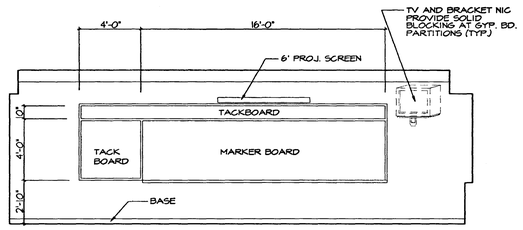
BQ #70 & 125 Attachment



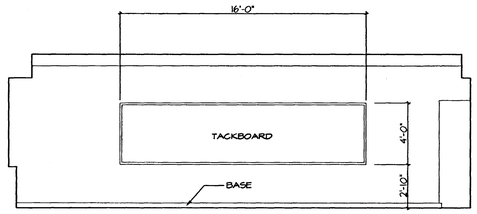
1 A801 CLASSROOM
1/4" = 1'-0"



2 A801 CLASSROOM
1/4" = 1'-0"

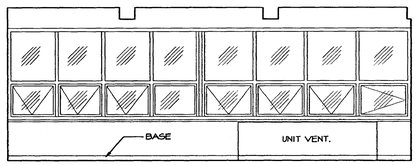


3 A801 CLASSROOM
1/4" = 1'-0"

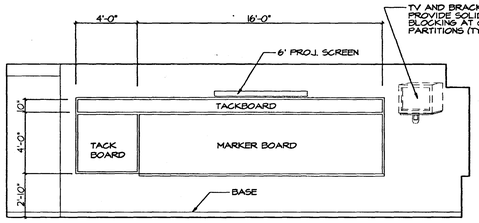


4 A801 CLASSROOM
1/4" = 1'-0"

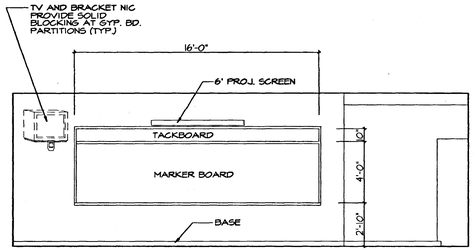
DRIP PAN



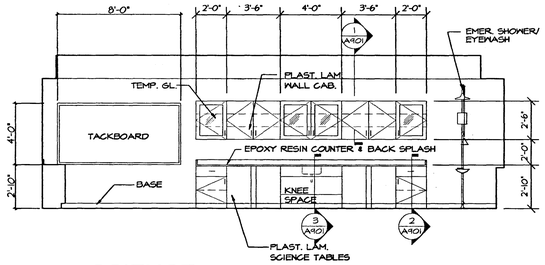
5 A801 CLASSROOM
1/4" = 1'-0"



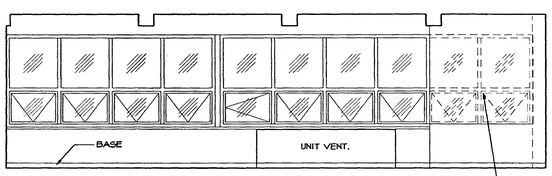
6 A801 CLASSROOM
1/4" = 1'-0"



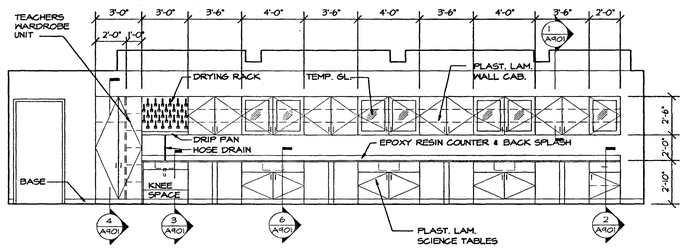
7 A801 SCIENCE
1/4" = 1'-0"



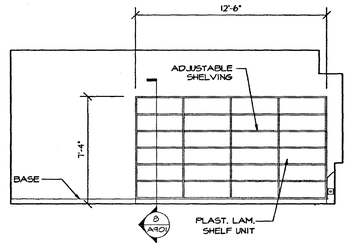
8 A801 SCIENCE
1/4" = 1'-0"



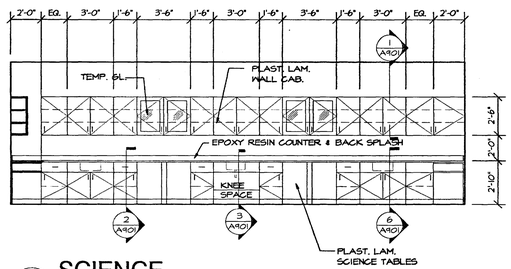
9 A801 & 9A A801 SCIENCE
1/4" = 1'-0"



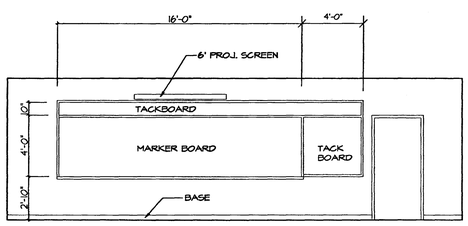
10 A801 SCIENCE
1/4" = 1'-0"



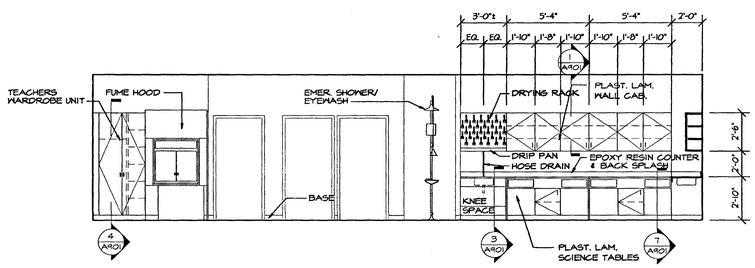
11 A801 SCIENCE STOR.
1/4" = 1'-0"



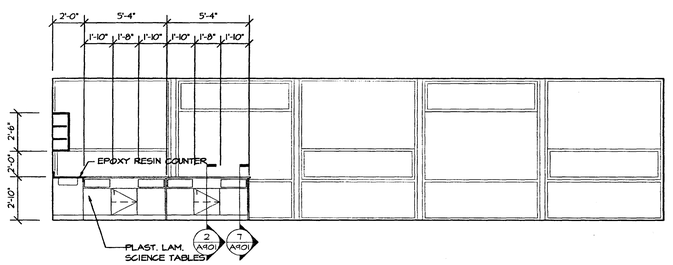
12 A801 SCIENCE
1/4" = 1'-0"



13 A801 SCIENCE
1/4" = 1'-0"



14 A801 SCIENCE
1/4" = 1'-0"



15 A801 SCIENCE
1/4" = 1'-0"

This drawing and details on it, as an instrument of service is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	S.E.McNEECE
DRAWN BY	J. CZUBATYJ

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

INTERIOR ELEVATIONS

NO	DATE	REVISION	BY
1	6/19/98	D. O. E. REVISIONS	J.C.

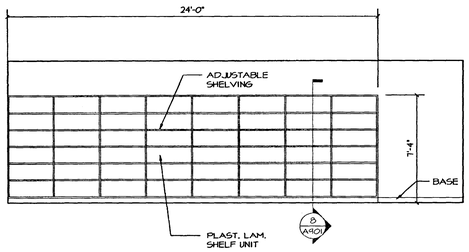
DATE: MARCH 16, 1998

SCALE: 1/4" = 1'-0"

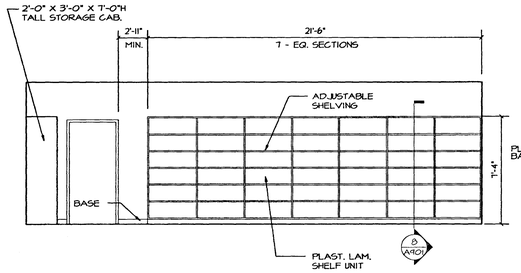
PROJECT NO.: 50950.06

DRAWING NO.: **A801**

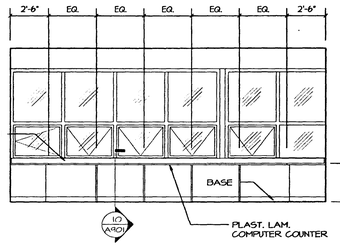
BQ #70 & 125 Attachment



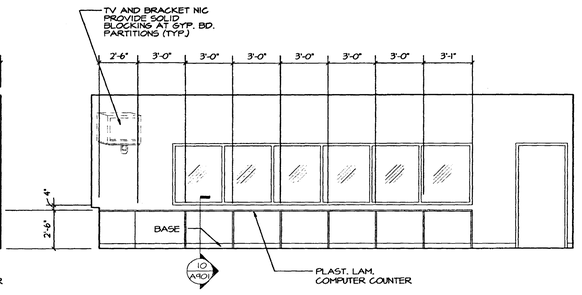
16 A802 STORAGE
1/4" = 1'-0"



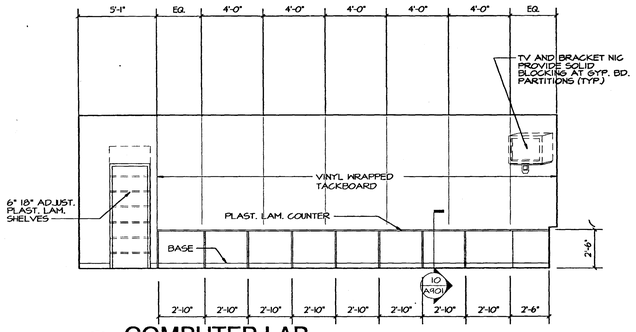
17 A802 STORAGE
1/4" = 1'-0"



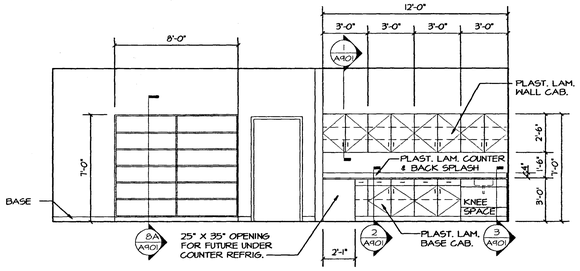
18 A802 COMPUTER LAB
1/4" = 1'-0"



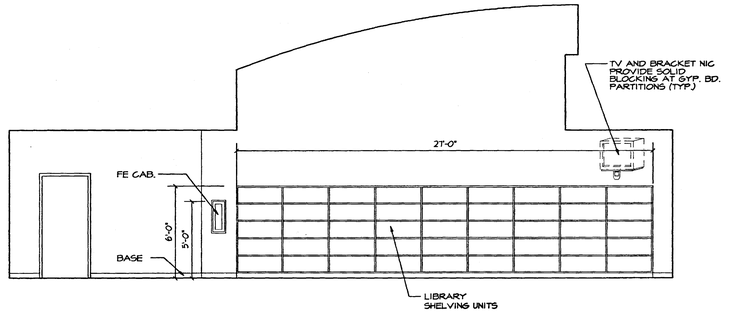
19 A802 COMPUTER LAB
1/4" = 1'-0"



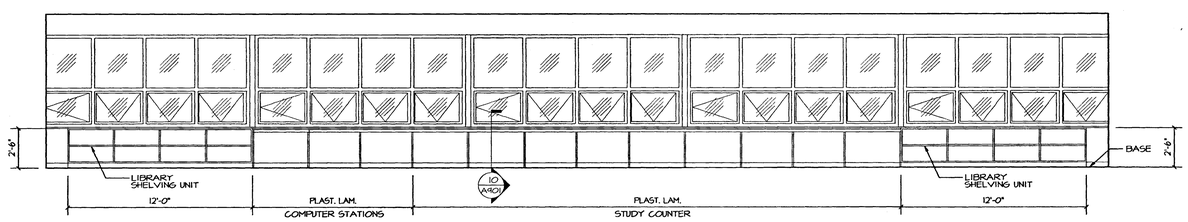
20 A802 COMPUTER LAB
1/4" = 1'-0"



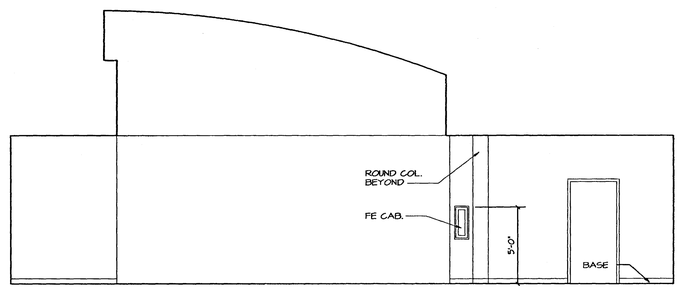
21 A802 TEACHERS WORKROOM
1/4" = 1'-0"



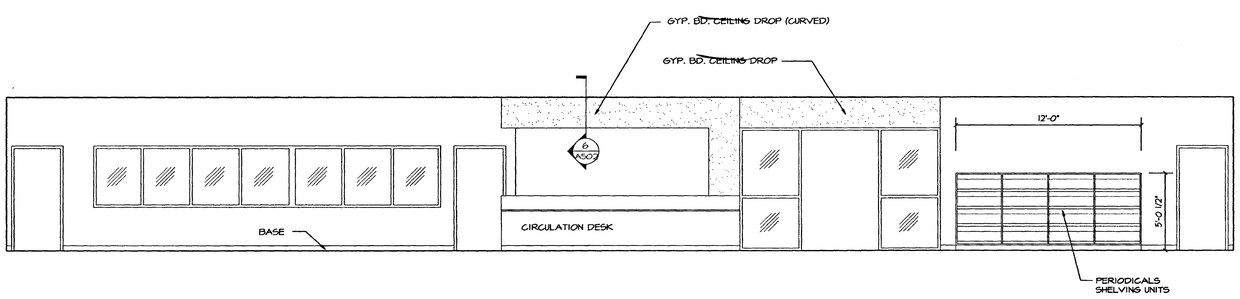
22 A802 MEDIA CENTER
1/4" = 1'-0"



23 A802 MEDIA CENTER
1/4" = 1'-0"



24 A802 MEDIA CENTER
1/4" = 1'-0"



25 A802 MEDIA CENTER
1/4" = 1'-0"

This drawing and details on it, as an instrument of service is the property of the architect and may be used for th specific project and shall not be loaned, copied o reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E.McNEECE
DRAWN BY: J. CZUBATY

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL
MIDDLE
SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

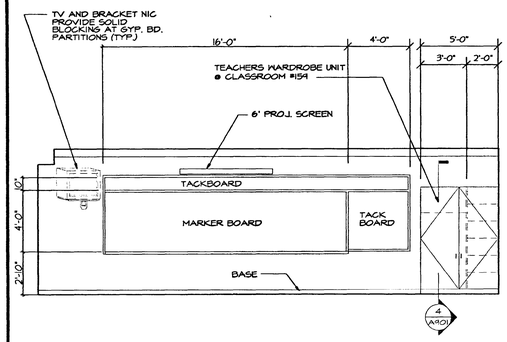
INTERIOR ELEVATIONS

NO	DATE	REVISION	BY

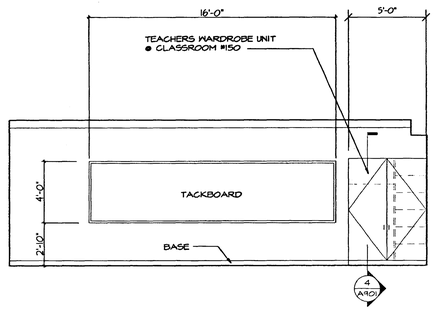
DATE: **MARCH 16, 1998**
SCALE: **1/4" = 1'-0"**
PROJECT NO.: **50950.06**
DRAWING NO.: **A802**

K:\50_projects\50950\dwg\Arch\A802 6-18-98 7:59:33 am EST

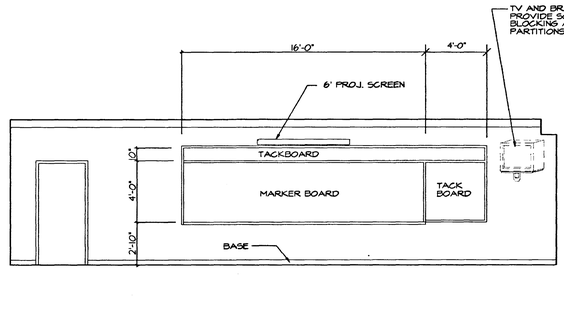
BQ #70 & 125 Attachment



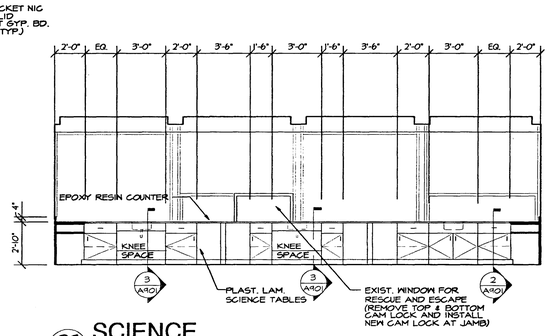
26 A803 CLASSROOM
1/4" = 1'-0"



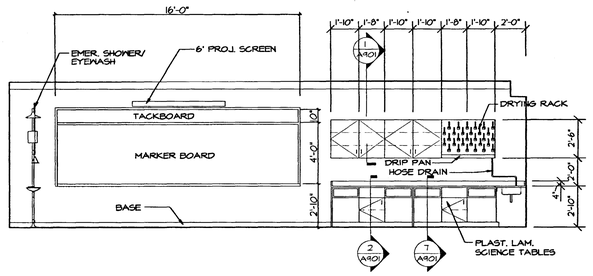
27 A803 CLASSROOM
1/4" = 1'-0"



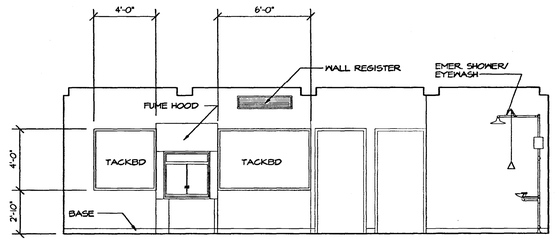
28 A803 CLASSROOM
1/4" = 1'-0"



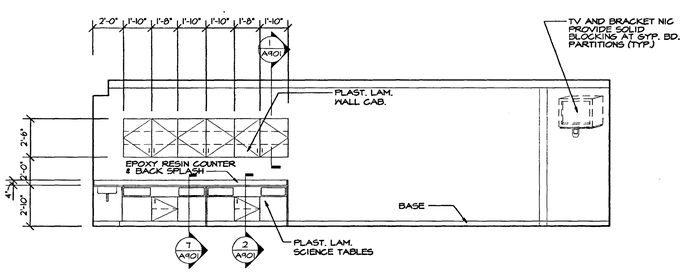
29 A803 SCIENCE
1/4" = 1'-0"



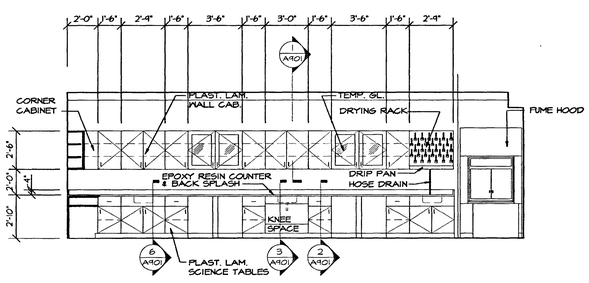
30 A803 SCIENCE
1/4" = 1'-0"



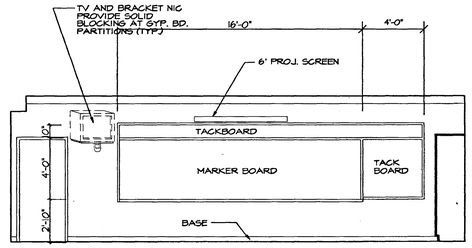
31 A803 SCIENCE
1/4" = 1'-0"



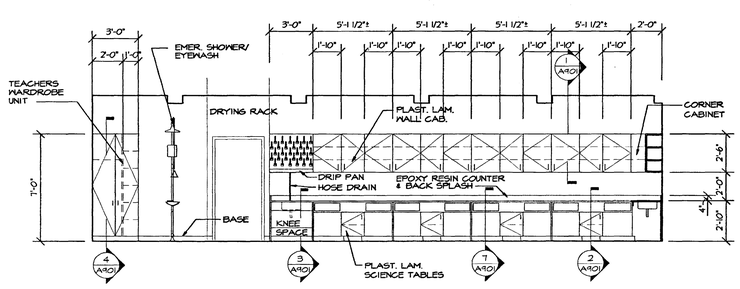
32 A803 SCIENCE
1/4" = 1'-0"



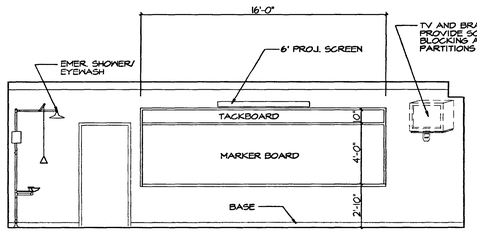
33 A803 SCIENCE
1/4" = 1'-0"



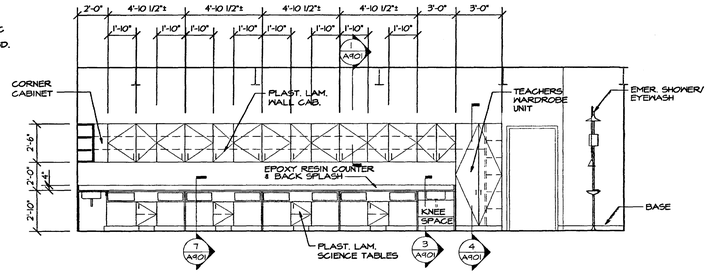
34 A803 SCIENCE
1/4" = 1'-0"



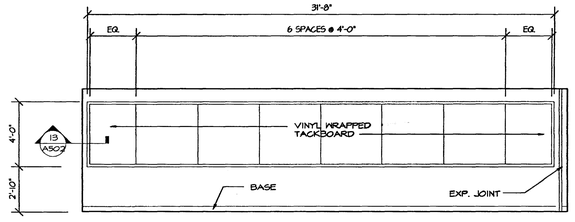
35 A803 SCIENCE
1/4" = 1'-0"



36 A803 SCIENCE
1/4" = 1'-0"



37 A803 SCIENCE
1/4" = 1'-0"



37A A803 CORRIDOR
1/4" = 1'-0"

This drawing and details on it, as an instrument of service is the property of the architect and may be used for thi specific project and shall not be loaned, copied o reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E.McNEECE
DRAWN BY: J. CZUBATYJ

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

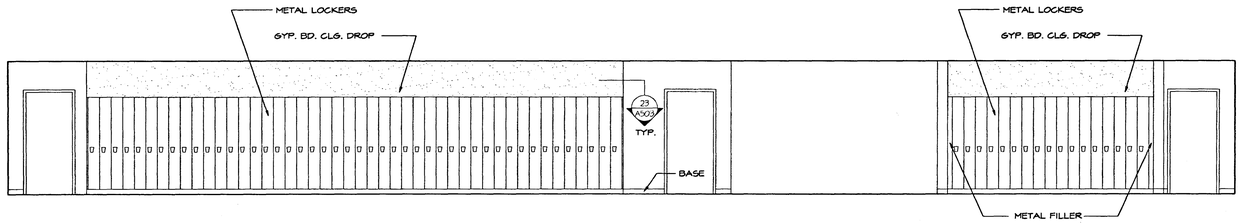
INTERIOR ELEVATIONS

NO	DATE	REVISION	BY

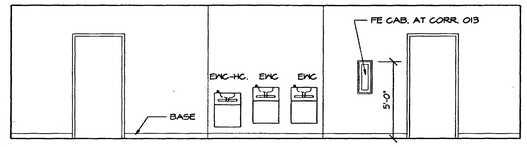
DATE: MARCH 16, 1998
SCALE: 1/4" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: A803

K:\50_projects\50950\dno\Arch\A803 6-18-98 8:00:51 am EST

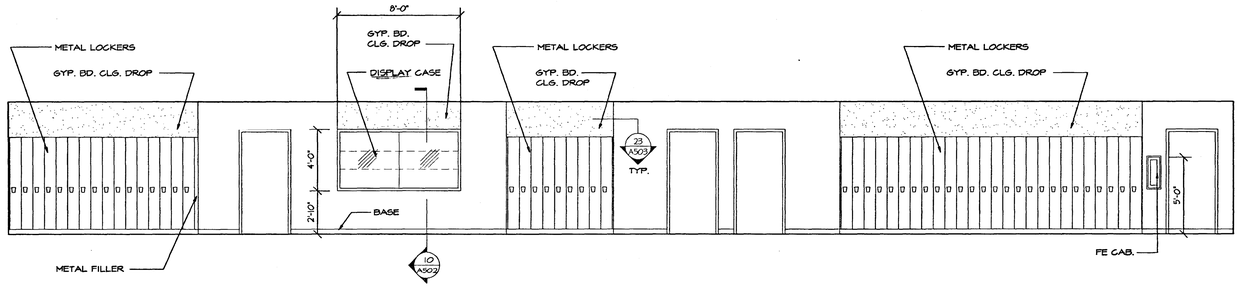
BQ #70 & 125 Attachment



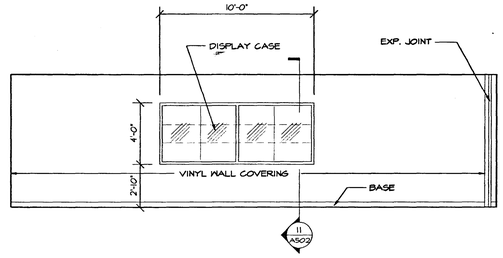
38 A804 CORRIDOR
1/4" = 1'-0"



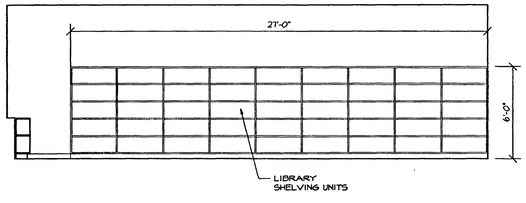
39 A804 CORRIDOR
1/4" = 1'-0"



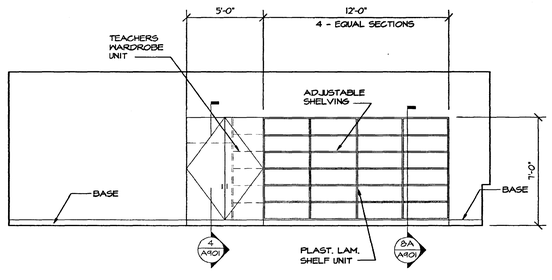
40 A804 CORRIDOR
1/4" = 1'-0"



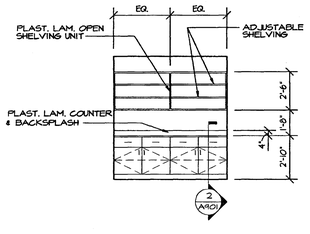
41 A804 GALLERY
1/4" = 1'-0"



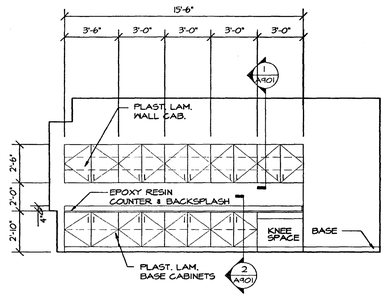
42 A804 READING AREA
1/4" = 1'-0"



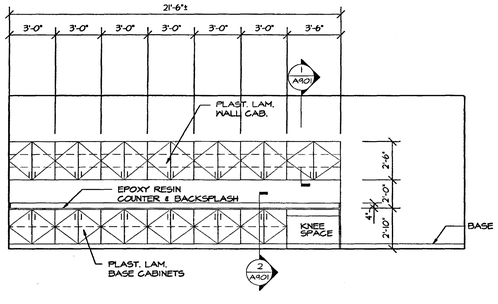
43 A804 READING
1/4" = 1'-0"



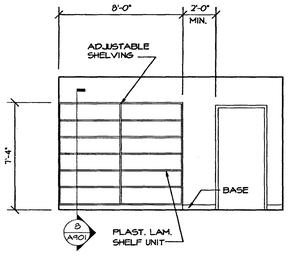
44 A804 REFERENCE AREA
1/4" = 1'-0"



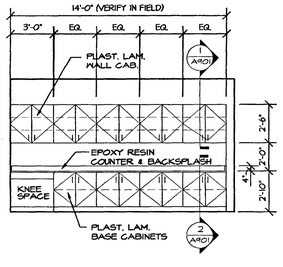
45 A804 SCIENCE STOR.
1/4" = 1'-0"



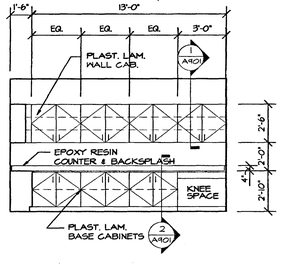
46 A804 SCIENCE STOR.
1/4" = 1'-0"



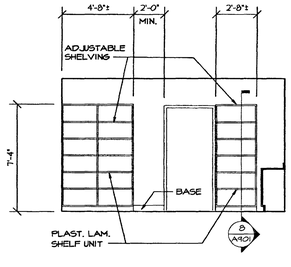
47 A804 SCIENCE STOR.
1/4" = 1'-0"



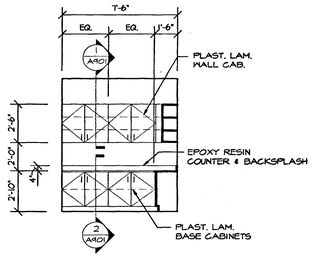
48 A804 SCIENCE STOR.
1/4" = 1'-0"



49 A804 SCIENCE STOR.
1/4" = 1'-0"



50 A804 SCIENCE STOR.
1/4" = 1'-0"



51 A804 SCIENCE STOR.
1/4" = 1'-0"

This drawing and details on it, as an instrument of service is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E.McNEECE
DRAWN BY: J. CZUBATY

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL
MIDDLE
SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

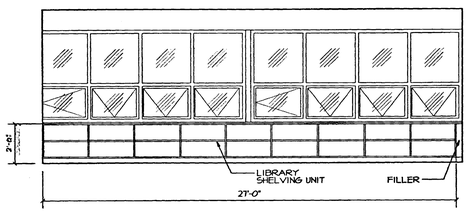
INTERIOR ELEVATIONS

NO	DATE	REVISION	BY
1	6/19/98	D. O. E. REVISIONS	J.C.

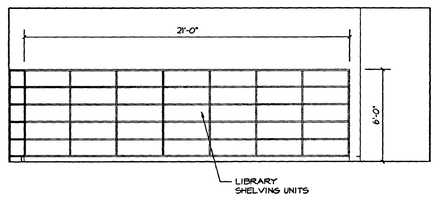
DATE: MARCH 16, 1998
SCALE: 1/4" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: A804

K:\50.projects\50950\dwg\Arch\A804 6-18-98 8:01:58 am EST

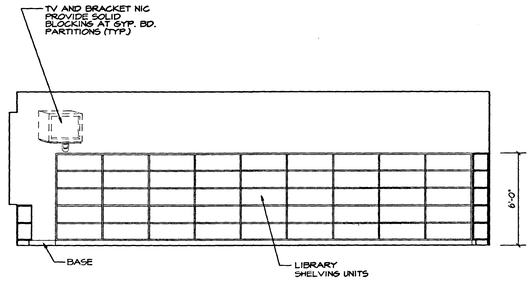
BQ #70 & 125 Attachment



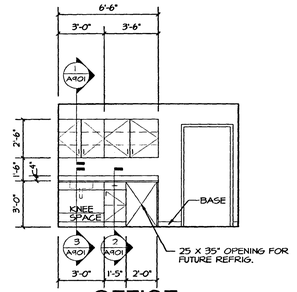
52 A805 READING AREA
1/4" = 1'-0"



53 A805 READING AREA
1/4" = 1'-0"



54 A805 READING AREA
1/4" = 1'-0"



55 A805 OFFICE
1/4" = 1'-0"

This drawing and details on it, as an instrument of servi is the property of the architect and may be used for t specific project and shall not be loaned, copied reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E.McNEECE
DRAWN BY: J. CZUBATY

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

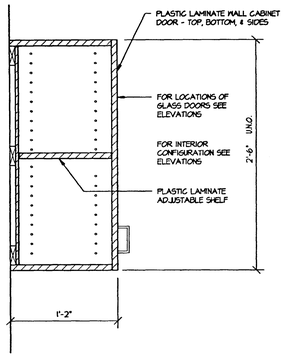
DRAWING TITLE

INTERIOR ELEVATIONS

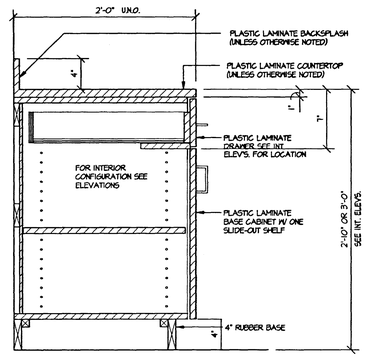
NO	DATE	REVISION	BY
1	6/19/98	D.O.E. REVISIONS	J.G.

DATE: MARCH 16, 1998
SCALE: 1/4" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: A805

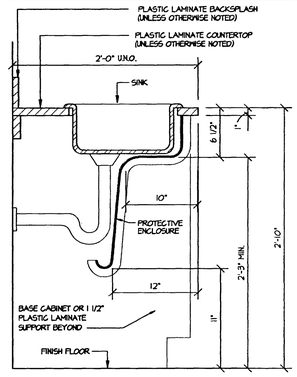
K:\50_projects\50950\dwg\Arch\A805 6-22-98 3:04:35 pm EST



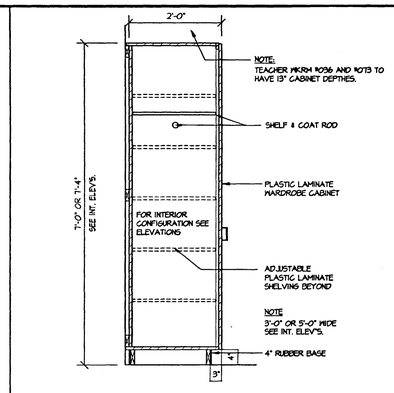
1 A901 WALL CABINET - TYPICAL
SCALE: 1 1/2" = 1'-0"



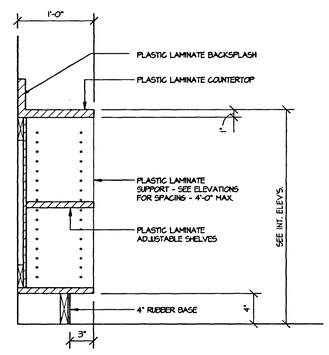
2 A901 BASE CABINET DETAIL
SCALE: 1 1/2" = 1'-0"



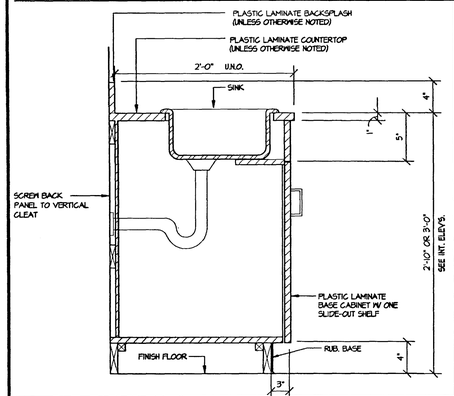
3 A901 HC. SINK COUNTER DETAIL
SCALE: 1 1/2" = 1'-0"



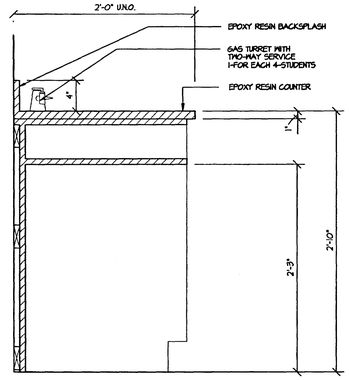
4 A901 CABINET DETAIL - TYPICAL
SCALE: 3/4" = 1'-0"



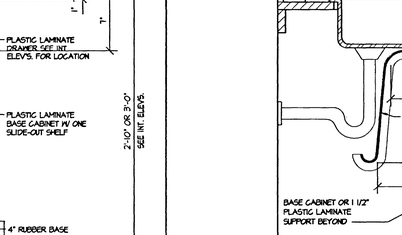
5 A901 OPEN SHELF CABINET DETAIL - TYPICAL
SCALE: 1 1/2" = 1'-0"



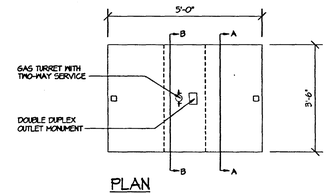
6 A901 HC. SINK COUNTER WITH DOOR DETAIL
SCALE: 1 1/2" = 1'-0"



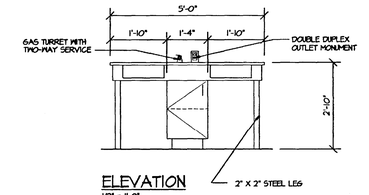
SECTION C-C
1 1/2" = 1'-0"



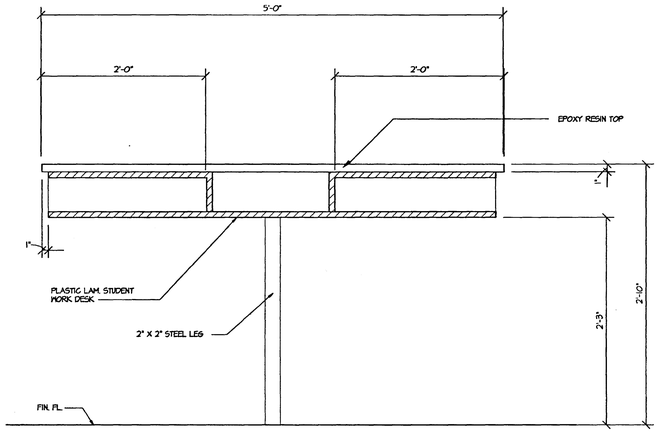
PLAN
1/2" = 1'-0"



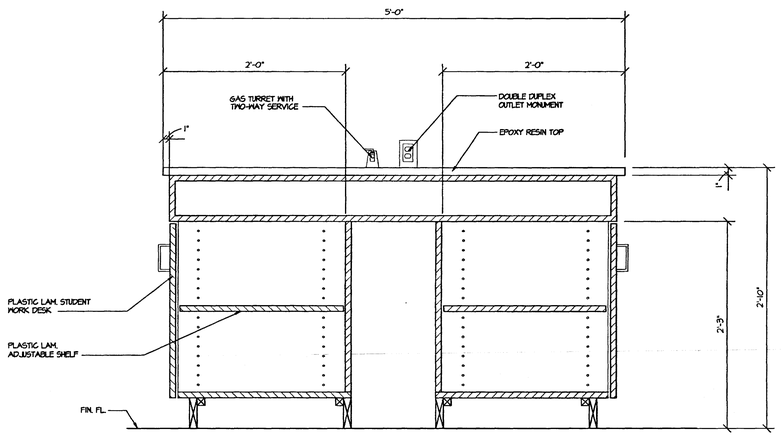
PLAN
1/2" = 1'-0"



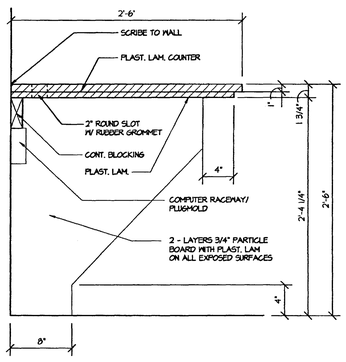
ELEVATION
1/2" = 1'-0"



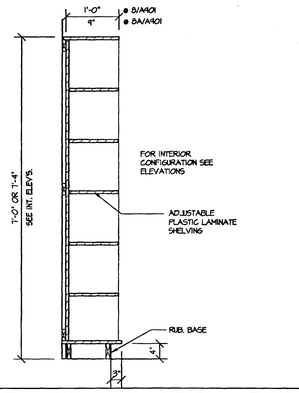
SECTION A-A
1 1/2" = 1'-0"



SECTION B-B
1 1/2" = 1'-0"



10 A901 COMPUTER STATION DETAIL
SCALE: 1 1/2" = 1'-0"



9 A901 & 9A A901 TALL OPEN SHELVING DETAIL - TYPICAL
SCALE: 3/4" = 1'-0"

7 A901 SCIENCE WORK STATION DETAIL
AS NOTED

BQ #70 & 125 Attachment

9 A901 FOUR STUDENT SCIENCE WORK DESK DETAIL
SCALE: 3/4" = 1'-0"

This drawing and details on it, as an instrum is the property of the architect and may be specific project and shall not be loaned, reproduced without written consent of the archit.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: S.E. McNEECE
DRAWN BY: J. CZUBATYJ

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

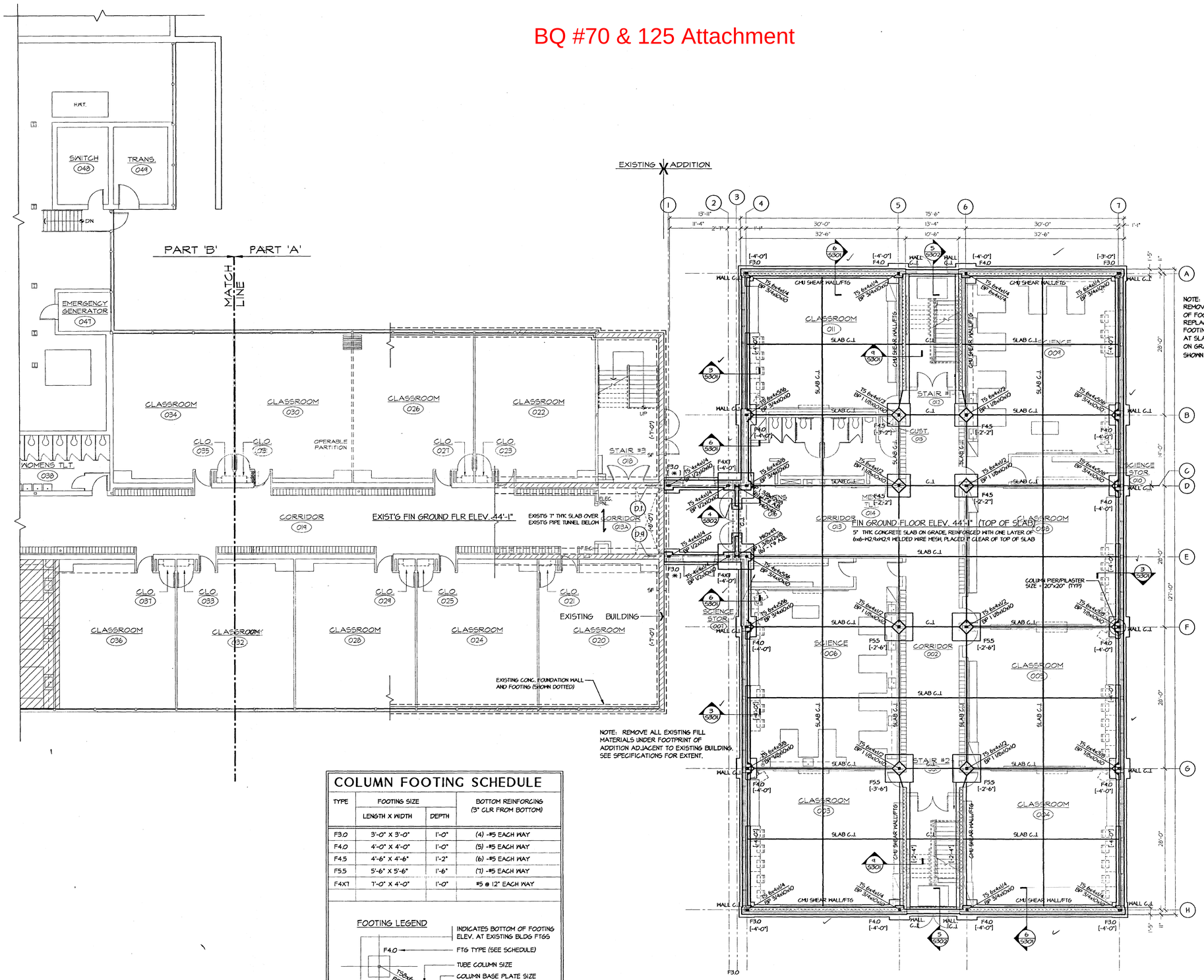
DRAWING TITLE

CASEWORK DETAILS

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: AS NOTED
PROJECT NO.: 50950.06
DRAWING NO.: A901

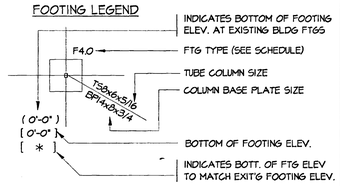
BQ #70 & 125 Attachment



COLUMN FOOTING SCHEDULE

TYPE	FOOTING SIZE		BOTTOM REINFORCING (3" CLR FROM BOTTOM)
	LENGTH X WIDTH	DEPTH	
F3.0	3'-0" X 3'-0"	1'-0"	(4) -#5 EACH WAY
F4.0	4'-0" X 4'-0"	1'-0"	(5) -#5 EACH WAY
F4.5	4'-6" X 4'-6"	1'-2"	(6) -#5 EACH WAY
F5.5	5'-6" X 5'-6"	1'-6"	(7) -#5 EACH WAY
F4X7	7'-0" X 4'-0"	1'-0"	#5 @ 12" EACH WAY

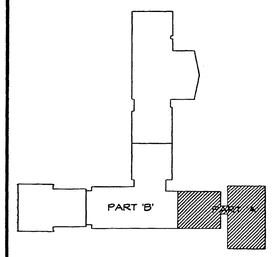
FOOTING LEGEND



FOUNDATION PLAN - PART "A"

1/8" = 1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

FOR DWG. REF.

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: R. C. BOGGS, P.E.
DRAWN BY: L. CZUBATY

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

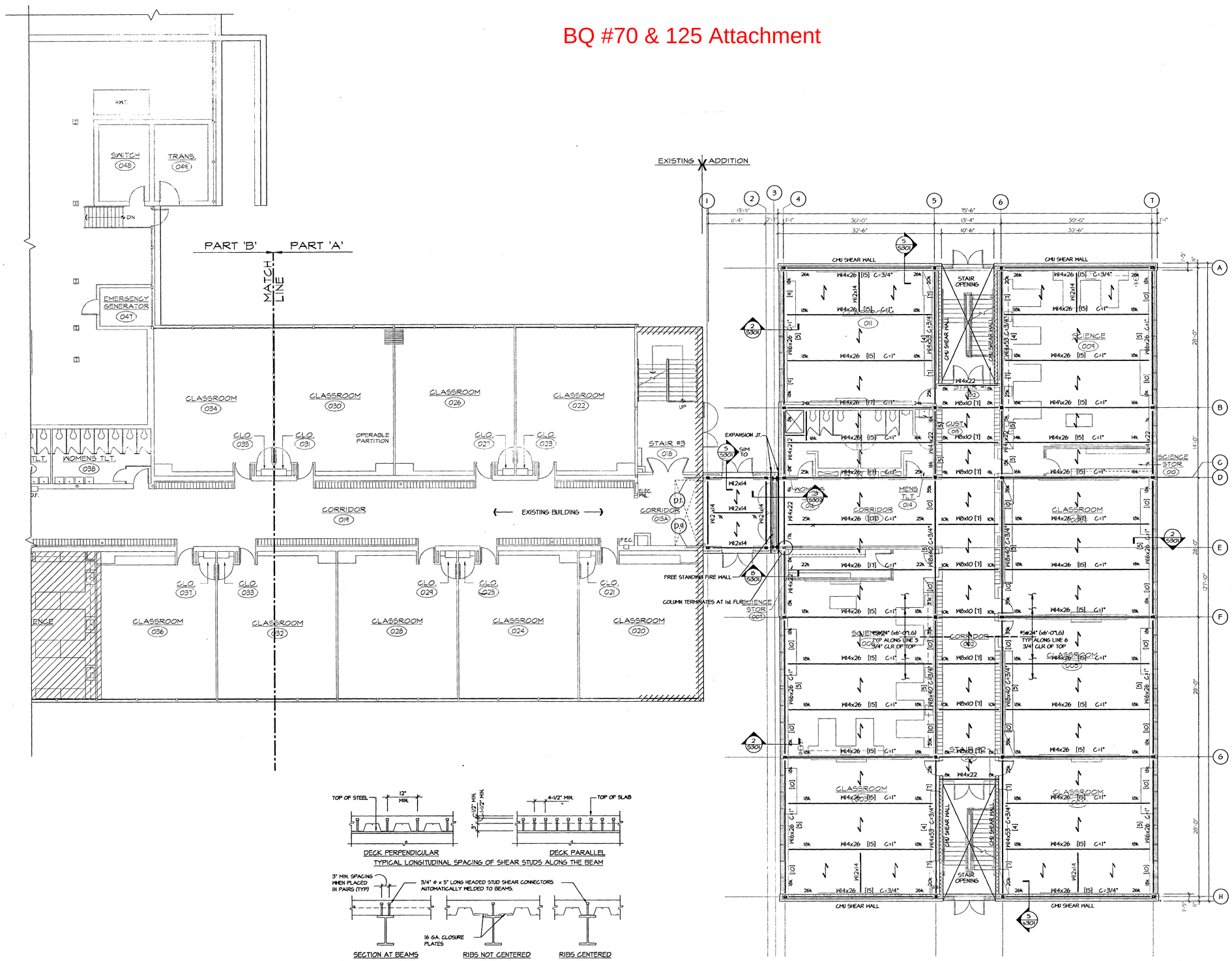
FOUNDATION PLAN - PART "A"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE: **MARCH 16, 1998**
SCALE: **1/8" = 1'-0"**
PROJECT NO.: **50950.06**
DRAWING NO.: **S100.1**

BQ #70 & 125 Attachment



1. PL x__ [10] : INDICATES QUANTITY OF STUD SHEAR CONNECTORS PER FRAMING MEMBER, AS INDICATED ON FLOOR FRAMING PLAN.
2. WHEN THE QUANTITY OF STUDS EXCEEDS THE QUANTITY OF AVAILABLE DECK RIBS, THEN THE EXCESS QUANTITY OF STUDS SHALL BE PLACED IN PAIRS STARTING AT EACH END OF THE BEAM.
3. IT IS THE INTENT THAT THE STUDS SHALL BE UNIFORMLY SPACED ALONG THE FULL BEAM LENGTH, OR PORTION OF BEAM AS INDICATED ON PLAN, ON THE ℄ OF WEB, UNLESS THE QUANTITY OF STUDS EXCEEDS THE MIN. SPACING, IN WHICH CASE STUDS WILL BE UNIFORMLY SPACED IN PAIRS STARTING AT EA. END.
4. SLAB MESH REINFORCING NOT SHOWN. SEE DATUM NOTES.

COMPOSITE METAL FLOOR DECK / SHEAR STUD PLACEMENT DET.

NOT TO SCALE

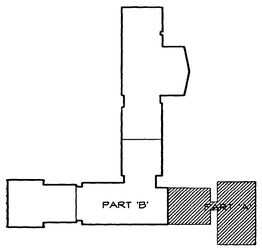
FIRST FLOOR FRAMING

1/8" = 1'-0"

FLOOR CONSTRUCTION:
2 1/2" CONCRETE OVER 3" DEEP x 20 GA. GALVANIZED COMPOSITE METAL FLOOR DECK. (5 1/2" TOTAL SLAB THICKNESS), REINFORCED WITH 6x6-W1.4xW1.4 WWF., PLACED 1" CLEAR OF TOP OF SLAB, OVER STEEL BEAM AND COLUMN CONSTRUCTION.

REFERENCE DATUM:
REFERENCE DATUM FOR FIRST FLOOR TOP OF STEEL (UNDERSIDE OF FLOOR DECK) SHALL BE FIN. FIRST FLOOR ELEV 55'-1". TOP OF ALL STEEL FRAMING MEMBERS SHALL BE 5 1/2" BELOW DATUM, UNLESS OTHERWISE NOTED ABOVE (+), OR BELOW (-) THE DATUM.

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

FOR DWG. REF. N

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	R. C. BOGGS, P.E.
DRAWN BY	L. CZUBATYJ

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR FRAMING PLAN PATR - "A"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

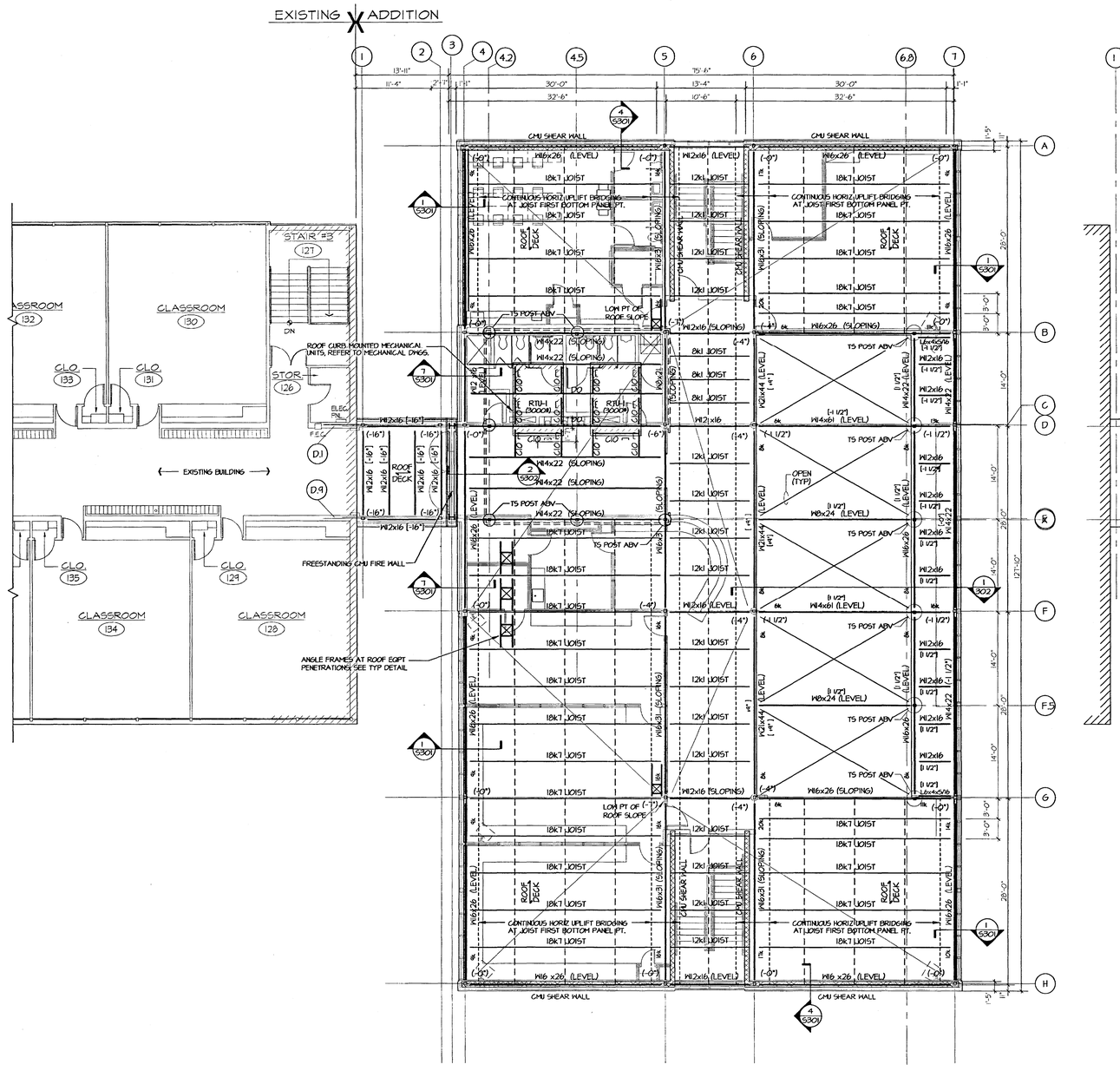
NO	DATE	REVISION	BY

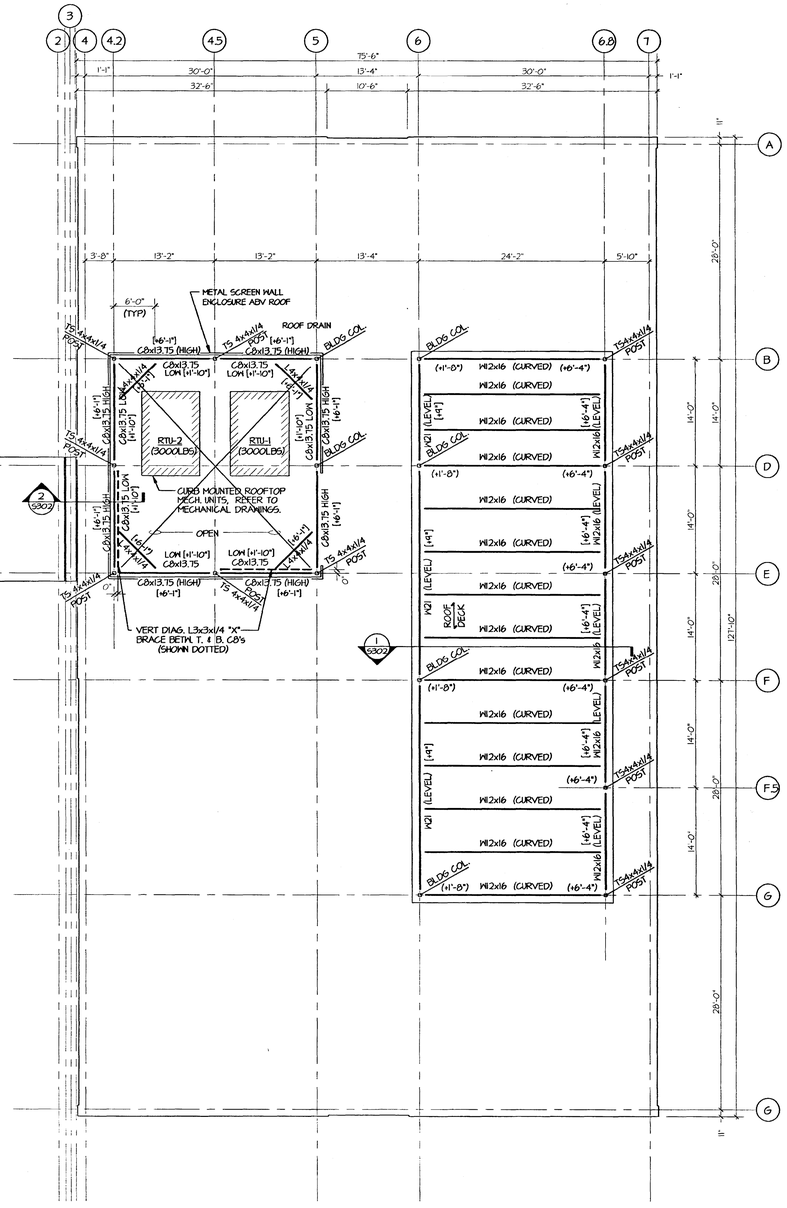
DATE	MARCH 16, 1998
SCALE	1/8" = 1'-0"
PROJECT NO.	50950.06
DRAWING NO.	S101.1

K:\50 projects\50950\dwg\Struct\S101-1 7-2-98 8:57:01 am EST

projects\50950\dwg\Struct\S101-1 7-2-98 8:57:01 am EST

BQ #70 & 125 Attachment





ROOF FRAMING PLAN

1/8" = 1'-0"

ROOF CONSTRUCTION:
1 1/2" DEEP x 20 GA. GALVANIZED WIDE RIB METAL ROOF DECK OVER "K" SERIES OPEN WEB STEEL JOIST, BEAM & COLUMN CONSTRUCTION. ALL ROOF FRAMING MEMBERS SHALL SLOPE FROM HIGH POINT AT PERIMETER OF ROOF TO LOW POINTS AT ROOF DRAIN LOCATIONS.

TOP OF STEEL (DATUM) ELEVATION:
TOP OF STEEL "UNDERSIDE OF ROOF DECK" AT HIGH POINT OF ROOF SLOPE SHALL BE ELEVATION 68'-1" ALONG THE ROOF PERIMETER. ROOF FRAMING SHALL SLOPE TO LOW POINTS AT ROOF DRAINS. FIGURES SHOWN THUS "(-)", AT COLUMNS, REFER TO TOP OF STEEL ELEV. BELOW (-) OR ABOVE (+) THE DATUM ELEVATION.

ROOF FRAMES:
LOCATION, SIZE, AND QUANTITY OF STEEL ANGLE ROOF FRAMES, SHOWN ON FRAMING PLAN, AT ROOF DECK PENETRATIONS, ARE TO BE VERIFIED WITH ARCH'L. AND MECH'L DWGS. REFER TO "TYPICAL ANGLE FRAME" DETAIL ON STRUCTURAL DRAWINGS.

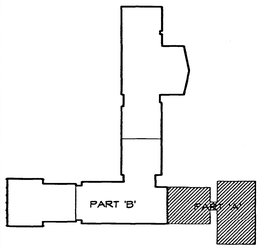
MEDIA CENTER ROOF & EQPT SCREEN FRAMING

1/8" = 1'-0"

MEDIA ROOF CONSTRUCTION:
1 1/2" DEEP x 20 GA. GALVANIZED WIDE RIB METAL ROOF DECK OVER STEEL BEAM, COLUMN, AND STEEL POST FRAMING

TOP OF STEEL ELEVATIONS
REFER TO DATUM ELEVATION NOTE AT ROOF FRAMING PLAN FOR TOP OF STEEL FIGURES "( )".

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

FOR DWG. REF.

N

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	R. C. BOGGS, P.E.
DRAWN BY	L. CZUBATYJ

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

ROOF FRAMING PLAN - PART "A"

SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

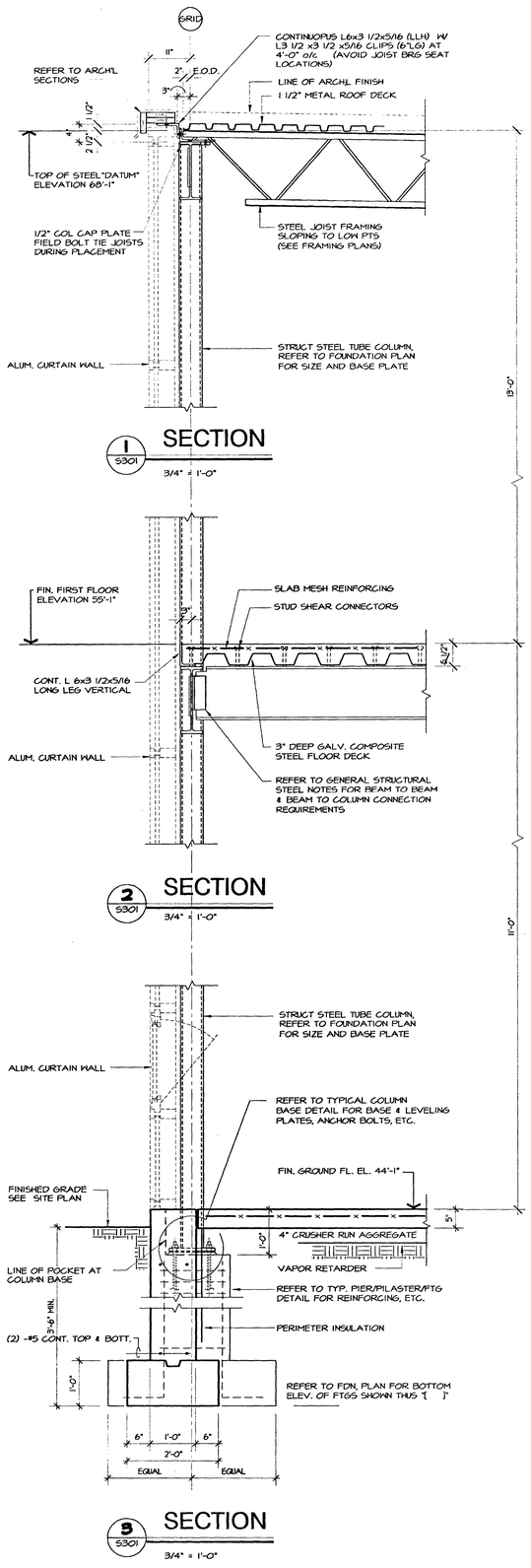
DATE: MARCH 16, 1998

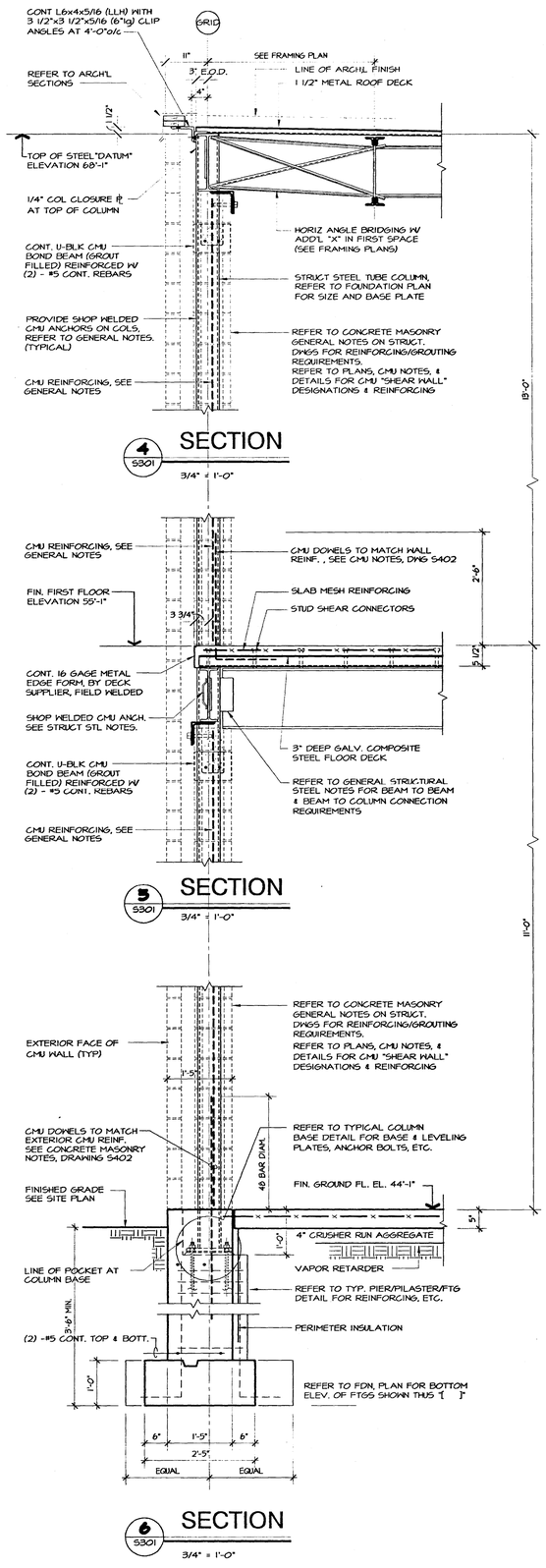
SCALE: 1/8" = 1'-0"

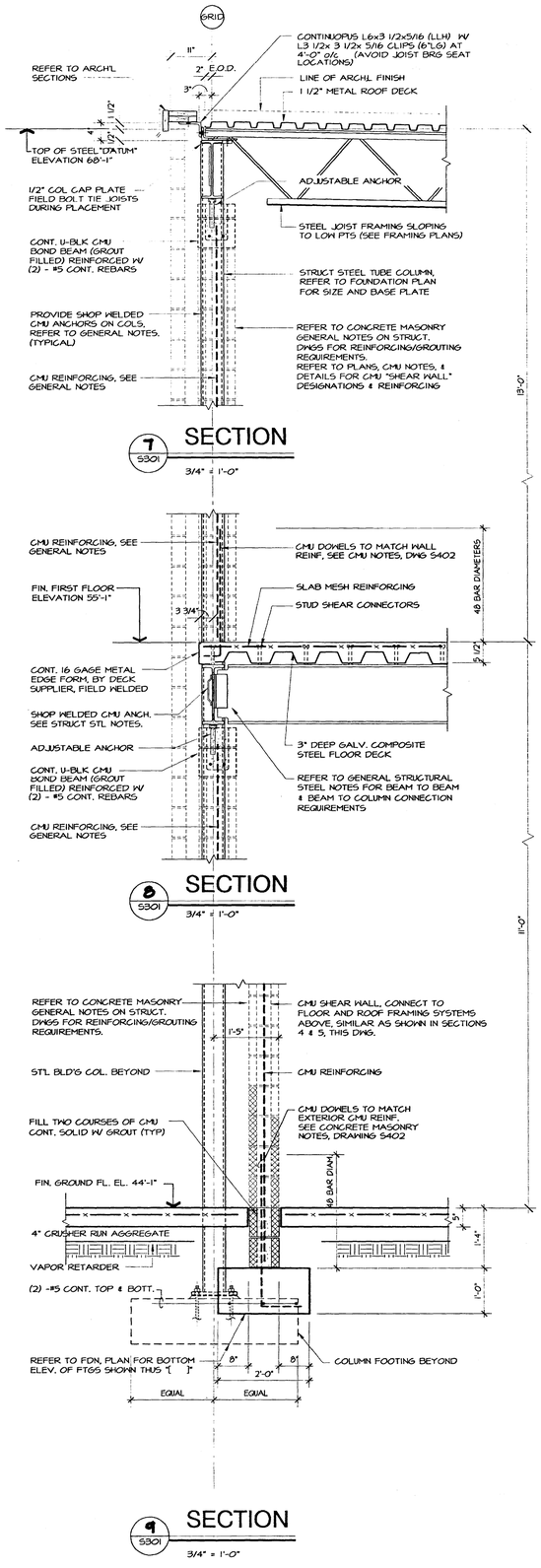
PROJECT NO.: 50950.06

DRAWING NO.: **S102.1**

BQ #70 & 125 Attachment







This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE

ARCHITECT/ENGINEER: R.C.BOGGS, P.E.

DRAWN BY: L. CZUBATYJ

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FRAMING SECTIONS AND DETAILS

NO	DATE	REVISION	BY

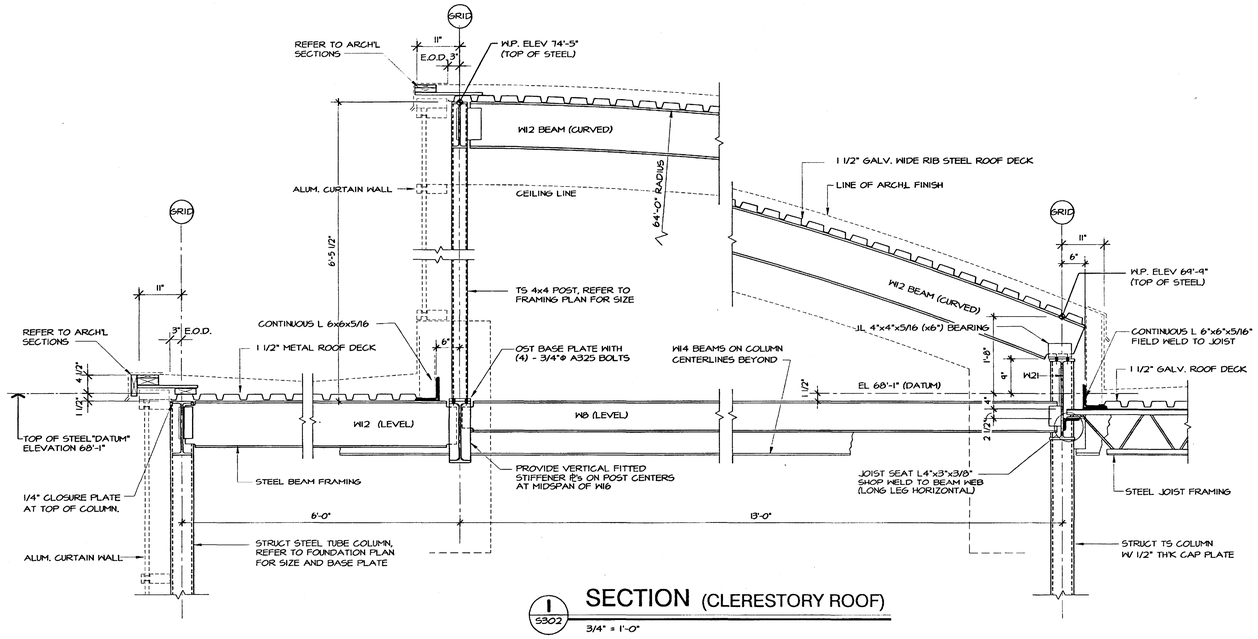
DATE: MARCH 16, 1998

SCALE: 3/4" = 1'-0"

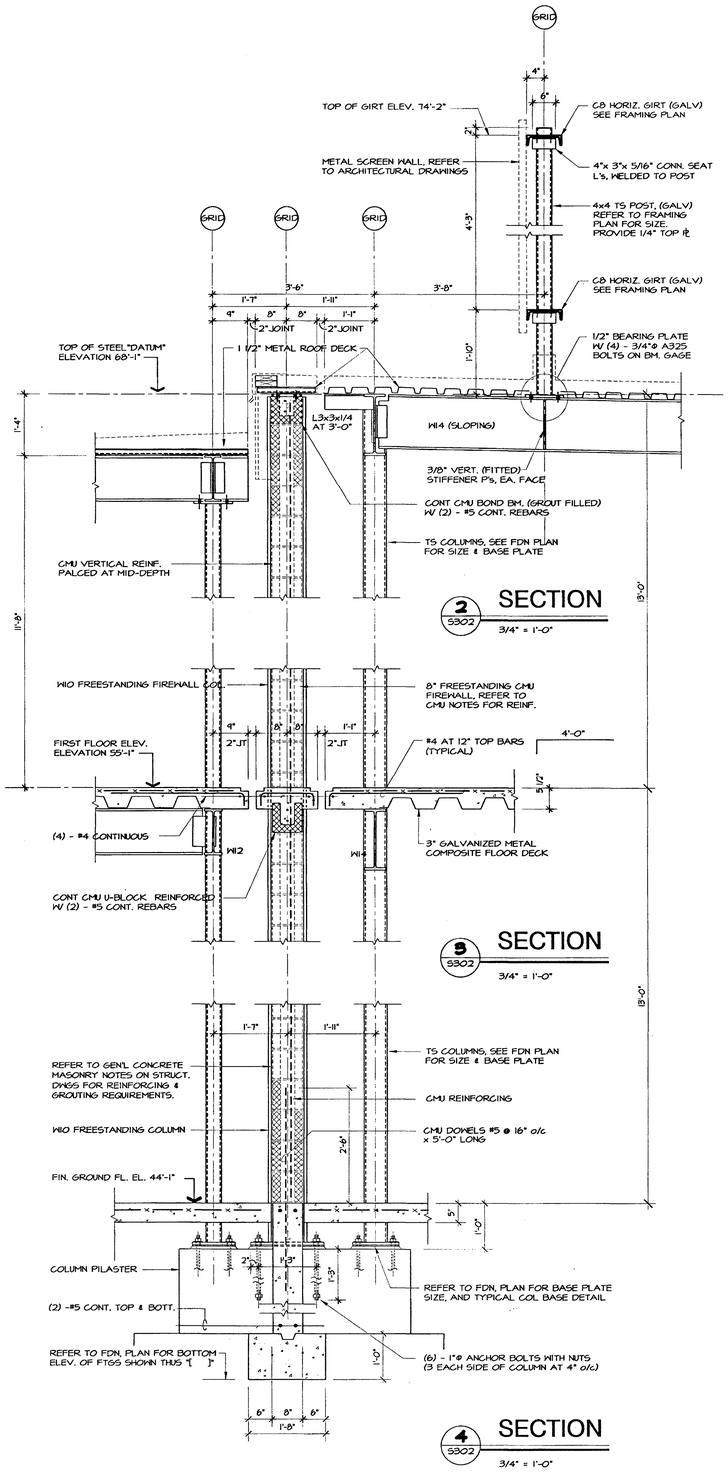
PROJECT NO.: 50950.06

DRAWING NO.: S301

BQ #70 & 125 Attachment

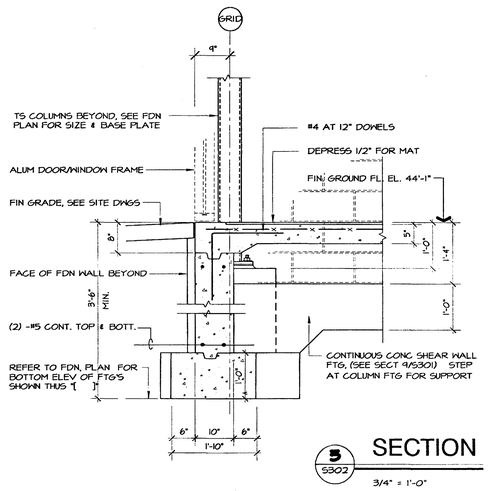


1 / S302 SECTION (CLERESTORY ROOF)
3/4" = 1'-0"



2 / S302 SECTION
3/4" = 1'-0"

3 / S302 SECTION
3/4" = 1'-0"



5 / S302 SECTION
3/4" = 1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: R.C. BOGGS, P.E.
DRAWN BY: L. CZUBATYJ

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FRAMING SECTIONS AND DETAILS

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: 3/4" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: S302

K:\50 projects\50950\dwg\Struct\S302 7-1-98 1:36:21 pm EST

BQ #70 & 125 Attachment

GENERAL STRUCTURAL NOTES

GENERAL

GOVERNING CODE: 1994 STATE OF CONNECTICUT BASIC BUILDING CODE (BOCA BASIC NATIONAL BUILDING CODE 1990, BOCA ACCUMULATIVE SUPPLEMENT 1992).

DESIGN LOADS:

NEW FLOOR AREAS: CORRIDORS: DEAD LOAD 65 PSF, LIVE LOAD 80 PSF
CLASSROOMS: DEAD LOAD 65 PSF +20 PSF PARTITIONS, LIVE LOAD 40 PSF

ROOF LOAD:

ROOF SNOW LOAD CRITERIA: Pg = 30 PSF, Ce = 0.7 AND I = 1.0, WITH INCREASES FOR SNOW DRIFTING, UNBALANCES AND SLIDING PER SECTION 1111 (1990 BOCA).

MINIMUM ROOF LIVE LOAD = 30 PSF

ROOF DEAD LOAD = 20 PSF

WIND LOAD CRITERIA: SECTION 1112 (1990 BOCA) WITH BASIC WIND SPEED = 80 MPH, BUILDING CATEGORY I, I = 1.03, EXPOSURE CLASSIFICATION "B".

MINIMUM WIND LOAD ON PRIMARY STRUCTURE = 18 PSF

WIND LOADS ON SECONDARY ELEMENTS SHALL CONFORM WITH ASCE 7-88.

TYPICAL WIND LOAD ON EXTERIOR WALLS = 24 PSF
MAXIMUM WIND LOAD AT CORNERS = 29 PSF
NET WIND UPLIFT ON STEEL JOIST ROOFS = 9 PSF

SEISMIC LOAD CRITERIA: AS PER SECTION 1113 (1990 BOCA SUPPLEMENT) WITH Av = .13, Aa = .13, S = 1.0, R = 4.5.

SEISMIC LOAD ON PRIMARY STRUCTURE = 7% OF MASS

ASSUMED BEARING PRESSURE ON UNDISTURBED SOIL: 5000 PSF
ASSUMED BEARING PRESSURE ON COMPACTED FILL: 5000 PSF

1. SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT WITH THE GENERAL STRUCTURAL NOTES, THE SPECIFICATIONS, OR WITH EACH OTHER, THE STRICTEST PROVISION SHALL GOVERN.
2. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIEDOWNS MIGHT BE NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER COMPLETION OF THE PROJECT.
3. THE STRUCTURE UTILIZES SHEAR WALLS TO PROVIDE LATERAL STABILITY. THEREFORE, TEMPORARY BRACING, GUYS, ETC. MUST BE MAINTAINED UNTIL ALL MASONRY SHEAR WALLS HAVE BEEN ERECTED AND ATTACHED TO STEEL FRAMING.
4. LOADS, OPENINGS AND STRUCTURE IN ANY WAY RELATED TO REQUIREMENTS OF OTHER (NON-STRUCTURAL) DISCIPLINES ARE SHOWN FOR BIDDING PURPOSES ONLY. THE CONTRACTOR SHALL OBTAIN FROM THE HEATING AND VENTILATING, ELECTRICAL, PLUMBING AND OTHER SUBCONTRACTORS THE FINAL APPROVED SIZE AND LOCATION OF ALL OPENINGS AND WORK TO BE PROVIDED FOR THEIR TRADE IN ROOFS, FLOORS AND WALLS, WHETHER SHOWN OR NOT SHOWN ON STRUCTURAL DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR TRANSMISSION OF REQUIREMENTS, LOCATIONS AND DETAILS TO STRUCTURAL SUBCONTRACTORS. EXCESS COST RELATED TO VARIATION IN MECHANICAL REQUIREMENTS ARE NOT TO BE BORNE BY THE OWNER.
5. MECHANICAL EQUIPMENT WEIGHTS USED IN DESIGN OF SUPPORTING ELEMENTS HAVE BEEN INDICATED ON THE DRAWINGS. CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO INSTALLATION IF ACTUAL WEIGHT EXCEEDS WEIGHT SHOWN ON DRAWINGS.
6. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
7. SHOP DRAWINGS ARE TO BE CHECKED BY THE CONTRACTOR AND SUBCONTRACTOR AND BEAR CHECKER'S INITIALS BEFORE BEING SUBMITTED TO THE ARCHITECT FOR APPROVAL.
8. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS BEFORE PROCEEDING WITH ANY WORK.
9. ALL SECTIONS AND DETAILS SHALL BE CONSIDERED TYPICAL AND APPLY FOR THE SAME AND SIMILAR SITUATIONS THROUGHOUT THE BUILDING, UNLESS OTHERWISE SPECIFICALLY NOTED.

FOUNDATIONS

1. BACKFILLING SHALL BE ACCOMPLISHED TO EQUAL HEIGHTS ON BOTH SIDES OF FOUNDATION WALLS TO PREVENT MOVEMENTS DUE TO UNBALANCED EARTH PRESSURE. WHERE EARTH IS ON ONE SIDE ONLY, BACKFILLING AND COMPACTION SHALL NOT START UNTIL FLOOR SLAB OR ADEQUATE BRACING IS PROVIDED FOR WALL SUPPORT (EXCEPT AT RETAINING WALLS).
2. ALL FOOTINGS ARE TO REST ON UNDISTURBED NATURAL SOIL, AS DEFINED IN THE SPECIFICATIONS, OR CONTROLLED COMPACTED FILL, REGARDLESS OF ELEVATIONS SHOWN ON DRAWINGS. FOOTING BOTTOM ELEVATIONS SHALL NOT BE HIGHER THAN INDICATED ON THE FOUNDATION PLAN.
3. ALL SOIL SURROUNDING AND UNDER ALL FOOTINGS SHALL BE PROTECTED FROM FREEZING AND FROST ACTION DURING THE COURSE OF CONSTRUCTION.
4. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE AT LEAST 3'-6" BELOW FINISHED GRADE.
5. FOOTING BOTTOMS SHALL STEP WHERE INDICATED AT THE RATE OF 1 UNIT VERTICAL TO 2 UNITS HORIZONTAL WITH A MAXIMUM VERTICAL STEP OF 2'-0".
6. WHERE FOOTINGS ARE IN CLOSE PROXIMITY OF SUBSURFACE PIPING, BOTTOM OF FOOTINGS SHALL BE AT LEAST 6" BELOW INVERT ELEVATION OF PIPING, UNLESS OTHERWISE SHOWN ON DRAWINGS.
7. KEEP FOUNDATION EXCAVATIONS FREE OF WATER AT ALL TIMES.
8. USE LEAN CONCRETE (f'c=1500) OR CONTROLLED COMPACTED FILL FOR OVER-EXCAVATION OF FOOTINGS.
9. PLACEMENT OF ALL COMPACTED FILL MUST BE UNDER SUPERVISION OF AN APPROVED TESTING LABORATORY (SEE SPECIFICATIONS). CONCRETE FOUNDATIONS SHALL NOT BE PLACED UNTIL SUBBASE HAS BEEN CHECKED IN PLACE AND APPROVED BY TESTING LABORATORY.
10. CONTROL JOINT SPACING IN FOUNDATION WALLS SHALL NOT EXCEED 30 FEET. 50% OF HORIZONTAL REINFORCEMENT SHALL EXTEND THROUGH JOINT AND HAVE A CLASS "B" SPLICE (PER ACI 318-89).
11. WHERE REQUIRED, CONSTRUCTION JOINTS SHALL BE KEYED AND OCCUR AT CONTROL JOINT INTERVALS.
12. THE LOCATION AND ELEVATION OF EXISTING FOOTINGS INDICATED ARE BASED ON DRAWINGS BY: MARCHANT & MINGES ENGINEERS, DATED APRIL 30, 1957, WHICH HAVE BEEN PROVIDED TO THE DESIGNERS BY THE OWNER. THIS INFORMATION IS PROVIDED FOR BIDDING PURPOSES ONLY. ACTUAL EXISTING FOUNDATIONS MAY VARY FROM WHAT IS INDICATED, AND MUST BE VERIFIED IN FIELD PRIOR TO PREPARATION OF SHOP DRAWINGS. NOTIFY ARCHITECT IF EXISTING CONDITIONS PRECLUDE USE OF DETAILS AS SHOWN.

SLAB ON GRADE

1. CONTROL JOINTS ARE TO BE CREATED IN SLABS ON GRADE. JOINTS SHALL BE SAW CUT 1/8" WIDE AND TO A DEPTH EQUAL TO 1/4 OF THE SLAB THICKNESS. LOCATE JOINTS 15'-0" ON CENTER (PLUS OR MINUS 5'-0") IN EACH DIRECTION, UNLESS OTHERWISE SHOWN ON DRAWINGS. CONSTRUCTION JOINTS AS REQUIRED SHALL BE KEYED AND LOCATED AT CONTROL JOINT INTERVALS.
2. SEE ARCHITECTURAL DRAWINGS FOR LOCATION AND SIZE OF DEPRESSED AREAS IN CONCRETE SLABS AND FOR CONCRETE PADS. MAINTAIN FULL SLAB THICKNESS IN DEPRESSED AREAS, UNLESS OTHERWISE SHOWN.
3. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF ALL MASONRY WALLS FOR WHICH NO FOOTING IS SHOWN. SEE DETAILS FOR SLAB REINFORCING REQUIREMENTS AT ALL WALL LOCATIONS.

CONCRETE

MATERIALS:

CONCRETE SHALL DEVELOP STRENGTH IN 28 DAYS AS FOLLOWS:

LOCATION		STRENGTH (PSI)
	FOUNDATIONS	3000
	WALLS	3000
	SLABS ON GRADE	4000
	SLABS ON METAL DECK	4000

1. ALL DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS MUST FOLLOW THE LATEST ACI CODE AND THE LATEST ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".
2. REINFORCING STEEL SHALL BE 60,000 PSI YIELD.
3. NO TACK WELDING OF REINFORCING WILL BE PERMITTED.
4. UNLESS NOTED OTHERWISE, ALL LAP SPLICES SHALL BE CLASS B, IN ACCORDANCE WITH ACI 318-89.
5. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185.
6. WIRE MESH REINFORCEMENT MUST LAP ONE MESH SIZE AT SIDES AND ENDS AND BE WIRED TOGETHER.
7. WELDED WIRE FABRIC SIDE LAPS SHALL BE STAGGERED TO AVOID FOUR MESH THICKNESS AT COINCIDING END LAP AND SIDE LAP LOCATION.
8. NO CALCIUM CHLORIDE OR ADMIXTURES CONTAINING MORE THAN 0.1% CHLORIDE BY WEIGHT OF ADMIXTURE SHALL BE USED IN THE CONCRETE.
9. CONTRACTOR SHALL ANTICIPATE DEFLECTION OF UNCAMBERED STEEL AT SUPPORTED SLABS, AND PROVIDE ADDITIONAL CONCRETE AS REQUIRED.
10. AT INTERSECTIONS OF REINFORCED CONCRETE WALLS, PROVIDE CORNER DOWELS OF SAME SIZE AND AT THE SAME SPACING AS THE SMALLER HORIZONTAL REINFORCING. DOWELS SHALL HAVE A CLASS B LAP WITH HORIZONTAL REINFORCING IN EACH DIRECTION.
11. PROVIDE CORROSION RESISTANT ACCESSORIES IN ALL EXPOSED CONSTRUCTION.
12. ALL KEYS IN CONCRETE WALLS SHALL BE 2 X 4 UNLESS NOTED OTHERWISE.
13. CONCRETE PIERS: PLACE CONCRETE PIERS AND WALLS TO SOLIDLY SET PIER REINFORCING AND SET WALL REINFORCING THROUGH PIER VERTICAL BARS. PROVIDE DOWELS WITH STANDARD HOOK FROM FOOTING AT ALL PIERS. SIZE AND QUANTITY OF DOWELS TO MATCH VERTICAL PIER REINFORCING (CLASS "B" SPLICE).
14. SEE ARCHITECTURAL, MECHANICAL AND EQUIPMENT DRAWINGS FOR CONCRETE PADS, SLEEVES, OPENINGS, RECESSES, AND BUILT-IN WORK IN CONCRETE ELEMENTS.
15. THE CONTRACTOR SHALL FURNISH, LOCATE AND INSTALL ALL ACCESSORIES FOR PROPER ANCHORAGE OF WOOD AND METAL FRAMING, WOOD BLOCKING, BRICK WORK AND MASONRY UNITS. HE SHALL BE SOLELY RESPONSIBLE FOR FURNISHING, LOCATING AND ENSURING PROPER QUANTITY OF ALL FASTENING DEVICES.
16. ALL CONCRETE TO REMAIN EXPOSED TO VIEW SHALL RECEIVE A SMOOTH RUBBED FINISH (SEE SPECIFICATIONS).
17. ALL CONCRETE CORNERS WITH BOTH SIDES EXPOSED TO VIEW SHALL BE SQUARE UNLESS OTHERWISE SHOWN OR NOTED. THE EDGE SHALL BE RUBBED, PRODUCING A SMOOTH, DENSE SURFACE WITHOUT PITS OR IRREGULARITIES.
18. PROVIDE CONTINUOUS VERTICAL DOVETAIL SLOTS AT 16 INCH CENTERS HORIZONTALLY FOR ALL CONCRETE WALLS ABUTTING A MASONRY WALL OR VENEER, UNLESS OTHERWISE NOTED.
19. PROVIDE CLEARANCE FROM EDGE OF REINFORCING TO EDGE OF CONCRETE AS FOLLOWS:

FOOTINGS (AGAINST EARTH)	3"
COLUMNS AND PIERS (VERTICAL REINFORCING)	2"
WALLS, INTERIOR FACE	3/4"
WALLS, EXTERIOR FACE (#5 AND SMALLER)	1 1/2"
SLABS (INTERIOR)	3/4"
SLABS (EXTERIOR)	1 1/2"
SLABS ON GRADE (MAT.)	1/3 X THK. FROM TOP SURFACE

20. PROVIDE THE FOLLOWING AT OPENINGS IN ALL CONCRETE WALLS AND FRAMED SLABS, UNLESS OTHERWISE INDICATED:

1-#5 AT EACH FACE ON EACH SIDE OF OPENING, EXTENDING 2'-0" BEYOND OPENING.
1-#5 X 4'-0" LONG AT EACH FACE DIAGONALLY AT EACH CORNER.

STRUCTURAL STEEL

MATERIALS:

WIDE FLANGE STRUCTURAL STEEL SHAPES	ASTM A 572, GR.50
STEEL PLATES AND ANGLES	ASTM A 36
STRUCTURAL STEEL TUBING	ASTM A500, GRADE B
BOLTS:	ASTM A325
ANCHOR BOLTS	ASTM A307
WELDING ELECTRODE	ASTM E 70

1. DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO CURRENT AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION.
2. WELDING SHALL CONFORM TO THE CODE FOR "ARC AND GAS WELDING IN BUILDING CONSTRUCTION" OF THE AMERICAN WELDING SOCIETY.
3. ALL LOOSE BEAM LINTELS SHALL HAVE 8" MINIMUM BEARING. SEE ARCHITECTURAL JAMB DETAILS FOR LENGTHS.
4. FOR MISCELLANEOUS STEEL SEE ARCHITECTURAL DRAWINGS.
5. ALL WELDING SHALL BE DONE BY A CERTIFIED WELDER IN ACCORDANCE WITH AWS STANDARDS.
6. CONNECTIONS:
   CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE A.I.S.C. MANUAL OF STEEL CONSTRUCTION. CONNECTIONS SHALL BE PROVIDED TO CONFORM TO THE REQUIREMENTS OF TYPE 2 CONSTRUCTION UNLESS OTHERWISE DETAILED.
   CONNECTIONS SHALL BE DESIGNED TO ACCOMMODATE REACTIONS INDICATED ON THE DRAWINGS.
   IF NO REACTION IS INDICATED AT A PARTICULAR BEAM END, DESIGN CONNECTION FOR 6 KIPS.
   MINIMUM CONNECTION ANGLE THICKNESS SHALL BE 5/16".
   IN ADDITION TO PROVIDING ADEQUATE BOLTS TO ACCOMMODATE REACTIONS, THE FOLLOWING MINIMUM NUMBER OF BOLT ROWS SHALL BE USED:

MEMBER DEPTH	MINIMUM BOLT ROWS
12" or Less	2
14" to 18"	3
21" to 24"	4
27" to 30"	5
Over 30"	6

   CONNECTIONS SHALL BE MADE USING 3/4" DIAMETER ASTM A325 BOLTS (SNUG TIGHT OR SLIP CRITICAL) OR WELDS, UNLESS NOTED OTHERWISE. IF TENSION CONTROL BOLTS ARE USED, CONNECTIONS SHALL BE DESIGNED FOR SLIP CRITICAL BOLT ALLOWABLE LOAD VALUES.
   PROVIDE SLOTTED BOLTED CONNECTIONS WHERE SHOWN WITH 13/16" X 1 7/8" SLOTTED HOLES USING ASTM A 325 BOLTS WITH WASHERS. NUTS SHALL BE FASTENED SNUG TIGHT, THEN UNTIGHTENED BY ONE-HALF TURN. PEEN THREADS TO PREVENT FURTHER LOOSENING OF NUT.
   USE LARGER OF 1/4" FILLET WELDS OR MINIMUM SIZE PER AISC REQUIREMENTS WHERE NO WELD SIZE IS SHOWN ON DRAWINGS.
   WELDS IN EXCESS OF 24" IN LENGTH SHALL BE 3" STITCH WELDS AT 12" ON CENTERS, UNLESS SPECIFICALLY SHOWN ON DRAWINGS TO BE CONTINUOUS.
   MOMENT CONNECTIONS SHALL BE DESIGNED TO DEVELOP FULL MOMENT CAPACITY OF THE ELEMENTS CONNECTED, UNLESS SPECIFIC MOMENT IS INDICATED ON THE DRAWINGS.
7. NO WELDING OR FINAL BOLTING SHALL BE DONE UNTIL AS MUCH OF THE STRUCTURE THAT WILL BE STIFFENED THEREBY HAS BEEN PROPERLY ALIGNED.
8. SEQUENCE OF PLACING WELDS SHALL BE SUCH AS TO AVOID DISTORTION OF MEMBERS.
9. SUBSTITUTION OF STRUCTURAL STEEL MEMBERS IS PERMITTED TO FACILITATE DELIVERY AT NO ADDITIONAL COST TO THE OWNER. SUBSTITUTED MEMBERS MUST BE OF THE SAME NOMINAL DEPTH AS THE MEMBER ORIGINALLY INDICATED AND HAVE A WEIGHT GREATER THAN THAT INDICATED. BEAM FLANGES MUST NOT INFRINGE ON ADJACENT ARCHITECTURAL ELEMENTS.

STRUCTURAL STEEL (CONTINUED)

10. ALL STRUCTURAL STEEL BEAMS AND COLUMNS ADJACENT TO MASONRY SHALL HAVE THE FOLLOWING MASONRY ANCHORAGE:
    16 GAGE GALVANIZED CHANNEL SLOTS (DUR-O-WAL INC. D/A 401) WELDED TO COLUMNS AND BEAMS WITH 1/4" GALVANIZED STRAP ANCHORS (DUR-O-WAL INC. D/A 914) SPACED 1'-4" O.C. AT COLUMNS AND 1'-4" AT BEAMS (UNLESS OTHERWISE NOTED). INSTALL PER MANUFACTURER'S SPECIFICATIONS.
11. STEEL MEMBERS SHOWN CONNECTED TO MASONRY WITH EXPANSION ANCHORS SHALL HAVE 3/4" DIAMETER EXPANSION ANCHORS AT 2'-8" ON CENTERS IN VERTICALLY SLOTTED HOLES, UNLESS OTHERWISE INDICATED.
12. PROVIDE 9/16" DIAMETER HOLES FOR WOOD NAILERS AS REQUIRED BY ARCHITECTURAL DRAWINGS.
13. PROVIDE BITUMASTIC PROTECTION COATING FOR ALL STRUCTURAL STEEL BELOW GRADE.
14. EXISTING STEEL SURFACES TO RECEIVE FIELD WELDS SHALL BE THOROUGHLY CLEANED UNTIL FREE FROM PAINT, RUST, GREASE, ETC.

METAL ROOF DECK

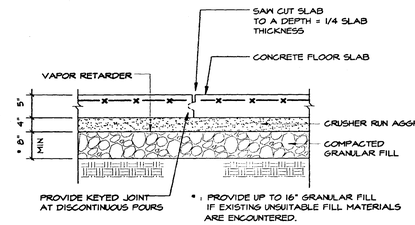
1. MATERIALS:
   TYPICAL METAL DECK SHALL BE 1 1/2" GALVANIZED WIDE RIB TYPE WITH NESTING SIDE SEAMS OF GAGE INDICATED ON THE DRAWINGS.
   DECK SHALL CONFORM TO "BASIC DESIGN SPECIFICATION" AS ADOPTED BY THE STEEL DECK INSTITUTE.
   METAL ROOF DECK SHALL BE FURNISHED IN SHEET LENGTHS SUFFICIENT TO EXTEND OVER FOUR SUPPORTS (3 SPANS) WHEREVER POSSIBLE.
2. ATTACHMENT:
   METAL DECK SHALL BE WELDED TO SUPPORTING STEEL WITH PUDDLE WELDS (5/8" DIAMETER MINIMUM) SPACED NOT MORE THAN 12" ON CENTER.
   WELD METAL ROOF DECK TO STEEL MEMBERS PARALLEL TO SPAN OF DECK USING 5/8" DIAMETER PUDDLE WELDS AT 12" ON CENTER.
   INTERMEDIATE SIDE CONNECTIONS SHALL BE MADE WITH #10 SELF TAPPING SCREWS. THE MAXIMUM SPACING OF SIDE LAP CONNECTIONS SHALL BE 3'-0".

COMPOSITE FLOOR DECK

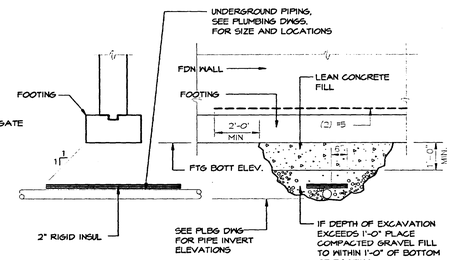
1. MATERIALS:
   METAL FLOOR DECK SHALL BE GALVANIZED AND OF DEPTH AND GAGE INDICATED ON THE DRAWINGS. METAL FLOOR DECK SHALL BE FORMED WITH EMBOSSMENTS TO PROVIDE A MECHANICAL LOCK BETWEEN THE STEEL FLOOR AND CONCRETE SLAB.
   METAL FLOOR DECK SHALL BE FURNISHED IN SHEET LENGTHS SUFFICIENT TO EXTEND OVER 4 SUPPORTS (3 SPANS).
2. ATTACHMENT:
   METAL FLOOR DECK SHALL BE FASTENED TO SUPPORTING STEEL, INCLUDING CAST IN PLACE PERIMETER STEEL ANGLES, WITH ATTACHMENTS EQUIVALENT TO 3/4" DIAMETER PUDDLE WELDS SPACED NOT MORE THAN 12" ON CENTER. ADJACENT DECK UNITS SHALL BE FASTENED TOGETHER AT SIDE LAPS SUCH THAT THE CONNECTION SPACING DOES NOT EXCEED 36" ON CENTER.

STEEL JOISTS

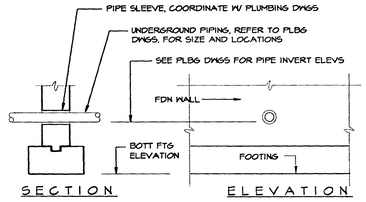
1. STEEL JOISTS SHALL CONFORM TO AND BE ERECTED IN ACCORDANCE WITH THE LATEST SPECIFICATIONS AND CODE OF STANDARD PRACTICE OF THE STEEL JOIST INSTITUTE AND AS SHOWN ON THE DRAWINGS.
2. BRIDGING FOR STEEL JOISTS SHALL BE AS SHOWN AND NOT LESS THAN CALLED FOR BY THE STEEL JOIST INSTITUTE SPECIFICATION AND CODE OF STANDARD PRACTICE.
3. HEADERS AND/OR FASTENERS BETWEEN JOISTS SHALL BE FASTENED TO TOP CHORD AND LOCATED OVER AN UPPER PANEL POINT OF A JOIST, UNLESS OTHERWISE SHOWN.
4. EXTEND ALL JOISTS 1" PAST CENTERLINE OF SUPPORTING MEMBER WHERE POSSIBLE.
5. ADJACENT JOISTS OF THE SAME DEPTH SHALL HAVE WEB MEMBERS IN LINE TO PERMIT PASSAGE OF MECHANICAL DUCTS.
6. ANCHOR ALL STEEL JOIST BRIDGING LINES TO INTERSECTING CONCRETE WALLS, MASONRY WALLS, AND/OR STEEL BEAMS WITH LATERAL ANCHORS UNLESS SHOWN OTHERWISE.
7. JOISTS AND JOIST EXTENDED ENDS, WHETHER CANTILEVERED OR SUPPORTED, SHALL BE DESIGNED TO SUSTAIN UNIFORM LOAD CAPACITY OVER FULL SPAN INDICATED IN THE SJI LOAD TABLES FOR STEEL JOISTS, UNLESS NOTED OTHERWISE ON DRAWINGS WITH "SP" DESIGNATION.
8. JOISTS ON COLUMN LINES SHALL BE ANCHORED BY BOLTING. IF THERE IS NO JOIST ON COLUMN CENTERLINE, THE JOIST NEAREST THE COLUMN CENTERLINE SHALL BE ANCHORED BY BOLTING.
9. WELD ALL JOISTS TO SUPPORTING STEEL WITH 1 1/2" OF 3/16" FILLET WELD EACH SIDE OF BEARING, UNLESS OTHERWISE SHOWN.
10. MAXIMUM LIVE LOAD DEFLECTION SHALL BE 1/360 OF JOIST SPAN, UNLESS OTHERWISE NOTED ON DRAWINGS.
11. WHERE DIAGONAL BRIDGING INTERFERES WITH MECHANICAL INSTALLATIONS, REMOVE CROSS BRIDGING AFTER TOTAL DEAD LOAD IS APPLIED AND REPLACE WITH HORIZONTAL ANGLES 2" X 2" x 3/16" AT TOP AND BOTTOM CHORDS.



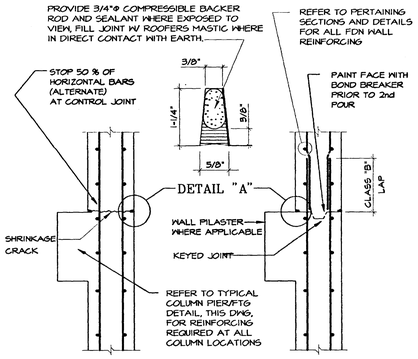
TYP. SLAB ON GRADE CONTROL JT. DETAIL
NOT TO SCALE



EARTHWORK DET. AT PIPE TRENCHING BENEATH FTGS.
NOT TO SCALE

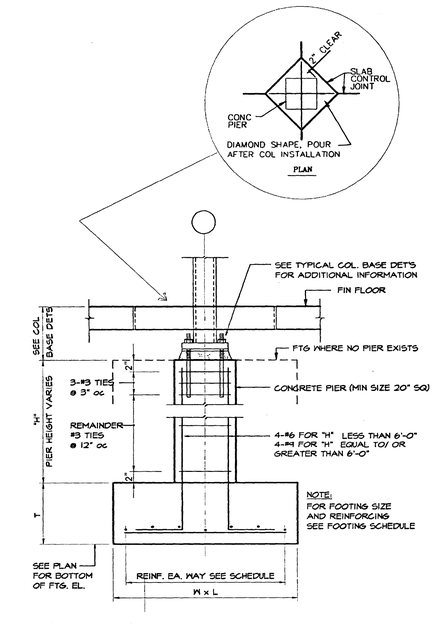


FOUNDATION WALL PIPE SLEEVE DETAIL
NOT TO SCALE

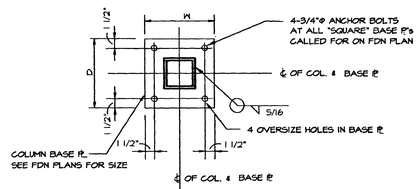


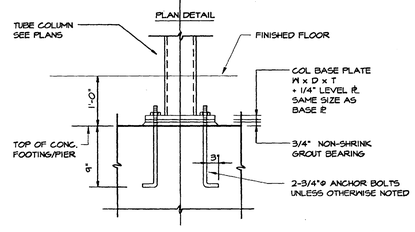
TYPICAL CONCRETE FOUNDATION WALL CONTROL/CONSTRUCTION JOINT DETAIL
NOT TO SCALE

FOUNDATION WALL /FTG PIPE BOXOUT DET.
NOT TO SCALE

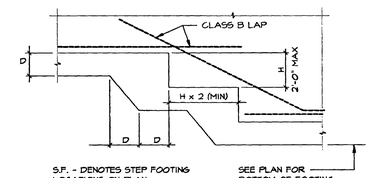


TYPICAL COLUMN PIER/PILASTER/FTG DETAIL
NOT TO SCALE





TYPICAL COLUMN BASE DETAIL
NOT TO SCALE



TYPICAL STEPPED FOOTING DETAIL
NOT TO SCALE

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	R. C. BOGGS, P.E.
DRAWN BY	L. CZUBATYJ

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN
FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT
STATE PROJECT NO. 057-106EA

DRAWING TITLE

GENERAL NOTES AND TYPICAL DETAILS

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: AS NOTED
PROJECT NO.: 50950.06
DRAWING NO.: S401

K:\50 projects\50950\dwg\Struct\S401 7-1-98 2:59:37 pm EST

projects\50950\dwg\Struct\S401 7-1-98 2:59:37 pm EST

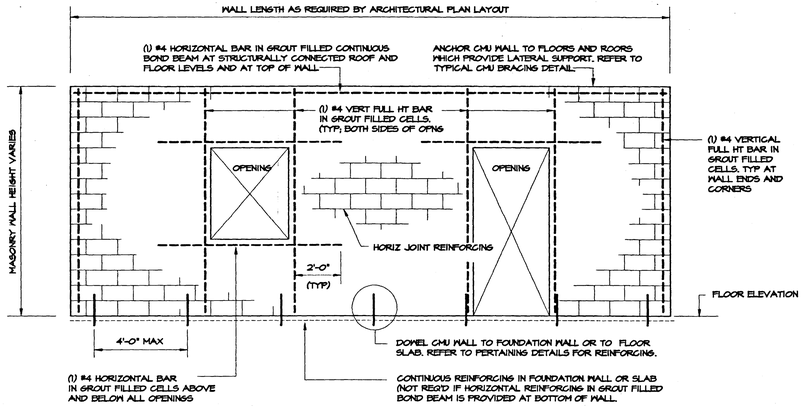
CONCRETE MASONRY NOTES

CONCRETE MASONRY

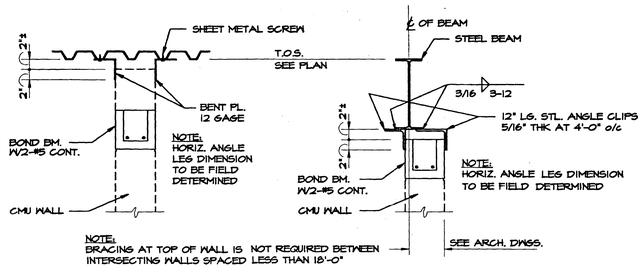
MATERIALS:

HOLLOW LOAD BEARING UNITS: ASTM C 90
MORTAR: (TYPE S) ASTM C 270
GROUT FOR REINFORCED MASONRY: ASTM C 476

1. WALLS INDICATED ON STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS FOR LOCATION, THICKNESS AND COMPOSITION OF MASONRY WALLS.
2. ALL EXTERIOR MASONRY WALLS SHALL CONTAIN THE FOLLOWING REINFORCING:
   - 1-#6 BAR AT 48" ON CENTER.
   - 1-#6 BAR AT BOTH SIDES OF DOOR AND WINDOW OPENINGS.
   - 1-#4 BAR MINIMUM ABOVE AND BELOW ALL WINDOW OPENINGS AND ABOVE ALL DOOR OPENINGS. PROVIDE ADDITIONAL BARS ABOVE DOORS AND WINDOWS AS REQUIRED IN ACCORDANCE WITH LINTEL SCHEDULE.
   - 1-#4 AT TOP OF ALL WALLS, UNLESS OTHERWISE INDICATED.
   - 2-#6 BAR AT ENDS OF ALL WALLS.
   - STANDARD LADUR TYPE DESIGN DUR-O-WAL HORIZONTAL REINFORCING AT 16" O.C. VERTICAL.
3. INTERIOR SHEAR WALLS, WHERE INDICATED, SHALL CONTAIN THE SAME REINFORCING AS EXTERIOR WALLS.
4. ALL OTHER INTERIOR MASONRY WALLS SHALL CONTAIN THE FOLLOWING MINIMUM REINFORCING:
   - 1-#4 AT ALL SIDES OF DOOR AND WINDOW OPENINGS.
   - 1-#4 AT TOP AND ENDS OF ALL WALLS.
   - STANDARD LADUR TYPE DESIGN DUR-O-WAL HORIZONTAL REINFORCING AT 16" O.C. VERTICAL.
5. ALL VERTICAL REINFORCING SHALL EXTEND FOR THE FULL HEIGHT OF THE MASONRY, AND SHALL PASS INTO OR THROUGH BOND BEAMS.
6. CELLS CONTAINING REINFORCING BARS AND ALL CELLS BELOW GRADE SHALL BE GROUTED SOLID. ALL OTHER CELLS SHALL REMAIN HOLLOW EXCEPT WHERE NOTED.
7. ALL BOLTS OR ANCHORS SHALL BE SOLIDLY EMBEDDED IN MORTAR OR GROUT. IF BOND BEAM IS NOT LOCATED AT BOLT OR ANCHOR ELEVATION, PROVIDE LATH AND FILL CELL LOCALLY TO PROVIDE SUBSTRATE FOR BOLT OR ANCHOR.
8. ALL COLUMNS WITHIN SHEAR WALLS AND EXTERIOR WALLS SHALL BE SOLIDLY EMBEDDED IN GROUT.
9. USE 2 COURSES (16") OF SOLID MASONRY BELOW EACH BEAM OR LINTEL BEARING EXCEPT AS NOTED.
10. PROVIDE CONTINUOUS GROUTED BOND BEAM WHERE MASONRY TIES CONCRETE MASONRY TO STEEL FRAMING.
11. HOLLOW UNITS SHALL BE LAID WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS, EXCEPT THAT WEBS SHALL ALSO BE BEDDED IN ALL COURSES OF BEARING WALLS, PIERS, COLUMNS AND PILASTERS, AND IN THE STARTING COURSE ON FOOTINGS AND SOLID FOUNDATION WALLS, AND WHERE ADJACENT TO CELLS OR CAVITIES WHICH ARE TO BE REINFORCED AND / OR FILLED WITH GROUT.
12. MORTAR PROTRUSIONS EXTENDING INTO CELLS OR CAVITIES TO BE REINFORCED AND/OR GROUTED SHALL BE REMOVED.
13. ALL MASONRY WALLS SHALL BE BRACED AT THE TOP UNLESS BRACED HORIZONTALLY BY COLUMNS OR INTERSECTING WALLS AT A MAXIMUM SPACING OF 12 FEET.

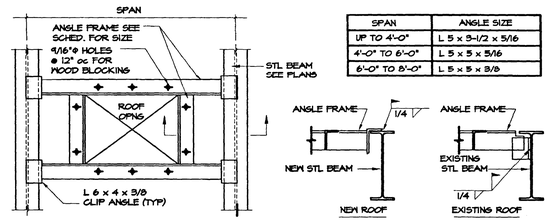


MINIMUM REINFORCING REQUIREMENTS FOR CMU WALLS
NOT TO SCALE



CMU WALL @ UNDERSIDE OF DECK CMU WALL @ STEEL BEAM/JOIST

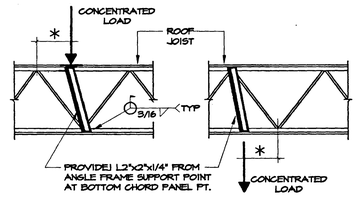
TYP. BRACING AT TOP OF INTERIOR CMU WALLS
NOT TO SCALE



SPAN	ANGLE SIZE
UP TO 4'-0"	L 5 x 3-1/2 x 5/16
4'-0" TO 6'-0"	L 5 x 5 x 5/16
6'-0" TO 8'-0"	L 5 x 5 x 3/8

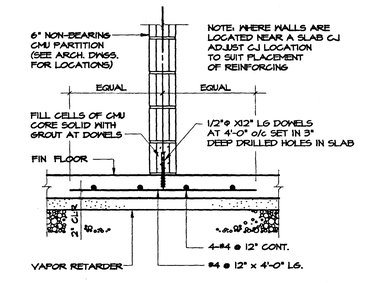
NOTES: 1. SEE ARCH. AND MECH. DWGS. FOR SIZE AND LOCATION OF ALL ROOF PENETRATIONS
2. PROVIDE SUPPORT FRAMES FOR ALL OPNS. 8" OR GREATER IN SIZE. COORDINATE WITH MECH'L AND ARCH'L DWGS FOR SIZE AND LOCATION.
3. AT EXISTING CONCRETE BUILDING, PROVIDE FRAMES BOLTED TO SIDE OF PERIMETER CONCRETE WITH 2 - 3/4"ø EXPANSION ANCHORS AT EACH ANGLE.

TYPICAL FRAME DETAIL AT ROOF DECK PENETRATIONBRATIONS
NOT TO SCALE



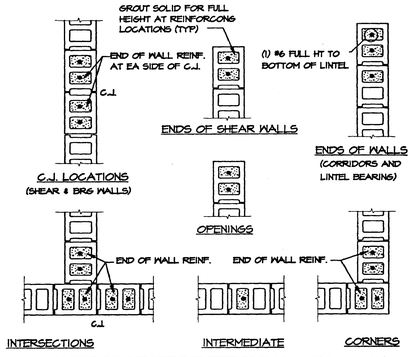
* WHEN CONCENTRATED LOADS OCCUR AT A DISTANCE MORE THAN 4" FROM A PANEL POINT PROVIDE AN ANGLE STRUT FROM POINT OF SUPPORT TO JOIST PANEL POINT.

TYP. JOIST REINFORCING DETAIL
NOT TO SCALE



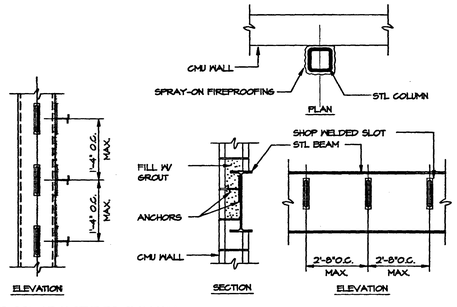
NOTE: PROVIDE SLAB DOWELS BETWEEN CONC FLR SLAB AND CMU WALLS THAT ARE SUPPORTED ON ELEVATED SLABS ALSO.

SLAB ON GRADE REINF. AT CMU PARTITIONS
NOT TO SCALE



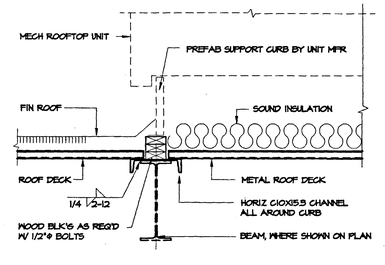
(FOR REINFORCING REQUIREMENTS, REFER TO GENERAL NOTES, THIS DWG.)

TYPICAL CMU REINFORCING PLAN DETAILS
NOT TO SCALE



TS COL ADJACENT TO CMU WALL BEAM ADJACENT TO CMU WALL

TYPICAL MASONTY ANCHORAGE DETAILS
NOT TO SCALE



ROOFTOP MECH. UNIT CURB SUPPORT DETAIL
NOT TO SCALE

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: R. C. BOGGS, P.E.
DRAWN BY: L. CZUBATYJ

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN
FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT
STATE PROJECT NO. 057-106EA

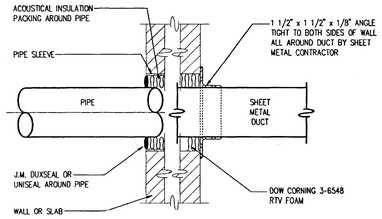
DRAWING TITLE

GENERAL NOTES AND TYPICAL DETAILS

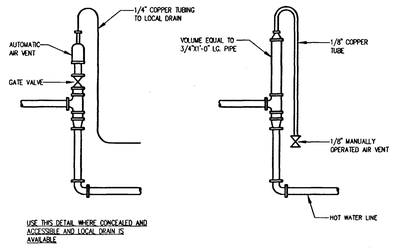
NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: AS NOTED
PROJECT NO.: 50950.06
DRAWING NO.: S402

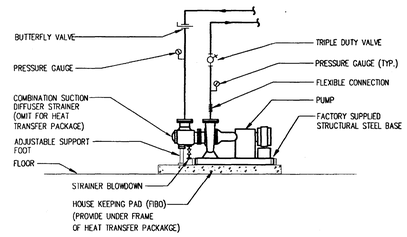
BQ #70 & 125 Attachment



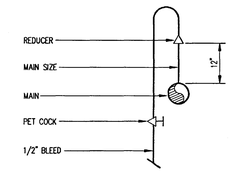
1 DETAIL OF ACOUSTIC CAULKING OF DUCTS AND PIPES PIERCING WALLS, SLABS, SHAFT WALLS, ETC.
NOT TO SCALE



2 TYPICAL VENT AT PIPING DROPS IN DIRECTION OF FLOW
NOT TO SCALE

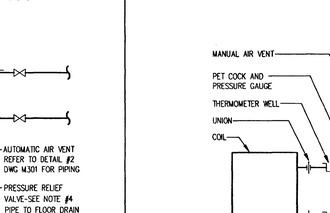


3 BASE MOUNTED PUMP PIPING DETAIL
NOT TO SCALE

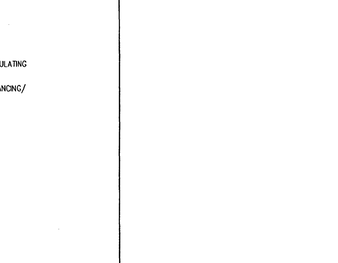


4 MAIN SYSTEM AIR VENT DETAIL
NOT TO SCALE

5 FLEXIBLE EXPANSION LOOP DETAIL
NOT TO SCALE

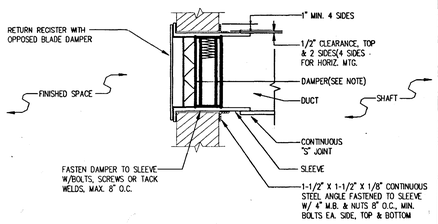


6 CABINET UNIT HEATER HOT WATER PIPING DETAIL
NOT TO SCALE



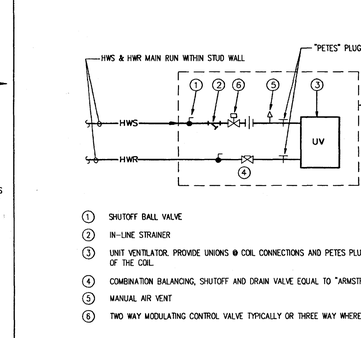
7 DETAIL OF HOT WATER DUCT COIL PIPING
NOT TO SCALE

8 HOT WATER CONVECTOR PIPING DETAIL
NOT TO SCALE



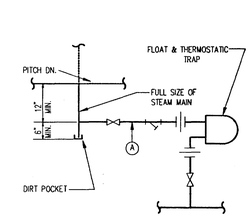
NOTES:
1. DAMPER STYLE & SLEEVE CONFIGURATION IS GOVERNED BY MAINTAINING A MAX. .06 STATIC PRESSURE @ 2500 F.P.M. FACE VELOCITY.
2. DEPTH OF DAMPER TO BE COORDINATED WITH WALL THICKNESS.
3. INSTALLATIONS & MATERIALS PER U.L. 555.

9 VERTICAL FIRE DAMPER
NOT TO SCALE



1. SHUTOFF BALL VALVE
2. IN-LINE STRAINER
3. UNIT VENTILATOR. PROVIDE UNIONS @ COIL CONNECTIONS AND PETES PLUGS ON EACH SIDE OF THE COIL.
4. COMBINATION BALANCING, SHUTOFF AND DRAIN VALVE EQUAL TO "ARMSTRONG" MODEL CV-1
5. MANUAL AIR VENT
6. TWO WAY MODULATING CONTROL VALVE TYPICALLY OR THREE WAY WHERE INDICATED ON PLAN.

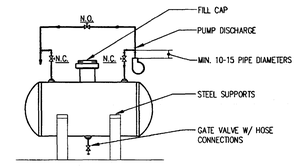
10 UNIT VENTILATOR PIPING DIAGRAM
NOT TO SCALE



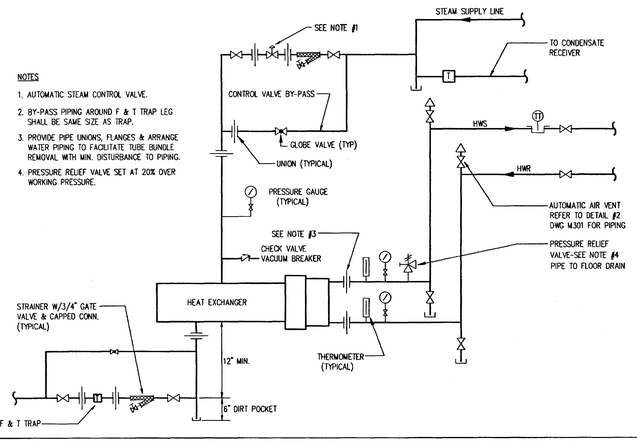
MIN. SIZES, TRAP & LINE	
STM. LOAD LBS HR	TRAP SIZE AND LINE SIZE (A)
0-70	3/4"
71-175	1"
176-425	1-1/4"
426-850	1-1/2"
851-1775	2"
1775 & UP	USE MULTIPLE 2" TRAPS

NOTES
1. THE ENTIRE TRAP RIG AS SHOWN HERE IS DENOTED ON PLANS BY THE SYMBOL: T
2. STEAM LOAD FOR ALL TRAPS BASED ON CAPACITY OF EQUIPMENT SERVED. DRIP TRAP MIN. CAPACITY 70 LBS/HR

11 STEAM TRAP DETAIL
NOT TO SCALE

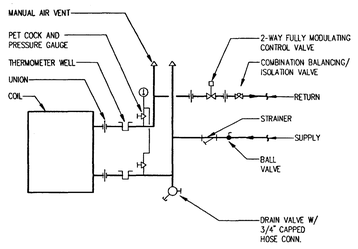


12 BYPASS FEEDER SYSTEM DETAIL
NOT TO SCALE



NOTES
1. AUTOMATIC STEAM CONTROL VALVE.
2. BY-PASS PIPING AROUND F & T TRAP LEG SHALL BE SAME SIZE AS TRAP.
3. PROVIDE PIPE UNIONS, FLANGES & ARRANGE WATER PIPING TO FACILITATE TUBE BUNDLE REMOVAL WITH MIN. DISTURBANCE TO PIPING.
4. PRESSURE RELIEF VALVE SET AT 20% OVER WORKING PRESSURE.

13 STEAM TO WATER CONVERTOR PIPING DETAIL
NOT TO SCALE



14 DETAIL OF VAV HOT WATER REHEAT COIL PIPING
NOT TO SCALE

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

HVAC PLAN NOTES:

1. REFER TO DRAWING M401 FOR HVAC SCHEDULES.
2. REFER TO DRAWING M201 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE HVAC DRAWINGS.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: J. MACALUSO
DRAWN BY: D. EAR

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN
FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

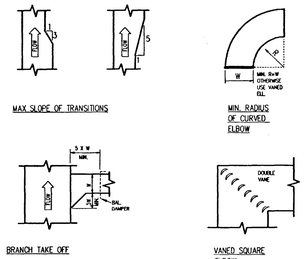
DRAWING TITLE

DETAILS - HVAC

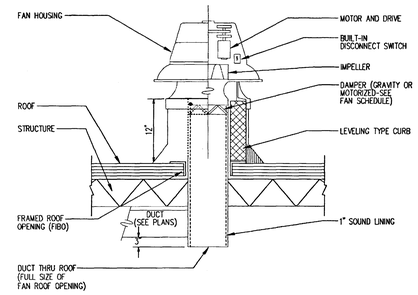
NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: AS NOTED
PROJECT NO.: 50950.06
DRAWING NO.: M301

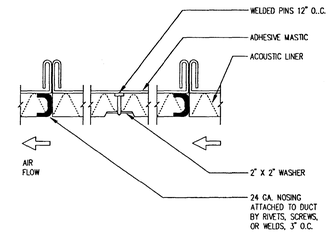
BQ #70 & 125 Attachment



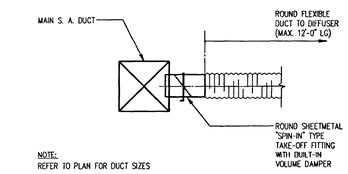
1 DUCT CONSTRUCTION DETAIL
NOT TO SCALE



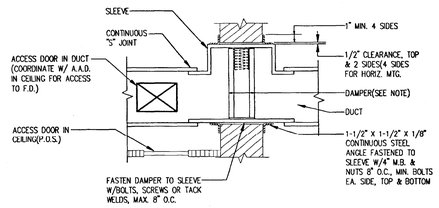
2 ROOF CURB MOUNTED EXHAUST FAN DETAIL
NOT TO SCALE



3 DETAIL OF ACOUSTIC LINING
NOT TO SCALE

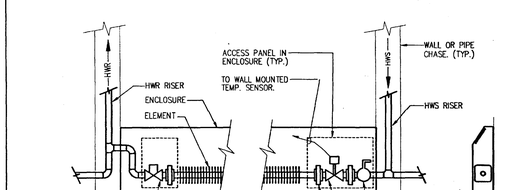


4 FLEXIBLE DUCT TAKE-OFF DETAIL
NOT TO SCALE

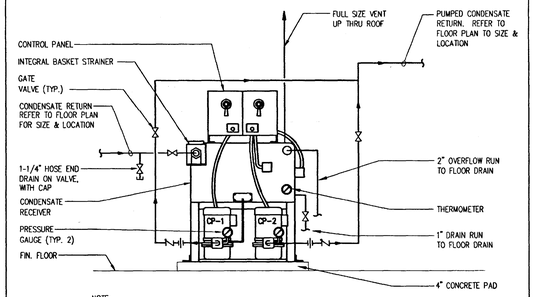


NOTES:
1. DAMPER STYLE & SLEEVE CONFIGURATION IS GOVERNED BY MAINTAINING A MAX. .06 STATIC PRESSURE @ 2500 F.P.M. FACE VELOCITY.
2. DEPTH OF DAMPER TO BE COORDINATED WITH WALL THICKNESS.
3. INSTALLATIONS & MATERIALS PER U.L. 555.

5 VERTICAL FIRE DAMPER DETAIL
NOT TO SCALE

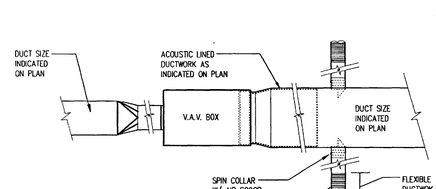


6 TYPICAL RADIATION PIPING DIAGRAM DOWNFEED
NOT TO SCALE

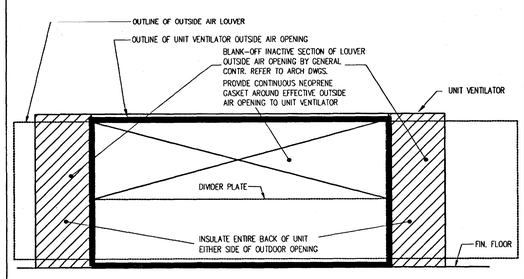


NOTE:
REFER TO THIS SHEET FOR CONDENSATE RECEIVER SPECIFICATION.

7 CONDENSATE TRANSFER PUMP PIPING DETAIL
NOT TO SCALE

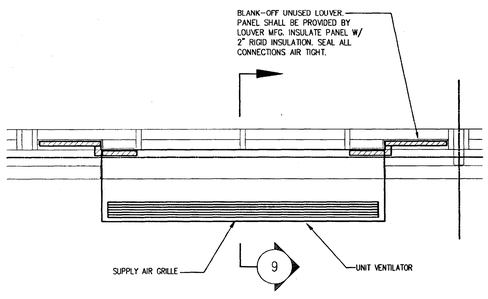


8 TYPICAL V.A.V. BOX DETAIL
NOT TO SCALE



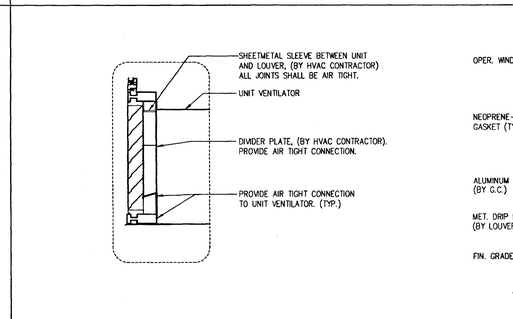
NOTE: REFER TO ARCH DWG. A.301 FOR CROSS SECTION OF UNIT VENTILATORS.

7 DETAIL AT BACK OF UNIT VENTILATOR
NOT TO SCALE



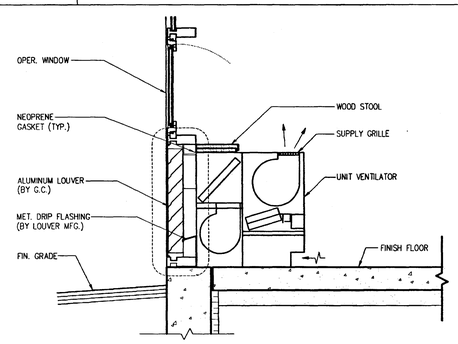
REFER TO DETAIL ON M.301 FOR PIPING ARRANGEMENT

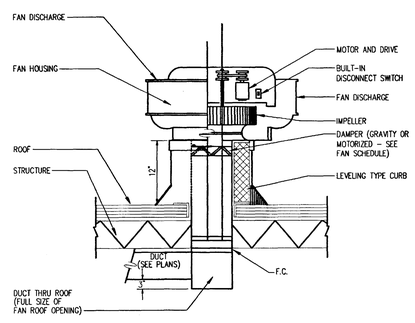
8 UNIT VENTILATOR INSTALLATION DETAIL – PLAN VIEW
NOT TO SCALE



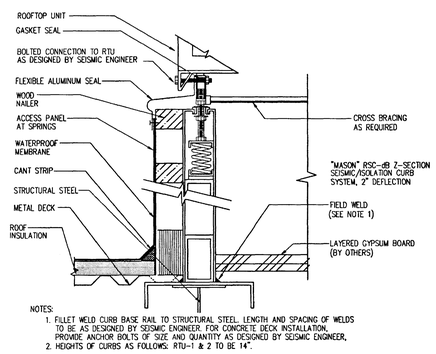
9 UNIT VENTILATOR INSTALLATION DETAIL – SECTION
NOT TO SCALE

15730268



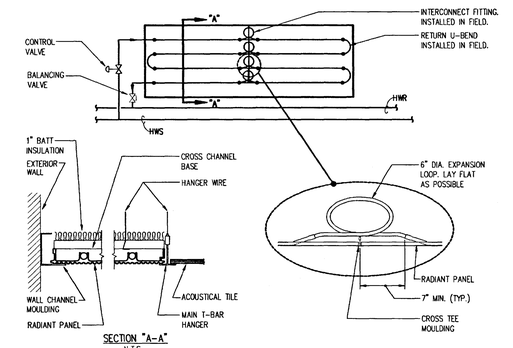


11 ROOF CURB MOUNTED UP-BLAST EXHAUST FAN DETAIL
NOT TO SCALE



NOTES:
1. FILLET WELD CURB BASE RAIL TO STRUCTURAL STEEL. LENGTH AND SPACING OF WELDS TO BE AS DESIGNED BY SEISMIC ENGINEER. FOR CONCRETE DECK INSTALLATION, PROVIDE ANCHOR BOLTS OF SIZE AND QUANTITY AS DESIGNED BY SEISMIC ENGINEER.
2. HEIGHTS OF CURBS AS FOLLOWS: RTU-1 & 2 TO BE 14".

13 ROOFTOP UNIT ISOLATION SEISMIC CURB
NOT TO SCALE



14 RADIANT PANEL DETAIL
NOT TO SCALE

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

HVAC PLAN NOTES:

1. REFER TO DRAWING M401 FOR HVAC SCHEDULES.
2. REFER TO DRAWING M201 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE HVAC DRAWINGS.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: J. MACALUSO
DRAWN BY: D. EAR

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

DETAILS - HVAC

NO	DATE	REVISION	BY

DATE: **MARCH 16, 1998**
SCALE: **AS NOTED**
PROJECT NO.: **50950.06**
DRAWING NO.: **M302**

HOT WATER COIL SCHEDULE (BASED ON MCQUAY EQUAL IS TRANE)

SYMBOL	UNIT SERVED	AREA SERVED	CAPACITY TOTAL MBH	AIR DATA CFM	AIR DATA MAX. P. D. IN. W. G.	AIR DATA TEMP. ENT. AIR °F	AIR DATA TEMP. LVG. AIR °F	WATER DATA GPM	WATER DATA MAX. P. D. (FT)	WATER DATA TEMP. ENT. °F	WATER DATA TEMP. LVG. °F	COIL DATA SIZE	COIL DATA ROWS	REMARKS
HC-1	RTU-1	MEDIA CENTER	237.3	7000	.2	48°	80°	16	3'	190	160	60x24	1	①

① PROVIDE COIL W/ DUCTWORK TRANSITION. EACH HEATING COIL WITH 2 WAY MODULATING CONTROL VALVE.
② COIL TYPE TT

HOT WATER CONVECTOR (BASED ON VULCAN, EQUAL ARE TRANE, MODINE OR RITTLING)

SYMBOL	LOCATION	MFR.	MODEL/TYPE	CAPACITY (MBH)	WATER DATA GPM	WATER DATA MAX. P. D. (FT)	WATER DATA TEMP. ENT.	WATER DATA TEMP. LVG.	CABINET DATA LENGTH (IN.)	CABINET DATA HEIGHT (IN.)	CABINET DATA DEPTH (IN.) REC.	CABINET DATA DEPTH (IN.) PROJ.	REMARKS
C-1	LARGE TOILET ROOMS	VULCAN	PW-A	4.0	.5	.5	190	160	36	20	4	2 1/4	①
C-2	TOILET ROOMS	VULCAN	FWC-A	1.9	.5	.5	190	160	28	20	4	1/8	②

① SEMI-RECESSED 4 SIDE OVERLAP ② RECESSED UNIT

PUMP SCHEDULE (BASED ON "BELL & GOSSETT", EQUAL ARE TACO OR WEINMAN)

DESIGNATION	SERVICE	LOCATION	FLOW RATE (GPM)	TOTAL PUMP HEAD (FT. OF WATER)	IMPELLER DIAMETER (INCHES)	MOTOR DATA MIN. MOTOR H.P	MOTOR DATA RPM	MOTOR DATA VOLT/PHASE	MOTOR CONTROLLER TYPE	MOTOR CONTROLLER CONTROL	MOTOR CONTROLLER PILOT DEVICE	MOTOR CONTROLLER MODEL NO.	PUMP TYPE	REMARKS
P-1	HOT WATER	BOILER ROOM	75	40	7"	1 1/2	1750	208/3	MAG	HOA	PE	1 1/2 AB	BASE MOUNTED	① ②
P-2	HOT WATER	BOILER ROOM	75	40	7"	1 1/2	1750	208/3	MAG	HOA	PE	1 1/2 AB	BASE MOUNTED	① ②

① ONE PUMP OPERATING AND ONE PUMP STANDBY
② FACTORY MOUNTED ON HTP2-90 HEAT TRANSFER PACKAGE

STEAM TO WATER HEAT EXCHANGER SCHEDULE (BASED ON B&G)

SYMBOL	LOCATION	AREA SERVED	CAPACITY (MBH)	SHELLSIDE DATA LB/HR	SHELLSIDE DATA PRESS. PSI	TUBESIDE DATA FLUID	TUBESIDE DATA GPM	TUBESIDE DATA TEMP. F° IN	TUBESIDE DATA TEMP. F° OUT	MAX. P. D. (FT.)	NO. PASS.	REMARKS
HX-1	MECHANICAL ROOM	ADDITION	1098	1161	15	WATER	75	160	190	.5	2	①

① FACTORY MOUNTED ON HTP2-90 HEAT TRANSFER PACKAGE.

HOT WATER CABINET UNIT HEATER SCHEDULE (BASED ON VULCAN, EQUAL ARE TRANE, DUNHAM BUSH, MODINE OR NESBITT)

SYMBOL	LOCATION	MAKE	MODEL/ TYPE	CAPACITY (MBH)	WATER DATA GPM	WATER DATA MAX. P. D. (FT)	WATER DATA TEMP. ENT.	WATER DATA TEMP. LVG.	AIR DATA CFM	AIR DATA TEMP. ENT.	AIR DATA TEMP. LVG.	FAN MOTOR DATA HP	FAN MOTOR DATA RPM	FAN MOTOR DATA VOLT	FAN MOTOR DATA PH	CABINET DATA STYLE/ ARR.	CABINET DATA LENGTH (IN.)	CABINET DATA HEIGHT OR WIDTH (IN.)	CABINET DATA DEPTH (IN.) REC.	CABINET DATA DEPTH (IN.) PROJ.	REMARKS
CUH-1	STAIRS	VULCAN	RW1120	15.1	1.0	.06	190	160	230	60	125	1/15	1050	120	1	REC. WALL	35	25	9"	1/2"	①

① PROVIDE WALL MOUNTED TSTAT WITH GUARD AND UNIT MOUNTED SPEED SELECTOR SWITCH

FAN SCHEDULE (BASED ON GREENHECK EQUAL ARE COOK OR PENN)

SYMBOL	LOCATION	AREA SERVED	FAN TYPE	SONES	MODEL	DAMPER TYPE	CFM	S.P. (IN W.G.)	FAN RPM	DRIVE	MOTOR DATA HP	MOTOR DATA VOLT	MOTOR DATA PH	MOTOR CONTROLLER TYPE	MOTOR CONTROLLER CONTROL	MOTOR CONTROLLER PILOT DEVICE	APPROX. WT.(LBS.)	REMARKS
EF-1W	ADDITION ROOF	GROUND FLOOR GENERAL EXHAUST	CRCE	14.7	GB-180	MOTORIZED	3200	1.25	1185	BELT	1 1/2	208	3	MAG	HOA	PE	101	① ③
EF-2W	ADDITION ROOF	ADDITON TOILET EXHAUST	CRCE	9.8	GB-140	MOTORIZED	1350	1.0	1300	BELT	1/2	208	3	MAG	HOA	PE	85	① ③
EF-3W	ADDITION ROOF	SCIENCE STORAGE ROOMS	CRCU	9.3	CUBE-140 HP	MOTORIZED	420	.75	1125	BELT	1/4	120	1	TT	---	--	60	① ③ ④
EF-4E	EXISTING ROOF	SCIENCE STORAGE 172	CRCE	6.8	GB-80	MOTORIZED	400	.5	1290	BELT	1/4	120	1	TT	---	--	30	① ③ ④ ⑤
EF-5E	EXISTING ROOF	SCIENCE STORAGE 161, 168	CRCE	6.8	GB-80	MOTORIZED	400	.5	1290	BELT	1/4	120	1	TT	---	--	30	① ③ ④ ⑤
EF-6E	EXISTING ROOF	FUME HOOD SCIENCE 167	CRCU	9.4	CUBE-100	MOTORIZED	770	1.0	1645	BELT	1/4	120	1	TT	---	--	52	① ② ③ ⑤
EF-7E	EXISTING ROOF	FUME HOOD SCIENCE	CRCU	9.4	CUBE-100	MOTORIZED	770	1.0	1645	BELT	1/4	120	1	TT	---	--	52	① ② ③ ⑤
EF-8E	EXISTING ROOF	FUME HOOD SCIENCE 169	CRCU	9.4	CUBE-100	MOTORIZED	770	1.0	1645	BELT	1/4	120	1	TT	---	--	52	① ② ③ ⑤

① PROVIDE WITH MANUFACTURERS PRE-FAB INSULATED ROOF CURB, 12" (H) AND DISCONNECT SWITCH.
② PUSH BUTTON STATION BY DIVISION 16 AT HOOD
③ INTERLOCK WITH MOTORIZED DAMPER
④ CONSTANT OPERATION
⑤ COORDINATE ROOF FLASHING OF EXISTING ROOF WITH ARCHITECTURAL DRAWINGS.

FAN TYPES:
CRCE = CENTRIFUGAL ROOF CURB MOUNTED EXHAUSTER
PRCS = PROPELLER ROOF CURB MOUNTED SUPPLY FAN
CRCU = CENTRIFUGAL ROOF CURB UPBLAST
CAF = CENTRIFUGAL AIR FOIL
CBI = CENTRIFUGAL, BACKWARD INCLINED
KUB = KITCHEN UPBLAST
IL = IN-LINE CENTRIFUGAL
CFC = CENTRIFUGAL FORWARD CURVED
VA = VANE AXIAL
CE = CEILING MOUNTED EXHAUSTER
TC = TUBULAR CENTRIFUGAL
BMCS = BUILDING MANAGEMENT CONTROL SYSTEMS
US = UTILITY SET

V. A. V. BOX SCHEDULE (BASED ON ENVIRO-TEC. EQUAL IS TRANE, TITUS OR TEMP MASTER)

SYMBOL	UNIT SERVED	AREA SERVED	CFM MAX.	CFM MIN.	P.D. (IN W.G.)	N.C. RADIATED/ DISCHARGE	INLET SIZE ø	CAPACITY TOTAL MBH	WATER DATA GPM	WATER DATA MAX. P.D. FT.	AIR DATA TEMP. ENT.	AIR DATA TEMP. LVG.	COIL DATA MIN. FACE AREA (SF)	COIL DATA ROWS	REMARKS
VAV-1	RTU-2	SPEECH	200	100	.13	20/20	5"	5.2	.5	.2	48	80	.7	1	① ② ③
VAV-2	RTU-2	GALLERY	500	250	.21	20/20	8"	13.0	1	.8	48	80	.8	1	① ② ③
VAV-3	RTU-2	OFFICE	500	250	.21	20/20	8"	13.0	1	.8	48	80	.8	1	① ② ③
VAV-4	RTU-2	MEDIA WKRM	900	450	.27	20/20	10"	23.4	1.5	2.4	48	80	1.2	1	① ② ③
VAV-5	RTU-2	TEACH. WKRM	1,300	650	.31	20/21	12"	33.9	2	4.6	48	80	1.7	1	① ② ③
VAV-6	RTU-2	COMP. LAB. 101	1500	750	.36	20/22	12"	39.1	2.5	.7	48	80	1.7	1	① ② ③
VAV-7	RTU-2	COMP. LAB. 104	1500	750	.36	20/22	12"	39.1	2.5	.7	48	80	1.7	1	① ② ③
VAV-8	RTU-2	READING 112	1500	750	.36	20/22	12"	39.1	2.5	.7	48	80	1.7	1	① ② ③
BPV-1	RTU-2	BYPASS	3325	0	.15	29/32	16"	-	-	-	-	-	-	-	① ④

① CONTROLS BY ETVT SYSTEM. EACH COIL WITH 2 WAY MODULATING CONTROL VALVE.
② COIL CAPACITY BASED ON 190°F EWT 30° DROP, AND 75% AIRFLOW.
③ NC AT 1" INLET STATIC PRESSURE.
④ NC AT 3" INLET STATIC PRESSURE .

DIFFUSER, REGISTER, & GRILLE SCHEDULE (BASED ON TITUS EQUAL ARE TUTTLE & BAILEY OR METALAIRE)

SYMBOL	MODEL	MAX. CFM	INLET SIZE	N.C. @ MAX CFM	BLOW DEG. & FT.	CEILING TYPE	REMARKS
A	TMS	500	10"	25	8'	LAY-IN	② ⑤
B	TMS	300	8"	20	6'	LAY-IN	② ⑤
C	TMS	200	6"	23	5'	LAY-IN	② ⑤
D	MPI-38	235	8"	27	21'	LAY-IN	② ⑦
E	TMSA	620	12"	31	8'	LAY-IN	②
F	272 RS	1300	36x8	26	22.5° 31'	-	① ②
G	272 RS	1000	36x6	25	22.5° 32'	-	① ②
H	272 RS	150	10x6			-	① ②
I	MPI-38	85	6"	25	16'	LAY-IN	⑩
A	350 RL	500	14x8	30	35°	-	① ②
B	350 RL	300	10x10	25	35°	LAY-IN	① ②
C	350 RL	100	6x6	18	35°	LAY-IN	① ②
D	CT 540	1200	24x12	32	0°	-	⑧ ⑨
E	350 ZRL	1300	36x8	24	0°	-	① ②
F	350 ZRL	1000	36x6	23	0°	-	① ②

TG-1 TYPE (DIFFUSER) CFM - SEE DWGS.
TG-1 TYPE (REGISTER/GRILLE) CFM - SEE DWGS.

① PROVIDE ODD for BALANCING
② COLOR SELECTED BY ARCHITECT
③ TYPE 3 ADJUSTMENT
④ SAFETY CHAIN
⑤ 24X24 MODULE SIZE
⑥ 12X12 MODULE SIZE
⑦ INTEGRATED W/RADIANT PANEL
⑧ TYPE 5 FRAME, FLOOR MOUNTED
⑨ TYPE A FASTENING
⑩ 2-3/4" SLOT, 2' LONG INSULATED PLENUM

FIN TUBE RADIATION SCHEDULE (BASED ON VULCAN, EQUAL ARE TRANE, MODINE OR RITTLING)

DESIGNATION	MINIMUM HEATING CAPACITY (BTUH PER UNIT.)	HEATING ELEMENT @ 175° F AVERAGE WATER TEMP. FIN SIZE (INCHES)	FIN MATERIAL	FINS PER FOOT	NUMBER OF ROWS	PIPE SIZE (INCHES)	PIPE MATERIAL	ENCLOSURE DATA STYLE	ENCLOSURE DATA HEIGHT (INCHES)	ENCLOSURE DATA DEPTH (INCHES)	REMARKS
A 00	1106	2 3/4" x 4 1/4"	AL	48	1	3/4"	CU	DS	12	5 5/16"	① ② ③ ④
B 00											

X XX — TYPE OF FINTUBE
X XX — LENGTH OF FINTUBE

① FINTUBE COVERS ARE TO BE WALL TO WALL MINIMUM MOUNTING HEIGHT IS 4" A.F.F. PROVIDE 24" ACCESS SECTION FOR VALVE ACCESS.
② PROVIDE WITH 14 GAUGE COVER.
③ PROVIDE WITH FULL BACK PLATE.
④ .02" FIN THICKNESS

GENERAL NOTES:

1. THE BMCS CONTRACTOR SHALL RUN LOW VOLTAGE WIRING FROM THE FIRE ALARM CONTROL PANEL TO ALL BMCS PANEL. THE FIRE ALARM CONTRACTOR SHALL PROVIDE SPACES AND ZONE DESIGNATIONS FOR THE BMCS CONTRACTOR.
2. THE BMCS CONTRACTOR SHALL RUN 120V CIRCUITS FROM SPARE CIRCUIT BREAKERS IN THE NEAREST ELECTRICAL PANEL TO POWER EACH LOW VOLTAGE TRANSFORMER OR CONTROL PANEL USED FOR CONTROLS.
3. THE BMCS CONTRACTOR SHALL PROVIDE ALL AUTOMATICALLY OPERATED: DAMPERS, SMOKE DAMPERS & VALVES. PROVIDE TRANSFORMERS AND LOW VOLTAGE WIRING.
4. COORDINATE WITH BMCS CONTRACTOR FOR LOCATIONS OF ALL CONTROL ACCESSORIES TO BE INSTALLED IN PIPING AND DUCTWORK. PROVIDE ALL REQUIRED TAPPINGS. CONTROL VALVES, WELLS, FITTINGS & DAMPERS WILL BE FURNISHED BY BMCS CONTRACTOR INSTALLED UNDER THE MECHANICAL CONTRACTOR SCOPE OF WORK.
5. THE CEILING VOID IN THE ADDITION AND THE EXISTING TUNNEL ARE USED AS RETURN AIR PLENUMS. ALL ITEMS INSTALLED IN THESE AREAS MUST BE APPROVED FOR SUCH USE.
7. SEAL PIPE & DUCT PENETRATIONS OF WALLS & FLOORS.
8. MECHANICAL EQUIPMENT OR REGISTERS MOUNTED IN BLOCK WALLS SHALL CONFORM TO BLOCK COURSING. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION & MOUNTING HEIGHTS.
9. STARTERS ARE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
10. REFER TO MANUFACTURER'S CERTIFIED DRAWINGS FOR EQUIPMENT DIMENSIONS AND MAINTAIN RECOMMENDED CLEARANCES.
11. DRAWINGS AND SKETCHES ARE DIAGRAMMATIC AND INTENDED TO SHOW APPROXIMATE ROUTING OF PIPING AND LOCATION OF EQUIPMENT. IT IS THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL FIELD CONDITIONS AND MAKE PROVISIONS TO PERFORM THE WORK ACCORDINGLY.
12. SEISMIC CERTIFICATION AND ANALYSIS:
SEISMIC RESTRAINT CALCULATIONS MUST BE PROVIDED FOR ALL CONNECTIONS OF EQUIPMENT TO THE STRUCTURE. CALCULATIONS TO SUPPORT SEISMIC RESTRAINT DESIGNS MUST BE STAMPED BY A REGISTERED PROFESSIONAL ENGINEER WITH AT LEAST FIVE YEARS OF SEISMIC DESIGN EXPERIENCE. ANALYSIS MUST INDICATE CALCULATED DEAD LOADS, DERIVED LOADS AND MATERIALS UTILIZED FOR CONNECTIONS TO EQUIPMENT AND STRUCTURE. ANALYSIS MUST DETAIL ANCHORING METHODS, BOLT DIAMETER, EMBEDMENT AND/OR WELD LENGTH. A SEISMIC DESIGN ERRORS AND OMISSIONS INSURANCE CERTIFICATE MUST ACCOMPANY SUBMITTALS.
PROCURE THE SERVICES OF A MANUFACTURER'S SEISMIC REPRESENTATIVE TO REVIEW THE PIPING INSTALLATION, PROVIDE SEISMIC CALCULATIONS AND DIRECT THE CONTRACTOR AS TO LOCATION AND AND TYPE OF SEISMIC SUPPORTS REQUIRED FOR NEW PIPING, DUCTWORK & EQUIPMENT.
13. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF DIFFUSERS & REGISTERS.

CONDENSATE PUMP AND RECEIVER SCHEDULE (DOMESTIC)

DESIGNATION	SERVICE	LOCATION	WATER FLOW RATE (GPM)	PUMP DISCHARGE PRESSURE (PSIG)	MOTOR DATA MOTOR HP	MOTOR DATA RPM	MOTOR DATA VOLTS/PHASE	RECEIVER CAPACITY (GALLONS)	MODEL NO.	OPERATING WEIGHT (LBS)	REMARKS
CP-1	CONDENSATE RETURN	MER	9	15	1/3	3500	120/1	23	23CB9-15		①

① UNIT TO BE COMBINATION CONDENSATE RETURN PUMPING/RECEIVER WITH (2) SETS OF DUPLEX PUMPS. REFER TO SPECIFICATIONS.

RADIANT PANEL SCHEDULE (BASED ON AIRTEX)

DESIGNATION	MINIMUM HEATING CAPACITY (BTUH PER UNIT.)	HEATING ELEMENT @ 175° F AVERAGE WATER TEMP. PANEL WIDTH (INCHES)	PANEL MATERIAL	NUMBER OF TUBES	TUBE I.D. (INCHES)	PIPE MATERIAL	MODEL	REMARKS
AA XX	307	18	AL	4	1/2	CU	HEF 18	① ② ③

XX — TYPE OF PANEL
XX — LENGTH OF PANEL

① RADIANT PANEL SHALL BE WALL TO WALL OR COLUMN TO COLUMN. CUT OUT FOR COLUMN ENCLOSURE
② T-BAR CEILING INSTALLATION
③ FOUR PASS CONFIGURATION

ROOFTOP UNIT SCHEDULE (BASED ON MCQUAY EQUAL ARE TRANE OR AAON)

SYMBOL	AREA SERVED	LOCATION	FILTER (AAF AS STANDARD) MIN. % EFF.	FILTER (AAF AS STANDARD) INITIAL PD IN IN. WTR.	FILTER (AAF AS STANDARD) FINAL PD IN IN. WTR.	FILTER (AAF AS STANDARD) TYPE	REFRIGERATION SYSTEM CAP. NET TOTAL (MBH)	REFRIGERATION SYSTEM CAP. NET SENS. (MBH)	REFRIGERATION EVAPORATOR COIL ENTERING AIR TEMP. T db/T dwb	REFRIGERATION EVAPORATOR COIL LEAVING AIR TEMP. T db/T dwb	NOMINAL CAPACITY (TONS)	SUPPLY FAN CFM	SUPPLY FAN MIN. OSA %	SUPPLY FAN ESP IN. WC	SUPPLY FAN TOTAL S.P.	SUPPLY FAN FAN (RPM)	SUPPLY FAN WHEEL # & DIAM. INCHES	SUPPLY FAN TYPE	SUPPLY FAN MOTOR BHP	SUPPLY FAN MOTOR MIN. HP	SUPPLY FAN MOTOR RPM	SUPPLY FAN MOTOR VOLTS	SUPPLY FAN MOTOR ø	EXHAUST FAN CFM	EXHAUST FAN EXT. S.P. IN. WC.	EXHAUST FAN RPM	EXHAUST FAN # & TYPE	EXHAUST FAN MOTOR BHP	EXHAUST FAN MOTOR MIN. HP	EXHAUST FAN MOTOR RPM	EXHAUST FAN MOTOR VOLTS	EXHAUST FAN MOTOR ø	UNIT ELECTRICAL VOLT/ PH.	UNIT ELECTRICAL MCA (AMPS)	UNIT ELECTRICAL MFS (AMPS)	STAND-ARD AIR EER	UNIT WEIGHT LBS.	MFR	MODEL
RTU-1	MEDIA CENTER	PART A ROOF	30	.12	.5	2" TA	218	159.1	80	67	59.1	57.3	17 1/2	7000	25	2.0	2.7	1085	(2) 15x15	FC	5.45	7.5	1750	208	3	6470	.2	-	(2) PROP	-	1/3	-	208	1	208/3	98	110	11.2	3000	MCQUAY	LCA 210H ① ② ③ ⑤
RTU-2	FIRST FLOOR	PART A ROOF	30	.12	.5	2" TA	218	159.1	80	67	59.1	57.3	17 1/2	7000	25	2.0	2.7	1085	(2) 15x15	FC	5.45	7.5	1750	208	3	6470	.2	-	(2) PROP	-	1/3	-	208	1	208/3	98	110	11.2	3000	MCQUAY	LCA 210H ① ③ ④ ⑤

① FURNISH UNIT WITH LOW LEAK DAMPERS, HIGH EFFICIENCY MOTORS, FULLY MODULATING ECONOMIZER, POWER EXHAUST FAN AND MASON SEISMIC CURB.
② CONSTANT VOLUME UNIT.
③ ALL UNITS SHALL HAVE MULTIPLE COMPRESSORS.
④ VARIABLE VOLUME UNIT
⑤ START/STOP THROUGH PNEUMATIC CONTROL SYSTEM

UNIT VENTILATOR SCHEDULE (BASED ON A.A.F. EQUAL ARE TRANE OR NESBITT)

SYMBOL	AIR DATA AIR FLOW RATE (CFM)	AIR DATA OUTDOOR AIR FLOW RATE (CFM)	HEATING DATA AIR DATA EAT (°F)	HEATING DATA AIR DATA LAT (°F)	HEATING DATA HEATING COIL WATER DATA EWT (°F)	HEATING DATA HEATING COIL WATER DATA LWT (°F)	HEATING DATA HEATING COIL WATER DATA CAPACITY (MBH)	HEATING DATA HEATING COIL WATER DATA WATER FLOW RATE (GPM)	HEATING DATA HEATING COIL WATER DATA P. D. (FT)	HEATING DATA HEATING COIL WATER DATA ROWS	FAN DATA MOTOR DATA H.P.	FAN DATA MOTOR DATA RPM HI SPEED	FAN DATA MOTOR DATA ELECTRICAL VOLT	FAN DATA MOTOR DATA ELECTRICAL ø	GENERAL TOTAL MBH	GENERAL SENSIBLE MBH	GENERAL EER	COOLING DATA CONDENSER COND. FANS AMBIENT TEMP. (°F)	COOLING DATA CONDENSER COND. FANS NUMBER OF FANS	COOLING DATA CONDENSER COND. FANS HORSEPOWER PER FAN	COOLING DATA COMPRESSOR NUMBER OF COMPRESSORS	COOLING DATA COMPRESSOR FLA./EA.	COOLING DATA COMPRESSOR LRA./EA.	COOLING DATA UNIT ELECTRICAL CHARACTERISTICS MCA (AMPS)	COOLING DATA UNIT ELECTRICAL CHARACTERISTICS MFS (AMPS)	COOLING DATA UNIT ELECTRICAL CHARACTERISTICS VOLTAGE /PHASE	CABINET DIMENSIONS LENGTH (IN.)	CABINET DIMENSIONS HEIGHT (IN.)	CABINET DIMENSIONS DEPTH (IN.)	OUTDOOR AIR INLET SIZE (LxH) (INTAKE)	UNIT WEIGHT (LBS)	MFG. MODEL	UNIT CONFIG. H - HORIZONTAL V - VERTICAL	REMARKS
UH-1	1400	450	50	100	190	170	69.5	5	6.6	1	1/4	970	208	1	53.3	34.1	9.1	95	1	3/4	1	8.5	123	30.1	45	208/1	112	30	28	REFER TO ARCH. DRAWINGS	1100	AAF A254	VERTICAL		

NOTES: 12 EACH UNIT VENTILATOR SHALL BE FURNISHED WITH THE FOLLOWING EQUIPMENT:
MICROTECH UNIT MOUNTED CONTROLLER WITH OPEN PROTOCOL ASHRAE II CYCLE CONTROL, WALL MOUNTED SPACE SENSOR WITH ROOM OVERRIDE CONTROL & 2 HR. BY-PASS, 2-WAY MODULATING VALVES OR 3-WAY MODULATING VALVES WERE INDICATED ON DRAWINGS. (SHIPPED LOOSE FOR FIELD INSTALLATION).

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

HVAC PLAN NOTES:

1. REFER TO DRAWING M401 FOR HVAC SCHEDULES.
2. REFER TO DRAWING M201 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE HVAC DRAWINGS.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: J.MACALUSO
DRAWN BY: D. EAR

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN
FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT
STATE PROJECT NO. 057-106EA

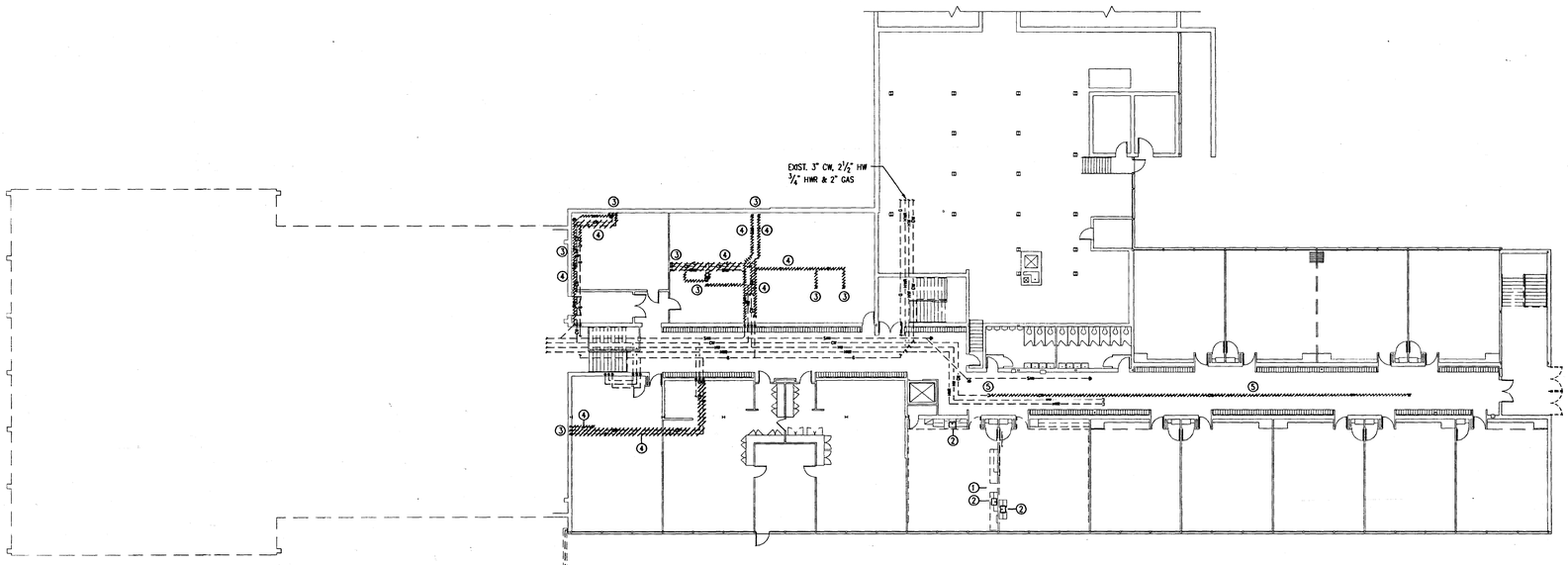
DRAWING TITLE

SCHEDULES & NOTES - HVAC

NO.	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: AS NOTED
PROJECT NO.: 50950.06
DRAWING NO.: M401

BQ #70 & 125 Attachment



PLAN DEMOLITION NOTES

1. REMOVE & DISPOSE OF EMERGENCY EYE WASH.
   - A) REMOVE COLD WATER PIPING FROM WALL AND CEILING BACK TO THE MAIN FEED PIPE AND CAP PIPE.
2. REMOVE & DISPOSE OF COUNTERTOP SINK AND ALL TRIM.
   - A) REMOVE HOT WATER AND COLD WATER PIPING BACK INTO WALL CAVITY AND CAP IN WALL CAVITY.
   - B) REMOVE WASTE PIPING BACK TO SANITARY RISER AND PLUG FITTING IN WALL CAVITY.
3. REMOVE EXISTING PIPING SERVING EXISTING PLUMBING FIXTURES ON FIRST FLOOR. CAP OR PLUG PIPING AT EXISTING MAIN AS REQUIRED.
4. REMOVE EXISTING PIPING BACK TO POINT SHOWN AND PLUG OR CAP.
5. REMOVE EXISTING 1½" CW PIPING BACK TO EXISTING 2½" CW PIPING AND TEMPORARALY CAP.

DEMOLITION GENERAL NOTES:

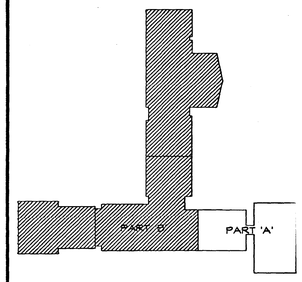
1. THE DEMOLITION NOTES ARE FOR DESCRIPTIVE GUIDE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL QUANTITIES OF EACH ITEM. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING HIS WORK WITH ALL TRADES, MECHANICAL, ELECTRICAL AND PLUMBING. SEE SPECIFICATIONS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
2. DISPOSE OF ALL REMOVED ITEMS OFF SITE OR IN ON SITE DUMPSTER PROVIDED SPECIFICALLY FOR THIS WORK.
3. SEE ARCHITECTURAL DRAWINGS FOR ANY ADDITIONAL DEMOLITION REQUIREMENTS.
4. HAZARDOUS AND/OR ASBESTOS MATERIALS TO BE REMOVED BY OWNER UNDER SEPARATE CONTRACT. BEFORE STARTING ANY WORK UNDER THE CONTRACT, VERIFY WITH THE GENERAL CONTRACTOR AND NOTIFY THE ARCHITECTS IN WRITING, THAT, IN ACCORDANCE WITH THE LATEST REVISION OF THE FEDERAL ASBESTOS NESHAP (NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS), THE FOLLOWING ITEMS HAVE BEEN COMPLETED:

   AN EPA APPROVED ASBESTOS SURVEY HAS BEEN MADE OF THE BUILDING WHERE THE WORK WILL BE PERFORMED.
   THE EPA HAS BEEN NOTIFIED THAT DEMOLITION AND/OR RENOVATION WORK WILL OCCUR IN THE BUILDING WHERE THE WORK WILL BE PERFORMED.

5. CROSSHATCHED LINES INDICATE EXISTING PIPING TO BE DEMOLISHED AND REMOVED.
6. SOLID LINES INDICATE EXISTING PIPING TO REMAIN.

GROUND FLOOR DEMOLITION PLAN
SCALE: 1/16"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	R.M. DECARLO
DRAWN BY	R.M. DECARLO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

GROUND FLOOR DEMOLITION PLAN - PLUMBING

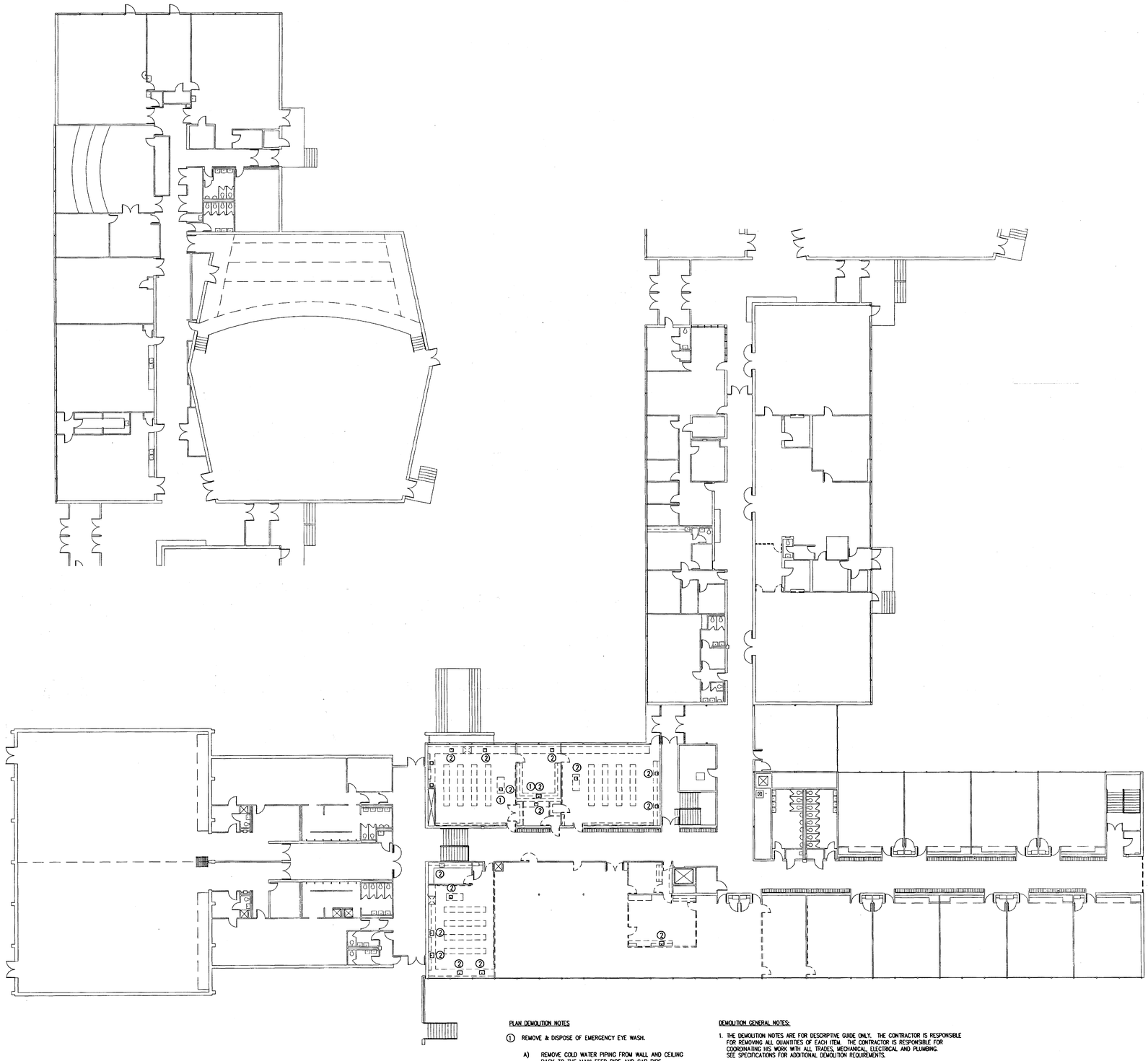
0 8' 16' 32'
SCALE: 1/16" = 1'-0"

NO	DATE	REVISION	BY

DATE	MARCH 16, 1998
SCALE	1/16" = 1'-0"
PROJECT NO.	50950.06
DRAWING NO.	P099

K:\50 projects\50950\dwg\Plumb-FP\P099 6-24-98 10:26:23 pm EST

BQ #70 & 125 Attachment



PLAN DEMOLITION NOTES

① REMOVE & DISPOSE OF EMERGENCY EYE WASH.

A) REMOVE COLD WATER PIPING FROM WALL AND CEILING BACK TO THE MAIN FEED PIPE AND CAP PIPE.

② REMOVE & DISPOSE OF COUNTERTOP SINK AND ALL TRIM.

A) REMOVE HOT WATER AND COLD WATER PIPING BACK INTO WALL CAVITY AND CAP IN WALL CAVITY.

B) REMOVE WASTE PIPING BACK TO SANITARY RISER AND PLUG FITTING IN WALL CAVITY.

DEMOLITION GENERAL NOTES:

1. THE DEMOLITION NOTES ARE FOR DESCRIPTIVE GUIDE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL QUANTITIES OF EACH ITEM. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING HIS WORK WITH ALL TRADES, MECHANICAL, ELECTRICAL AND PLUMBING. SEE SPECIFICATIONS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
2. DISPOSE OF ALL REMOVED ITEMS OFF SITE OR IN ON SITE DUMPSTER PROVIDED SPECIFICALLY FOR THIS WORK.
3. SEE ARCHITECTURAL DRAWINGS FOR ANY ADDITIONAL DEMOLITION REQUIREMENTS.
4. HAZARDOUS AND/OR ASBESTOS MATERIALS TO BE REMOVED BY OWNER UNDER SEPARATE CONTRACT. BEFORE STARTING ANY WORK UNDER THE CONTRACT, VERIFY WITH THE GENERAL CONTRACTOR AND NOTIFY THE ARCHITECTS IN WRITING, THAT, IN ACCORDANCE WITH THE LATEST REVISION OF THE FEDERAL ASBESTOS NESHAP (NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS), THE FOLLOWING ITEMS HAVE BEEN COMPLETED:

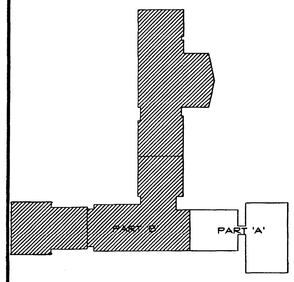
   AN EPA APPROVED ASBESTOS SURVEY HAS BEEN MADE OF THE BUILDING WHERE THE WORK WILL BE PERFORMED.
   THE EPA HAS BEEN NOTIFIED THAT DEMOLITION AND/OR RENOVATION WORK WILL OCCUR IN THE BUILDING WHERE THE WORK WILL BE PERFORMED.

5. CROSSHATCHED LINES INDICATE EXISTING PIPING TO BE DEMOLISHED AND REMOVED.
6. SOLID LINES INDICATE EXISTING PIPING TO REMAIN.

FIRST FLOOR DEMOLITION PLAN

SCALE: 1/16"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: R.M. DECARLO
DRAWN BY: R.M. DECARLO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR DEMOLITION PLAN - PLUMBING

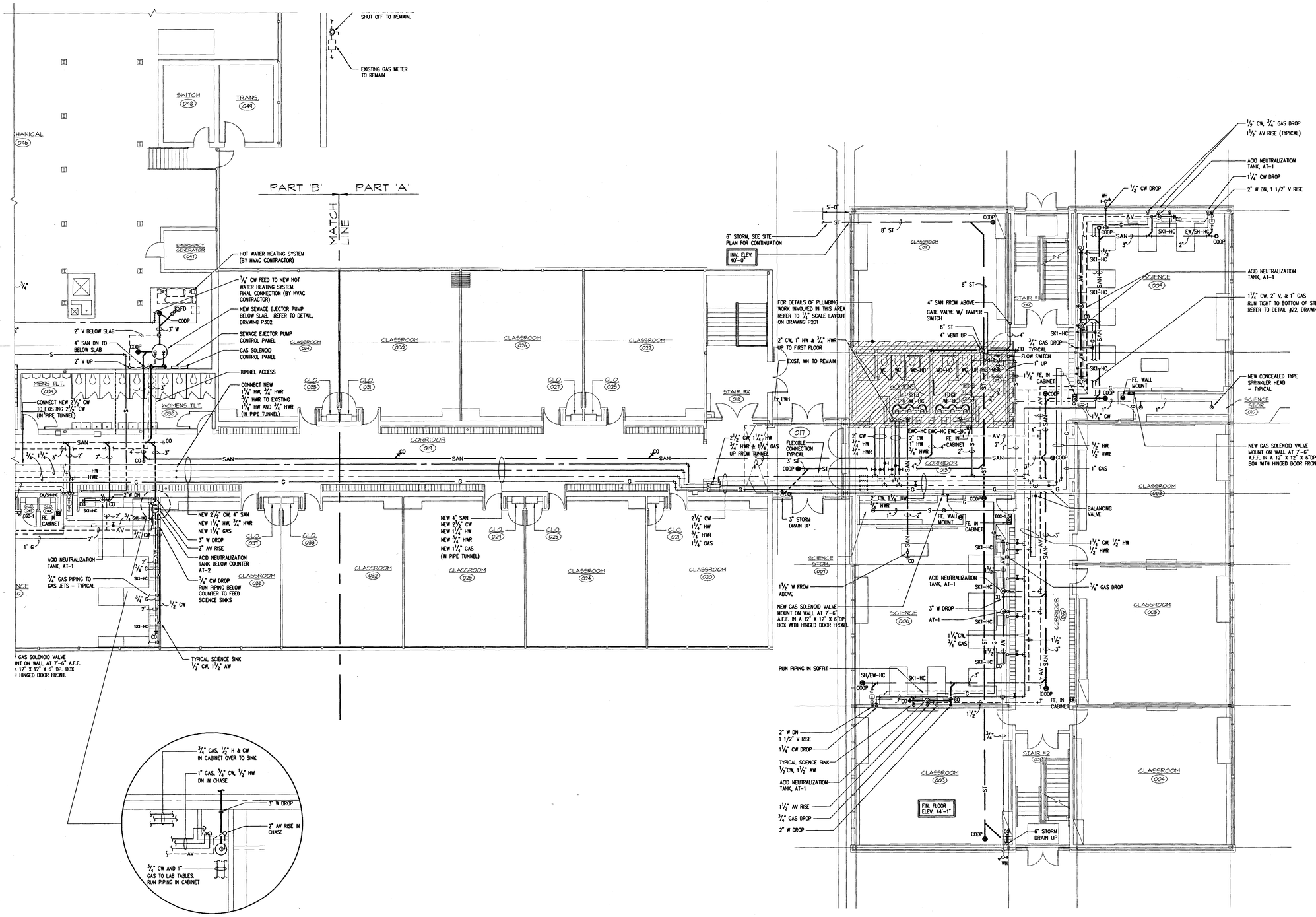
0 8' 16' 32'
SCALE: 1/16" = 1'-0"

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: 1/16" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: **P099.1**

K:\50 projects\50950\dwg\Plumb-FP\P099-1 6-29-98 10:27:13 pm EST

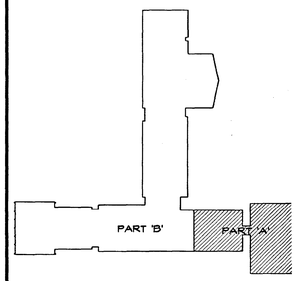
BQ #70 & 125 Attachment



GROUND FLOOR PLAN - PART "A"

SCALE: 1/8"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PLUMBING PLAN NOTES:

1. REFER TO DRAWING P401 FOR PLUMBING NOTES PERTAINING TO THIS AND ALL PLUMBING DRAWINGS.
2. REFER TO DRAWING P401 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE PLUMBING DRAWINGS.
3. REFER TO DRAWING P401 FOR ACCESSIBILITY PLUMBING FIXTURE SCHEDULE FOR THESE PLUMBING DRAWINGS.

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	R.M. DECARLO
DRAWN BY	R.M. DECARLO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN
FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

GROUND FLOOR PLAN PART "A" - PLUMBING & FIRE PROTECTION

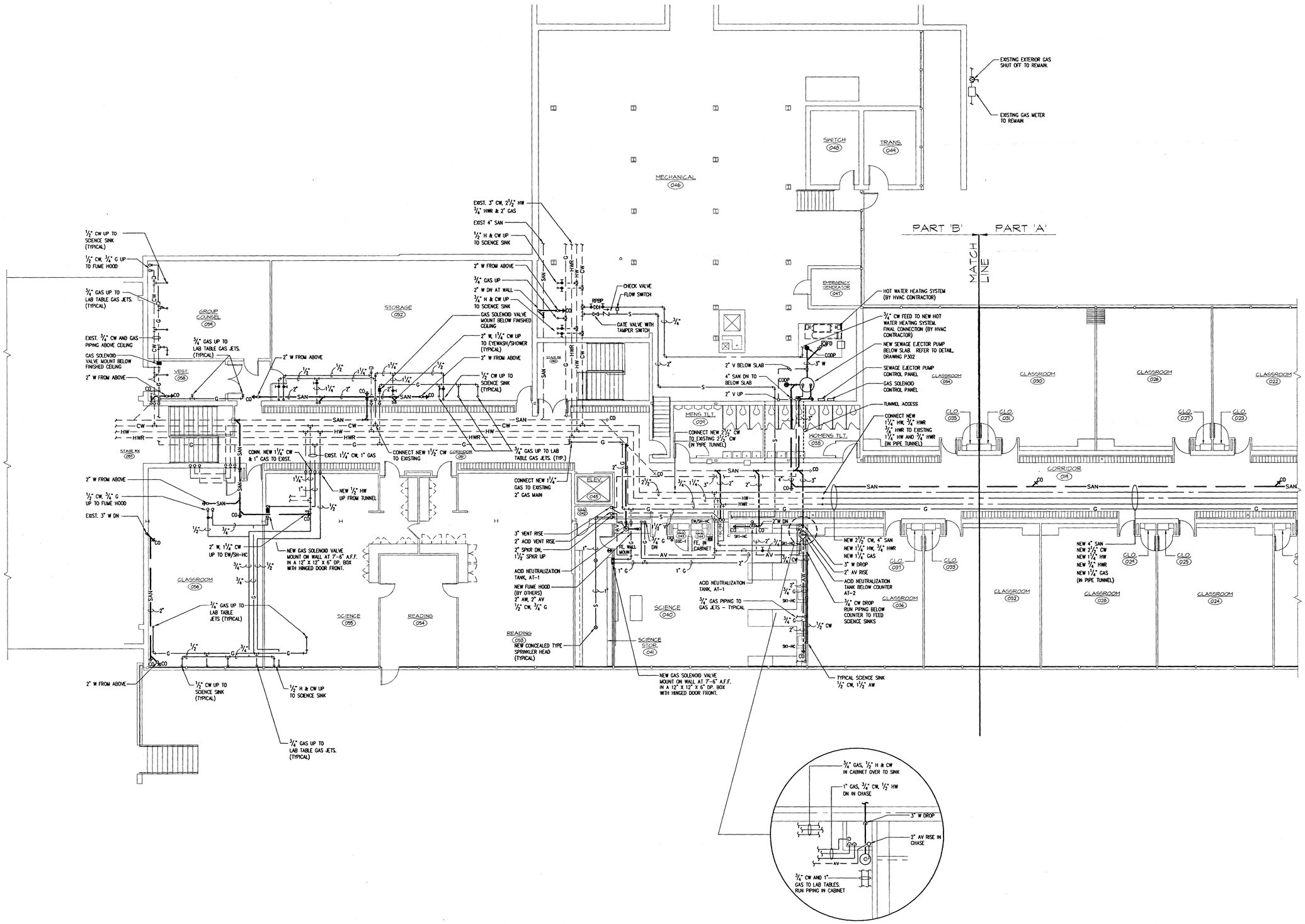
0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE	MARCH 16, 1998
SCALE	1/8" = 1'-0"
PROJECT NO.	50950.06
DRAWING NO.	PFP100.1

K:\50 projects\50950\dwg\Plumb-FP\P100-1 6-29-98 10:28:27 pm EST

BQ #70 & 125 Attachment

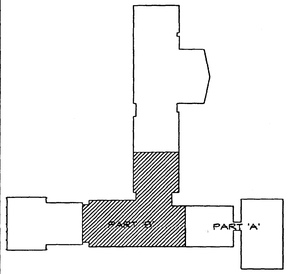


GROUND FLOOR PLAN - PART "B"

SCALE: 1/8" = 1'-0"

K:\50 projects\50950\dwg\Plumb-FP\P100-2 6-29-98 10:30:29 pm EST

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PLUMBING PLAN NOTES:

1. REFER TO DRAWING P401 FOR PLUMBING NOTES PERTAINING TO THIS AND ALL PLUMBING DRAWINGS.
2. REFER TO DRAWING P401 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE PLUMBING DRAWINGS.
3. REFER TO DRAWING P401 FOR ACCESSIBILITY PLUMBING FIXTURE SCHEDULE FOR THESE PLUMBING DRAWINGS.

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	R.M. DECARLO
DRAWN BY	R.M. DECARLO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

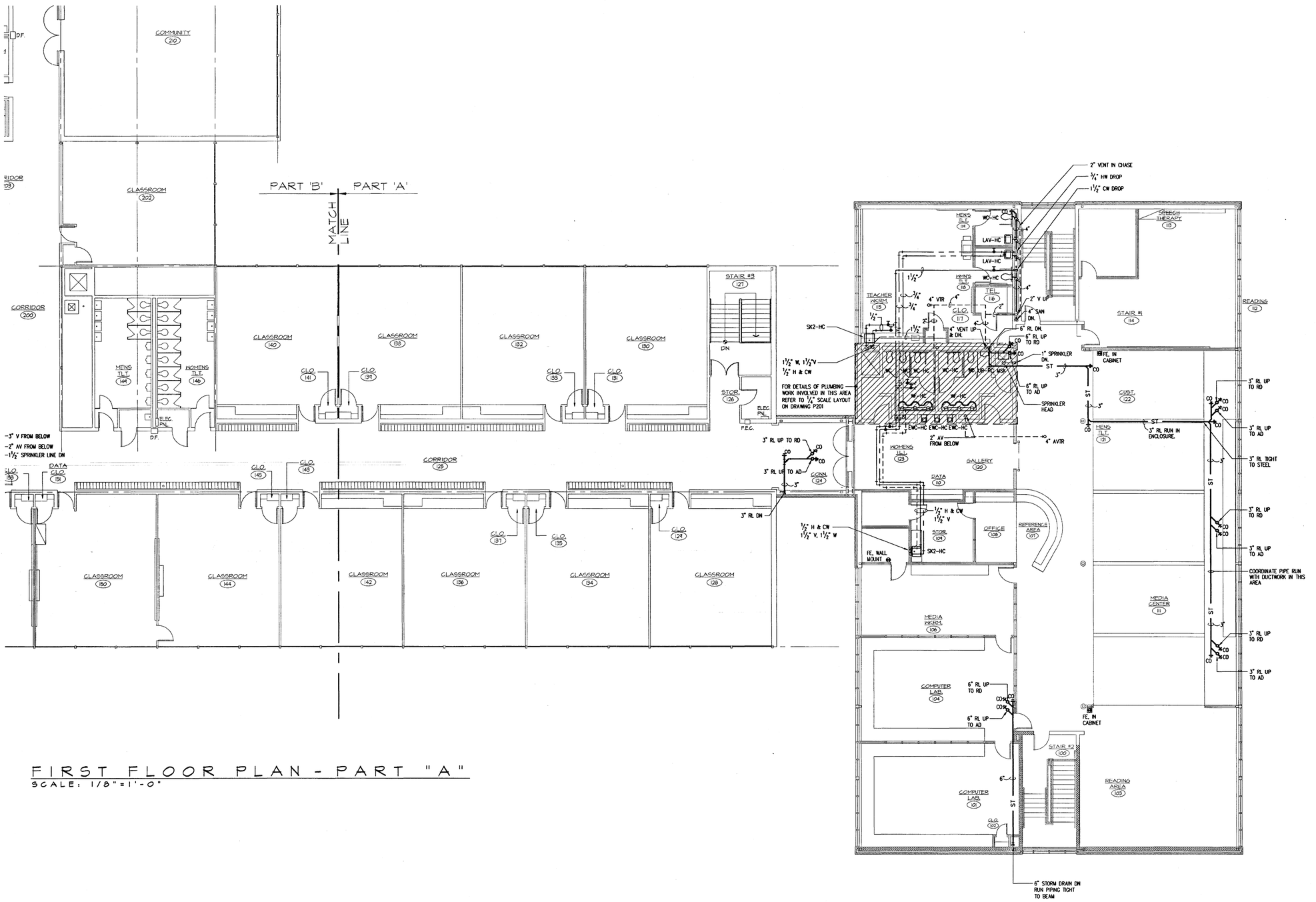
GROUND FLOOR PLAN PART "B" - PLUMBING & FIRE PROTECTION

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE	MARCH 16, 1998
SCALE	1/8" = 1'-0"
PROJECT NO.	50950.06
DRAWING NO.	PFP100.2

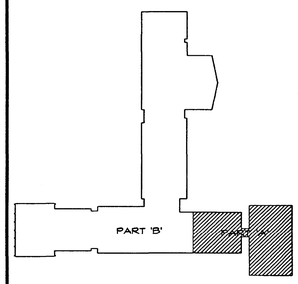
BQ #70 & 125 Attachment



FIRST FLOOR PLAN - PART "A"

SCALE: 1/8"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PLUMBING PLAN NOTES:

1. REFER TO DRAWING P401 FOR PLUMBING NOTES PERTAINING TO THIS AND ALL PLUMBING DRAWINGS.
2. REFER TO DRAWING P401 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE PLUMBING DRAWINGS.
3. REFER TO DRAWING P401 FOR ACCESSIBILITY PLUMBING FIXTURE SCHEDULE FOR THESE PLUMBING DRAWINGS.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE

ARCHITECT/ENGINEER: R.M. DECARLO

DRAWN BY: R. M. DECARLO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR PLAN PART "A" - PLUMBING & FIRE PROTECTION

0 4' 8' 16'

SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998

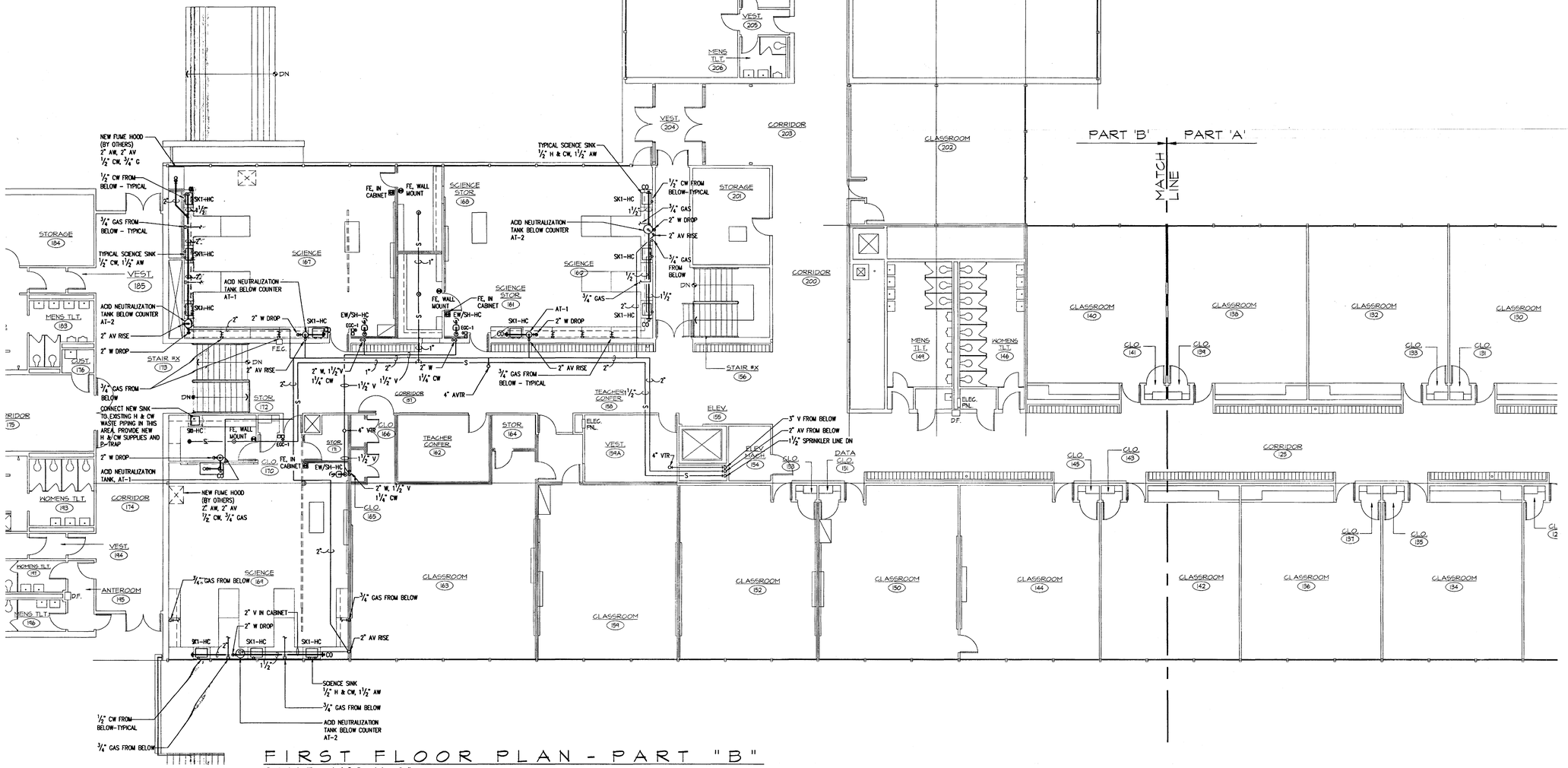
SCALE: 1/8" = 1'-0"

PROJECT NO.: 50950.06

DRAWING NO.: **PFP101.1**

K:\50 projects\50450\dwg\Plumb-FP\P101-1 6-29-98 10:38:42 pm EST

BQ #70 & 125 Attachment

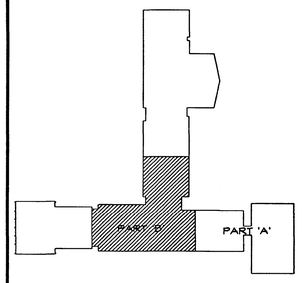


FIRST FLOOR PLAN - PART "B"

SCALE: 1/8" = 1'-0"

K:\50 projects\50950\dwg\Plumb-FPP101-2 6-29-98 10:40:51 pm EST

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PLUMBING PLAN NOTES:

1. REFER TO DRAWING P401 FOR PLUMBING NOTES PERTAINING TO THIS AND ALL PLUMBING DRAWINGS.
2. REFER TO DRAWING P401 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE PLUMBING DRAWINGS.
3. REFER TO DRAWING P401 FOR ACCESSIBILITY PLUMBING FIXTURE SCHEDULE FOR THESE PLUMBING DRAWINGS.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE

ARCHITECT/ENGINEER: R.M. DECARLO

DRAWN BY: R. M. DECARLO

FLETCHER THOMPSON

ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR PLAN PART "B" - PLUMBING & FIRE PROTECTION

0 4' 8' 16'

SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY
1	6/19/98	D.O.E. REVISIONS	N.S.

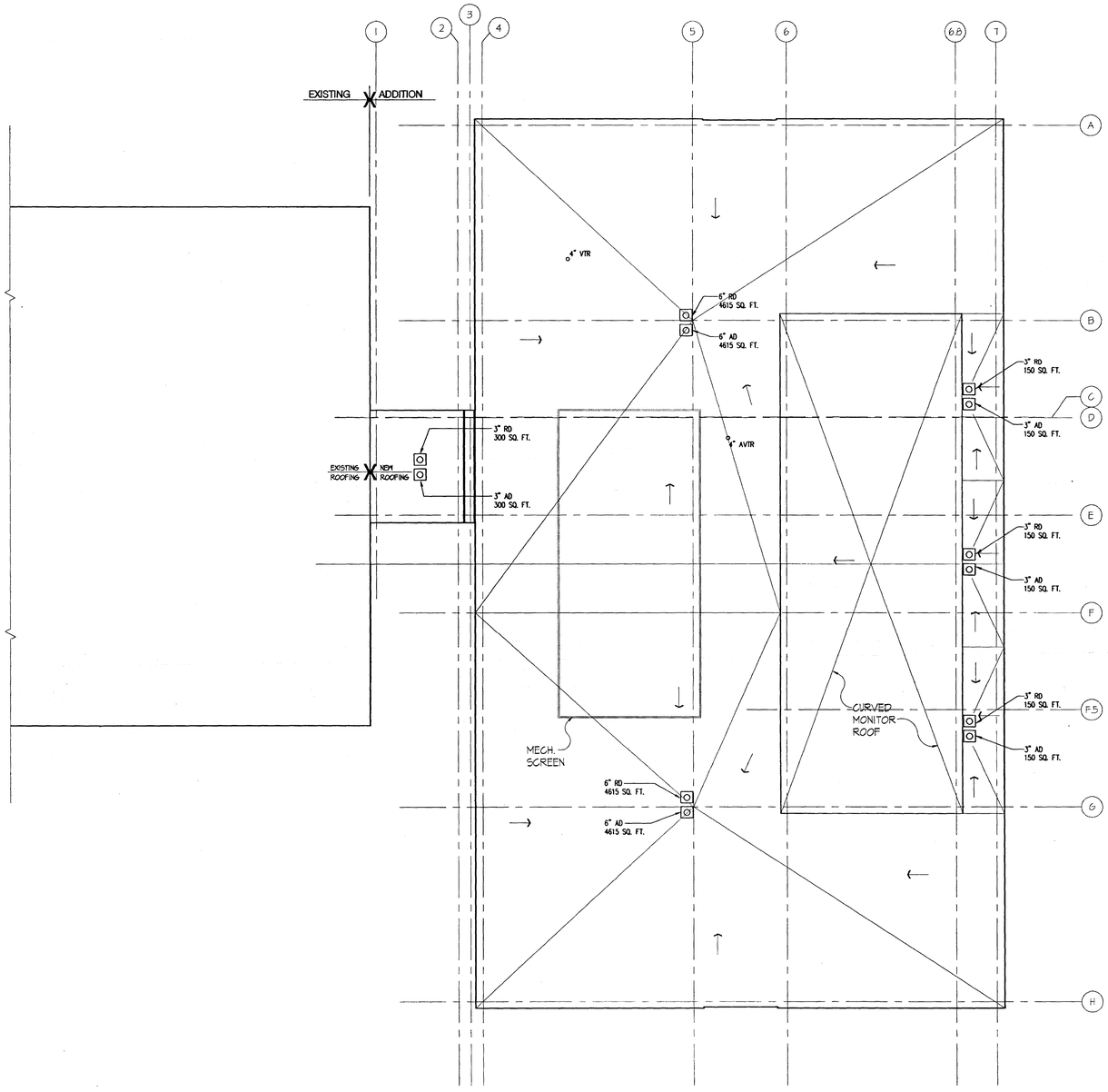
DATE: MARCH 16, 1998

SCALE: 1/8" = 1'-0"

PROJECT NO.: 50950.06

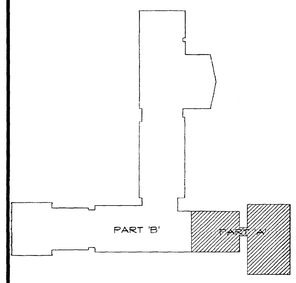
DRAWING NO.: **PFP101.2**

BQ #70 & 125 Attachment



ROOF PLAN
SCALE: 1/8"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PLUMBING PLAN NOTES:

1. REFER TO DRAWING P401 FOR PLUMBING NOTES PERTAINING TO THIS AND ALL PLUMBING DRAWINGS.
2. REFER TO DRAWING P401 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE PLUMBING DRAWINGS.
3. REFER TO DRAWING P401 FOR ACCESSIBILITY PLUMBING FIXTURE SCHEDULE FOR THESE PLUMBING DRAWINGS.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: R.M. DECARLO
DRAWN BY: R.M. DECARLO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

ROOF PLAN - PLUMBING

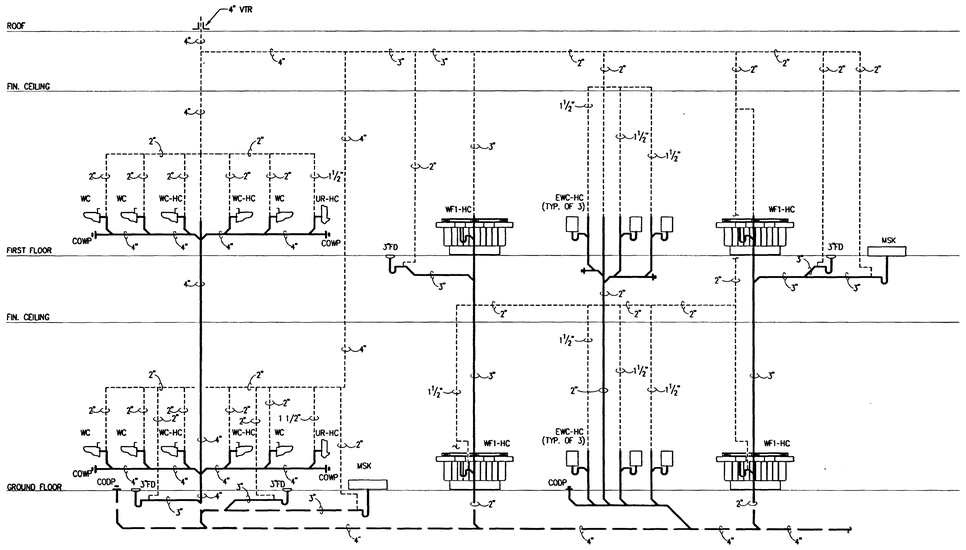
0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE: **MARCH 16, 1998**
SCALE: **1/8" = 1'-0"**
PROJECT NO.: **50950.06**
DRAWING NO.: **P110**

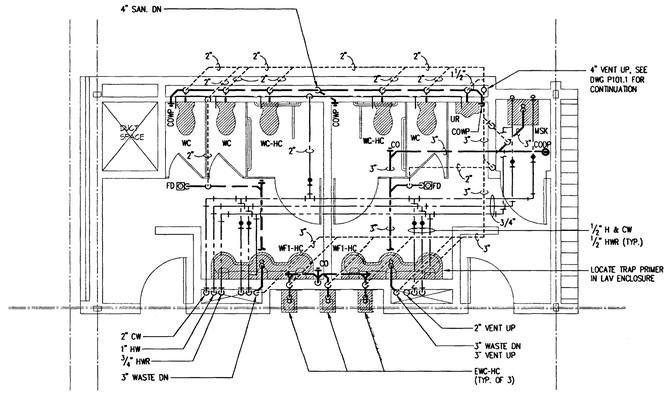
R:\50 projects\50950\dwg\Plumb-FP\P110 6-24-98 10:41:40 pm EST

BQ #70 & 125 Attachment



SANITARY RISER DIAGRAM
FIRST FLOOR AND SECOND FLOOR - PART A

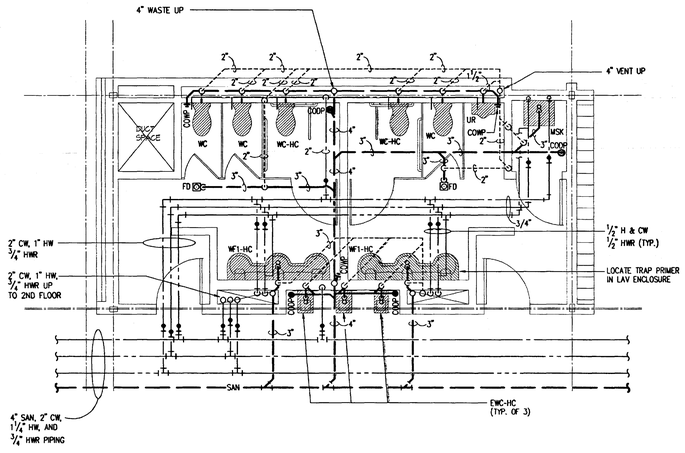
1 / P301 SCALE: NONE



1 / P201 **LARGE SCALE TOILET ROOM PLAN - SECOND FLOOR**
SCALE: 1/4" = 1'-0"

WATER RISER DIAGRAM
FIRST FLOOR AND SECOND FLOOR - PART A

2 / P301 SCALE: NONE



1 / P201 **LARGE SCALE TOILET ROOM PLAN - FIRST FLOOR**
SCALE: 1/4" = 1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PLUMBING PLAN NOTES:

1. REFER TO DRAWING P401 FOR PLUMBING NOTES PERTAINING TO THIS AND ALL PLUMBING DRAWINGS.
2. REFER TO DRAWING P401 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE PLUMBING DRAWINGS.
3. REFER TO DRAWING P401 FOR ACCESSIBILITY PLUMBING FIXTURE SCHEDULE FOR THESE PLUMBING DRAWINGS.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: R.M. DECARLO
DRAWN BY: R.M. DECARLO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

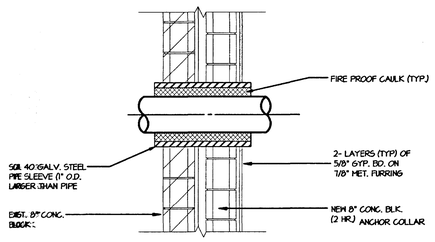
DRAWING TITLE

ENLARGED TOILET ROOM LAYOUT & RISER DIAGRAMS - PLUMBING

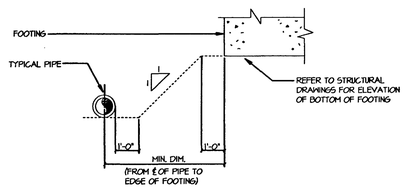
NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: AS NOTED
PROJECT NO.: 50950.06
DRAWING NO.: P201

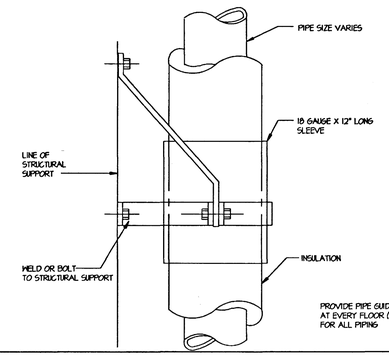
K:\50 projects\50950\dwg\Plumb-FP\P201 6-29-98 10:44:51 pm EST



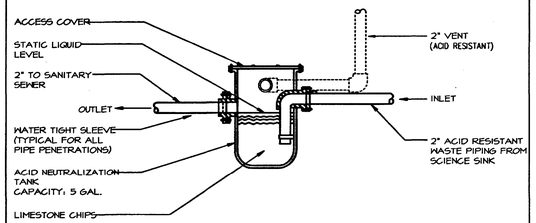
1 DETAIL OF PENETRATION W/ SLEEVE THRU FIRE WALL
NOT TO SCALE



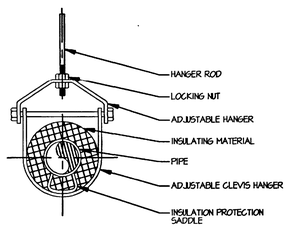
2 DETAIL OF UNDERGROUND PIPING
NOT TO SCALE



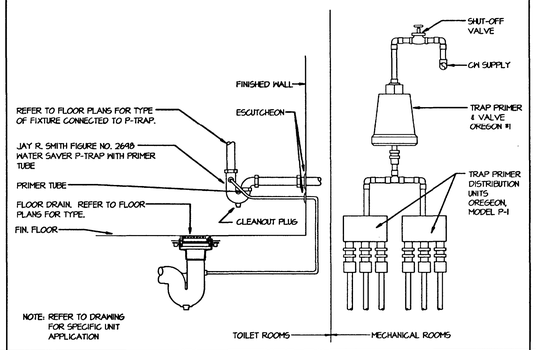
3 DETAIL OF VERTICAL PIPE GUIDE
NOT TO SCALE



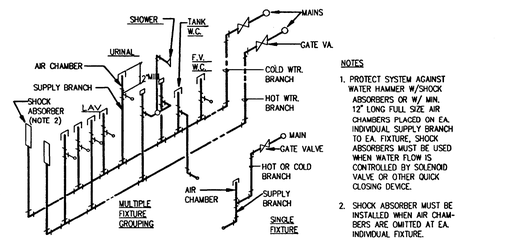
4 DETAIL OF ACID NEUTRALIZATION TANK
NOT TO SCALE



5 CLEVIS HANGAR WITH SADDLE
NOT TO SCALE

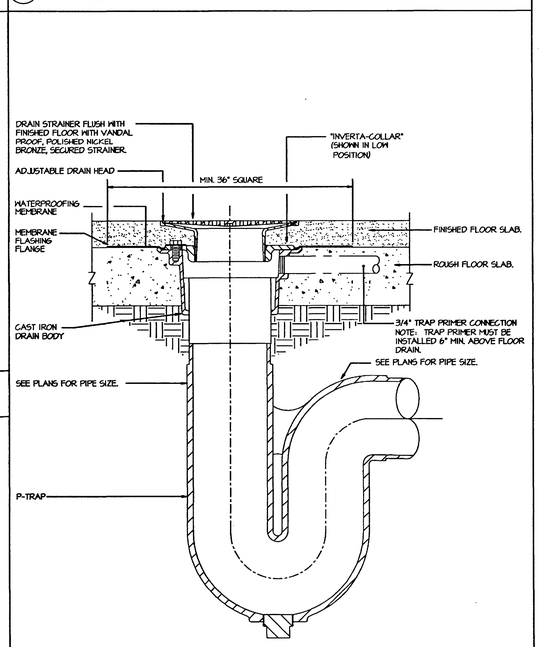


6 TRAP PRIMER DETAIL
NOT TO SCALE

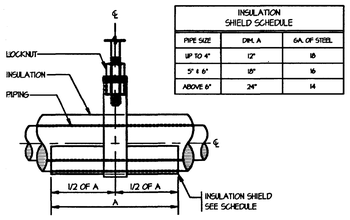


NOTES
1. PROTECT SYSTEM AGAINST WATER HAMMER W/SHOCK ABSORBERS OR W/ MIN. 12" LONG FULL SIZE AIR CHAMBERS PLACED ON E.A. INDIVIDUAL SUPPLY BRANCH TO E.A. FIXTURE, SHOCK ABSORBERS MUST BE USED WHEN WATER FLOW IS CONTROLLED BY SOLENOID VALVE OR OTHER QUICK CLOSING DEVICE.
2. SHOCK ABSORBER MUST BE INSTALLED WHEN AIR CHAMBERS ARE OMITTED AT E.A. INDIVIDUAL FIXTURE.
3. AT SHOCK ABSORBERS, ACCESS PANEL REQUIRED
4. SEE RISER DIAGRAMS AND PLUMBING DRAWINGS FOR ARRANGEMENT OF PIPING AND FIXTURES.

7 DETAIL OF AIR CHAMBER & SHOCK ABSORBER LOCATIONS
NOT TO SCALE

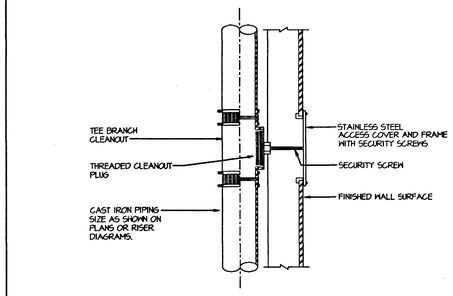


4 DETAIL OF ACID NEUTRALIZATION TANK
NOT TO SCALE

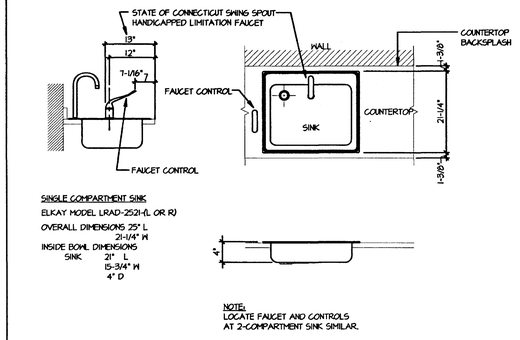


INSULATION SHIELD SCHEDULE		
PIPE SIZE	DIM. A	GA. OF STEEL
1/2" TO 4"	12"	18
5" & 6"	18"	16
ABOVE 6"	24"	14

8 PIPE HANGAR/SHIELD DETAIL
NOT TO SCALE



9 WALL CLEANOUT DETAIL
NOT TO SCALE



SINGLE COMPARTMENT SINK
ELKAY MODEL LRAD-2521-(L OR R)
OVERALL DIMENSIONS 25" L
21-1/4" H
INSIDE BOWL DIMENSIONS
SINK 21" L
15-3/4" H
4" D

NOTE:
LOCATE FAUCET AND CONTROLS AT 2-COMPARTMENT SINK SIMILAR.

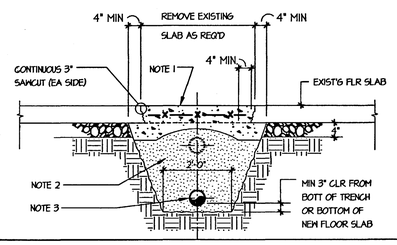
10 DETAIL OF HANDICAPPED ACCESSIBLE SINK & FAUCET LAYOUT
NOT TO SCALE

RPD SIZE	DRAIN SIZE
3/4"	1"
1"	1"
1 1/2"	2"
2"	2"

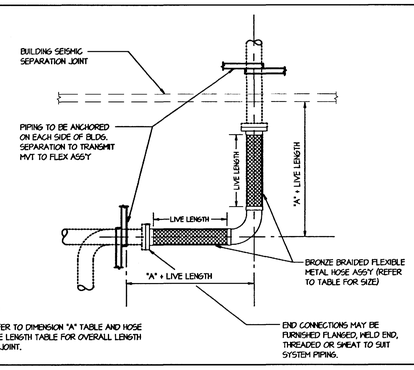
NOTE:
THIS DETAIL IS APPROPRIATE FOR PIPE SIZES 3/4" THRU 2".

11 ADJUSTABLE FLOOR DRAIN DETAIL
NOT TO SCALE

1. REPLACE CONCRETE SLAB WITH 4000 PSI CONCRETE, FINISH NEW SLAB FLUSH WITH EXISTING FLOOR SLAB. REINFORCE W/ 6x6-W2.9xW2.9 WWF.
2. COMPACTED FINE AGGREGATE FILL CONFORMING TO STATE OF CONN. DOT FORM 814 1988, SECTION M.03, ARTICLE M.03.01, PARAGRAPH 2. COMPACT TO 95% MAX DRY DENSITY IN ACCORDANCE WITH ASTM D1557. PLACE BACKFILL IN MAXIMUM 8" DEEP LAYERS.
3. NEW PIPE OR ELECTRICAL CONDUIT. REFER TO PLUMBING AND ELECTRICAL DRAWINGS FOR LOCATION, EXTENT, AND PITCH REQUIREMENTS.



12 DETAIL OF NEW UNDERSLAB PIPING AT EXISTING FLOOR SLAB
NOT TO SCALE



NOTES:
1) REFER TO DIMENSION "A" TABLE AND HOSE LIVE LENGTH TABLE FOR OVERALL LENGTH OF JOINT.

BRONZE BRAIDED METAL HOSE LIVE LENGTH											
HOSE SIZE (ID)											
1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"	8"
13-3/4"	15-1/4"	16"	17-1/2"	18-1/2"	20-3/4"	22-1/4"	24"	26-3/4"	29-1/2"	42-1/2"	48-1/4"

DIMENSION "A" TABLE				
PIPE SIZE	TYPE OF END FITTING			
	THD'D NIPPLE	HELD NIPPLE	COPPER SWEAT	150# FLANGE
1/2"	4"	4-1/4"	2-9/16"	3-1/8"
3/4"	4-3/8"	4-1/8"	3-1/2"	3"
1"	5"	4-3/4"	4-1/16"	3-9/16"
1-1/4"	5-1/8"	5-1/16"	4-3/4"	4-1/16"
1-1/2"	6-1/4"	6"	5-3/8"	5-1/8"
2"	7-1/2"	6-3/4"	6-1/2"	6"
2-1/2"	8-3/4"	7-1/2"	7-3/8"	6-7/8"
3"	9-1/2"	8-1/4"	8-5/16"	7-1/16"
4"	12"	9-3/4"	10-1/2"	9-5/16"
5"	—	12-3/4"	—	11-5/16"
6"	—	14-1/4"	—	13-1/16"
8"	—	17-1/4"	—	16-5/8"

NOTE:
TO DETERMINE APPROXIMATE OVERALL LENGTH (OAL) OF EACH LEG, ADD DIMENSION "A" TO THE LIVE LENGTH.

13 DETAIL OF SEISMIC SEPARATION JOINT PIPING DETAIL
NOT TO SCALE

14 DETAIL OF BACKFLOW PREVENTER (RPBP)
NOT TO SCALE

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PLUMBING PLAN NOTES:
1. REFER TO DRAWING P401 FOR PLUMBING NOTES PERTAINING TO THIS AND ALL PLUMBING DRAWINGS.
2. REFER TO DRAWING P401 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE PLUMBING DRAWINGS.
3. REFER TO DRAWING P401 FOR ACCESSIBILITY PLUMBING FIXTURE SCHEDULE FOR THESE PLUMBING DRAWINGS.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: R.M. DECARLO
DRAWN BY: R.M. DECARLO

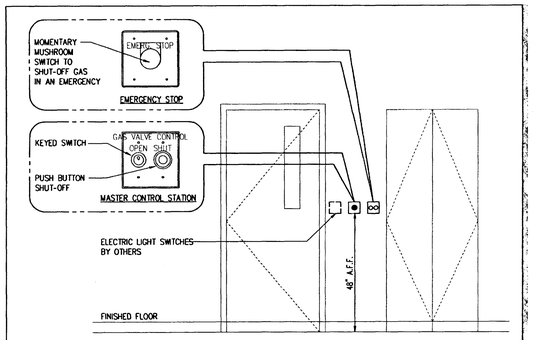
FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN
FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE
ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT
STATE PROJECT NO. 057-106EA

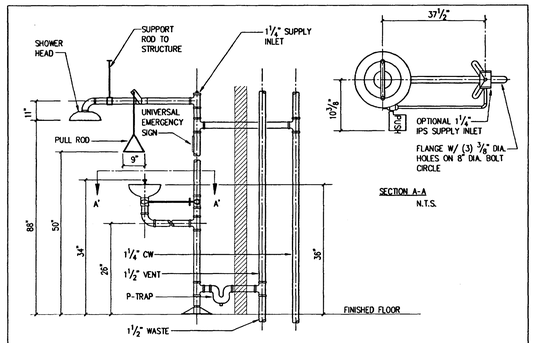
DRAWING TITLE
DETAILS - PLUMBING

NO	DATE	REVISION	BY

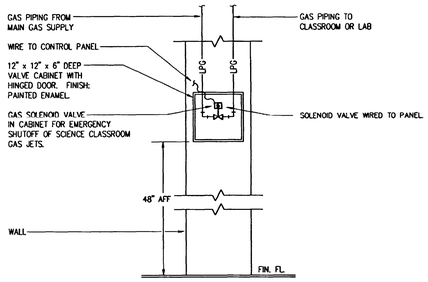
DATE: MARCH 16, 1998
SCALE: NOT TO SCALE
PROJECT NO.: 50950.06
DRAWING NO.: P301



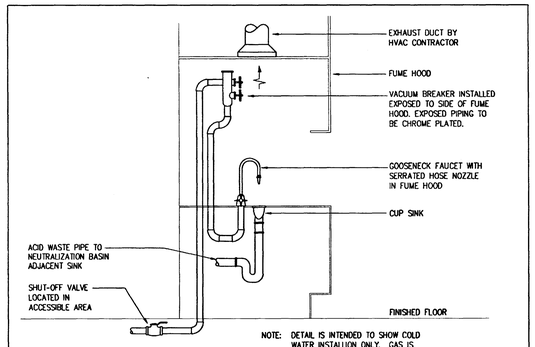
1 DETAIL OF EMERGENCY GAS CONTROL SHUTOFF
SCALE : 1/2" = 1'-0"



2 DETAIL OF EMERGENCY SHOWER/EYE WASH (FREE STANDING)
NOT TO SCALE

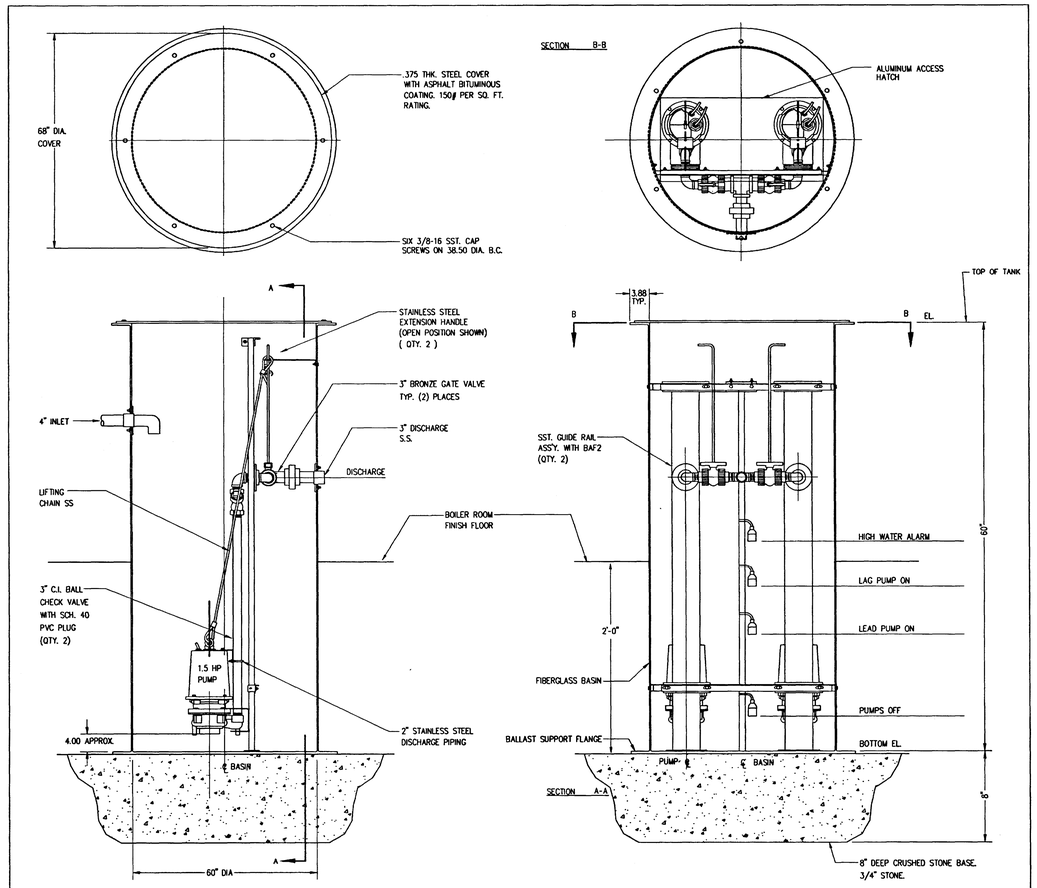


3 DETAIL OF GAS SOLENOID VALVE IN CABINET
NOT TO SCALE



NOTE: DETAIL IS INTENDED TO SHOW COLD WATER INSTALLION ONLY. GAS IS ALSO REQUIRED, REFER TO PLANS.

4 DETAIL OF TYPICAL FUME HOOD
NOT TO SCALE



5 SEWAGE EJECTOR PIPING DETAIL
NOT TO SCALE

BQ #70 & 125 Attachment

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PLUMBING PLAN NOTES:

1. REFER TO DRAWING P401 FOR PLUMBING NOTES PERTAINING TO THIS AND ALL PLUMBING DRAWINGS.
2. REFER TO DRAWING P401 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE PLUMBING DRAWINGS.
3. REFER TO DRAWING P401 FOR ACCESSIBILITY PLUMBING FIXTURE SCHEDULE FOR THESE PLUMBING DRAWINGS.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: R.M. DECARLO
DRAWN BY: R.M. DECARLO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

DETAILS - PLUMBING

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: NOT TO SCALE
PROJECT NO.: 50950.06
DRAWING NO.: P302

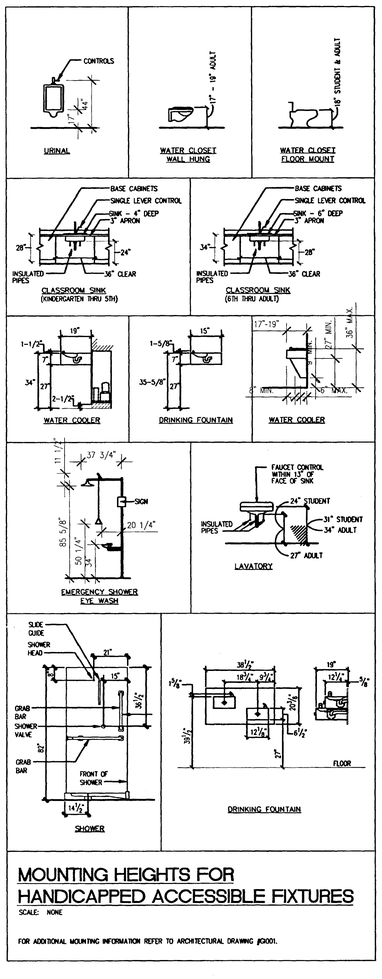
FIXTURE CONNECTION SCHEDULE

SYMBOL	DESCRIPTION	SUPPLY SIZE	TRAP SIZE	MINIMUM BRANCH SIZE				REMARKS
				WASTE	VENT	HOT	COLD	
WC	WATERCLOSET	1"	- -	4"	2"	- -	1"	
WC-HC	WATERCLOSET (HANDICAP ACCESSIBLE)	1"	- -	4"	2"	- -	1"	
UR	URINAL	3/4"	- -	2"	1-1/2"	- -	3/4"	
UR-HC	URINAL (HANDICAPPED ACCESSIBLE)	3/4"	- -	2"	1-1/2"	- -	3/4"	
EWC	ELECTRIC WATER COOLER	3/8"	1-1/2"	1-1/2"	1-1/2"	-	1/2"	
LAV	LAVATORY	3/8"	1-1/2"	1-1/2"	1-1/2"	1/2"	1/2"	
LAV-HC	LAVATORY (HANDICAP ACCESSIBLE)	3/8"	1-1/2"	1-1/2"	1-1/2"	1/2"	1/2"	
SK#	SINK (HANDICAP ACCESSIBLE)	3/8"	1-1/2"	1-1/2"	1-1/2"	1/2"	1/2"	
DF#-HC	DRINKING FOUNTAIN (HANDICAP ACCESSIBLE)	3/8"	1-1/4"	1-1/2"	1-1/2"	- -	1/2"	
MSK	MOP SINK	1/2"	3"	3"	2"	3/4"	3/4"	
SH/EW-HC	SHOWER/EYE WASH (HANDICAP)	1-1/4"	- -	2"	1-1/2"	- -	1-1/4"	

HANDICAPPED ACCESSIBLE PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	MFG.	MODEL	SIZE (OVERALL DIMENSIONS) (L=LENGTH, W=WIDTH, D=DEPTH, H=HIGH)	DESCRIPTION
WC-HC	WATER CLOSET	KOHLER	K-4268	19" HIGH x 14" W x 29 5/8" L	WHITE VITREOUS CHINA, FLOOR SET, ELONGATED, SIPHON JET BOWL. SEE FIXTURE SCHEDULE ABOVE FOR MOUNTING HEIGHTS
UR-HC	URINAL	KOHLER	K-4960-T	28"H x 18"W	SEE MOUNTING HEIGHT DIAGRAM ABOVE
LAV-HC	LAVATORY	KOHLER	K-2032	20"L x 18"W	SEE MOUNTING HEIGHT DIAGRAM ABOVE
SK1-HC	SINK (SCIENCE SINK)	ELKAY	LRAD-3321	33"L x 21 1/2"W x 6 1/2"D	TWO COMPARTMENT, STAINLESS STEEL, 18 GAUGE, TYPE 302, SELF-RIMMING.
SK2-HC	SINK (STUDENT SINK 4") (ADULT SINK 6-1/2")	ELKAY	LRAD-2521	25"L x 21 1/4"W x 4"D	SINGLE COMPARTMENT, STAINLESS STEEL, 18 GAUGE, TYPE 302, SELF-RIMMING.
WF-HC	WASH FOUNTAIN (HANDICAP)	BRADLEY	SS-3	80"L x 21"W x 38"H	3 PERSON, SOLID SURFACE MATERIAL
EWC-HC	ELECTRIC WATER COOLER (HANDICAP)	ELKAY	LISEA-8-C	18-5/16" x 23-1/4" OVERALL	UL LISTED, STAINLESS STEEL BASIN & CABINET, LEAD FREE, SINGLE LEVEL

BQ #70 & 125 Attachment



MOUNTING HEIGHTS FOR HANDICAPPED ACCESSIBLE FIXTURES

SCALE: NONE

FOR ADDITIONAL MOUNTING INFORMATION REFER TO ARCHITECTURAL DRAWING #0001.

PLUMBING GENERAL NOTES

1.) CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO STARTING WORK. REFER PROBLEMATIC CONDITIONS TO ENGINEER.

2.) MAKE SUBMITTALS OF SHOP DRAWINGS AS SPECIFIED.

3.) DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK. BASIC DESIGN CONCEPTS INDICATED ARE MINIMAL AND MUST BE FOLLOWED OR BETTERED. DO NOT SCALE DRAWINGS.

4.) WORK IS NOT SHOWN IN FINITE DETAIL BUT IS INTENDED TO INCLUDE ITEMS NECESSARY FOR COMPLETION AND PROPER OPERATION.

5.) PROVIDE REQUIRED SUPPORTS AND HANGERS FOR PIPING, FIXTURES AND EQUIPMENT, SO LOADING WILL NOT EXCEED ALLOWABLE LOADINGS OF STRUCTURE.

6.) ALL EQUIPMENT, FIXTURES, PIPING, ETC., TO BE REMOVED, SHALL NOT BE REMOVED FROM THE PREMISES WITHOUT THE OWNER'S APPROVAL.

7.) ALL PIPING TO BE REMOVED SHALL BE PROPERLY PLUGGED AND CAPPED.

8.) NO DEAD ENDS SHALL BE LEFT ON ANY PIPING UPON COMPLETION OF WORK.

9.) ALL SYSTEMS SHALL BE LEFT IN PERFECT WORKING ORDER UPON COMPLETION OF ALL NEW WORK.

10.) FIXTURES (GENERAL): "FIRST QUALITY", NEW COMPLETE WITH TRIMMINGS AND FITTINGS, INCLUDING FAUCETS, SUPPLIES, STOPS, TRAPS, TAILPIECES, WASTE PLUGS, CASINGS, HANGERS, PLATES, BRACKETS, ANCHORS, SUPPORTS, HARDWARE AND FASTENING DEVICES.

11.) WHERE FIXTURES OR TRIM ARE DAMAGED OR BROKEN DURING THE INSTALLATION, THEY SHALL BE REPLACED WITH NEW FIXTURES.

12.) TRIMMINGS AND FITTINGS: CONSTRUCTED OF FORGED, CAST, ROLLED OR EXTRUDED BRASS OR BRONZE WITH MONEL AND OTHER SUITABLE NON-CORROSIVE PARTS: DESIGNED WITH PARTS SUBJECT TO WEAR OR DETERIORATION EASILY RENEWABLE. NO DIE CASTINGS AND STAMPINGS OTHER THAN BRASS OR STAINLESS STEEL.

13.) EXAMINE ROUGH-IN WORK OF POTABLE WATER AND WASTE PIPING SYSTEMS TO VERIFY ACTUAL LOCATIONS OF PIPING CONNECTIONS PRIOR TO INSTALLING FIXTURES. CORRECT ANY INCORRECT LOCATION OF PIPING, AND OTHER UNSATISFACTORY CONDITIONS FOR INSTALLATION OF PLUMBING FIXTURES.

14.) EXERCISE CARE IN HANDLING OF FIXTURES, TRIM, PIPE, AND FITTINGS. USE TOOLS DESIGNED TO PREVENT DAMAGE TO SURFACE FINISHES.

15.) SET FIXTURES LEVEL AND UNIFORMLY, WITH CONNECTIONS AT RIGHT ANGLES TO WALL AND PROPERLY CENTERED. LAY OUT ROUGHING ACCURATELY AND IN COORDINATION WITH SPACE AND FINISH REQUIREMENTS. IF FIELD CUT-OUTS AND HOLES ARE REQUIRED, USE PROPER CUTTING AND DRILLING TOOLS TO MAINTAIN INTEGRITY OF FINISHED SURFACE. PROVIDE CUT-OUT TEMPLATES FOR COUNTERTOP INSERT ITEMS.

16.) LOCATE WASTE OUTLETS AND WATER SUPPLIES AT CONSTANT HORIZONTAL LEVELS, WITH WASTE OUTLET CENTERED ON FIXTURE DRAIN CONNECTION AND WATER SUPPLIES SPACED EQUALLY RIGHT TO LEFT.

17.) SUPPORT WALL HUNG FIXTURES RIGIDLY FROM BUILDING CONSTRUCTION, NOT FROM PIPING, BY MEANS OF CONCEALED METAL SUPPORTING MEMBERS DESIGNED TO CARRY WEIGHT OF FIXTURE UNDER CONDITIONS OF UNUSUAL LOADING, WITH NO STRESS PLACED ON WASTE CONNECTION OR ANY OTHER PART OF SYSTEM.

18.) SECURE FLOOR MOUNT SUPPORTS TO SLAB. SECURE WALL MOUNT SUPPORTS TO 1/4" THICK METAL BACKUP PLATE SECURED TO WALL CONSTRUCTION. DO NOT USE WIRE, NAILS, OR OTHER MAKESHIFT DEVICES TO SECURE SUPPORTING MEMBERS.

19.) USE VANDALPROOF DEVICES TO SECURE FIXTURES, TRIMMINGS AND FITTINGS TO DETER UNAUTHORIZED REMOVAL. PROVIDE CHROME PLATED BRASS WASHERS AND CAP NUTS FOR EXPOSED BOLT ENDS.

20.) PROVIDE ESCUTCHEONS, THREADED OR HELD IN PLACE WITH THREADED PART OR SET SCREW, ON PIPING AND FIXTURE SUPPORTS PROTRUDING FROM WALL OR FLOOR, AND ON WSBLE CONNECTIONS TO FIXTURES.

21.) MAKE CONNECTION BETWEEN INTEGRAL TRAPPED FIXTURES AND DRAINAGE PIPING GAS AND WATERTIGHT, WITH CLOSET COUPLING OR FLANGE, CLOSET RING GASKET AND NON-CORROSIVE BOLTING MATERIALS.

22.) USE SPACING DEVICES TO SUPPORT AND STABILIZE WATER PIPING.

23.) PAINT NON-CORROSIVE FERROUS METAL SURFACES OF FIXTURES, INCLUDING BRACKETS, HANGERS, AND PLATES WITH PRIME COAT OF PAINT.

24.) UPON COMPLETION OF WORK, REMOVE PROTECTIVE COVERS AND THOROUGHLY CLEAN SURFACES, TRAPS AND STRAINERS. CHECK ALL ITEMS FOR PROPER OPERATION. TIGHTEN PACKINGS AND RETAINING DEVICES.

25.) ADJUST FLUSH VALVES TO PROVIDE MINIMUM FLOW CONSISTENT WITH CLEANING REQUIREMENTS OF FIXTURES. ADJUST SUPPLIES TO PROVIDE ADEQUATE FLOW WITHOUT SPLASHING, AND WITH FLOW RATE OF HOT AND COLD WATER EQUAL IN VELOCITY, EXCEPT AS OTHERWISE REQUIRED.

26.) SECURE AND PAY COSTS OF PERMITS, CERTIFICATES, LICENSES, INSPECTIONS AND APPROVALS.

27.) OBTAIN CERTIFICATE OF APPROVAL FROM RESPONSIBLE BUILDING OFFICIAL.

28.) SUPPLY TWO COPIES OF A WARRANTY COUNTERSIGNED AND GUARANTEED BY CONTRACTOR, STATING THAT IMPERFECT SYSTEM OPERATION AND ALL DEFECTS IN LABOR AND MATERIALS OF PLUMBING WORK WILL BE REPAIRED WITHOUT COST TO OWNER FOR A PERIOD OF ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION, AND STATING THAT ALL PLUMBING EQUIPMENT HAS BEEN FULLY SERVICED AND LEFT IN PROPER OPERATING CONDITION.

29.) GUARANTEE THAT SERVICING WILL BE PROVIDED WITHOUT COST DURING GUARANTEE PERIOD.

30.) TEST PLUMBING SYSTEMS TO SATISFACTION OF BUILDING OFFICIAL. DO NOT CLOSE IN, CONCEAL, OR COVER UP ANY PLUMBING WORK UNTIL IT HAS BEEN TESTED, INSPECTED AND APPROVED.

31.) FLUSH PIPING, PRIOR TO TESTING, TO REMOVE FOREIGN MATERIALS WHICH MAY HAVE ENTERED DURING COURSE OF INSTALLATION. CLEAN FILTERS AND STRAINERS AFTER FLUSHING.

32.) ALL PIPING PENETRATIONS THRU NEW RATED WALLS SHALL BE SEALED WITH LISTED FIREPROOFING MATERIALS. SEE ARCHITECTURAL PLANS FOR EXACT LOCATIONS.

33.) PLUMBERS WORK SHALL END 5'-0" AWAY FROM EXTERIOR FOUNDATION AND SITE CONTRACTORS WORK SHALL BEGIN AT THAT POINT.

34.) PROVIDE SEISMIC BRACING AND SUPPORTS FOR ALL PIPING AND EQUIPMENT PER BOCA BUILDING CODE. SEE HVAC DRAWINGS FOR DETAILS.

35.) LOCATION OF ALL FULL-OPEN VALVES AND SHUTOFF VALVES SHALL BE INSTALLED PER BOCA PLUMBING CODE SECTION P-1504.1 AND P-1504.2 WHETHER SPECIFICALLY SHOWN ON DRAWINGS OR NOT.

36.) ITEMS NEEDING SAWCUTTING AND PATCHING SHALL BE COORDINATED BETWEEN TRADES. ONLY MAJOR PIECES ARE SHOWN ON DRAWINGS AND DO NOT INDICATE ALL LOCATIONS. PLUMBER SHALL BE RESPONSIBLE FOR CONCEALING ALL NEW WORK, UNLESS NOTED OTHERWISE.

37.) SET AND CONNECT ALL FIXTURES WITH HOT AND COLD WATER, VENT AND DRAINAGE AS REQUIRED AND PROTECT FIXTURES UNTIL FINAL ACCEPTANCE AND TEST.

38.) CLEAN ALL FLUSH VALVES AFTER TWO WEEKS OPERATION.

39.) FIXTURES SHALL BE COMPLETE WITH CHROME PLATING ON EXPOSED IRON OR PIPE, TRAPS, ANCHOR BOLTS, HANGERS, STRAINERS, STOP VALVES AT EVERY FIXTURE AND OTHER INCIDENTAL ITEMS FURNISHED AS STANDARD.

40.) ALL FIXTURES SHALL BE CAULKED TIGHT TO WALLS AND FINISHED SURFACES SO THAT NO VOIDS SHALL REMAIN.

41.) ALL FLOOR DRAINS SHALL RECEIVE WATER FROM TRAP PRIMER VALVES - TYPICAL. SEE DETAIL J ON DRAWING P.501.

42.) ALL PLUMBING FIXTURE'S BACK PLATES AND ESCUTCHEONS RECTANGULAR IN NATURE SHALL BE INSTALLED FLUSH WITH THE WALL SURFACE. THE VERTICAL EDGE SHALL BE INSTALLED IN A VERTICAL POSITION PERPENDICULAR TO A HORIZONTAL PLANE AND THE HORIZONTAL EDGE SHALL BE INSTALLED IN A HORIZONTAL (LEVEL) POSITION.

43.) TRADE CONTRACTOR'S NOTE:
ALL EQUIPMENT SHOWN ON THESE DRAWINGS AND IN PROJECT SPECIFICATION IS BASED ON SPECIFIED MANUFACTURERS. ANY MODIFICATION AND/OR SUBSTITUTION OF SAID EQUIPMENT IS SUBJECT TO COMPLETE COORDINATION OF ALL CONNECTIONS, SERVICES, OPENING SIZES, AND ANY OTHER CONSTRUCTION RELATED REQUIREMENTS BY THE TRADE CONTRACTOR PROVIDING THE EQUIPMENT.

PIPE AND FITTING SCHEDULE

DESCRIPTION	SIZE	TEST P.S.I.	PIPE		FITTING		REMARKS
			TYPE	SCHED.	TYPE	RATING	
WASTE & VENT PIPING (ABOVE GRADE)	UNDER 2"	CODE	S1 GALV.	40	S1 GALV.	40	
WASTE, & VENT PIPING (ABOVE GRADE)	OVER 2"	CODE	C. I.	SV	C. I.	SV	NO-HUB WITH 4 BAND "HUSKEY" OR EQUAL "CLAMP ALL" CLAMPS
WASTE, & VENT PIPING (BELOW GRADE)	ALL	CODE	C. I.	SV	C. I.	SV	HUB AND SPIGOT
STORM DRAIN (ABOVE GRADE)	ALL	CODE	C. I.	SV	C. I.	SV	NO-HUB WITH 4 BAND "HUSKEY" OR EQUAL "CLAMP ALL" CLAMPS
STORM DRAIN (BELOW GRADE)	ALL	CODE	C. I.	SV	C. I.	SV	HUB AND SPIGOT
DOMESTIC COLD WATER	ALL	200	CUL	STD.	CUS	STD.	
DOMESTIC HOT WATER	ALL	200	CUL	STD.	CUS	STD.	
CONDENSATE DRAIN	ALL	200	DWV	STD.	CUS	STD.	COPPER
GAS PIPING (PROPANE)	UP TO 2"	50	S2 BLK	40	M.I.	40	
FUEL OIL PIPING	ALL	200	CUL	STD.	CUS	STD.	

INSULATION SCHEDULE

DESCRIPTION	TYPE	PIPE SIZE	THICKNESS	REMARKS
DOMESTIC COLD WATER	P-10		1"	
DOMESTIC HOT WATER	P-10	3/4"-1"	1"	
		1-1/4"-2"	1"	
		2-1/2"-4"	1-1/2"	
DOMESTIC HOT WATER CIRC	P-10		1"	
STORM HORIZ. RUNS ABOVE GRADE	P-10		1/2"	ALSO INSULATE FIRST TWO (2) FEET OF VERTICAL RISER
ROOF DRAIN BODY	P-45		1"	INCLUDE VERTICAL SECTION UP TO ROOF DRAIN
LAVATORY HANDICAPPED ACCESSIBLE INSULATION FOR UNDER HANDICAPPED LAV.	P-10A		3/16"	INSULATE TRAP, CW & HW PIPING UNDER HANDICAPPED ACCESSIBLE LAVATORY/SINKS
CONDENSATE DRAIN	P-10		1/2"	(INSIDE BUILDING ABOVE CEILING ONLY)

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	S OR W	NEW SOIL OR WASTE ABOVE FLOOR OR GRADE
S	S OR W	NEW SOIL OR WASTE BELOW FLOOR OR GRADE
S	S	EXIST. SANITARY LINE ABOVE FLOOR OR GRADE
S	S	EXIST. SANITARY LINE BELOW FLOOR OR GRADE
ST	ST	NEW STORM DRAIN ABOVE FLOOR OR GRADE
ST	ST	NEW STORM DRAIN BELOW FLOOR OR GRADE
ST	ST	EXIST. STORM DRAIN PIPING
V	V	NEW VENT PIPING
CW	CW	NEW COLD WATER PIPING
HW	HW	NEW HOT WATER PIPING
HWR	HWR	NEW HOT WATER RECIRCULATION PIPING
V	V	EXIST. VENT PIPING
CW	CW	EXIST. COLD WATER PIPING
HW	HW	EXIST. HOT WATER PIPING
HWR	HWR	EXIST. HOT WATER RECIRCULATION PIPING
G	G	NEW GAS SERVICE ABOVE GRADE
G	G	EXIST. GAS SERVICE
	CO/COWP	CLEANOUT/CLEANOUT WALL PLATE
	CODP	CLEANOUT DECKPLATE
		TRAP
	BV	BALL VALVE
	CV	CHECK VALVE
	GV	GATE VALVE
	RPBP	REDUCED PRESS. BACKFLOW PREVENTER
		GAS COCK
	WH	WALL HYDRANT W/ VACUUM BREAKER(NON FREEZE)
		UNION
		CAP
	P.O.C.	POINT OF CONNECTION
	INV. EL.	INVERT ELEVATION
	V.T.R.	VENT THRU ROOF
	EXIST.	EXISTING
	FD	FLOOR DRAIN
	RD	ROOF DRAIN
	L-WC, EWC-HC, WC, WC-HC	EXISTING WATER CLOSET (HANDICAPPED ACCESSIBLE) WATER CLOSET (HANDICAPPED ACCESSIBLE)
	EUR, EUR-HC, UR, UR-HC	EXISTING URINAL (HANDICAPPED ACCESSIBLE) URINAL (HANDICAPPED ACCESSIBLE)
	ELAV, ELAV-HC, LAV, LAV-HC	EXISTING LAVATORY (HANDICAPPED ACCESSIBLE) LAVATORY (HANDICAPPED ACCESSIBLE)
	ESK, SK-#	EXISTING SINK, SINK
	EMSR, MSR	EXISTING MOLDED STONE RECEPTOR MOLDED STONE RECEPTOR
	EDF, DF, DF-HC	EXISTING DRINKING FOUNTAIN (HANDICAPPED ACCESSIBLE) DRINKING FOUNTAIN (HANDICAPPED ACCESSIBLE)
	ESH, SH, SH-HC	EXISTING SHOWER, SHOWER (HANDICAPPED ACCESSIBLE)
	EXEWC, EXEWC-HC EWC, EWC-HC	EXIST. ELECT. WATER COOLER (HANDICAPPED ACCESSIBLE ELECTRIC WATER COOLER (HANDICAPPED ACCESSIBLE)
	ES/EEW	EMERGENCY SHOWER/EMERGENCY EYEWASH
	EWF, WF	EXISTING WASH FOUNTAIN, WASH FOUNTAIN

FIRE PROTECTION LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
S	SPKR.	SPRINKLER PIPING
		SEMI-RECESSED PENDENT SPRINKLER HEAD
		CONCEALED SPRINKLER HEAD
		UPRIGHT SPRINKLER HEAD
	O S & Y W/ TAMP SW	OUTSIDE SCREW & YOKE VALVE WITH TAMPER SWITCH
	F.E. WITH CAB.	FIRE EXTINGUISHER WITH CAB
	F.E.	FIRE EXTINGUISHER - WALL MOUNT
	F.S.	FLOW SWITCH
	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
		PIPING DOWN
		PIPING DOWN
		SEISMIC SEPARATION ASSEMBLY

VALVE SCHEDULE

DESCRIPTION	SIZE	TYPE					REMARKS
		GATE	GLOBE	CHECK	BALL	PLUG	
DOMESTIC COLD WATER	TO 3"	GVT	GLVT	CVT	BVB		
DOMESTIC HOT WATER	TO 3"	GVT	GLVT	CVT	BVB		
DOMESTIC COLD WATER	ABV. 3"	GVF		CVF	BVF		
DOMESTIC HOT WATER	ABV. 3"	GVF		CVF	BVF		
BACKFLOW PREVENTER (RPBP)	ALL	GVT					
GAS	ALL	GVF				PVG	

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PLUMBING PLAN NOTES:

1. REFER TO DRAWING P401 FOR PLUMBING NOTES PERTAINING TO THIS AND ALL PLUMBING DRAWINGS.
2. REFER TO DRAWING P401 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE PLUMBING DRAWINGS.
3. REFER TO DRAWING P401 FOR ACCESSIBILITY PLUMBING FIXTURE SCHEDULE FOR THESE PLUMBING DRAWINGS.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: R.M. DECARLO
DRAWN BY: R.M. DECARLO

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN
FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

LEGEND, NOTES AND SCHEDULES - PLUMBING

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: NOT TO SCALE
PROJECT NO.: 50950.06
DRAWING NO.: P401

K:\50 projects\50950\dwg\Plumb-FP\P401 6-29-98 10:54:16 pm EST

BQ #70 & 125 Attachment

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

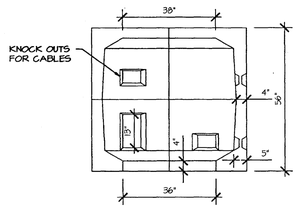
ELECTRICAL NOTE LEGEND:

1. EXISTING UTILITY COMPANY POLE WITH ONE (1) RISER CONDUIT FOR PRIMARY SERVICE AND ONE (1) POLE RISER CONDUIT STUBBED 18" A.F.G..
2. TWO (2) 4" PVC CONDUITS UNDERGROUND, ONE (1) FOR NEW PRIMARY SERVICE CABLE AND ONE (1) SPARE CONDUIT. PROVIDE CONCRETE ENCASEMENT FOR CONDUITS BELOW PARKING AND ROAD-WAYS.
3. NEW ELECTRICAL HAND HOLE, SEE DETAIL.
4. NEW PAD MOUNTED TRANSFORMER AND PAD, SEE DETAIL.
5. SIX SETS OF UNDERGROUND SECONDARY FEEDERS, EACH 4 #500 MCM-THHN - 4" GALVANIZED STEEL CONDUITS TO NEW MAIN SWITCH AND SECONDARY DISTRIBUTION SWITCHBOARD. SEAL AND WATERPROOF CONDUITS AT BOTH THE BUILDING ENTRANCE AND TRANSFORMER LOCATION.
6. UPON COMPLETION OF THE NEW ELECTRICAL SERVICE THE EXISTING TRANSFORMER SHALL BE REMOVED AS WELL AS THE EXISTING PRIMARY CABLES. CAP CONDUIT AT BOTH ENDS AND ABANDON IN PLACE.

ELECTRICAL SITE PLAN
SCALE: 1" = 40'-0"



PLAN VIEW

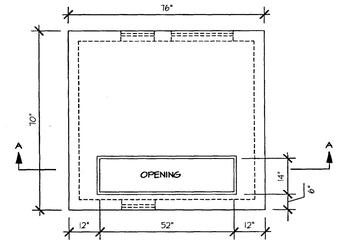


SECTION A-A

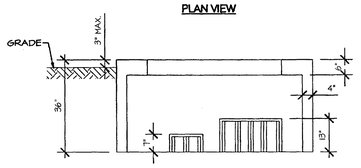
HANDHOLE - HEXAGONAL - PRECAST CONCRETE 60" WIDE X 56" HIGH OUTSIDE (N.U. SPC H-019)

NOT TO SCALE

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. ¾ INCH - COIL LOOP INSERTS - 6 INCH - (DAYTON B-16) WITH INSERT LOCATOR PLUG (DATTON T-21). TWO EACH IN TOP AND BOTTOM SECTIONS FOR LIFTING WITH SWIVEL PLATE. INSERTS ARE TO BE SECURED IN PLACE WITH REBAR.



PLAN VIEW



SECTION A-A

1. CONCRETE - 4000 P.S.I. 28 DAYS
2. COMPLY WITH PROVISIONS OF NORTHEAST UTILITIES SPECIFICATIONS #SPC P-015 FOR 500-2500 KVA TRANSFORMER PAD.

PRECAST CONCRETE TRANSFORMER PAD 3 PHASE, 500 - 2500 KVA (N.U.)

NOT TO SCALE

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	W.D. BOLAND
DRAWN BY	F. AGOSTINI

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

SITE ELECTRICAL PLAN

0 40' 80' 120'

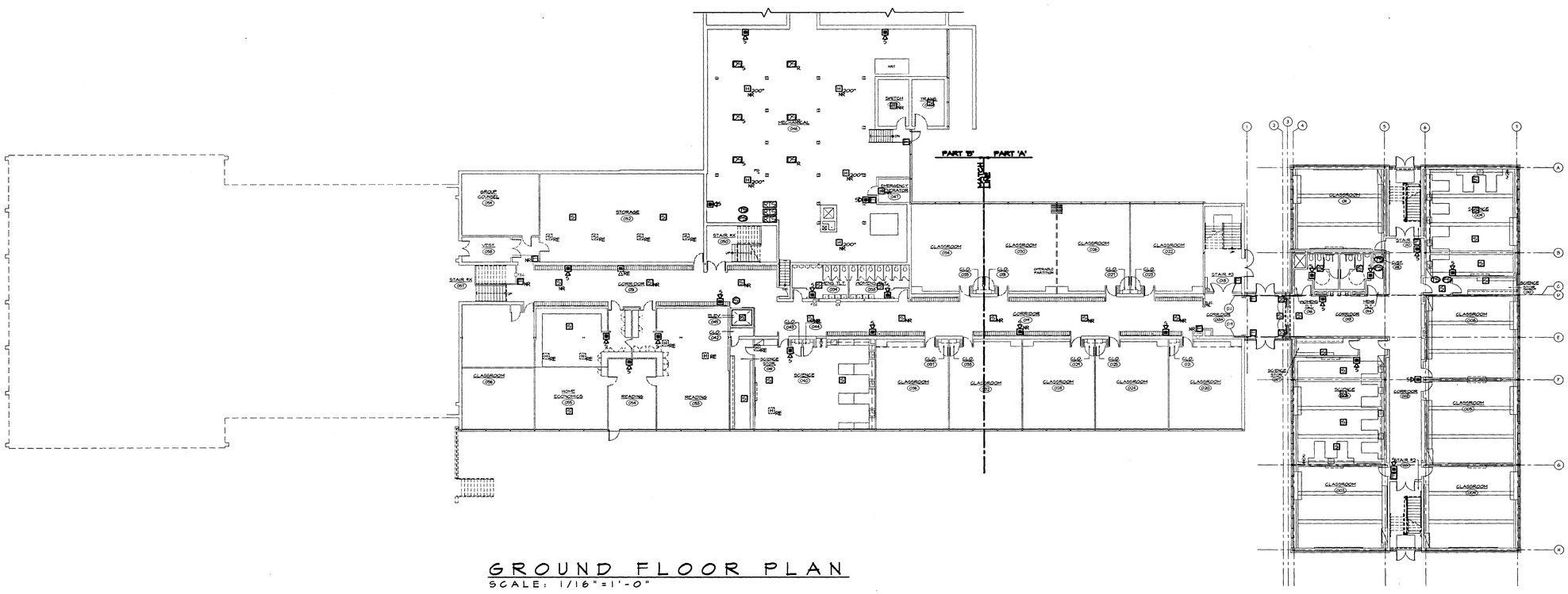
NO	DATE	REVISION	BY

DATE	MARCH 16, 1998
SCALE	AS NOTED
PROJECT NO.	50950.06
DRAWING NO.	E001

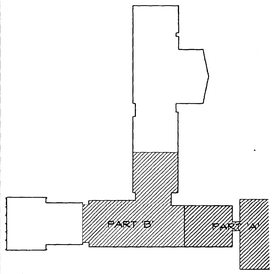
K:\50 projects\50950\dwg\Elec\E001 6-24-98 10:43:52 am EST

BQ #70 & 125 Attachment

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



GROUND FLOOR PLAN
SCALE: 1/16"=1'-0"



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: W.D. BOLAND
DRAWN BY: F. AGOSTINI

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

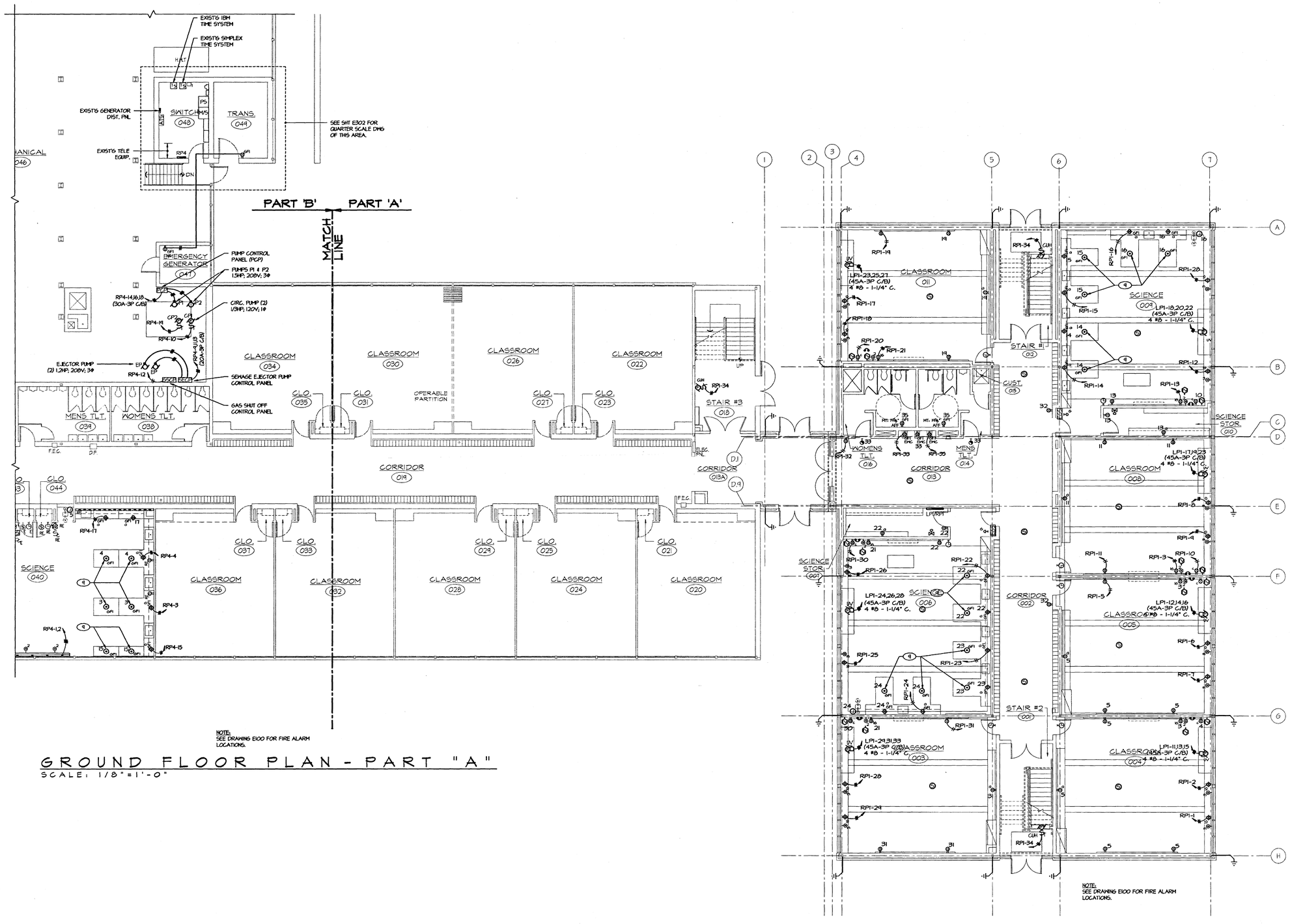
GROUND FLOOR FIRE ALARM PLAN

0 8' 16' 32'
SCALE: 1/16" = 1'-0"

NO	DATE	REVISION	BY
1	6/19/98	D.O.E. REVISIONS	F.A.

DATE: MARCH 16, 1998
SCALE: 1/16" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: E100

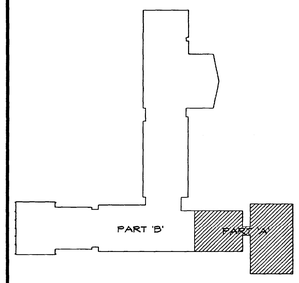
BQ #70 & 125 Attachment



GROUND FLOOR PLAN - PART "A"

SCALE: 1/8" = 1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE

ARCHITECT/ENGINEER: W.D. BOLAND

DRAWN BY: F. AGOSTINI

FLETCHER THOMPSON

ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

GROUND FLOOR PART "A" ELECTRICAL PLAN

0 4' 8' 16'

SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998

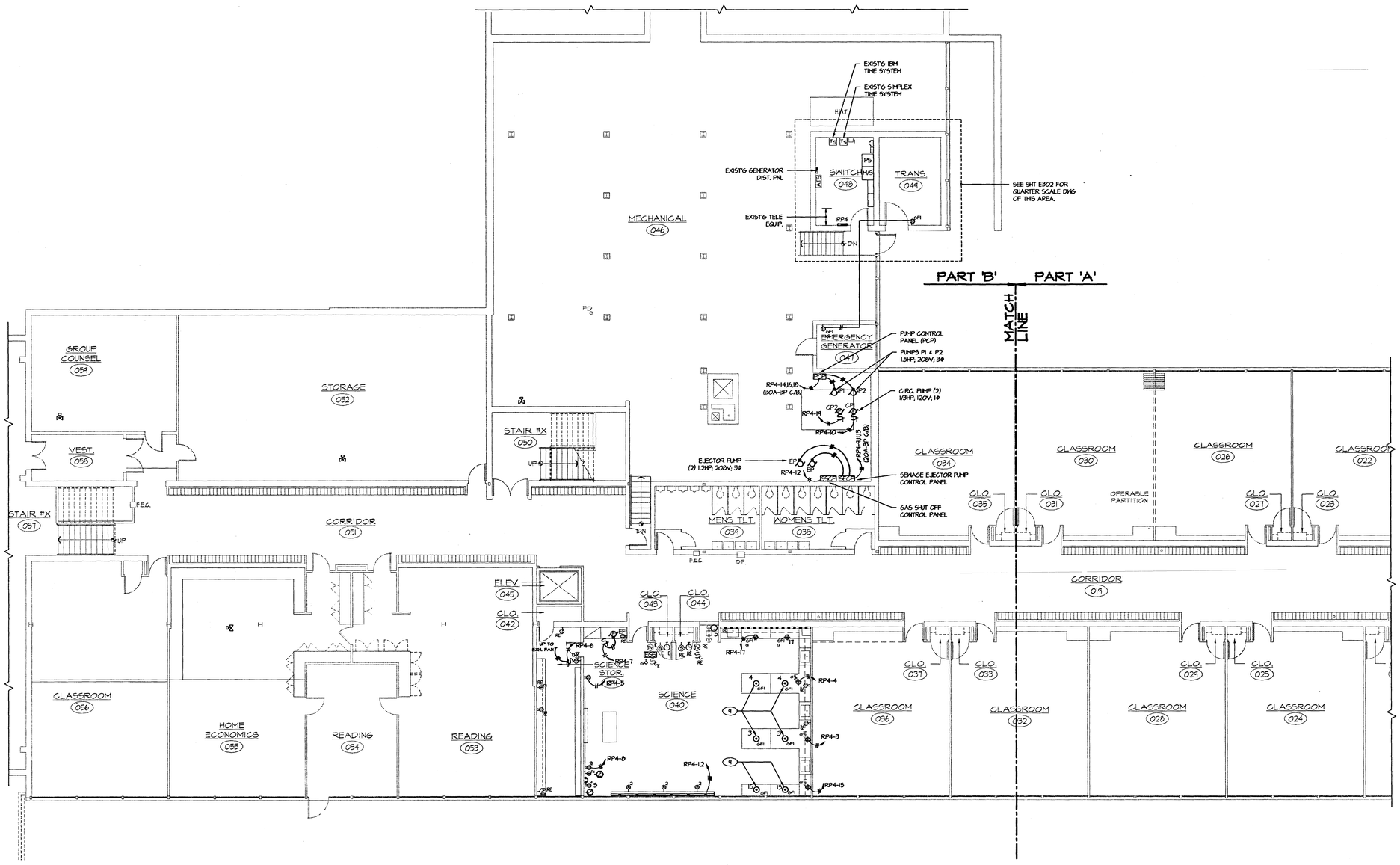
SCALE: 1/8" = 1'-0"

PROJECT NO.: 50950.06

DRAWING NO.: **E100.1**

R:\50 projects\50950\dng\Elec\E100-1 6-24-98 10:40:39 am EST

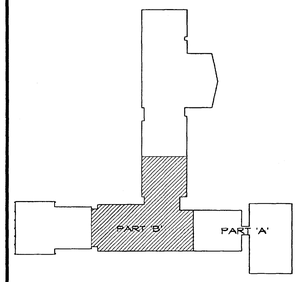
BQ #70 & 125 Attachment



GROUND FLOOR PLAN - PART "B"

SCALE: 1/8" = 1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	W.D. BOLAND
DRAWN BY	F. ACOSTINI

FLETCHER THOMPSON

ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

GROUND FLOOR PART "B" ELECTRICAL PLAN

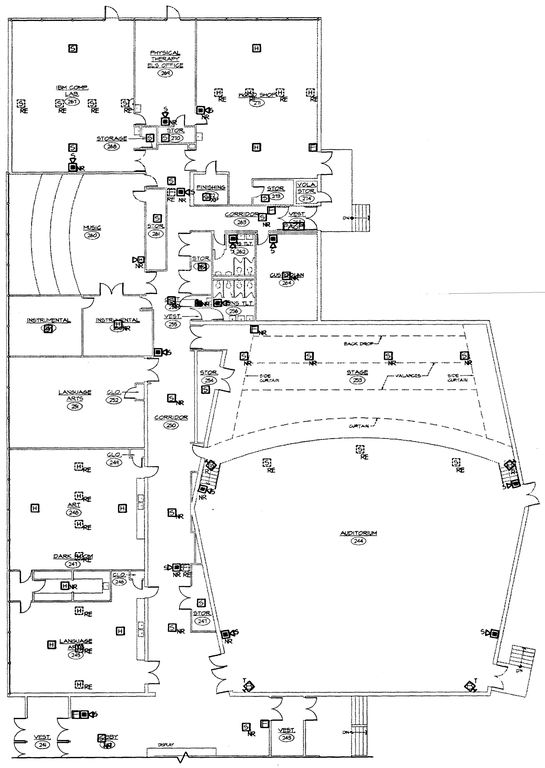
0 4' 8' 16'

SCALE: 1/8" = 1'-0"

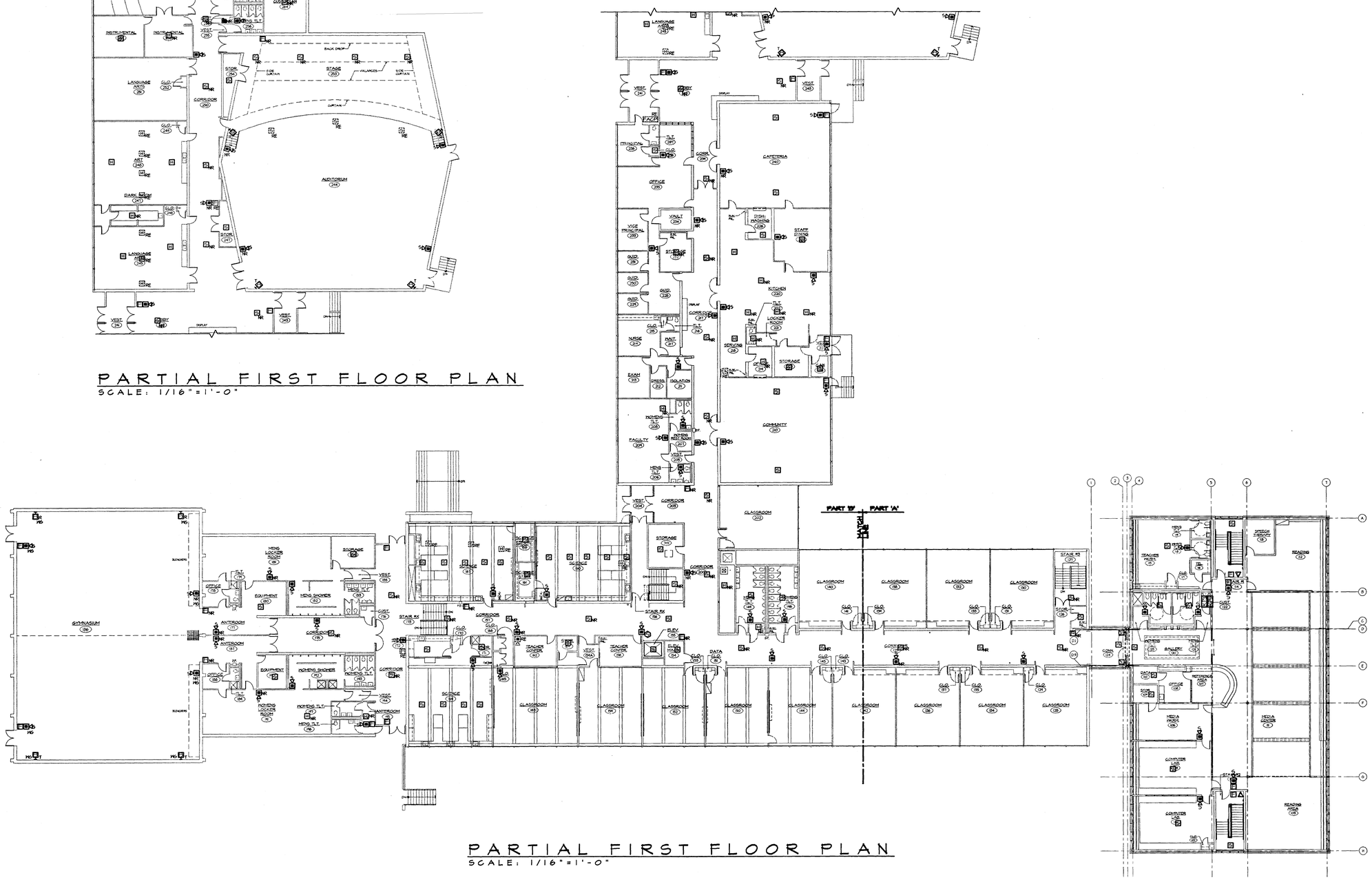
NO	DATE	REVISION	BY

DATE	MARCH 16, 1998
SCALE	1/8" = 1'-0"
PROJECT NO.	50950.06
DRAWING NO.	E100.2

BQ #70 & 125 Attachment

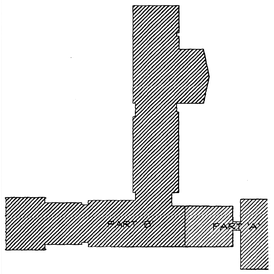


PARTIAL FIRST FLOOR PLAN
SCALE: 1/16"=1'-0"



PARTIAL FIRST FLOOR PLAN
SCALE: 1/16"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	W.D. BOLAND
DRAWN BY	F. AGOSTINI

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR FIRE ALARM PLAN

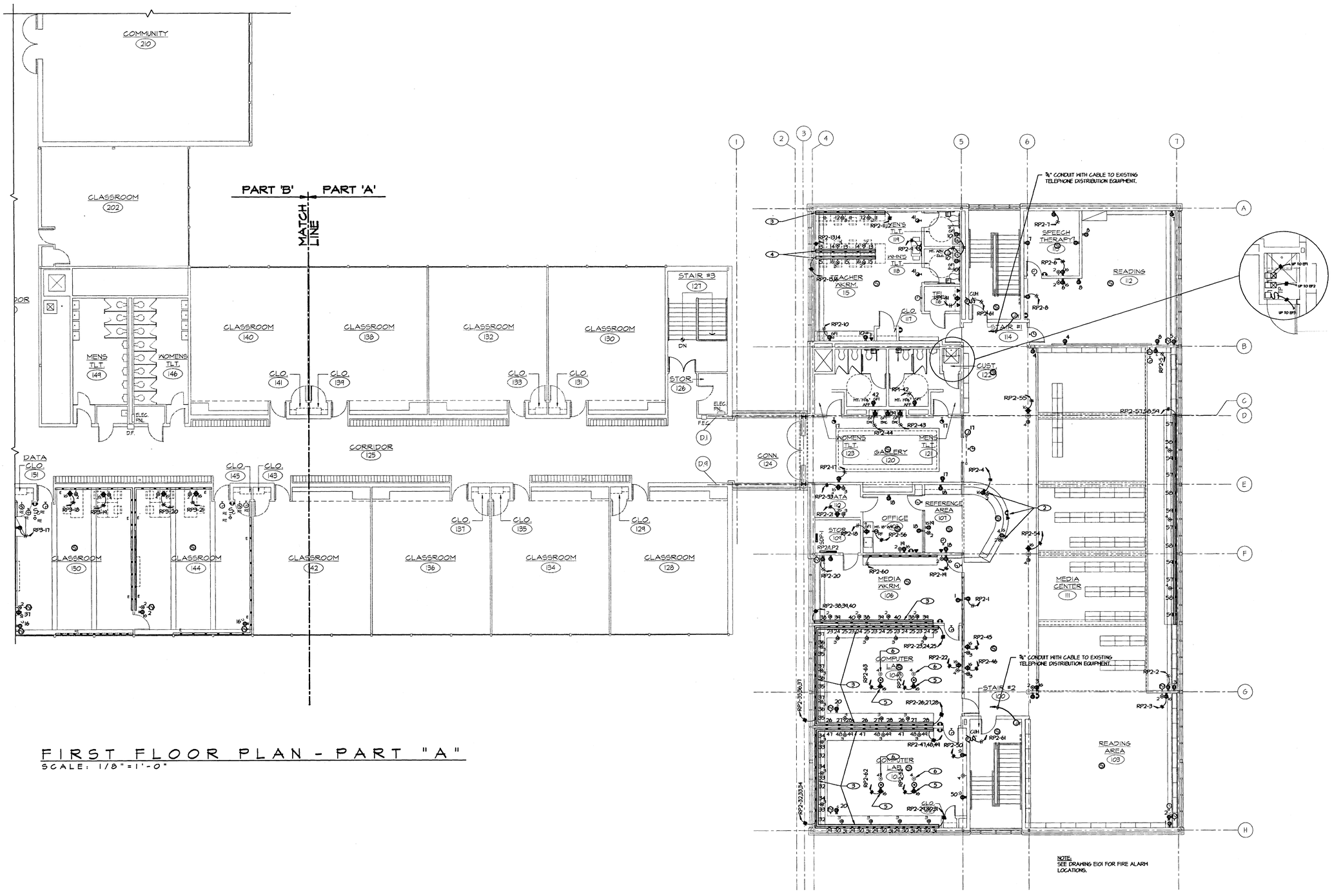
0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY
1	6/19/98	D.O.E. REVISIONS	F.A.

DATE: MARCH 16, 1998
SCALE: 1/16" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: E101

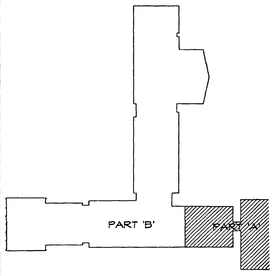
K:\50 projects\50950\dwg\Fleur\F101 7-13-98 10:02:51 am EST

BQ #70 & 125 Attachment



FIRST FLOOR PLAN - PART "A"
SCALE: 1/8"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: W.D. BOLAND
DRAWN BY: F. AGOSTINI

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR PART "A" ELECTRICAL PLAN

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: 1/8" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: **E101.1**

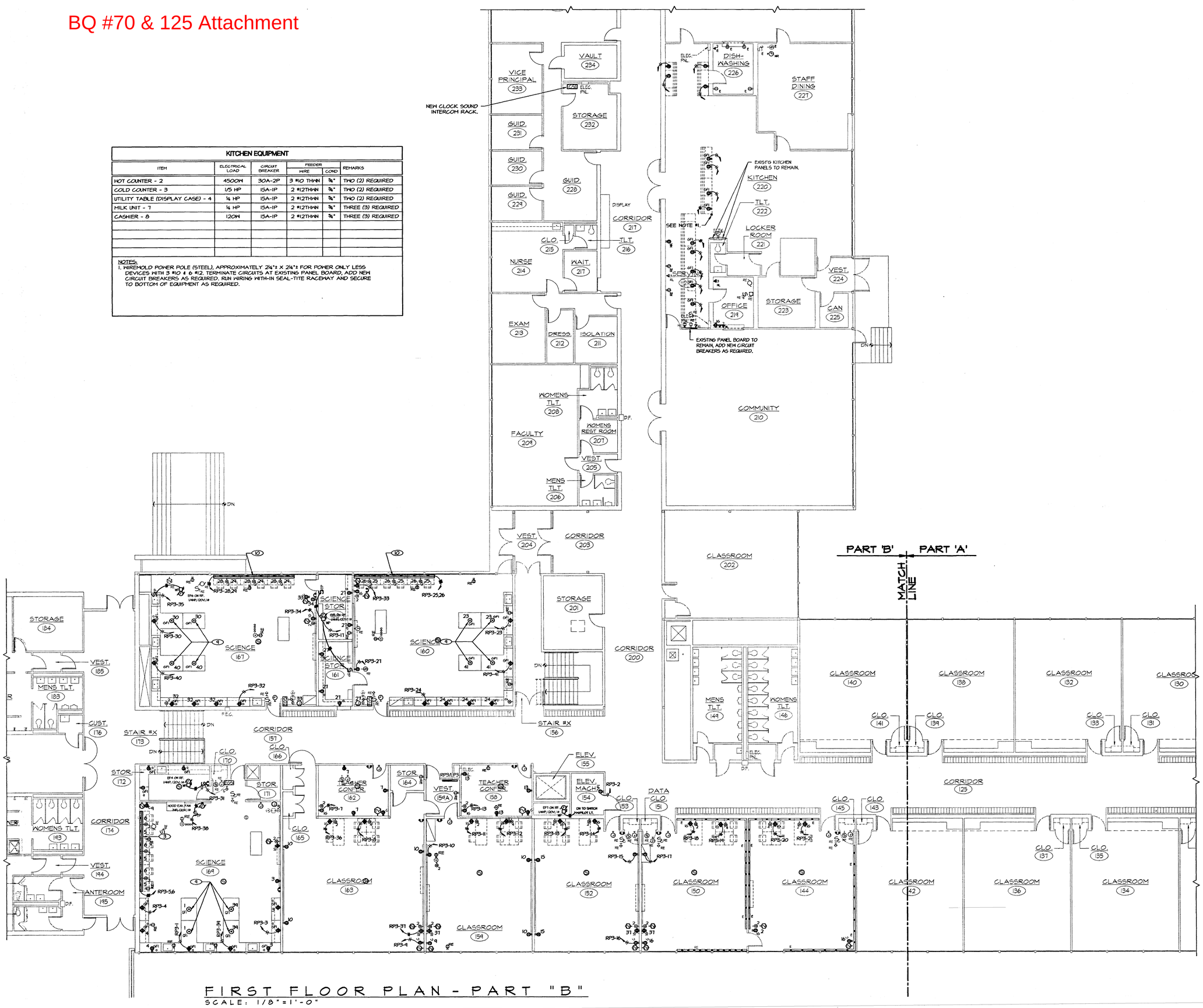
K:\50 projects\50950\dwg\Elec\E101-1 7-13-98 10:04:09 am EST

BQ #70 & 125 Attachment

KITCHEN EQUIPMENT

ITEM	ELECTRICAL LOAD	CIRCUIT BREAKER	FEEDER WIRE	FEEDER CONDT	REMARKS
HOT COUNTER - 2	4500W	30A-2P	3 #10 THWN	¾"	TWO (2) REQUIRED
COLD COUNTER - 3	1/5 HP	15A-1P	2 #12THWN	¾"	TWO (2) REQUIRED
UTILITY TABLE (DISPLAY CASE) - 4	¼ HP	15A-1P	2 #12THWN	¾"	TWO (2) REQUIRED
MILK UNIT - 7	¼ HP	15A-1P	2 #12THWN	¾"	THREE (3) REQUIRED
CASHIER - 8	120W	15A-1P	2 #12THWN	¾"	THREE (3) REQUIRED

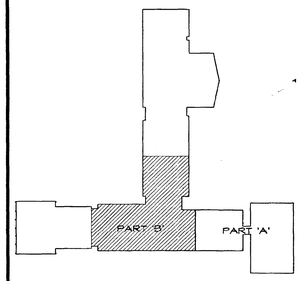
NOTES:
1. WIREMOLD POWER POLE (STEEL), APPROXIMATELY 2¼"± X 2¼"± FOR POWER ONLY LESS DEVICES WITH 3 #10 & 6 #12. TERMINATE CIRCUITS AT EXISTING PANEL BOARD, ADD NEW CIRCUIT BREAKERS AS REQUIRED. RUN WIRING WITH-IN SEAL-TITE RACEWAY AND SECURE TO BOTTOM OF EQUIPMENT AS REQUIRED.



FIRST FLOOR PLAN - PART "B"
SCALE: 1/8"=1'-0"

K:\50 projects\50950.dwg\Elec\E101-2 6-24-98 10:34:11 am EST

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: W.D. BOLAND
DRAWN BY: F. AGOSTINI

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

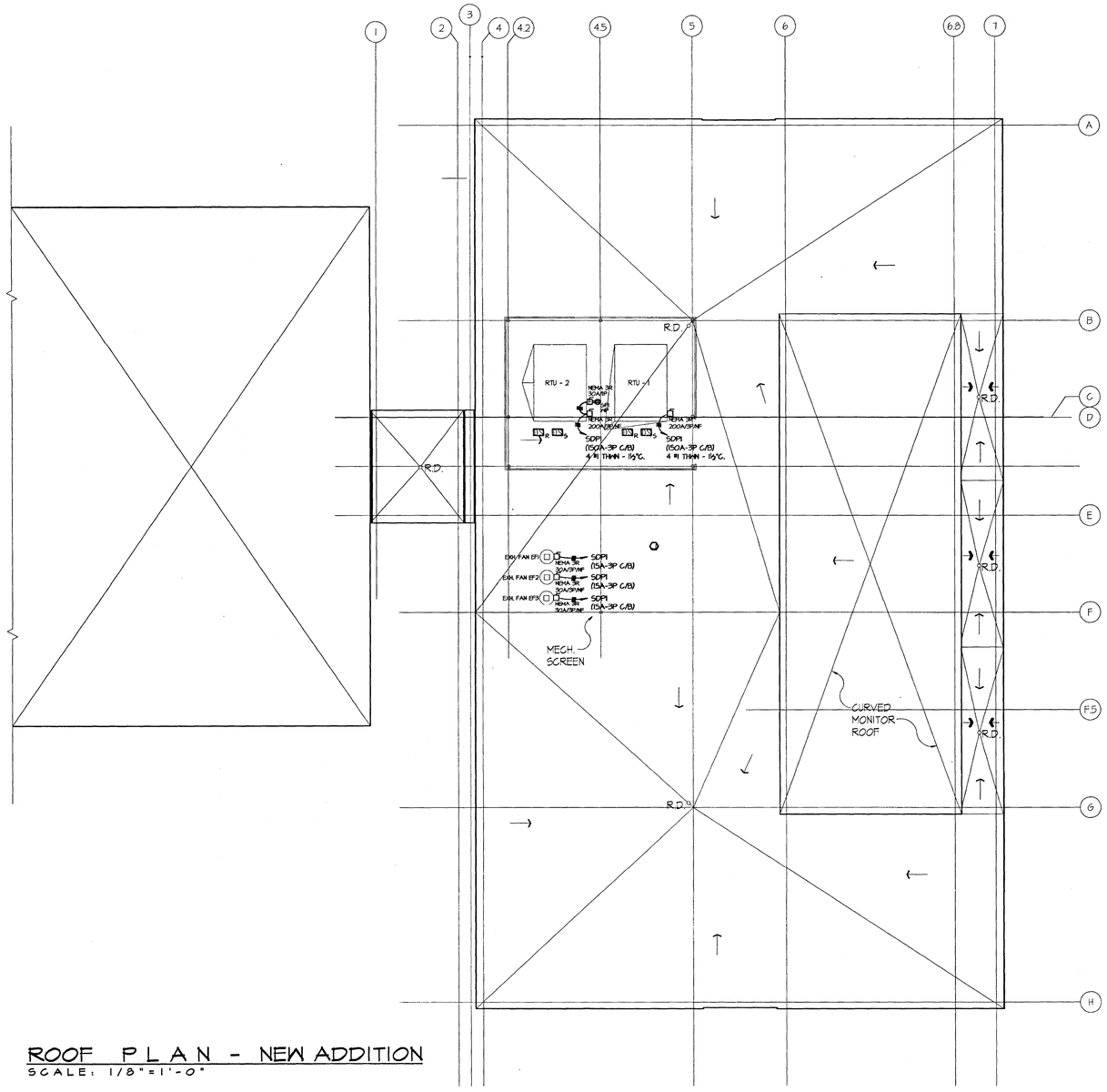
FIRST FLOOR PART "B" ELECTRICAL PLAN

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

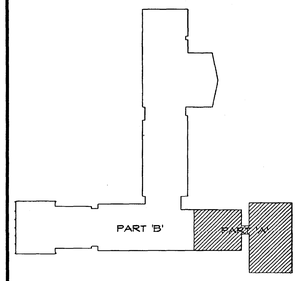
DATE: MARCH 16, 1998
SCALE: 1/8" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: E101.2

BQ #70 & 125 Attachment



ROOF PLAN - NEW ADDITION
SCALE: 1/8"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: W.D. BOLAND
DRAWN BY: F. AGOSTINI

FLETCHER
THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND
RENOVATIONS TO

CENTRAL
MIDDLE
SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

NEW ADDITION
ROOF
ELECTRICAL
PLAN

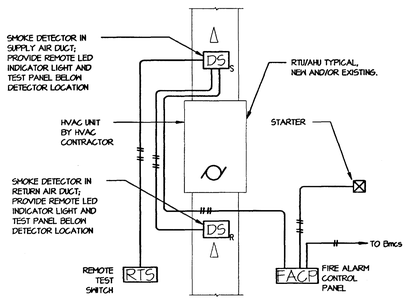
0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE: **MARCH 16, 1998**
SCALE: **1/8" = 1'-0"**
PROJECT NO.: **50950.06**
DRAWING NO.: **E110**

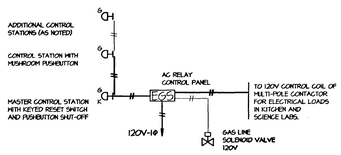
K:\50 projects\50950\dwg\Elec\E110 6-24-98 10:32:40 am EST

BQ #70 & 125 Attachment



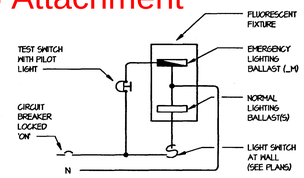
NOTE:
UPON ACTIVATION OF FIRE ALARM SYSTEM RTU SHALL BE SHUT OFF, TYPICALLY, OR AS DIRECTED BY FIRE MARSHAL.

WIRING DIAGRAM: DUCT SMOKE DETECTORS
NOT TO SCALE:



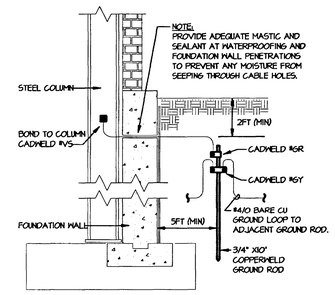
NOTES:
1. ALL PANELS, VALVES, AND CONTROL STATIONS TO BE FURNISHED AND INSTALLED BY PLUMBING CONTRACTOR.
2. ALL CONDUIT AND WIRE TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR; USE #12AWG, 3/4"C MIN.

WIRING DIAGRAM: EMERGENCY GAS SHUT-OFF
SCALE: NONE

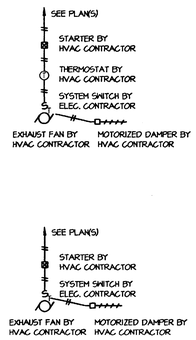


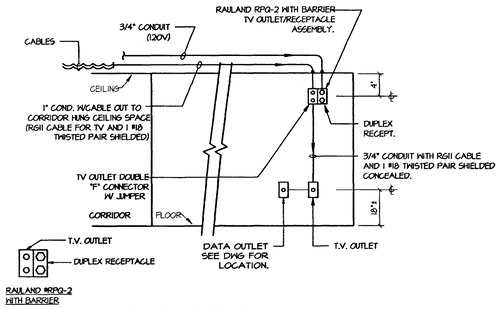
NOTE: EMERGENCY LAMPS SWITCHABLE; ON DURING A POWER FAILURE.

WIRING DIAGRAM: EMERGENCY FLUORESCENT LIGHTING
NOT TO SCALE:



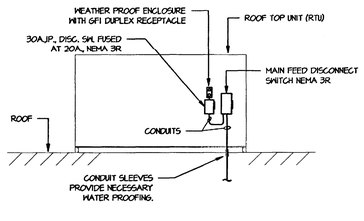
GROUNDING LOOP DETAIL
NOT TO SCALE:



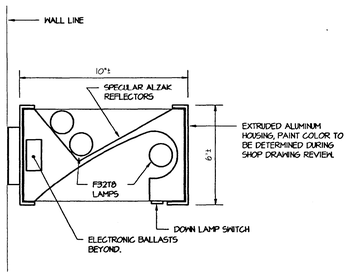


RAULAND #RPG-2 WITH BARRIER

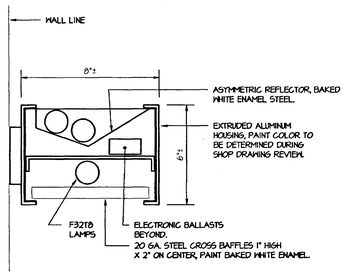
TYPICAL DETAIL: CLASSROOM T.V. WIRING
NOT TO SCALE:



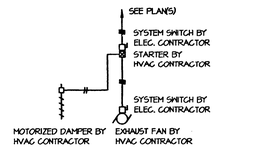
ROOF TOP UNIT DETAIL
NOT TO SCALE:



CROSS SECTION DETAIL: FIXTURE TYPE "K1" SERIES
NOT TO SCALE

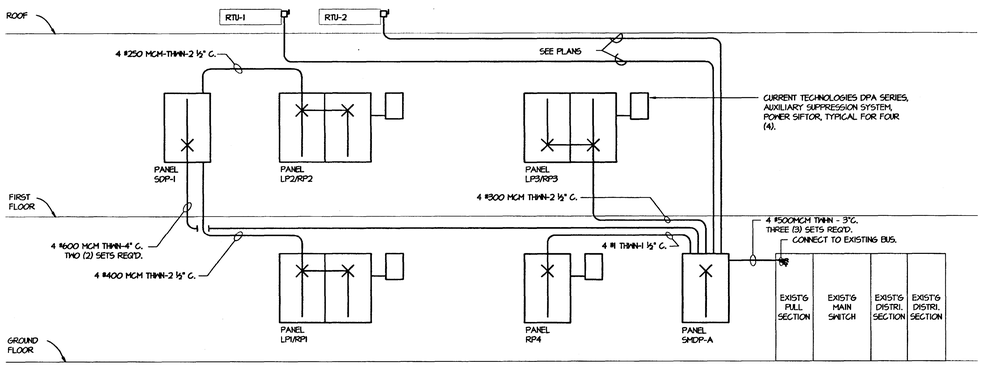


CROSS SECTION DETAIL: FIXTURE TYPE "H1A" SERIES
NOT TO SCALE

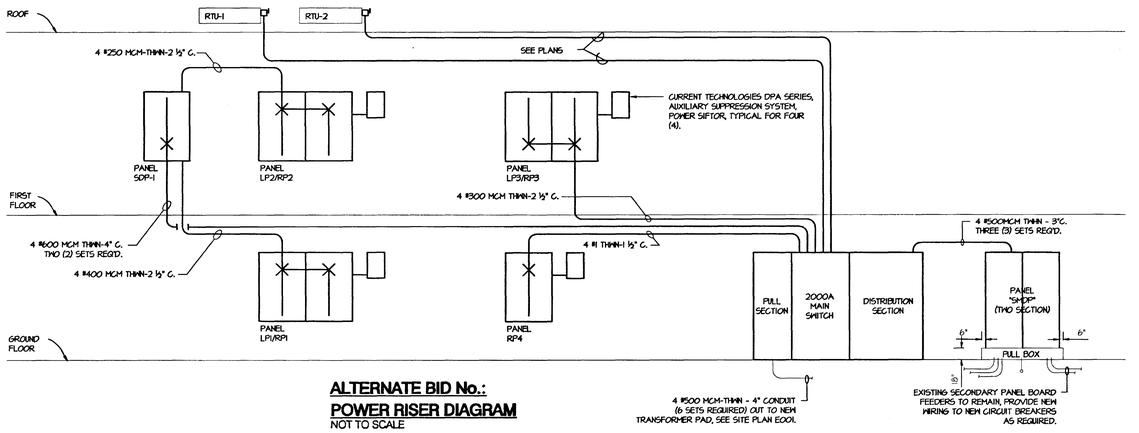


NOTES:
1. ALL EQUIPMENT BY HVAC CONTRACTOR (UON).
2. ALL WIRING BY ELECTRICAL CONTRACTOR.
3. ALL WIRING TO BE #12 (MIN) IN 3/4"C (MIN).
4. REFER TO PLAN(S) FOR LOCATIONS AND QUANTITIES OF EXHAUST FANS AND COMPONENTS.

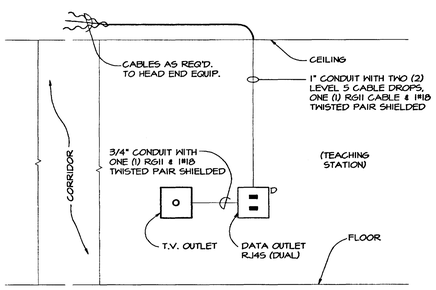
WIRING DIAGRAM: HVAC EXHAUST FANS
NOT TO SCALE:



BASE BID: POWER RISER DIAGRAM
NOT TO SCALE



ALTERNATE BID No.: POWER RISER DIAGRAM
NOT TO SCALE



TYPICAL DETAIL: DATA AND T.V. OUTLET LOCATIONS
NOT TO SCALE

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	W.D. BOLAND
DRAWN BY	F. AGOSTINI

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

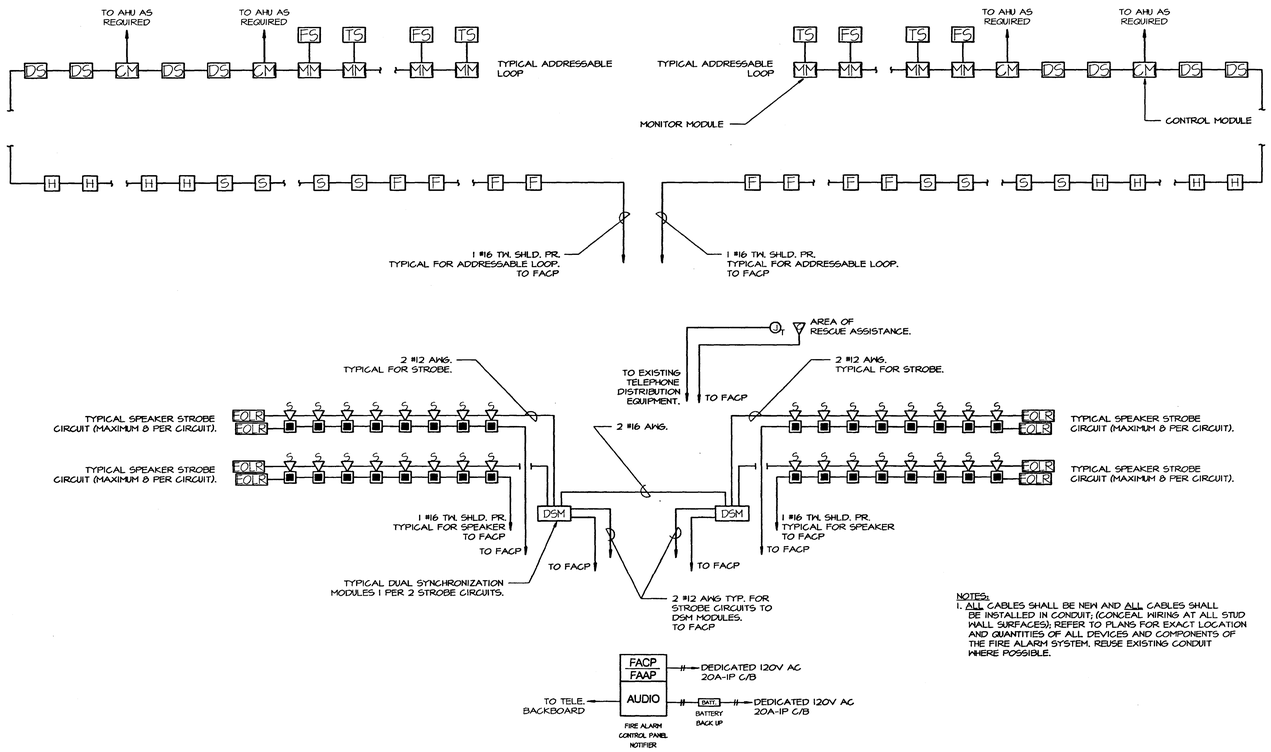
ELECTRICAL WIRING AND RISER DIAGRAMS AND DETAILS

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: AS NOTED
PROJECT NO.: 50950.06
DRAWING NO.: E301

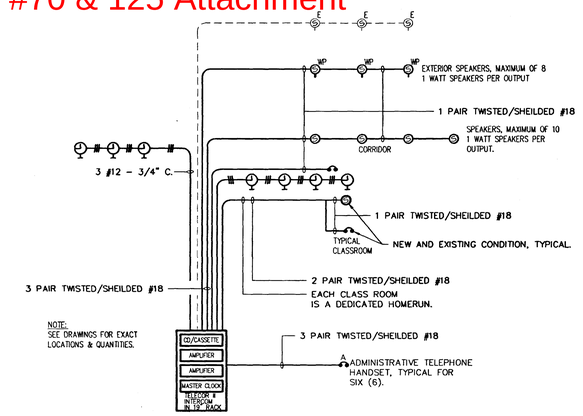
K:\projects\06050\dwg\files\E301 1-13-98 10:13:18 pm EST

BQ #70 & 125 Attachment

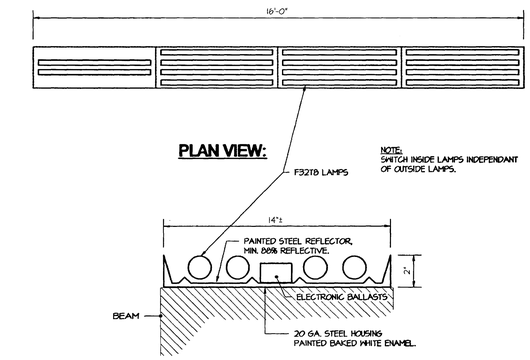


NOTES:
1. ALL CABLES SHALL BE NEW AND ALL CABLES SHALL BE INSTALLED IN CONDUIT; (CONCEAL WIRING AT ALL STUD WALL SURFACES). REFER TO PLANS FOR EXACT LOCATION AND QUANTITIES OF ALL DEVICES AND COMPONENTS OF THE FIRE ALARM SYSTEM. REUSE EXISTING CONDUIT WHERE POSSIBLE.

WIRING DIAGRAM: FIRE ALARM SYSTEM
NOT TO SCALE

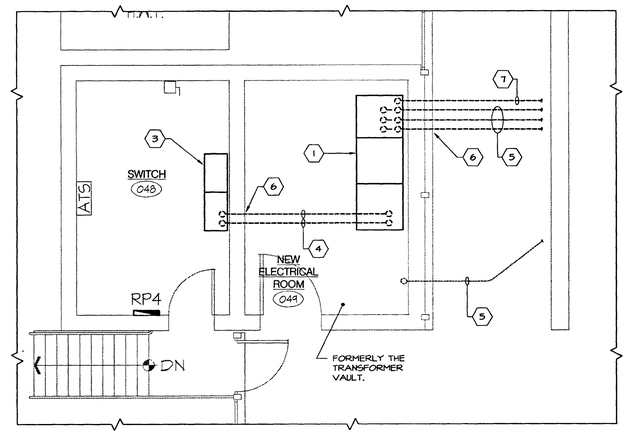


WIRING DIAGRAM: CLOCK-SOUND-INTERCOM
NOT TO SCALE



CROSS SECTION:

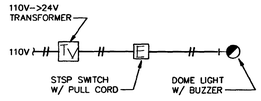
LUMINAIRE DETAIL:
FIXTURE TYPE "H1/H1M" SERIES
NOT TO SCALE



ELECTRICAL ROOM LAYOUT
SCALE: 1/4" = 1'-0"

ELECTRICAL NOTE LEGEND:

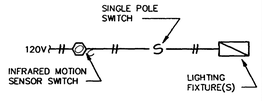
1. NEW 2000A MAIN SWITCH AND SECONDARY DISTRIBUTION SWITCHBOARD (EXACT LOCATION TO BE DETERMINED FROM FINAL SHOP DRAWING DIMENSIONS.)
2. NEW UNDERGROUND SECONDARY FEEDERS, SEE SHEET E001.
3. NEW SUB-DISTRIBUTION PANEL, SEE SHEET E301.
4. NEW SECONDARY FEEDERS, SEE SHEET E301.
5. APPROXIMATE LOCATION OF EXISTING PRIMARY SERVICE, SEE SHEET E001.
6. CUT AND PATCH WALL AND FLOOR SLABS AS REQUIRED.
7. NEW GROUND, CUT TO TRANSFORMER PAD.



ALL CONNECTIONS SHALL BE PER MANUFACTURER'S WIRING DIAGRAM(S).

ENTIRE SYSTEM, EXCLUDING CONDUIT AND WIRE, SHALL BE COMPONENTS OF A SINGLE SYSTEM AS PRODUCED BY ONE MANUFACTURER.

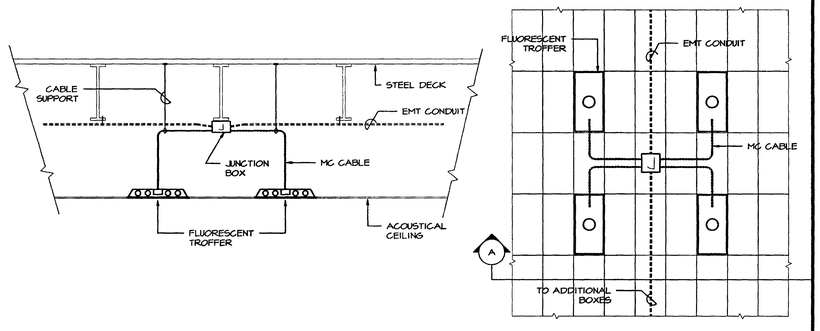
WIRING DIAGRAM: CALL FOR AID SYSTEM
NOT TO SCALE



ALL CONNECTIONS SHALL BE PER MANUFACTURER'S WIRING DIAGRAM(S).

SINGLE POLE SWITCH TO BE AN INTEGRAL COMPONENT OF WALL MOUNTED SENSORS; SWITCH REQUIRED FOR CEILING MOUNTED SENSORS.

WIRING DIAGRAM: OCCUPANCY SENSOR SWITCH
NOT TO SCALE



SECTION A
SCALE: NONE

PLAN VIEW
SCALE: NONE

FLUORESCENT TROFFER WIRING DETAIL AND CONDUIT
SCALE: NONE

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: W.D. BOLAND
DRAWN BY: F. AGOSTINI

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN
FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

ELECTRICAL WIRING AND RISER DIAGRAMS AND DETAILS

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: AS NOTED
PROJECT NO.: 50950.06
DRAWING NO.: E302

E:\50_projects\50950\cad\dwg\E302 7:13:48, 10/14/01 on FST

SCHEDULE OF LUMINAIRES

TYPE VOLTS	MANUFACTURER CATALOG NUMBER	LAMPS SOURCE	DESCRIPTION	REMARKS
A1 120V	Hubbel # RS36NA02-B1, Daybrite or Williams	(3) 32 W	Fluorescent 2'x4' lay-in Troffer, Three (3) lamps (T8), electronic ballast, hinged door frame, acrylic plastic lens panel (.125 thick)	Recessed
A1M 120V	Hubbel # RS36NA02-EM, Daybrite or Williams	(3) 32 W	Fluorescent 2'x4' lay-in Troffer, Similar to Type "A1" except center lamp on self-contained emergency ballast.	Recessed
A1A 120V	Hubbel # RA26NA02-A1	(2) 32W	Similar to Type "A1" except 2'x2' housing size and "U" shaped	Recessed
A1AM 120V	Hubbel # RA26NA02-EM	(2) 32W	Similar to Type "A1A" except one (1) lamp on self-contained emergency ballast.	Recessed
A2 120V	Hubbel # RC26NA02-B1	(2) 32W	Fluorescent 1'x4' lay-in Troffer, two (2) lamps (T8), electronic ballast, hinged door frame, acrylic plastic lens panel (.125 thick)	Recessed
A2M 120V	Hubbel # RC26NA02-EM	(2) 32W	Similar to Type "A2" except one (1) lamp on self-contained emergency ballast.	Recessed
B1 120V	Ledalite # 2526T025-24-1- 12-EO	(12) 32W	Fluorescent luminaire, two (2) lamps with direct/indirect distribution (30% DN/70% UP), twenty four (24'-0") foot, one-piece aluminum extrusion open top and specular parabolic louver down. Air-craft cable suspension, flat canopy. Electronic ballast. Exact housing/canopy color to be determined during shop drawing	Pendant Provide 21" suspension.
B1M 120V	Ledalite # 2526T025-24-1- 12-EO-EM	(12) 32W	Similar to Type "B1" except one (1) lamp on self-contained emergency ballast.	Pendant
B1A 120V	Ledalite # 2526T025-20-1- 12-EO	(10) 32W	Similar to Type "B1" except twenty foot (20'-0") long housing.	Pendant
B1B 120V	Ledalite # 2526T025-08-1- 12-EO	(10) 32W	Similar to Type "B1" except twenty foot (20'-0") long housing.	Pendant
B1C 120V	Ledalite # 2526T025-8-1- 12-EO	(4) 32W	Fluorescent luminaire, two (2) lamps with direct/indirect distribution, similar to Type "B1" except eight foot (8'-0") long housing.	Pendant
B1CM 120V	Ledalite #	(4) 32W	Fluorescent luminaire, two (2) lamps with direct/indirect distribution, similar to Type "B1C" except one (1) lamp on self-contained emergency ballast.	Pendant
C1 120V	Alkco # SF332	(1) 32W	Under cabinet task light, solid front, Flat lens panel, 4'-0" long housing.	Surface
C1A 120V	Alkco # SF325	(1) 25W	Under cabinet task light, similar to fixture type "C1" except 3'-0" long housing.	Surface
D1 120V	Kurt Versen #634EB	(2) 26W	Fluorescent down-light, two (2) lamps, specular clear alzak reflector, electronic ballast.	Recessed
D1M 120V	Kurt Versen # 634EB-EM	(2) 26W	Similar to Type "D1" except one (1) lamp on self-contained emergency ballast.	Recessed
D2 120V	Kurt Versen # P672-EB	(1) 26W	Fluorescent down-light, one (1) lamp, specular clear alzak reflector.	Recessed
F1 120V	Lite Control # CCA12854678- CWM-TW-EM	(4) 25W	Indirect cove light, two (2) lamp, T8, electronic ballasts 6'-0" Long housing.	Surface
F1M 120V	Lite Control # CCA12854678- CWM-TW Linear Lighting or I.C.E.	(4) 25W	Indirect cove light, two (2) lamp, Similar to Type "F1" except one (1) lamp on self-contained emergency ballast.	Surface
G1 120V	Linear Lighting # S38P-1-2-T8- 120-NS-C21-CC- NO-24, Peerless, ICE or PAL	(12) 32W	Indirect fluorescent luminaire, two (2) T8 lamps, electronic ballast. One (1) piece extruded aluminum 24'-0" long housing with perforated upper housing, air-craft cable suspension, flat canopy. Exact color to be determined during shop-drawing review.	Pendant Provide 21" suspension.
G1A 120V	Linear Lighting	(10) 32W	Similar to Type "G1" except 20'-0" long housing.	Pendant
G1B 120V	Linear Lighting	(8) 32W	Similar to Type "G1" except 16'-0" long housing	Pendant
G1C 120V	Linear Lighting	(6) 32W	Similar to Type "G1" except 12'-0" long housing.	Pendant
G1D 120V	Linear Lighting	(4) 32W	Similar to Type "G1" except 8'-0" long housing.	Pendant
G1DM 120V	Linear Lighting	(4) 32W	Similar to Type "G1" except one (1) lamp on emergency battery ballast, Bodine #B50.	Pendant
H1 120V	Day-O-Lite # DLS-1099A	(14) 32W	Indirect fluorescent luminaire (mounts on top of wood beam) steel housing, 16'-0" long row. See details.	Surface
H1A 120V	Day-O-Lite # WM-DLS-1099A	(8) 32W UP (4) 32W DN	Direct/Indirect fluorescent luminaire, Asymmetric reflector up, Two (2) lamp up & one (1) lamp dn w/ cross baffle shielding. 16'-0" lg. Extruded aluminum housing. Exact color to be determined during shop-dwg review.	Wall
H1M 120V	Day-O-Lite # DLS-1099A-EM	(14) 32W	Similar to Type "H1" except two (2) lamps on emergency ballast battery unit.	Surface
J1 120V	Louis Poulsen #PH6-184 White	(1) 300w	Decorative Chandelier, 25.6" dia. X 19.7 over all hgt. graduated reflector shades.	Pendant
K1 120V	Day-O-Lite Linear Lighting or I.C.E.	(12) 32W UP (6) 32W DN	Direct/Indirect fluorescent luminaire, Two (2) lamps up w/asymmetric reflector and one (1) lamp down. Extruded aluminum housing, 24'-0" long. See details.	Wall
K1A 120V	Day-O-Lite	(8) 32W UP (4) 32W DN	Direct/Indirect fluorescent luminaire, Similar to Type "K1" except 15'-0" long housing.	Wall
L1 120V	Hubbell # NRG-308-4W- PC-EM	(1) 28W	Exterior light fixture, prismatic reflector, -20° F ballast operation, with emergency ballast.	Wall
N1 120V	Day-O-Lite Adam Series Linear Lighting or I.C.E.	(6) 32W	Continuous fluorescent wall washer, extruded aluminum housing, 24'-0' long row, acrylic ribbed lens at bottom and at wall side, electronic ballast. Exact paint color to be determined at the site.	Wall
P1 120V	Prudential #P-101-48-CTE	(1) 32W	Single lamp strip light, 4'-0" long housing w/½" eggcrate acrylic plastic cube & mounting grid. See dwg A502.	Surface
Q1M 120V	Hubbell #WIM42-WAC	(2) 32W	Wrap-around, 4'-0" long fluorescent luminaire, acrylic plastic, two (2) lamp, one (1) lamp on emergency batteryt ballast, Bodine #B50.	Surface Electronic Ballast.
X1 120V	PRESCOLITE #LED-R-1-NB-W,	(1) 1.5W LED	EMERGENCY TYPE EXIT LIGHT, SINGLE FACE EITHER WALL OR CEILING MOUNTED, ALUMINUM HOUSING, WHITE FINISH.	SURFACE DUAL LITE OR HIGH-LITES
X2 120V	PRESCOLITE #LED-R-2-NB-W	(2) 1.5W LED	SIMILAR TO TYPE "X1" EXCEPT DOUBLE-FACE.	SURFACE DUAL LITE OR HIGH-LITES
X3 120V	PRESCOLITE #LED-R-1-NB-W,	(1) 1.5W LED	"AREA OF RESCUE ASSISTANCE" SIGN SINGLE FACE COMPLETE WITH NI-CAD BATTERY.	SURFACE DUAL LITE OR HIGH-LITES

NOTES:
1. ALL LAMPS SHALL BE EITHER F25T8/SPX35/RS OR F32T8/SPX35/RS.
2. ALL BALLAST SHALL BE ELECTRONIC, MOTOROLA, MAGNATEK OR TRIAD.
3. PROVIDE BODINE #B30 EMERGENCY BALLAST IN ALL "AIM" FIXTURES LOCATED IN CORRIDORS AND STAIR WELLS AND BODINE #B50 IN REMAINING AREAS.
4. ALL FLUORESCENT FIXTURES SHOWN ALIGNED IN TANDEM TO BE INSTALLED TO APPEAR AS A SINGLE CONTINUOUS LUMINAIRE.
5. ALL INCANDESCENT LAMPS SHALL BE RATED FOR 130 VOLTS.
6. ALL EXIT LIGHTS SHALL BE WALL MOUNTED, U.O.N., OR CEILING MOUNTED AS CLOSE TO WALL AS POSSIBLE.
7. UNLESS OTHERWISE NOTED, ALL LUMINAIRES INDICATED WITH THE LETTER..M PRECEDING THE FIXTURE TYPE, ie. "AIM" SHALL BE USED FOR EMERGENCY LIGHTING. WHERE MULTIPLE LAMPS ARE PRESENT ONLY ONE (1) LAMP SHALL BE USED FOR EMERGENCY.

ALTERNATE BID PANEL: MDP 2000A MAIN SWITCH 120 /208V 3 PHASE 4 WIRE

CKT	EQUIPMENT	LOAD	FRAME	TRIP	POLE	FEEDER WIRE	FEEDER COND	NOTES
1	PANEL SMDP	200,000	800A	800A	3	SEE RISER DIAGRAM		
2	PANEL RP4	18,644	225A	100A	3			
3	PANEL SDP-1	154,032	-	600A	3			
4	PANEL LP3/RP3	44,374	225A	225A	3			
5	RTU-1	35,280	225A	150A	3			
6	RTU-2	35,280	225A	150A	3			
7	SPARE		225A	225A	3			
8	SPACE		225A	100A	3			
9	SPACE		225A	100A	3			
10								
11								
12								

NOTES:
1. CONNECT AHEAD OF MAIN.
2. MAIN BREAKER 100,000A I.C., FEEDER BREAKER 65,000A I.C..
3. ALL CABLE SHALL BE THWN.
4. ALL CONDUIT SHALL BE GALVANIZED STEEL IN FLOOR SLAB AND E.M.T. IN OPEN AREAS.

SCHEDULE OF PANEL BOARDS

PANEL DESIGNATION	VOLTAGE	MAINS	BRANCH CIRCUITS FRAME	TRIP	POLE	ACTIVE	SPARE	TOTAL	REMARKS
SDP-1 - -	120/208 3Φ.4W	600A MCB	400A 225A 100A 100A 100A 100A 100A	400A 225A 100A 20A 15A 20A 15A	3 3 3 3 3 1 1	1 1 - 1 2 - 1	- - 1 2 - 4 -	1 1 1 2 2 4 1	- - - - - - -
LP1/RP1 DBLE SECT. PNL -	120/208 3Φ.4W	300A MLO	100A 100A 100A	45A 20A 15A	3 1 1	7 44 1	- 12 -	7 56 1	- - -
LP2/RP2 DBLE SECT. PNL -	120/208 3Φ.4W	300A MLO	100A	20A	1	61	11	72	-
LP3/RP3 DBLE SECT. PNL -	120/208 3Φ.4W	225A MLO	100A 100A	15A 20A	1 1	4 44	- 8	4 52	- - -
RP4 - -	120/208 3Φ.4W	150A MLO	100A 100A 100A 100A	30A 20A 20A 15A	3 3 1 1	1 1 9 4	- - 5 -	1 1 14 4	- - - -
SMDP ALTERNATE BID -	120/208 3Φ.4W	800A MLO	200A 100A 100A 100A	200A 100A 60A 30A	3 3 3 3	2 10 9 1	1 2 - -	3 12 9 1	- - - -

NOTES:
1. MCB; MAIN CIRCUIT BREAKER, MLO; MAIN LUGS ONLY, MFS; MAIN FUSED SWITCH.
2.
3.

ELECTRICAL NOTE LEGEND:

① LOCATE SWITCHES HERE FOR CONTROL OF SWITCH CONTROL A THROUGH F WITHIN MEDIA CENTER.

② LOCATE DEVICES WITHIN CHARGING DESK, EXACT LOCATION TO BE DETERMINED AT THE SITE AND/OR DURING SHOP DRAWING REVIEW.

③ #4000 WIREMOLD RACEWAY COMPLETE WITH CENTER DIVIDER AND CONTINUOUS COVER. PROVIDE HUBBELL #IG53625 SINGLE SUPPRESSION TYPE RECEPTACLES LOCATED AS INDICATED. IN ADDITION PROVIDE CATEGORY 5 DATA OUTLETS LOCATED AS INDICATED AND CATEGORY 5 DATA CABLES, TERMINATE DATA CABLES IN DATA ROOM #110. LOCATE RACEWAY BELOW COUNTER, 18" A.F.F..

④ SIMILAR TO NOTE #3, EXCEPT MOUNT WIREMOLD RACEWAY TO FURNITURE, EXACT MOUNTING METHOD TO BE DETERMINED AT THE SITE.

⑤ FLUSH FLOOR BOX WITH THREE (3) DUPLEX RECEPTACLES, #IG53625, SURGE SUPPRESSION TYPE AND BRASS COVER PLATES.

⑥ FLUSH FLOOR BOX WITH FOUR (4) RJ45, CATEGORY FIVE (5) DATA OUTLETS

⑦ UNLESS OTHERWISE NOTED, DISCONNECT AND REMOVE ALL EXISTING LIGHTING FIXTURES, RECEPTACLES, FIVE ALARM EQUIPMENT, ETC. AND REPLACE WITH NEW. REUSE EXISTING WIRING WHERE EVER POSSIBLE.

⑧ TECHNOLOGY NOTES:
EACH INSTRUCTIONAL AREA SHOULD HAVE A WALL PLATE WITH RF MASTER ANTENNA VIDEO OUTLET, RF OUTLET CONNECTED BY CONDUIT TO THE CLASSROOM COMPUTER AREA BY IN-WALL CONDUIT (WITH AN RF OUTLET ALSO AT THE COMPUTER END TO BE USED WITH A COMPUTER DISPLAY ADAPTER), AND TWO ELECTRICAL OUTLETS MOUNTED AT WHATEVER STANDARD HEIGHT YOU USE FOR WALL MOUNTING (70"). WE REQUIRE A MOUNTED WALL OR CEILING DEVICE THAT WILL HOLD BOTH A 27 PLUS INCH DISPLAY MONITOR AS WELL AS A VCR (THE REASON FOR THE SECOND AC OUTLET).

TV WALL PLATES: BLONDER TONGUE #V-1GF-FT, OFO TYPE

FEED COVERS: MULBERRY #84101 IVORY ENAMELED METAL.

TV CABLE: ALPHA OR EQUIVALENT RG-6 TRIPPLE-SHIELD COAX WITH BRAIDED AND FOIL SHIELD. THIS DIVISION OF AT&T IS KNOWN AS LUCENT

DATA WALL PLATES: AT&T M28A-246 (8 POSITION), M14A-246 (4 POSITION) OR M12A-246 (2 POSITION). NOTE: 8 POSITION PLATES REQUIRE A 2 GANG BOX. OTHERS ARE SINGLE GANG.

DATA OUTLETS (JACK ASSEMBLIES): AT&T M100BH-246 (RJ45). NOW MPS 100BH.

DATA CABLE: AT&T #1061C, 4 PAIR, LEVEL 5 UTP (UNLESS PLENUM CABLE IS REQUIRED).

RACK: CHATSWORTH 190W X 380H X 180D, WALL MOUNTED, OPEN FRAME RACK,
SWING OUT TYPE FOR REAR ACCESS:
PATCH PANEL: ATT 1100CAT5-48 OR 96
CONCENTRATOR CHASSIS: ASANTE AH2072
12 PORT MODULES: ASANTE AH2072-RJ45
MANAGEMENT MODULE: ASANTE AH2072-NMM

⑨ PEDESTAL TYPE, DOUBLE DUPLEX, MOUNTED TO TOP OF WORK STATION. WIRING FROM CONDUIT STUB-UP BELOW. EXACT ROUTING TO BE DETERMINED AT THE SITE.

⑩ DISCONNECT AND REMOVE EXISTING LIGHT FIXTURES AND REPLACE IN ORIGINAL LOCATION TO FACILITATE REMOVAL OF ANY EXISTING CEILING TILES TO ACCOMMODATE NEW HVAC, PLUMBING PIPING. RECONNECT TO EXISTING WIRING.

⑪ PROVIDE DIMMING BALLASTS FOR EACH TYPE "G1" LIGHT FIXTURE IN COMPUTER LABS, LUTRON ELECTRONIC HI-LUME SERIES WITH NOVA, SLIDE STYLE DIMMER SWITCHES AS REQUIRED.

⑫ DISCONNECT AND REMOVE EXISTING LIGHT FIXTURES INCLUDING ALL WIRING, etc. AND REPLACE WITH NEW AS INDICATED PROVIDE NEW WIRING, RACEWAYS, SWITCHING AND NEW HOME RUNS AS REQUIRED.

TYPICAL ELECTRICAL PLAN NOTES:

1. WHEREVER POSSIBLE, RE-USE EXISTING BRANCH CIRCUIT(S) FOR NEW EQUIPMENT (UON); EXISTING CIRCUIT(S) THAT ARE ABANDONED SHALL BE CLEARLY IDENTIFIED AT PANELBOARD DIRECTORY AS 'SPARE' AND ALL CONDUCTORS ASSOCIATED WITH SPARE CIRCUIT(S) SHALL BE REMOVED.
2. EXACT LOCATION OF ALL 'EXISTING TO REMAIN' MATERIAL AND ALL 'EXISTING TO BE RELOCATED' MATERIAL SHALL BE ESTABLISHED AND VERIFIED IN FIELD.
3. FOR EXACT LOCATION OF ALL MECHANICAL, PLUMBING, FIRE PROTECTION, AND OWNER FURNISHED EQUIPMENT, REFER TO DRAWINGS OF THOSE TRADES, AND COORDINATE ALL ELECTRICAL WORK WITH THOSE RESPECTIVE CONTRACTORS.
4. ELECTRICAL CONTRACTOR TO PROVIDE ALL NECESSARY NEW CIRCUIT BREAKERS IN EXISTING PANELBOARDS AS REQUIRED BY THESE DRAWINGS.
5. ALL NEW DUPLEX RECEPTACLES SHALL BE TIED TO NEAREST AVAILABLE 20A-1P, 120V BRANCH CIRCUIT (UON); NO CIRCUIT IS TO BE LOADED TO MORE THAN 80% OF BREAKER RATING.
6. ALL NEW OUTLETS SHALL MATCH EXISTING DEVICES (IN THAT SPACE) FOR STYLE, COLOR, AND MOUNTING HEIGHT (UON).
7. ALL ITEMS INDICATED ON ELECTRICAL PLANS SHALL BE NEW, UNLESS OTHERWISE INDICATED AS EXISTING TO REMAIN (E) OR EXISTING TO BE RELOCATED (RL) OR (RR).
8. FOR EXACT LOCATION OF LIGHTING FIXTURES AND ALL OTHER CEILING MOUNTED MATERIAL, REFER TO REFLECTED CEILING PLAN(S).
9. ALL NEW AND RELOCATED LIGHTING FIXTURES SHALL BE TIED TO EXISTING BRANCH CIRCUITS AND CONTROL, UNLESS INDICATED OTHERWISE.
10. IN AREAS WHERE NO ELECTRICAL WORK IS INDICATED, ALL EXISTING LIGHTING, CONTROL, AND BRANCH CIRCUIT(S) AND WIRING DEVICES ARE EXISTING (TO REMAIN).
11. IN AREAS WHERE ONE FIXTURE IS SHOWN TO BE CONTROLLED BY A SWITCH OR SWITCH(ES), ALL OTHER CEILING MOUNTED FIXTURES IN THAT SPACE SHALL BE CONTROLLED BY THE SAME SWITCH(ES).
12. ALL EXISTING, RELOCATED, AND NEW EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS SHALL MONITOR NEAREST LIGHTING BRANCH CIRCUIT <u>AHEAD</u> OF ANY CONTROL DEVICES (UON); FEED FIXTURES FROM SAME BRANCH CIRCUIT.
13. ALL SALVAGEABLE EQUIPMENT, FIXTURES, DEVICES, ETC. NOT BEING REUSED SHALL BE TURNED OVER TO BUILDING OWNER'S REPRESENTATIVE FOR STORAGE AND/OR FOR USE IN NEW WORK.
14. WHERE THE REMOVAL OF ANY DEVICE, FIXTURE, AND/OR EQUIPMENT INTERRUPTS THE CONTINUITY OF AN EXISTING (TO REMAIN) CIRCUIT, PROVIDE ALL CONNECTIONS, CONDUIT, AND CONDUCTORS NECESSARY TO MAINTAIN AND/OR EXTEND EXISTING CIRCUIT CONTINUITY.
15. WHERE BOXES REMAIN AFTER REMOVAL OF FIXTURES AND ELECTRICAL DEVICES FROM EXISTING (TO REMAIN) CONSTRUCTION, PROVIDE BLANK COVER FOR EACH OUTLET BOX.
16. REMOVAL OF ANY ELECTRICAL MATERIAL SHALL INCLUDE THE REMOVAL OF ALL CONTROL (INCLUDING SWITCHES), WIRES, AND CONDUIT (WHERE PRACTICAL) ASSOCIATED WITH SUCH MATERIAL, UNLESS OTHERWISE NOTED.
17. RELOCATION OF ANY ELECTRICAL MATERIAL SHALL INCLUDE THE EXTENSION OF ALL BRANCH CIRCUIT FEEDERS AND ALL CONTROL CIRCUITS TO NEW LOCATION.
18. <u>ALL</u> EXISTING DUPLEX RECEPTACLES LOCATED WITHIN 6'-0" OF ANY WATER SOURCE (SUCH AS SINKS, WATER COOLERS, OR GRADE, ETC.) TO BE REPLACED WITH NEW GFI TYPE DUPLEX RECEPTACLE (WHETHER INDICATED OR NOT).
19. IT IS THE INTENT OF THESE DRAWINGS THAT THE ENTIRE EXISTING FIRE ALARM SYSTEM SHALL BE REMOVED AND REPLACED WITH A NEW COMPLETE SYSTEM; HOWEVER, THIS BUILDING <u>MUST</u> REMAIN PROTECTED AT ALL TIMES.
20. WHERE NEW DEVICES AND/OR EQUIPMENT ARE INDICATED ON EXISTING (TO REMAIN) MASONRY WALLS, USE WIREMOLD SURFACE BOXES AND WIREMOLD SERIES 700 RACEWAY(S); WHERE NEW DEVICES AND/OR EQUIPMENT ARE INDICATED ON EXISTING (TO REMAIN) STUD WALLS (SHEETROCK OR GYPSUM BOARD SURFACES), USE FLUSH BOXES AND CONCEAL ALL RACEWAYS WITHIN WALL CONSTRUCTION.
21. ALL EXISTING TO REMAIN DIRECTIONAL EMERGENCY LIGHTING FIXTURES SHALL BE RE-AIMED TO PROVIDE EMERGENCY ILLUMINATION AT PATH OF EGRESS.

SYMBOL LIST
(STATE OF CONNECTICUT)

○	SURFACE MOUNT LUMINAIRE SUBSCRIPT DENOTES FIXTURE TYPE
◘	RECESSED MOUNT DOWNLIGHT LUMINAIRE SUBSCRIPT DENOTES FIXTURE TYPE
◙	LUMINAIRE USED FOR EMERGENCY LIGHTING W/ A SELF-CONTAINED, BODINE, EMERGENCY BATTERY BALLAST. SUBSCRIPT DENOTES FIXTURE TYPE
⊙	PENDANT SUSPEND LUMINAIRE SUBSCRIPT DENOTES FIXTURE TYPE
▭	CEILING MOUNT FLUORESCENT TROFFER SUBSCRIPT DENOTES FIXTURE TYPE
▭	FLUORESCENT TROFFER (WIRE FOR TWO CIRCUITS) SUBSCRIPT DENOTES FIXTURE TYPE
◣ ◐ ◐	LUMINAIRE USED FOR EMERGENCY LIGHTING W/ A SELF-CONTAINED, BODINE, EMERGENCY BATTERY BALLAST. SUBSCRIPT DENOTES FIXTURE TYPE
▭	PENDANT SUSPEND FLUORESCENT LUMINAIRE SUBSCRIPT DENOTES FIXTURE TYPE
○	WALL MOUNT LUMINAIRE SUBSCRIPT DENOTES FIXTURE TYPE
▬	WALL MOUNT FLUORESCENT LUMINAIRE SUBSCRIPT DENOTES FIXTURE TYPE
├─●─┤	LINEAR FLUORESCENT CHANNEL LUMINAIRE SUBSCRIPT DENOTES FIXTURE TYPE
▬	TRACK WITH LIGHTING FIXTURES AS INDICATED SUBSCRIPTS DENOTE TRACK AND FIXTURE TYPES
A1 a 1	LIGHTING FIXTURE ATTRIBUTES LEGEND —LIGHTING CONTROL CIRCUIT —LIGHTING FIXTURE TYPE (SEE SCHEDULE) —POWER BRANCH CIRCUIT
⊠	SELF-CONTAINED EMERGENCY EXIT SIGNS WITH DIRECTIONAL ARROWS AS INDICATED
◙	SELF-CONTAINED EMERGENCY LIGHTING UNITS WIRE TO NEAREST LIGHTING BRANCH CIRCUIT
M S	SELF-CONT MASTER/SATELLITE EMERG LTG UNITS WIRE TO NEAREST LIGHTING BRANCH CIRCUIT
S	SINGLE POLE SWITCH MOUNT AT 48" AFF
S_3	THREE-WAY SWITCH MOUNT AT 48" AFF
S_4	FOUR-WAY SWITCH MOUNT AT 48" AFF
S_P	SINGLE POLE SWITCH WITH PILOT LIGHT 48" AFF
S_{3P}	THREE-WAY SWITCH WITH PILOT LIGHT 48" AFF
S_D	SINGLE POLE 1000W DIMMER SWITCH 48" AFF
S_{D3}	THREE-WAY 1000W DIMMER SWITCH 48" AFF
S_{be}	BOILER EMERGENCY SWITCH MOUNT AT 60" AFF
⊘	OCCUPANCY MOTION SENSOR LIGHT SWITCH 48" AFF, UON. (C DENOTES CEILING MOUNT ASSEMBLY) (H DENOTES MOUNT HIGH ON WALL)
S_T	SWITCH W/ THERMAL OVERLOAD PROTECTION 48" AFF
S_K	KEY OPERATED SINGLE POLE SWITCH 48" AFF
S_{3K}	KEY OPERATED THREE-WAY SWITCH 48" AFF
ES	ELECTRIC DOOR STRIKE
●	DOOR CONTACT SWITCH
▭	VIDEO CAMERA WITH MOUNTING HARDWARE
VM VR	VIDEO MONITOR, VIDEO RECORDER
K	CARD READER MOUNT AT 48" AFF
M -M	CEILING OR WALL MOUNTED MOTION DETECTOR
◁	SECURITY SYSTEM INFARED BEAM
S	CEILING MOUNTED SPEAKER
-S	WALL OR COLUMN MOUNTED SPEAKER
M-	WALL MOUNTED MICROPHONE OUTLET (18" AFF)
VC	SOUND SYSTEM VOLUME CONTROL MOUNT AT 48" AFF
AMP	SOUND SYSTEM AMPLIFIER
S	PA/SOUND SYSTEM/CLOCK IN COMMON ENCLOSURE MOUNT AT 80" AFF
☎	PA/PAGING SYSTEM HANDSET MOUNT AT 48" AFF
☎ A	ADMINISTRATIVE HANDSET
S_C	3 POSITION SELECTOR SWITCH 48" AFF (P-PRIVACY; N-NORMAL; C-CALL-IN)
BQ	PROGRAM BELL MOUNT AT 80" AFF
●	CALL FOR AID BEACON WITH BUZZER 80" AFF
E	CALL FOR AID SWITCH WITH PULL CORD 36" AFF
C P V	AUDIO-VISUAL SYSTEM OUTLETS (C-CAMERA) (P-PAN/TILT/ZOOM; V-VIDEO PROJECTOR)
⌒	DEDICATED 'HOMERUN' TO PANELBOARD BREAKER CONDUCTORS AS INDICATED OR SCHEDULED
—·—·—	EMERGENCY LIGHTING 'HOMERUN' TO BATTERY VOLTAGE AND CAPACITY TO MATCH BATTERY
⏚	#4/0 AWG COPPER GROUND FROM COLUMN STEEL TO 3/4"x10' COPPERWELD GROUND ROD (ALL CADWELD)
▬	PANELBOARD (277/480V, 3PH, 4W)
T	DRY TYPE TRANSFORMER
▬	PANELBOARD (120/208V, 3PH, 4W)
D	EMERGENCY SHUT-OFF SWITCH 42" AFF G-GAS; L-ELECTRIC; U-BOTH UTILITIES
⊠	MULTI-POLE CONTACTOR IN NEMA 1 ENCLOSURE MTD AT 60" AFF (REFER TO WIRING DIAGRAM)
EGS	EMERGENCY GAS SHUT-OFF CONTROL PANEL
S	GAS LINE SHUT-OFF SOLENOID VALVE
HFSP	HOOD FIRE SUPPRESSION PANEL FURNISHED BY FIRE PROTECTION CONTRACTOR
SD	SMOKE DAMPER BY DIVISION 15 WIRED BY ELECTRICAL CONTRACTOR
MD	MOTORIZED DAMPER BY DIVISION 15 WIRED BY ELECTRICAL CONTRACTOR
BD	BY-PASS DAMPER BY DIVISION 15 WIRED BY ELECTRICAL CONTRACTOR
AFF	ABOVE FINISHED FLOOR
BFC	BELOW FINISHED CEILING
UON	UNLESS OTHERWISE NOTED
WG	PROVIDE APPLIANCE WITH WIRE GUARD
WP	WEATHERPROOF PROTECTION (ENCLOSURE)
XP	EXPLOSION PROOF ENCLOSURE

⊖	SINGLE RECEPTACLE MOUNT AT 18" AFF (UON)
⊜	DUPLEX RECEPTACLE MOUNT 18" AFF (UON) c - MOUNT AT 80" AFF (REFER TO DETAIL)
⊜ ab	a - MOUNT 6" ABOVE COUNTERTOP OR 48" AFF b - MOUNT WITHIN ARCHITECTURAL MILLWORK
◆	DOUBLE DUPLEX RECEPTACLE MTD 18" AFF (UON)
⊜	DUPLEX SAFETY RECEPTACLE MTD 18" AFF (UON)
AC ⊜	DUPLEX RECEPTACLE FOR UNIT AIR CONDITIONER MOUNT AS NOTED ON PLAN
CD ⊖	SINGLE RECEPTACLE FOR CLOTHES DRYER MOUNT AT 12" AFF (UON)
DW ⊖	SINGLE RECEPTACLE FOR DISHWASHER MOUNT AT 12" AFF (UON)
EWC GFI ⊜	GFI TYPE DUPLEX RECEPTACLE FOR ELECTRIC WATER COOLER; MOUNT AT 18" AFF (UON)
FZR ⊖	SINGLE RECEPTACLE FOR FREEZER MOUNT AT 48" AFF (UON)
GFI ⊜	GFI TYPE DUPLEX RECEPTACLE MOUNT AT 18" AFF (UON)
IG ⊜	DUPLEX RECEPTACLE MOUNT AT 18" AFF (UON) WITH INSULATED ISOLATED GROUND CONDUCTOR TO PANEL. SURGE SUPPRESSION OUTLET HUBBELL #653525
REF ⊜	DUPLEX RECEPTACLE FOR REFRIGERATOR MOUNT AT 48" AFF (UON)
RF ⊖	SINGLE RECEPTACLE FOR REFRIGERATOR/FREEZER MOUNT AT 48" AFF (UON)
RNG ⊖	SINGLE RECEPTACLE FOR ELECTRIC RANGE MOUNT AT 12" AFF (UON)
TC ⊖	SINGLE RECEPTACLE FOR TRASH COMPACTOR MOUNT AT 12" AFF (UON)
VM ⊜	DUPLEX RECEPTACLE FOR VENDING MACHINE MOUNT AT 48" AFF (UON)
WM ⊜	GFI DUPLEX RECEPTACLE FOR WASHING MACHINE MOUNT AT 48" AFF (UON)
⊗	SPECIAL PURPOSE OUTLET; CONFIGURATION TO MATCH EQUIPMENT CONNECTION ASSEMBLY
⊙	FLOOR MOUNTED TOMBSTONE MONUMENT WITH OUTLETS AS INDICATED
▣	FLUSH MOUNT FLOOR RECEPTACLE PROVIDE FLANGE TO SUIT FLOOR FINISH MATERIAL
▭	PLUGMOLD WITH OUTLETS 18" OC (UON) MOUNT AT 18" AFF (UON)
▭	PLUGMOLD WITH OUTLETS 36" OC (UON) AND RACEWAY (FOR DATA) MOUNT AT 18" AFF (UON) WIREMOLD #4000 WITH HUBBELL #653525 SURGE SUPRESSION OUTLETS, SEE OTHER NOTES ALSO.
J J	JUNCTION BOX (SEE PLAN FOR APPLICATION)
J_P	JUNCTION BOX FOR ELECTRONIC PLUMBING FIXTURE COORDINATE MOUNTING WITH PLUMBING DRAWINGS
◷	12" SYSTEM CLOCK
▶	TELEPHONE OUTLET MTD 18" AFF (F-FAX 18" AFF) (P-PAY PHONE 48" AFF; W-WALL PHONE 48" AFF)
▶	COMBINATION DATA/TELEPHONE OUTLET 18" AFF REFER TO DETAIL DIAGRAM
⊛	FLOOR MOUNTED TELEPHONE/DATA OUTLET
$-\bullet_3$	DATA OUTLET MOUNT AT 18" AFF, SEE NOTES BELOW NUMBER INDICATES QUANTITY OF DATA OUTLETS/CABLES
$-\bullet_D$	DATA OUTLET MOUNT AT 18" AFF (D-DUPLEX) REFER TO DETAIL DIAGRAM OR LOCATED WITH-IN WIREMOLD
◈	TELEVISION SYSTEM OUTLET MOUNT AT 18" AFF REFER TO DETAIL DIAGRAM
CCC	COMBINATION OUTLET FOR COMMUNICATION, COMPUTER, AND CABLE TV MOUNT AT 18" AFF (SEE DETAIL)
⌂	MASTER FIRE ALARM PULL BOX 48" AFF
F	MANUAL FIRE ALARM PULL STATION 48" AFF
◀	FIREFIGHTER'S TELEPHONE JACK MOUNT AT 48" AFF
F -F	FIRE ALARM CEILING OR WALL MOUNT SPEAKER
■◁	FIRE ALARM HORN/LIGHT COMBINATION 80" AFF (UON)
■◁S	FIRE ALARM SPEAKER/STROBE 80" AFF FOR VOICE EVACUATION SYSTEM
▣◁	FIRE ALARM HORN (ONLY) 80" AFF (UON)
■	FIRE ALARM FLASHING LIGHT 80" AFF (UON)
S	FIRE ALARM SMOKE DETECTOR
H	FIRE ALARM HEAT DETECTOR (135° F UON) BOILER ROOM DETECTORS TO BE 200° F
S	ELEVATOR RECALL SMOKE DETECTOR
T/R	INFARED BEAM TYPE SMOKE DETECTOR 12" BFC R-RECEIVER; T-TRANSMITTER
M	FIRE ALARM MAGNETIC DOOR HOLDER/RELEASE F DENOTES FLOOR MOUNTED ASSEMBLY
SD_R	DUCT MOUNTED SMOKE DETECTOR R-RETURN; S-SUPPLY
FS TS	SPRINKLER FLOW SWITCH, TAMPER SWITCH
FAA	FIRE COMMAND CENTER WITH FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL WITH FIREFIGHTERS COMMAND CENTER
VEP	FIRE ALARM VOICE EVACUATION PANEL
◀	AREA OF REFUGE COMMUNICATION PHONE TO FIRE COMMAND CENTER (MOUNT AT 42" AFF)
⌀	CONNECTION TO MOTORIZED EQUIPMENT
◻	UNFUSED SAFETY DISCONNECT SWITCH 60" AFF
◼	FUSED SAFETY DISCONNECT SWITCH 60" AFF
⊠	MOTOR STARTER (FURNISHED WITH EQUIPMENT)
S_F	CONTROL SWITCH FURNISHED WITH FAN 60" AFF
T	THERMOSTAT (BY HVAC CONTRACTOR) 60" AFF
P	LIGHTING CONTROL PHOTOCELL
TC	TIME CLOCK
c	COMBINATION T.V. OUTLET AND DUPLEX RECEPTACLE AT 4" BELOW CEILING AND A TV OUTLET 18" AFF SEE DETAIL ON DRAWING E301
d	COMBINATION T.V. OUTLET AND DUPLEX RECEPTACLE AT 4" BELOW CEILING SEE DETAIL ON DRAWING E301
E	EXISTING TO REMAIN
RE	EXISTING TO BE REMOVED
RL	EXISTING TO BE RELOCATED
NL	NEW LOCATION OF EXISTING TO BE RELOCATED
NR	NEW TO REPLACE EXISTING
RR	REMOVE AND REPLACE ON NEW SURFACE

NOTES:
1. THIS LIST OF SYMBOLS IS COMPREHENSIVE; NOT ALL SYMBOLS WILL APPEAR ON ALL DRAWINGS WITHIN THIS SET.
2. PROVIDE WIRE GUARDS FOR ALL NEW AND EXISTING FIRE ALARM DEVICES, EXIT SIGNS, AND EMERGENCY LIGHTING FIXTURES IN ALL GYMNASIUMS, LOCKER ROOMS, AND SHOWER ROOMS.

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER L.J. FREE
ARCHITECT/ENGINEER W.D. BOLAND
DRAWN BY F. AGOSTINI

FLETCHER
THOMPSON

ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND
RENOVATIONS TO

CENTRAL
MIDDLE
SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

**ELECTRICAL
SPECIFICATIONS,
SCHEDULES
AND NOTES**

NO	DATE	REVISION	BY

DATE **MARCH 16, 1998**

SCALE **AS NOTED**

PROJECT NO. **50950.06**

DRAWING NO. **E401**

BQ #70 & 125 Attachment

REMOVE EXISTING LIGHT FIXTURE AND REPLACE WITH A HUBBELL #ENL08AR-SPDRA, WITH A -20°F BALLAST, CONNECT TO EXISTING CIRCUIT.

PART 'B' PART 'A'

MATCH LINE

EXISTG

1 (A100) GROUND FLOOR PLAN - PART "A"
SCALE: 1/8"=1'-0"

LOCATE TOP OF LUMINAIRE 8'-0" A.F.F. TYPICAL.

MOUNT BOTTOM OF LUMINAIRE 8'-0" A.F.F., TYPICAL THIS FLOOR.

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PART 'B' PART 'A'

KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER L.J. FREE
ARCHITECT/ENGINEER W.D. BOLAND
DRAWN BY F. ACOSTINI

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

GROUND FLOOR PART "A" LIGHTING PLAN

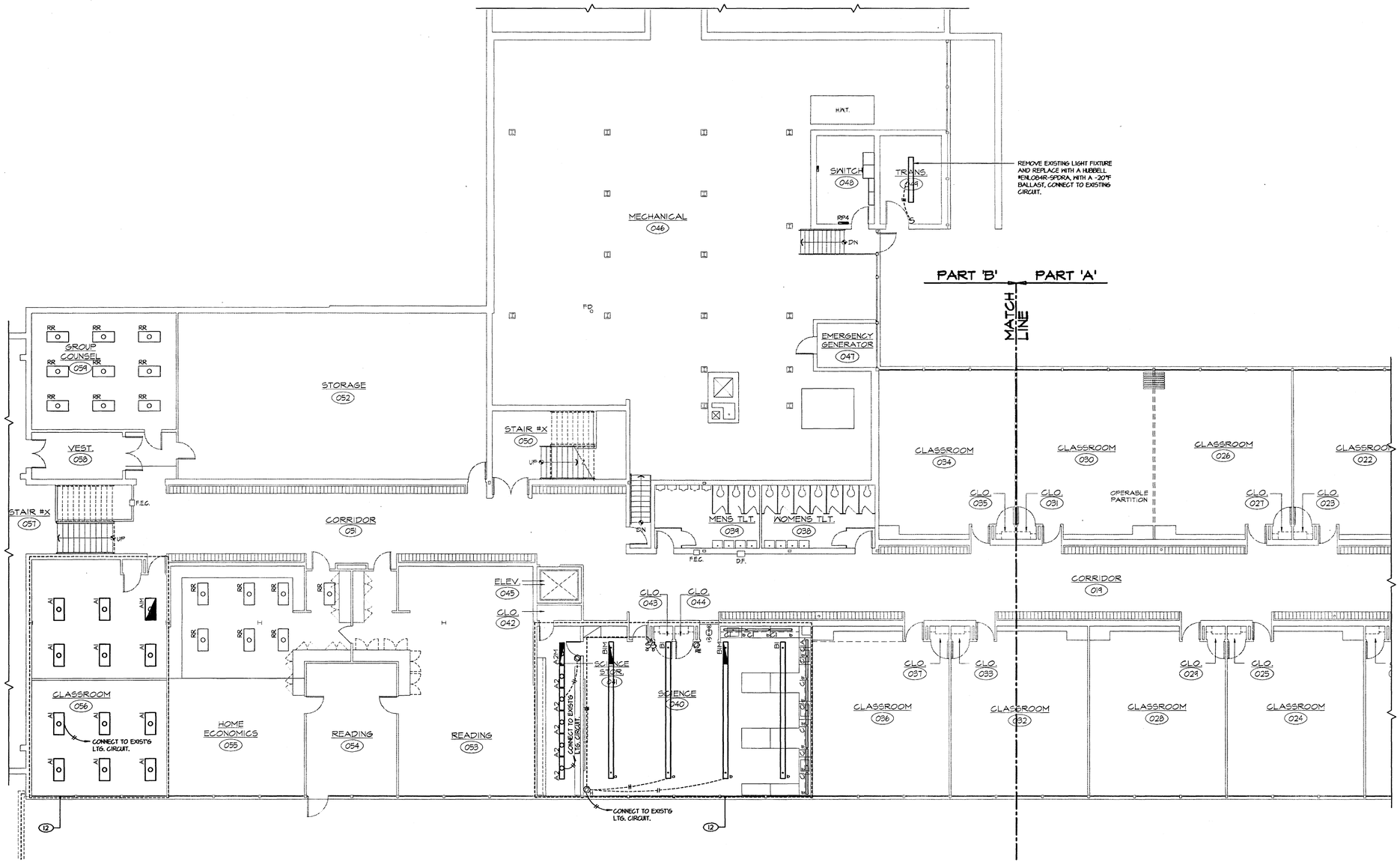
0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE MARCH 16, 1998
SCALE 1/8" = 1'-0"
PROJECT NO. 50950.06
DRAWING NO. E700.1

K:\50 projects\50950\dwg\Elec\E700-1 7-13-98 11:32:15 am EST

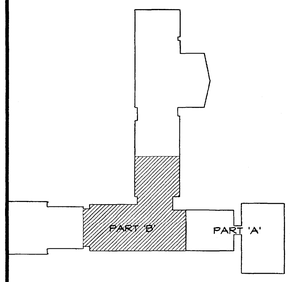
BQ #70 & 125 Attachment



GROUND FLOOR PLAN - PART "B"

A100.3 SCALE: 1/8" = 1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	W.D. BOLAND
DRAWN BY	F. AGOSTINI

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

GROUND FLOOR PART "B" LIGHTING PLAN

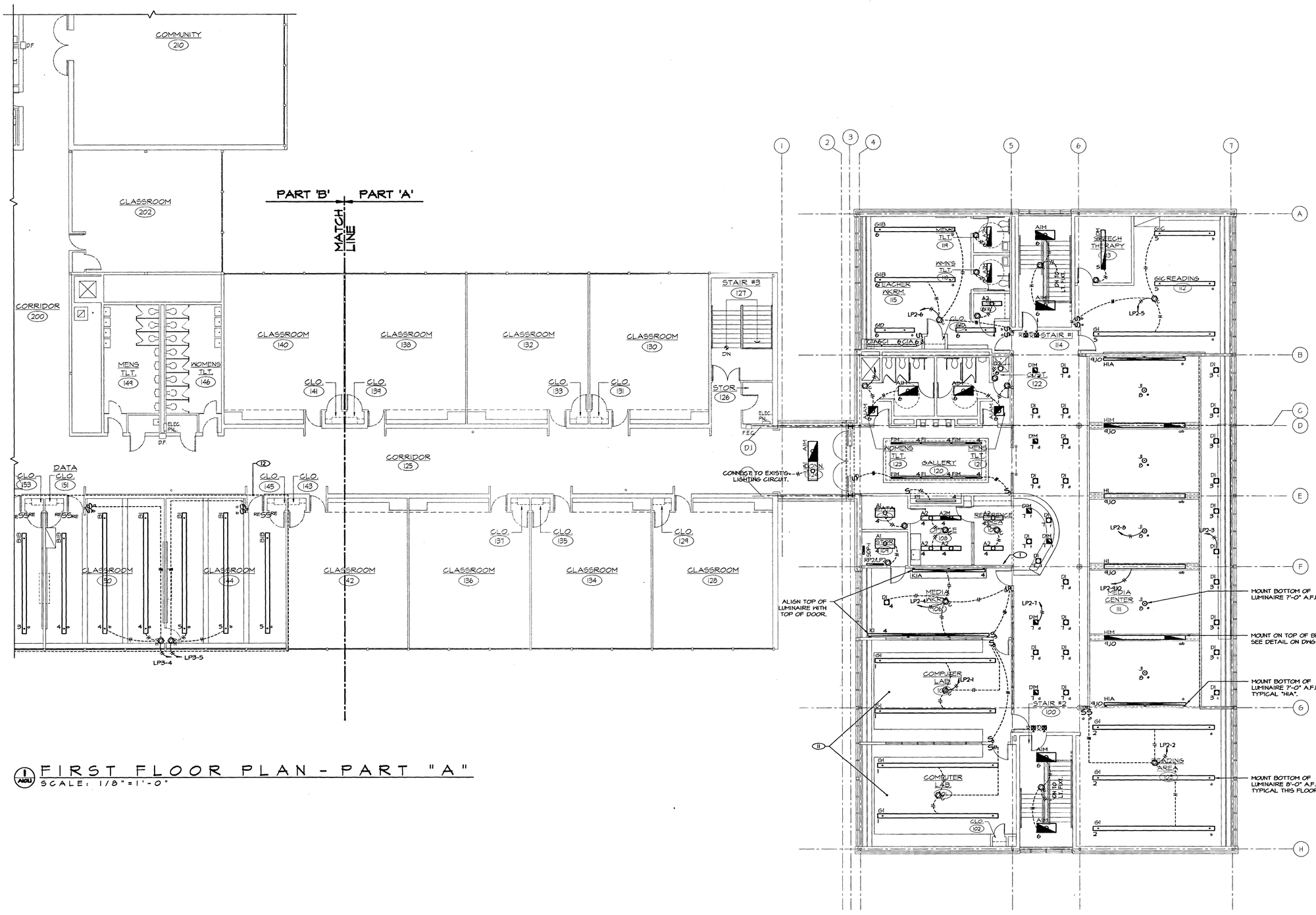
0 4' 8' 16'

SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE	MARCH 16, 1998
SCALE	1/8" = 1'-0"
PROJECT NO.	50950.06
DRAWING NO.	E700.2

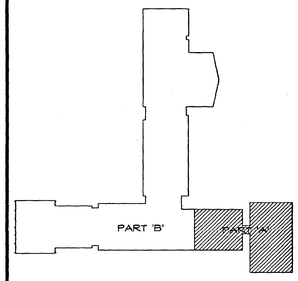
BQ #70 & 125 Attachment



1 A601 FIRST FLOOR PLAN - PART "A"

SCALE: 1/8"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: W.D. BOLAND
DRAWN BY: F. AGOSTINI

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR PART "A" LIGHTING PLAN

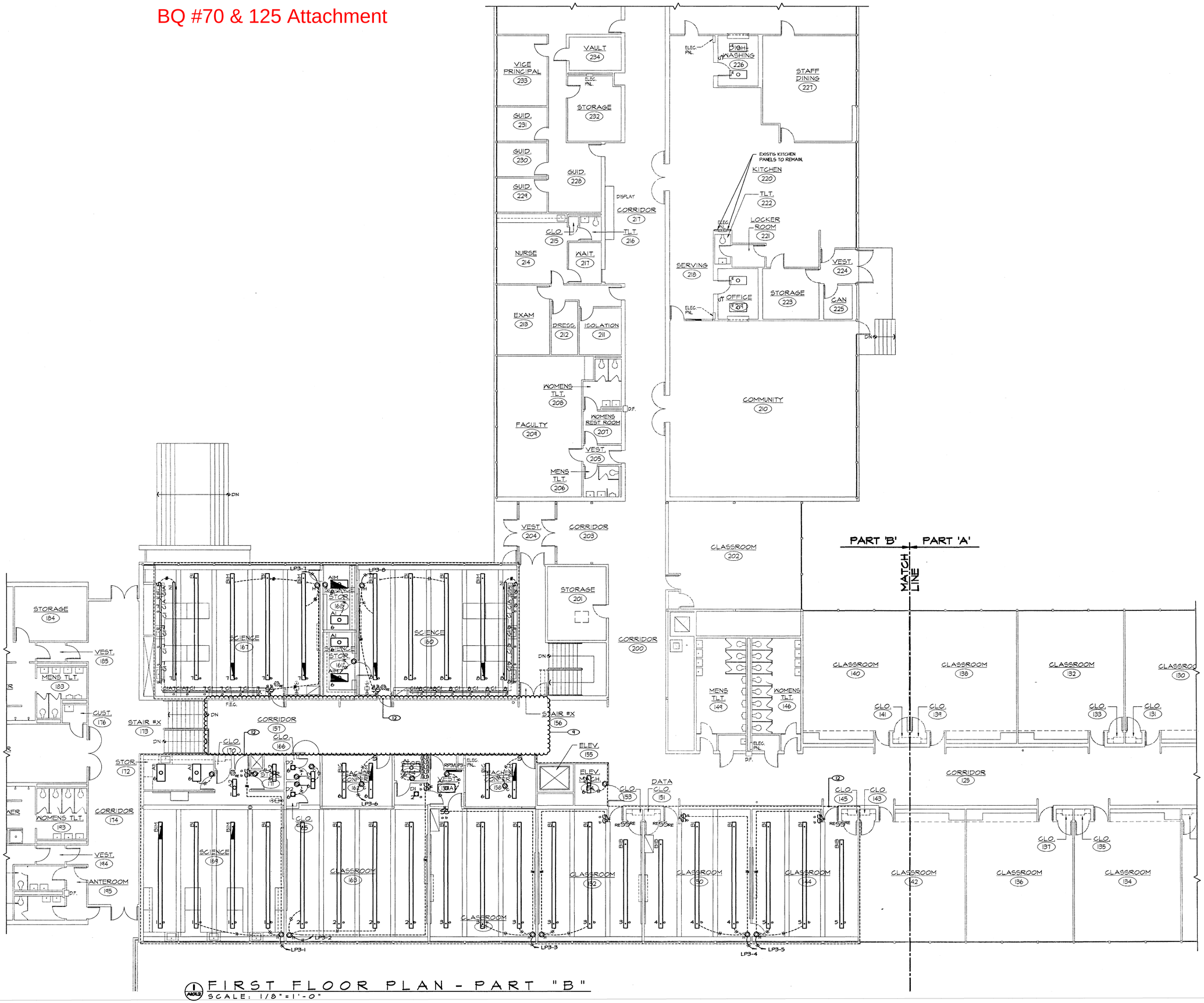
0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE: **MARCH 16, 1998**
SCALE: **1/8" = 1'-0"**
PROJECT NO.: **50950.06**
DRAWING NO.: **E701.1**

K:\50 projects\50950\dwg\Elec\E701-1 6-24-98 10:09:24 am EST

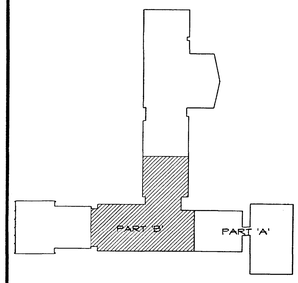
BQ #70 & 125 Attachment



1 A601.2 FIRST FLOOR PLAN - PART "B"
SCALE: 1/8"=1'-0"

K:\50 projects\50950\dwg\Elec\E101-2 6-24-98 10:03:53 am EST

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	W.D. BOLAND
DRAWN BY	F. AGOSTINI

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

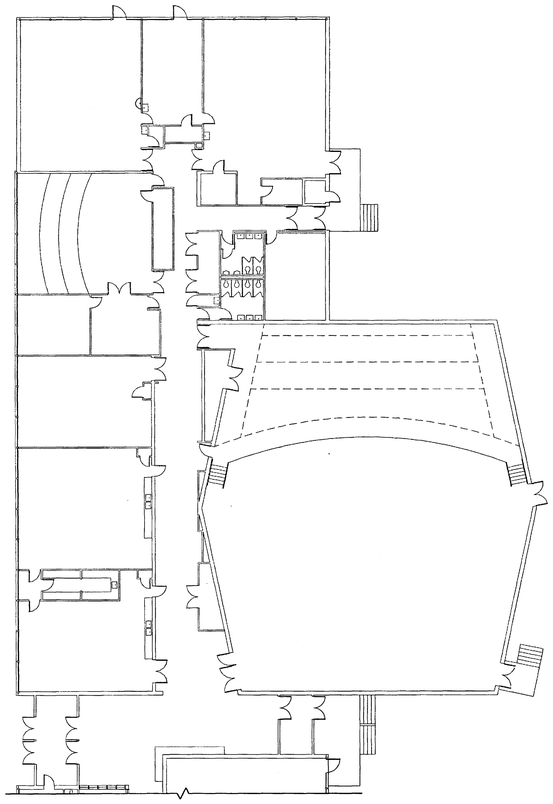
FIRST FLOOR PART "B" LIGHTING PLAN

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

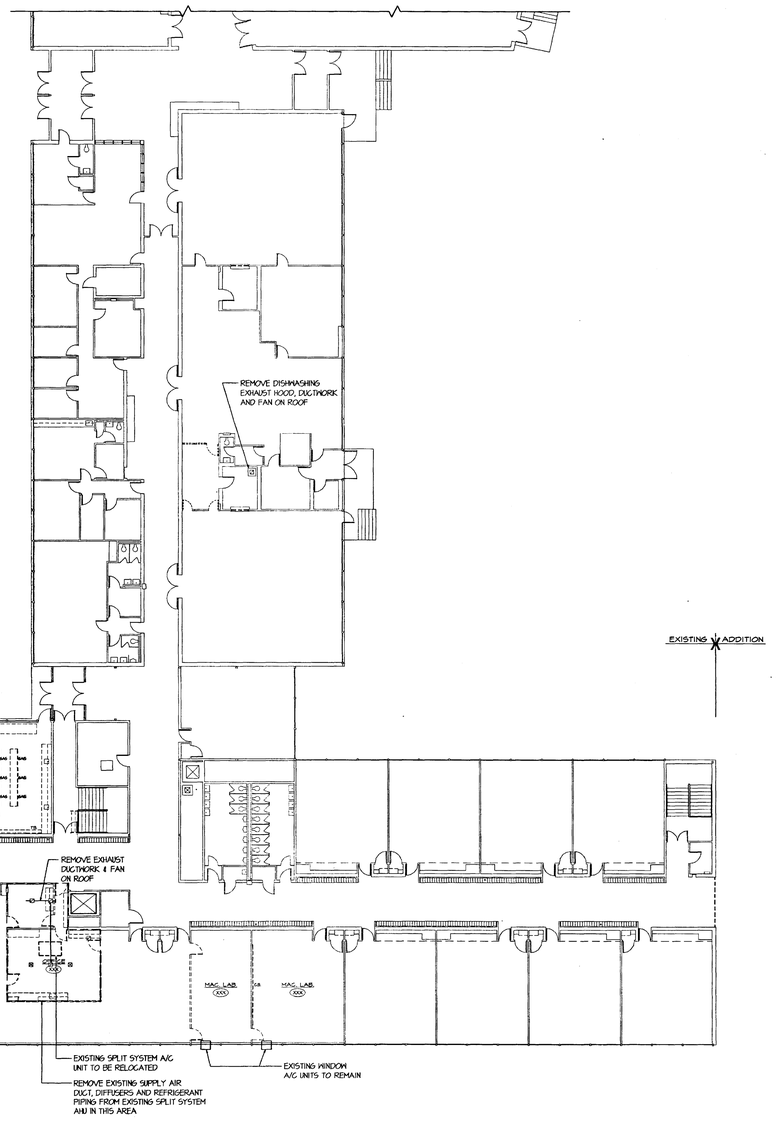
NO	DATE	REVISION	BY

DATE	MARCH 16, 1998
SCALE	1/8" = 1'-0"
PROJECT NO.	50950.06
DRAWING NO.	E701.2

BQ #70 & 125 Attachment



② FIRST FLOOR DEMOLITION PLAN
SCALE: 1/16"=1'-0"

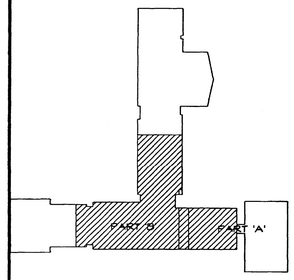


① FIRST FLOOR DEMOLITION PLAN
SCALE: 1/16"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

HVAC PLAN NOTES:

1. REFER TO DRAWING M001 FOR HVAC SCHEDULES.
2. REFER TO DRAWING M201 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE HVAC DRAWINGS.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: J. MACALUSO
DRAWN BY: D. EAR

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR DEMOLITION PLAN - HVAC

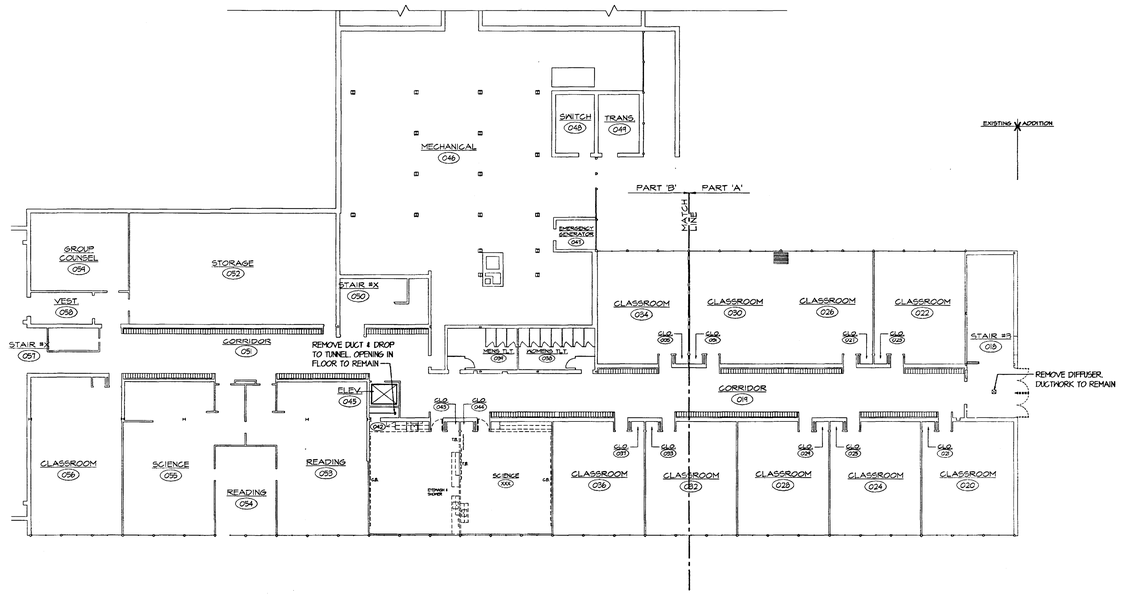
0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE: **MARCH 16, 1998**
SCALE: **1/16" = 1'-0"**
PROJECT NO.: **50950.06**
DRAWING NO.: **M099.1**

K:\SD projects\50950\dwg\HVAC\M099.1 6-29-98 8:52:46 pm EST

BQ #70 & 125 Attachment

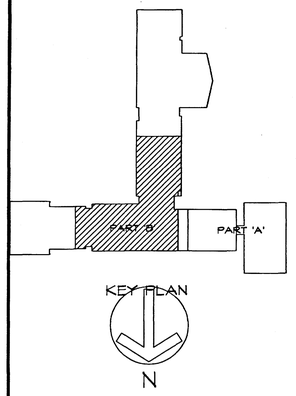


1 A099 GROUND FLOOR DEMOLITION PLAN
SCALE: 1/16"=1'-0"

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

HVAC PLAN NOTES:

1. REFER TO DRAWING M001 FOR HVAC SCHEDULES.
2. REFER TO DRAWING M001 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE HVAC DRAWINGS.



PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	J. MACALUSO
DRAWN BY	D. EAR

FLETCHER THOMPSON
ARCHITECTURE/ENGINEERING/INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

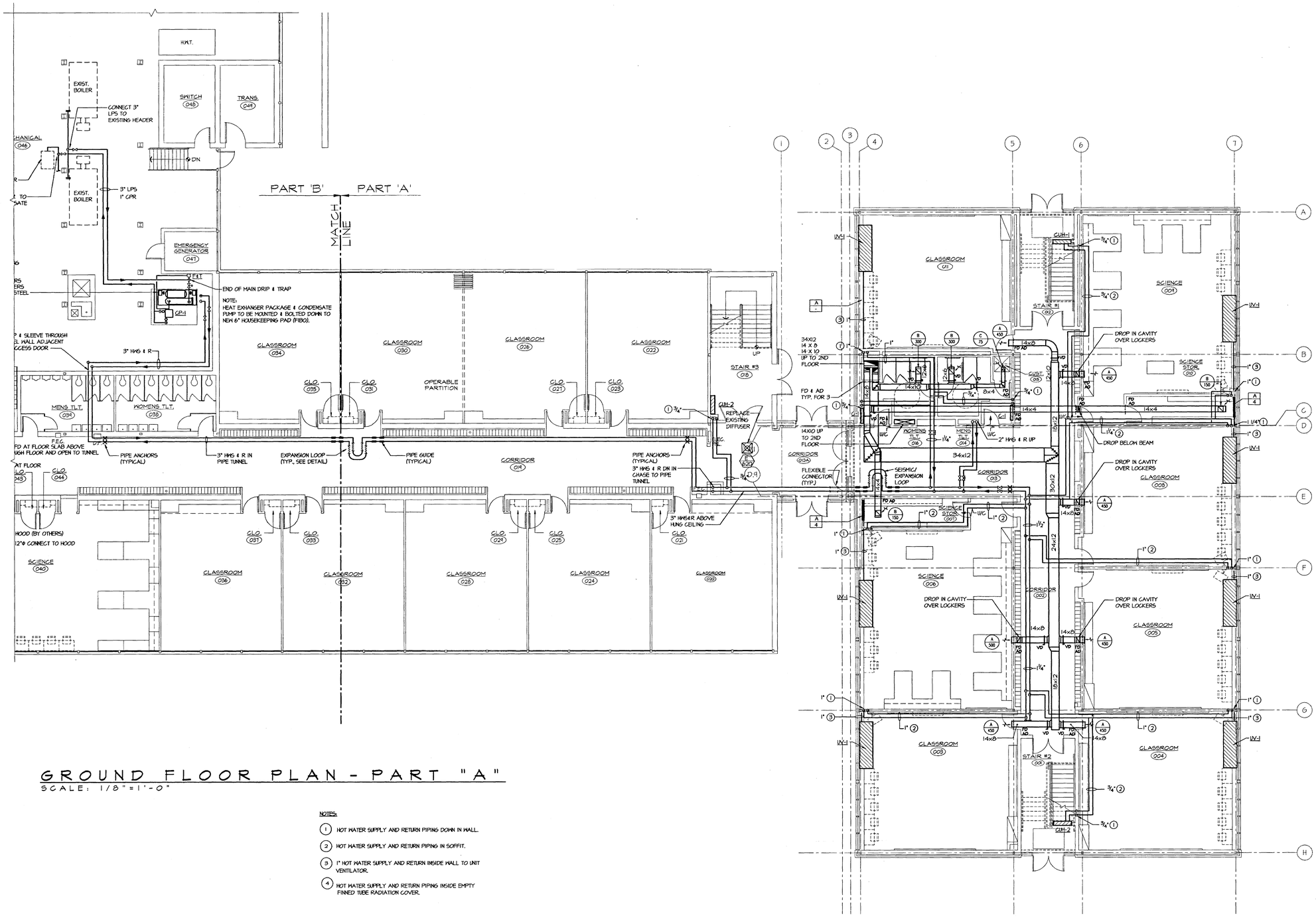
GROUND FLOOR DEMOLITION PLAN - HVAC

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE	MARCH 16, 1998
SCALE	1/16" = 1'-0"
PROJECT NO.	50950.06
DRAWING NO.	M099.2

BQ #70 & 125 Attachment



GROUND FLOOR PLAN - PART "A"

SCALE: 1/8"=1'-0"

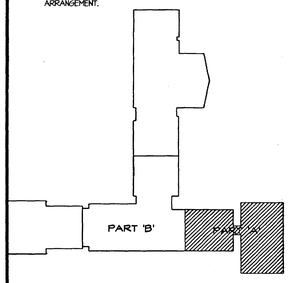
NOTES:

1. HOT WATER SUPPLY AND RETURN PIPING DOWN IN WALL.
2. HOT WATER SUPPLY AND RETURN PIPING IN SOFFIT.
3. 1" HOT WATER SUPPLY AND RETURN INSIDE WALL TO UNIT VENTILATOR.
4. HOT WATER SUPPLY AND RETURN PIPING INSIDE EMPTY FINNED TUBE RADIATION COVER.

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

HVAC PLAN NOTES:

1. REFER TO DRAWING M401 FOR HVAC SCHEDULES.
2. REFER TO DRAWING M201 FOR SYMBOLS LIST AND LIST OF ABBREVIATIONS FOR THESE HVAC DRAWINGS.
3. PROVIDE AIR VENTS ON ALL PIPING DROPS, HIGH POINTS OR CHANGES OF ELEVATION. REFER TO DETAIL FOR PIPING ARRANGEMENT.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE

ARCHITECT/ENGINEER: J. MACALUSO

DRAWN BY: D. EAR

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

GROUND FLOOR PLAN PART "A" - HVAC

0 4' 8' 16'

SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998

SCALE: 1/8" = 1'-0"

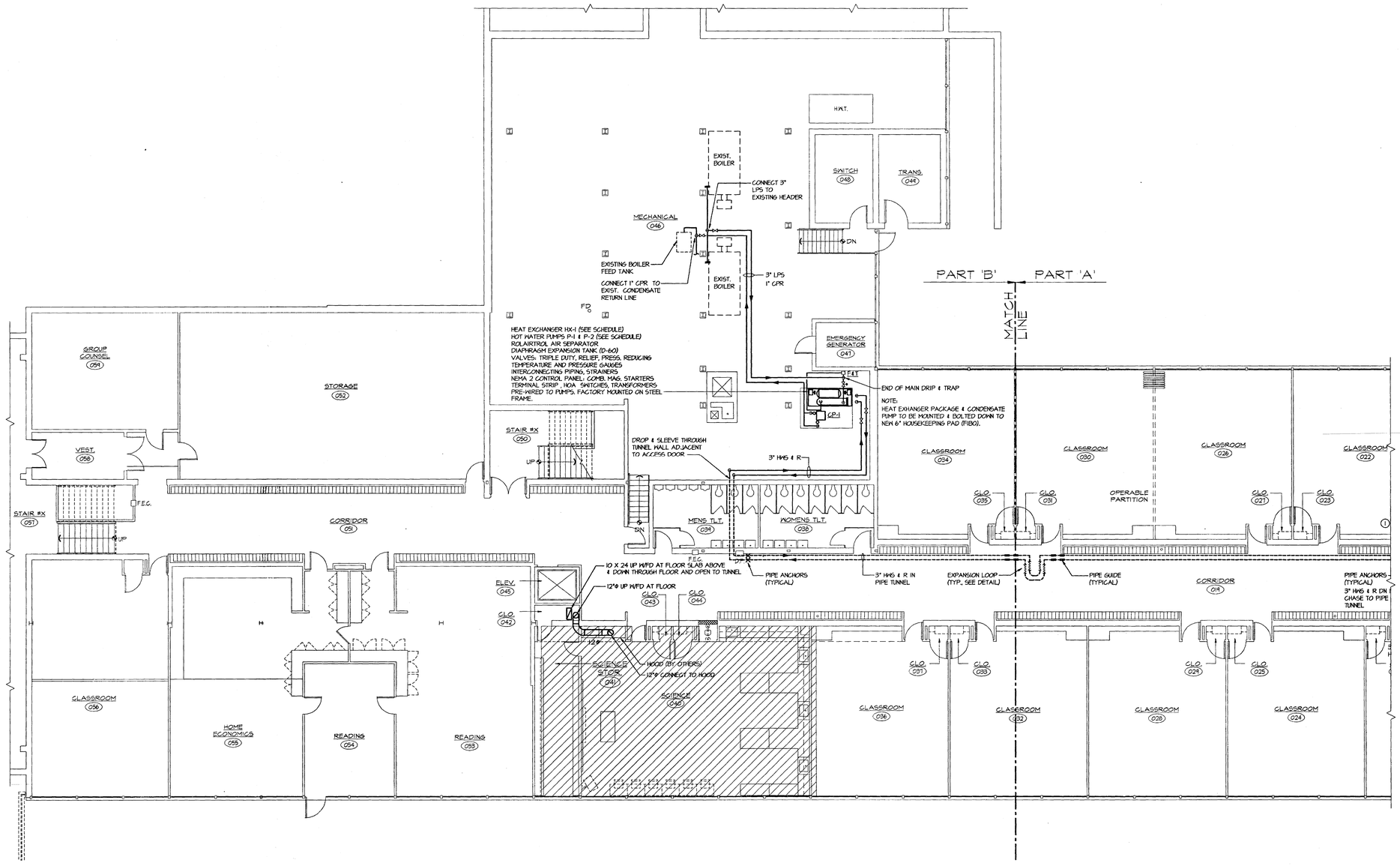
PROJECT NO.: 50950.06

DRAWING NO.: **M100.1**

K:\50 projects\50950\dwg\HVAC\M100-1 7-6-98 10:51:32 pm EST

AB

BQ #70 & 125 Attachment



GROUND FLOOR PLAN - PART "B"

SCALE: 1/8" = 1'-0"

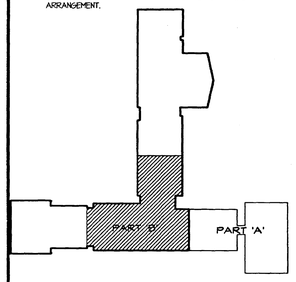
NOTES:

1. HOT WATER SUPPLY AND RETURN PIPING DOWN IN CHASE. REFER TO ARCHITECTURAL DRAWING AND COORDINATE WITH ALL TRADES.
2. HOT WATER SUPPLY AND RETURN PIPING IN SOFFIT.
3. 1" HOT WATER SUPPLY AND RETURN ALONG WALL TO UNIT VENTILATOR.
4. 1" HOT WATER SUPPLY AND RETURN UP TO SECOND FLOOR UNIT VENTILATOR.
5. HOT WATER SUPPLY AND RETURN PIPING DOWN IN WALL.
6. HOT WATER SUPPLY AND RETURN PIPING UP FROM FIRST FLOOR.

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

HVAC PLAN NOTES:

1. REFER TO DRAWING M401 FOR HVAC SCHEDULES.
2. REFER TO DRAWING M201 FOR SYMBOLS LIST AND LIST OF ABBREVIATIONS FOR THESE HVAC DRAWINGS.
3. PROVIDE AIR VENTS ON ALL PIPING DROPS, HIGH POINTS OR CHANGES OF ELEVATION. REFER TO DETAIL FOR PIPING ARRANGEMENT.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE

ARCHITECT/ENGINEER: J. MACALUSO

DRAWN BY: D. EAR

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

GROUND FLOOR PLAN PART "B" - HVAC

0 4' 8' 16'

SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998

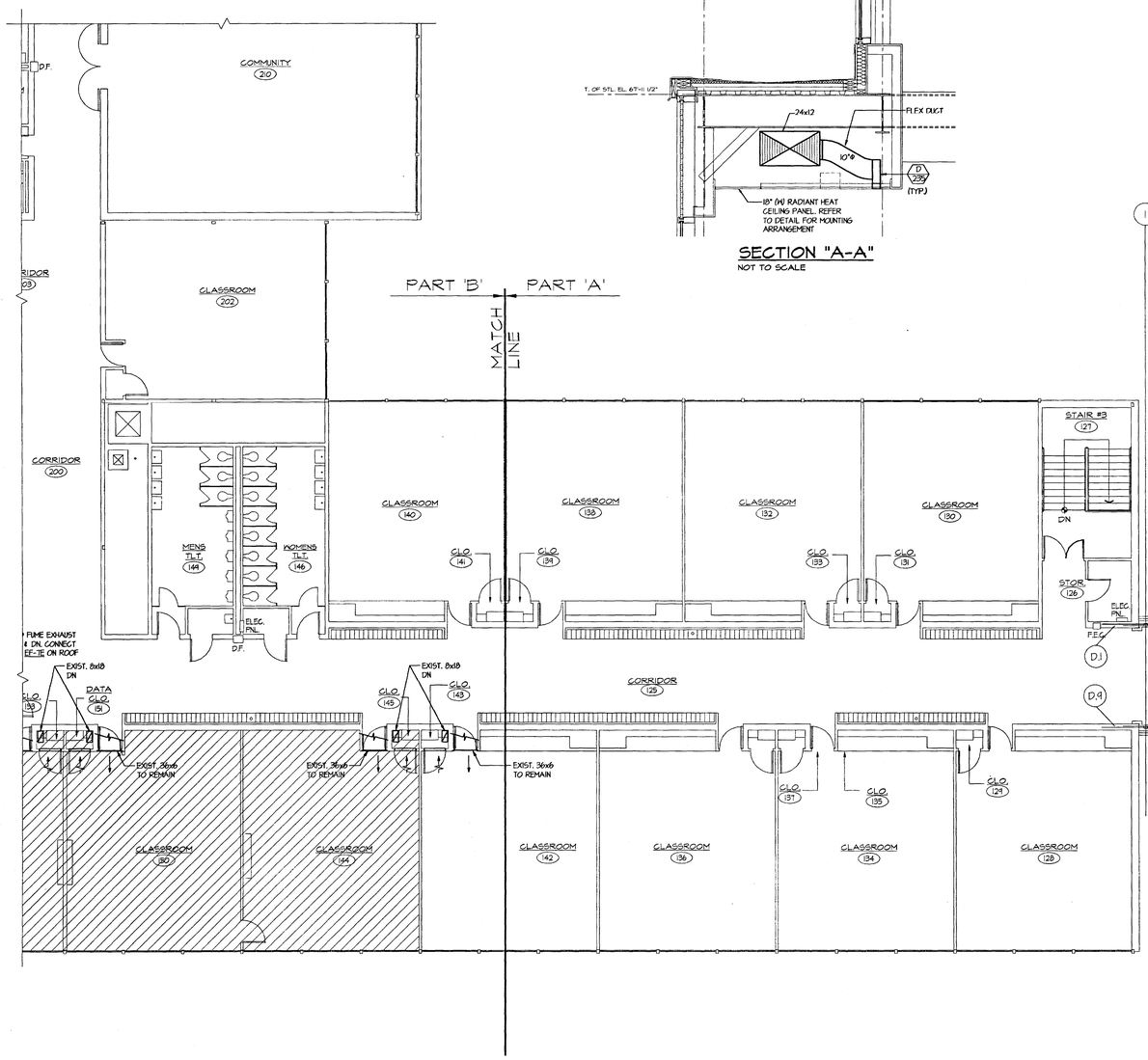
SCALE: 1/8" = 1'-0"

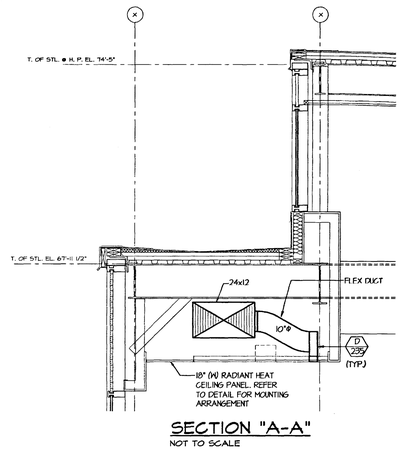
PROJECT NO.: 50950.06

DRAWING NO.: **M100.2**

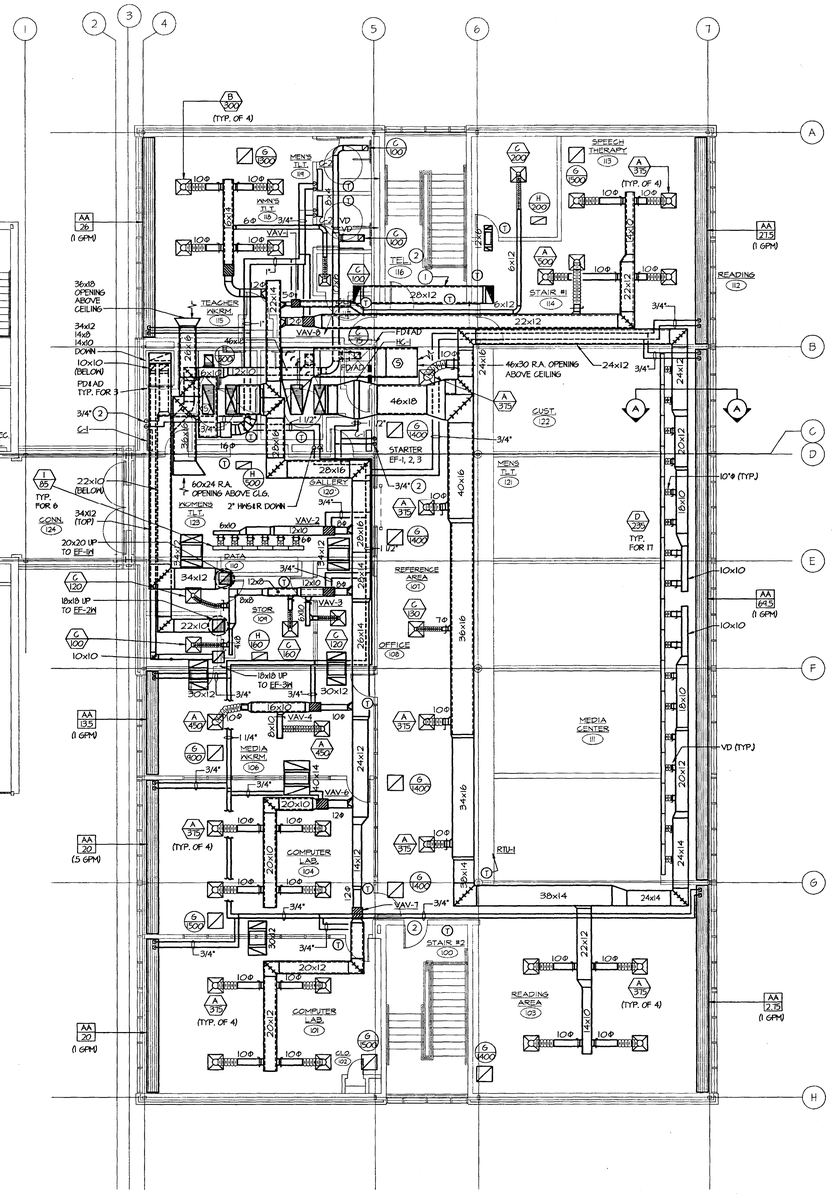
K:\50 projects\50950\dwg\HVAC\M100-2 7-6-98 10:54:27 pm EST

BQ #70 & 125 Attachment





SECTION "A-A"
NOT TO SCALE



GENERAL NOTES:

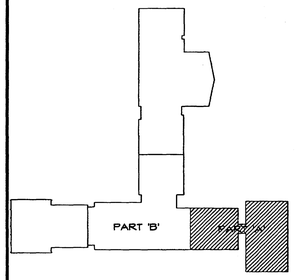
1. RETURN AIR TRANSFER DUCT LOCATED IN FIRE RATED ENCLOSURE ABOVE STAIR CEILING.
2. HOT WATER SUPPLY & RETURN PIPING DOWN IN WALL.

FIRST FLOOR PLAN - PART "A"

SCALE: 1/8"=1'-0"

HVAC PLAN NOTES:

1. REFER TO DRAWING M401 FOR HVAC SCHEDULES.
2. REFER TO DRAWING M201 FOR SYMBOLS LIST AND LIST OF ABBREVIATIONS FOR THESE HVAC DRAWINGS.
3. PROVIDE AIR VENTS ON ALL PIPING DROPS, HIGH POINTS OR CHANGES OF ELEVATION. REFER TO DETAIL FOR PIPING ARRANGEMENT.



KEY PLAN

N

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

PROFESSIONAL SEAL

PROJECT MANAGER	L.J. FREE
ARCHITECT/ENGINEER	J. MACALUSO
DRAWN BY	D. EAR

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO

CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR PLAN PART "A" - HVAC

0 4' 8' 16'

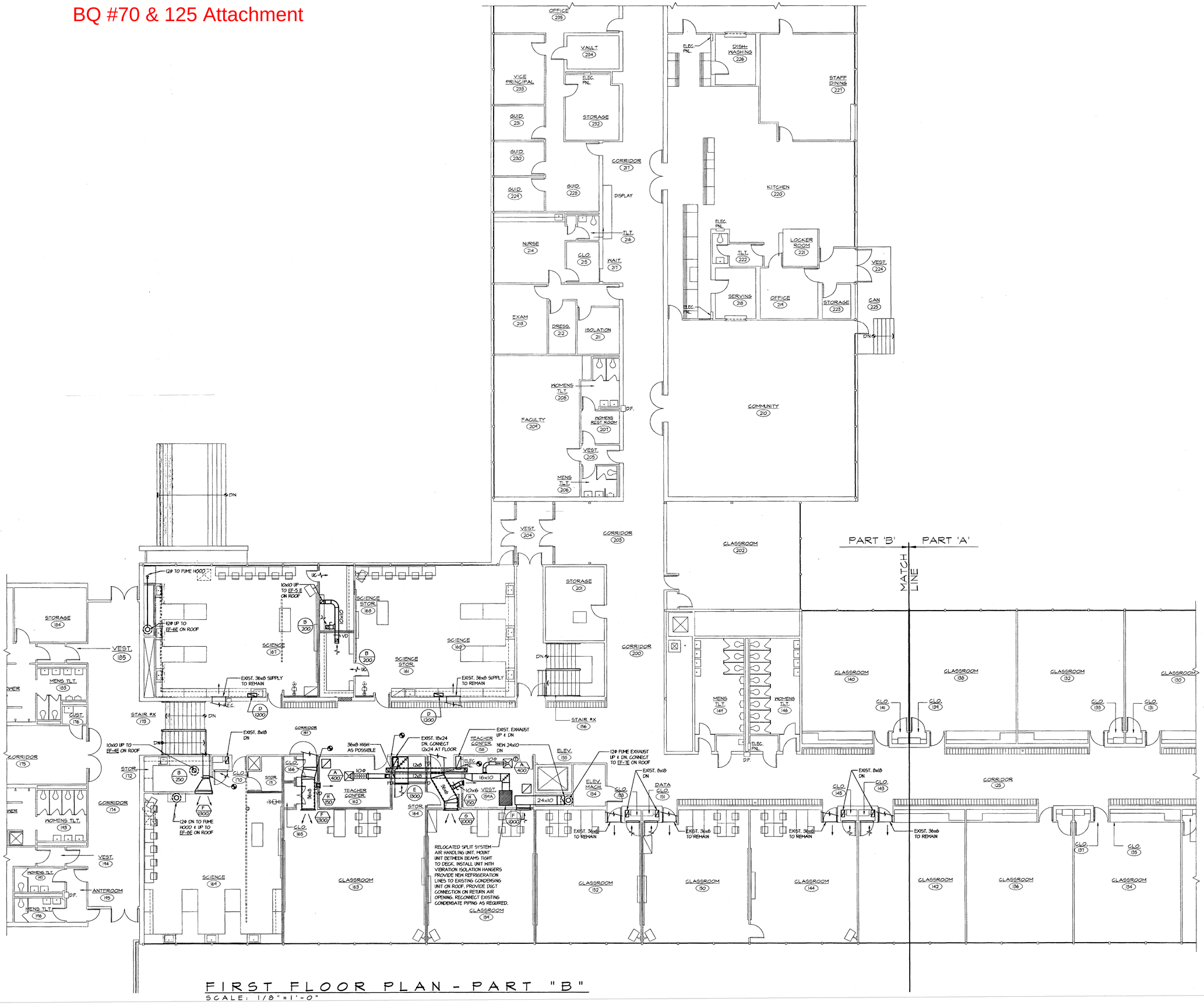
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE	MARCH 16, 1998
SCALE	1/8" = 1'-0"
PROJECT NO.	50950.06
DRAWING NO.	M101.1

K:\50 projects\50950\dwg\HVAC\M101-1 7-6-98 10:56:44 pm EST

BQ #70 & 125 Attachment



FIRST FLOOR PLAN - PART "B"

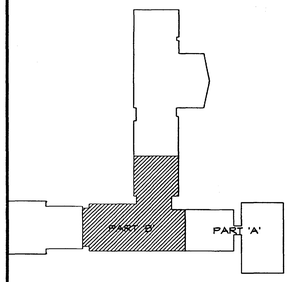
SCALE: 1/8"=1'-0"

K:\50 projects\50950\dwg\HVAC\M101-2 7-6-98 11:00:40 pm EST

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

HVAC PLAN NOTES:

1. REFER TO DRAWING M401 FOR HVAC SCHEDULES.
2. REFER TO DRAWING M301 FOR SYMBOLS LIST AND LIST OF ABBREVIATIONS FOR THESE HVAC DRAWINGS.
3. PROVIDE AIR VENTS ON ALL PIPING DROPS, HIGH POINTS OR CHANGES OF ELEVATION. REFER TO DETAIL FOR PIPING ARRANGEMENT.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: J. MACALUSO
DRAWN BY: D. EAR

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FIRST FLOOR PLAN PART "B" - HVAC

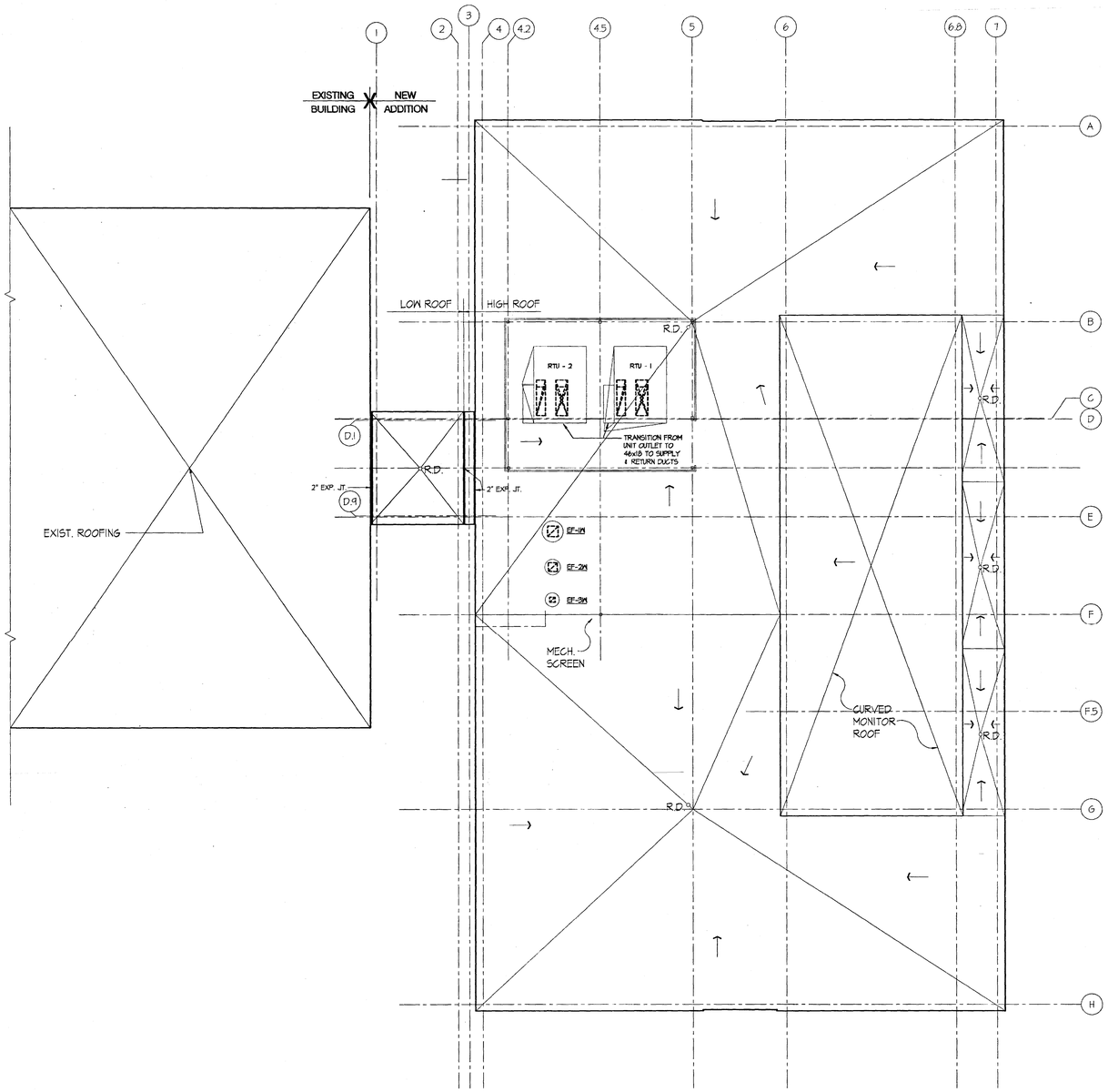
0 4' 8' 16'

SCALE: 1/8" = 1'-0"

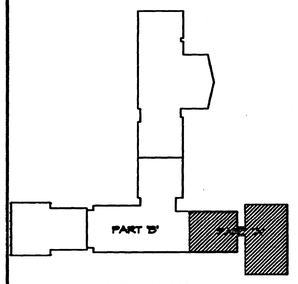
NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: 1/8" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: M101.2

BQ #70 & 125 Attachment



This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.



KEY PLAN

N

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: J. MACALUSO
DRAWN BY: D. EAR

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

ROOF PLAN

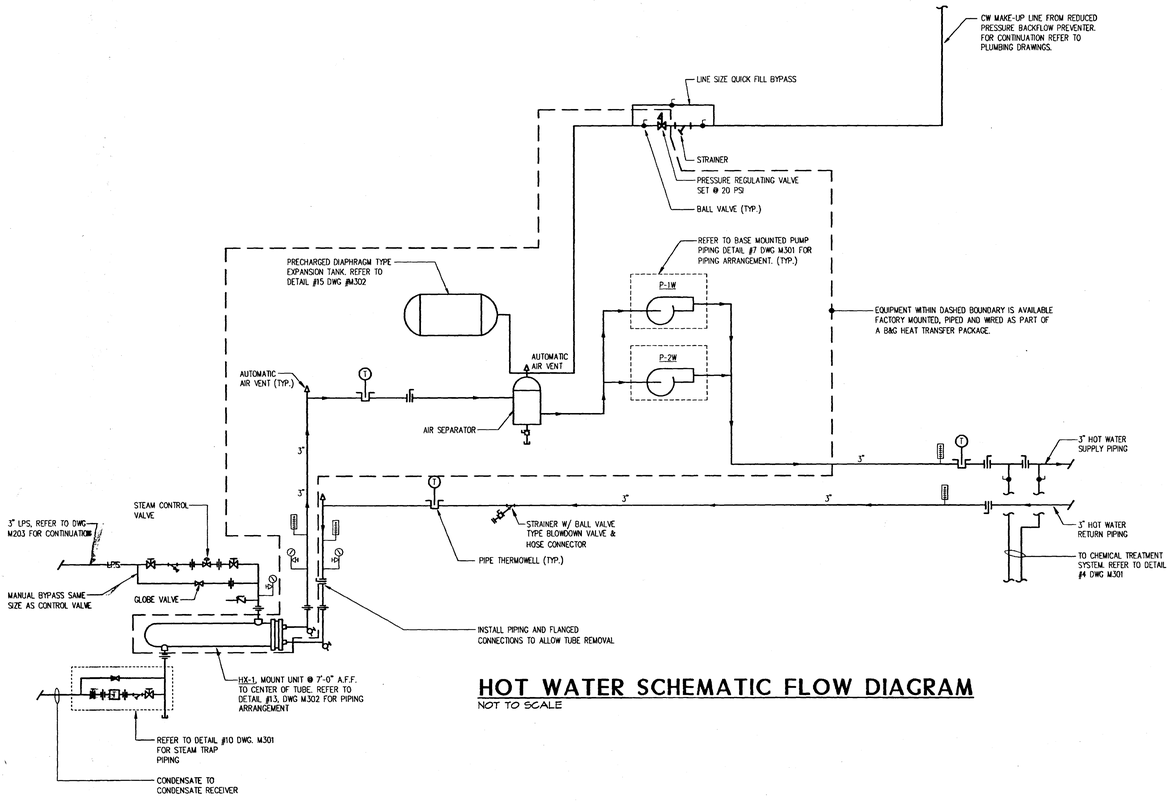
0 4' 8' 16'
SCALE: 1/8" = 1'-0"

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: 1/8" = 1'-0"
PROJECT NO.: 50950.06
DRAWING NO.: M110

50 projects\50950\dwg\HVAC\M110 7-6-98 10:32:23 am EST

BQ #70 & 125 Attachment



HOT WATER SCHEMATIC FLOW DIAGRAM

NOT TO SCALE

ABBREVIATIONS

(###)	CFM	FA	FACE AREA	NO	NORMALLY OPEN
ABV	ABOVE	FBO	FURNISHED BY OTHERS	NTS	NOT TO SCALE
AC	AIR COMPRESSOR		INSTALLED BY HVAC SUBCONTRACTOR	OA	OUTSIDE AIR
ACU-#	AIR CONDITIONING UNIT	FC	FORWARD CURVE	OAT	OUTDOOR AIR TEMPERATURE
AD	ACCESS DOOR	FCU	FAN COIL UNIT	OAI	OUTDOOR AIR INTAKE
AF	AIRFOIL	FD	FIRE DAMPER WITH ACCESS DOOR	OBD	OPPOSED BLADE DAMPER
AFC	ADJUSTABLE FREQUENCY CONTROLLER	FF	FINAL FILTER	OD	OUTSIDE DIMENSION
AFF	ABOVE FINISHED FLOOR	FIBO	FURNISHED AND INSTALLED BY OTHERS	O.E. T.D.	OPEN END TRANSFER DUCT
AFMS	AIR FLOW MEASURING STATION	FIN FL	FINISH FLOOR	P-#	PUMP
AHU-#	AIR HANDLING UNIT	FL	FLOOR	PB	PUSH BUTTON
AL	ACOUSTIC LINING	FLA	FULL LOAD AMPERES	PBD	PARALLEL BLADE DAMPER
ALD	AUTOMATIC LOUVER DAMPER	FLEX	FLEXIBLE	PD	PRESSURE DROP
APD	AIR PRESSURE DROP	FPF	FINS PER FOOT	PF	PREFILTER
AUTO	AUTOMATIC	FPV	FAN POWERED VAV BOX	PH	PHASE
B-#	BOILER	FT	FEET	PHC	PREHEAT COIL
BC	BACKWARD CURVED	F.T.	FLOAT & THERMOSTATIC TRAP	PPH	POUND PER HOUR
BD	BELT DRIVE	FTR	FIN TUBE RADIATION	PRV	PRESSURE REDUCING VALVE
BMCS	BUILDING MANAGEMENT & CONTROL SYSTEM	FV	FACE VELOCITY	PSI	POUND PER SQUARE INCH
BIT	INVERTED BUCKET TRAP	GC	GENERAL CONTRACTOR	RA	RETURN AIR
BTU	BRITISH THERMAL UNIT	GH	GRAVITY INTAKE HOOD	RAF-#	RETURN AIR FAN
C-#	CHILLER	GPH	GALLONS PER HOUR	RAT	RETURN AIR TEMPERATURE
CAP	CAPACITY	GPM	GALLONS PER MINUTE	REG	REGISTER
CB-#	CONTROL BOX	H/C	HEATING/COOLING	RH	RELATIVE HUMIDITY
CC-#	COOLING COIL	H-#	HUMIDIFIER	RHC	REHEAT COIL
CD	CEILING DIFFUSER	H-O-A	HAND-OFF-AUTOMATIC	RM	ROOM
CFM	CUBIC FEET PER MINUTE	HC-#	HEATING COIL	RPM	REVOLUTIONS PER MINUTE
CG	CEILING GRILLE	hd	FEET OF HEAD	RS	RISE
CLG	CEILING	HP	HORSEPOWER	RTU-#	ROOFTOP AIR CONDITIONING UNIT
CONV-#	HOT WATER CONVECTOR	HTG	HEATING	SA	SUPPLY AIR
CP	CONDENSATE RECEIVER/PUMPING SYSTEM	HTR	HEATER	SAF-#	SUPPLY AIR FAN
CR	CEILING REGISTER	HV-#	HEATING AND VENTILATING UNIT	SAT	SUPPLY AIR TEMPERATURE
CT-#	COOLING TOWER	HVAC	HEATING, VENTILATING & AIR CONDITIONING	SB	SECURITY BARS
CTD	CEILING TRANSFER DUCT			VSC	VERTICAL SPLIT CASE
CUH-#	CABINET UNIT HEATER HOT WATER	HX-#	HEAT EXCHANGER CONVERTOR	HSC	HORIZONTAL SPLIT CASE
CV	CONTROL VALVE	ID	INSIDE DIMENSION	SD	SMOKE DAMPER
CW	COLD WATER	IN	INCHES	SG	SUPPLY GRILLE
D&T	DRIP AND TRAP	IV	INLET GUIDE VANES	SP	STATIC PRESSURE
db	DECIBELS	KW	KILOWATT	SQ FT	SQUARE FOOT (AREA)
DB	DRY BULB	KWH	KILOWATT HOUR	ST	SINGLE POLE SWITCH W/THERMAL OVERLOAD
DD	DIRECT DRIVE	IL	INLINE	SWR	SIDE WALL REGISTER
DDC	DIRECT DIGITAL CONTROL	LAT	LEAVING AIR TEMPERATURE	TSTAT	THERMOSTAT
DIFF	DIFFUSER	LD	LINEAR DIFFUSER	TD	TEMPERATURE DIFFERENCE
DL	DOOR LOUVER	LIN	LINEAR	TEMP	TEMPERATURE
DN	DOWN	LRA	LOCKED ROTOR AMPERES	TG	AIR TRANSFER GRILLE
DP	DEWPOINT TEMPERATURE	LPR	LOW PRESSURE RETURN	TOT	TOTAL
DR	DROP	LPS	LOW PRESSURE SUPPLY	TN-HR	TON HOUR REFRIGERATION
DX	DIRECT EXPANSION	LVG	LEAVING	TRD	TRANSFER DUCT
E-#	EXHAUST FAN	LWT	LEAVING WATER TEMPERATURE	TT	THERMOSTATIC TRAP
EAT	ENTERING AIR TEMPERATURE	MAN	MANUAL	TYP	TYPICAL
EER	ENERGY EFFICIENCY RATIO	MAT	MIXED AIR TEMPERATURE	UC	UNDERCUT DOOR
EG	EXHAUST GRILLE	MAX	MAXIMUM	UH-#	UNIT HEATER HOT WATER
EHC-#	ELECTRIC HEATING COIL	MBH	1000 BTU'S	UV-#	UNIT VENTILATOR
ENT	ENTERING	MCA	MINIMUM CIRCUIT AMPACITY	VAV-#	VARIABLE AIR VOLUME
HEPA	HIGH EFFICIENCY PARTICULATE FILTER	MD	MOTORIZED DAMPER	VD	VOLUME DAMPER
ER	EXHAUST REGISTER	MER	MECHANICAL EQUIPMENT ROOM	VE	VOLUME EXTRACTOR
ES	END SUCTION	MEZZ	MEZZANINE	VI	VIBRATION ISOLATOR
ESP	EXTERNAL STATIC PRESSURE	MFS	MAXIMUM FUSE SIZE	VSF	VARIABLE SPEED FAN SWITCH
ET-#	EXPANSION TANK	MIN	MINIMUM	W/	WITH
EUH-#	ELECTRIC UNIT HEATER	MOT	MOTOR	WB	WET BULB
EWT	ENTERING WATER TEMPERATURE	MUA	MAKE-UP AIR	WFM	WATER FLOW MEASURING STATION
EX	EXISTING	MV	MOTORIZED VALVE	WMS	WIRE MESH SCREEN
EXH	EXHAUST	NC	NORMALLY CLOSED	WPD	WATER PRESSURE DROP
EXT	EXTERNAL	NC	NOISE CRITERIA	WT	WEIGHT (LBS)
F	DEGREES FAHRENHEIT	NFA	NET FREE AREA	ZD	ZONE DAMPER
F&B	FACE & BYPASS DAMPER	NIC	NOT IN THIS CONTRACT		

SYMBOLS

PIPING SYMBOLS

- CHILLED WATER SUPPLY PIPING (CWS)
- CHILLED WATER RETURN PIPING (CWR)
- CONDENSER WATER SUPPLY PIPING (CWS)
- CONDENSER WATER RETURN PIPING (CWR)
- GLYCOL WATER SUPPLY (GWS)
- GLYCOL WATER RETURN (GWR)
- DOMESTIC COLD WATER MAKE-UP (CW)
- HOT WATER (HEATING) SUPPLY PIPING (HWS)
- HOT WATER (HEATING) RETURN PIPING (HWR)
- HIGH PRESSURE STEAM SUPPLY PIPING (HPS)
- HIGH PRESSURE STEAM CONDENSATE RETURN PIPING (HPR)
- LOW PRESSURE STEAM SUPPLY PIPING (LPS)
- LOW PRESSURE STEAM CONDENSATE RETURN PIPING (LPR)
- PUMPED CONDENSATE RETURN PIPING (PC)
- CONDENSATION DRAIN PIPING (D)
- DUAL TEMPERATURE SUPPLY PIPING (DTS)
- DUAL TEMPERATURE RETURN PIPING (DTR)
- DIRECTION OF FLOW IN PIPE
- PITCH PIPE DOWN IN DIRECTION OF ARROW
- PIPE ELBOW UP; DOWN
- PIPE TOP CONNECTION
- PIPE BOTTOM CONNECTION
- PIPE CAPPED
- PIPE UNION
- PIPE ANCHOR
- PIPE GUIDES
- PIPE EXPANSION JOINTS
- FLEXIBLE PIPE CONNECTOR
- PIPE EXPANSION LOOP (LENGTH X WIDTH)
- SEISMIC OR EXPANSION LOOP
- PRESSURE GAUGE WITH PETCOCK
- PIPE REDUCER OR INCREASER
- THERMOMETER WITH THERMO WELL
- PIPE WELL (FOR CONTROLS OR TEST)
- PIPE AIR VENT (M-MANUAL, A-AUTOMATIC)
- PET COCK
- GLOBE VALVE
- GATE VALVE
- BUTTERFLY VALVE
- BALANCING CIRCUIT SETTER TYPE VALVE WITH 100% SHUT OFF
- PLUG VALVE
- BALL VALVE
- DRAIN VALVE W/ HOSE COUPLING W/CAP
- CHECK VALVE
- THREE-WAY MOTORIZED CONTROL VALVE
- TWO-WAY MOTORIZED CONTROL VALVE
- SUMMER/WINTER VALVE
- RELIEF VALVE
- ANGLE RELIEF VALVE
- PRESSURE REDUCING VALVE (PRV)
- RADIATION PIPING CONTROL VALVE
- STRAINER W/ BLOWDOWN BALL VALVE
- STEAM TRAP RIG
- WATER FLOW MEASURING STATION
- O S & Y GATE VALVE

DUCTWORK SYMBOLS

- S.A. OR O.A. DUCT UP; DN
- R.A. OR EXH. DUCT UP; DN
- DOUBLE LINE DUCTWORK W/ INTERNAL ACOUSTICAL INSULATION AND INDICATION OF INSIDE DIMENSION
- SINGLE LINE DUCTWORK W/ INDICATION OF INSIDE DIMENSIONS
- SINGLE LINE DUCTWORK W/ INTERNAL ACOUSTICAL INSULATION AND INDICATION OF INSIDE DIMENSION
- ACCESS DOOR IN DUCT
- ROUND DUCT DIAMETER SIZE
- FLEXIBLE DUCT CONNECTION
- DUCT MOUNTED COIL
- FLEXIBLE ROUND DUCT
- DIRECTION OF AIR FLOW
- FIRE DAMPER
- SMOKE DAMPER
- MANUAL VOLUME DAMPER
- MOTORIZED DAMPER
- ELBOW WITH AIRFOIL TURNING VANES
- TEMPERATURE SENSOR OR THERMOSTAT (G DENOTES WITH GUARD)
- STATIC PRESSURE SENSOR
- SMOKE DETECTOR IN DUCT (FIBO)
- RELATIVE HUMIDITY SENSOR OR HUMIDISTAT
- CEILING DIFFUSER
- CEILING DIFFUSER (3-WAY BLOW)
- CEILING DIFFUSER (2-WAY BLOW)
- CEILING DIFFUSER (1-WAY BLOW)
- WALL GRILLE OR REGISTER AS NOTED
- LINEAR DIFFUSER
- RETURN OR EXHAUST GRILLE
- FIN-TUBE RADIATION W/ COVER
- AIR TERMINAL UNIT
- DOOR UNDERCUTS
- DUCT STATIC PRESSURE CLASSIFICATION
- ADJUSTABLE FREQUENCY CONTROLLER
- VARIABLE SPEED FAN SWITCH
- MOTOR STARTER
- EQUIPMENT DISCONNECT

This drawing and details on it, as an instrument of service, is the property of the architect and may be used for this specific project and shall not be loaned, copied or reproduced without written consent of the architect.

HVAC PLAN NOTES:

1. REFER TO DRAWING M401 FOR HVAC SCHEDULES.
2. REFER TO DRAWING M201 FOR SYMBOL LIST AND LIST OF ABBREVIATIONS FOR THESE HVAC DRAWINGS.

PROFESSIONAL SEAL

PROJECT MANAGER: L.J. FREE
ARCHITECT/ENGINEER: J. MACALUSO
DRAWN BY: D. EAR

FLETCHER THOMPSON
ARCHITECTURE / ENGINEERING / INTERIOR DESIGN

FLETCHER-THOMPSON, INC.
TWO LAFAYETTE SQUARE
BRIDGEPORT, CT 06604-3944

PROJECT TITLE

ADDITIONS AND RENOVATIONS TO
CENTRAL MIDDLE SCHOOL
9 INDIAN ROCK LANE
GREENWICH, CONNECTICUT

STATE PROJECT NO. 057-106EA

DRAWING TITLE

FLOW DIAGRAMS & DETAILS - HVAC

NO	DATE	REVISION	BY

DATE: MARCH 16, 1998
SCALE: AS NOTED
PROJECT NO.: 50950.06
DRAWING NO.: M201

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Add. #1	Add. #2	Add. #3	Add. #4	Add. #5	Addendum #6	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		10/30/2024			*Addendum #2, Addendum #4*
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							
	SUBSTITUTION PROCEDURES ATTACHMENT – CSI FORM 1.5C	9/30/2024							
01 2500	ATTACHMENT – CSI FORM 13.1A								
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							
	SUSTAINABILITY COMPLIANCE PROCEDURES – CTHPB WORKING	9/30/2024							
01 3566.42	COMPLIANCE CHECKLIST W/ LEED								
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							
	TEMPORARY FACILITIES AND CONTROLS -- ATTACHMENT FORM SCG-	9/30/2024							
01 5000	3021 PROJECT SIGN								
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					*11/1/2024*		*Addendum #5*
02 4100	DEMOLITION	9/30/2024							
02 4113	SITE UTILITY ABANDONMENT	9/30/2024					*11/1/2024*		*Addendum #5*
	SELECTIVE HAZARDOUS BUILDING MATERIALS ABATEMENT DEMOLITION	9/30/2024							
02 8200									
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 4313	STONE MASONRY VENEER					10/30/2024			*Addendum #4*
04 7323	MANUFACTURED BUILDING STONE MASONRY	9/30/2024							
DIVISION 05 - METALS									
05 0905	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							
05 7000	DECORATIVE METAL RAILINGS	9/30/2024							
05 7100	MONUMENTAL METAL STAIRS	9/30/2024							

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Add. #1	Add. #2	Add. #3	Add. #4	Add. #5	Addendum #6	Comments
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						11/6/2024	*Addendum #6*
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			10/23/2024				*Addendum #3*
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						11/6/2024	*Addendum #6*
08 4313	ALUMINUM-FRAMED STOREFRONTS	9/30/2024			10/23/2024				*Addendum #3*
08 4413	GLAZED ALUMINUM CURTAIN WALLS	9/30/2024				10/30/2024		11/6/2024	*Addendum #4, Addendum #6*
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				10/30/2024			*Addendum #4*
10 4400	FIRE PROTECTION SPECIALTIES	9/30/2024							
10 5113	METAL LOCKERS	9/30/2024				10/30/2024			*Addendum #4*
10 5502	MAIL SORTER	9/30/2024							
10 7516	GROUND-SET FLAGPOLES	9/30/2024							
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						11/6/2024	*Addendum #6*
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						11/6/2024	*Addendum #6*
11 7300	PATIENT CARE EQUIPMENT	9/30/2024							

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Add. #1	Add. #2	Add. #3	Add. #4	Add. #5	Addendum #6	Comments
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			10/23/2024				*Addendum #3*
12 6613	TELESCOPING BLEACHERS	9/30/2024				10/30/2024			*Addendum #4*
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 0433	HEAT TRACE FOR FIRE SUPPRESSION PIPING	N/A			10/23/2024				*Addendum #3*
21 0516	EXPANSION FITTINGS AND LOOPS FOR FIRE SUPPRESSION PIPING	9/30/2024							
21 0533	HEAT TRACE FOR PLUMBING PIPING	N/A			10/23/2024				*Addendum #3*
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						11/6/2024	*Addendum #6*
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				10/30/2024		11/6/2024	*Addendum #4, Addendum #6*
23 0993	SEQUENCE OF OPERATIONS	9/30/2024			10/23/2024	10/30/2024			*Addendum #3, Addendum #4*
23 2113	HYDRONIC PIPING	9/30/2024							
23 2114	HYDRONIC SPECIALTIES	9/30/2024							
23 2123	HYDRONIC PUMPS	9/30/2024			10/23/2024				*Addendum #3*
23 2500	HVAC WATER TREATMENT	9/30/2024							
23 3100	HVAC DUCTS AND CASINGS	9/30/2024			10/23/2024			11/6/2024	*Addendum #3, Addendum #6*
23 3300	AIR DUCT ACCESSORIES	9/30/2024							
23 3400	HVAC FANS	9/30/2024			10/23/2024				*Addendum #3*
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						11/6/2024	*Addendum #6*
23 7413	MODULAR CENTRAL-STATION AIR-HANDLING UNITS	9/30/2024							
23 8126	SPLIT-SYSTEM AIR-CONDITIONERS	9/30/2024						11/6/2024	*Addendum #6*
23 8200	CONVECTION HEATING AND COOLING UNITS	9/30/2024				10/30/2024			*Addendum #4*
DIVISION 25 - INTEGRATED AUTOMATION [Not Used]									

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Add. #1	Add. #2	Add. #3	Add. #4	Add. #5	Addendum #6	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 0548	VIBRATION AND SEISMIC CONTROLS FOR ELECTRICAL	N/A						11/6/2024	*Addendum #6*
26 0553	IDENTIFICATION FOR ELECTRICAL SYSTEMS	9/30/2024							
26 0573	OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY	9/30/2024						11/6/2024	*Addendum #6*
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						11/6/2024	*Addendum #6*
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					*11/1/2024*		*Addendum #5*
31 2200	GRADING	9/30/2024							
31 2300	EXCAVATION, BACKFILL, COMPACTION AND DEWATERING	9/30/2024					*11/1/2024*		*Addendum #5*
31 2316.26	ROCK REMOVAL	9/30/2024					*11/1/2024*	11/6/2024	*Addendum #5, Addendum #6*
31 2323	BORROW MATERIAL	9/30/2024					*11/1/2024*		*Addendum #5*
31 2333	TRENCHING AND BACKFILLING	9/30/2024					*11/1/2024*		*Addendum #5*
31 2500	SOIL EROSION AND SEDIMENT CONTROLS	9/30/2024							
31 6616	AGGREGATE PIERS	9/30/2024					*11/1/2024*		*Addendum #5*
DIVISION 32 - EXTERIOR IMPROVEMENTS									
32 0529	GLACIAL BOULDERS FOR EXTERIOR IMPROVEMENTS	9/30/2024		10/16/2024		10/30/2024			*Addendum #2, Addendum #4*
32 1216	ASPHALT PAVING	9/30/2024							
32 1313	CONCRETE PAVING	9/30/2024						11/6/2024	*Addendum #6*
32 1373	CONCRETE PAVING JOINT SEALANTS	9/30/2024							
32 1400	UNIT PAVERS	9/30/2024				10/30/2024			*Addendum #4*
32 1500	AGGREGATE SURFACING	9/30/2024							
~~32 1613.23~~	~~PRECAST CONCRETE CURB~~	9/30/2024				10/30/2024			Specification Section Removed in Addendum #4
32 1640	GRANITE CURBING	9/30/2024				10/30/2024			*Addendum #4*
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							Specification Section Removed in Addendum #6
~~32 3120~~	~~VEHICLE BARRIER GATES~~	9/30/2024							Specification Section Removed in Addendum #6
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				10/30/2024			*Addendum #4*
33 0514	BREAKING INTO EXISTING MANHOLES AND CATCH BASINS	9/30/2024				10/30/2024			*Addendum #4*
33 1113	DUCTILE IRON PIPE AND FITTINGS	9/30/2024					*11/1/2024*		*Addendum #5*
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				10/30/2024	*11/1/2024*		*Addendum #4, Addendum #5*
33 3114	TESTING OF SANITARY SEWER AND STORM DRAINAGE SYSTEMS	9/30/2024				10/30/2024			*Addendum #4*
33 3115	TELEVISION INSPECTION OF PIPELINES	N/A		10/16/2024					*Addendum #2*
33 4100	STORM DRAINAGE	9/30/2024					*11/1/2024*		*Addendum #5*
33 4113	HIGH DENSITY POLYETHYLENE PIPE AND FITTINGS	9/30/2024					*11/1/2024*		*Addendum #5*
33 4114	UNDERGROUND WARNING TAPE	9/30/2024				10/30/2024			*Addendum #4*
33 4419	STORMWATER TREATMENT SYSTEM	9/30/2024					*11/1/2024*		*Addendum #5*
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									

Board of Education of the Town of Greenwich
Central Middle School Project -
State Project No. 057-0114N
Greenwich, CT

Turner Construction Company
7/8/2024
Revised: 11/7/2024

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Add. #1	Add. #2	Add. #3	Add. #4	Add. #5	Addendum #6	Comments
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						11/6/2024	*Addendum #6*
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				10/30/2024			*Addendum #4*
C203	SITE LOW IMPACT DEVELOPMENT PART PLAN	9/30/2024				10/30/2024			*Addendum #4*
C204	SITE LOW IMPACT DEVELOPMENT PART PLAN	9/30/2024							
C205	SITE LOW IMPACT DEVELOPMENT PART PLAN	9/30/2024				10/30/2024			*Addendum #4*
C206	OVERALL SOIL TEST LOCATIONS PLAN	9/30/2024				10/30/2024			*Addendum #4*
C301	OVERALL SITE UTILITY PLAN	9/30/2024		10/16/2024		10/30/2024			*Addendum #2, Addendum #4*
C302	SITE UTILITY PART PLAN	9/30/2024				10/30/2024			*Addendum #4*
C303	SITE UTILITY PART PLAN	9/30/2024				10/30/2024			*Addendum #4*
C304	SITE UTILITY PART PLAN	9/30/2024				10/30/2024			*Addendum #4*
C305	SITE UTILITY PART PLAN	9/30/2024				10/30/2024			*Addendum #4*
C306	SANITARY SEWER EXISTING PLAN AND PROFILE	9/30/2024							
C307	SANITARY SEWER PROPOSED PLAN AND PROFILE	9/30/2024				10/30/2024			*Addendum #4*
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							
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			10/23/2024				*Addendum #3*
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				10/30/2024			*Addendum #4*
C507	SITE UTILITY DETAILS - 1	9/30/2024							
C508	SITE UTILITY DETAILS - 2	9/30/2024						11/6/2024	*Addendum #6*
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			10/23/2024				*Addendum #3*
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							

Board of Education of the Town of Greenwich
Central Middle School Project -
State Project No. 057-0114N
Greenwich, CT

Turner Construction Company
7/8/2024
Revised: 11/7/2024

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Add. #1	Add. #2	Add. #3	Add. #4	Add. #5	Addendum #6	Comments
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							
[06] SITE UTILITIES									
SU100	MEP SITE UTILITY PLAN	9/30/2024		10/16/2024	10/23/2024				*Addendum #2, Addendum #3*
SU500	MEP SITE UTILITY PLAN - DETAILS & SCHEDULES	9/30/2024						11/6/2024	*Addendum #6*
SU501	MEP SITE UTILITY PLAN - DETAILS & SCHEDULES	9/30/2024			10/23/2024				*Addendum #3*
PSU001	PLUMBING SITE UTILITY PLAN	9/30/2024		10/16/2024	10/23/2024				*Addendum #2, Addendum #3*
[10] LANDSCAPE									
L001	GENERAL SITE INFORMATION	9/30/2024						11/6/2024	*Addendum #6*
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		10/30/2024		11/6/2024	*Add. #2, Add. #4, Addendum #6*
L202B	SITE MATERIALS SOUTHEAST	9/30/2024				10/30/2024			*Addendum #4*
L202C	SITE MATERIALS SOUTHWEST	9/30/2024		10/16/2024		10/30/2024			*Addendum #2, Addendum #4*
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						11/6/2024	*Addendum #6*
L403	PLANTING DETAILS	9/30/2024							
L404	SITE IRRIGATION PLAN	9/30/2024		10/16/2024					*Addendum #2*
L501	SITE DETAILS	9/30/2024				10/30/2024		11/6/2024	*Addendum #4, Addendum #6*
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				10/30/2024			*Addendum #4*
L602	ATHLETIC FIELD SITE DETAILS	9/30/2024						11/6/2024	*Addendum #6*
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				11/6/2024	*Addendum #2, Addendum #6*
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				11/6/2024	*Addendum #2, Addendum #6*
S101F	FOUNDATION PLAN - PART F	9/30/2024							
S200	TYPICAL FOUNDATION DETAILS	9/30/2024						11/6/2024	*Addendum #6*
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				10/30/2024			*Addendum #4*
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				10/30/2024			*Addendum #4*
S411	FRAMING DETAILS	9/30/2024				10/30/2024			*Addendum #4*
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							

Board of Education of the Town of Greenwich
Central Middle School Project -
State Project No. 057-0114N
Greenwich, CT

Turner Construction Company
7/8/2024
Revised: 11/7/2024

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Add. #1	Add. #2	Add. #3	Add. #4	Add. #5	Addendum #6	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				10/30/2024		11/6/2024	*Addendum #4, Addendum #6*
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				10/30/2024			*Addendum #4*
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			10/23/2024				*Addendum #3*
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			10/23/2024	10/30/2024			*Addendum #3, Addendum #4*
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			10/23/2024	10/30/2024			*Addendum #3, Addendum #4*
A103	OVERALL ROOF PLAN	9/30/2024						11/6/2024	*Addendum #6*
A103A	ROOF PLAN - PART A	9/30/2024			10/23/2024			11/6/2024	*Addendum #3, Addendum #6*
A103B	ROOF PLAN - PART B	9/30/2024						11/6/2024	*Addendum #6*
A103C	ROOF PLAN - PART C	9/30/2024			10/23/2024			11/6/2024	*Addendum #3, Addendum #6*
A103D	ROOF PLAN - PART D	9/30/2024						11/6/2024	*Addendum #6*
A103E	ROOF PLAN - PART E	9/30/2024			10/23/2024			11/6/2024	*Addendum #3, Addendum #6*
A103F	ROOF PLAN - PART F	9/30/2024						11/6/2024	*Addendum #6*
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				10/30/2024			*Addendum #4*
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				10/30/2024			*Addendum #4*
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				10/30/2024			*Addendum #4*
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				10/30/2024			*Addendum #4*
A131	ENLARGED TOILET ROOM PLANS AND ELEVATIONS	9/30/2024				10/30/2024			*Addendum #4*
A132	ENLARGED TOILET ROOM PLANS AND ELEVATIONS COPY 1	9/30/2024				10/30/2024			*Addendum #4*
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				10/30/2024			*Addendum #4*
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							
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						11/6/2024	*Addendum #6*
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							

Board of Education of the Town of Greenwich
Central Middle School Project -
State Project No. 057-0114N
Greenwich, CT

Turner Construction Company
7/8/2024
Revised: 11/7/2024

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Add. #1	Add. #2	Add. #3	Add. #4	Add. #5	Addendum #6	Comments
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				10/30/2024			*Addendum #4*
A510	EXTERIOR PLAN DETAILS	9/30/2024							
A511	EXTERIOR PLAN DETAILS	9/30/2024				10/30/2024			*Addendum #4*
A512	EXTERIOR PLAN DETAILS	9/30/2024							
A513	EXTERIOR PLAN DETAILS	9/30/2024							
A514	EXTERIOR PLAN DETAILS	9/30/2024			10/23/2024				*Addendum #3*
A515	EXTERIOR PLAN DETAILS	9/30/2024			10/23/2024				*Addendum #3*
A516	EXTERIOR PLAN DETAILS	9/30/2024							
A520	EXTERIOR SECTION DETAILS	9/30/2024			10/23/2024	10/30/2024			*Addendum #3, Addendum #4*
A521	EXTERIOR SECTION DETAILS	9/30/2024				10/30/2024			*Addendum #4*
A522	EXTERIOR SECTION DETAILS	9/30/2024				10/30/2024			*Addendum #4*
A530	TYPICAL MEMBRANE ROOFING DETAILS	9/30/2024				10/30/2024			*Addendum #4*
A531	TYPICAL MEMBRANE ROOFING DETAILS	9/30/2024				10/30/2024			*Addendum #4*
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				10/30/2024			*Addendum #4*
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				10/30/2024			*Addendum #4*
A640	TYPICAL ALUMINUM FRAME DETAILS	9/30/2024				10/30/2024			*Addendum #4*
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		10/31/2024		11/6/2024	*Add. #2, Add. #4, Addendum #6*
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						11/6/2024	*Addendum #6*
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						11/6/2024	*Addendum #6*
A910	FINISH PRODUCT LIST - PART A	9/30/2024						11/6/2024	*Addendum #6*
A911	FINISH PRODUCT LIST -PART B AND FINISH NOTES	9/30/2024		10/16/2024				11/6/2024	*Addendum #2, Addendum #6*
A912	SPECIALTY EQUIPMENT LIST	9/30/2024						11/6/2024	*Addendum #6*
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							
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						11/6/2024	*Addendum #6*
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	10/23/2024				*Addendum #2, Addendum #3*
FP001	FIRE PROTECTION ZONING PLAN	9/30/2024			10/23/2024				*Addendum #3*
FP101A	FIRE PROTECTION FIRST FLOOR PLAN - PART A	9/30/2024		10/16/2024	10/23/2024				*Addendum #2, Addendum #3*
FP101B	FIRE PROTECTION FIRST FLOOR PLAN - PART B	9/30/2024		10/16/2024	10/23/2024				*Addendum #2, Addendum #3*
FP101C	FIRE PROTECTION FIRST FLOOR PLAN - PART C	9/30/2024		10/16/2024	10/23/2024				*Addendum #2, Addendum #3*
FP101D	FIRE PROTECTION FIRST FLOOR PLAN - PART D	9/30/2024		10/16/2024	10/23/2024				*Addendum #2, Addendum #3*
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*

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Add. #1	Add. #2	Add. #3	Add. #4	Add. #5	Addendum #6	Comments
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	10/23/2024				*Addendum #2, Addendum #3*
P100C	PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART C	9/30/2024							
P100D	PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART D	9/30/2024			10/23/2024				*Addendum #3*
P100E	PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART E	9/30/2024		10/16/2024	10/23/2024				*Addendum #2, Addendum #3*
P100F	PLUMBING FIRST FLOOR UNDERSLAB PLAN - PART F	9/30/2024			10/23/2024				*Addendum #3*
P001	PLUMBING FIRST FLOOR OVERALL PLAN	9/30/2024							
P101A	PLUMBING FIRST FLOOR PLAN - PART A	9/30/2024		10/16/2024	10/23/2024				*Addendum #2, Addendum #3*
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	10/23/2024				*Addendum #2, Addendum #3*
P101F	PLUMBING FIRST FLOOR PLAN - PART F	9/30/2024		10/16/2024	10/23/2024				*Addendum #2, Addendum #3*
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	10/23/2024				*Addendum #2, Addendum #3*
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			10/23/2024				*Addendum #3*
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							
M102A	MECHANICAL SECOND FLOOR PLAN - PART A	9/30/2024			10/23/2024				*Addendum #3*
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				10/30/2024			*Addendum #4*
M103B	MECHANICAL ROOF PLAN - PART B	9/30/2024				10/30/2024		11/6/2024	*Addendum #4, Addendum #6*
M103C	MECHANICAL ROOF PLAN - PART C	9/30/2024				10/30/2024			*Addendum #4*
M103D	MECHANICAL ROOF PLAN - PART D	9/30/2024				10/30/2024		11/6/2024	*Addendum #4, Addendum #6*
M103E	MECHANICAL ROOF PLAN - PART E	9/30/2024				10/30/2024			*Addendum #4*
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	10/23/2024				*Addendum #2, Addendum #3*
MP101C	MECHANICAL PIPING FIRST FLOOR PLAN - PART C	9/30/2024		10/16/2024	10/23/2024				*Addendum #2, Addendum #3*
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	10/23/2024			11/6/2024	*Add. #2, Add. #3, Addendum #6*
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				11/6/2024	*Addendum #2, Addendum #6*
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				10/30/2024		11/6/2024	*Addendum #4, Addendum #6*
M501	MECHANICAL DETAILS	9/30/2024				10/30/2024			*Addendum #4*
M502	MECHANICAL DETAILS	9/30/2024			10/23/2024				*Addendum #3*
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				11/6/2024	*Addendum #2, Addendum #6*
M602	MECHANICAL SCHEDULES	9/30/2024		10/16/2024	10/23/2024				*Addendum #2, Addendum #3*
M700	MECHANICAL CONTROLS DIAGRAMS	9/30/2024		10/16/2024	10/23/2024				*Addendum #2, Addendum #3*
M701	MECHANICAL CONTROLS DIAGRAMS	9/30/2024		10/16/2024	10/23/2024				*Addendum #2, Addendum #3*
[70] ELECTRICAL									
E000	ELECTRICAL ABBREVIATIONS, NOTES AND SYMBOLS	9/30/2024		10/16/2024		10/30/2024			*Addendum #2, Addendum #4*
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			10/23/2024				*Addendum #3*
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		10/30/2024		11/6/2024	*Add. #2, Add. #4, Addendum #6*
EP101B	ELECTRICAL POWER FIRST FLOOR PLAN - PART B	9/30/2024			10/23/2024				*Addendum #3*
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			10/23/2024	10/30/2024			*Addendum #3, Addendum #4*
EP101E	ELECTRICAL POWER FIRST FLOOR PLAN - PART E	9/30/2024		10/16/2024	10/23/2024				*Addendum #2, Addendum #3*
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			10/23/2024				*Addendum #3*
EP103B	ELECTRICAL POWER ROOF PLAN - PART B	9/30/2024			10/23/2024				*Addendum #3*

LIST OF CONTRACT DRAWINGS, SPECIFICATIONS

Spec Section	Description	Date	Add. #1	Add. #2	Add. #3	Add. #4	Add. #5	Addendum #6	Comments
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	10/23/2024	10/30/2024			*Addendum #2, Addendum #3, Addendum #4*
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			10/23/2024				*Addendum #3*
E503	ELECTRICAL DETAILS	9/30/2024							
E504	ELECTRICAL DETAILS	9/30/2024							
E505	ELECTRICAL DETAILS	N/A			10/23/2024			11/6/2024	*Addendum #3, Addendum #6*
E600	ELECTRICAL SCHEDULES AND DIAGRAMS	9/30/2024			10/23/2024			11/6/2024	*Addendum #3, Addendum #6*
E601	ELECTRICAL SCHEDULES AND DIAGRAMS	9/30/2024							
E602	ELECTRICAL PANEL SCHEDULES	9/30/2024						11/6/2024	*Addendum #6*
E603	ELECTRICAL PANEL SCHEDULES	9/30/2024		10/16/2024					*Addendum #2*
E604	ELECTRICAL PANEL SCHEDULES	9/30/2024			10/23/2024				*Addendum #3*
E605	ELECTRICAL PANEL SCHEDULES	9/30/2024							
E606	ELECTRICAL PANEL SCHEDULES	9/30/2024							
E607	ELECTRICAL PANEL SCHEDULES	9/30/2024				10/30/2024			*Addendum #4*
E700	ELECTRICAL RISER DIAGRAM	9/30/2024			10/23/2024	10/30/2024		11/6/2024	*Add. #3, Add. #4, Addendum #6*
E701	FIRE ALARM RISER DIAGRAM	9/30/2024		10/16/2024		10/30/2024		11/6/2024	*Add. #2, Add. #4, Addendum #6*
[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*
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*
00 9113-1	Appendix E - Greenwich Test Pit Field Log Forms (TP101-TP120) - New Per BQ RFI #233 - Reports Dated 11/17/2023					11/17/2023			*Addendum #4*
	Appendix F - GCMS Construction-Vibration and Controls During Construction (CVC), By Gap Mountain Consulting Engineers, PLLC.						11/1/2024		*Addendum #5*
	Appendix G - Statements of Special Inspections - Structural & Architectural							11/6/2024	*Addendum #6*

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

Turner Construction Company
7/8/2024
Revised: 11/07/2024

BID PACKAGE BREAKDOWN

	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

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

Turner Construction Company
7/8/2024
Revised: 11/07/2024

BID PACKAGE BREAKDOWN

	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 4313	Stone Masonry Veneer	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

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

Turner Construction Company
7/8/2024
Revised: 11/07/2024

BID PACKAGE BREAKDOWN

	Spec Number	Bid Package	Comments
	05 7000	Decorative Metal Railings	Exclusive
	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

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

Turner Construction Company
7/8/2024
Revised: 11/07/2024

BID PACKAGE BREAKDOWN

	Spec Number	Bid Package	Comments
	07 4213.23	Metal Composite Material Wall Panels	Exclusive
	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

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

Turner Construction Company
7/8/2024
Revised: 11/07/2024

BID PACKAGE BREAKDOWN

	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

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

Turner Construction Company
7/8/2024
Revised: 11/07/2024

BID PACKAGE BREAKDOWN

	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 0433	Heat Trace for Fire Suppression Piping	Shared
	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
	21 0533	Heat Trace for Plumbing Piping	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

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

Turner Construction Company
7/8/2024
Revised: 11/07/2024

BID PACKAGE BREAKDOWN

	Spec Number	Bid Package	Comments
	22 0548	Vibration and Seismic Controls for Plumbing Piping and Equipment	Exclusive
	22 0553	Identification for Plumbing Piping and Equipment	Exclusive
	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
	21 0433	Heat Trace for Fire Suppression Piping	Shared
	21 0533	Heat Trace for Plumbing Piping	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

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

Turner Construction Company
7/8/2024
Revised: 11/07/2024

BID PACKAGE BREAKDOWN

	Spec Number	Bid Package	Comments
	26 0548	Vibration and Seismic Controls for Electrical	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
	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

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#9 - Sitework
Dated: 07.08.2024
Revised: 11.07.2024

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

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#9 - Sitework
Dated: 07.08.2024
Revised: 11.07.2024

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.
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

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.

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#9 - Sitework
Dated: 07.08.2024
Revised: 11.07.2024

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.

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 including concrete footings, as indicated in the contract documents.

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

148. This Subcontractor furnish and install all baseball and softball backstop systems including concrete footings, 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.~~ Item excluded by sitework, shade enclosure is by BP#41

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, including concrete footings. 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.
157. This subcontractor shall include all fill as needed based on the existing building elevation changes. The Sitework Subcontractor shall remove any existing gravel course or footing / slab-on-grade subgrade prep materials (assume 12" depth).
158. This Subcontractor shall remove any existing gravel course or footing / slab-on-grade subgrade prep materials (assume 12" depth).
159. This subcontractor shall backfill, slope, and excavated areas to achieve the correct final elevation and conditions.
160. This Subcontractor shall include the seismic requirements of the Gap Mountain Report issued as a part of Addendum 5 and included as attachment F within the project manual. Proper means and methods shall be included by this subcontractor to meet the requirements set forth for the seismic limits at the existing school building. Include Blasting provisions identified on page 5 of report, Item #5 (a-i).
161. This Subcontractor shall furnish and install all warning track, trench drain and associated concrete including but not limited detail 1A/L601.

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.

8. Exclude placing Concrete and Concrete Reinforcing for Transformer Pad(s), Gas Meter Pad(s), and Generator Pad(s).
9. Exclude the Independent testing agency requirements of the Gap Mountain Report issued as a part of Addendum 5 and included as attachment F within the project manual, identified on page 4 of report, Item #4 (a-g).

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**

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#9 - Sitework
Dated: 07.08.2024
Revised: 11.07.2024

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: 11.07.2024

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 4313	Stone Masonry Veneer
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

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: 11.07.2024

03 6213	Non-Metallic Non-Shrinking Grouting
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.

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: 11.07.2024

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.

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: 11.07.2024

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.
49. This Subcontractor shall furnish and install custom galvanized plates and clips at recessed RWL, for example 3E/A511. This Subcontractor shall coordinate with BP #15 Roofing for a complete RWL assembly.

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).

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: 11.07.2024

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: 11.07.2024

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

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#15 – Roofing
Dated: 07.08.2024
Revised: 11.07.2024

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.
38. This Subcontractor furnish and install rainwater leader and associated brackets and attachments to the galvanized plate, for example detail 3E/A511. This Subcontractor shall coordinate with BP #11 Masonry for a complete recessed RWL assembly.

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: 11.07.2024

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 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)
3. This Subcontractor shall exclude custom galvanized bent plate & clips at RWL (By BP #11 Masonry)

F. Logistics and Schedule

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

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: 11.07.2024

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: 07.26.2024
Revised: 11.07.2024

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 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: 07.26.2024
Revised: 11.07.2024

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
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

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 CTHB 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

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#19 – Glass, Glazing, & Metal Panels
Dated: 07.26.2024
Revised: 11.07.2024

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 tie-in air and vapor barrier as required. 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. This Subcontractor shall tie-in air and vapor barrier as required. 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 Bullet Resistant (BWSR) 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, in. 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, as shown on Detail 1S/A641.

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 design requirements with Roofer (BP #15) and Drywall (BP #21).

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.
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, 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 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.

Spec. 07 2726 Fluid-Applied Membrane Air Barriers

42. This Subcontractor shall furnish and install fluid-applied membrane air barrier between the work of this bid package both similar and dissimilar materials. Assume minimum One foot overlap with adjacent materials where AVB required by this subcontractor.

Spec. 07 6200 Sheet Metal Flashing and Trim

43. This Subcontractor shall furnish and install sheet metal flashing, ~~and~~ trim, and sill at work of this bid package both similar and dissimilar materials. For example, this contractor shall furnish and install 1/8" plat sill per Detail 2F/A641 and 1/8" bent aluminum plate per Detail 1D/A641.
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, 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 requirements.
48. This Subcontractor shall furnish and install the automatic door operators and the remote activation paddles specified for the aluminum doors provided by this Subcontractor. This Subcontractor is responsible for all the low voltage wiring between the operator and the remote paddles, and this Subcontractor shall coordinate with the Electrical Subcontractor for the line voltage connection to this system.
49. This Subcontractor shall exclude electronic security hardware (card readers) as it will be supplied and installed by the Security Subcontractor. This Subcontractor shall coordinate installation with Security Subcontractor.

D. Safety

50. This Subcontractor shall provide a site-specific plan on how they will comply with Turner's Ladder's Last Program.
51. This subcontractor shall ensure that any Lulls used on site are equipped with hydraulic fork positioners.
52. 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.
53. 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.

54. During the installation this Subcontractor shall provide a secondary redundant means of material support in case the primary means of support fails.
55. 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.
56. This Subcontractor is to utilize Leading Edge fall protection in all circumstances where installation is done from the inside of the building.
57. This Subcontractor shall install a Controlled Access Zone below elevated work areas.
58. 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 furnish and installing glazing at HM 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 and 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 Electricity 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

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: 07.26.2024
Revised: 11.07.2024

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#21 – Drywall & General Trades
Dated: 07.08.24
Revised: 11.07.2024

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 ***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

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#21 – Drywall & General Trades
Dated: 07.08.24
Revised: 11.07.2024

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
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.

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#21 – Drywall & General Trades
Dated: 07.08.24
Revised: 11.07.2024

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
State Project No. 057-0114 N
Greenwich, CT
BP#21 – Drywall & General Trades
Dated: 07.08.24
Revised: 11.07.2024

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 patching, 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.~~ This Subcontractor shall furnish and install the 16 GA CFMF stud brace and the associated 12 GA Bent Plate that is secured to the adjacent steel structure and decking above, as shown on drawing A605 for masonry partitions. For example, Case 3 on Detail 1B/A605 or similar. The 12 GA Bent Plate at top of Masonry walls will be provided by the Mason. For example, the bent plate / angle called out in Case 1 for Detail 1B/A605 and similar details.
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.

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#21 – Drywall & General Trades
Dated: 07.08.24
Revised: 11.07.2024

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.

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#33 – Window Treatment
Dated: 07.08.2024
Revised: 11.7.2024

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 ***Window Treatment 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 ***Window Treatment 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
12 2401	Window Shades

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
Division 01	General Requirements

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 provide all window shades including but not limited to manually operated roller shades and motorized roller shades as indicated on the contract documents.
7. This subcontractor shall provide all shade pockets and metal trim for the window shades.
8. This subcontractor shall provide all shade fabric as indicated on the contract documents.
9. This Subcontractor shall coordinate blocking requirements with the Drywall Subcontractor. Under no circumstance will the shade be attached to the window system.
10. This Subcontractor shall coordinate the color of fascia as indicated.
11. This subcontractor shall provide all painted metal trim pieces as typically indicated in the window shade detail 2C on drawing A211.
12. Any installation not completed per the project schedule will be on off hours, at the cost of this Subcontractor. Additionally, when working on off hours, this Subcontractor shall be responsible for all costs related to temporary systems (heat, lighting, etc.) plus the manpower to supervise will be the responsibility of this Subcontractor.
13. This Subcontractor shall provide a site-specific height access and fall protection plan for all work 4 weeks prior to mobilization.
14. This Subcontractor shall furnish and install the motorized shades at the gym in a staggered pattern as indicated on elevation 3B on drawing A111.4.

D. Exclusions

1. This Subcontractor shall exclude Blocking (By BP#21-Drywall & General Trades)

E. ***Safety***

1. This Subcontractor shall provide a site-specific height access and fall protection plan for all work 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	

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#37 – HVAC & Controls
Dated: 07.08.2024
Revised: 11.07.2024

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 at locations indicated on the Contract Documents. ~~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. This Subcontractor shall also furnish and install all insulation requirements associated with these plenum boxes per Key Note M10 on the Mechanical Roof Plans. This Subcontractor shall connect their aluminum fabricated duct plenum box to the architectural louvers located within each doghouse. This Subcontractor shall coordinate locations and sizes of architectural louvers with the BP #19 Glass, Glazing & Metal Panels Subcontractor, who is furnishing and installing these architectural louvers.

45. This Subcontractor shall include 2 complete cleanings of major mechanical 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. This scope of work shall include all DOA's, RTU's, HRV-1, Chillers, Boilers, Dust Collector DC-1, Cabinet Unit Heaters, Unit Heaters, and Split Systems.

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 to commence the beginning of April 2026. 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~~ all DOA's, RTU's, and HRV-1. Filter changes to occur two (2) times per month, as well as, ~~One~~ 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~~ DOA's, HRV-1 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, roof, 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, equipment rails, counter flashing, etc. required for their work. This should include, but not be limited to, all roof pipe penetrations, roof duct penetrations, roof pipe supports, roof duct supports, condensing units, roof-mounted exhaust fans, etc. This Subcontractor shall coordinate roofing depths and blocking requirements furnished and installed by the BP#15 Roofing Subcontractor. This Subcontractor shall review all Contract Drawings to include a complete scope of work. Reference M500, M501 and all applicable Architectural drawings.
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~~ 1/P500. The BP#38 Electrical Subcontractor shall furnish and install all conduit, wiring, terminations, etc. for power and fire alarm integration. The BP#30 Food Service Subcontractor shall furnish and install the Ansul system. The BP#36 Plumbing Subcontractor shall furnish and install the Ansul system solenoid valve in the natural gas piping system. This Subcontractor shall furnish and install all, but not limited to, conduit, wiring, terminations, etc. for controls integration between the Ansul system and HVAC components and equipment called for in the Contract Documents.

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 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: 11.07.2024

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.

104. The HVAC Subcontractor (BP #37) shall furnish and install DC-1 and associated control panel, VFD, push button start, and interconnecting control wiring/devices/etc. ~~This~~ The Electrical Subcontractor (BP #38) shall furnish and install all other electrical scope, including but not limited to:

a. Feeder (conduit, wire, terminations, testing, etc.) from MP1E to fusible disconnect switch.
b. Fusible disconnect switch.
c. Feeder (conduit, wire, terminations, testing, etc.) from fusible disconnect switch to control panel/VFD.
d. Feeder (conduit, wire, terminations, testing, etc.) from control panel/VFD to DC-1.

105. This Subcontractor shall furnish and install all duct sleeves and associated mineral wool packing where ductwork penetrates the exterior walls. Reference 1E/A520 and Key Note M10 on the Mechanical Roof Plans as examples. This Subcontractor shall coordinate this scope of work with the BP #11 Masonry Subcontractor who is furnishing and installing associated AVB.

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).
6. This Subcontractor shall exclude the chiller maintenance service outlined in Specification Section 23 64 11 – 1.11. This maintenance service shall be directly contracted between the Owner and equipment manufacturer.

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.

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.***

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: 11.07.2024

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 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 #38 – Electrical & Fire Alarm
Dated: 07.08.2024
Revised: 11.07.2024

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 #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
260548	Vibration & Seismic Controls for Electrical
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

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP #38 – Electrical & Fire Alarm
Dated: 07.08.2024
Revised: 11.07.2024

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
019113	General Commissioning Requirements
210433	Heat Trace for Fire Suppression Piping
210533	Heat Trace for Plumbing Piping
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.

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP #38 – Electrical & Fire Alarm
Dated: 07.08.2024
Revised: 11.07.2024

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.
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.

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP #38 – Electrical & Fire Alarm
Dated: 07.08.2024
Revised: 11.07.2024

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.
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.

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 loading, unloading, cabling, terminations, etc. of the temporary load bank rented by others (BP #06). ~~as needed.~~ Curbside delivery of temporary load bank by others (BP #06).

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.

154. The HVAC Subcontractor (BP #37) shall furnish and install DC-1 and associated control panel, VFD, push button start, and interconnecting control wiring/devices/etc. This Subcontractor (BP #38) shall furnish and install all other electrical scope, including but not limited to:

    a. Feeder (conduit, wire, terminations, testing, etc.) from MP1E to fusible disconnect switch.
    b. Fusible disconnect switch.
    c. Feeder (conduit, wire, terminations, testing, etc.) from fusible disconnect switch to control panel/VFD.
    d. Feeder (conduit, wire, terminations, testing, etc.) from control panel/VFD to DC-1.

155. This Subcontractor shall furnish & install all cellular gateway modules needed for the Electric Vehicle Charging Pedestals, including but not limited to all conduit, conductors, terminations, testing, etc. For example, see detail 4 on SU501.

156. This subcontractor shall furnish & install all NEMA rated enclosures, including but not limited to the NEMA 4 rated enclosure for Panels EVLP1, EVLP2, & EVHP shown in detail 4 on SU501.

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.

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP #38 – Electrical & Fire Alarm
Dated: 07.08.2024
Revised: 11.07.2024

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#40 – Concrete Flatwork
Dated: 07.08.2024
Revised: 10.31.2024
Revised: 11.7.2024

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 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.

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#40 – Concrete Flatwork
Dated: 07.08.2024
Revised: 10.31.2024
Revised: 11.7.2024

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

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#40 – Concrete Flatwork
Dated: 07.08.2024
Revised: 10.31.2024
Revised: 11.7.2024

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~~ Delete Bleachers do not require footings
    c. Heavy Duty Concrete Pavement
    d. Concrete Utility Pads
    ~~e. Concrete Curbs~~ Per Bidders Question#162 response
    ~~f. Concrete Edge at Synthetic Track Trench Drain~~ – by BP#9 Sitework
    ~~g. Concrete Edge at Synthetic Sports Field~~ – Duplicate with F.
    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.

Additional Provisions/Scope of Work

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT
BP#40 – Concrete Flatwork
Dated: 07.08.2024
Revised: 10.31.2024
Revised: 11.7.2024

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
Revised: 11.07.2024

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
Revised: 11.07.2024

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.

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
Revised: 11.07.2024

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.

Add'l Items:

27. ~~This Subcontractor is to include the furnish and install of the infield mix & warning track mix as part of your scope of work.~~ Any removals of existing grass & infields will be removed by BP#9 Sitework as part of an exclusive specification section 31 1005 "Athletic Field Site preparation". The furnishing and installation of the infield mix & warning track is in exclusive specification section 32 1823.17 which is owned by BP#9 Sitework.

28. This Subcontractor is to furnish and install the shade enclosure structure at the ball fields complete including benches as shown but not limited to drawing L202C and details on L602. This is part of your exclusive specification section 11 6833 Athletic Field Equipment.

29. 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. This is part of the exclusive specification 11 6833 Athletic Field Equipment.

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
Revised: 11.07.2024

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~~ BP#40 Concrete Flatwork).
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.

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
Revised: 11.07.2024

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	

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

Bid Due Date: **11/19/2024 @ 12 p.m.(noon)**

FORM OF PROPOSAL dated 11/07/24

To: **Turner Construction Company**
6 Corporate Drive - Suite 820
Shelton, Connecticut 06484
Phone: 203-712-6070

Name and Address of Bidder: _____

_____

Contact Representative: _____

Telephone: _____

Email Address: _____

We offer to perform per plans, specifications, additional provisions, and addendum as acknowledged below, all the _____ Work for Bid Package #_____for Project Listed Above the lump sum of (inclusive of all applicable State and Local taxes):

Labor:	***$*** _____	***dollars***
Material:	***$*** _____	***dollars***
Tax:	***$*** _____	***dollars***
TOTAL QUOTE:	***$*** _____	***dollars***

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

Information required to be provided with Bid:

A. Trade Information:

Unburdened Payroll $_____

Total Trade Hours Included _____ hrs

B. Bid Notice Receipt:

The receipt of the following Bid Notices to the Contract Documents is acknowledged:

Received Addendum #1	_____	**dated**	**10/16/2024**
Received Addendum #2	_____	**dated**	**10/22/2024**
Received Addendum #3	_____	**dated**	**10/25/2024**
Received Addendum #4	_____	**dated**	**10/31/2024**
Received Addendum #5	_____	**dated**	**11/5/2024**
Received Addendum #6	_____	**dated**	**11/7/2024**

C. Current Experience Modification Rating (EMR): _____

(Proof required via NCCI form from insurance provider)

2023 Recordable Incident Rate (RIR): _____

2023 Lost Time Incident Rate (LTIR): _____

D. Unit Prices:

The following Unit Prices shall be valid for the life of the project and include all cost for labor, materials, tools, equipment, shipping, handling, storage, hoisting, rigging, distribution, protection of materials, fringe benefits, applicable taxes, overhead, profit, insurance, and all other things necessary for a complete installation on a per unit basis.

Abatement & Demolition Related Items

Unit Price #1: Small Containment Preparation Containment (Less than 160 square\260 linear feet of asbestos containing material) Pricing for containments with larger amounts of materials are to be INCLUDED in the unit prices themselves listed below. There is no separate unit price for containments with larger amounts.

$ _____ per containment

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

Unit Price #2: Floor Tile/Flooring Materials and Mastics (Includes All layers of carpeting, adhesives, multiple layers of floor tiles/flooring materials/linoleum/sheet flooring/vinyl stairwell flooring/wood/slate/ceramic/grout/mud bed/terrazzo/concrete/mastics, levelastics, contaminated flooring materials and substrates, etc.) Removal and Disposal as ACM.

$ _____ per square foot

Unit Price #3: Cove Base and Adhesives (multiple layers) (including contaminated substrates) Removal and Disposal as ACM.

$ _____ per linear foot

Unit Price #4: Mudded Pipe Fitting Insulation Removal and Disposal as ACM.

$ _____ per fitting/joint

Unit Price #5: Glove Bag Removal and Disposal as ACM.

$ _____ per bag

Unit Price #6: Pipe and Pipe Fitting Insulation Removal and Disposal as ACM.

$ _____ per linear foot

Unit Price #7: Pipe/Duct Insulation Buried under Floor Slabs Removal and Disposal as ACM.

$ _____ per linear foot

Unit Price # 8: Duct Insulation/Adhesives/Seam/Flange Sealant (including contaminated substrates) Removal and Disposal as ACM.

$ _____ per square foot

Unit Price #9: Air Duct Vibration Isolation Cloth Removal and Disposal as ACM.

$ _____ per cloth

Unit Price #10: Light Backing Paper Insulation Removal and Disposal as ACM.

$ _____ per light fixture

Unit Price #11: Sink Undercoating Removal and Disposal as ACM.

$ _____ per sink

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

Unit Price #12: Countertop/Millwork/Cabinet/Adhesives/Science Desk Tops Removal and Disposal as ACM.

$ _____ per square foot

Unit Price #13: Transite Cement Board Removal and Disposal as ACM.

$ _____ per square foot

$ _____ per linear foot (buried transite piping)

Unit Price #14: Fire Door/Insulation Removal and Disposal as ACM.

$ _____ per door

Unit Price #15: Wall Adhesives and Contaminated Substrates (mirrors/blackboards/bulletin boards, wood panel walls, etc.) Removal and Disposal as ACM.

$ _____ per square foot

Unit Price #16: Vermiculite and Associated/Contaminated Wall/Ceiling Materials Removal and Disposal as ACM.

$ _____ per square foot

Unit Price #17: Ceramic Wall and Floor Tiles Adhesives, Damp-Proofing, Mud Bed/Grout and Contaminated Substrates Removal and Disposal as ACM.

$ _____ per square foot

Unit Price #18: Wall/Ceiling Board/Sheetrock/Taping/Joint Compounds (multiple layers) and Removal and Disposal as ACM.

$ _____ per square foot

Unit Price #19: Wall/Ceiling Plaster (multiple layers) and Supporting Systems and Contaminated Substrates Removal and Disposal as ACM.

$ _____ per square foot

Unit Price #20: Electrical Insulation Removal and Disposal as ACM.

$ _____ per linear foot

Unit Price #21: Wall, Ceiling Tile and Glue Daubs and Contaminated Substrates Removal and Disposal as ACM.

$ _____ per square foot

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

Unit Price #22: Water Fountain/Damp-Proofing Removal and Disposal as ACM.

$ _____ per fountain

Unit Price #23: Custodial Slop Sink/Damp-Proofing Removal and Disposal as ACM.

$ _____ per slop sink

Unit Price #24: Freezers/Damp-Proofing/Contaminated Cork/Contaminated Substrates/Other Material Removal and Disposal as ACM.

$ _____ per freezer

Unit Price #25: Incinerator/Boiler/Brick/Mortar/Interior and Exterior Insulation/Mastic/Fireproofing Materials/Gaskets/Roping Removal and Disposal as ACM.

$ _____ per boiler/incinerator

Unit Price #26: Gymnasium Flooring Materials (All Layers) and Mastics/Damp-proofing (including cleaning concrete substrates) Removal and Disposal as ACM.

$ _____ per square foot

Unit Price #27: Caulking, Glazing and Sealant Compounds (includes substrates and contaminated materials) Removal and Disposal as ACM.

$ _____ per linear foot

$ _____ per square foot

$ _____ per window opening (multiple windows/sizes exist in openings)

$ _____ per door opening (multiple doors/sizes exist in openings)

Unit Price #28: Caulking, Glazing and Sealant Compounds (includes substrates and contaminated materials) Removal and Disposal as PCB>50 ppm Bulk Product Waste.

$ _____ per linear foot

$ _____ per square foot

$ _____ per window opening (multiple windows/sizes exist in openings)

$ _____ per door opening (multiple doors/sizes exist in openings)

Unit Price #29: Caulking, Glazing and Sealant Compounds (includes substrates and contaminated materials) Removal and Disposal as ACM and PCB>50 ppm Bulk Product Waste.

$ _____ per linear foot

$ _____ per square foot

$ _____ per window opening (multiple windows/sizes exist in openings)

$ _____ per door opening (multiple doors/sizes exist in openings)

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

Unit Price #30: Interior/Exterior Wall/Ceiling/Floor/Paint Removal and Disposal as PCB>50 Bulk Product Waste.

$ _____ per ton

Unit Price #31: Interior/Exterior Wall/Ceiling/Floor/Paint Removal and Disposal as PCB<50 CT DEEP Regulated Waste.

$ _____ per ton

Unit Price #32: Interior/Exterior Wall/Ceiling/Floor Removal and Disposal as PCB Remediation Waste.

$ _____ per ton

Unit Price #33: Exterior Asphalt/Concrete Removal and Disposal as PCB Remediation Waste.

$ _____ per ton

Unit Price #34: Exterior Soil Removal and Disposal as PCB Remediation Waste.

$ _____ per ton

Unit Price #35: Roofing Core/Field Base Material (includes multiple layers and substrates) Removal and Disposal as ACM.

$ _____ per square foot

Unit Price #36: Roof Flashing (includes multiple layers and substrates) Removal and Disposal as ACM.

$ _____ per square foot

Unit Price #37: Damp-proofing/Tars/Mastics – Interior/Exterior Walls/Floors/Ceilings/Slab/Foundation and Associated Substrate/Adjacent Materials (includes multiple layers, contaminated materials and substrates) Removal and Disposal as ACM.

$ _____ per square foot

$ _____ per ton with substrate

Site Work & Demolition Related Unit Prices (See below for add'l Sitework items)

Unit Price #38: Off-Site Transportation and Disposal of Natural Soil.

$ _____ per ton.

"Natural" Soil: Soils have no detectable concentrations of non-naturally occurring compounds.

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

Unit Price #39: Off-Site Transportation and Disposal of Polluted Soil.

$ _____ per ton.

"Polluted" Soils contain concentrations of non-naturally occurring compounds detected above laboratory reporting limits, but below the CTDEEP RSR criteria in accordance with RCSA 22a -133k-1(a)(45).Polluted soils can be reused on-site with the preparation of a Materials Management Plan and approval from the Engineer.

Unit Price #40: Off-Site Transportation and Disposal of Contaminated Soil.

$ _____ per ton.

"Contaminated Materials" contain concentrations of compounds that exceed CTDEEP RSR criteria in accordance with RCSA 22a-133k. Contaminated materials (concrete, soil, sediment, groundwater or surface water) can NOT be reused on-site and must be disposed of at an off-site disposal facility.

Unit Price #41: Off-Site Transportation and Disposal of Hazardous Waste/Soils.

$ _____ per ton.

"Hazardous Waste/Soils" Includes all soil/fill material that exceeds regulatory limits for hazardous substances as defined in 40 CFR, Part 261.20 Subpart C – Characteristics of Hazardous Waste. This material can NOT be reused on-site and must be disposed of at an off site approved disposal facility.

Unit Price #42: Off-Site Transportation and Disposal of Hazardous Lead-Based Paint Demolition Debris.

$ _____ per 40 yard dumpster.

$ _____ per 100 yard dumpster.

Steel & Flooring Related Unit Prices

A. Structural Steel, more than 30 LBS/LF – New Construction; Div 05

$ _____ per ton

furnished and installed.

B. Structural Steel, less than, or equal to 30 LBS/LF – New Construction; Div 05

$ _____ per ton

furnished and installed.

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

C. Beam Penetrations, field fabricated and installed - each Type; Div 05

$ _____ (6" x 6")each
furnished and installed.

$ _____ (8" x 8")each
furnished and installed

$ _____ (12" x 12")each
furnished and installed

D. 0.75 inch by 8 inches epoxy anchor, full manufacturer in place system installation
Div 05 furnished and installed

$ _____ each

E. Item: Alternate Flooring Adhesive; Div. 09.

$ _____ per square foot

F. Item: Moisture Vapor Emission Control System Control System; Div. 09.

$ _____ per square foot

G. Traffic Signage, Each type with/post/bollard/base in place; Div. 10.

$ _____ each

MEP Related Unit Prices

A. Provide an additional sprinkler head including arm-over piping with an addition (6) six feet of piping to get back to nearest branch line; Div. 21
Per Sprinkler head installed

$ _____ each

B. Provide an additional duplex receptacle including wiring to nearest normal power panel with sufficient capacity, faceplate, back-box, conduits, bushing, and pull string. Also include cutting and patching of typical interior partition; Div. 26
Per receptacle installed

$ _____ each

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

C. Provide an additional duplex receptacle including wiring to nearest emergency power panel with sufficient capacity, faceplate, back-box, conduits, bushing, and pull string. Also include cutting and patching of typical interior partition; Div. 26
Per receptacle installed

$ _____ each

D. Provide an additional exit sign including power wiring and conduit system from the nearest emergency electrical power panel. Extension of the nearest exit sign circuit is acceptable if the base bid circuit capacity is sufficient: Div. 26
Per Exit Sign Installed

$ _____ each

E. Provide an additional fire alarm pull station, including wiring to panel. Also include cutting and patching of typical interior partition; Div. 28
Per pull station installed

$ _____ each

F. Provide an additional combination audible/visual fire alarm device, including wiring to panel. Also include cutting and patching of typical interior partition; Div. 28
Per fire alarm device installed

$ _____ each

G. Provide an additional ceiling smoke detector including wiring and conduit system to the nearest node. Also include cutting and patching of typical acoustical ceiling panel; Div. 28
Per smoke detector installed

$ _____ each

H. Provide an additional carbon monoxide detector including wiring and conduit system to the nearest node. Also include cutting and patching of typical acoustical ceiling panel and/or typical interior partition; Div. 28
Per carbon monoxide detector installed

$ _____ each

I. Provide an additional combination audible/visual fire alarm device, including wiring to panel. Also include cutting and patching of typical interior partition; Div. 28
Per fire device installed

$ _____ each

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

J. Single Data or Voice Outlet; Div 26 & 27

1. Provide an additional back-box, conduits, cable, bushing, and pull string. Include cutting and patching of typical interior partition, to accommodate installation of Single Data Outlet, including terminations, cable mounting devices, labeling, testing, documentation, installation and supervision
2. One (1) Category 6 rated RJ45 jack mounted on a single gang faceplate with one (1) Category 6, plenum rated, unshielded twisted pair cable installed to relevant IDF or MDF patch panel.
   a) Category 6 cable shall terminate onto an available port on the IDF or MDF patch panel.
   b) Cable length: Assume 285 feet.

Per outlet installed

$ _____ each

K. Dual Data Outlet; Div 26 & 27

1. Provide an additional back-box, conduits, cable, bushing, and pull string. Include cutting and patching of typical interior partition, to accommodate installation of Dual Data Outlet, including terminations, cable mounting devices, labeling, testing, documentation, installation and supervision.
2. Two (2) Category 6 rated RJ45 jacks, mounted on a single gang faceplate with one (2) Category 6, plenum rated, unshielded twisted pair cable installed to relevant IDF or MDF patch panel.
   a) Category 6 cable shall terminate onto an available port on the IDF or MDF patch panel.
   b) Cable length to assume 285 feet.

Per outlet installed

$ _____ each

L. Wireless Access Point location; Div 26 & 27

1. Provide pathway, and cable for additional WAP. Include cutting and patching of typical interior partition and/or ceiling tile, to accommodate installation of Wireless Access Point location, including terminations, cable mounting devices, labeling, testing, documentation, installation and supervision.
2. One (1) Category 6 rated RJ45 plug, terminated onto (1) Category 6, plenum rated, unshielded twisted pair cable, with a 20ft. service loop, and installed to relevant IDF or MDF patch panel.
   a) Category 6 cable shall terminate onto an available port on the the IDF or MDF patch panel.
   b) Cable length to assume 285 feet.

Per WAP installed

$ _____ each

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

Site Related Unit Prices

A. Preparation of aggregate pier design, one mobilization, one modulus test, pre-auger each aggregate pier location, pre-drill or pre-excavate 50% of pier locations, installation of aggregate pier elements, and demobilization (See Note AG-1 below); Div 31

$ _____ (Lump Sum)

B. Pre-drill aggregate pier location using down-hole hammer (See Note AG-2 below); Div 31

$ _____ per linear foot

C. Pre-excavate aggregate pier location, remove oversize materials that could obstruct aggregate pier, backfill excavation with excavated soils or imported borrow to satisfaction of aggregate pier designer (See Note AG-2 below); Div 31

$ _____ per linear foot

D. Additional aggregate piers (See Note AG-3 below); Div 31

$ _____ per linear foot

E. Additional aggregate piers (See Note AG-3 below); Div 31

$ _____ per linear foot

F. Additional modulus tests Div 31

$ _____ each

G. Additional mobilizations/demobilizations; Div 31

$ _____ each

H. Additional Contractor-provided information: Div 31

1. Total number of aggregate piers in base bid design: Quantity _____.
2. Average installed pier length in base bid design:: Linear Foot _____.
3. Volume of crushed stone import in base bid design: Cubic Yard _____.

Aggregate Pier - Notes 1-3 related to units and Alternate price

AG-1. Contractor's base bid shall include pre-drill or pre-excavate of 50% of the Contractor's design number of piers and based on the Contractor's average design pier length, in addition to pre-auger. Payment for pre-drill or pre-excavate will be based on actual installed length of pre-drill or pre-excavate in accordance with the unit costs provided under Item 2 and Item 3.

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

AG-2 Contractor will only be paid for one of pre-drill or pre-excavate - whichever is the method used to achieve the final installation depth.

AG-3 Additional aggregate pier unit cost shall only apply to additional piers required to be installed outside the limits of unsuitables shown on the Drawings. Unit cost shall be based on aggregate pier installation with pre-auger. Unit cost for pre-drill/pre-excavate, as applicable, will be paid in addition to aggregate pier with pre-auger unit cost.

J. Bituminous concrete paving regular duty, in place with base, Div 32

$ _____ per square foot

K. Bituminous concrete paving heavy duty, in place with base, DIV. 32

$ _____ per square foot

L. Bituminous concrete walk paving, in place with base, DIV. 32

$ _____ per square foot

M. Pavement Stripping – 4" wide striping, Div. 32

$ _____ Linear Foot

N. Gravel subbase placed and compacted, Div. 32

$ _____ Cubic Yard

O. Processed aggregate, placed and compacted, Div. 32

$ _____ Cubic Yard

P. Unit masonry pavers, in place with base, Div 32

$ _____ per square foot

Q. Washed stone aggregate surfacing, in place with geotextile fabric and base, Div 32

$ _____ per square foot

R. Natural infield & warning track surfacing, spread and compacted, Div 32

$ _____ per square foot

S. Granite Curbing, in place with base, each, Div 32 Straight Section Linear Foot $.....
Curved Section Linear Foot $.....

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

T. Chain link fence, each, Div 32

4-foot tall fence $_____ per Linear Foot

4-foot gate $_____ each

6-foot-tall fence $_____ per Linear Foot

6-foot gate $_____ each

8-foot-tall fence $_____ per Linear Foot

10-foot-tall fence $_____ per Linear Foot

12-foot-tall fence $_____ per Linear Foot

U. Segmental retaining walls with base, backfill, geotextile fiber and anchoring system, DIV. 32

$ _____ face foot

V. Athletic Field Seeding/Sodding, each, Div. 32

Seeding – Lawn

$ _____ per square foot

Sodding (Per Alternate #2)

$ _____ per square foot

W. Turf and Grasses, each, Div. 32

Seeding – Lawn

$ _____ per square foot

Seeding - Conservation Mix

$ _____ per square foot

X. Plants, Div 32

1. All planting listed on the plant list (each type), in place, with mulch

Each$ - Furnish as provide separate attachment with plant list

2. Mulch furnished, placed and fine raked

$ _____ per cubic yard

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

Turner Related Unit Prices

A. Pressure treated plywood- 3/4" thick, 4'x8' sheet - material cost

$ _____ each

B. Unit price for 30 yard dumpster, assume 8 tons

$ _____ each

E. ***Alternate Prices:***

The following Alternate Prices shall be valid for the life of the project and include all cost for labor, materials, tools, equipment, shipping, handling, storage, hoisting, rigging, distribution, protection of materials, fringe benefits, applicable taxes, overhead, profit, insurance, and all other things necessary for a complete installation.

Turner Alternate #1 Exclude 100% Payment and Performance Bond

Deduct $ _____

Turner Alternate #2 Provide a cost to provide Commercial General Liability Insurance and Worker's Compensation and Employer's Liability Insurance through an insurance carrier of the Subcontractor's choosing in lieu of through the CCIP Program. ***(*Note Demo & Abatement and Sitework Bid Packages to include Commercial Insurace in base bid as they are excluded from CCIP)***

ADD $ _____

Turner Alternate #3 (BP#09) Exclude the requirements of the Gap Mountain Report issued within Addendum #5 (Appendix F) for Blasting and Construciton Activities.

Deduct $ _____

Project Alternate #1 (BP#41) Provide sod in lieu of seeding at the Baseball and Rectangular fields

ADD / DEDUCT $ _____

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

Project Alternate #2
(BP#41)

Provide sod in lieu of seeding at the Softball field

ADD / DEDUCT $ _____

Project Alternate #3
(BP#41)

Courtyards- Provide pavers in lieu of concrete

ADD / DEDUCT $ _____

Project Alternate #4
(BP#27)

Add painted graphics at all gym walls: 1. Alternate Item: Drawing number A111.4 including elevations 1B, 1D, 1E, 3B.

ADD / DEDUCT $ _____

Project Alternate #5
(BP#21, #23, #27)

Add full-height wall tile at sink wall in the following restrooms: 1105, 1104, 2021, 2027, 2055, 2061, 2092 and 2098.
1. Alternate Item: Refer to Finish Plans and Finish Product List for type of tile.
2. Alternate Item: Drawing number A131 and Section 09 3000.

ADD / DEDUCT $ _____

Project Alternate #6
(BP#21)

Add dimensional letter signage at the following:
1. Auditorium doors.
2. Cafeteria.
3. Art room.
4. Construction Tech room.
5. Main reception window.
6. Gymnasium.
7. See Drawings for specific dimensional letter signage at each location.
8. Alternate Item: Section 10 1419

ADD / DEDUCT $ _____

Project Alternate #7
(BP#09, #36)

Provide 250kW natural gas fueled generator in lieu of diesel fueled generator.

ADD / DEDUCT $ _____

Project Alternate #8
(BP#38)

Delete lightning protection system.

ADD / DEDUCT $ _____

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

Project Alternate #9
(BP#15)

Provide 80 mil roofing membrane and 30-year warranty in lieu of 60 mil roofing membrane and 20-year warranty:
1. Alternate Item: Section 07 5423.

ADD / DEDUCT $ _____

Project Alternate #10
(BP#08)

The hazardous buildings material contractor shall remove and dispose of PCB greater than 50PPM containing paint/painted materials as PCB bulk product waste.
1. Alternate Item: Section 02 8432.

ADD / DEDUCT $ _____

Project Alternate #11
(BP#08)

The hazardous buildings material contractor shall remove and dispose of PCB less than 50PPM containing paint/painted materials as PCB CTDEEP regulated waste.
1. Alternate Item: Section 02 8432.

ADD / DEDUCT $ _____

Project Alternate #12
(BP#09)

Aggregate pier ground improvement shall be provided as an alternate to complete removal and replacement of existing fill or buried organic-containing materials from below building structures.
1. Alternate Item: Section 31 6616.

ADD / DEDUCT $ _____

F. Allowance Breakout Prices:

The undersigned proposes and agrees that the following allowances are **included** in the base bid value. All allowances are unit cost/rate/quantity allowances unless otherwise noted. Unit prices for calculating allowance values must be the same as unit prices/rate above. Fill in N/A if not applicable to your bid package.

Reference Hours within Scope of Work

BP Scope of Work Line item	Value
BP#08 - Demo Labor Hours	$
BP#09 - Sitework Dumpsters	$
BP#09 - Sitework Equip Hours	$
BP#09 - Sitework Labor Hours	$
BP#11 - Mason Labor Hours	$
BP#15 - Roofer Hours	$
BP#15 - Roofing Protection	$
BP#16 - SOFP Patching	$
BP#21 - Drywall Mechanic Hrs	$

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

BP#21 - Drywall Labor Hours	$
BP#21 - Drywall Carpenter Hrs	$
BP#27 - Painter Hrs	$
BP#34 - Elev. Operator Hours	$
BP#41 - Landscaping Hours	$

G. ***Wage Rates:***

The following are hourly wage rates for all tradespeople associated with this Bid Package for performing extra work on a time and material basis. These rates are fully loaded (including benefits, payroll and sales taxes, insurance, 10% overhead and profit, bond costs, small tools, travel, parking, supervision, and any other costs associated with labor, etc.). The wage rates shall be valid for the life of the project. ***NOTE: Further, no mark-up shall be allowed on the premium time portion of the wage rate. This Subcontractor is required to submit labor rate summary sheets, which will fully justify all these labor rates. All rates are subject to a thorough analysis and subject to reduction if deemed inaccurate at the time of Bid.***

Foreman	**Straight Time**	**Time & Half**	**Double Time**
	$	$	$
	$	$	$

Journeyman	**Straight Time**	**Time & Half**	**Double Time**
	$	$	$
	$	$	$

H. ***ADDITIONAL BID REQUIREMENTS:***

1 Bidder acknowledges that this proposal is based on reasonable interpretation of the documents / information/ specifications provided. This pricing shall be full compensation to the subcontractor for the complete work of the associated trade required at the Project. This proposal includes any necessary elaboration, missing segments, obvious requirements, etc. that would be necessary for a functioning system at the quality level established by the Contract Documents.

Board of Education of The Town of Greenwich

New Central Middle School Project
State Project No. 057-0114 N
Greenwich, CT

2 Your bid accounts for all information contained in the Contract Documents and Design Drawings, Bid Notifications, Project Memos all other correspondence provided to you as related to your work. If the Contract Documents and/or Contract Drawings and/or Specifications conflict, then the greater quantity shall apply.

3 Your bid shall remain valid for ninety (90) days.

4 Current Financial Statements will be required at time of final scope review for the competitive bidder(s).

5 All bids must be accompanied by the NCCI form from your insurance provider indicating the subcontractor's current EMR (Experience Modification Rating).

6 The bidder acknowledges that if successful (at the time of final scope review), it will sign the Turner Construction Company's Form of Contract **36** with no exceptions.

7 Did you verify and acknowledge all Bid Notifications on the bid form?

8 Your bid is based on TAX EXEMPT STATUS– TAX-EXEMPT ORGANIZATION.

9 Bidder has included acknowledged Non-Collusion Affidavit, Scope of Work Sheet and Insurance worksheets.

1) The following documentation **MUST** be submitted with each bid (2 copies of each) in order per below:
   a) Turner Form of Proposal
   b) Inititaled Scope of work sheet for your assigned Bid Package
   c) Non- Collusion Affidavit
   d) Bid Bond (if applicable)
   e) Turner Prequalification Response Form
   f) Curret DAS certificate (as applicable)
   g) Curret SBE/MBE Certificate (Set-aside Packages Only)
   h) OPM Ethics Form 1 or 6 as applicable

Submitted By: _____

_____ Date: _____
Signature of Authorized Agent for Bidder

_____
(Title)

_____ Date: _____
(Attest)

SECTION 07 2119 - FOAMED-IN-PLACE INSULATION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Foamed-in-place insulation.
   1. In masonry cavity walls.
   2. In exterior framed walls.
   3. At junctions of dissimilar wall and roof materials.
   4. ~~At steel roof deck to fill in deck flutes.~~

B. Foamed-in-place insulating sealant.
   1. In exterior wall crevices.
   2. For filling perimeter window and door shim spaces and crevices in exterior wall and roof.

C. Protective intumescent coating.

D. Preformed closure plugs for metal deck.

1.2 RELATED REQUIREMENTS

A. Section 01 3329.04 – Material Content Form

B. Section 01 3566.42 - Sustainability Compliance Procedures

C. Section 01 7419 – Construction Waste Management and Disposal

1.3 REFERENCE STANDARDS

A. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2021.

B. ASTM D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics; 2019.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

D. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.

E. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials; 2021a.

F. FM 4880 - Approval Standard for Class 1 Fire Rating of Building Panels or Interior Finish Materials; 2015.

G. NFPA 275 - Standard Method of Fire Tests for the Evaluation of Thermal Barriers; 2022.

H. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components; 2023.

I. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth; 2019.

J. UL 1040 - Standard for Safety Fire Test of Insulated Wall Construction; Current Edition, Including All Revisions.

K. UL 1715 - Standard for Safety Fire Test of Interior Finish Material; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week prior to commencing work of this section.

1.5 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide product description, insulation properties, overcoat properties, and preparation 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. Certificates: Certify that products of this section meet or exceed specified requirements.

E. Manufacturer's Installation Instructions: Indicate special procedures, and perimeter conditions requiring special attention.

F. Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.

G. Installer Qualification: Submit documentation of current contractor accreditation and current installer certification. Keep copies of all contractor accreditation and installer certification on site during and after installation. Present on-site documentation upon request.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with not less than seven years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified, with minimum five years of documented experience, and approved by manufacturer.

1.7 FIELD CONDITIONS

A. Do not apply foam when temperature is below that specified by the manufacturer for ambient air and substrate.

B. Do not apply foam when temperature is within 5 degrees F of dew point.

PART 2 PRODUCTS

2.1 MATERIALS

A. Foamed-In-Place Insulation: Low-density, flexible, open cell, water vapor permeable polyurethane foam; foamed on-site, using blowing agent of water or non-ozone-depleting gas.
   1. Regulatory Requirements: Comply with applicable code for flame and smoke, concealment, and fire protection requirements.
      a) Fire Protection: Provide 15-minute thermal barrier of 1/2 inch gypsum board or equivalent material complying with NFPA 275 test method, or foamed-in-place insulation either exposed or with covering that complies with FM 4880, NFPA 286, UL 1040, or UL 1715.
   2. Thermal Resistance: R-value of 3.0, minimum, per 1 inch thickness at 75 degrees F mean temperature when tested in accordance with ASTM C518.
   3. Air Permeance: 0.04 cfm per square foot, maximum, when tested at intended thickness in accordance with ASTM E2178 at 1.57 psf.
   4. Surface Burning Characteristics: Flame spread/smoke developed index of 25/450, maximum, when tested in accordance with ASTM E84.
   5. Products:
      a) BASF Corporation; ENERTITE Max: www.spf.basf.com/#sle.
      b) Carlisle Spray Foam Insulation; SealTite PRO High Yield: www.carlislesfi.com/#sle.
      c) Huntsman Building Solutions; Classic Ultra: www.huntsmanbuildingsolutions.com/#sle.
      d) Huntsman Building Solutions;[Icynene Ultra 50]: www.huntsmanbuildingsolutions.com/#sle.
      e) Johns Manville; JM ocSPF Open Cell Spray Polyurethane Foam: www.jm.com/#sle.
   6. Substitutions: See Section 01 6000 - Product Requirements.

B. ~~Foamed-In-Place Insulation: Medium-density, rigid or semi-rigid, closed-cell polyurethane foam; foamed on-site, using blowing agent of water or EPA-approved zero-ozone-depleting, low-global warming potential (GWP<1) hydrofluoroolefin (HFO) gas. Use of hydrofluorocarbon (HFC) blowing agents is prohibited.~~

1. ~~Application(s):~~
   a) ~~At steel roof deck to fill in deck flutes. See drawings for specific locations.~~
2. ~~Regulatory Requirements: Comply with applicable code for flame and smoke, concealment, and fire protection requirements.~~
   a) ~~Fire Protection: Provide 15-minute thermal barrier of 1/2 inch gypsum board or equivalent material complying with NFPA 275 test method, or foamed-in-place insulation either exposed or with covering that complies with FM 4880, NFPA 286, UL 1040, or UL 1715.~~
3. ~~Thermal Resistance: R-value of 6.9, minimum, per 1 inch thickness at 75 degrees F mean temperature when tested in accordance with ASTM C518.~~
4. ~~Water Vapor Permeance: Vapor retarder; 1.1 perms, maximum, when tested at intended thickness in accordance with ASTM E96/E96M, desiccant method.~~
5. ~~Water Absorption: Less than 2 percent by volume, maximum, when tested in accordance with ASTM D2842.~~
6. ~~Air Permeance: 0.04 cfm per square foot, maximum, when tested at intended thickness in accordance with ASTM E2178 at 1.57 psf.~~
7. ~~Closed Cell Content: At least 90 percent.~~
8. ~~Surface Burning Characteristics: Flame spread/smoke developed index of 25/450, maximum, when tested in accordance with ASTM E84.~~
9. ~~Products:~~
   a) ~~BASF Corporation; Walltite Plus: www.spf.basf.com/#sle.~~
   b) ~~Carlisle Spray Foam Insulation; SealTite PRO HFO: www.carlislesfi.com/#sle.~~
   c) ~~Henry Company; Permax 2.0 HFO: www.henry.com/#sle.~~
   d) ~~Huntsman Building Solutions; Icynene ProSeal HFO: www.huntsmanbuildingsolutions.com/#sle.~~
   e) ~~Johns Manville; JM Corbond IV Closed Cell Spray Polyurethane Foam: www.jm.com/#sle.~~
10. ~~Substitutions: See Section 01 6000 - Product Requirements.~~

C. Foamed-in-Place Insulating Sealant: ASTM C 1620. Low pressure, one-component, insulating polyurethane foam intended for use in filling gaps and voids in wall assemblies, including at door and window frames.Packaged in self-contained pressurized containers, gun grade, containing no urea formaldehyde.
   1. Performance Requirements: Tested in accordance with AAMA 812.
      a) Pressure Build: Tested in accordance with AAMA 812.
      b) Flame Spread Index: 25 or less, tested per ASTM E 84.
      c) Smoke Developed Index: 100 or less, tested per ASTM E 84.
      d) Air Infiltration: Less than 0.025 cfm/sf @ 1.57 psf when tested in accordance with ASTM E283.
      e) Water Infiltration: No leakage after 15 min. exposure (@ 2.9 psf). ASTM E 331.
      f) Non-ozone depleting.
   2. Manufacturers/Products:
      a) Everkem; **Thermal Seal All-in-One Fireblock + Window & Door Insulating Foam Sealant**.
      b) Hilti; **CF 812 WD Low Pressure Door and Window Foam**.
      c) Owens Corning; **Insulating Foam Sealant.**

2.2 ACCESSORIES

A. Primer: As required by insulation manufacturer.

B. Protective Coating: Intumescent coating of type recommended by insulation manufacturer and as required to comply with applicable codes. Capable of acting as an ignition barrier.
   1. Coating Type: Single component, water-based.
   2. Protected Insulation Type: Spray polyurethane foam (SPF).
   3. Application: Apply using brush, roller, or airless sprayer.
   4. Surface Burning Characteristics: Flame spread/smoke developed index of 25/450, maximum, when tested in accordance with ASTM E84.
   5. Exterior Wall System: Comply with NFPA 285.
   6. Color: White.
   7. Products:
      a) International Fireproof Technology Inc; DC315 Intumescent Coating: www.painttoprotect.com/#sle.
      b) No-Burn, Inc; Plus ThB Intumescent Coating: www.noburn.com/#sle.
      c) TPR Corporation; Fireshell IB4 Ignition Barrier Coating.

C. Metal Lath: Expanded galvanized metal lath fabricated from material of weight and configuration required to anchor insulation. Include clips and other anchorage devices required to attach lath to substrates and to receive foamed-in-place insulation material.

D. Preformed Closure Plugs for Metal Deck: Formed ~~foam~~ plugs or plug strips for filling in flutes of metal deck.
   1. Applications: As indicated on drawings for each type.
   2. Mineral Wool Deck Plugs:
      a) Basis of Design Product: Hilti; Firestop Top Track Seal CFS-TT MD P Series Flute Plug: www.hilti.com.
         1) Select product sizes to fit specific deck size(s).
   3. Rubber Deck Plugs: Formed foam or foam rubber individual plugs. Manufacturers of individual deck plugs include:
      a) A.C.T. Metal Deck Supply; Rubber Plugs: www.metaldecksupply.com.
      b) Carrington Specialty Products: www.carringtonbp.com.
      c) Cordeck Building Supply: www.cordeck.com.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify work within construction spaces or crevices is complete before insulation application.

B. Verify that surfaces are clean, dry, and free of matter that may inhibit insulation adhesion.

3.2 PREPARATION

A. Mask and protect adjacent surfaces from over spray or dusting.

B. Apply primer in accordance with manufacturer's instructions.

C. Install metal lath to anchor insulation as needed. Use standoff clips where lath fastens to structural steel.

3.3 APPLICATION

A. Apply each type of foamed-in-place insulation in accordance with manufacturer's written instructions.

B. Apply insulation by spray method, to a uniform monolithic density without voids.

C. Apply in multiple passes to not exceed maximum thicknesses recommended by manufacturer. Do not spray into rising foam.

D. Apply protective coating monolithically, without voids, to fully cover foam insulation, to achieve fire rating required.
   1. Do not cover insulation prior to any required spray foam insulation inspections.

E. Patch damaged areas.

F. Where applied to voids and gaps assure space for expansion to avoid pressure on adjacent materials that may bind operable parts.

G. Trim excess away for applied trim or remove as required for continuous sealant bead.

3.4 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements for additional requirements.

B. Field inspections and tests will be performed by an independent testing agency.

C. Inspection will include verification of insulation and protective coating thickness and density.

3.5 PROTECTION

A. Do not permit subsequent construction work to disturb applied insulation.

END OF SECTION 07 2119

SECTION 08 3326 - OVERHEAD COILING GRILLES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Overhead coiling metal grilles and operating hardware; electrically operated.

B. Wiring from electric circuit disconnect to operator and to control station.

1.2 RELATED REQUIREMENTS

A. Section 01 3566.42 - Sustainability Compliance Procedures.

B. Section 01 7419 – Construction Waste Management and Disposal.

C. Section 05 5000 - Metal Fabrications: Delegated design requirements for secondary structural members supporting overhead coiling grilles, furnished and installed by overhead coiling grille provider.

D. Sections 08 0671 and 08 7100 - Door Hardware: Cylinder cores and keys.

E. Section 26 0583 - Wiring Connections: Power to disconnect.

1.3 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

B. ITS (DIR) - Directory of Listed Products; Current Edition.

C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2018.

D. NEMA ICS 2 - Industrial Control and Systems Controllers, Contactors and Overload Relays Rated 600 Volts; 2000, with Errata (2008).

E. NEMA MG 1 - Motors and Generators; 2018.

F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

G. UL (DIR) - Online Certifications Directory; Current Edition.

H. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems; Current Edition, Including All Revisions.

1.4 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: For each type of coiling grille, provide data for general construction component connections and details, and electrical equipment.

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: Provide plans, elevations, sections, and details.Indicate pertinent dimensioning, anchorage methods, hardware locations, and installation details.
   1. Include diagrams for power, signal, and control wiring.

E. Manufacturer's Installation Instructions: Indicate installation sequences and procedures, adjustment and alignment procedures.

F. Manufacturer's qualification statement.

G. Installer's qualification statement.

H. Specimen warranty.

I. Maintenance Data: Indicate lubrication requirements and frequency and periodic adjustments required.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years documented experience.

C. Products Requiring Electrical Connection: Listed and classified by ITS (DIR), UL (DIR), or testing firm acceptable to authorities having jurisdiction as suitable for purpose specified.

1.6 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide 2-year manufacturer warranty against defects in materials and workmanship, on mechanical components, operator, and control panel. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design - Overhead Coiling Grilles:
   1. Cornell Iron Works, Inc; Visionaire MicroCoil Grille - Model ESG10: www.cornelliron.com/#sle.
   2. Substitutions: See Section 01 6000 - Product Requirements.

2.2 GRILLES AND COMPONENTS

A. Grille: Aluminum~~Stainless steel~~; horizontal bar curtain, coiling on overhead counterbalanced shaft.
   1. ~~Finish: No. 4 - Brushed.~~
   2. Finish: Anodized, clear.
   3. Lock Devices: Lock and latch handle on outside.
   4. Electric operation.
   5. Mounting: As indicated on Drawings.

B. Curtain: Round horizontal bars connected with vertical links.
   1. Horizontal bars: 5/16 inch diameter, 5056 H32 aluminum alloy.
   2. Bar spacing: 1-1/2 inch on center.
   3. Tube spacers: 1/2 inch diameter.
   4. Spacer spacing: 3-1/4 inch on center.
   5. Vertical links: 5/16 inch diameter, aluminum.
   6. Link spacing: 6 inch on center.
   7. Bar Ends: Provide with nylon runners for quiet operation.
   8. Bottom Bar: Back-to-back angles, extruded aluminum, with tubular resilient cushion.

C. Guides: Extruded aluminum~~stainless steel~~ angles, of profile to retain grille in place with snap-on trim, mounting brackets of same metal.
   1. ~~Tube-Mounted Guides: Heavy duty Type 304 stainless steel sections. Provide~~
   2. Finish: Clear anodized.

D. Hood Enclosure and Trim: Sheet metal; completely covering operating mechanisms; internally reinforced to maintain rigidity and shape.
   1. Material: Aluminum. ~~Stainless steel.~~
   2. Sheet Metal Thickness: ~~24 gauge, 0.0235 inch.~~ 0.040 inch.
   3. Finish: Anodized, clear.

E. Locking:
   1. Keyed cylinder locking into both jambs operable from both sides of curtain with motor interlock cutout switches.

F. Roller Shaft Counterbalance: Steel pipe and helical steel spring system, capable of producing torque sufficient to ensure smooth operation of curtain from any position and capable of holding position at mid-travel; with adjustable spring tension; requiring 25 lb nominal force to operate.

G. Brackets: Minimum 1/4 inch steel plate with permanently lubricated ball or roller bearings at rotating support points to support counterbalance shaft assembly and form end closures.
   1. Zirconium treatment followed by a corrosion inhibitive baked-on zinc-rich gray polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.
   2. ~~Finish: Hot-dip Galvanized, ASTM A 123, Grade 85 zinc coating, hot-dip galvanized after fabrication.~~

H. Trim Package: Minimum 16 gauge Type 304 #4 finish stainless steel. Custom-made to hide visible bolts, fasteners and other exposed hardware.

2.3 MATERIALS

A. Aluminum: ASTM B221 (ASTM B221M).

B. Galvanized Steel Sheet: ASTM A653/A653M, galvanized to minimum G90/Z275 coating.

2.4 ELECTRIC OPERATION

A. Operator, Controls, Actuators, and Safeties: Comply with UL 325; provide products listed by ITS (DIR), UL (DIR), or testing agency acceptable to authorities having jurisdiction.
   1. Provide interlock switches on motor operated units.

B. Electric Operators:
   1. Mounting: Side mounted.
   2. Motor Enclosure:
      a) Interior Coiling Grilles: NEMA MG 1, Type 1; open drip proof.
   3. Motor Rating: As recommended by manufacturer for size and type of door; industrial duty, rated for mazimum 20 cycles per hour.
      a) Basis-of-Design: Cornell; **Supply Model MG Electric Motor Operator**.
   4. Motor Voltage: 120 volts, single phase, 60 Hz.
   5. Motor Controller: NEMA ICS 2, full voltage, reversing magnetic motor starter.
   6. Controller Enclosure: NEMA 250 Type 1.
   7. Opening Speed: 12 inches per second.
   8. Brake: Adjustable friction clutch type, activated by motor controller.
   9. Manual override in case of power failure.
   10. Refer to Section 26 0583 for electrical connections.

C. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated; enclose terminal lugs in terminal box sized to comply with NFPA 70.

D. Control Station: Provide flush mounted, "Open/Close" key switch with "Stop" push button; NEMA 1B, at each overhead coiling grille.
   1. Cylinder type as required by Owner.

2. 24 volt circuit.
3. Surface mounted, at interior door jamb.
4. Entrapment Protection Devices: Provide sensing devices and safety mechanisms complying with UL 325.
    a) Primary Device: Provide electric sensing edge, wireless sensing, NEMA 1 photo eye sensors, or NEMA 4X photo eye sensors as required with momentary-contact control device.

E. Safety Edge: Located at bottom of coiling grill, full width, electro-mechanical sensitized type, wired to stop and reverse grill direction upon striking object, hollow neoprene covered.
    1. Basis-of-Design: Cornell;

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that adjacent construction is suitable for door installation.

B. Verify that electrical services have been installed and are accessible.

C. Verify that door opening is plumb, header is level, and dimensions are correct.

D. Notify Architect of any unacceptable conditions or varying dimensions.

E. Commencement of installation indicates acceptance of substrate and door opening conditions.

3.2 INSTALLATION

A. Install grille unit assembly in accordance with manufacturer's instructions.

B. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.

C. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.

D. Fit and align assembly including hardware; level and plumb, to provide smooth operation.

E. Coordinate installation of electrical service with Section 26 0583.

F. Complete wiring from disconnect to unit components.

G. Install enclosure and perimeter trim.

3.3 TOLERANCES

A. Maintain dimensional tolerances and alignment with adjacent work.

B. Maximum Variation From Plumb: 1/16 inch.

C. Maximum Variation From Level: 1/16 inch.

D. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch per 10 ft straight edge.

3.4 ADJUSTING

A. Adjust grille, hardware and operating assemblies for smooth and noiseless operation.

3.5 CLEANING

A. Clean grille and components.

B. Remove labels and visible markings.

END OF SECTION 08 3326

SECTION 08 4413 - GLAZED ALUMINUM CURTAIN WALLS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Aluminum-framed curtain wall, with vision glazing and glass infill panels.

B. Vertical sunshade devices.

C. Firestopping between curtain wall and edge of floor slab.

1.2 RELATED REQUIREMENTS

A. Section 01 3566.42 - Sustainability Compliance Procedures.

B. Section 01 7419 – Construction Waste Management and Disposal.

C. Section 05 1200 - Structural Steel Framing: Steel attachment members.

D. Section 07 2500 - Weather Barriers: Sealing framing to water-resistive barrier installed on adjacent construction.

E. Section 07 8400 - Firestopping: Firestop at system junction with structure.

F. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.

G. Section 08 8000 - Glazing.

1.3 REFERENCE STANDARDS

A. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site; 2015.

B. AAMA 501.1 - Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure; 2017.

C. AAMA 501.2 - Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems; 2015.

D. AAMA 503 - Voluntary Specification for Field Testing of Newly Installed Storefronts, Curtain Walls and Sloped Glazing Systems; 2014.

E. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.

F. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections; 2009.

G. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2017a.

H. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.

I. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

J. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

K. ASTM C794 - Standard Test Method for Adhesion-In-Peel of Elastomeric Joint Sealants; 2018.

L. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.

M. ASTM E783 - Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors; 2002 (Reapproved 2018).

N. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference; 2015.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with installation of other components that comprise the exterior enclosure.

B. Preinstallation Meeting: Conduct a preinstallation meeting one week before starting work of this section; require attendance by all affected installers.

1.5 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, internal drainage details, glazing, and infill.

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 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.

D. Shop Drawings: Provide project-specific elevations, plans, sections, and details. Indicate system dimensions, framed opening requirements and tolerances, attachments to related Work, expansion and contraction joint location and details, and field welding required.
   1. Include design engineer's stamp or seal on shop drawings for attachments and anchors.
   2. Include details for integration with adjacent building materials.
   3. Include details of provisions for assembly expansion and contraction and for draining moisture occurring withi the assembly to the exterior.
   4. Include full-size isometric details of each vertical-to-horizontal intersection of glazed aluminum curtain walls, showing the following:
      a) Joinery, including concealed welds.
      b) Anchorage.
      c) Expansion provisions.
      d) Glazing.
      e) Flashing and drainage.

E. Samples: Submit two samples 6 by 6 inches in size illustrating finished aluminum surface, for each color specified.

F. Design Data: Provide framing member structural and physical characteristics and engineering calculations, and identify dimensional limitations; include load calculations at points of attachment to building structure. All analysis data to be signed and sealed by the qualified professional engineer responsible for their preparation.

G. Test Reports: Submit results of full-size mock-up testing. Reports of tests previously performed on the same design are acceptable.

H. Test Reports: Test reports showing compliance with specified requirements, including ballistic resistance. Frame and glazing may be tested separately, provided that curtain wall test sample adequately simulates the glazing to be used.
   1. Security-strengthened glazing (Type ISG) for curtain wall frames is specified in Section 08 8000.
   2. Bullet resistant curtain wall is limited to specific curtain wall assemblies indicated on drawings.

I. Field Quality Control Submittals: Report of field testing for water penetration and air leakage.

J. Designer's Qualification Statement.

K. Manufacturer's Qualification Statement.

L. Installer's Qualification Statement.

M. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.6 QUALITY ASSURANCE

A. Designer Qualifications: Design curtain wall and its structural support framing components under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed at the State in which the Project is located.

B. ~~Full-Size Mock-up Testing: Have a specimen representative of project conditions tested by an independent testing agency for compliance with specified thermal, structural, air infiltration, and water penetration criteria.~~

C. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with not less than five years of documented experience.

D. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Handle products of this section in accordance with AAMA CW-10.

B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.8 FIELD CONDITIONS

A. Do not install sealants when ambient temperature is less than 40 degrees F. Maintain this minimum temperature during and 48 hours after installation.

1.9 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. Manufacturer Warranty: Provide 5-year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units. Complete forms in Owner's name and register with installer.

D. Finish Warranty: Provide ten-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Glazed Aluminum Curtain Walls Manufacturers:
   1. Basis of Design: **EFCO Corporation**: www.efcocorp.com.
   2. Alternate Acceptable Manufacturers: Subject to compliance with specified requirements.
      a) Kawneer North America: www.kawneer.com/#sle.
      b) Oldcastle Building Envelope: www.oldcastlebe.com/#sle.
      c) Tubelite, Inc: www.tubeliteinc.com/#sle.
      d) YKK AP America, Inc: www.ykkap.com/commercial/#sle.
   3. Substitutions: See Section 01 6000 - Product Requirements.
      a) For any product not identified as "Basis of Design", submit information as specified for substitutions.

2.2 BASIS OF DESIGN - CURTAIN WALL SYSTEMS

A. Pressure Cap Four Sides; Not Unitized, Field Assembled:
   1. Basis of Design: EFCO Corporation; **System 5600, with Duracast Fiberglass Pressure Plate,** 2 1/4 inch (57 mm) wide face: www.efcocorporation.com.

B. Other Manufacturers: Provide either product identified as "Basis of Design" or an equivalent product of one of the manufacturers listed below.
   1. Kawneer: www.kawneer.us.com.
   2. Oldcastle Building Envelope: www.obe.cm.
   3. YKK AP: www.ykkap.com.

C. Substitutions: See Section 01 6000 - Product Requirements.
   1. For any product not identified as "Basis of Design", submit information as specified for substitutions.

2.3 CURTAIN WALL

A. Aluminum-Framed Curtain Wall: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
   1. Outside glazed, with pressure plate and mullion cover.
   2. Fabrication Method: Field fabricated stick system.
   3. Glazing Method: Field glazed system.
   4. Finish: Superior performing organic coatings.
   5. Provide flush joints and corners, weathersealed, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for imposed loads.
   6. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
   7. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.

8. Maintain continuous air barrier and/or vapor retarder seal throughout assembly, primarily in line with inside pane of glazing and inner sheet of infill panel and heel bead of glazing compound.

B. Structural Performance Requirements: Design and size components to withstand the following load requirements without damage or permanent set.
   1. Design Wind Loads: Comply with structural design criteria indicated on Drawing S001 .
      a) Member Deflection: For spans less than 13 feet 6 inches, limit member deflection to flexure limit of glass in any direction, and maximum of 1/175 of span or 3/4 inch, whichever is less and with full recovery of glazing materials.
      b) Member Deflection: For spans over 13 feet 6 inches and less than 40 feet, limit member deflection to flexure limit of glass in any direction, and maximum of 1/240 of span plus 1/4 inch, with full recovery of glazing materials.
   2. Movement: Accommodate the following movement without damage to components or deterioration of seals:
      a) Expansion and contraction caused by 180 degrees F surface temperature.
      b) Expansion and contraction caused by cycling temperature range of 170 degrees F over a 12 hour period.
      c) Movement of curtain wall relative to perimeter framing.
      d) Deflection of structural support framing, under permanent and dynamic loads.

C. Water Penetration Resistance on Manufactured Assembly: No uncontrolled water on indoor face when tested as follows:
   1. Test Pressure Differential: 15 psf.
   2. Test Method: AAMA 501.1.

D. Air Leakage: 0.06 cfm/sq ft maximum leakage of wall area when tested in accordance with ASTM E283/E283M at 6.24 psf pressure difference across assembly.

E. Thermal Performance Requirements:
   1. Condensation Resistance Factor of Framing: 50, minimum, measured in accordance with AAMA 1503.
   2. Overall U-value Including Glazing: 0.32 Btu/(hr sq ft deg F), maximum.

F. Ballistic Resistance (Frames): Tested to meet UL 752, Level 3.

2.4 COMPONENTS

A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
   1. Framing members for interior applications need not be thermally broken.
   2. Cross-Section: As indicated on drawings.

B. Glazing: See Section 08 8000.

C. Fiberglass Pressure Plate: Fiberglass composite for enhanced thermal performance.
   1. Flexural strength: Minimum 82 ksi along the lineal's major axis.
   2. Material thermal conductivity: Maximum 2 BTU·in/hr·ft²·°F.

D. Sun Shades: Shop fabricated, shop finished, extruded aluminum sunshade louvers, free of defects impairing strength, durability or appearance.
   1. Sun Shade Configuration: As indicated on drawings.
   2. Louver Type: Tube. See drawings for profile.
   3. Materials: Aluminum, 6063-T6.
   4. Mounting Brackets: Same material and finish as sunshade louvers.
   5. Design Criteria: Design and fabricate to resist the same loads as curtain wall system as well as the following loads without failure, damage, or permanent deflection:
      a) Thermal Movement: Plus/minus 1/8 inch, maximum.
   6. Sizes: As indicated on drawings.
   7. Finish: Same as curtain wall mullion sections.
   8. Products:
      a) Same as manufacturer of curtain wall.
         1) Basis of Design: **EFCO; X-Therm E-Shades**.
      b) Substitutions: See Section 01 6000 - Product Requirements.

E. Trims and Sills: Miscellaneous metal trim pieces and exposed sills, finished to match curtain wall framing.
   1. Material: Aluminum, 6063-T6.
      a) Thickness: As indicated on drawings.
   2. Profiles: As indicated on drawings.

2.5 MATERIALS

A. Extruded Aluminum: ASTM B221 (ASTM B221M).

B. Sheet Aluminum: ASTM B209/B209M.

C. Structural Supporting Anchors: See Section 05 1200.

D. Structural Supporting Anchors Attached to Structural Steel: Design for bolted attachment.

E. Fasteners: Stainless steel; type as required or recommended by curtain wall manufacturer.

F. Exposed Flashings: Aluminum sheet, 20-gauge, 0.032-inch minimum thickness; finish to match framing members.

G. Concealed Flashings: Stainless steel, 26-gauge, 0.0187-inch minimum thickness.

H. Firestopping: See Section 07 8400.

I. Weatherseal Sealant: Silicone, with adhesion in compliance with ASTM C794; compatible with glazing accessories.

J. Sill Flashing Sealant: Elastomeric, silicone or polyurethane, and compatible with flashing material.

K. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.

L. Glazing Accessories: See Section 08 8000.

2.6 FINISHES

A. Superior Performing Organic Coatings System: Manufacturer's standard multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent polyvinylidene fluoride (PVDF) resin, and at least 80 percent of aluminum extrusion and panels surfaces having minimum total dry film thickness (DFT) of 1.2 mils, 0.0012 inch.

B. Color, Basis-of-Design: **EFCO Ultrapon "Mineral Brown".**

C. Touch-Up Materials: As recommended by coating manufacturer for field application.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify dimensions, tolerances, and method of attachment with other related work.

B. Verify that curtain wall openings and adjoining water-resistive and air barrier seal materials are ready to receive work of this section.

C. Verify that anchorage devices have been properly installed and located.

3.2 INSTALLATION

A. Install curtain wall system in accordance with manufacturer's instructions and approved shop drawings.

B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.

C. Provide alignment attachments and shims to permanently fasten system to building structure.

D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.

E. Provide thermal isolation where components penetrate or disrupt building insulation.

F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.

G. Coordinate installation of firestopping at each floor slab edge.

H. Pressure Plate Framing: Install glazing and infill panels using exterior dry glazing method; see Section 08 8000.

I. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.3 TOLERANCES

A. Maximum Variation from Plumb: 0.06 inch per 3 feet noncumulative or 0.5 inches per 100 feet, whichever is less.

B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

C. Sealant Space Between Curtain Wall Mullions and Adjacent Construction: Maximum of 3/4 inch and minimum of 1/4 inch.

3.4 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements for general testing and inspection requirements.

B. Water-Spray Test: Provide water spray quality test of installed curtain wall components in accordance with AAMA 501.2 during construction process and before installation of interior finishes.
   1. Perform a minimum of two tests in each designated area as indicated on drawings.
   2. Conduct tests in each area prior to 10 percent and 50 percent completion of this work.

C. Provide field testing of installed curtain wall system by independent laboratory in accordance with AAMA 503 during construction process and before installation of interior finishes.
   1. Perform a minimum of two tests in each designated area as indicated on drawings.
   2. Conduct tests in each area prior to 10 percent and 50 percent completion of this work.
   3. Field test for water penetration in accordance with ASTM E1105 with uniform static air pressure difference (Procedure A) not less than 4.18 psf.
      a) Maximum allowable rate of water penetration in 15-minute test is 0.5 ounce that is not contained in an area with provisions to drain to exterior, or collected on surface of interior horizontal framing member.
   4. Field test for air leakage in accordance with ASTM E783 with uniform static air pressure difference of 1.57 psf.

D. Repair or replace curtain wall components that have failed designated field testing, and retest to verify performance complies with specified requirements.

3.5 CLEANING

A. Remove protective material from pre-finished aluminum surfaces.

B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, take care to remove dirt from corners, and wipe surfaces clean.

C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.

3.6 PROTECTION

A. Protect installed products from damage until Date of Substantial Completion. ~~mm-dd-yyyy.~~

END OF SECTION 08 4413

SECTION 11 5400 - ART EQUIPMENT

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Kiln.
   1. Kilns for Art Department use.
      a) A. Related Sections include the following:
   2. Division 23 and 26 Sections for services and connections to miscellaneous equipment.

1.2 SUBMITTALS

A. Product data for each type of equipment specified, with installation instructions for each unit built-in or connected to other construction. Include methods of installation for each type of substrate.

B. Shop drawings showing installation details of accessories permanently affixed to construction, including full-scale installation details of special conditions, where applicable.

C. Qualification Data: For qualified Installer.

D. Warranty: Sample of Special warranty specified in this Section.

1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For each equipment item to include in operation and maintenance manuals.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by manufacturer for installation and maintenance of equipment items required for this Project.

B. Source Limitations: Obtain equipment items through one source from a single manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to project site in original factory wrappings and containers, clearly labeled with identification of manufacturer, brand name, and lot number. Store materials in original undamaged packages and containers, inside well-ventilated area protected from weather, moisture, soiling, extreme temperatures, humidity; laid flat, blocked off ground to prevent sagging and warping.

B. Comply with instructions and recommendations of manufacturer for special delivery, storage, and handling requirements.

1.6 SEQUENCE AND SCHEDULING

A. Sequence installation of miscellaneous equipment with existing adjacent construction to minimize possibility of damage and soiling during remainder of construction period.

1.7 WARRANTY

A. Special Warranties: Manufacturer's standard form in which manufacturer agrees to repair or replace equipment items or components that fail in materials or workmanship within specified warranty period.
   1. Three year limited parts warranty from date of Substantial Completion.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Products: The design for each miscellaneous equipment item is based on the product named, to be compatible with the existing kiln. Subject to compliance with requirements, provide the named products. No substitutions will be permitted.

B. Basis-of-Design Manufacturer: L & L Kiln Mfg, Inc., www.hotkilns.com.

2.2 KILNS

A. Kiln **EV01**: Top-loading kiln.
   1. Basis-of-Design: L & L Kiln; **Easy-Fire e23T-3-208-3P**.
   2. Temperature Rating: Cone 10.
   3. Size:
      a) Inside Dimensions: 22.3” diameter x 17” high.
      b) Volume: 6.7 cubic feet.
      c) Outside Dimensions: 30" wide x 68” high x 40" deep.
   4. Construction:
      a) Assembly: Two 9 inch high sections stack on top of each other.
      b) Stainless steel jacket wrapped around a 3-inch thick firebrick lining with three clamps on each section. Brick has a reflective coating to protect it and prevent dusting.
      c) Firebrick Thickness: 3 inches.
   5. Stand: Heavy duty 14 gauge full solid steel stand with multiple bends for strength. Bolt-on legs and feet protectors.
   6. Lid: Spring loaded hinge allowing lid to be self-supporting.
   7. Elements: Heavy-duty, 2 elements per 9 inch section. Elements held in place by hard ceramic holders.
   8. Control Panel: Control electronics and operating elements provided in a separate, insulated control panel module mounted to the front of the kiln and connected to the kiln element connection box. Control panel and element box are hinged for access and maintenance and can be removed for servicing.

a) Control Basis-of-Design: **Genesis Touchscreen Control with Dynamic Zone Control** by L&L Kilns. Wi-fi enabled touchscreen interface, includes graphical display of firing process and built-in diagnsotic testing. ~~**Dyna Trol** with 4 Easy-Fire programs, 6 Vary-Fire programs, Pre-Heat, , Delay, Program and Segment Review, and Diagnostics. Alos included dynamic zone control as a standard feature.~~

9. UL Listing: c-MET-us listed to UL499 standards.
10. Electrical Specifications:
    a) Power Cord: NEMA 15-50 cord for three phase, included with kiln.
    b) Wattage: 11,000 at 30.5 amps.
    c) Voltage/Phase: 208V / 3-phase.
    d) Elements: All elements are of equal resistance value. T models have six elements.

B. Kiln Instructions:
1. Provide complete visual instuctions with control reference, process information, assembly, troubleshooting, and parts list. In addition available web videos show how to assemble the kiln and how to fire it.

2.3 KILN EXHAUST VENT

A. Basis-of-Design Product: L & L Kiln; **Vent-Sure** kiln downdraft exhaust vent system
1. Downdraft Vent: Vent system shall pull air from the bottom of the kiln to ventilate fumes from the kiln under vacuum, venting kiln fumes to the exterior. The downdraft ventilation system shall produce better firing by promoting higher temperature uniformity in the kiln; up to a 1/2 cone improvement.
2. Voltage and Amperage: 120 volts at 1.37 Amps.
3. On/Off Switch and Cord: Switch on six-foot long cord.
4. Flexible Exhaust Ductwork: 3-inch diameter flexible and expandable aluminum duct with necessary hose clamps, length as required.
5. Fan Motor Capacity: 130 CFM.
6. Vent Control: A vacuum bypass on the kiln bypass/collection box shall adjust the amount of venting from the system.

2.4 FURNITURE KIT

A. Furniture Kit: Set of shelves, posts, and heat-resistant gloves intended to allow stacking and handling of ceramic items inside the kiln. Compatible with specified kiln.

B. Basis of Design: **L&L Kilns**; Model #**H-E-K23T/3H**.

PART 3 - EXECUTION

3.1 COORDINATION

A. Verify that room contruction and finishes, and electrical connections are ready for equipment installation.

3.2 INSTALLATION

A. Verify that materials are those specified before installing.

B. Local dealer, or manufacturer's representative, shall unpack and then assemble any loose or optional parts, provide initial start-up operations, and verify functioning of all control and program sequences.

C. Install accessories after other finishing operations, including painting, have been completed.

D. Free Standing Units: Install freestanding units in scheduled locations.

E. Wall Mounted Units: Install wall mounted units with wall brackets in accordance with manufacturer's written instructions.

F. Adjust accessory items for proper operation. Clean and polish exposed surfaces, using materials and methods recommended by the manufacturer.

3.3 PROTECTION

A. Protect units against damage during remainder of construction period, complying with manufacturer's directions.

3.4 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain the kiln(s).

B. See Section 01 7900 - Demonstration and Training for general requirements for demonstration and training.

END OF SECTION 11 5400

SECTION 11 6833 ATHLETIC FIELD EQUIPMENT

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. Ball Field Equipment
2. Ball Field ~~Dugouts~~ **Shade Structures**
3. Ball Field Benches **& Bleacher Seating**
4. Soccer Goals

B. Related Requirements:

1. Division 01 Section(s) “Construction Waste Management and Disposal” and “Sustainability Compliance Procedures” for sustainability requirements.

2. Division 03 Section "Cast-in-Place Concrete" for installing site furnishings cast in concrete footings.

3. Division 05 Section "Metal Fabrications" for metal fabrication requirements

4. Division 31 Section "Excavation, Backfill, Compaction and Dewatering" for excavation for installing concrete footings.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Provide athletic field equipment manufacturer's product data indicating materials of construction, compliance with specified standards, installation procedures, and necessary safety limitations.

B. LEED Submittals:

1. Product Data for Credit MR 4.1 and Credit MR 4.2: For products having recycled content, documentation indicating percentages by weight of postconsumer and pre-consumer recycled content. Include statement indicating cost for each product having recycled content.
2. Certificates for Credit MR 7: Chain-of-custody certificates indicating that wood components of site furnishings comply with forest certification requirements. Include

documentation that manufacturer is certified for chain of custody by an FSC-accredited certification body. Include statement indicating cost for each certified wood product.

C. Samples for Initial Selection: For units with factory-applied finishes.

D. Samples for Verification: For each type of exposed finish, not less than 6-inch- (152-mm-) long linear components and 4-inch- (102-mm-) square sheet components.

E. Shop Drawings: Benches Submit detailed scale drawings showing athletic field equipment and perimeter layout.

1. Indicate locations and dimensions of footings and anchorage points.

2. Identify mounting elevations in relation to fixed survey point on site, and subgrade elevation.

3. Indicate location of underground utilities, storm drainage system, and irrigation system.

F. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacture

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store equipment on project site in accordance with manufacturer's recommendations.

B. Store materials in a dry, covered area, and elevated above grade.

1.6 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Provide minimum 1year manufacturer warranty for allathletic field equipment.

PART 2 - PRODUCTS

2.1 ATHLETIC FIELD EQUIPMENT – GENERAL

A. Provide equipment that complies with NFHS requirements.

B. Provide equipment that complies with FIFA requirement

C. Coordinate field grading as required for proper placement and arrangement of equipment, refer to Section 31 2205 for additional information

2.2 BALL FIELD EQUIPMENT

A. Ball Field Bases: Anchored bases for field, locations as indicated on drawings:
1. Size: 15 inch by 15 inch (381 mm by 381 mm) and 3 inch (76 mm) thick.
2. Base Support Plate: Rust resistant, steel anchor system and stanchion pan.
3. Base: Tough pebble embossed, UV resistant rubber top that prevents spikes from slipping or puncturing base surface, heavy duty polyurethane foam pad interior, with reinforced non-collapsing side walls.

B. Ball Field Home Plate for locations as indicated on drawings:
4. Description: Tough molded rubber, colored white, with 3/4 inch (19 mm)3/4 inch (19mm) wide beveled black perimeter.
5. Size: 17 inch (43.2 cm)wide across front, 8-1/2 inch (21.6 cm)long on each side, and two 12 inch (30.5 cm)long edges on rear at 45 degree angle to sides creating point at back.
6. Plate Support Plate: Rust resistant, steel anchor system and stanchion pan including hardware for base assembly, anchor, and base plug.

C. Pitcher's Plate:
1. Description: Heavy duty, UV resistant rubber system in whitecolor; size of 6 inch by 24inch (152 mm by 610 mm)by 11/16 inch (17.5 mm)thick.
Anchored Assembly: Welded assembly with double metal stanchion, anchor, and hardware set below exposed pitching rubber.

D. Soccer Goals / Appurtenances:
1. Shall be existing equipment salvaged during site preparation for re-use.

2.2 BALLFIELD ~~DUGOUTS~~ SHADE STRUCTURES

A. Basis-of-Design Product: Subject to compliance with requirements, provide all equipment and materials, and do all work necessary to furnish and install the Game Shade Dugouts as manufactured by Sports Field Specialties Inc. (888) 975-3343, www.sportsfieldspecialties.com or a comparable product by the following:
1. JW Industries, Inc., www.jwindustriesinc.com (920)865-7307
2. Beacon Athletics (Premium Team Dugouts) (800)747-5985

B. Product:
1. Baseball/Softball Model No. GD10x24

C. Requirements:
1. Building Code: ASCE 7-10.
2. Maximum Wind Speed Rating: 140mph, Exposure Category C.
3. Maximum Ground Snow Load: 60psf.
4. Seismic Design Category E, Ss=1.5g, S1=0.75g.
5. Roof Pitch: 2 inch rise back-to-front

D. Components:

1. GameShade Dugouts:

a. Overall Dimensions:

1) Baseball Structure: 10 feet wide x 24 feet long.

2) Softball Structure: 10 feet wide x 24 feet long.

b. Structural Columns Fabricated of:

1) 3-1/2 inch square structural steel tube with factory pre-drilled A36 steel base mounting plates and A36 steel roof and column cap plates.

c. Roof Frame Fabricated of:

1) 5 inch x 2 inch x 3/16 inch structural steel rectangular perimeter, transverse, and longitudinal roof tubes.

d. Roofing Material: 29 gauge, rib-style corrugated metal with j-channel drip cap installed on front and sides.

e. Column attachment hardware: Galvanized steel. Carbon steel anchoring hardware.

f. Anchoring Hardware: Carbon Steel.

g. Accessories: Epoly and lifting eye bolts.

h. Metal Finish: Powder Coated Primer and Coated Finish

1) Column Color: As selected by Owner from manufacturer's full range.

2) Roof Color: As selected by Owner from manufacturer's full range.

2. Vinyl-coated Chain Link Fence:

a. Materials: Conforming to Section 32 3113 – Chain Link Fences and Gates.

b. Connection: Attach fencing beneath shade structure to structure column.

c. Locations: As indicated on Drawings

d. Color: Black.

~~E. Dugout Enclosure~~

~~1. Height: See plan and details for height.~~

~~2. Color / Finish: All metals shall be galvanized w/"Black" powder coated PVC (Match ballfield chain link fencing).~~

~~F. Roof~~

~~1. Provide heavy duty corrugated metal roof with side trim as per details. Secure a per delegated design recommendations.~~

~~2. Color / Finish: "Dark Green" powder coated PVC~~

~~G. Concrete Floor and Base~~

~~1. Provide 4,000 psi Heavy Duty Concrete as specified and detailed for paving sections.~~

~~2. Finish: Medium broom finish w/ 2" smooth border at all edges and joints.~~

~~H. Appurtenances~~

~~1. Provide heavy duty stainless steel bolts, hinges, hooks, etc.as per delegated design and as recommended by the manufacturer.~~

~~2. Gate Latches: Provide heavy duty stainless steel self closing lockable latches as per delegated design and as recommended by the manufacturer.~~

~~I. Delegated Design: The Contractor shall provide shop drawings demonstrating compliance with the design intent per the details which are to be sealed / signed by a licensed Engineer.~~

2.3 ATHLETIC BENCHES & BLEACHER SEATING

A. Site Benches
1. Basis-of-Design Product: Subject to compliance with requirements, provide Two-Tier Polyboard Team Benches as manufactured by Sports Field Specialties Inc., (888) 975-3343,www.sportsfieldspecialties.com or a comparable product by the following, as approved by the Landscape Architect
   a. Dant Clayton Corporation, www.dantclayton.com (800) 626-2177
   b. SturdiSteel Grandstands, www.sturdisteel.com (800)433-31116
2. Length:
   Softball **Shade Structures Benches** ~~Dugouts~~: 2@ 20-feet (240-inches) long x 24 inches tall x 16 inches deep
   Softball **Bleacher Seating** ~~Spectators~~: 2@ 20-feet (240-inches) long x 24 inches tall x 16 inches deep
   Baseball **Shade Structures Benches** ~~Dugouts~~: 2@ 20-feet (240-inches) long x 24 inches tall x 16 inches deep
   Baseball **Bleacher Seating** ~~Spectators~~: 2@ 40-feet (**480**~~240~~ inches) long x 24 inches tall x 16 inches deep
3. Securement: All securement hardware shall be Stainless Steel.
4. Description: Two-tier seating with aluminum welded frame and synthetic polyboard planking.
5. Frame Finish: Powercoat. Color as selected by Owner from manufacturer's full range.
6. Polyboard Color: As selected by Owner from manufacturer's full range.
7. Logos on Ends of Benches: Two logos per team bench area.
8. Mounting: Permanent – Stainless Steel
9. Concrete Base: Provide 4000lb concrete base as detailed.

B. Materials:
1. Extruded Aluminum: ASTM B221 or ASTM B221M, Alloy 6061, 6062, or 6063.
2. Tensile Strength: 39,000 psi (270 MPa), minimum.
3. Yield Point: 36,500 psi (250 MPa), minimum.

~~C. Delegated Design: The Contractor shall provide shop drawings demonstrating compliance with the design intent which are to be sealed / signed by a licensed Engineer. See Item 2.4 A.3 above for special requirements.~~

2.4 GENERAL FABRICATION

A. Metal Components: Form to required shapes and sizes with true, consistent curves, lines, and angles. Separate metals from dissimilar materials to prevent electrolytic action.

B. Welded Connections: Weld connections continuously. Weld solid members with full-length, full-penetration welds and hollow members with full-circumference welds. At exposed connections, finish surfaces smooth and blended so no roughness or unevenness shows after finishing and welded surface matches contours of adjoining surfaces.

C. Pipes and Tubes: Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section

of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.

D. Exposed Surfaces: Polished, sanded, or otherwise finished; all surfaces smooth, free of burrs, barbs, splinters, and sharpness; all edges and ends rolled, rounded, or capped.

E. Factory Assembly: Assemble components in the factory to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.

2.5 GENERAL FINISH REQUIREMENTS

A. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

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 of the Work.

B. Verify that athletic field equipment footings have been installed in proper locations and at proper elevations.

C. Verify location of underground utilities and facilities in athletic field equipment area; damage to underground utilities and facilities will be repaired at Contractor's expense.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.

B. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.

C. Install site furnishings level, plumb, true, and securely anchored at locations indicated on Drawings.

D. Post Setting: Set cast-in support posts in concrete footing with smooth top, shaped to shed water. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.

E. Posts Set into Voids in Concrete: Form or core-drill holes for installing posts in concrete to depth recommended in writing by manufacturer of site furnishings and 3/4 inch (19 mm) larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with non-shrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.

3.3 INSTALLING BALL FIELD EQUIPMENT

A. Stake locations of athletic field equipment elements, including necessary athletic field perimeters, surfacing, access and egress points, hard surfaces, walls, fences, and/or structures. Do not proceed with this work until revised drawings have been provided, showing any corrected layout, and that any obstructions have been removed or approved corrections to layout have been made.

B. Anchors: Install Base Anchors true and level per Manufacturer's recommendations.

C. Bases: Install Per Manufacturer's instructions. Protect from damage until acceptance by Owner.

3.4 BALLFIELD ~~DUGOUTS~~ SHADE STRUCTURES AND ATHLETIC BENCHES

A. General:
1. Mark locations of ~~dugouts~~ **shade structures** and benches, hard surfacing, access and egress points, fences, etc. To confirm layout. Do not proceed with this work until revised drawings have been provided, showing any corrected layout, and that any obstructions have been removed or approved corrections to layout have been made.
2. Coordinate this work with concrete work and all other trades as may affect the dugouts.
3. Install ~~dugouts~~ **shade structures** in locations as shown and per approved Shop Drawings per "Delegated Design".
4. Securement: Secure to concrete base with stainless steel hardware in conformance with approved shop drawings.

3.5 CLEANING AND PROTECTION

A. After installation, clean soiled site furnishing surfaces according to manufacturer's written instructions. Protect from damage until acceptance by Owner.

END OF SECTION 11 6833

SECTION 22 1005 - PLUMBING PIPING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Pipe, pipe fittings, specialties, and connections for piping systems.
   1. Domestic water.
   2. Storm water.
   3. Sanitary waste and vent.
   4. Chemical resistant waste and vent
   5. Grease waste and vent
   6. Radon Piping
   7. Flanges, unions, and couplings.

1.2 RELATED REQUIREMENTS

A. Division 01 – General Requirements.

B. Division 07 - Thermal and Moisture Protection

C. Division 08 – Openings.

D. Division 09 - Finishes.

E. Division 22 – Plumbing

F. Division 31 - Earthwork

G. Division 33 - Utilities.

1.3 REFERENCE STANDARDS – Most Currently adopted versions and amendments for the location of the project.

A. American National Standards Institute
   1. ANSI Z21.22 - American National Standard for Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems; and addenda A&B.
   2. ANSI Z223.1 - National Fuel Gas Code.

B. American Society of Mechanical Engineers
   1. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings.
   2. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings.
   3. ASME B16.23 - Cast Copper Alloy Solder Joint Drainage Fittings - DWV.
   4. ASME B16.29 - Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings - DWV.
   5. ASME B16.51: Copper and Copper Alloy Press-Connect Pressure Fittings
   6. ASME B31.9 - Building Services Piping.

7. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Welding, Brazing, and Fusing Qualifications.

C. American Society of Sanitary Engineering
1. ASSE 1003 - Performance Requirements for Water Pressure Reducing Valves for Domestic Water Distribution Systems.

D. American Society for Testing and Materials
1. ASTM A47 - Standard Specification for Ferritic Malleable Iron Castings.
2. ASTM A53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
3. ASTM A74 - Standard Specification for Cast Iron Soil Pipe and Fittings.
4. ASTM A536 – Ductile Iron Castings
5. ASTM B32 - Standard Specification for Solder Metal.
6. ASTM B42 - Standard Specification for Seamless Copper Pipe, Standard Sizes.
7. ASTM B88 - Standard Specification for Seamless Copper Water Tube.
8. ASTM B813 - Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube.
9. ASTM B828 - Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings.
10. ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
11. ASTM D1622 – Standard Test Method for Apparent Density of Rigid Cellular Plastics
12. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
13. ASTM D2466 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
14. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems.
15. ASTM D2657 – Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings
16. ASTM D2665 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings.
17. ASTM D2683 - Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing.
18. ASTM D2729 – Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings
19. ASTM D2855 - Standard Practice for the Two-Step (Primer & Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets.
20. ASTM D3035 – Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter:
21. ASTM D3261 – Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
22. ASTM D3311 – Standard Specification for Drain, Waste, and Vent (DWV) Plastic Fittings Patterns

23. ASTM D3350 – Standard Specification for Polyethylene Plastics Pipe and Fittings Materials
24. ASTM F493 - Standard Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings.
25. ASTM F876 - Standard Specification for Crosslinked Polyethylene (PEX) Tubing.
26. ASTM F877 - Standard Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems.
27. ASTM F1055 – Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene and Crosslinked Polyethylene (PEX) Pipe and Tubing
28. ASTM F1960 - Standard Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Cross-linked Polyethylene (PEX) Tubing.
29. ASTM F2389 - Standard Specification for Pressure-rated Polypropylene (PP) Piping Systems

E. American Welding Society
1. AWS A5.8M/A5.8 - Specification for Filler Metals for Brazing and Braze Welding; 2011-AMD 1.

F. American Water Works Association
1. AWWA C104/A21.4-08 – Cement-mortar Lining for Ductile-iron Pipe and Fittings for Water
2. AWWA C105/A21.5 - Polyethylene Encasement for Ductile-Iron Pipe Systems.
3. AWWA C110/A21.10 - Ductile-Iron and Gray-Iron Fittings.
4. AWWA C111/A21.11 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
5. AWWA C151/A21.51 - Ductile-Iron Pipe, Centrifugally Cast.
6. AWWA C606 - Grooved and Shouldered Joints.
7. AWWA C651 - Disinfecting Water Mains.
8. AWWA C901 - Polyethylene (PE) Pressure Pipe and Tubing, 1/2 In. Through 3 In., for Water Service.
9. AWWA C906 – Polyethylene (PE) Pressure Pipe and Fittings, 4 In. Through 65 In., for Waterworks

G. Cast Iron Soil Pipe Institute
1. CISPI 301 - Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications.
2. CISPI 310 - Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications.

H. CSA Group
1. CSA B137.11 - Polypropylene (PP-R) Pipe and Fittings for Pressure Applications

I. Manufacturers Standardization Society
1. MSS SP-60 – Connecting Flange Joints between Tapping Sleeves and Tapping Valves

J. National Sanitation Foundation
1. NSF 14 – Plastics Piping System Components and Related Materials
2. NSF 61 - Drinking Water System Components - Health Effects.
3. NSF 372 - Drinking Water System Components - Lead Content.

K. Plastic Pipe Institute
1. PPI TR-4 - PPI Listing of Hydrostatic Design Basis (HDB), Hydrostatic Design Stress (HDS), Strength Design Basis (SDB), Pressure Design Basis (PDB), and Minimum Required Strength (MRS) Ratings For Thermoplastic Piping Materials or Pipe.

1.4 SUBMITTALS

A. See Division 01- General Requirements

B. Product Data: Provide data on pipe materials, pipe fittings, , and accessories. Provide manufacturer's catalog information.

C. Welder Certificate: Include welder's certification of compliance with ASME BPVC-IX.

D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Division 01 -General Requirements.

1.5 QUALITY ASSURANCE

A. Perform work in accordance with applicable codes.

B. Welding Materials and Procedures: Conform to ASME BPVC-IX and applicable state labor regulations.

C. Welder Qualifications: Certified in accordance with ASME BPVC-IX.

D. Identify pipe with marking including size, ASTM material classification, ASTM specification, potable water certification, water pressure rating.

E. To assure uniformity and compatibility of piping components in grooved piping systems, all grooved products utilized shall be supplied by a single manufacturer. Grooving tools shall be supplied by the same manufacturer as the grooved components.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

B. Installer: Company specializing in performing Work of this section with minimum three years experience.

1.7 PRE-INSTALLATION MEETINGS

A. Division 01 General Requirements: Pre-installation meeting.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Division 01 General Requirements: Product storage and handling requirements.

B. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

C. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

1.9 FIELD CONDITIONS

A. Division 01 General Requirements: Product Requirements.

B. Do not install underground piping when bedding is wet or frozen.

C. Verify field measurements prior to fabrication.

1.10 WARRANTY

A. Division 01 General Requirements: Execution and Closeout Requirements: Product warranties and product bonds.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

2.2 DOMESTIC WATER SERVICE PIPING, BURIED

A. Copper Tubing: ASTM B88, Type K, annealed.
   1. Fittings: ASME B16.18, cast copper, or ASME B16.22, wrought copper.
   2. Joints: Compression connection or brazed, AWS A5.8 BCuP silver/phosphorus/copper alloy with melting range 1190 to 1480 °F.

B. Copper Pipe: ASTM B42, Type K, hard drawn.
   1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22 wrought copper and bronze.
   2. Joints: ASTM B32, alloy Sn95 solder.
   3. Joints: AWS A5.8M/A5.8, BCuP copper/silver braze.

C. Ductile Iron Pipe: AWWA C151/A21.51.
1. Lining: AWWA C104/A21.4-08 cement mortar lining
2. Fittings: AWWA C110, Ductile or gray iron, standard thickness.
3. Joints: AWWA C111/A21.11, rubber gasket with 3/4 inch (19 mm) diameter rods.
4. Jackets: AWWA C105 polyethylene jacket.

2.3 DOMESTIC WATER PIPING, BELOW GRADE

A. Copper Tubing
1. Tubing: ASTM B88, Type K, annealed.
2. Fittings: ASME B16.18, cast copper, or ASME B16.22, wrought copper.
3. Joints: Compression connection or brazed, AWS A5.8 BCuP silver/phosphorus/copper alloy with melting range 1190 to 1480 °F.
4. Tubing shall be installed with no joints below grade.

B. Copper Piping, Pre-Insulated
1. Manufacturers:
   a. Rovanco Piping Systems, Inc.
   b. Tricon Piping Systems, Inc.
   c. Thermacor Process Inc.
   d. Ricwil Piping Systems
   e. Perma-Pipe International Holdings, Inc.
   f. Substitutions – See Division 01
2. Description: Factory fabricated piping with carrier pipe, insulation and casing.
3. Carrier Pipe: Type L Hard Drawn Copper Tubing conforming to ASTM B88 in 20-foot lengths
4. Carrier Pipe Insulation:
   a. Hi-temp Polyurethane Foam insulation.
   b. K-Factor: .147 to .165
   c. Minimum density of 2 PCF
   d. Closed cell content of 90% to 95%
   e. Compressive strength of 35 PSI
   f. Maximum carrier fluid temperature of 250ºF
   g. Conform to ASTM standard D1621, D1622, D1623, D2126, and D2842 completely filling the annular space between the carrier pipe and jacketing.
5. Casing: High-density PVC, ASTM D-1784.
6. Joining Method: Straight lengths of pipe will be joined by solder connection, ASTM B32, alloy Sn95 solder.
7. Fittings and Field Joints:
   a. Fittings: ASME B16.18, cast copper alloy or ASME B16.22 wrought copper and bronze.
   b. Fittings will be insulated and jacketed with materials supplied by the system supplier and as per manufacturer's standard procedures.
8. End Seals: Each length of pre-insulated pipe will be fitted with a watertight mastic end seal at jacket and pipe surfaces. Field cuts will be sealed with a field applied end seal.
9. Anchors: Pipe shall be anchored per system supplier's recommendations.

Piping Material	Application
Copper Tubing	Below grade

2.4 DOMESTIC WATER PIPING, ABOVE GRADE

A. Copper Tube: ASTM B88, Type L, hard drawn.
   1. Fittings:
      a. Soldered fittings, ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze. ASTM B32, alloy Sn95 solder.
      b. Mechanical press-connect fittings, ASME B16.51, Cast-bronze or wrought-copper fitting with EPDM-rubber, O-ring seal in each end. Unpressed fitting identification feature to the fitting wall.
      c. Mechanical roll groove fittings,
         1) 2"-8" (DN50-DN200) for copper tubing consisting of ductile iron cast housings, synthetic rubber gasket, with plated nuts and bolts to secure unit together. Couplings shall be manufactured to connect copper tubing sized tube and fittings. (Flaring of tube and fitting ends to IPS dimensions is not allowed.)
         2) Coupling Housings: Ductile iron, ASTM A536, coated with copper colored alkyd enamel. Housings cast with offsetting, angle-pattern bolt pads to provide rigidity.
         3) Coupling Gaskets: Gasket shall be Grade EPDM designed for operating temperatures from -30 °F to +250 °F.

Piping Material	Application
Copper Tubing	Above grade

2.5 STORM WATER PIPING, BURIED

A. Solid-Wall PVC Pipe: ASTM D2665, drain, waste, and vent.
   1. Cellular-Core PVC Pipe will not be accepted.
   2. PVC Socket Fittings: ASTM D2665, made to ASTM D3311, drain, waste, and vent patterns.
   3. PVC Pressure Fittings: ASTM D2466, Socket Type
   4. Primer: ASTM F656.
   5. Solvent Cement: ASTM D2564.

B. Applications: Provide piping products of the types indicated on the plans and in accordance with the following.

Piping Material	Application
Solid-Wall PVC Pipe	All buried storm water piping

2.6 STORM WATER PIPING, ABOVE GRADE

A. Solid-Wall PVC Pipe: ASTM D2665, drain, waste, and vent.
   1. Cellular-Core PVC Pipe will not be accepted.
   2. PVC Socket Fittings: ASTM D2665, made to ASTM D3311, drain, waste, and vent patterns.
   3. PVC Pressure Fittings: ASTM D2466, Socket Type
   4. Solvent Cement: ASTM D2564.

B. Applications: Provide piping products of the types indicated on the plans and in accordance with the following.

Piping Material	Application
Solid-Wall PVC Pipe	All above ground storm piping

2.7 SANITARY WASTE AND VENT BELOW GRADE

A. Solid-Wall PVC Pipe: ASTM D2665, drain, waste, and vent.
   1. Cellular-Core PVC Pipe will not be accepted.
   2. PVC Socket Fittings: ASTM D2665, made to ASTM D3311, drain, waste, and vent patterns.
   3. PVC Pressure Fittings: ASTM D2466, Socket Type
   4. Solvent Cement: ASTM D2564.

B. Applications: Provide piping products of the types indicated on the plans and in accordance with the following.

Piping Material	Application
Solid-Wall PVC Pipe	All below grade sanitary waste and vent piping

2.8 SANITARY WASTE AND VENT PIPING, ABOVE GRADE

A. Copper Tube: ASTM B306, DWV
   1. Fittings: ASME B16.23, cast-copper-alloy or ASME B16.29, wrought-copper, solder-joint fittings.
   2. Joints: ASTM B32, lead free with ASTM B813, water-flushable flux

B. Solid-Wall PVC Pipe: ASTM D2665, drain, waste, and vent.
   1. Cellular-Core PVC Pipe: ASTM F891, Schedule 40 will not be accepted.
   2. PVC Socket Fittings: ASTM D2665, made to ASTM D3311, drain, waste, and vent patterns.
   3. PVC Pressure Fittings: ASTM D2466, Socket Type
   4. Solvent Cement: ASTM D2564.

C. Applications: Provide piping products of the types indicated on the plans and in accordance with the following.

Piping Material	Application
Copper Tube: ASTM B306, DWV	
Solid-Wall PVC Pipe	All above grade vent piping. Above grade sanitary piping where the temperature of the waste stream does not exceed 120 °F.

2.9 RADON PIPING

A. PVC Pipe: ASTM D1785, Schedule 40, polyvinyl chloride (PVC) material, bell and spigot style solvent sealed joint ends.
1. Fittings: ASTM D2466, Schedule 40, PVC.
2. Joints: ASTM D2855, solvent weld with ASTM D2564 Solvent cement.

B. PVC Pipe – Perforated: ASTM D2729, polyvinyl chloride (PVC) material, bell and spigot style solvent sealed joint ends. Perforated pipe shall be supplied with two rows of 1/2" diameter holes every five inches. Rows shall be parallel to the pipe axis and are 120° apart.
1. Fittings: ASTM D2466, Schedule 40, PVC.
2. Joints: ASTM D2855, solvent weld with ASTM D2564 Solvent cement.

C. Applications: Provide piping products of the types indicated on the plans and in accordance with the following.

Piping Material	Application
PVC Pipe	All radon vent piping
PVC Pipe - Perforated	Below grade radon collection piping

2.10 FLANGES, UNIONS, AND COUPLINGS

A. Unions for Pipe Sizes 3 Inches and Under:
1. Ferrous pipe: Class 150 malleable iron threaded unions.
2. Copper tube and pipe: Class 150 bronze unions with soldered joints.

B. Flanges for Pipe Size Over 1 Inch:
1. Ferrous Pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets.
2. Copper Tube and Pipe: Class 150 slip-on bronze flanges; preformed neoprene gaskets.

C. Mechanical Couplings for Grooved and Shouldered Joints: Two or more curved housing segments with continuous key to engage pipe groove, circular C-profile gasket, and bolts to secure and compress gasket.
   1. Dimensions and Testing: In accordance with AWWA C606.
   2. Housing Material: Provide ASTM A47 malleable iron, ductile iron, or galvanized.
   3. Gasket Material: EPDM suitable for operating temperature range from minus 30 °F to 230 °F.
   4. Gasket Material: Nitrile rubber suitable for operating temperature range from minus 20 °F to 180 °F.
   5. Bolts and Nuts: Hot dipped galvanized or zinc-electroplated steel.
   6. When pipe is field grooved, provide coupling manufacturer's grooving tools.
   7. Manufacturers:
      a. Grinnell Products, a Tyco Business
      b. Bristol Metals
      c. Viega LLC
      d. Victaulic Company
      e. Substitutions: Division 01 - General Requirements.

D. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier are required where two dissimilar metal products are connected within a system.

2.11 GREASE WASTE AND VENT PIPING

A. CPVC Pipe: ASTM F2618, Schedule 40, Chlorinated polyvinyl chloride (CPVC), bell and spigot style solvent sealed joint ends.
   1. Fittings: ASTM F2618, Schedule 40, CPVC, drainage pattern fitings
   2. Joints: solvent weld with ASTM F493 solvent cement
   3. Buried pipe shall be installed in accordance with ASTM D2321 and ASTM F1668
   4. Pipe and fittings shall be products of a single manufacturer

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that excavations are to required grade, dry, and not over-excavated.

3.2 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt, on inside and outside, before assembly.

C. Prepare piping connections to equipment with flanges or unions.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.

C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.

D. Install piping to maintain headroom, conserve space, and not interfere with use of space.

E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Refer to Section 22 05 16.

F. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings. Refer to Section 220700.

G. Provide access where valves and fittings are not exposed.
   1. Coordinate size and location of access doors with Division 08 Openings.

H. Establish elevations of buried piping outside the building to ensure not less than the local area's frost depth of cover.

I. Install vent piping penetrating roofed areas to maintain integrity of roof assembly and a minimum of 25 feet from an air intake; refer to Division 08 – Openings.

J. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.

K. Provide support for utility meters in accordance with requirements of utility companies.

L. Prepare exposed, unfinished pipe, fittings, supports, and accessories ready for finished painting.
   1. Painting of plumbing systems and components are specified in Division 09 - Finishes.

M. Excavate and backfill in accordance with Division 31- Earthwork requirements.

N. Install bell and spigot pipe with bell end upstream.

O. Install water piping to ASME B31.9.

P. Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.

Q. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.

R. Fusion Welding of Joints

1. Install fittings and joints using socket-fusion, elecrofusion, or butt-fusion as applicable for the fitting type. All fusion-weld joints shall be made in accordance with the pipe and fitting manufacturer's specifications and product standards.
2. Fusion-weld tooling, welding machines, and electrofusion devices shall be as specified by the pipe and fittings manufacturer.
3. Prior to joining, the pipe and fittings shall be prepared in accordance with ASTM D2657, ASTM F 2389 and the manufacturer's specifications.
4. Joint preparation, setting and alignment, fusion process, cooling times and working pressure shall be in accordance with the pipe and fitting manufacturer's specifications.

S. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.

3.4 TOLERANCES

A. Sanitary Drainage Piping: slope to sanitary drain at minimum of 1/4" per foot for horizontal piping 3" and smaller. Slope sanitary drain at minimum of 1/8" per foot for horizontal piping larger than 3 inches.

3.5 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

A. Prior to starting work, verify system is complete, flushed and clean.

B. Ensure acidity (pH) of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).

C. Inject disinfectant, free chlorine in liquid, powder, tablet or gas form, throughout system to obtain 50 to 80 mg/L residual.

D. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.

E. Maintain disinfectant in system for 24 hours.

F. If final disinfectant residual tests less than 25 mg/L, repeat treatment.

G. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.

H. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C651.

3.6 SERVICE CONNECTIONS

A. Provide new sanitary sewer services. Before commencing work check invert elevations required for sewer connections, confirm inverts and ensure that these can be properly connected with slope for drainage and cover to avoid freezing.

B. Provide new water service complete with approved reduced pressure backflow preventer and, pressure reducing valve, and sand strainer.
   1. Provide sleeve in wall for service main and support at wall with reinforced concrete bridge. Caulk enlarged sleeve and make watertight with pliable material. Anchor service main inside to concrete wall.
   2. Provide 18 gage, 0.0478 inch galvanized sheet metal sleeve around service main to 6 inch above floor and 6 feet minimum below grade. Size for minimum of 2 inches of loose batt insulation stuffing.

END OF SECTION

SECTION 23 0900 - INSTRUMENTATION AND CONTROLS FOR HVAC

PART 1 GENERAL

1.1 SECTION INCLUDES

A. System Description

B. Operator Interface

C. General Purpose Digital Controllers

D. Unitary Or Terminal Digital Controllers

E. Input/Output Interface

F. Bridges And Routers

G. Gateways

H. Panels

I. Power Supplies And Line Filtering

J. Local Area Network (Lan)

K. System Software

L. Controller Software

M. Input Hardware

N. Thermostats

O. Humidistats

P. Time Clocks

Q. Control Valves

R. Dampers

S. Actuators

T. Wire, Cable And Network Accessories

1.2 RELATED REQUIREMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. This Section includes provision of control sequences for HVAC systems, subsystems, and equipment indicated on the drawings and other Division 23 specification sections.

C. Section 23 0400 – General Conditions for Mechanical Trades.

D. Section 26 2717 - Equipment Wiring: Electrical characteristics and wiring connections.

E. Section 28 3100 - Fire Detection and Alarm.

1.3 REFERENCE STANDARDS (follow the most currently adopted amended version)

A. ANSI/CEA 709.1.D - Control Network Protocol Specification.

B. ASHRAE Std 135 - BACnet - A Data Communication Protocol for Building Automation and Control Networks.

C. MIL-STD-810 - Environmental Engineering Considerations and Laboratory Tests; Revision G.

D. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

E. UL (DIR) - Online Certifications Directory.

1.4 DEFINITIONS

A. Backbone: The high traffic density connectivity portion of the communication network.

B. Bridge: A device that connects two or more LAN segments at the physical and data link layers. This device may also perform message filtering if programmed to do so.

C. Browser: A computer program that accesses and displays information from the Internet or intranet.

D. Client: A system or device that makes use of another device for some particular purpose through a system request.

E. Device (BACnet): A device, real or virtual, that supports digital communication using the BACnet protocol. Examples would be an operator terminal, router, unitary controller, etc.

F. Ethernet: Ethernet is a widely used Local Area Network (LAN). Ethernet, which conforms to IEEE Standard 802.3.

G. Events: Changes in the state of an object, typically between Normal, Off-Normal, and Fault Condition. Events may be reported to other BACnet devices.

H. Firewall: A security mechanism placed at the connection between networks and/or at networks outside connections. The firewall restricts access to the network.

I. Gateway: A device that connects two or more dissimilar networks by message translation and signal conditioning, permitting information exchange among them. A gateway would be necessary to translate LonWorks messages to the BACnet form.

J. Gbps: Gigabits per second. A unit of data transfer speed equal to 1024 Mbps.

K. GUI: Graphical User Interface, a type of Operator Interface Device for a BAS.

L. Hertz: A unit of measure equal to an oscillation per second.

M. HTML: The source form used for documents on the Internet or on an intranet. HTML embeds commands that determine formatting along with the text to be displayed.

N. Instance: A number which uniquely identifies an object within a device (e.g., Analog Input No.1, No. 2, etc.). Device Objects are required to have an instance number that is unique to their internetwork. Instance numbers may range from 0 to 4194303.

O. ID: Identification (name, number, plate, or tag).

P. IP: Internet Protocol. The protocol that defines both the format of packets used on a TCP/IP internet or intranet and the mechanism for routing a packet to its destination.

Q. IP address: A 32-bit address assigned to a device that uses TCP/IP protocols.

R. Kbps: A unit of data transfer equal to 1024 bits per second.

S. LAN: A LAN is a network of interconnected hardware devices sharing resources within a relatively small geographic area.

T. Mbps: A unit of data transfer equal to 1024 Kbps.

U. MS/TP: The Master-Slave/Token-Passing EIA-485 LAN developed for BACnet by ASHRAE. Operates at 9600, 19.2K, 38.4K and 76.8 K BPS. Master nodes (devices) pass around a speaking token which entitles the holder to initiate BACnet messages. Slave nodes can only respond to messages from Masters.

V. Native BACnet: A Building Automation System that uses the BACnet protocol for its data transfer between hardware devices and operator interface devices.

W. Object Identifier: A 32-bit number which uniquely identifies an object within a device, or the device object internetwork-wide. 10 bits represent the object type and 22 bits the instance number.

X. PC: Personal Computer.

Y. Peer-to-Peer Communication: Communication between equals. In BACnet, application programs (performing the functions of the BACnet devices on which they run) in devices of the appropriate conformance class talk to each other as peers, using the Protocol Stacks to deliver their message to each other. Likewise, Network Layers may talk as peers to determine how to route messages.

Z. Physical Segment: A single continuous medium 9-wire to which BACnet nodes are attached.

AA. PID: Proportional Integral and Derivative.

BB. Protocol: A design that specifies the details of how digital devices interact.

CC. Repeater: A device that connects two or more physical segments of a LAN at the physical layer and exactly reproduces the electrical signals on either side so that nodes on either side of the repeater are considered to be on the same network.

DD. Router: A device which connects two or more networks, of same or different types, so that a BACnet message may be transferred across the appropriate networks to reach its destination.

EE. RS-232-C: The technical name of the standard for serial data connections such as those between a computer and a keyboard.

FF. Server: A computer or hardware device which stores the resources accessed by other computers or hardware devices (clients).

GG. TCP/IP: The protocol suite used in the Internet. Although the suite contains many protocols, TCP and IP are two of the most important.

HH. Unitary Controller: Devices which controls and/or monitors a single piece of equipment.

II. WEB: A synonym for the World Wide Web. In modern usage pertains to both the Internet and to intranets using the TCP/IP Protocol.

1.5 GENERAL REQUIREMENTS

A. All work of this section shall be coordinated and provided by the single Building Management System (BMS) Contractor.

B. The BMS work shall consist of the provision of all labor, materials, tools, equipment, software, software licenses, software configurations and database entries, interfaces, wiring, tubing, installation, labeling, engineering, calibration, documentation, samples, submittals, testing, commissioning, training services, permits and licenses, transportation, shipping, handling, administration, supervision, management, insurance, temporary protection, cleaning, cutting and patching, warranties, services, and items, even though these may not be specifically mentioned in these Division documents which are required for the complete, fully functional and commissioned BMS.

C. The BMS shall perform all sequences of operation which may be listed on control drawings. Controls supplier shall provide all devices necessary to completely perform sequences whether such devices are explicitly shown on the drawings specified, or not shown or specified.

D. Where other Sections include a requirement for manufacturer equipment controllers (e.g. chillers, boilers, packaged units that are specified with packaged controls), this Section shall be responsible for provision of control components and software required to perform sequences of operation outlined that are in addition to the capabilities of the controllers provided with the manufacturer equipment. Coordinate and integrate all equipment controllers.

E. Each component of the system, including the LANs and software, shall be in full compliance with ASHRAE Standard 135, commonly referred to as BACnet.

F. Provide the services of control manufacturer's representative to be on site during startup, testing and balancing procedures, detailed in Part 3 of this specification. Representative shall be part of manufacturer's service organization and shall be skilled in the adjustment and calibration of all control devices as well as being capable of modifying and checking system software.

1.6 ADMINISTRATIVE REQUIREMENTS

A. The work of this Division shall be scheduled, coordinated, and interfaced with the associated work of other trades.

B. If the Contractor believes there are conflicts or missing information in the project documents, the Contractor shall promptly request clarification and instruction from the design team.

C. Pre-installation Meeting: Conduct a pre-installation meeting one week prior to the start of the work of this section; require attendance by all affected installers.

D. Scheduling: Coordinate with Owner and General Contractor. Manage and coordinate the BMS work in a timely manner in consideration of the Project schedules. Coordinate with the associated work of other trades so as to not impede or delay the work of associated trades.

1.7 COORDINATION

A. Coordinate locations of thermostats, humidistats, and other exposed control sensors with plans and room details before installation.

B. Coordinate work under provisions of General Conditions and Division 1 as applicable.

C. Coordinate material delivery to comply with project schedule.

D. Coordinate conduit, and wiring installation with other trades to avoid conflicts.

E. Coordinate panel locations and installation with other trades to avoid conflicts and to provide power and other requirements.

1.8 SUBMITTALS

A. Product Data: Include manufacturer's technical literature for each control device. Indicate dimensions, capacities, performance characteristics, electrical characteristics, finishes for materials, and installation and startup instructions for each type of product indicated.
1. DDC System Hardware: Bill of materials of equipment indicating quantity, manufacturer, and model number. Include technical data for operator workstation equipment, interface equipment, control units, transducers/transmitters, sensors, actuators, valves, relays/switches, control panels, and operator interface equipment.
2. Control System Software: Include technical data for operating system software, operator interface, color graphics, information on programmability and other third-party applications.
3. Controlled Systems: Instrumentation list with element name, type of device, manufacturer, model number, and product data.

B. Shop Drawings: Submit shop drawings containing the following information for each control system:
1. System architecture diagram: Indicate programmable control unit locations, and trunk data conductors.
2. Schematic control diagrams: Submit diagrams of each controlled system with control points labeled and control elements graphically shown, with wiring.
3. Floor plans: Show sizes and locations of components, horizontal routing and risers.
4. Points list: List connected data points, including connected control unit and input device.
5. Sequence of operation: Written detailed operational description of sequences
6. Schedule of dampers: Include size, leakage, pressure drop and other flow characteristics.
7. Schedule of valves: Including flow, pressure drop, valve coefficient (CV), shut-off head, maximum controllable differential pressure range and other flow characteristics.

C. Wiring Diagrams: Submit wiring diagrams, detailing wiring for power, signal, and control systems and differentiating clearly between manufacturers installed and field installed wiring.

D. Sample Covers: Submit samples of each type of space sensor cover for approval prior to ordering the covers.

E. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owners name and registered with manufacturer.

1.9 RECORD DOCUMENTATION

A. General: Manuals shall be furnished as files in portable document format (PDF). One complete set of manuals shall be furnished before the contract is complete. The manuals shall include the name, address and telephone number of each subcontractor installing equipment and systems and of the local representative for each specific item of equipment and each system provided. A logically organized table of contents shall be included with dynamic links to view all data sheets.

B. Hardware Manual: The hardware manual shall describe the system and each piece of equipment provided.

C. Software Manual: The software manual shall describe programming and testing, starting with a system overview and proceeding to a detailed description of each software module. The manual shall be oriented to programmers and shall describe calling requirements, data exchange requirements, data file requirements, and other information necessary to enable proper integration, loading, testing, and program execution.

D. Operations Manual: The Operations manual shall describe the operations of the complete system.

E. Maintenance Manual: The maintenance manual shall provide descriptions of maintenance for each piece of equipment, including inspection, periodic preventative maintenance, fault diagnosis, and repair or replacement of defective components.

F. Project Drawings: Record actual locations of control components, including panels, thermostats, and sensors. Accurately record actual location of control components, including panels, thermostats, and sensors. Revise shop drawings to reflect actual installation and operating sequences.

1.10 QUALITY ASSURANCE

A. Products shall be standard manufacturer products having been in commercial or industrial use for at least one year prior to the bid date for this project. Products shall comply with the following as a minimum:
1. NFPA 90A, “Installation of Air Conditioning and Ventilation Systems.”
2. NISTIR 6392 for digital system control components.
3. ANSI/ASHRAE Standard 135-1995 for BACnet compatible system control components.
4. Applicable provisions of NFPA code.
5. Applicable provisions of NEC.

~~B. Designer Qualifications: Perform design of system software under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.~~

C. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.

D. Installer Qualifications: Company specializing in performing work of the type specified and with minimum three years of documented experience.

E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and certified and marked for intended use.

F. Comply with ASHRAE 135 for DDC system components.

1.11 PERFORMANCE REQUIREMENTS

A. Accuracy: Report values and maintain measured variables within tolerances as follows:
1. Water Temperature: Plus or minus 1 deg F.
2. Water Flow: Plus or minus 5 percent of full scale.
3. Water Pressure: Plus or minus 2 percent of full scale.
4. Space Temperature: Plus or minus 1 deg F.
5. Ducted Air Temperature: Plus or minus 1 deg F.
6. Outside Air Temperature: Plus or minus 2 deg F.
7. Dew Point Temperature: Plus or minus 3 deg F.
8. Temperature Differential: Plus or minus 0.25 deg F.
9. Relative Humidity: Plus or minus 5 percent.
10. Airflow (Pressurized Spaces): Plus or minus 3 percent of full scale.
11. Airflow (Measuring Stations): Plus or minus 5 percent of full scale.
12. Airflow (Terminal): Plus or minus 10 percent of full scale.
13. Air Pressure (Space): Plus or minus 0.01-inch wg.
14. Air Pressure (Ducts): Plus or minus 0.1-inch wg.
15. Carbon Monoxide: Plus or minus 5 percent of reading.
16. Carbon Dioxide: Plus or minus 50 ppm.
17. Electrical: Plus or minus 5 percent of reading.

B. Alarm Response Time: Annunciate alarm at workstation within 45 seconds. Multiple workstations must receive alarms within five seconds of each other.

1.12 WARRANTY

A. Correct defective Work within a five year period after Substantial Completion.

B. Provide five year manufacturer's warranty for field programmable micro-processor based units.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Provide operator workstation software, controller software, and custom application programming language, building controllers, programmable application controllers and application specific controllers from only one of the following manufacturers.
1. Distech Controls- CTC (Town of Greenwich Controls System)

B. Other products specified herein (such as sensors, valves, dampers and actuators) need not be manufactured by the above manufacturers, unless otherwise noted.

2.2 SYSTEM DESCRIPTION

A. The system shall consist of a series of digital controllers interconnected by the LAN. One or more operator interface devices shall be connected to the LAN to provide access to the controllers for the purpose of receiving information or issuing commands. The controllers shall be located adjacent to the equipment they monitor or control and shall be sized for the task assigned to them. The system shall utilize distributed processing architecture and one controller shall be provided for each major piece of equipment controlled or monitored except that the equipment associated with the chiller plant and the heating plant shall be controlled from multiple controllers if necessary.

B. The communication network between building controllers shall be BACnet over Ethernet or BACnet over IP. The communication network between unitary or terminal unit controllers shall be BACnet MS/TP over EIA-485. BACnet Point-To-Point may be used for communication between the network and modems, line drivers or other data communication equipment.

C. The BAS software shall be designed around the open standards of web technology. The BAS server shall communicate using the ASHRAE BACnet/IP protocol. The Server shall be accessed using a web browser. The web browser Graphical User Interface shall support Microsoft browsers, and Windows as well as non-Windows operating systems. No special software shall be required for the PC's/PDA's used to access the BAS via a web browser.

D. Input devices such as temperature sensors, humidity sensors, pressure sensors, motor current sensors, relays and other devices to sense or measure conditions of equipment or space, shall be provided as part of the system to meet the requirements of the sequences of operation.

E. Output devices such as valves, dampers, damper operators, relays, solenoids, transducers, or other devices to control equipment, shall be provided as part of the system to meet the requirements of the sequences of operation.

F. System Software:
1. Provide and install the software indicated in Part 2 of this specification. The database required for implementation shall be provided, including point description, alarm limit, calibration variable graphics, report, and point summaries.
2. The system described herein is a distributed processing system, which utilizes DDC to perform each logic and control decision and operation for each piece of equipment. An OID shall not be required to operate the system. Each item of large equipment, such as air handling units, boilers and PDDU units, shall be provided with a separate digital controller panel (DCP) with readout capability. Each equipment shall be controlled by a separate application-specific field controller (ASC).

G. Labeling: Provide a comprehensive labeling system for each wiring and component using the designations shown on the approved submittals.

H. Electrical Work: Provide the BAS power and control wiring required. This shall include power requirements for control panels, field controllers, sensors and other control devices. Provide transformers necessary to step down from the available voltage to the voltage required to operate the control system products and control devices.

I. Other Work: The work included under this Division shall include the drawings, specifications, submittals, equipment, labor, materials, technical supervision, transportation, training services, documentation, warranty, and other appurtenant work as required to furnish and install a fully operational system to monitor and control, set forth, in strict accordance with these specifications and subject to the terms and conditions of the Contract. An apparatus, appliance, material or work not shown on the drawings but mentioned in the specifications, or vice versa, or incidental accessories necessary to make the work entirely complete and ready for operation, even if not particularly specified, shall be furnished, delivered and installed by the Contractor without additional expense to the Owner.

J. Completion: It is the intention of the specifications and drawings to call for furnished work, tested, and ready for operation. Wherever the word "provide" is used, it shall mean "provide and install complete and ready for use."

K. Omissions: Minor details not usually shown or specified but necessary for proper installation and operations shall be included, as if herein specified and/or shown.

2.3 OPERATOR INTERFACE

A. General:
1. PC Based Work Station shall reside on high speed network with building controllers and be connected to server for full access to all system information
2. Workstation, controllers, and control backbone shall communicate using BACnet protocol and addressing.

B. Personal Computer: PC compatible with sufficient memory and hard drive storage to support graphics, reports, and communication requirements. Furnish with the following minimum requirements:
1. Processor: Intel i5 4.0 GHz.
2. Hard Drive: 1 TB
3. Memory: 8 Gigabyte DDR4 SDRAM.
4. Mouse And keyboard.
5. Monitor: Minimum of 24 inch color, flat panel display.
6. Operating System: Windows 10
7. Printer: Furnish each operator workstation with color ink jet printer and associated cables. Printer capable of minimum of 14 pages per minute (PPM) operation and compatible with standard parallel or USB communications or network capable.

C. Laptop: PC compatible with sufficient memory and hard drive storage to support graphics, reports, and communication requirements. Furnish with the following minimum requirements:
1. Processor: Intel i5 4.0 GHz.
2. Hard Drive: 1 TB
3. Memory: 8 Gigabyte DDR4 SDRAM.
4. Mouse: two-button optical type wireless.
5. Keyboard: 104 key.

2.4 GENERAL PURPOSE DIGITAL CONTROLLERS

A. General Purpose Digital Controllers shall be BTL listed.

B. Communication Speed: Controllers shall communicate using Ethernet or BACnet/IP using an unshielded twisted pair at the Data Link Layer.

C. General Specification: Each General Purpose Digital Controller shall be capable of stand-alone DDC operation utilizing its own minimum 16-bit processor, non-volatile flash memory, input/output, 10-bit A to D conversion, hardware clock/calendar, and voltage transient and lightning protection devices. Firmware revisions to the controller shall be made from the BAS server or remotely over the intranet or Internet. Controllers shall not require component changes to implement firmware revisions.

D. Self-Test Diagnostics: Each controller shall include self-test diagnostics, enabling the controller to automatically report malfunctions to the server.

E. Each General Purpose Multiple Application Digital Controller shall contain both software and firmware to perform full DDC Proportional, Integral, and Derivative (PID) control loops and programs.

F. Input/Output Processing:
1. Digital outputs shall be relays, each configured as normally open or normally closed. Each output shall have a manual Hand-Off-Auto switch to allow for override and a LED to indicate the operating mode of the output.
2. Universal inputs shall be Thermistor, RTD 0-10VDC, 0-20 mA, resistive and dry contact.
3. Analog output shall be electronic, voltage mode 0-10 VDC, current mode 4-20mA.

G. Power and Noise Immunity:
1. Maintain operation at 90 to 110 percent of nominal voltage rating.
2. Perform orderly shutdown below 80 percent of nominal voltage.
3. Operation protected against electrical noise of 5 to 120 Hz and from keyed radios up to 5 W. at 3 feet.

2.5 UNITARY OR TERMINAL DIGITAL CONTROLLERS

A. BACnet BIBBs: The Unitary Controllers shall use BACnet as the native communications protocol between controllers on the unitary controller network and shall be classified as AACs, ASCs, or SAs by the BACnet Testing Laboratory.

B. Communication Speed: The communication between unitary controllers shall be 38.4 Kbps, minimum, over EIA-485, using MS/TP architecture.

C. Sensor Support: Each unitary controller shall be able to support various types of zone temperature sensors, such as temperature sensor only, temperature sensor with built-in local override switch, and temperature sensor with built-in set point adjustment switch.

D. Each Unitary Controller for VAV application shall have a built-in air flow transducer for accurate air flow measurement in order to provide the pressure independent VAV operation, and an integral direct-coupled electronic actuator.

E. Visual Status: Each unitary controller and unitary controller interface shall have LED indication for visual status of communication, power, and each output.

F. Standalone Algorithm: In the event of a loss of communication, each Unitary Controller shall control from a stand-alone algorithm to maintain the assigned space temperature until communication with the unitary control module interface is restored.

G. Input/Output Processing:
1. Digital Outputs shall be relays, 24 Volts AC or DC maximum, having 3-amp maximum current. Each relay shall be configured as normally open or normally closed, and either dry contact or bussed.
2. Universal Inputs shall be Thermistor, RTD, dry contacts or 0-5VDC.
3. Enhanced Zone Sensor Input: The input shall provide one Thermistor input, one local setpoint adjustment, one timed local override switch, and one occupancy LED indicator.
4. Analog Output electronic, voltage made 0-10VDC or current mode 4-20mA or 3-wire floating.

2.6 INPUT/OUTPUT INTERFACE

A. Hardwired inputs and outputs tie into the DDC system through building, custom application, or application specific controllers.

B. All Input/Output Points:
1. Protect controller from damage resulting from any point short-circuiting or grounding and from voltage up to 24 volts of any duration.
2. Provide universal type for building and custom application controllers where input or output is software designated as either binary or analog type with appropriate properties.

C. Binary Inputs:
1. Allow monitoring of On/Off signals from remote devices.
2. Provide wetting current of 12 mA minimum, compatible with commonly available control devices and protected against the effects of contact bounce and noise.
3. Sense dry contact closure with power provided only by the controller.

D. Pulse Accumulation Input Objects: Conform to all requirements of binary input objects and accept up to 10 pulses per second.

E. Analog Inputs:
1. Allow for monitoring of low voltage 0 to 10 VDC, 4 to 20 mA current, or resistance signals (thermistor, RTD).
2. Compatible with and field configurable to commonly available sensing devices.

F. Binary Outputs:
1. Used for On/Off operation or a pulsed low-voltage signal for pulse width modulation control.
2. Outputs provided with three position (On/Off/Auto) override switches.
3. Status lights for building and custom application controllers to be selectable for normally open or normally closed operation.

G. Analog Outputs:
1. Monitoring signal provides a 0 to 10 VDC or a 4 to 20 mA output signal for end device control.
2. Provide status lights and two position (AUTO/MANUAL) switch for building and custom application controllers with manually adjustable potentiometer for manual override on building and custom application controllers.

H. Tri State Outputs:
1. Coordinate two binary outputs to control three point, floating type, electronic actuators without feedback.
2. Limit the use of three point, floating devices to the following zone and terminal unit control applications:
   a. VAV terminal units.
   b. Duct mounted heating coils.
   c. Zone dampers.
   d. Radiation.
3. Control algorithms run the zone actuator to one end of its stroke once every 24 hours for verification of operator tracking.

I. System Object Capacity:
1. System size to be expandable to twice the number of input output objects required by providing additional controllers, including associated devices and wiring.
2. Hardware additions or software revisions for the installed operator interfaces are not to be required for future, system expansions.

2.7 BRIDGES AND ROUTERS

A. The controller network shall use BACnet as its native communication protocol. Network bridges and routers must be of a modular design to ensure reliability and system performance. Routers and bridges must be used between system LANs and between the system and third party devices requiring interfaces.

B. BACnet Router: The central system shall use the building's Local Area Network (LAN) for communication. The communication between the central server and the controllers shall be BACnet/IP. A router shall be provided as required to bridge BACnet/IP and the data link used between controllers (BACnet Ethernet and BACnet MS/TP). Proprietary networks and proprietary protocols are not acceptable. The BACnet routers shall utilize flash memory to allow firmware upgrades to be performed remotely.

C. Unitary Controller Router: A router shall be provided as required to bridge between the unitary controller network and the main controller network.

2.8 GATEWAYS

A. Bi-Directional Protocol Translator (BPT): The Building Automation System shall establish an interconnection, which appears to the operator to be seamless, between the building's electrical and/or mechanical subsystems, as well as other manufacturers' control systems as may be installed in the future. These systems shall be controlled, monitored, and programmed with the same programming language used for the other control modules.

1. The BPT shall be a microprocessor-based communication device to provide seamless, two-way translation between two or more standard or non-standard protocols.
2. The BPT shall be available for a variety of Data Link/Physical Layer configurations, including PTP (point-to-point) via EIA-232, MS/TP via EIA-485, and ARCNET.
3. In addition to BACnet, the BPT shall also support other protocols including Modbus, JBus and other protocols as specified herein for electrical/mechanical subsystems.
4. The BPT shall have at least three communications ports: One shall be for communication between native BACnet controllers residing on the controller network; the other two ports shall have the ability to be configured for different protocols.
5. The BPT shall provide full custom programmability of the data flowing between the networks, using the same graphic programming as specified herein. The system shall have the ability to create custom building control strategies using global data between networks.

2.9 PANELS

A. Cabinet: Each DDC Controller shall be enclosed in a field panel or equipment enclosure with relays and controls mounted in cabinet and temperature indicators, pressure gauges, pilot lights, push buttons and switches flush on cabinet panel face. The field panel cabinet shall be general purpose utility enclosures with enameled finished face panel. Provide sufficient access for wire and conduit to enter the cabinet. Each of the field control panel locks for the project shall be keyed alike.
1. Locations outdoors and/or in wet ambient conditions: Provide waterproof enclosure rated for operation at 32-122 degrees F.
2. Locations in conditioned space: Provide dustproof enclosure

B. Each panel shall include the following:
1. Receptacles: Provide a 20 ampere duplex receptacle inside or immediately adjacent to the field control panel.
2. Master Disconnect Switch: Provide a master electrical power disconnect switch inside the field control panel to disconnect the external power to the cabinet for maintenance and repair. The disconnect switch shall not affect the duplex receptacle hereinbefore specified.
3. Terminal Strips: Provide screw type terminal strips in the field control panel for the termination of field wiring. Lay out terminal strips in a neat and orderly fashion and label each termination. Wiring entering the panel shall be routed through the panel wire-ways in a neat and workmanlike manner, properly tied or laced and terminated.

2.10 POWER SUPPLIES AND LINE FILTERING

A. Power Supplies:
1. Provide UL listed control transformers with Class 2 current limiting type or over-current protection in both primary and secondary circuits for Class 2 service as required by the NEC.
2. Limit connected loads to 80 percent of rated capacity.
3. Match DC power supply to current output and voltage requirements.
4. Unit to be full wave rectifier type with output ripple of 5.0 mV maximum peak to peak.
5. Regulation to be 1 percent combined line and load with 100 microsecond response time for 50 percent load changes.
6. Provide over-voltage and over-current protection to withstand a 150 percent current overload for 3 seconds minimum without trip-out or failure.
7. Operational Ambient Conditions: 32 to 120 degrees F.
8. EM/RF meets FCC Class B and VDE 0871 for Class B and MIL-STD 810 for shock and vibration.
9. Line voltage units UL recognized and CSA approved.

B. Power Line Filtering:
1. Provide external or internal transient voltage and surge suppression component for all workstations and controllers.
2. Minimum surge protection attributes:
a. Dielectric strength of 1000 volts minimum.
b. Response time of 10 nanoseconds or less.
c. Transverse mode noise attenuation of 65 dB or greater.
d. Common mode noise attenuation of 150 dB or greater at 40 to 100 Hz.

2.11 LOCAL AREA NETWORK (LAN)

A. Provide communication between control units over local area network (LAN).
1. LAN Capacity: Not less than 60 stations or nodes.
2. Break in Communication Path: Alarm and automatically initiate LAN reconfiguration.
3. LAN Data Speed: Minimum 100 MBps
4. Communication Techniques: Allow interface into network by multiple operation stations and by auto-answer/auto-dial modems. Support communication over telephone lines utilizing modems.
5. Transmission Median: Fiber optic or single pair of solid 24 gage twisted, shielded copper cable.
6. Network Support: Time for global point to be received by any station, shall be less than 3 seconds. Provide automatic reconfiguration if any station is added or lost. If transmission cable is cut, reconfigure two sections with no disruption to system's operation, without operator intervention.
7. Where used, LAN controller cards shall be standard “off the shelf” products available through normal PC vendor channels.

2.12 SYSTEM SOFTWARE

A. System Software Overview: The BAS Contractor shall provide the OID software required for efficient operation of the BAS specified herein. Software shall be modular in design to provide maximum flexibility, expandability, and to permit future revision of the system. The functionality described herein shall be regarded as a minimum. The system software shall include the following, as a minimum:
1. Complete database entry.
2. Configuration of the controller and operator workstation application programs to provide the sequence of operation indicated.
3. Dynamic color Graphics of each system.
4. Configuration of the reports and point summaries indicated.
5. Event/alarms comprised of Urgent Alarms, Alarms, and Messages as specified.

B. Graphical User Interface (GUI) Software
1. The GUI shall be a 32-bit full-featured software application compatible with Windows 10. The intent of the GUI is to provide an easy to use graphical OID that enables operators to manage their facilities on a day-to-day basis. The user may navigate within the system to check on environmental conditions, setpoints, schedules, etc. Using a mouse, it shall be possible to easily navigate through floor plans and different areas within a facility or multiple facilities. In addition,

manual commands may be used to navigate directly to each point in the system and a tree structure shall show the control system hierarchy.

C. Workstation Applications Editors:
1. Database Creation and Modification. Changes shall be done utilizing standard procedures and while the system is on-line and operating. The system shall allow changes to be made either at the local site through a portable computer or at the central OID.
2. The system shall permit the operator to perform the following, as a minimum:
a. Add and delete BACnet objects and points
b. Assign BACnet Object/Device Instance numbers and Network numbers
c. Modify point parameters, control sequences and programs
d. Reconfigure application programs
e. Create and/or modify graphics

2.13 CONTROLLER SOFTWARE

A. The system shall continuously perform DDC functions at the local control module in a stand alone mode. The operator shall be able to design and modify the control loops to meet the requirements of the system being operated. The operators shall use system-provided displays for tuning of PID loops. These displays shall include the past three input variable values, the setpoint for the loop, the sample interval and the results of the PID effects on the final output.

B. Each control module shall perform the following functions:
1. Identify and report alarm condition.
2. Execute each application programs indicated in the sequences of operation.
3. Execute DDC algorithms.
4. Trend and store data.
5. Maintain time-of-day schedules.

C. Software Integration: The programs should be integrated into a single working system and each of the above functions should be executed in real time and automatically when needed, such as to optimize the controlled equipment.

D. System Security: User access secured via user passwords and user names.

E. Object or Object Group Scheduling:
1. Weekly Schedules Based on Separate, Daily Schedules:
a. Include start, stop, optimal stop, and night economizer.
b. 10 events maximum per schedule.
c. Start/stop times adjustable for each group object.
2. Exception Schedules:
a. Based on any day of the year.
b. Defined up to one year in advance.
c. Automatically discarded and replaced with standard schedule for that day of the week upon execution.

3. Holiday or Special Schedules:
   a. Capability to define up to 99 schedules.
   b. Repeated annually.
   c. Length of each period is operator defined.

F. Provide standard application for equipment coordination and grouping based on function and location to be used for scheduling and other applications.

G. Alarms:
1. Binary object is set to alarm based on the operator specified state.
2. Analog object to have high/low alarm limits.
3. All alarming is capable of being automatically and manually disabled.
4. Alarm Reporting:
   a. Operator determines action to be taken for alarm event.
   b. Alarms to be routed to appropriate workstation.

H. Maintenance Management: System monitors equipment status and generates maintenance messages based upon user-designated run-time limits.

I. Sequencing: Application software based upon specified sequences of operation

J. PID Control Characteristics:
1. Direct or reverse action.
2. Anti-windup.
3. Calculated, time-varying, analog value, positions an output or stages a series of outputs.
4. User selectable controlled variable, set-point, and PED gains.

K. Power Failure/Automatic Restart:
1. Power failures shall cause the control module to go into an orderly shutdown with no loss of program memory.
2. Upon resumption of power, the Control module shall automatically restart and printout the time and date of the power failure and restoration at the respective OID.
3. Prior to taking action, the controller shall look at the actual time-of-day and the programmed schedule for the controlled systems. If systems are operating, the restart program shall automatically restart affected field equipment. The operator shall be able to define an automatic power up time delay for each piece of equipment under control.

L. Staggered Start Application:
1. Prevents all controlled equipment from simultaneously restarting after power outage.
2. Order of equipment startup is user selectable.

M. Energy Calculations:
1. Accumulated instantaneous power or flow rates are converted to energy use data.
2. Algorithm calculates a rolling average and allows window of time to be user specified in minute intervals.

3. Algorithm calculates a fixed window average with a digital input signal from a utility meter defining the start of the window period that in turn synchronizes the fixed-window average with that used by the power company.

N. Anti-Short Cycling:
1. All binary output objects protected from short-cycling.
2. Allows minimum on-time and off-time to be selected.

O. On-Off Control with Differential:
1. Algorithm allows binary output to be cycled based on a controlled variable and set-point.
2. Algorithm to be direct-acting or reverse-acting incorporating an adjustable differential.

P. Run-Time Totalization:
1. Totalize run-times for all binary input objects.
2. Provides operator with capability to assign high run-time alarm.

2.14 INPUT HARDWARE

A. Temperature Sensors: Vibration and corrosion resistant, for wall, immersion, or duct mounting as required.
1. General purpose temperature sensors
   a. Accuracy: +/-0.5 degrees F at calibration point.
2. Outside Air Temperature Sensors
   a. Description: Designed to withstand the environmental conditions to which they will be exposed. They shall also be provided with a solar shield. Sensors exposed to wind velocity pressures shall be shielded by a perforated plate that surrounds the sensor element. Temperature transmitters shall be of NEMA 3R construction and rated for ambient temperatures.
   b. Accuracy: within +/- 1 degrees F in the range of -52 degrees F to 120 degrees F.
3. Room Temperature Sensors:
   a. Description: Steel cover plate with insulated back and security screws. Color per architect.
4. Room temperature sensors with slide switch
   a. Description: Construct for surface mounting. Provide setpoint reset slide switch with an adjustable temperature range.
   b. Accuracy: +/-0.5 degrees F in the range of 32 degrees F to 96 degrees F.
5. Room Temperature Sensors with Integral Digital Display:
   a. Description: Construct for surface mounting with four button keypad with the following capabilities:
      1) Indication of space temperature.
      2) Setpoint adjustment to accommodate room setpoint,
      3) Display and control fan operation status.
      4) Manual occupancy override and indication of occupancy status.
      5) Controller mode status.

6. Chilled water and condenser water sensors
   a. Accuracy: +/-0.25 degrees F in the range 30 degrees F to 70 degrees F.
7. Hot water temperature sensors
   a. Accuracy: +/-0.75 degrees F over the range of 50 degrees F to 250 degrees F.
8. Thermo wells:
   a. When thermo wells are required, the sensor and well shall be supplied as a complete assembly, including wellhead and Greenfield fitting. Thermo wells shall be pressure rated and constructed in accordance with the system working pressure. Thermo wells and sensors shall be mounted in a threadolet or 1/2" NFT saddle and allow access to the sensor for repair or replacement. Thermo wells shall be constructed of 316 stainless steel.
9. Ceiling and Recessed Mount Temperature Sensors:
   a. Description: Ceiling-mounted sensor in a low-profile housing.
10. Temperature Averaging Elements
   a. Accuracy: +/- 1 degrees F.
   b. Applications: Use on duct sensors for ductwork 10 sq ft or larger, where prone to stratification and for all mixed air and heating coil discharge sensors regardless of duct size.
11. Duct Mount Sensors
   a. Description: Duct mount sensors shall mount in an electrical box through a hole in the duct, and be positioned so as to be easily accessible for repair or replacement. Duct sensors shall be insertion type and constructed as a complete assembly, including lock nut and mounting plate. For outdoor air duct applications, a weatherproof mounting box with weatherproof cover and gasket shall be used.

B. Humidity Sensors: Vibration and corrosion resistant, for wall, immersion, or duct mounting as required.
1. Room Sensors
   a. Description With locking cover, matching room temperature sensors, span of 25% to 90% R.H.
   b. Accuracy: ± 3% of operating range, with linear output
2. Duct and Outside Air Sensors
   a. Description: With element guard and mounting plate, range of 0% to 100% R.H., with repeatable accurate readings from 10% to 90% R.H.
   b. Accuracy: ± 1% of operating range, with linear output

C. Differential Water Pressure Sensors
1. Manufacturers:
   a. Setra
   b. Mamac
   c. Automation Components Inc. (ACI)
   d. Greystone
2. Description: Industrial quality probe with pressure transducer designed to transmit a proportional 4 to 20 mA or 0-10VDC output in response to variation of differential pressure at water pressure sensing points. Pressure transmitters shall be selected with suitable range for expected input, temperature compensated, and constructed to withstand 100% pressure over-range without damage, and to hold

calibrated accuracy when subject to a momentary 40% over-range input. A minimum of a NEMA 1 housing shall be provided for the transmitter. Differential pressure transmitters used for flow measurement shall be sized to the flow sensing device, and shall be supplied with Tee fittings and shut-off valves in the high and low sensing pick-up lines.

3. Transmitters shall be located in accessible local control panels wherever possible.
4. Accuracy: 1% of full scale, maintain up to 20 to 1 ratio turndown.

D. Differential Air Pressure Sensors
1. Manufacturers:
   a. Setra
   b. Mamac
   c. Automation Components Inc. (ACI)
   d. Greystone
2. Description: Air Static Pressure and Differential Pressure Sensors shall consist of a probe with pressure transducer designed to transmit a proportional 4 to 20 mA or 0-10VDC output in response to variation of differential pressure at air pressure sensing points. Pressure transmitters shall be selected with suitable range for expected input, temperature compensated, and constructed to withstand 100% pressure over-range without damage, and to hold calibrated accuracy when subject to a momentary 40% over-range input. A minimum of a NEMA 1 housing shall be provided for the transmitter. Transmitters shall be located in accessible local control panels wherever possible.
3. Accuracy: 2% of full scale with repeatability of 0.5%.
4. Range:
   a. Building Static Pressure Range: 0 inch to 0.25 inch wg.
   b. Duct Static Pressure Range: 0 inch to 5 inches wg.
   c. End of Line Primary Fan System Discharge Duct Static Pressure Range: 0 to 4 inches wg.
   d. Return Air and Outside Air Static Pressure Range: -2 to +2 inches wg.

E. Fluid Flow Monitoring
1. Electromagnetic type (Pipes 3” or larger)
   a. Manufacturer and model: Onicon F3500
   b. Description: Electromagnetic type with integral microprocessor-Based electronics, NEMA 4 enclosure, and 316L stainless steel wetted components, analog output signal. The meter shall have an accuracy of +/-1.0% from 2 to 20 ft/sec. Provide remote mounted LCD read-out panel or unit mounted.
2. Electromagnetic type (Pipes smaller than 3”)
   a. Manufacturer and model: Onicon F3100
   b. Electromagnetic type with integral microprocessor-Based electronics, NEMA 4 enclosure, analog output signal. The meter shall have an accuracy of +/-0.4% ft/sec from 3.3 to 33 ft/sec. Provide remote mounted LCD read-out panel or unit mounted.

F. BTU Monitoring
1. Manufacturer and model: Onicon System 10
2. Description: Two matched temperature sensors and flow meter, microprocessor-based controller, designed to provide full energy, flow and temperature data at local LCD panel and over a serial network interface. Calibrated using application specific flow and temperature data and provided with a certificate of calibration.

G. Airflow Measuring Sensors (AFMS)
1. Thermal Dispersion Type
a. Description: Thermal airflow stations with one or more bead-in-glass thermistor sensor nodes mounted in a probe with a stainless steel mounting bracket, and a remotely mounted microprocessor-based transmitter at each measurement location compatible with BMS. Provide the number of independent sensor nodes as recommended by the airflow station manufacturer based on the duct size.
b. Sensing-Node Temperature Accuracy: Within 0.15 deg F (0.08 deg C) over an operating range of minus 20 to plus 160 deg F (minus 28.9 to plus 71.1 deg C) and humidity range of 0 to 100 percent RH.
c. Airflow Station Accuracy: Within 3 percent of reading for ducted applications, and within 5 percent of reading for non-ducted applications.
2. Pitot-Tube Type
a. Description: Multiple total- and static-pressure sensors positioned at the center of equal area of the station cross section and interconnected by respective averaging manifolds. Provide the number of independent sensors recommended by the airflow station manufacturer in written instructions based on the duct size.
b. Casing: Galvanized sheet steel at least 0.079 inch (2.0 mm) thick with coating complying with ASTM A653/A653M, G90 (Z275). Casings shall be stainless steel, 0.0781 inch (2.0 mm) thick, when connected to stainless duct and aluminum, 0.063 inch (1.6 mm) thick, when connected to aluminum duct.
c. Straightener or equalizer: Type 3003 aluminum or Type 316 stainless steel, depending on casing material. Use stainless steel for units with stainless-steel casings.
d. Pressure sensor array: Drawn copper or stainless-steel tubing. Use stainless steel for units with stainless-steel casings. Copper tubing shall comply with ASTM B75 and ASTM B280. Minimum tube wall thickness shall be 0.030 inch (0.8 mm). Include internal piping and external pressure transmitter ports.
e. Performance:
1) Pressure Loss: 0.015-inch wg (3.8 Pa) at 1000 fpm (5 m/s), or 0.085-inch wg (22.5 Pa) at 2000 fpm (10 m/s).
2) Accuracy: Within 2 percent of actual airflow.
3) Self-Generated Sound: NC 40 and sound level within the duct shall not be amplified.
4) Performance rated and tested according to AMCA 610. Each station shall bear the AMCA seal.

3. Piezometer Ring Fan Inlet Airflow Sensor
   a. Description: Multiple pressure sensor points strategically placed along the circumference of the inlet cone and internally connected to an averaging ring manifold located behind the inlet cone. Sensor points shall not protrude beyond the surface of the inlet cone nor be adversely affected by particle contamination present in the airstream. Sensor shall be non-intrusive and not impact fan performance. Product shall be a standard offering of the fan manufacturer and include published literature with supporting test data to validate sensor performance.
   b. Accuracy: within 5 percent of actual airflow.

H. Status and Safety Switches
1. General Requirements and application: Switches shall be provided to monitor equipment status, safety conditions, and generate alarms at the BMS when a failure or abnormal condition occurs. Safety switches shall be provided with two sets of contacts and shall be interlock wired to shut down respective equipment.
   a. Status Inputs for Fans: Differential-pressure switch with adjustable range of 0 to 5 inches wg. or current sensing switch, as indicated on the control diagrams.
   b. Status Inputs for Pumps: Differential-pressure switch piped across pump with adjustable pressure-differential range of 5 psig to 1.5 times the design pump operating pressure differential, or current sensing switch, as indicated on the control diagrams.
   c. Status Inputs for Electric Motors: Current-sensing relay with current transformers, adjustable and set to 175 percent of rated motor current.
2. Current Sensing Switches
   a. The current sensing switch shall be self-powered with solid-state circuitry and a dry contact output. It shall consist of a current transformer, a solid state current sensing circuit, adjustable trip point, solid state switch, SPDT relay, and an LED indicating the on or off status. A conductor of the load shall be passed through the window of the device. It shall accept over-current up to twice its trip point range.
   b. Current sensing switches shall be calibrated to show a positive run status only when the motor is operating under load. A motor running with a broken belt or coupling shall indicate a negative run status.
3. Air Filter Status Switches
   a. Differential pressure switches used to monitor air filter status shall be of the automatic reset type with SPDT contacts rated for 2 amps at 120VAC.
   b. A complete installation kit shall be provided, including: static pressure tops, tubing, fittings, and air filters.
   c. Provide appropriate scale range and differential adjustment for intended service.
4. Air Flow Switches
   a. Differential pressure flow switches shall be bellows actuated mercury switches or snap acting micro-switches with appropriate scale range and differential adjustment for intended service.
5. Air Pressure Safety Switches

a. Air pressure safety switches shall be of the manual reset type with SPDT contacts rated for 2 amps at 120VAC.
b. Pressure range shall be adjustable with appropriate scale range and differential adjustment for intended service.

6. Water Flow Switches
   a. Bellows-actuated mercury or snap-acting type, with appropriate scale range and differential adjustment, with stainless-steel or bronze paddle. For chilled-water applications, provide vapor-proof type.
7. Low Temperature Limit Switches
   a. The low temperature limit switch shall be of the manual reset type with Double Pole/Single Throw snap acting contacts rated for 16 amps at 120VAC.
   b. The sensing element shall be a minimum of 15 feet in length and shall react to the coldest 18-inch section. Element shall be serpentined across the leaving side of the coil surface in accordance with manufacturers recommended installation procedures.
   c. For large duct areas where the sensing element does not provide full coverage of the air stream, additional switches shall be provided as required to provide full protection of the air stream.
8. Damper Position Indication
   a. Potentiometer mounted in enclosure with adjustable crank arm assembly connected to damper to transmit 0 - 100 percent damper travel.

I. Vibration Switches: Designed to provide vibration protection for rotating machinery operating within the range of 120 to 60,000 rpm. Provide two limit set points, one set for the maximum allowable vibration (in/sec), and the other set for a percentage of that setting, tripping the alarm relay when that percentage is reached. Provide a built-in, adjustable time delay to prevent trips due to transient vibrations. Switch shall be wired for automatic remote reset and enclosed in water-tight housing.

J. Water Detectors: External tape-style sensor with contacts to connect to a monitoring system. Gold-plated probes and microchip technology for detection of conductive liquids. Weatherproof enclosure with LED indication if water detected.

K. Power Monitoring Devices:
1. Manufacturers:
   a. Veris Industries
2. Current measurement shall be by a combination current transformer and a current transducer. The current transformer shall be sized to reduce the full amperage of the monitored circuit to a maximum 5 Amp signal, which will be converted to a 4-20 mA DDC compatible signal for use by the BAS.
3. Current Transformer: A split core current transformer shall be provided to monitor motor amps.
   a. Operating frequency – 50 - 400 Hz.
   b. Insulation – 0.6 Kv class 10Kv BIL.
   c. UL recognized.
   d. Five amp secondary.
   e. Select current ration as appropriate for application.

4. Current Transducer: A current to voltage or current to mA transducer shall be provided. The current transducer shall include:
   a. 6X input over amp rating for AC inrushes of up to 120 amps.
   b. Manufactured to UL 1244.
   c. Accuracy: +.5%, Ripple +1%.
   d. Minimum load resistance 30kOhm.
   e. Input 0-20 Amps.
   f. Output 4-20 mA.
   g. Transducer shall be powered by a 24VDC regulated power supply (24 VDC +5%).

L. Carbon Dioxide Sensors: Electronic, designed to monitor CO2 levels in HVAC systems for use in demand controlled ventilation systems according to ASHRAE Standard 62. Units shall have linear analog output of 0-10VDC/4-21mA, over a range of 0-3000 ppm of CO2. Units shall be furnished with a 5-year calibration guarantee.

M. Oxygen Sensor: Wall-mounted, single detectors, using solid-state zircon cell sensing, suitable over a temperature range of minus 32 to plus 1100 deg F (0 to 593 deg C), calibrated for 0 to 5 percent, with continuous or averaged reading, 4 to 20 mA output.

N. Occupancy Sensor: Passive infrared, with time delay, daylight sensor lockout, sensitivity control, and 180-degree field of view with vertical sensing adjustment, flush mounting for finished areas (offices, entries, etc.), and wall mounted for storage areas, garages, shops, etc.

2.15 THERMOSTATS

A. General: Refer to control sequences and diagrams for application requirements. Manufacturer's standard thermostats shall meet the applicable requirements listed below, unless thermostat is specified in other sections.

B. Combination Thermostat and Fan Switches: Line-voltage thermostat with two-, three-, or four-position, push-button or lever-operated fan switch. Label switches "FAN ON-OFF," "FAN HIGH-LOW-OFF," or "FAN HIGH-MED-LOW-OFF." Provide unit for mounting on two-gang switch box. Separate heating and cooling setpoint with locking exposed setpoint adjustment. Automatic switching from heating to cooling.

C. Electric microcomputer-based room thermostats: 7-day programmable with automatic switching from heating to cooling, short-cycle protection, battery replacement without program loss, LCD display including room temperature, setpoint and mode.

D. Low-Voltage, On-Off Thermostats: NEMA DC 3, 24-V, bimetal-operated mercury-switch type, with adjustable anticipation heater.

E. Line-Voltage, On-Off Thermostats: Bimetal-actuated, open contact or bellows-actuated, enclosed, snap-switch type, or equivalent solid-state type, with heat anticipator, integral manual on-off-auto selector switch. Thermostats that control electric heating loads directly shall be provided with off position on dial wired to break ungrounded conductors.

F. Remote-Bulb Thermostats: On-off or modulating type, liquid filled to compensate for changes in ambient temperature, with copper capillary and bulb, unless otherwise indicated.
1. Bulbs in water lines with separate wells of same material as bulb.
2. Bulbs in air ducts with flanges and shields.
3. Averaging Elements: Copper tubing with either single- or multiple-unit elements, extended to cover full width of duct or unit, adequately supported.
4. Scale settings and differential settings are clearly visible and adjustable from front of instrument.
5. On-Off Thermostat: With precision snap switches, with electrical ratings required by application.
6. Modulating Thermostats: Construct so complete potentiometer coil and wiper assembly is removable for inspection or replacement without disturbing calibration of instrument.

G. Fire-Protection Thermostats: UL listed with fixed or adjustable settings to operate at not less than 75 deg F above normal maximum operating temperature, with the following:
1. Compliant with latest issue of NFPA 90A.
2. Reset: Manual
3. Dual-Temperature Thermostats: Automatic changeover from normal setting to lower unoccupied setting, with manual-reset lever to permit return to normal temperatures during unoccupied cycles, with automatic reset to normal during next cycle of operation.

H. Immersion Thermostats: Remote-bulb or bimetal rod-and-tube type, proportional acting with adjustable throttling range and adjustable set point.

I. Airstream Thermostats: Two-pipe, fully proportional, single-temperature type, with adjustable set point in middle of range and adjustable throttling range, plug-in air gauge test fitting or permanent pressure gage, remote bulb, bimetal rod and tube, or averaging element.

J. Heating/Cooling Valve-Top Thermostats: Proportional acting for modulating flow, molded-rubber diaphragm, remote-bulb liquid-filled element, direct or reverse acting with minimum valve shutoff differential pressure of 25 psig, and cast housing with position indicator and adjusting knob.

2.16 HUMIDISTATS

A. Electric Duct-Mounted Humidistats: Insertion, 2-position type with adjustable 2 percent throttling range, 20 to 80 percent operating range, single- or double-pole contacts.

2.17 TIME CLOCKS

A. Seven day programming switch timer with synchronous timing motor and seven day dial, continuously charged Ni-cad battery driven power failure 8 hour carry over and multiple switch trippers to control systems for minimum of two and maximum of eight signals per day with two normally open and two normally closed output switches.

B. Solid state programmable time control, 24 hour battery carry over, duty cycling.

2.18 CONTROL VALVES

A. General: All automatic control valves shall be factory fabricated, of type, body material, and pressure class based on maximum pressure and temperature rating of the piping system in which the valve is being installed, and be suitable for the system flow conditions and close against the differential pressures involved. Valves shall be fully proportioning and provide near linear heat transfer control. The valves shall be quiet in operation and fail-safe open, closed, or in their last position. All valves shall operate in sequence with another valve when required by the sequence of operations. All control valves shall be sized by the control manufacturer, and shall be guaranteed to meet the heating and cooling loads, as specified.

B. Sizing and application: Valves shall be globe, ball, and/or butterfly, as required by the specific application. Modulating water valves shall be sized per manufacturer's recommendations for the given application.
   1. Liquid Control Valves (water and glycol)
      a. Two-position service: Line size unless otherwise indicated.
      b. Two-way modulating service (non-pressure independent): Pressure drop shall be equal to the pressure drop through heat exchanger (load), 50 percent of the pressure difference between supply and return pipe mains, or 5 psi whichever is greater. Minimum Cv shall be calculated at 10 percent of design flow, with a coincident pressure differential equal to the system design pump head.
      c. Three-way modulating service: Pressure drop equal to the pressure drop through the coil exchanger (load), 5 psi maximum.
      d. For pressure independent valves, select for a differential pressure range of 5 to 50 psig.
      e. Close-off (differential) Pressure Rating: Valve actuator and trim shall be furnished to provide the following minimum close-off pressure ratings:
         1) Two-way: 150 percent of total system (pump) head.
         2) Three-way: 300 percent of pressure differential between ports A and B at design flow or 100 percent of total system (pump) head.

C. Ball Valves NPS 2 and Smaller:
   1. Description: Forged brass body with nickel plating, characterized stainless steel ball and trim, and Teflon seats and seals.
   2. Application: Characterized Ball valves shall be used for hot and condenser water applications, water terminal reheat coils, radiant panels, unit heaters, package air conditioning units, and fan coil units except those described hereinafter.
   3. Manufacturers:
      a. Belimo CCV
      b. Siemens
      c. Johnson Controls

D. Globe Pattern:
   1. Application: Modulating valves of the single-seat type with equal percentage flow characteristics shall be used for all AHU, ERU and special applications as indicated.
   2. Manufacturers:
      a. Belimo
      b. Siemens
      c. Johnson Controls
   3. Up to 2 inches (50 mm): Bronze body, bronze trim, rising stem, renewable composition disc, screwed ends with backseating capacity repackable under pressure.
   4. Over 2 inches: Iron body, bronze trim, rising stem, plug-type disc, flanged ends, renewable seat and stainless steel disc.
   5. Hydronic Systems:
      a. Rate for service pressure of 125 psig at 250 degrees F.
      b. Replaceable plugs and seats of stainless steel.
      c. Two way valves shall have equal percentage characteristics, three way valves linear characteristics. Size two way valve operators to close valves against pump shut off head.
   6. Steam Systems:
      a. Rate for service pressure of 125 psig at 250 degrees F.
      b. Replaceable plugs and seats of stainless steel. Pressure drop across any steam valve at maximum flow shall be as shown on the Drawings.
      c. Valves shall have modified linear characteristics.

E. Butterfly Pattern:
   1. Application: High Performance Butterfly valves shall be acceptable for modulating large flow applications greater than modulating plug valves, and for all two-position, open/close applications. In-line and/or three-way butterfly valves shall be heavy-duty pattern with a body rating comparable to the pipe rating, replaceable lining suitable for temperature of system, and a stainless steel vane.
   2. Sizing: Valves for modulating service shall be sized and travel limited to 50 degrees of full open. Valves for isolation service shall be the same as the pipe. Valves in the closed position shall be bubble-tight.
   3. Manufacturers:
      a. Nibco, Inc.
      b. Crane Co.
      c. Grinnell
      d. Hammond Valve
      e. Milwaukee Valve Co.
      f. Bray International
   4. Lug type: Bi-directional dead end service without downstream flange.
      a. Body: Carbon steel, cast iron, ductile Iron or stainless steel.
      b. Seat: Metal or reinforced PTFE.
      c. Offset stem: Stainless steel.
      d. Disc: 316 Stainless Steel

F. Pressure Independent Control Valves

1. Application: Provide pressure independent flow control valves as specified within the drawings and schedules.
2. Description:
   a. Body: Forged brass, nickel plated body
   b. Packing: EPDM O-rings, lubricated.
   c. Trim: Chrome plated brass stem, chrome plated brass ball with equal percentage flow characteristics, fiberglass reinforced Teflon PTFE seats.
   d. Pressure Rating: 600 psi (1/2" to 1") and 400 psi (1-1/4" to 2")
   e. Temperature Ratings: Media temperature range 0ºF to 212ºF
   f. Close Off Pressure Rating: 200 PSI
3. Manufacturers:
   a. Griswold
   b. Belimo
   c. FDI
4. Accuracy: The flow shall not vary more than +/- 5% due to system static pressure fluctuations across the valve with a minimum of 5 PSID across the valve from 0 to 100% full rated flow with an equal percentage characteristic.
5. Sizing: sized by the maximum coil capacity in GPM, not the conventional Cv method.
6. Provide PT ports to verify flow.
7. The manufacturer shall warranty all components for a period of 5 years from the date of production, with the first two years unconditional.

G. Terminal Unit Control Valves:
1. Bronze or brass body, bronze trim, two- or three-port as indicated, stainless steel ball union and threaded ends, 100 psi close-off rating.
2. Rating: Class 125 for service at 862 kPa (125 psig) and 121 deg C (250 deg F) operating conditions.
3. Flow Characteristics: Two-way valves shall have equal percentage characteristics; three-way valves shall have linear characteristics.

H. 6-Way Ball Valve with Characterizing Discs (CBVS & CBVM):
1. Materials:
   a. Body: Nickel plated brass
   b. Ball: Chrome plated brass
   c. Stem/Extension/Seals: Nickel plated brass, double EPDM O-rings
   d. Seat/Seals: PTFE (Teflon)/EPDM O-rings
   e. Characterizing Disc: Chrome Plated Steel
2. Piping Connections: NPS ½ (DN 15) through NPS 1 (DN 25): (6), female NPT
3. Media: Water (maximum 60% glycol solution)
4. Performance:
   a. Media Temperature: 43 deg F to 180 deg F (6 deg C to 82 deg C)
   b. Pressure:
      1) Body: 232 psig (16kPa)
      2) Maximum Operating Differential: 15 psid (103kPa)
      3) Close-off (valve and actuation assembly): 50 psid (345kPa)
   c. Leakage: 0%
5. The valve shall incorporate a loop pressure relief to release any pressure build up in the loop when the valve is in the isolated position.

6. Labeling: Valve body shall be furnished with a label containing the following date:
   a. Manufacturer's name and model number
   b. Nominal size

2.19 DAMPERS

A. General: The BMS Contractor shall furnish all automatic dampers unless provided as standard from equipment manufacturer. All automatic dampers shall be sized for the application by the BMS Contractor or as specifically indicated on the Drawings.

B. Sizing and Application: All dampers used for throttling airflow shall be of the opposed blade type arranged for normally open or normally closed operation, as required. The damper is to be sized so that, when wide open, the pressure drop is a sufficient amount of its close-off pressure drop to shift the characteristic curve to near linear. All dampers used for two-position, open/close control and mixing boxes shall be parallel blade type arranged for normally open or closed operation, as required.

C. Airfoil Blade Dampers
   1. General: Double skin construction with linkage out of the air stream
   2. Manufacturers:
      a. Johnson Controls D-7250 D-1250 or D-1300
      b. Ruskin CD50
      c. Vent Products 5650.
      d. Tamco
   3. Application: whenever the damper face velocity exceeds 1500 FPM or system pressure exceeds 2.5" w.g., but no more than 4000 FPM or 6" w.g.

D. One-Piece Rolled Blade Damper
   1. Manufacturers:
      a. Johnson Controls D-1600
      b. Ruskin CD36
      c. Vent Products 5800
      d. Tamco
   2. Performance: Dampers shall be tight closing, low leakage type, with synthetic elastomer seals on the blade edges and flexible stainless steel side seals. Dampers of 48"x48" size shall not leak in excess of 8.0 cfm per square foot when closed against 4" w.g. static pressure when tested in accordance with AMCA Std. 500.
   3. Construction:
      a. Frames: Galvanized steel, welded or riveted with corner reinforcement, minimum 12 gage, 0.1046 inch.
      b. Blades: Galvanized steel, maximum blade size 8 inches wide, 48 inches long, minimum 22 gage, 0.0299 inch, attached to minimum 1/2 inch shafts with set screws.
      c. Blade Seals: Synthetic elastomeric inflatable mechanically attached, field replaceable.
      d. Jamb Seals: Spring stainless steel.
      e. Shaft Bearings: Oil impregnated sintered bronze.
      f. Linkage Bearings: Oil impregnated sintered bronze.

4. Application: face velocities of 1500 FPM or below.

2.20 ACTUATORS

A. General: Size to operate with sufficient reserve power to provide smooth modulating action or two-position action over the entire operating range. Provide proportional or two-position type as indicated in the sequence of operation, with current limiting circuitry or microprocessor overload protection.

B. Manufacturers:
1. Johnson Controls
2. Honeywell
3. Belimo
4. Siemens

C. Electronic Damper Actuators
1. Modulating and two-position actuators shall be provided as required by the sequence of operations and as indicated on drawings. Damper sections shall be sized based on actuator manufacturer's recommendations for face velocity, differential pressure and damper type. The actuator mounting arrangement and spring return feature shall permit normally open or normally closed positions of the dampers, as required. All actuators (except terminal units) shall be furnished with mechanical spring return unless otherwise specified in the sequences of operations. All actuators shall have external adjustable stops to limit the travel in either direction and a gear release to allow manual positioning.
2. Modulating actuators shall accept 24 VAC or VDC power supply, consume no more than 15 VA, and be UL listed. The control signal shall be 2-10 VDC or 4-20 mA, and the actuator shall provide a clamp position feedback signal of 2-10 VDC. The feedback signal shall be independent of the input signal and may be used to parallel other actuators and provide true position indication. The feedback signal of one damper actuator for each separately controlled damper shall be wired back to a terminal strip in the control panel for trouble-shooting purposes.
3. Two-position or open/closed actuators shall accept 24 or 120 VAC power supply and be UL listed. Isolation, smoke, exhaust fan, and other dampers, as specified in the sequence of operations, shall be furnished with adjustable end switches to indicate open/closed position or be hard wired to start/stop associated fan. Two-position actuators, as specified in sequences of operations as "quick acting," shall move full stroke within 20 seconds. All smoke damper actuators shall be quick acting.
4. Electronic damper actuators shall be direct shaft mount.

D. Electronic Valve Actuators:
1. Modulating and two-position actuators shall be provided as required by the sequence of operations. Actuators shall provide the minimum torque required for proper valve close-off against the system pressure for the required application. The valve actuator shall be sized Based on valve manufacturer's recommendations for flow and pressure differential. All actuators shall fail in the last position unless specified with mechanical spring return in the sequence of

operations. The spring return feature shall permit normally open or normally closed positions of the valves, as required. All direct shaft mount rotational actuators shall have external adjustable stops to limit the travel in either direction.

2. Modulating Actuators shall accept 24 VAC or VDC and 120 VAC power supply and be UL listed. The control signal shall be 2-10 VDC or 4-20 mA and the actuator shall provide a clamp position feedback signal of 2-10 VDC. The feedback signal shall be independent of the input signal, and may be used to parallel other actuators and provide true position indication. The feedback signal of each valve actuator (except terminal valves) shall be wired back to a terminal strip in the control panel for trouble-shooting purposes.
3. Two-position or open/closed actuators shall accept 24 or 120 VAC power supply and be UL listed. Butterfly isolation and other valves, as specified in the sequence of operations, shall be furnished with adjustable end switches to indicate open/closed position or be hard wired to start/stop the associated pump or heat exchanger.

2.21 WIRE, CABLE AND NETWORK ACCESSORIES

A. Exposed cables installed in air plenums shall be specifically listed for air plenum use. (See specifications for specific wire and cable installation requirements.)

B. Cables, both fiber and copper, shall be as recommended by the manufacturer of the BAS, and shall be as required to support the specified LAN BACnet transmission type.

C. Network Repeater: Provide network repeaters as required to isolate and boost RS-485 signals. Provide power connection and NEMA enclosure as required.

PART 3 EXECUTION

2.22 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that conditioned power supply is available to the control units and to the operator work station. Verify that field end devices, wiring, and pneumatic tubing is installed prior to installation proceeding.

2.23 INSTALLATION

A. Provide a complete, neat and workmanlike installation. Use only manufacturer employees who are skilled, experienced, trained, and familiar with the specific equipment, software, standards and configurations to be provided for this Project.

B. Install control units and other hardware in position on permanent walls where not subject to excessive vibration.

C. Install software in control units and in operator work station. Implement all features of programs to specified requirements and appropriate to sequence of operation.

D. Provide with 120v AC, 15 amp dedicated emergency power circuit to each programmable control unit.

E. Provide conduit and electrical wiring in accordance with Section 26. Electrical material and installation shall be in accordance with appropriate requirements of Division 26.

F. Combination fire Smoke dampers shall be installed by division 23, powered by division 26, interconnecting control wiring between duct mounted smoke detector and fire/smoke damper by BMS contractor, alarm points, status/position, shut down of unit and notification by BMS contractor.

G. Furnish and install all access doors.

H. BMS Wiring
1. All conduit, wiring, accessories and wiring connections required for the installation of the Building Management System, as herein specified, shall be provided by the BMS Contractor unless specifically shown on the Electrical Drawings under Division 26 Electrical. All wiring shall comply with the requirements of applicable portions of Division 26 and all local and national electric codes, unless specified otherwise in this section.
2. All BMS wiring materials and installation methods shall comply with BMS manufacturer recommendations.
3. The sizing, type and provision of cable, conduit, cable trays, and raceways shall be the design responsibility of the BMS Contractor. If complications arise, however, due to the incorrect selection of cable, cable trays, raceways and/or conduit by the BMS Contractor, the Contractor shall be responsible for all costs incurred in replacing the selected components.
4. Class 2 Wiring
   a. All exposed Class 2 (24VAC or less) wiring shall be installed in conduit unless otherwise specified.
   b. Conduit is not required for Class 2 wiring in concealed accessible locations. Class 2 wiring not installed in conduit shall be supported every 5’ from the building structure utilizing metal hangers designed for this application. Wiring shall be installed parallel to the building structural lines. All wiring shall be installed in accordance with local code requirements.
   c. The use of plenum rated cable, not in conduit, in areas such as drop ceilings and wall cavities is acceptable.
   d. Class 2 signal wiring and 24VAC power can be run in the same conduit. Power wiring 120VAC and greater cannot share the same conduit with Class 2 signal wiring.
5. Provide for complete grounding of all applicable signal and communications cables, panels and equipment so as to ensure system integrity of operation. Ground cabling and conduit at the panel terminations. Avoid grounding loops.

I. BMS Line Voltage Power Source

1. 120-volt AC circuits used for the Building Management System shall be taken from panel boards and circuit breakers provided by Division 26.
2. Circuits used for the BMS shall be dedicated to the BMS and shall not be used for any other purposes.
3. DDC terminal unit controllers may use AC power from motor power circuits.

J. BMS Raceway
1. All wiring shall be installed in conduit or raceway except as noted elsewhere in this specification. Minimum control wiring conduit size 3/4".
2. All conduits and raceways shall be installed level, plumb, at right angles to the building lines and shall follow the contours of the surface to which they are attached.
3. Flexible Metal Conduit shall be used for vibration isolation and shall be limited to 3 feet in length when terminating to vibrating equipment. Flexible Metal Conduit may be used within partition walls. Flexible Metal Conduit shall be UL listed.

K. Penetrations
1. Provide fire stopping for all penetrations used by dedicated BMS conduits and raceways.
2. All openings in fire proofed or fire stopped components shall be closed by using approved fire resistive sealant.
3. All wiring passing through penetrations, including walls shall be in conduit or enclosed raceway.
4. Penetrations of floor slabs shall be by core drilling. All penetrations shall be plumb, true, and square.

L. BMS Identification Standards
1. Node Identification. All nodes shall be identified by a permanent label fastened to the enclosure. Labels shall be suitable for the node location.
   a. Cable types specified in Item A shall be color coded for easy identification and troubleshooting.

M. BMS Panel Installation
1. The BMS panels and cabinets shall be located as indicated at an elevation of not less than 2 feet from the bottom edge of the panel to the finished floor. Each cabinet shall be anchored per the manufacturer's recommendations.
2. The BMS contractor shall be responsible for coordinating panel locations with other trades and electrical and mechanical contractors.

2.24 COMMISSIONING

A. Start and commission systems. Allow sufficient time for start-up and commissioning prior to placing control systems in permanent operation.

B. The Contractor shall provide the services of a factory authorized service representative to assist an independent commissioning agent to start up the BAS, and to commission each component included in the BAS.

C. Controls and Safeties: Test, and set each of the digital and analog sensing and actuating devices. Test each instrumentation device by making a comparison between the central computer or field control panel display and the reading at the device, using an instrument traceable to the National Bureau of Standards, which shall be at least twice as accurate as the device to be tested. Record the measured value and displayed value for each device in the Commissioning Report.

D. Operational Tests: The Contractor shall conduct an operational test of each system and subsystem, including each of the associated field control panels, components, and field devices, to verify the proper sequence of operation and the actual performance of the installed BAS subsystem.

E. Documentation: Provide written documentation of the system commissioning and performance verification processes described above, including an itemized inspection and validation report complete with dates and second test results, and a performance test report for each system and each Sequence of Operation.

2.25 DEMONSTRATION AND INSTRUCTIONS

A. General: The contractor shall demonstrate the operation of the BAS hardware, software, and each of the related components, systems and subsystems to the satisfaction of the Owner. The Contractor shall schedule the demonstration with the Owner's representative at least 2 weeks in advance of the proposed demonstration. Demonstration shall not be scheduled until each of the hardware and software submittals, and the Commissioning Test Report are received and approved. If the work fails to conform to Contract specifications, scheduling of additional site visits by the Contractor for re-demonstration is required.

B. Personnel and Equipment: The Contractor shall supply the required personnel and equipment for the demonstration, including, but not limited to, instruments, ladders, paper, etc. The contractor-supplied personnel shall be competent with and knowledgeable of the project-specific hardware, software, and the HVAC systems. Complete training documentation and a complete copy of the BAS submittals shall be on file at the job site.

C. Physical Demonstration of Response to System Conditions: System acceptance shall include demonstrations that each of the components function properly by actual response to system conditions that may be encountered. The Contractor shall furnish the materials such as sources of temporary heating and cooling necessary to cause the system components to go through the required sequences. Computer simulations of possible operating conditions are not acceptable for demonstration of system performance. Proposed methods of demonstrating component operation shall be submitted to the Owner. Representatives of Owner will also witness the tests.

D. Orientation and training: Provide services of qualified technical personnel for three 6-hour days at project site to instruct Owner's personnel in operation and maintenance of the installed BAS.

2.26 ACCEPTANCE

A. Upon completion of the installation and commissioning of the systems, the contractor shall notify the owner's representative in writing, together with a copy of the commissioning report, that the system is complete and ready for acceptance testing. The owner's representative shall schedule a starting day for system acceptance testing. The contractor shall demonstrate calibration, testing, and adjusting of points or systems selected by the owner's representative. After an adequate sampling of points and sequences have been verified to satisfy the owner's representative that the system is performing in accordance with the contract documents, the system shall be accepted and the warranty period shall begin.

2.27 MAINTENANCE

A. See Section 01 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.

B. Provide service and maintenance of energy management and control systems for one years from Date of Substantial Completion.

C. Provide two complete inspections, one in each season, to inspect, calibrate, and adjust controls as required, and submit written reports.

D. Provide complete service of systems, including service calls to inspect, calibrate, and adjust controls, and submit written reports.

END OF SECTION

SECTION 23 3100 - HVAC DUCTS AND CASINGS

PART 1 GENERAL

1.1 SECTION INCLUDES:

A. Duct Materials.

B. Duct Liner

C. Non-Insulated Flexible ducts.

D. Insulated flexible ducts.

E. Single wall spiral round ducts.

F. Double wall spiral insulated round ducts.

G. Transverse duct connection system.

H. Kitchen hood exhaust ductwork fabrication.

I. Fabric Ductwork

1.2 RELATED SECTIONS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this section.

1.3 REFERENCES

A. ASTM International:
1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
2. ASTM A90/A90M - Standard Test Method for Weight Mass of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings.
3. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
4. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
5. ASTM A568/A568M - Standard Specification for Steel, Sheet, Carbon, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for.
6. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
7. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.

8. A1011/A1011M-07 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
9. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
10. ASTM C14 - Standard Specification for Concrete Sewer, Storm Drain, and Culvert Pipe.
11. ASTM C443 - Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
12. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. National Fire Protection Association:
1. NFPA 90A - Standard for the Installation of Air Conditioning and Ventilating Systems.
2. NFPA 90B - Standard for the Installation of Warm Air Heating and Air Conditioning Systems.
3. NFPA 96 - Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations.

C. Sheet Metal and Air Conditioning Contractors:
1. SMACNA - Fibrous Glass Duct Construction Standards.
2. SMACNA - HVAC Air Duct Leakage Test Manual.
3. SMACNA - HVAC Duct Construction Standard - Metal and Flexible.

D. Underwriters Laboratories Inc.:
1. UL 181 - Factory-Made Air Ducts and Connectors.

1.4 PERFORMANCE REQUIREMENTS

A. ~~Delegated Duct Design:~~ Duct construction, including sheet metal thicknesses, seam and joint construction, reinforcements, and hangers and supports, shall comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" and performance requirements and design criteria indicated in "Duct Schedule" Article.

B. Structural Performance: Duct hangers and supports shall withstand the effects of gravity loads and stresses within limits and under conditions described in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible"

C. Variation of duct configuration or sizes other than those of equivalent or lower loss coefficient is not permitted except by written permission. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts.

1.5 SUBMITTALS

A. Shop Drawings: Submit duct fabrication drawings, drawn to scale not smaller than 1/4 inch equals 1 foot, on drawing sheets same size as Contract Documents, indicating:

1. Fabrication, assembly, and installation details, including plans, elevations, sections, details of components, and attachments to other work.
2. Duct layout, indicating pressure classifications and sizes in plan view. For exhaust duct systems, indicate classification of materials handled as defined in this section.
3. Fittings.
4. Reinforcing details and spacing.
5. Seam and joint construction details.
6. Penetrations through fire rated and other walls.
7. Terminal unit, coil, and humidifier installations.
8. Hangers and supports, including methods for building attachment, vibration isolation, and duct attachment.

B. Product Data: Submit data for duct materials, duct liner, duct connectors.

C. Test Reports: Indicate pressure tests performed. Include date, section tested, test pressure, and leakage rate, following SMACNA HVAC Air Duct Leakage Test Manual.

1.6 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations of ducts and duct fittings. Record changes in fitting location and type. Show additional fittings used.

1.7 QUALITY ASSURANCE

A. Perform Work in accordance with SMACNA - HVAC Duct Construction Standards - Metal and flexible.

B. Construct ductwork to NFPA 90A, NFPA 90B and NFPA 96 standards as applicable.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing Work of this section with minimum three years documented experience.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Do not install duct sealant when temperatures are less than those recommended by sealant manufacturers.

B. Maintain temperatures during and after installation of duct sealant.

1.10 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

PART 2 PRODUCTS

2.1 DUCT MATERIALS

A. Galvanized Steel Ducts: ASTM A653/A653M galvanized steel sheet, lock-forming quality, having G90 (zinc coating of in conformance with ASTM A90/A90M.

B. Steel Ducts: ASTM A1008/A1008M, with oiled, matte finish for exposed ducts.

C. Aluminum Ducts: ASTM B209; aluminum sheet, alloy 3003-H14. Aluminum Connectors and Bar Stock: Alloy 6061-T6 or of equivalent strength. Mill finish for concealed ducts, and standard, one-side bright finish for duct surfaces exposed to view.

D. Stainless Steel Ducts: ASTM A480/A480M, Type 316 Exposed surface finish shall be No. 2B, No. 2D, No. 3, or No. 4 as indicated in the "Duct Schedule" Article

E. Fasteners: Rivets, bolts, or sheet metal screws.

F. Hanger Rod: ASTM A36/A36M; steel, galvanized; threaded both ends, threaded one end, or continuously threaded.

2.2 DUCT LINER

A. Fibrous-Glass Duct Liner
   1. Manufacturers:
      a. CertainTeed Corporation; Insulation Group.
      b. Johns Manville.
      c. Knauf Insulation.
      d. Owens Corning.
   2. Comply with ASTM C 1071, NFPA 90A, or NFPA 90B; and with NAIMA AH124, "Fibrous Glass Duct Liner Standard."
   3. Antimicrobial Erosion-Resistant Coating: Apply to the surface of the liner that will form the interior surface of the duct to act as a moisture repellent and erosion-resistant coating. Antimicrobial compound shall be tested for efficacy by an NRTL and registered by the EPA for use in HVAC systems.
   4. Water-Based Liner Adhesive: Comply with NFPA 90A or NFPA 90B and with ASTM C 916.
      a. For indoor applications, adhesive shall have a VOC content of 80 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

~~B. Flexible Elastomeric Duct Liner:~~
~~1. Manufacturers:~~
~~a. Aeroflex USA Inc.~~
~~b. Armacell LLC~~
~~c. K-Flex~~
~~2. Description: Elastomeric foam duct liner, integral EPA registered antimicrobial agent, complying with NFPA 90A or NFPA 90B.~~
~~3. Thermal Conductivity: 0.27 Btu x in./h x sq. ft. x deg F at 75 deg F mean temperature.~~
~~4. Surface Burning Characteristics: Maximum flame spread index of 25 and maximum smoke developed index of 50 when tested according to UL 723; certified by an NRTL.~~
~~5. Liner Adhesive: As recommended by insulation manufacturer and complying with NFPA 90A or NFPA 90B.~~
~~a. For indoor applications, adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).~~

2.3 NON-INSULATED FLEXIBLE DUCTS

A. Manufacturers:
1. Thermaflex Technaflex
2. Tuttle + Bailey
3. Flexmaster

B. Product Description: UL 181, Class 1, aluminum laminate and polyester film with latex adhesive supported by helical-wound spring steel wire.
1. Pressure Rating: 10 inches wg positive and 1.0 inches wg negative.
2. Maximum Velocity: 4000 fpm.
3. Temperature Range: -20 degrees F to 210 degrees F.

2.4 INSULATED FLEXIBLE DUCTS

A. Manufacturers:
1. Thermaflex
2. Technaflex
3. Tuttle + Bailey
4. Flexmaster

B. Product Description: UL 181, Class 1, aluminum laminate and polyester film with latex adhesive supported by helical wound spring steel wire; fiberglass insulation; polyethylene or aluminized vapor barrier film.
1. Pressure Rating: 10 inches wg positive and 1.0 inches wg negative.
2. Maximum Velocity: 4000 fpm.
3. Temperature Range: -20 degrees F to 210 degrees F.
4. Thermal Resistance: 6square feet-hour-degree F per BTU.
5. Vapor Barrier Permeance: 0.05 perm per ASRM E96, Procedure A

2.5 SEALANTS AND GASKETS

A. General Sealant and Gasket Requirements: Surface-burning characteristics for sealants and gaskets shall be a maximum flame-spread index of 25 and a maximum smoke-developed index of 50 when tested according to UL 723; certified by an NRTL.

B. Water-Based Joint and Seam Sealant:
1. General: Brush-on, water-resistant, mold and mildew resistant, indoor and outdoor use, compatible with galvanized sheet steel (both PVC coated and bare), stainless steel, or aluminum sheets.
2. Solids Content: Minimum 65 percent.
3. Shore A Hardness: Minimum 20.
4. VOC: Maximum 75 g/L (less water).
5. Maximum Static-Pressure Class: 10-inch wg, positive and negative.

C. Flanged Joint Sealant: Comply with ASTM C 920.
1. General: Single-component, acid-curing, silicone, elastomeric.
2. For indoor applications, sealant shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

D. Flange Gaskets: Butyl rubber, neoprene, or EPDM polymer with polyisobutylene plasticizer.

E. Round Duct Joint O-Ring Seals:
1. Seal shall provide maximum leakage class of3 cfm/100 sq. ft. at 1-inch wg and shall be rated for10-inch wg static-pressure class, positive or negative.

2.6 SINGLE WALL SPIRAL ROUND DUCTS

A. Manufacturers include, but are not limited to:
1. McGill AirFlow Corporation
2. Semco Incorporated
3. Tangent Air Corp
4. Spiral Mfg. Co., Inc.

B. Product Description: UL 181, Class 1, round spiral lockseam duct constructed of galvanized steel.

C. Construct ducts and fittings gauge per the latest edition of SMACNA.

2.7 DOUBLE WALL SPIRAL INSULATED ROUND DUCTS

A. Manufacturers include, but are not limited to:
1. McGill AirFlow Corporation
2. Semco Incorporated

3. Tangent Air Corp
4. Spiral Mfg. Co., Inc.

B. Product Description: Machine made from round spiral lock seam duct with light reinforcing corrugations, galvanized steel outer wall, 2 inch thick glass fiber insulation, perforated galvanized steel inner wall; fittings manufactured with perforated inner wall.

C. Construct round duct with the following minimum gages:

Diameter	Gauge
3 inches to 14 inches	26
15 inches to 26 inches	24
28 inches to 36 inches	22
38 inches to 50 inches	20
52 inches to 84 inches	18

D. Construct round fittings with the following minimum gages:

Diameter	Gauge
3 inches to 14 inches	24
15 inches to 26 inches	22
28 inches to 36 inches	20
38 inches to 50 inches	20
52 inches to 60 inches	18
62 inches to 84 inches	16

2.8 TRANSVERSE DUCT CONNECTION SYSTEM

A. Manufacturers:
1. United McGill
2. Semco
3. ACME
4. Nufab

B. Product Description: [SMACNA "E" rated] [SMACNA "F" rated] [or] [SMACNA "J" rated] rigidity class connection, interlocking angle and duct edge connection system with sealant, gasket, cleats, and corner clips.

2.9 DUCTWORK FABRICATION

A. Fabricate and support rectangular ducts in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible . Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.

B. Fabricate and support round ducts with longitudinal seams in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible (Round Duct Construction Standards). Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.

C. TDC connections on all ductwork where any dimension exceeds 12 inches. Slip and drive connection acceptable on duct sizes less than 12" x 12".

D. Construct T's, bends, and elbows with minimum radius 1-1/2 times centerline duct width. Where not possible and where rectangular elbows are used, provide [airfoil] turning vanes. Where acoustical lining is indicated, furnish turning vanes of perforated metal with glass fiber insulation.

E. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.

F. Fabricate continuously welded round and oval duct fittings two gages heavier than duct gages indicated in SMACNA Standard. Minimum 4 inch cemented slip joint, brazed or electric welded. Prime coat welded joints.

G. Provide standard 45-degree lateral wye takeoffs. When space does not allow 45-degree lateral wye takeoff, use 90-degree conical tee connections.

H. Seal joints between duct sections and duct seams with welds, gaskets, mastic adhesives, mastic plus embedded fabric systems.
1. Sealants, Mastics: Conform to UL 181A. Provide products bearing appropriate UL 181A markings.
2. Do not provide sealing products not bearing UL approval markings.

2.10 KITCHEN HOOD EXHAUST DUCTWORK FABRICATION

A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible and NFPA 96.

B. Exposed Kitchen Hood Exhaust Ducts: Construct of stainless steel ASTM A240/A240M OR ASTM 666, type 316using continuous external welded joints.

C. Concealed Kitchen Hood Exhaust Ducts: Construct of 16 gage carbon steel or 18 gage stainless steel ASTM ASTM A240/A240M OR ASTM 666, type 316 using continuous external welded joints.

D. Grease Duct: Provide factory built commercial grease ducts labeled and listed in accordance with UL 1978.

2.11 FABRIC DUCTWORK

A. Manufacturers:
1. FabricAir Combi-70
2. DuctSox
3. KE Fibertec
4. No Substitutions Acceptable.

B. Product Description: Non-metal ductwork as indicated on drawings and by requirements of this section.

C. Colors: The colors of the fabric duct shall be as follows:
1. Colors Gymnasium B – 3001 Blue
2. Gymnasium E – 3001 Blue
3. Multipurpose Room D103 – 3003 Dark Gray
4. Corridor D201 - 3002 Orange
5. Cafeteria A104 – 3002 Orange

D. Fabric is a woven fire retardant and permeable fabric complying with the following characteristics:
1. Fabric: 100% Flame Retardant Polyester
2. Weight: 8.5 oz./yd² per ASTM D3776
3. Shrinkage: Max. 0,5% per DIN EN 26 630
4. Color: By Architect
5. Temperature Range: -40°F to +284°F
6. Permeability: 2 (+/- 5%) per ASTM D737, Frazier – calandering of fabric NOT accepted
7. Fire Retardancy: Must meet the requirements in NFPA 90-A, ICC AC-167 and UL2518

E. SYSTEMS FABRICATION REQUIREMENTS
1. Fabric duct installed 20 feet or more above finished floor shall have the “Oriflow” dispersion option with rows of 1” diameter holes at 4 o’clock and 8 o’clock positions.
2. Fabric Duct installed in the 8 to 12 foot above finished floor range shall have the “microflow” dispersion option.
3. Color of nozzles must match color of fabric.
4. Location and number of nozzles to be specified and approved by manufacturer.
5. The system is made of permeable fabric. Permeability of fabric must be reached based on weave construction only and weave must have gone through thermo fixation in order to secure same permeability after wash. Fabric with permeability obtained based on calandering is not accepted.
6. Provide system in sections optimized for maintenance, connected by zippers. Zippers must provide closure completely around the circumference to prevent leakage. Required number of zippers as specified by manufacturer.
7. Each section to have a unique tag including information about: manufacturers order number, position, diameter of section, length of section, maintenance instruction, code compliance and contact details for spare parts.

8. Fabric system shall include connectors to attach to suspension system listed below.

F. DESIGN PARAMETERS
1. Use fabric air diffusers only for positive pressure air distribution.
2. Do not use fabric air diffusers in concealed locations.
3. Fabric diffusers shall be designed from minimum 0.25" water gage to 3" as the maximum – 0.5" being the standard.
4. Design temperatures between –40°F and 284°F
5. Manufacturer shall approve all technical design parameters.

G. HANGERS AND SUPPORT
1. Provide all hangers and support for complete system. All hangers shall be by ductwork manufacturer. Provide all hangers so when ductwork is unpressurized ductwork will not lose shape.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify sizes of equipment connections before fabricating transitions.

3.2 INSTALLATION

A. General:
1. Drawing plans, schematics, and diagrams indicate general location and arrangement of duct system. Indicated duct locations, configurations, and arrangements were used to size ducts and calculate friction loss for air-handling equipment sizing and for other design considerations. Install duct systems as indicated unless deviations to layout are approved on Shop Drawings and Coordination Drawings.
2. Install and seal ducts in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible.
3. During construction, install temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
4. Use crimp joints with or without bead or beaded sleeve couplings for joining round duct sizes 8inch and smaller.
5. Install duct hangers and supports in accordance with Section 23 05 29.
6. Use double nuts and lock washers on threaded rod supports.
7. Install ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building.
8. Install ducts with a clearance of 1 inch (25 mm), plus allowance for insulation thickness.
9. Do not route ducts through transformer vaults or electrical equipment rooms and enclosures.

10. Where ducts pass through non-fire-rated interior partitions and exterior walls and are exposed to view, cover the opening between the partition and duct or duct insulation with sheet metal flanges of same metal thickness as the duct. Overlap openings on four sides by at least 1-1/2 inches (38 mm).
11. Where ducts pass through fire-rated interior partitions and exterior walls, install fire dampers. Comply with requirements in Division 23, Air Duct Accessories for fire and smoke dampers.

B. Flexible ductwork
1. When located above ceilings, support flexible duct from above; flexible duct shall not touch the ceiling.
2. Minimize kinks and sags
3. Flexible duct shall be located only where concealed and accessible.
4. Non-insulated flexible ductwork: Provide when the metal ductwork connected to is not insulated.
5. Insulated flexible ductwork: Provide when the metal ductwork connected to is insulated. R-value of flexible ductwork insulation shall meet or exceed the R-value of the metal ductwork insulation.
6. Elbow supports: Provide above flexible ductwork connections to ceiling diffusers. Use cable ties as indicated in the manufacturer's installation instructions.
7. Connections to rigid ductwork: Provide both a drawband and two layers of duct tape lapped approximately 25% at each connection of flexible ductwork to rigid ductwork. Drawbands shall be the non-metallic type listed and labeled in accordance with UL 181B. Duct tape shall be listed and labeled in accordance with UL 181B.

C. Kitchen Hood Exhaust Ducts
1. Install kitchen range hoods in accordance with NFPA 96. Refer to Section 11 40 00.
2. Install residue traps in kitchen hood exhaust ducts at base of vertical risers with provisions for clean out.
3. Kitchen hood exhaust ducts: Use stainless steel for ductwork exposed to view and stainless steel or carbon steel where ducts are concealed.

D. For outdoor ductwork, protect ductwork, ductwork supports, linings and coverings from weather.

3.3 DUCT SEALING

A. Duct Seal Level Description

Seal Level	Sealing Requirements*
A	All transverse joints, longitudinal seams, and duct wall penetrations. Pressure sensitive tape shall not be used as the primary sealant, unless it has been certified to comply with UL-181A or UL0181B by an independent testing laboratory and the tape is used in accordance with that certification
B	All transverse joints, longitudinal seams. Pressure sensitive tape shall not be used as the primary sealant, unless it has been certified to comply with UL-181A or UL0181B by an independent testing laboratory and the tape is used in accordance with that certification.
C	Transverse joints only.
Notes: Longitudinal seams are joints oriented in the direction of flow. Transverse joints are connections of two duct sections oriented perpendicular to airflow. Duct wall penetrations are openings made by any screw fastener, pipe, rod, or wire. Spiral lock seams in a round or flat oval duct need not be sealed. All other connections are considered transverse joints, including but not limited to spin-ins, taps, and other branch connections, access door frames and jambs, duct connections to equipment, etc.	

B. Minimum Duct Seal Levels

Duct Type				
Duct Location	Supply		Exhaust	Return
	2-in. or less (1)	Greater than 2-in. (1)		
Outdoor	A	A	C	A
Unconditioned Space (2)	B	A	C	B
Conditioned Space	C	B	B	C
Notes: Duct design static pressure classification Includes indirectly conditioned spaces such as return air plenums				

3.4 INTERFACE WITH OTHER PRODUCTS

A. Install openings in ductwork where required to accommodate thermometers and controllers. Install pitot tube openings for testing of systems. Install pitot tube complete

with metal can with spring device or screw to prevent air leakage. Where openings are provided in insulated ductwork, install insulation material inside metal ring.

B. Connect air terminal units to supply ducts directly or with five foot maximum length of flexible duct. Do not use flexible duct to change direction.

3.5 CONCEALED GREASE DUCT TESTING

A. Prior to concealing, wrapping, or insulating grease ductwork, or placing grease duct in service, perform leakage test in accordance with ICC IMC, in presence of authority having jurisdiction.

B. Perform light test by pulling minimum 100 W light through duct and observing for light leaks at duct joints.

C. Test complete extent of duct installed, including joint at which duct connects to exhaust hood.

3.6 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Final cleaning.

B. Duct cleaning is required if test sections of metal duct system, chosen randomly by Owner, for cleanliness according to "Vacuum Test" in NADCA ACR, "Assessment, Cleaning and Restoration of HVAC Systems." do not meet the following criteria:
   1. Cleanliness Level: Net weight of debris collected on the filter media shall not exceed 0.75 mg/100 sq. cm.

C. Clean duct system and force air at high velocity through duct to remove accumulated dust. To obtain sufficient air flow, clean one half of system completely before proceeding to other half. Protect equipment with potential to be harmed by excessive dirt with temporary filters, or bypass during cleaning.

D. Clean duct systems with high power vacuum machines. Protect equipment with potential to be harmed by excessive dirt with filters, or bypass during cleaning. Install access openings into ductwork for cleaning purposes.

3.7 DUCTWORK LEAKAGE TESTING

A. The following ductwork systems shall be pressure/leakage tested:
   1. All ductwork to be concealed in a sheetrock, concrete block or other permanent chase shall be pressure tested before ductwork is concealed.

2. 2012 IECC REQUIREMENTS
   a. All ductwork systems listed below that are constructed and installed for 3" w.c. or more (positive or negative).
3. For ductwork leakage testing: "Ductwork main" shall be defined as all ductwork serving more than one grille or diffuser.
4. All ductwork outside of the building insulation envelope shall be pressure tested.

B. Testing shall conform to the following:
1. Test static pressure must be the lower of 125% of the external static pressure of the air moving equipment or the construction static pressure class of the ductwork.
2. Test in accordance with SMACNA HVAC Air Duct Leakage Test Manual. Maximum Allowable Leakage shall be in accordance with Duct Pressure Class rating listed below and Leakage Class listed here-in.
3. For Ductwork Pressure Class 3" w.c: Leakage Class shall be 8.
4. For Ductwork Pressure Class 2" w.c or less: Leakage Class shall be 16.
5. Testing shall occur after ductwork has been cleaned, but before duct insulation is applied or ductwork is concealed.

C. Duct Leakage Test Report shall include:
1. Date of test.
2. Name of company and person conducting the test.
3. Name of company and person witnessing the test.
4. Description of ductwork tested. Provide drawings to indicate section of ductwork being tested. Labeling on the drawings shall correspond to labeling in the report.
5. Surface area (square feet) of section of ductwork being tested.
6. Duct design operating pressure (inches w.c.)
7. P = Duct design test static pressure (inches w.c.)
8. Duct capacity, air flow
9. CL= Specified Leakage Class.
10. F = Leakage factor (CFM / 100 sf of duct area)
11. Maximum allowable leakage (CFM)
12. Test apparatus
    a. Blower
    b. Orifice tube size
    c. Orifice size
    d. Calibrated
13. Test orifice differential pressure (inches w.c.)

3.8 SCHEDULES

A. Ductwork Material Schedule:

AIR SYSTEM	MATERIAL
~~Supply (Heating Systems)~~ Supply and Return Ductwork associated with RTU's, DOAS, and FCU's	Galvanized Steel, Aluminum
~~Supply (System with Cooling Coils)~~ Outside Air and Exhaust Ductwork associated with DOAS	Galvanized Steel, Aluminum,
~~Buried Supply or Return~~	~~Pre-engineered HDPE system, Fiber Reinforced Plastic~~
~~Return and Relief~~ Supply and Return Ductwork associated with HRV-1 and FCU's in the Locker Room Area	~~Galvanized Steel,~~ Aluminum
General Exhaust	Galvanized Steel, Aluminum
Kitchen Hood Exhaust	~~Steel, Stainless Steel~~ Concealed Ductwork: Carbon Steel, Stainless Steel or Pre-fabricated Grease Duct System. Ductwork Exposed to View: Stainless Steel or Pre-fabricated Grease Duct System.
Dishwasher Exhaust	Stainless Steel~~, Aluminum~~
Fume Hood Exhaust	Stainless Steel
Outside Air Intake	Galvanized Steel
Combustion Air	Galvanized Steel
Emergency Generation Ventilation	Galvanized Steel
Dust Collector Exhaust (Interior)	Galvanized Steel (factory fabricated)
Dust Collector Exhaust (Exterior)	Stainless Steel

B. Ductwork Pressure Class Schedule:

AIR SYSTEM	PRESSURE CLASS
Supply Ductwork (upstream of VAV boxes terminal units and/or final balancing damper)	3 inch wg regardless of velocity.
Supply Ductwork (downstream of VAV boxes and terminal units and/or final balancing damper)	1 inch wg regardless of velocity.
RTU and DOAS Return and Relief	~~2~~ 3-inch wg regardless of velocity.

Return associated with terminal units (VAV's, FCU's, etc.)	1-inch wg regardless of velocity.
Outside Air Intake Ductwork	2-inch wg regardless of velocity.
General Exhaust	1 inch wg regardless of velocity.
Dishwasher Exhaust	2 inch wg
Fume Hood Exhaust	Negative 2 inch wg
Dust Collector Exhaust	Negative 10 inch wg
All Others Not Identified	1.5x maximum anticipated system pressure

C. Ductwork Liner Schedule:

AIR SYSTEM	THICKNESS
10 ft downstream of VAV box	1 inch
10 ft upstream / downstream of fan coil unit	1 inch
First 10 ft of supply and return/ exhaust from ~~AHU~~ RTU/ERV/DOAS	1 inch
Transfer air ducts	1 inch
All supply and return ductwork associated with RTU-2 serving the Auditorium.	1 inch

END OF SECTION

SECTION 23 6411 - PACKAGED WATER CHILLERS – SCROLL

PART 1 GENERAL

1.1 SUMMARY

A. Section includes chiller package, charge of refrigerant and oil, controls and control connections, chilled water connections, condenser water connections, refrigerant connections, auxiliary water connections, starters.

B. Related Sections:
1. Division 03.
2. Section 23 04 00 – General Conditions for Mechanical Trades
3. Section 23 05 48 - Vibration and Seismic Controls for HVAC Piping and Equipment: Product requirements for vibration isolators for placement by this section.
4. Section 23 09 00 - Sequence of Operations for HVAC Controls: Sequences of operation for chillers specified in this section.
5. Section 23 21 13 - Hydronic Piping: Product requirements for chilled water and condenser water piping for placement by this section.
6. Section 23 21 14 - Hydronic Specialties: Product requirements for piping specialties for placement by this section.
7. Division 26

1.2 REFERENCES

A. Air-Conditioning and Refrigeration Institute:
1. ARI 550/590 - Water Chilling Packages Using the Vapor Compression Cycle.

B. American Society of Heating, Refrigerating and Air-Conditioning Engineers:
1. ASHRAE 90.1 - Energy Standard for Buildings Except Low-Rise Residential Buildings.

C. American Society of Mechanical Engineers:
1. ASME Section VIII - Boiler and Pressure Vessel Code - Pressure Vessels.

D. National Electrical Manufacturers Association:
1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

1.3 DEFINITIONS

A. Coefficient of Performance (COP) - cooling: The ratio of the rate of heat removal to the rate of energy input, in consistent units, for a complete refrigerating system or some specific portion of that system under designated operating conditions.

B. Integrated Part-Load Value (IPLV): A single-number figure of merit based on part-load EER, COP, or kW/ton expressing part-load efficiency for air-conditioning and heat pump

equipment on the basis of weighted operation at various load capacities for the equipment.

1.4 SUBMITTALS

A. Section 01 - Submittal Procedures.

B. Shop Drawings: Indicate components, assembly, dimensions, weights and loads, required clearances, and location and size of field connections. Indicate valves, strainers, and thermostatic valves required for complete system.

C. Product Data: Submit rated capacities, weights, specialties and accessories, electrical requirements, wiring diagrams, and control diagrams.

D. Manufacturer's Installation Instructions: Submit assembly, support details, connection requirements, and include startup instructions.

E. Manufacturer's Certificate: Certify products meet or exceed specified requirements including those furnished but not produced by manufacturer.

F. Manufacturer’s Field Reports: Submit start-up report for each unit. Indicate results of leak test and refrigerant pressure test.

1.5 CLOSEOUT SUBMITTALS

A. Section 01 - Closeout procedures.

B. Operation and Maintenance Data: Submit start-up instructions, maintenance data, parts lists, controls, and accessories. Include trouble-shooting guide.

1.6 QUALITY ASSURANCE

A. Conform to ARI 550/590 code for testing and rating of screw water chillers.

B. Performance Ratings: Coefficient of Performance (COP) and Integrated Part-Load Value (IPLV) not less than prescribed by ASHRAE 90.1.

C. Perform Work in accordance with State of Connecticut standard.

D. Maintain two copies of each document on site.

1.7 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience and with service facilities within 100 miles of Project.

B. Installer: Company specializing in performing Work of this section with minimum three years documented experience approved by manufacturer.

1.8 PRE-INSTALLATION MEETINGS

A. Section 01 – Project Management.

B. Convene minimum one week prior to commencing work of this section.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Section 01 - Product Requirements.

B. Accept chillers on site in factory packaging. Inspect for damage.

C. Protect indoor chillers from weather by storing under roof.

1.10 WARRANTY

A. Section 01- Closeout Procedures.

B. Furnish five year manufacturer warranty to for compressors, all other pieces and parts shall be warranted by manufacturer for 18 months including but not limited to evaporator, condenser, complete assembly including materials and labor.

1.11 MAINTENANCE SERVICE

A. Section 01- Closeout Procedures.

B. Furnish service and maintenance of chiller for 18 months from Date of Substantial Completion.

C. Examine unit components monthly. Clean, adjust, and lubricate equipment.

D. Include systematic examination, adjustment, and lubrication of unit, and controls checkout and adjustments. Repair or replace parts in accordance with manufacturer's operating and maintenance data. Use parts produced by manufacturer of original equipment.

E. Perform work without removing units from service during building normal occupied hours.

F. Provide emergency call back service at all hours for this maintenance period.

G. Maintain locally, near Place of the Work, adequate stock of parts for replacement or emergency purposes. Have personnel available to ensure fulfillment of this maintenance service, without unreasonable loss of time.

H. Perform maintenance work using competent and qualified personnel under supervision and in direct employ of manufacturer or original installer.

I. Do not assign or transfer maintenance service to agent or subcontractor without prior written consent of Owner.

1.12 MAINTENANCE MATERIALS

A. Section 01- Closeout Procedures.

B. Furnish two containers of lubricating oil.

PART 2 PRODUCTS

2.1 PACKAGED WATER CHILLERS

A. Manufacturers:
1. Trane
2. Daikin Applied
3. Carrier
4. York
5. Quantech

B. Product Description: Factory assembled, single-piece chassis, air-cooled liquid chiller. Contained within the package shall be all factory wiring, piping, controls, and refrigerant charge (R513A).

C. High efficiency/performance: This provides oversized heat exchangers for two purposes: It allows the unit to be more energy efficient, and the unit will have enhanced operation in high ambient conditions.

D. Factory Functional Test: The chiller shall be pressure tested, evacuated and fully charged with refrigerant and oil. In addition, a factory functional test shall be conducted to verify correct operation by cycling condenser fans and compressors and confirming operation of temperature and pressure sensors.

2.2 COMPRESSORS

A. Screw Compressors
1. Provide compressor with automatic capacity reduction equipment consisting of capacity control via variable speed drive and slide valve. Compressor must start unloaded for soft start on motors.

2.3 EVAPORATOR

A. The evaporator shall be designed, tested, and stamped in accordance with ASME code for a refrigerant side working pressure of 200 psig. Waterside working pressure shall be 150 psig.

B. Insulate the evaporator and water boxes with a minimum of 0.75 inch (K=0.28) UV rated insulation. If the insulation is field installed, the additional money to cover material and installation costs in the field should be included in the bid.

~~C. Evaporator heaters shall be factory installed and shall protect unit down to -20F (-29C). Contractor shall wire separate power to energize heat tape and protect cooler while chiller is disconnected from the main power.~~

D. Provide shell and tube type evaporator, seamless or welded steel construction with cast iron or fabricated steel heads, seamless internally and externally finned copper tubes, roller expanded into tube sheets.

E. Provide ability to remove evaporator tubes from either end of the heat exchanger.

F. Provide water drain connection, vent and fittings for factory installed leaving water temperature control and low temperature cutout sensors.

G. Water connections shall be grooved pipe. Evaporator shall have only one entering and one leaving connection. If manufacturer provides 2 separate evaporators, contractor shall provide manifold and pressure gauges to ensure equal flow is provided to each evaporator.

H. Proof of flow shall be provided by the equipment manufacturer, mechanically installed and electrically wired, at the factory of origin.

2.4 CONDENSER COILS, FANS AND MOTORS

A. Fans shall be dynamically balanced and direct driven.

B. All condenser fans shall have integrated drives to provide variable speed for optimized efficiency.

C. Chiller shall be able to start and operate in ambient conditions down to 14ºF and up to 115ºF.

D. Construct condenser coils of microchannel all aluminum brazed fin construction. The condenser coils shall have an integral sub-cooling circuit and shall be designed for at least 350 psig working pressure. Leak tested at 1.5 times working pressure. Coils can be cleaned with high pressure water.

2.5 ENCLOSURES/STARTER

A. House components in a galvanized steel frame and mounted on a formed steel base. Hot-dip galvanized steel frame coating shall be Underwriters Laboratories Inc. (UL) recognized as G90-U, UL guide number DTHW2.

B. Unit panels, base rails and control panels shall be finished with a baked on powder paint. Control panel doors shall have door stays. Paint system shall meet the requirements for outdoor equipment of Federal Government Agencies.

C. Mount starters and Terminal Blocks in a UL 2014 rated weatherproof panel provided with full opening access doors. If a circuit breaker is chosen, it should be a lockable,

through-the-door type with an operating handle and clearly visible from outside of unit indicating if power is on or off.

D. Casings fabricated from steel that do not have a Zinc coating conforming to ASTM A 123 or ASTM A525 shall be treated for the prevention of corrosion with a factory coating or paint system. The coating or paint system shall withstand 1000 hours in a salt-spray fog test in accordance with ASTM B 117. Each specimen shall have a standard scribe mark as defined in ASTM D 1654. Upon completion of exposure, the coating or paint system shall be evaluated and rated in accordance with procedures A and B of ASTM D 1654. The rating of failure at the scribe mark shall be not less than six (average creepage not greater than 1/8 inch). The rating of the unscribed area shall not be less than ten (no failure). Thickness of coating or paint system on the actual equipment shall be identical to that on the test specimens with respect to materials, conditions of application, and dry-film thickness.

E. A control power transformer shall be factory-installed and factory-wired to provide unit control power.

2.6 LOW VOLTAGE VARIABLE SPEED DRIVE (VSD), UNIT MOUNTED

A. The water chiller shall be furnished with an air cooled variable speed drive (VSD) as shown on the drawings.

B. The VSD will be specifically designed to interface with the water chiller controls and allow for the operating ranges and specific characteristics of the chiller.

C. The VSD efficiency shall be 97% or better at full speed and full load. Fundamental displacement power factor shall be a minimum of 0.96 at all loads.

D. The VSD shall be solid state, microprocessor based pulse-width modulated (PWM) design. The VSD shall be voltage and current regulated. Output power devices shall be IGBTs.

E. Power semi-conductor and capacitor cooling shall be from a liquid or air cooled heatsink.

F. Warranties
1. The variable speed drive shall be warranted by the manufacturer for a period of twelve months from the date of installation. The warranty shall include parts, labor, travel costs, and living expenses incurred by the manufacturer to provide factory-authorized on-site service.

2.7 REFRIGERANT CIRCUIT

A. All units shall have 2 refrigeration circuits to provide redundancy, each with one or two (manifolded) compressor(s) on each circuit.

B. Provide for refrigerant circuit:
1. Liquid line shutoff valve.
2. Suction service valve

3. Discharge service valve
4. Filter (replaceable core type).
5. Liquid line sight glass.
6. Electronic expansion valve sized for maximum operating pressure.
7. Charging valve.
8. Discharge and oil line check valves.
9. High side pressure relief valve.
10. Full operating charge of R134a and oil.

C. Capacity Modulation: Provide capacity modulation by a variable speed drive. Unit shall be capable of operation down to 15%.

2.8 CONTROLS

A. On chiller, mount weatherproof control panel, containing starters, power and control wiring, factory wired with terminal block power connection. Provide primary and secondary fused control power transformer and a single 115 volt 60 Hz single phase connection for evaporator freeze protection heaters.

B. The unit controller shall utilize the following components to automatically take action to prevent unit shutdown due to abnormal operating conditions which will perform as follows:
1. High pressure switch that is set 20 PSIG lower that factory pressure switch that will automatically unload the compressor to help prevent a high pressure condenser control trip. One switch is required for each compressor and indicating light shall also be provided.
2. Motor surge protector that is set at 95% of compressor RLA that will automatically unload the compressor to help prevent an over current trip. One protector is required for each compressor and indicating light shall also be provided.
3. Low pressure switch that is set at 5 PSIG above the factory low pressure switch that will automatically unload the compressor to help prevent a low evaporator temperature trip. One switch is required for each compressor and indicating light shall also be provided.

C. In the above case, the chiller will continue to run in an unloaded state, and will continue to produce some chilled water in an attempt to meet the cooling load. However, if the chiller reaches the trip-out limits, the chiller controls will take the chiller off line for protection, and a manual reset will be required. Once the "near-trip" condition is corrected, the chiller will return to normal operation and can then produce full load cooling.

D. Provide the following safety controls with indicating lights or diagnostic readouts.
1. Low chilled water temperature protection.
2. High refrigerant pressure.
3. Low oil flow protection.
4. Loss of chilled water flow.
5. Contact for remote emergency shutdown.
6. Motor current overload.

7. Phase reversal/unbalance/single phasing.
8. Over/under voltage.
9. Failure of water temperature sensor used by controller.
10. Compressor status (on or off).

E. Provide the following operating controls:
1. A variable method to control capacity in order to maintain leaving chilled water temperature based on PI algorithms. Five minute solid state anti-recycle timer to prevent compressor from short cycling. Compressor minimum stop-to-start time limit shall be 2 minutes. If a greater than 5 minute start-to-start, or greater than 2 minute stop-to-start timer is included, hot gas bypass shall be provided to insure accurate chilled water temperature control in light load applications.
2. Chilled water pump output relay that closes when the chiller is given a signal to start.
3. Load limit thermostat to limit compressor loading on high return water temperature to prevent nuisance trip outs.
4. High ambient unloader pressure controller that unloads compressors to keep head pressure under control and help prevent high pressure nuisance trip outs on days when outside ambient is above design.
5. Compressor current sensing unloader unit that unloads compressors to help prevent current overload nuisance trip outs.
6. Auto lead-lag functions that constantly even out run hours and compressor starts automatically. If contractor cannot provide this function then cycle counter and hour meter shall be provided for each compressor so owner can be instructed by the contractor on how to manually change lead-lag on compressors and even out compressor starts and running hours.
7. Low ambient lockout control with adjustable setpoint.
8. Condenser fan sequencing which adjusts the speed of all fans automatically in response to ambient, condensing pressure and expansion valve pressure differential thereby optimizing unit efficiency.

F. Provide user interface on the front of the panel. If display is on the inside of the panel, then a control display access door shall be provided to allow access to the display without removal of panels. Provide user interface with a minimum of the following features:
1. Leaving chilled water setpoint adjustment from LCD input
2. Entering and leaving chilled water temperature output
3. Percent RLA output for each compressor
4. Pressure output of condenser
5. Pressure output of evaporator
6. Ambient temperature output
7. Voltage output
8. Current limit setpoint adjustment from LCD input.

G. Digital Communications to BAS system shall consist of a BACnet MS/TP interface via a single twisted pair wiring.

H. The chiller control panel shall provide leaving chilled water temperature reset based upon return water temperature.

2.9 CHILLER PERFORMANCE

A. Air Cooled Water Chillers
   1. See Schedules

2.10 ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. Electrical Characteristics: In accordance with Section 26.

B. Disconnect Switch: Factory mount in control panel.

2.11 SOURCE QUALITY CONTROL (AND TESTS)

A. Section 01 - Quality Requirements: Testing, inspection and analysis requirements.

B. Furnish testing and analysis of package chillers.

C. Furnish shop inspection and testing for package chillers.

D. Make completed chillers available for inspection at manufacturer's factory prior to packaging for shipment. Furnish at least seven days notice before packaging is scheduled.

E. Allow witnessing of factory inspections and tests at manufacturers test facility. Furnish at least seven days notice before inspections and tests are scheduled.

2.12 SOUND

A. At full load chiller sound power shall not exceed 97 (dBA) A-weighted. Submitted sound data shall be in accordance with AHRI 370.
   1. If manufacturer cannot meet this sound specification then sound attenuation devices and/or barrier walls must be field installed at the contractor expense to meet the specified level.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install packaged outdoor chiller on concrete foundation minimum 6 inches thick and 6 inches wider than equipment base on each side. Refer to Section 03.

B. Install units on vibration isolation. Refer to Section 23 05 48.

C. Install the following piping accessories on evaporator chilled water piping connections. Refer to Section 23 21 16 and Section 23 21 13.
   1. On inlet:
      a. Thermometer well for temperature controller.
      b. Thermometer.
      c. Strainer.
      d. Flow switch.

e. Flexible pipe connection.
f. Pressure gage.
g. Shut-off valve.

2. On outlet:
a. Thermometer.
b. Flexible pipe connection.
c. Pressure gage.
d. Shut-off valve.

D. Install auxiliary water piping for oil cooling units and purge condensers.

E. Install the following piping accessories on condenser water piping connections. Refer to Section 23 21 16 and Section 23 21 13.

1. On inlet:
a. Thermometer well for temperature limit controller.
b. Thermometer well and thermometer.
c. Strainer.
d. Flow switch.
e. Flexible pipe connection.
f. Pressure gage.
g. Shut-off valve.

2. On outlet:
a. Thermometer well and thermometer.
b. Flexible pipe connection.
c. Pressure gage.
d. Shut-off valve.

F. Arrange piping for easy dismantling to permit tube cleaning.

G. Install refrigerant piping connections to air-cooled condensing units. Refer to Section 23 23 00.

H. Install piping from chiller safety relief valve to outdoors. Size as recommended by manufacturer.

I. Install chiller accessories furnished loose for field mounting.

J. Install electrical devices furnished loose for field mounting.

K. Install control wiring between chiller control panel and field mounted control devices.

L. Provide connection to electrical service. Refer to Section 26.

3.2 FIELD QUALITY CONTROL

A. Section 01 - Quality Requirements, 01 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.

B. Furnish cooling season start-up, winter season shutdown service, for first year of operation. When initial start-up and testing takes place in winter and machines are to remain inoperative, repeat start-up and testing operation at beginning of first cooling season.

3.3 MANUFACTURER'S FIELD SERVICES

A. Section 01 - Quality Requirements: Manufacturers' field services.

B. Furnish services of factory trained representative for minimum of two days to leak test, refrigerant pressure test, evacuate, dehydrate, charge, start-up, calibrate controls, and instruct Owner on operation and maintenance.

C. Furnish initial charge of refrigerant and oil.

3.4 ADJUSTING

A. Section 01- Closeout Procedures.

B. Provide cooling season start-up, winter season shutdown service, for first year of operation.

3.5 DEMONSTRATION AND TRAINING

A. Section 01- Closeout Procedures.

B. Demonstrate system operations and verify specified performance..

C. Furnish services of manufacturer's technical representative for one 8 hour day to instruct Owner's personnel in operation and maintenance of unit. Schedule training with Owner, provide at least 7 days notice to Architect/Engineer of training date.

3.6 COMMISSIONING

A. Engage a factory-authorized service representative, to perform startup service as per functional test sheets and requirements of Section 23 Commissioning Requirements.

B. Verify that equipment is installed and commissioned as per requirements of Section 23 Commissioning Requirements and manufacturer's written instructions.

C. Complete installation and startup checks and functional tests according to Section 23 Commissioning Requirements and manufacturer's written instructions.

D. Operational Test: After electrical and control systems have been energized, start units to confirm proper unit operation. Rectify malfunctions, replace defective parts with new one and repeat the start up procedure.

E. Test and adjust controls and safety devices. Replace damaged and malfunctioning controls and equipment.

F. Verify that equipment is installed and commissioned as per requirements of Section 01 19 13 and manufacturer's written instructions.

G. Complete installation and startup checks and functional tests according to Section 01 91 13 and manufacturer's written instructions.

END OF SECTION

FOR REFERNCE: THIS SECTION WAS ISSUED FOR PHASE 1 AND PHASE 2

SECTION 23 8126 - SPLIT-SYSTEM AIR-CONDITIONERS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Air handling unit.
2. Condensing unit.
3. Refrigerant Piping

B. Related Sections:
1. Section 03 30 00 - Cast-In-Place Concrete: Execution requirements for concrete foundations specified by this section.
2. Section 23 05 48 - Vibration and Seismic Controls for HVAC Piping and Equipment: Vibration isolators.
3. Section 23 09 93 - Sequence of Operations for HVAC Controls: Sequences of operation applying to units in this section.
4. Section 23 21 13 - Hydronic Piping: Execution requirements for connection to hot water and drain piping specified by this section.
5. Section 23 23 00 - Refrigerant Piping: Execution requirements for connection to refrigerant piping specified by this section.
6. Section 23 33 00 - Air Duct Accessories: Flexible connections.
7. Section 25 50 00 - Integrated Automation Facility Controls: Control systems remote from unit.
8. Section 26 05 03 - Equipment Wiring Connections: Electrical connection to units.

1.2 REFERENCES

A. Air-Conditioning and Refrigeration Institute:
1. ARI 210/240 - Unitary Air-Conditioning and Air-Source Heat Pump Equipment.
2. ARI 270 - Sound Rating of Outdoor Unitary Equipment.
3. ARI 340/360 - Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment.
4. ARI 365 - Commercial and Industrial Unitary Air-Conditioning Condensing Units.

B. American Society of Heating, Refrigerating and Air-Conditioning Engineers:
1. ASHRAE 52.1 - Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter.
2. ASHRAE 90.1 - Energy Standard for Buildings Except Low-Rise Residential Buildings.

C. ASTM International:
1. ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus.

D. National Electrical Manufacturers Association:

1. NEMA MG 1 - Motors and Generators.

E. National Fire Protection Association:
1. NFPA 90A - Standard for the Installation of Air Conditioning and Ventilating Systems.

F. ASHRAE Standard 15
1. ASHRAE Std 15 - Safety Standard for Refrigeration Systems

G. ASHRAE Standard 34
1. ASHRAE Std 34 - Designation and Safety Classification of Refrigerants

H. ASME BPVC-VIII-1 - Boiler and Pressure Vessel Code, Section VIII, Division 1 - Rules for Construction of Pressure Vessels

I. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Welding, Brazing, and Fusing Qualifications

J. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings

K. ASME B16.26 - Cast Copper Alloy Fittings for Flared Copper Tubes

L. ASME B31.5 - Refrigeration Piping and Heat Transfer Components

M. ASME B31.9 - Building Services Piping

N. ASTM A53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

O. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

P. ASTM F708 - Standard Practice for Design and Installation of Rigid Pipe Hangers

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Product Data: Submit data indicating:
1. Cooling and heating capacities.
2. Dimensions.
3. Weights.
4. Rough-in connections and connection requirements.
5. Duct connections.
6. Electrical requirements with electrical characteristics and connection requirements.
7. Controls.
8. Accessories.

C. Manufacturer's Installation Instructions: Submit assembly, support details, connection requirements, and include start-up instructions.

D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

E. Manufacturer's Field Reports: Submit start-up report for each unit.

F. Sustainable Design Documentation: Submit manufacturer's product data on refrigerant used, showing compliance with specified requirements.

G. Shop Drawings: Indicate schematic layout of system, including equipment, critical dimensions, equivalent piping lengths and sizes.

H. Design Data: Submit design data indicating pipe sizing. Indicate load carrying capacity of trapeze, multiple pipe, and riser support hangers.

I. Project Record Documents: Record exact locations of equipment and refrigeration accessories on record drawings.

1.4 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Closeout procedures.

B. Project Record Documents: Record actual locations of controls installed remotely from units.

C. Operation and Maintenance Data: Submit manufacturer's descriptive literature, operating instructions, installation instructions, and maintenance and repair data.

1.5 QUALITY ASSURANCE

A. Performance Requirements: Energy Efficiency Rating (EER) not less than prescribed by ASHRAE 90.1 when used in combination with compressors and evaporator coils when tested in accordance with ARI 210/240.

B. Cooling Capacity: Rate in accordance with ARI 210/240.

C. Sound Rating: Measure in accordance with ARI 270.

D. Insulation and adhesives: Meet requirements of NFPA 90A.

E. Maintain one copy of each document on site.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing Work of this section with minimum three years documented experience approved by manufacturer.

1.7 PRE-INSTALLATION MEETINGS

A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.

B. Convene minimum one week prior to commencing work of this section.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Accept units and components on site in factory protective containers, with factory shipping skids and lifting lugs. Inspect for damage.

C. Comply with manufacturer's installation instruction for rigging, unloading and transporting units.

D. Protect units from weather and construction traffic by storing in dry, roofed location.

E. Deliver and store piping and specialties in shipping containers with labeling in place.

F. Protect piping and specialties from entry of contaminating material by leaving end caps and plugs in place until installation.

G. Dehydrate and charge components such as piping and receivers, seal prior to shipment, until connected into system.

1.9 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Requirements for coordination.

B. Coordinate installation of condensing units with roof structure.

C. Coordinate installation of air handling units with building structure.

1.10 WARRANTY

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for warranties.

B. Furnish one year manufacturers warranty for compressors.

1.11 MAINTENANCE SERVICE

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for maintenance service.

B. Furnish service and maintenance of equipment for one year from Date of Substantial Completion. Include maintenance items as shown in manufacturer's operating and maintenance data, including filter replacements, fan belt replacement, and controls checkout and adjustments.

C. Furnish 24-hour emergency service on breakdowns and malfunctions for this maintenance period. Furnish capability of response time within 24 hours.

1.12 MAINTENANCE MATERIALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for maintenance materials.

B. Furnish one set for each unit.

PART 2 PRODUCTS

2.1 SPLIT SYSTEM AIR CONDITIONING UNITS

A. Manufacturers:
1. Daikin
2. The Trane Company
3. Mitsubishi Enviromaster
4. Substitutions: Not Permitted.

B. Product Description: Split system consisting of air handling unit and condensing unit including cabinet, evaporator fan, refrigerant cooling coil, compressor, refrigeration circuit, condenser, air filters, controls, air handling unit accessories, condensing unit accessories, and refrigeration specialties.

2.2 AIR HANDLING UNIT

A. Configuration: As indicated on Drawings.

B. Cabinet:
1. Panels: Constructed of galvanized steel with baked enamel finish. Access Panels: Located on both sides of unit. Furnish with duct collars on inlets and outlets.
2. Insulation: Factory applied to each surface to insulate entire cabinet. one inch thick aluminum foil faced glass fiber with edges protected from erosion.

C. Evaporator Fan: Forward curved centrifugal type, resiliently mounted with adjustable belt drive and high efficiency motor complying with NEMA MG1, Type 1. Motor permanently lubricated with built-in thermal overload protection.

D. Evaporator Coil: Constructed of copper tubes expanded onto aluminum fins. Factory leak tested under water. Removable, PVC construction, double-sloped drain pan with piping connections on both sides.

E. Refrigeration System: Single refrigeration circuits controlled by factory installed thermal expansion valve.

F. Air Filters: 25 to 30 percent efficiency based on ASHRAE 52.1.

G. Air Handling Unit Accessories:
1. Discharge Plenum: with construction and finish matching unit casing. Integral grille of aluminum construction and adjustable louvers.
2. Return Air Grille: mounted in return air opening of aluminum construction and fixed louvers.
3. Mounting Subbase with construction and finish matching unit casing.
4. Vibration Isolators: As specified in Section 23 05 48.

2.3 CONDENSING UNIT

A. General: Factory assembled and tested air cooled condensing units, consisting of casing, compressors, condensers, coils, condenser fans and motors, and unit controls.

B. Unit Casings: Exposed casing surfaces constructed of galvanized steel with manufacturer's standard baked enamel finish. Designed for outdoor installation and complete with weather protection for components and controls, and complete with removable panels for required access to compressors, controls, condenser fans, motors, and drives.

C. Compressor: Single refrigeration circuit with rotary or hermetic reciprocating type compressors, resiliently mounted, with positive lubrication, and internal motor overload protection.

D. Condenser Coil: Constructed of copper tubing mechanically bonded to aluminum fins, factory leak and pressure tested.

E. Controls: Furnish operating and safety controls including high and low pressure cutouts. Control transformer. Furnish magnetic contactors for compressor and condenser fan motors.

F. Condenser Fans and Drives: Direct drive propeller fans statically and dynamically balanced. Wired to operate with compressor. Permanently lubricated ball bearing type motors with built-in thermal overload protection. Furnish high efficiency fan motors.

G. Condensing Unit Accessories: Furnish the following accessories:
1. Controls to provide low ambient cooling to -20 degrees F.
2. Time delay relay.
3. Anti-short cycle timer.
4. Disconnect switch.
5. Vibration isolators.
6. Hot gas bypass kit.
7. Coil with corrosion resistant coating capable of withstanding salt spray test of 1000 hours in accordance with ASTM B117.
8. Condenser Coil Guard: Condenser fan openings furnished with PVC coated steel wire safety guards.
9. Suction and discharge pressure gauges.

H. Refrigeration specialties: Furnish the following for each circuit:
1. Charge of compressor oil.

2. Holding charge of refrigerant.
3. Replaceable core type filter drier.
4. Liquid line sight glass and moisture indicator.
5. Shut-off valves on suction and liquid piping.
6. Liquid line solenoid valve.
7. Charging valve.
8. Oil level sight glass.
9. Crankcase heater.
10. Hot gas muffler.
11. Pressure relief device.

I. Refrigerant: Furnish charge of refrigerant.

2.4 CONTROLS

A. Furnish interface to Building Automation and Control System.

2.5 ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. Electrical Characteristics: Refer to mechanical schedules

B. Disconnect Switch: Factory mounted, non-fused type, interlocked with access door, accessible from outside unit, with power lockout capability.

2.6 REFRIGERANT PIPING

A. Piping
1. Copper Tube: ASTM B280, Type ACR hard drawn or annealed.
   a. Fittings: ASME B16.22 wrought copper.
   b. Joints: Braze, AWS A5.8 BCuP silver/phosphorus/copper alloy with melting range 1190 to 1480 degrees F.

B. Valves
1. Service Valves:
   a. Forged brass body with copper stubs, brass caps, removable valve core, integral ball check valve, flared or solder ends, for maximum pressure of 500 psi.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify concrete pad for condensing unit is ready for unit installation.

3.2 INSTALLATION - AIR HANDLING UNIT

A. Install air handling units on vibration isolators. Refer to Section 23 05 48.

B. Install floor mounted units on concrete housekeeping pads at least 3-1/2 inches high and 6 inches wider than unit. Refer to Section 03 30 00.

C. Install condensate piping with trap and route from drain pan to condensate drainage system.

D. Install components furnished loose for field mounting.

E. Install connection to electrical power wiring in accordance with Section.

3.3 INSTALLATION - CONDENSING UNIT

A. Install condensing units on vibration isolators.

B. Install refrigerant piping from unit to condensing unit. Install refrigerant specialties furnished with unit.

C. Evacuate refrigerant piping and install initial charge of refrigerant.

D. Install electrical devices furnished loose for field mounting.

E. Install control wiring between air handling unit, condensing unit, and field installed accessories.

F. Install connection to electrical power wiring in accordance with Section 26 05 03.

3.4 INSTALLATION – REFRIGERANT PIPING

A. Install refrigeration specialties in accordance with manufacturer's instructions.

B. Route piping in orderly manner, with piping parallel to building structure, and maintain gradient.

C. Install piping to conserve building space and avoid interference with use of space.

D. Group piping whenever practical at common elevations and locations.

E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

F. Arrange piping to return oil to compressor. Provide traps and loops in piping, and provide double risers as required.

G. Provide clearance for installation of insulation and access to valves and fittings.

H. Flood piping system with nitrogen when brazing.

I. Where pipe support members are welded to structural building frame, brush clean, and apply one coat of zinc rich primer to welding.

J. Insulate piping and equipment; refer to Section 23 0700.

K. Follow ASHRAE Std 15 procedures for charging and purging of systems and for disposal of refrigerant.

3.5 MANUFACTURER'S FIELD SERVICES

A. Section 01 40 00 - Quality Requirements: Requirements for manufacturer's field services.

B. Furnish initial start-up and shutdown during first year of operation, including routine servicing and checkout.

C. Test refrigeration system in accordance with ASME B31.5.

D. Pressure test system with dry nitrogen to maximum allowable working pressure. Pressure shall hold for a minimum of 24 hours with no leakage allowed.

3.6 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for cleaning.

B. Install temporary filters during construction period. Replace with permanent filters at Substantial Completion.

3.7 DEMONSTRATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for demonstration and training.

B. Demonstrate air handling unit operation and maintenance.

C. Demonstrate starting, maintenance, and operation of condensing unit including low ambient temperature operation.

D. Furnish services of manufacturer's technical representative for 8 hour day to instruct Owner's personnel in operation and maintenance of units. Schedule training with Owner, provide at least 7 days notice to Architect/Engineer of training date.

3.8 PROTECTION OF FINISHED WORK

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.

B. Do not operate air handling units until ductwork is clean, filters are in place, bearings lubricated, and fan has been test run under observation.

END OF SECTION

SECTION 26 05 48

VIBRATION AND SEISMIC CONTROLS FOR ELECTRICAL

PART 1 GENERAL

1.1 SECTIONS INCLUDES

A. Seismic restraints for electrical systems.

B. Certification of seismic restraint designs and installation supervision.

C. Certification of seismic attachment of housekeeping pads.

1.2 RELATED REQUIREMENTS

A. Division 03 - Cast-In-Place Concrete.

B. Section 26 04 00 – General Conditions for Electrical Trades.

C. Section 26 05 29 – Hangers and Supports for Electrical Systems.

D. Section 26 05 33 – Raceway and Boxes for Electrical Systems.

E. Section 26 05 36 – Cable Trays for Electrical Systems.

F. Section 26 22 00 – Low-Voltage Transformers.

G. Section 26 24 13 – Switchboards.

H. Section 26 24 16 – Panelboards.

I. Section 26 28 19 – Enclosed Switches.

J. Section 26 28 26 – Enclosed Transfer Switches.

K. Section 26 32 13 – Engine Generators.

1.3 SUBMITTALS

A. Division 01 - Submittal Procedures: Submittal procedures.

B. Shop Drawings:
   A. Submit fabrication details for equipment bases including dimensions, structural member sizes and support point locations.
   B. Provide all details of suspension and support for ceiling suspended equipment.
   C. Where walls, floors, slabs or supplementary steel work are used for seismic restraint locations, details of acceptable attachment methods for raceways must be included and approved before the condition is accepted for installation.

Restraint manufacturers' submittals must include spacing, static loads and seismic loads at all attachment and support points.

D. Provide specific details of seismic restraints and anchors; include number, size and locations for each piece of equipment.

C. Product Data:
   A. Catalog cuts or data sheets on specific restraints detailing compliance with the specification.
   B. Detailed schedules of flexible and rigidly mounted equipment, showing seismic restraints by referencing numbered descriptive drawings.

D. Seismic Certification and Analysis:
   A. Seismic restraint calculations must be provided for all connections of equipment to the structure. Calculations must be stamped by a registered professional engineer with at least five years of seismic design experience, licensed in the state of the job location.
   B. All restraining devices shall have a preapproval number from California OSHPD or some other recognized government agency showing maximum restraint ratings. Preapprovals based on independent testing are preferred to preapprovals based on calculations. Where preapproved devices are not available, submittals based on independent testing are preferred. Calculations (including the combining of tensile and shear loadings) to support seismic restraint designs must be stamped by a registered professional engineer with at least five years of seismic design experience and licensed in the state of the job location. Testing and calculations must include both shear and tensile loads as well as one test or analysis at 45° to the weakest mode.
   C. Analysis must indicate calculated dead loads, static seismic loads and capacity of materials utilized for connections to equipment and structure. Analysis must detail anchoring methods, bolt diameter, embedment and/or welded length.

E. Manufacturer's Responsibilities:
   A. Provide installation instructions, drawings and field inspections to ensure proper installation and performance.
   B. Provide written certification that isolators meet or exceed specified requirements.

1.4 CLOSEOUT SUBMITTALS

A. Division 01 - Execution and Closeout Requirements: Closeout procedures.

B. Project Record Documents: Record actual locations of seismic restraints.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing Work of this section with minimum three years documented experience.

C. Design application of seismic restraints under direct supervision of Professional Engineer experienced in design of this Work and licensed in the State where the Project is located.

1.6 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

PART 2 PRODUCTS

2.1 VIBRATION AND SEISMIC CONTROL FOR ELECTRICAL SYSTEMS

A. Provide a "Vibration isolation And Seismic Restraints For Electrical Systems Report" for vibration isolation analysis, seismic restraint, design plans/details and specifications report for all electrical systems to resist seismic forces as determined in accordance to State of CT Building Code for the "Seismic Hazard Exposure Group " and the "Seismic Performance Category " as identified in the architectural and structural contract documents for design classifications. Restraint systems are intended to be designed to withstand the stipulated seismic accelerations applied through the component's center of gravity. The Report shall include all necessary equipment information, including but not limited to, weights, dimensions, center of gravity, mounting locations, wall material, from the submittal approved manufacturers, the appropriate calculations and installation recommendations that are stamped and certified by a licensed Professional Engineer registered in the state where the project is constructed, and with the expertise of vibration and seismic restraints for electrical systems. (Note that vibration control manufacturers usually can assist in recommendations for such services above). This Report shall be submitted and reviewed prior to installation of equipment.

B. Seismic restraint for all electrical systems used on this project shall be provided, except where specifically allowed for exclusion in the Code.

C. Vibration Isolation and Seismic Restraint Devices

1. All vibration isolation and seismic restraint devices described in this section shall be the product of a single manufacturer. Mason Industries is the base manufacturer of these specifications; products of other manufacturers are acceptable provided their systems strictly comply with intent, structural design, performance and deflections of the Base Manufacturer. The devices shall be identified by the manufacturer to be suitable for the particular seismic application(s) and also be listed with California OSHPD to ensure product seismic capability.

2. The manufacturer of the seismic restraint devices shall certify that the devices are capable of accepting, without failure, the seismic forces. The manufacturer shall select the appropriate seismic restraint device type, quantities, locations, installation instructions, drawings and field supervision to insure proper installation and performance of systems.

3. Corrosion protection for outdoor application shall be as follows:

   a. Springs cadmium plated, zinc electroplated, or powder coat.
   b. Hardware cadmium plated.
   c. All other metal parts hot spray or hot dipped galvanized.

4. All seismic restraint devices:

   a. shall maintain the equipment in a captive position and not short circuit isolation devices during normal operating conditions.

b. shall have provisions for bolting and/or welding to the structure.

5. Welding of springs to isolator housing, base plates, etc., is strictly prohibited.

6. Provide restraint attachment plates cast into housekeeping pads, concrete inserts, double sided beam clamps, etc.

7. The same manufacturer shall provide vibration isolation devices for transformers suitable to maintain minimum deflection.

8. Under the transformer and similar electrical equipment with vibration, there should be a stack of two ¾-inch neoprene pads with a 10 ga. metal shim between the pads and on top of the pads. These pads should be similar to Mason Industries type Super W. The spacing of these pads should be based on achieving a static deflection of 0.20 inches. To achieve this deflection, detailed weight information about the transformer will need to be provided by the manufacturer, along with a detail of the bottom supports of the transformer. The isolation pad vendor will need to work with these details and the manufacturer to determine how many pads and how closely spaced they are to properly support the transformer. To restrain the transformer to the housekeeping pad, a resilient bolt connection, similar to the one attached to this document, should be implemented at each isolation pad.

9. The suspended conduits should be suspended from the slab using neoprene isolation hangers similar to Mason HD, sized to achieve at least 0.2 inches of deflection.

D. Seismic Restraint Types

1. TYPE I: Same as TYPE B. Cast or aluminum housing, (except ductile iron) are not acceptable.

   a. Mason Industries TYPE SLR
   b. Avnec
   c. Vibration Eliminator Company

2. TYPE II: Where required, each corner or side of equipment base shall incorporate a seismic restraint snubber having an all directional resilient pad limit stop. Restraints shall be fabricated of plate, structural members or square metal tubing. Angle bumpers are not acceptable.

   a. Mason Industries Type Z-1225 / Z-1011
   b. Avnec
   c. Vibration Eliminator Company

3. TYPE III: Restraints for suspended systems

   a. Vibration isolated systems shall be braced with multiple 7 x 19 strand galvanized cable rope.

1) Mason Industries Type SCB
2) Avnec
3) Vibration Eliminator Company

b. Non-isolated systems shall be braced with structural steel strut type with approved fastening devices to equipment and structure.
1) Mason Industries Type SSB
2) Avnec
3) Vibration Eliminator Company

c. Steel angles (by contractor) shall be provided to prevent rod bending of hung equipment where indicated by the Seismic Restraint vendor's submittals. Steel angles shall be attached to the rods with a minimum of three ductile iron clamps at each restraint location. Welding of support rods to angles is not acceptable. Rod clamp assemblies shall have Anchorage Pre-approval "R" number from California OSHPD.
1) Mason Ind. Model "SRC".
2) Avnec
3) Vibration Eliminator Company

d. Pipe clevis cross braces are required at all restraint locations. They shall be special purpose preformed channels deep enough to be held in place by bolts passing over the clevis cross bolt. Clevis cross braces shall have Anchorage Pre-approval "R" number from California OSHPD.
1) Mason Ind. Model "CCB".
2) Avnec
3) Vibration Eliminator Company

4. TYPE IV: Double deflection neoprene isolator encased in ductile iron or steel casing.

a. Mountings shall have Anchorage Pre-approval "R" number from California OSHPD, certifying the horizontal and vertical seismic load ratings.
1) Mason Industries Type RC or BR
2) Avnec
3) Vibration Eliminator Company

5. TYPE V: Rigid attachment to structure utilizing wedge type expansion anchors for bolting and steel plates, either cast-in or anchored with wedge type expansion bolts, for welding. Powder shots are not acceptable. Concrete anchor bolt spacing shall be in accordance with manufacturer's published standards.

E. Vibration Isolator Types

1. TYPE A: Spring Isolator - Free Standing

a. Spring shall have a minimum outer diameter to overall height ratio of 0.8 : 1 at rated deflection.
b. Reserve deflection (from published load ratings to solid height) of 50% of the rated deflection.
c. Ductile top cup with adjusting bolt tapped for equipment attachment locking cap screw.

d. Minimum 1/4" thick neoprene acoustical base pad or cup on underside, unless designated otherwise.
   1) Mason Industries Type SLF

2. TYPE B: Spring Isolator - Restrained

   a. Shall be the same as TYPE A with the following additional features.

      1) Integral restraining bolts with elastomeric cushions preventing metal-to-metal contact.
      2) Internal spring adjusting nut or bolt with leveling capability.
      3) Built-in all-directional limit stops with minimum 1/4" clearance under normal operation.
      4) Mountings shall have Anchorage Pre-approval “R” number from California OSHPD, certifying the horizontal and vertical seismic load ratings.
         a) Mason Industries Type SLR, SSLFH

3. TYPE D: Double deflection neoprene isolator encased in ductile iron or steel casing.

   a. Mountings shall have Anchorage Pre-approval “R” number from California OSHPD, certifying the horizontal and vertical seismic load ratings.
      1) Mason Industries Type RC or BR

4. TYPE E: Elastomer Hanger Isolator

   a. Molded neoprene element with an integral bushing to insulate lower support rod from the hanger box.
   b. Steel hanger box shall withstand three times the rated load without failure.
      1) Mason Industries Type HD

F. Submittal Requirements

1. Catalog cuts or data sheets on specific seismic restraint devices restraints to be utilized detailing compliance with the specification. Reference seismic restraint types per section of this specification. An itemized list of all isolated and non-isolated equipment. Detailed schedules showing seismic restraints proposed for each piece of equipment, referencing material and seismic calculation drawing numbers. Provide specific details of seismic restraints and anchors; include number, size and locations for each piece of equipment.

2. When walls and slabs are used as seismic restraint locations, details of acceptable methods must be included.

3. Coordinated drawings shall be marked-up with the specific locations and types of restraints shown for all electrical systems including but not limited to, conduit, cable tray. Rod bracing at various installation angles and assigned load at each restraint location shall be clearly delineated. Any and all tributary loads shall be considered for proper restraint sizing.

4. For ceiling suspended equipment provide minimum/maximum installation angle allowed for restraint system as well as braced and unbraced rod lengths at each allowable installation condition.

G. Related Work

1. The Electrical Subcontractor shall coordinate with the General Contractor for all concrete pads and all attachments. Coordinate with the seismic restraint manufacturer for edge distance of pads, but shall be as minimum 10 bolt diameters of clearance all around the outermost anchor bolt to allow for the use of full anchor ratings.

2. Coordinate to ensure that the concrete pad is restrained itself to the structure to resist the seismic forces.

H. Supplementary Support Steel

1. Contractor shall supply supplementary support steel and connections for all equipment and piping as required.

I. Definitions

1. The term EQUIPMENT used throughout this specification section above includes ALL non-structural components within the facility and/or serving this facility, such as equipment located in outbuildings or outside of the main structure on grade within five feet of the foundation wall. Equipment buried underground is excluded but entry of services through the foundation walls is included. Equipment referred to below is a partial list of equipment for reference. (Equipment not listed is still included in this specification).

2. Life safety systems are defined.

   a. All systems involved with fire alarm system.
   b. All systems involved emergency lighting systems.

3. Positive Attachment is defined as a support location with a cast-in or wedge type expansion anchor, a double sided beam clamp, and a welded or through bolted connection to the structure.

4. Transverse Bracing is defined as restraint(s) applied to limit motion perpendicular or angular to the centerline of the conduit, cable tray or bus duct.

A. Longitudinal Bracing is defined as restraint(s) applied to limit motion along the centerline of the conduit, cable tray or bus duct.

PART 3 EXECUTION

3.1 INSTALLATION

A. General

A. Unless specifically noted or indicated otherwise, all equipment and material specified in Part 2 of this specification or indicated on the drawings shall be installed under this Contract whether or not specifically itemized herein. This Section covers particular installation methods and requirements peculiar to certain items and classes or material and equipment.

B. The Electrical Subcontractor shall obtain detailed information from manufacturers of equipment provided under Part 2 of this specification as to proper methods of installation.

C. The Electrical Subcontractor shall obtain final roughing dimensions and other information as needed for complete installation of items furnished under other Sections or furnished by the Owner.

D. The Electrical Subcontractor shall keep fully informed of size, shape and position of openings required for material and equipment provided under this and other Sections. Ensure that openings required for work of this Section are coordinated with work of other Sections. Provide cutting and patching as necessary.

E. All miscellaneous hardware and support accessories, including support rods, nuts, bolts, screws and other such items, shall be of a galvanized or cadmium plated finish or of another approved rust-inhibiting coating.

B. Vibration Isolation and Seismic Restraints for Electrical System

A. Refer to the Part 2 Vibration and Seismic Restraints for Electrical Systems Report for installation requirements.

B. All floor mounted equipment shall be snubbed, anchored, bolted or welded to the structure to comply with the required seismic forces. Calculations that determine that isolated equipment movement may be less than the operating clearance of snubbers (restraints) do not preclude the need for snubbers. All equipment must be positively restrained to the structure.

C. All suspended equipment shall be two or four point independently braced with TYPE III restraints, installed taught for non-isolated equipment and slack with ½" cable deflection for isolated equipment. Rod bracing shall be installed as per approved submittals and shop drawings.

D. All horizontally suspended conduits shall use RESTRAINT TYPE III unless otherwise noted in the Report.

E. For all trapeze supported conduit, the individual conduits must be transversely and vertically restrained to the trapeze support at the designated restraint locations.

F. The installation shall not overstress the building structure. Bracing locations and methods shall be reviewed by the Structural Engineer and Architect prior to installation.

G. Conduit Risers and Busduct Risers

a. Where conduits and busduct risers pass through cored holes, core diameters to be a maximum of 2" larger than pipe O.D. Cored holes must be packed with suitable resilient fire stop material as specified in other sections of this specification and/or state and local codes.

b. Conduit risers and busduct risers through cored holes require a riser clamp at each floor level on top of the slab attached in a seismically approved manner for vertical restraint. Allow space for thermal expansion per manufacturer and all applicable standards. The electrical code requires vertical support for cables within conduits, in addition to the required supports include conduit thermal expansion at each cable support location. Such thermal expansion method shall also allow space for any building settlement.

c. Conduit risers and busduct risers in pipe shafts require structural steel attached in a seismically approved manner at each floor level and a riser clamp at each floor level on top of, and fastened to the structural steel. The riser clamp and structural steel must be capable of withstanding all static and seismic loads.

d. Refer to manufacturer's seismic restraint methods for busduct. In addition to the seismic methods also coordinate for any thermal expansion (Vertical and Horizontal) and include proper installation method per manufacturer recommendations. Include any required future adjustment to the busducts or busduct fittings for building movement (settlement), such adjustment shall be perform within ten (10) to twelve (12) months of the busducts installation.

H. Ceiling mounted lighting fixtures shall be attached to lay-in ceilings with earthquake clips or other approved means of positive attachment to T- bar structure, in addition to direct attachments to the structure.

I. All non-isolated floor or wall mounted equipment shall use RESTRAINT TYPE III or V, unless noted otherwise in the Report.

J. Where base anchoring of equipment is insufficient to resist seismic forces, provide restraint TYPE III shall be located above the units center of gravity to suitably resist "G" forces specified, unless noted otherwise in the Report.

K. A rigid conduit or cable tray system shall not be braced to dissimilar parts of a building or two dissimilar building systems that may respond in a different mode during an earthquake (e.g Wall and roof; solid concrete wall and a metal deck

with lightweight concrete fill, bus duct, conduit, etc. crossing a building expansion joint).

3.2 MATERIALS AND WORKMANSHIP

A. All materials and equipment shall be new and unused and shall meet requirements of the latest Standards of NEMA, UL, IPCEA, ANSI and IEEE. Equipment shall have components required or recommended by OSHA, applicable NFPA documents and shall be UL listed and labeled.

B. Despite references in the specifications or on the drawings to materials or pieces of equipment by name, make or catalog number, such references shall be interpreted as establishing standards of quality for materials and performance.

C. Finish of materials, components and equipment shall not be less than Industry good practice. When material or equipment is visible or subject to corrosive or atmospheric conditions, the finish shall be as approved by the Architect.

D. Provide proper access to material or equipment that requires inspection, replacement, repair or service. If proper access cannot be provided, confer with the Architect as to the best method of approach to minimize effects of reduced access.

E. All work shall be installed in a neat and workmanlike manner and shall be done in accordance with all Local and State Codes.

F. The Owner will not be responsible for material, equipment or the installation of same before testing and acceptance.

END OF SECTION

SECTION 260573 - OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY

PART 1 GENERAL

1.1 SUMMARY

A. Section includes short circuit and protective device coordination study for the following portions of electrical distribution system from normal power source or sources to and including:
1. Breakers in service entrance switchboard.
2. Main breaker in sub-distribution panels.
3. Main breaker in each panelboard.
4. Branch circuit breakers or fuses in Life Safety Power Systems.

B. Related Sections:
1. Section 260519 – Building Wire and Cable.
2. 262413 – Switchboards.
3. Section 262416 – Panelboards.
4. Section 262913 – Enclosed Controllers.

1.2 SECTION INCLUDES

A. Performance requirements for overcurrent protective devices.

B. Short circuit study.

C. Coordination study and analysis.

~~3.~~D. Arc flash hazard analysis.

~~1.2~~1.3 DESIGN REQUIREMENTS

A. Report Preparation:
1. Perform study with aid of computer software program.
2. Obtain actual settings for packaged chiller and motor characteristics.
3. Calculate short circuit interrupting and, when applicable, momentary duties for assumed 3-phase bolted fault short circuit current and phase to ground fault short circuit current at each of the following locations:
   a. Utility supply bus.
   b. Medium voltage air interrupter switchgear.
   c. Medium voltage circuit breaker switchgear.
   d. Secondary unit substations.
   ~~e. Medium voltage motor controllers.~~
   ~~f. Medium voltage oil switchgear.~~
   ~~g.~~e. Low-voltage switchgear.
   ~~h.~~f. Switchboards.
   ~~i.~~g. Motor control centers.
   ~~j.~~h. Distribution panelboards.

~~k.~~i. Branch circuit panelboards.
~~l.~~j. Busway.
~~m.~~k. Each other significant equipment location throughout system.

B. Prepare time-current curves graphically indicating coordination proposed for system, centered on conventional, full-size, log-log forms.

C. Prepare with each time-curve sheet complete title and one-line diagram with legend identifying specific portion of system covered by that particular curve sheet.

D. Prepare detailed description of each protective device identifying its type, function, manufacturer, and time-current characteristics. Tabulate recommended device tap, time dial, pickup, instantaneous, and time delay settings.

~~D.~~E. Refer to paragraph 1.08, E. for Arc Flash Hazard analysis requirements.

1.4 RELATED REQUIREMENTS

A. Section 262413 - Switchboards: Overcurrent protective devices in switchboards.

B. Section 262416 - Panelboards: Overcurrent protective devices in panelboards.

1.5 REFERENCE STANDARDS

A. IEEE 242 - IEEE Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems; 2001.

B. IEEE 399 - IEEE Recommended Practice for Industrial and Commercial Power Systems Analysis; 1997.

C. NFPA 70 - National Electrical Code; current revision.

~~1.3~~1.6 SUBMITTALS

A. See Division 01 – General Requirements: for submittal procedures.

B. Study Preparer's Qualifications.

C. Study Report: Submit protective device studies as specified, prior to submission of product data submittals or ordering or fabrication of protective devices.
1. Evaluation of product data submittals by Engineer will not commence until acceptable preliminary studies in sufficient detail to ensure that device selection will be adequate have been submitted.
2. Include stamp or seal and signature of preparing engineer.

D. Product Data: In addition to submittals specified elsewhere, submit manufacturer's time-current curves for all protective devices.

E. Field Engineer Qualifications.

F. Field Inspection Report: Show final adjusted settings of protective devices.

G. Certificates: Prior to final inspection, certify that field adjustable protective devices have been set in accordance with requirements of protective device analysis.

H. Project Record Documents: Revise protective device study as required to show as-built conditions.
1. Submit not less than 60 days prior to final inspection of electrical system.
2. Include hard copies in operation and maintenance data submittals.
3. Include all files prepared using software packages, on electronic media, with file name cross-references to specific pieces of equipment and systems.

~~A. Qualifications Data: Required.~~

~~B. Completed Report: Required.~~

1.7 PROTECTIVE DEVICE STUDY

A. Analyze the specific electrical and utilization equipment (according to NEC definition), the actual protective devices to be used, and the actual feeder lengths to be installed.
   1. Scope of Studies: Refer to Summary.
   2. Primary Source, for Purposes of Studies: Utility company primary protective devices.
   3. Study Methodology: Comply with requirements and recommendations of NFPA 70, IEEE 399, and IEEE 242.
   4. Report: State the methodology and rationale employed in making each type of calculation; identify computer software package(s) used.

B. One-Line Diagrams: Prepare schematic drawing of the emergency electrical distribution system, with all electrical equipment and wiring to be protected by the protective devices; identify nodes on the diagrams for reference on report that includes:
   1. Calculated fault impedance, X/R ratios, utility contribution, and short circuit values (asymmetric and symmetric) at the main switchboard bus and all downstream devices containing protective devices.
   2. Breaker and fuse ratings.
   3. Transformer kVA and voltage ratings, percent impedance, X/R ratios, and wiring connections.
   4. Identification of each bus, with voltage.
   5. Conduit materials, feeder sizes, actual lengths, and X/R ratios.

C. Short Circuit Study: Calculate the fault impedance to determine available 3-phase short circuit and ground fault currents at each bus and piece of equipment during normal conditions, alternate operations, emergency power conditions, and other operations that could result in maximum fault conditions.
   1. Show fault currents available at key points in the system down to a fault current of 7,000 A at 480 V and 208 V.
   2. Include motor contributions in determining the momentary and interrupting ratings of the protective devices.
   3. Primary Fault Level Assumptions: Obtain data from utility company.
   4. Report: Include all pertinent data used in calculations and for each device include:
      a. Device identification.
      b. Operating voltage.
      c. Protective device.
      d. Device rating.
      e. Calculated short circuit current, asymmetrical and symmetrical, and ground fault current.

D. Coordination Study: Perform an organized time-current analysis of each protective device in series from the individual device back to the primary source, under normal conditions, alternate operations, and emergency (alternate source) power conditions.
   1. Graphically illustrate that adequate time separation exists between series devices, including upstream primary device.
   2. Plot the specific time-current characteristics of each protective device on log-log paper.

3. Organize plots so that all upstream devices are clearly depicted on one sheet.
4. Also show the following on curve plot sheets:
   a. Device identification.
   b. Voltage and current transformer ratios for curves.
   c. 3-phase and 1-phase ANSI damage curves for each transformer.
   d. No-damage, melting, and clearing curves for fuses.
   e. Cable damage curves.
   f. Transformer inrush points.
   g. Maximum short circuit cutoff point.
   h. Simple one-line diagram for the portion of the system that each curve plot illustrates.
   i. Software report for each curve plot, labeled for identification.

E. Arc Flash Hazard Study: Perform an arc flash hazard study after short circuit and coordination study is complete based on IEEE Std. 1584 "IEEE Guide for Performing Arc Flash Hazard Calculations."
1. Pertinent data, rationale employed, and assumptions in developing calculations shall be incorporated in the introductory remarks of the study.
2. The study shall be in accordance with applicable NFPA 70E, OSHA 29-CFR, Part 1910 Sub Part S and IEEE 1584 Standards.
3. Determine the following:
   a. Flash Hazard Protection Boundary.
   b. Limited Approach Boundary.
   c. Restricted Boundary.
   d. Prohibited Boundary.
   e. Incident energy Level.
   f. Minimum Arc Rating.
   g. Shock Risk.
   h. Glove Class.
   i. Required Personal Protective Equipment class.
   j. Type of Fire Rated Clothing required.
4. Provide Arc Flash Evaluation summary sheet listing the following additional items:
   a. Bus Name.
   b. Upstream protective device Name, Type, and Settings.
   c. Bus Line to Line Voltage.
   d. Bus Bolted Fault.
   e. Protective Device Bolted fault current.
   f. Arcing Fault current.
   g. Protective Device Trip/Delay time.
   h. Breaker Opening Time.
   i. Equipment type.
   j. Gap.
   k. Arc Flash Boundary.
   l. Working distance.
   m. Incident energy.
   n. Required Protective Fire-Rated Clothing Type and Class.

F. Analysis: Determine ratings and settings of protective devices to minimize damage caused by a fault and so that the protective device closest to the fault will open first.
1. Required Ratings and Settings: Derive required ratings and settings of protective devices in consideration of upstream protective device settings and optimize system to ensure selective coordination.
2. Identify any equipment that is underrated.
3. Identify specified protective devices will not achieve required protection or coordination but with minor changes can be made to do so; provide such modified devices at no additional cost and identify them on submittals as "revised in accordance with Protective Device Coordination Study"; minor changes include different trip sizes in the same frame, time curve characteristics of induction relays, CT ranges, etc.
4. Identify specified protective devices that will not achieve required protection or coordination and cannot be field adjusted to do so, and for which adequate devices would involve a change to the contract sum.
5. In all cases where adequate protection or coordination cannot be achieved at no extra cost, provide a discussion of alternatives and logical compromises for best achievable coordination.

G. Protective Device Rating and Setting Chart: Summarize in tabular format the required characteristics for each protective device based on the analysis; include:
1. Device identification.
2. Relay CT ratios, tap, time dial, and instantaneous pickup.
3. Circuit breaker sensor rating, long-time, short-time, and instantaneous settings, and time bands.
4. Fuse rating and type.
5. Ground fault pickup and time delay.
6. Input level and expected response time at two test points that are compatible with commonly available test equipment and the ratings of the protective device.
7. Highlight all devices that as furnished by Contractor will not achieve required protection.

~~1.4~~1.8 QUALITY ASSURANCE

A. Study Preparer Qualifications: Electrical testing agency regularly engaged in short circuit and coordination studies, with at least 5 years experience in work of this type, and employing professional electrical engineer licensed in the State of Connecticut to perform the studies.

B. Computer Software for Study Preparation: Use the latest edition of commercially available software utilizing specified methodologies.

C. Contractor Responsibility: Provide all project-related data needed by study preparer, including equipment, wire sizes, insulation types, conduit types, and actual circuit lengths.

~~A. Use commercially available software, designed specifically for short circuit and protective device coordination studies with minimum of 5 years documented availability approved by Engineer.~~

~~B. Perform study in accordance with IEEE 242.~~

~~C. Coordinate work with local power company.~~

PART 2 PRODUCTS

2.1 COMPUTER SOFTWARE DEVELOPERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide a comparable product by one of the following:
1. CGI CYME.
2. EDSA Micro Corporation.
3. ESA Inc.
4. Operation Technology, Inc.
5. SKM Systems Analysis, Inc.

2.2 COMPUTER SOFTWARE PROGRAM REQUIREMENTS

A. Comply with IEEE 399.

B. Analytical features of fault-current-study computer software program shall include "mandatory," "very desirable," and "desirable" features as listed in IEEE 399.

C. Computer software program shall be capable of plotting and diagramming time-current characteristic curves as part of its output. Computer software program shall report device settings and ratings of all overcurrent protective devices and shall demonstrate selective coordination by computer-generated, time-current coordination plots.

2.3 PROTECTIVE DEVICES

A. Provide protective devices of ratings and settings as required so that the protective device closest to the fault will open first.

B. In addition to requirements specified elsewhere, provide overcurrent protective devices having ratings and settings in accordance with results of this analysis.

~~Not used.~~

PART 3 EXECUTION

3.1 FIELD QUALITY CONTROL

A. Provide the services of a qualified field engineer and necessary tools and equipment to test, calibrate, and adjust the installed protective devices to conform to requirements determined by the coordination analysis.

B. Adjust installed protective devices having adjustable settings to conform to requirements determined by the coordination analysis.

C. Produce Arc Flash Warning Labels with pre-printed header incorporating items a through j above. Also, include bus name, system operating voltage, and date of issue. Labels shall be printed in color on self-adhesive backed labels. Labels shall comply with NEC and NFPA 70E.
   1. Provide arc flash warning labels on the following equipment:
      a. Switchboards.
      b. Panelboards.
      c. Disconnect switches.
      d. Motor controllers.
      e. Standalone overcurrent protective devices.
      f. Other electrical equipment that is inspected, maintained and adjusted while energized.

D. Submit report showing final adjusted settings of all protective devices.

E. Results of the above shall be documented in writing and provided within the O&M manuals and to the CX agent as part of the closeout.

~~A. Provide assistance to electrical distribution system equipment manufacturer during start up of electrical system and equipment.~~

END OF SECTION

FOR REFERENCE: THIS SECTION WAS ISSUED FOR PHASE 1 AND PHASE 2

SECTION 28 0528 - PATHWAYS FOR SECURITY SYSTEMS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Related Drawings
   1. "T" Drawings – Technology Plans

C. Related Sections:
   1. Section 271000 – Communication Horizontal
   2. Section 280500 – Security Conductor Cables
   3. Section 281300 – Access Controls
   4. Section 281600 – Intrusion Detection
   5. Section 282300 – Video Surveillance

1.02 SUMMARY

A. Section Includes:
   1. Metal conduits and fittings.
   2. Nonmetallic conduits and fittings.
   3. Optical-fiber-cable pathways and fittings.
   4. Metal wireways and auxiliary gutters.
   5. Nonmetallic wireways and auxiliary gutters.
   6. Surface pathways.
   7. Boxes, enclosures, and cabinets.
   8. Handholes and boxes for exterior underground cabling.

1.03 DEFINITIONS

A. ARC: Aluminum rigid conduit.

B. GRC: Galvanized rigid steel conduit.

C. IMC: Intermediate metal conduit.

1.04 ACTION SUBMITTALS

A. Product Data: For surface pathways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, and attachment details.

1.05 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Pathway routing plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of items involved:
   1. Structural members in paths of pathway groups with common supports.
   2. HVAC and plumbing items and architectural features in paths of conduit groups with common supports.

B. ~~Qualification Data: For professional engineer.~~

C. ~~Seismic Qualification Certificates: For pathway racks, enclosures, cabinets, equipment racks and their mounting provisions, including those for internal components, from manufacturer.~~
   1. ~~Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.~~
   2. ~~Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.~~
   3. ~~Detailed description of equipment anchorage devices on which certification is based and their installation requirements.~~
   4. ~~Detailed description of conduit support devices and interconnections on which certification is based and their installation requirements.~~

D. Source quality-control reports.

PART 2 PRODUCTS

2.01 METAL CONDUITS AND FITTINGS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. AFC Cable Systems, Inc.
   2. Allied Tube & Conduit; a Tyco International Ltd. Co.
   3. Alpha Wire Company
   4. Anamet Electrical, Inc.
   5. Electri-Flex Company
   6. O-Z/Gedney; a brand of EGS Electrical Group
   7. Picoma Industries; Subsidiary of Mueller Water Products, Inc.
   8. Republic Conduit
   9. Robroy Industries
   10. Southwire Company
   11. Thomas & Betts Corporation
   12. Western Tube and Conduit Corporation
   13. Wheatland Tube Company; a division of John Maneely Company

B. General Requirements for Metal Conduits and Fittings:
   1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
   2. Comply with TIA-569-B.

C. GRC: Comply with ANSI C80.1 and UL 6.

D. ARC: Comply with ANSI C80.5 and UL 6A.

E. IMC: Comply with ANSI C80.6 and UL 1242.

F. PVC-Coated Steel Conduit: PVC-coated rigid steel conduit.
   1. Comply with NEMA RN 1.
   2. Coating Thickness: 0.040 inch minimum.

G. EMT: Comply with ANSI C80.3 and UL 797.

H. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.
   1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886 and NFPA 70.
   2. Fittings for EMT:
      a. Material: Steel.
      b. Type: Setscrew.
   3. Expansion Fittings: PVC or steel to match conduit type, complying with UL-467, rated for environmental conditions where installed, and including flexible external bonding jumper.
   4. Coating for Fittings for PVC-Coated Conduit: Minimum thickness of 0.040 inch, with overlapping sleeves protecting threaded joints.

I. Joint Compound for IMC, GRC, or ARC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.02 NONMETALLIC CONDUITS AND FITTINGS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. AFC Cable Systems, Inc.
   2. Allied Tube & Conduit; a Tyco International Ltd. Co.
   3. Anamet Electrical, Inc.
   4. Arnco Corporation
   5. CANTEX Inc.
   6. CertainTeed Corp.
   7. Condux International, Inc.
   8. Electri-Flex Company
   9. Kraloy
   10. Lamson & Sessions; Carlon Electrical Products

11. Niedax-Kleinhuis USA, Inc.
12. RACO; a Hubbell company
13. Thomas & Betts Corporation

B. General Requirements for Nonmetallic Conduits and Fittings:
   1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
   2. Comply with TIA-569-B.

C. RNC: Type EPC-40-PVC complying with NEMA TC 2 and UL 651 unless otherwise indicated.

D. Rigid HDPE: Comply with UL 651A.

E. Continuous HDPE: Comply with UL 651B.

F. RTRC: Comply with UL 1684A and NEMA TC 14.

G. Fittings for RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.

H. Solvent cements and adhesive primers shall have a VOC content of 510 and 550 g/L or less, respectively, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.03 OPTICAL-FIBER-CABLE PATHWAYS AND FITTINGS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Alpha Wire Company.
   2. Arnco Corporation.
   3. Endot Industries Inc.
   4. IPEX.
   5. Lamson & Sessions; Carlon Electrical Products.

B. Description: Comply with UL 2024; flexible-type pathway, approved for plenum installation unless otherwise indicated.
   1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
   2. Comply with TIA-569-B.

2.04 METAL WIREWAYS AND AUXILIARY GUTTERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Cooper B-Line, Inc.
   2. Hoffman; a Pentair company
   3. Mono-Systems, Inc.
   4. Square D; a brand of Schneider Electric

B. Description: Sheet metal, complying with UL 870 and NEMA 250 and sized according to NFPA 70.
   1. Metal wireways installed outdoors shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
   2. Comply with TIA-569-B.

C. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

D. Wireway Covers: Screw-cover type unless otherwise indicated.

E. Finish: Manufacturer's standard enamel finish.

2.05 NONMETALLIC WIREWAYS AND AUXILIARY GUTTERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Allied Moulded Products, Inc.
   2. Hoffman; a Pentair company
   3. Lamson & Sessions; Carlon Electrical Products
   4. Niedax-Kleinhuis USA, Inc.

B. General Requirements for Nonmetallic Wireways and Auxiliary Gutters:
   1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
   2. Comply with TIA-569-B.

C. Description: Fiberglass polyester, extruded and fabricated to required size and shape, without holes or knockouts. Cover shall be gasketed with oil-resistant gasket material and fastened with captive screws treated for corrosion resistance. Connections shall be flanged and have stainless-steel screws and oil-resistant gaskets.

D. Description: PVC, extruded and fabricated to required size and shape, and having snap-on cover, mechanically coupled connections, and plastic fasteners.

E. Fittings and Accessories: Couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings shall match and mate with wireways as required for complete system.

F. Solvent cements and adhesive primers shall have a VOC content of 510 and 550 g/L or less, respectively, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.06 SURFACE PATHWAYS

A. General Requirements for Surface Pathways:
   1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2. Comply with TIA-569-B.

B. Surface Metal Pathways: Galvanized steel with snap-on covers complying with UL 5. Manufacturer's standard enamel finish in color selected by Architect.
   1. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
      a. Mono-Systems, Inc.
      b. Niedax-Kleinhuis USA, Inc.
      c. Panduit Corp
      d. Wiremold/Legrand

C. Surface Nonmetallic Pathways: Two- or three-piece construction, complying with UL 5A, and manufactured of rigid PVC with texture and color selected by Architect from manufacturer's standard colors. Product shall comply with UL-94 V-0 requirements for self-extinguishing characteristics.
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Hubbell Incorporated; Wiring Device-Kellems Division
      b. Lamson & Sessions; Carlon Electrical Products
      c. Mono-Systems, Inc.
      d. Panduit Corp.
      e. Wiremold/Legrand

2.07 BOXES, ENCLOSURES, AND CABINETS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Adalet

B. Cooper Technologies Company; Cooper Crouse-Hinds
   1. EGS/Appleton Electric
   2. Erickson Electrical Equipment Company
   3. Hoffman; a Pentair company
   4. Hubbell Incorporated; Killark Division
   5. Lamson & Sessions; Carlon Electrical Products
   6. Milbank Manufacturing Co.
   7. Molex; Woodhead Brand
   8. Mono-Systems, Inc.
   9. O-Z/Gedney; a brand of EGS Electrical Group
   10. RACO; a Hubbell company
   11. Robroy Industries
   12. Spring City Electrical Manufacturing Company
   13. Stahlin Non-Metallic Enclosures; a division of Robroy Industries
   14. Thomas & Betts Corporation
   15. Wiremold/Legrand

C. General Requirements for Boxes, Enclosures, and Cabinets:
   1. Comply with TIA-569-B.
   2. Boxes, enclosures and cabinets installed in wet locations shall be listed for use in wet locations.

D. Sheet-Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.

E. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, aluminum, Type FD, with gasketed cover.

F. Box extensions used to accommodate new building finishes shall be of same material as recessed box.

G. Metal Floor Boxes:
   1. Material: Cast metal.
   2. Type: Fully adjustable.
   3. Shape: Rectangular.
   4. Listing and Labeling: Metal floor boxes shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

H. Nonmetallic Floor Boxes: Nonadjustable, rectangular.
   1. Listing and Labeling: Nonmetallic floor boxes shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

I. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

J. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, cast aluminum with gasketed cover.

K. Device Box Dimensions: as specified within the Architectural drawings.

L. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.

M. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, with continuous-hinge cover with flush latch unless otherwise indicated.
   1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
   2. Nonmetallic Enclosures:
      a. Material: Plastic.
      b. Finished inside with radio-frequency-resistant paint.
   3. Interior Panels: Steel; all sides finished with manufacturer's standard enamel.

PART 3 EXECUTION

3.01 PATHWAY APPLICATION

A. Indoors: Apply pathway products as specified below unless otherwise indicated:

1. Exposed, Not Subject to Physical Damage: EMT.
2. Exposed, Not Subject to Severe Physical Damage: EMT.
3. Exposed and Subject to Severe Physical Damage: GRC. Pathway locations include the following:
   a. Loading dock.
   b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
   c. Mechanical rooms.
   d. Gymnasiums.
4. Concealed in Ceilings and Interior Walls and Partitions: EMT. Allow plenum cable in j-hooks or cable tray.
5. Damp or Wet Locations: GRC.
6. Pathways for Optical-Fiber or Communications Cable in Spaces Used for Environmental Air: Plenum-type, optical-fiber-cable pathway.
7. Pathways for Concealed General-Purpose Distribution of Optical-Fiber or Communications Cable: Plenum-type, optical-fiber-cable pathway.
8. Boxes and Enclosures: NEMA 250 Type 1, except use NEMA 250 Type 4 stainless steel in institutional and commercial kitchens and damp or wet locations.

B. Minimum Pathway Size: ¾-inch trade size. Minimum size for optical-fiber cables is 1 inch.

C. Pathway Fittings: Compatible with pathways and suitable for use and location.
1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with this type of conduit. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
3. EMT: Use setscrew or compression, cast-metal fittings. Comply with NEMA FB 2.10.

D. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.

E. Install surface pathways only where indicated on Drawings.

F. Do not install nonmetallic conduit where ambient temperature exceeds 120 deg.

3.02 INSTALLATION

A. Comply with NECA 1, NECA 101, and TIA-569-B for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum pathways. Comply with NFPA 70 limitations for types of pathways allowed in specific occupancies and number of floors.

B. Keep pathways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal pathway runs above water and steam piping.

C. Complete pathway installation before starting conductor installation.

D. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.

E. Arrange stub-ups so curved portions of bends are not visible above finished slab.

F. Install no more than the equivalent of two (2) 90-degree bends in any pathway run. Support within 12 inches of changes in direction. Utilize long radius ells for all optical-fiber cables.

G. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.

H. Support conduit within 12 inches of enclosures to which attached.

I. Pathways Embedded in Slabs:
   1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support. Secure pathways to reinforcement at maximum 10-foot intervals.
   2. Arrange pathways to cross building expansion joints at right angles with expansion fittings.
   3. Arrange pathways to keep a minimum of 2 inches of concrete cover in all directions.
   4. Do not embed threadless fittings in concrete unless specifically approved by Architect for each specific location.
   5. Change from ENT to RNC, Type EPC-40-PVC before rising above floor.

J. Stub-ups to Above Recessed Ceilings:
   1. Use EMT, IMC, or RMC for pathways.
   2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.

K. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of pathway and fittings before making up joints. Follow compound manufacturer's written instructions.

L. Coat field-cut threads on PVC-coated pathway with a corrosion-preventing conductive compound prior to assembly.

M. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install insulated bushings on conduits terminated with locknuts.

N. Install pathways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus ¼ turn more.

O. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.

P. Cut conduit perpendicular to the length. For conduits of 2-inch trade size and larger, use roll cutter or a guide to ensure cut is straight and perpendicular to the length.

Q. Install pull wires in empty pathways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground pathways designated as spare above grade alongside pathways in use.

R. Surface Pathways:
1. Install surface pathway for surface telecommunications outlet boxes only where indicated on Drawings.
2. Install surface pathway with a minimum 2-inch radius control at bend points.
3. Secure surface pathway with screws or other anchor-type devices at intervals not exceeding 48 inches and with no less than two supports per straight pathway section. Support surface pathway according to manufacturer's written instructions. Tape and glue are not acceptable support methods.

S. Pathways for Optical-Fiber and Communications Cable: Install pathways, metal and nonmetallic, rigid and flexible, as follows:
1. ¾-Inch Trade Size and Smaller: Install pathways in maximum lengths of 50 feet.
2. 1-Inch Trade Size and Larger: Install pathways in maximum lengths of 75 feet.
3. Install with a maximum of two (2) 90-degree bends or equivalent for each length of pathway unless Drawings show stricter requirements. Separate lengths with pull or junction boxes or terminations at distribution frames or cabinets where necessary to comply with these requirements.

T. Install pathway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed pathways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install pathway sealing fittings according to NFPA 70.

U. Install devices to seal pathway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all pathways at the following points:
1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2. Where an underground service pathway enters a building or structure.
3. Where otherwise required by NFPA 70.

V. Comply with manufacturer's written instructions for solvent welding PVC conduit and fittings.

W. Expansion-Joint Fittings:
1. Install in each run of aboveground RNC that is located where environmental temperature change may exceed 30 deg F, and that has straight-run length that exceeds 25 feet. Install in each run of aboveground RMC and EMT conduit that is located where environmental temperature change may exceed 100 deg F and that has straight-run length that exceeds 100 feet.
2. Install type and quantity of fittings that accommodate temperature change listed for each of the following locations:
   a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.
   b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.

c. Indoor Spaces Connected with Outdoors without Physical Separation: 125 deg F temperature change.
d. Attics: 135 deg F temperature change.

3. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F of temperature change for PVC conduits. Install fitting(s) that provide expansion and contraction for at least 0.000078 inch per foot of length of straight run per deg F of temperature change for metal conduits.
4. Install expansion fittings at all locations where conduits cross building or structure expansion joints.
5. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.

X. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.

Y. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surface to provide a flat surface for a raintight connection between box and cover plate or supported equipment and box.

Z. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.

AA. Support boxes of three (3) gangs or more from more than one (1) side by spanning two (2) framing members or mounting on brackets specifically designed for the purpose.

BB. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

CC. Set metal floor boxes level and flush with finished floor surface.

DD. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface.

3.03 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR COMMUNICATIONS PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 271000 "Structured Cabling."

3.04 FIRESTOPPING

A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

3.05 PROTECTION

A. Protect coatings, finishes, and cabinets from damage or deterioration.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION

SECTION 312316.26 – ROCK REMOVAL

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. Rock excavation for trenches and structures.

B. Related Sections

1. Section 312300 – Excavation, Backfill, Compaction and Dewatering

2. Appendix F - Report entitled "Greenwich Central Middle School Construction-Vibration and Controls During Construction" by Gap Mountain Consulting Engineers, PLLC dated November 1, 2024. The Construction-Vibration and Controls report is provided to outline the requirements for monitoring and protection the existing school building from structural damage while it is occupied.

1.2 DESCRIPTION

A. Removal of boulders greater than 1 cubic yard in volume is included under this Section of work. Removal of boulders under 1 cubic yard in volume is not considered part of this work and is considered a part of the work specified under Section 312300.

B. Rock excavation shall mean solid ledge rock or solid concrete which in the opinion of the Engineer requires for its removal, drilling and blasting, wedging, sledging, firing, or breaking up with power operated hand tools.

C. Material removed solely with a power-operated excavator or loose, previously blasted ledge, broken stone, weathered rock, cemented gravel, hardpan, or glacial till which may be encountered during excavation operations is not considered rock excavation.

1.3 SUBMITTALS

A. Construction methods that will be utilized for the removal of rock on the project.

B. Qualifications of professional blasting Consultant and a pre-blast survey.

C. A description of the proposed method for blasting, prior to beginning any blasting operations, detailing the proposed methods of blasting including the type of information to be included in the blasting monitoring seismograph reports.

1. Seismograph reports shall include plan of drilling, amount and type of loadings, kind and distribution of blasting caps, delays used and amount of explosive per day, order of firing, distance and direction of recording station from blast area, type of ground at recording station, time of readings displacements and frequency, copy or record, and brief discussion on vibratory effects.

D. Conduct pre-blast structure survey prior to start of blasting.

1. Conduct pre-blast structure survey on structures within areas affected by work that may be damaged by blasting. Include aboveground structures within at least 500 feet of areas to be blasted.

2. The purpose of the survey is to document existing conditions of structures prior to blasting. The survey is intended to be used as evidence in ascertaining whether and to what extent damage may have occurred as a result of blasting.

3. Record information for each structure surveyed:

   a. Age and type of construction

   b. Location and character of cracks

   c. Evidence of settlement and leakage

   d. Other pertinent information

4. Record pre-blast survey information on forms prepared specifically for pre-blast surveys.

5. Supplement written records with photographs or videotape recording.

6. Submit copies of written records and photographs or videotapes to respective property owner, as well as to the Engineer with the property owner's permission, prior to the start of blasting.

E. Blasting records - For each blast, document the following:

1. Location of blast in relation to Project Stationing or coordinate systems and elevation.

2. Date and times of loading and detonation of blast.

3. Name of person in responsible charge of loading and firing.

4. Details of blast design, as previously specified.

5. Vibration records including location and distance of seismograph geophones to blast and to nearest structure and measured peak particle velocity. Report peak particle velocity in units of inches per second.

6. Air-blast records. Report peak air blast values in units of pounds per square inch overpressure above atmospheric or in decibels at linear response.

7. Comments by blaster in charge regarding damage to existing facilities, adjacent property, or completed work, misfires, fly rock occurrences, unusual results, or unusual effects.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.1 BLASTING

A. Comply with OSHA, State and Local regulations when blasting and handling explosives.

1. The Town of Greenwich Fire Department approval is required for all blasting operations. A pre-blast survey must be completed. The Fire Chief or his designated representative must witness the survey.

B. Assume full responsibility for the safety of the blasting operations and perform the work in a manner that will ensure the safety of personnel and that of existing structures, adjacent buildings, and completed new construction. The Contractor will be held responsible for claims for damage to property and underground structures. Repair in kind utilities, pipelines or house services damaged while conducting pre-drilling and blasting activities. Repair and maintain roadway and paved surfaces that are cracked or damaged during the course of pre-drilling and blasting.

C. Comply with current OSHA regulations as well as engage the services of a qualified, professional blasting Consultant who will design, review, evaluate and modify the blasting operations. Design the initial blasts and conduct test blasts (minimum four tests) until regular production-controlled blast patterns are developed that produce the desired rate of excavation while meeting the requirements for vibration and air blast control specified. Periodically, or when requested by the Engineer, review the blasting operations and make such changes in the blasting operations as are required to produce a controlled blasting operation meeting the requirements of these specifications. Review by the Engineer of the Contractor's blast design shall not relieve the responsibility for obtaining adequate rock breakage.

D. Provide adequate notice to residents that may be affected by the use of explosives. In residential areas, provide the following:

1. Certificate of Insurance to cover a blasting operation.

2. Evidence that residential homes have been reviewed to satisfy all parties that pre-construction conditions are well documented.

E. Blasting Design Criteria

1. Exercise care in the drilling and blasting operations so that the remaining rock remains stable and to reduce overbreak to a minimum.

2. Control blasting by limiting the charge per delay to that which produces limited levels of ground vibrations as herein specified. Hire a qualified testing agency to measure the radial particle velocities using a seismograph. Peak radial particle velocity shall be the measure of the level of vibration.

3. The charge weight per delay used in blasting, measured on the foundation material, rock, or overburden at the nearest residential structure, shall be such the peak radial particle velocity and frequency relationship criteria shown below on Figure 1 – "New U.S. Bureau of Mines Criteria from Report RI-8501, dated November 1980" is not exceeded. The Contractor shall modify the size and type of explosives used to meet this criteria or other limiting criteria.

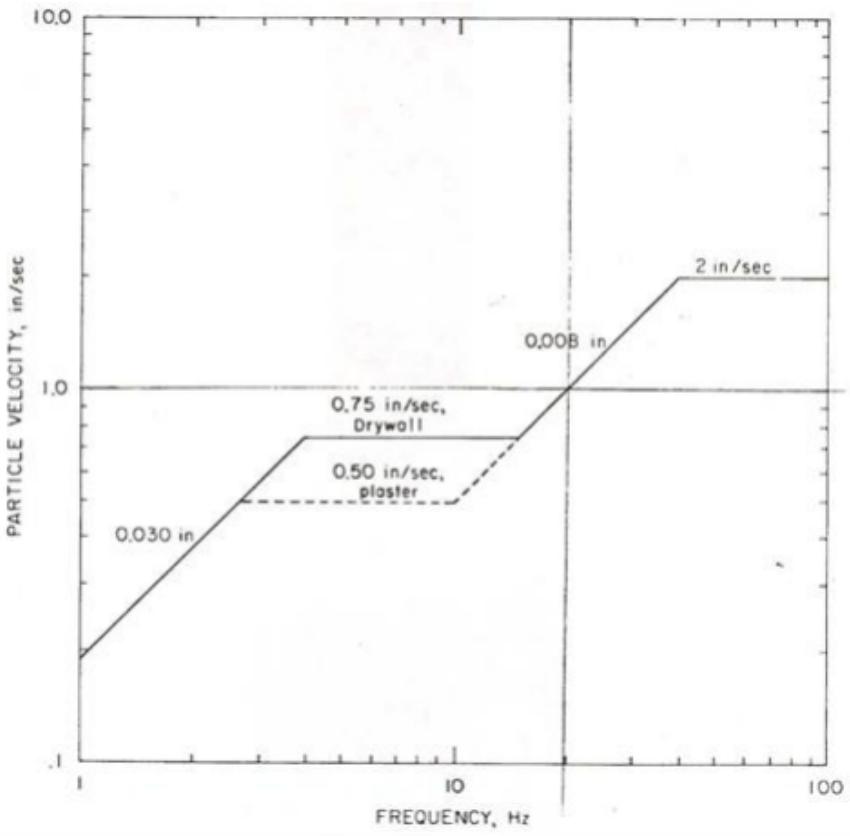


Figure 1

4. The charge weight per delay used in blasting, measured at the foundation of the existing middle school building, shall be such shall be such that the peak particle velocity and frequency relationship criteria detailed in the CVC report is not exceeded.

5. Air blast overpressures from blasting operations shall not exceed 0.02 psi.

6. The maximum depth of lift to be removed at any one time shall not exceed 6 feet.

7. Use blasting mats, chained logs, warning signs, guards, etc., in accordance with the best practice.

8. All blasting operations shall be done by electronic or non-electric detonation.

9. Restrict blasting to daylight hours. In no case will blasting operations be permitted before 8:00 AM or after 5:00 PM.

10. These criteria may be adjusted by the Owner, if the blasting procedures based on monitoring results or in the opinion of the Owner are likely to be disruptive to nearby businesses, people, or to cause damage to structures. These changes may require the Contractor to revise blast design and reduce the size of charges.

~~F. In areas where the Contractor is allowed to pre-drill and blast ledge or rock formations without first removing the over-burden, the Contractor shall be required to firmly establish a profile of the solid ledge or rock that cannot be ripped free by the excavating machine. The actual pay quantities will be based on the inspector's determination of the actual profile and extent of the rock formations drilled and blasted by the Contractor and his verification of the rock formations once the excavation has been opened.~~

G. Minimum excavation and clearance within rock trenches shall be per Section 312300.

H. The use of perchlorate containing explosives is prohibited.

3.2 BACKFILL

A. Backfill must be with material from the excavation or where the excavated material is considered unsuitable for backfill, with material wasted from other area of the job or, when directed by the Engineer in writing, with ordinary borrow. No stones, rocks, or boulders shall be used as backfill.

B. Minimum pipe bedding requirements shall be per Section 312300.

END OF SECTION

SECTION 32 1313 - CONCRETE PAVING

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.

B. State of Connecticut, Department of Transportation, Form 816 Standard Specification of Roads, Bridges and Incidental Construction, 1995, and as amended.

1.2 SUMMARY

A. This Section includes exterior cement concrete pavement for the following:

1. Concrete Sidewalk Pavement.
2. Concrete Footing for Bleachers.
3. Heavy Duty Concrete Pavement.
4. Concrete Utility Pads.
5. ~~Concrete Curbs.~~
6. ~~Concrete Edge at Synthetic Track Trench Drain.~~
7. ~~Concrete Edge at Synthetic Sports Field.~~
8. ADA detectable warning tiles.

B. Related Requirements:

1. Division 01 Section(s) "Construction Waste Management and Disposal" and "Sustainability Compliance Procedures" for sustainability requirements

2. Division 03 Section "Cast-in-Place Concrete" for footings of walls, stairs, signs, site furnishings, and other general building applications of concrete.

3. Division 11 Section "Track and Field Equipment" for formwork of track and field events.

4. Division 31 Section "Excavation, Backfill, Compaction and Dewatering" for subgrade preparation, grading, and subbase course.

C. Alternates: Refer to Division 01 Section "Alternates" for description of Work of this Section affected by alternates.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

1.4 SUBMITTALS

A. Product Data: For each type of manufactured material and product indicated.

B. 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.

C. Design Mixtures: For each concrete pavement mixture. Include alternate mixture designs when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

D. Qualification Data: For manufacturer.

E. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:

1. Aggregates.

F. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements:

1. Cementitious materials.
2. Steel reinforcement and reinforcement accessories.
3. Admixtures.
4. Curing compounds.
5. Joint fillers.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products who complies with ASTM C 94/C 94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities".

B. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete", unless modified by requirements in the Contract Documents.

C. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

D. Mockups of ADA Tactile Warning Tiles: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination".

1. Before submitting design mixtures, review concrete pavement mixture design and examine procedures for ensuring quality of concrete materials and concrete pavement construction practices. Require representatives, including the following, of each entity directly concerned with concrete pavement, to attend conference:

a. Contractor's superintendent.
b. Independent testing agency responsible for concrete design mixtures.
c. Ready-mix concrete producer.
d. Concrete pavement subcontractor.

1.6 PROJECT CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

1.7 WARRANTY

A. Special Warranty: Contractor agrees to repair or replace components of tactile warning surfaces that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Deterioration of finishes beyond normal weathering and wear.
b. Separation or delamination of materials and components.

2. Warranty Period: One year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.

1. Use flexible or curved forms for curves with a radius 100 feet (30.5 m) or less.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

C. Reinforcing Bars: ASTM A 615/A 615M, Grade 60(Grade 420); deformed.

D. Plain Steel Wire: ASTM A 82, as drawn.

E. Deformed-Steel Wire: ASTM A 496.

F. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420) plain-steel bars. Cut bars true to length with ends square and free of burrs.

G. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded-wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:

1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.

2.3 CONCRETE MATERIALS

A. Regional Materials: Provide concrete materials that have been manufactured within 500 miles (800 km) of Project site from aggregates and cement that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles (800 km) of Project site.

B. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout the Project:

1. Portland Cement: ASTM C 150, Type I and II. Supplement with the following:

a. Fly Ash: ASTM C 618, Class C or F.
b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

C. Aggregates: ASTM C 33, uniformly graded from a single source with coarse aggregate as follows:

1. Per governing jurisdictions as referenced in Section 1.2C.

D. Water: ASTM C 94/C 94M.

E. Air-Entraining Admixture: ASTM C 260.

F. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
3. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
4. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.

2.4 CURBING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd.(305 g/sq. m) dry.

B. Water: Potable.

C. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.

D. Clear Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

2.5 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: Concrete Sidewalk Pavement: ASTM D 1751, asphalt-saturated cellulosic fiber.

2.6 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.

1. Use a qualified independent testing agency for preparing and reporting proposed concrete mixture designs for the trial batch method.

B. Proportion mixtures to provide normal-weight concrete with the following properties:

1. Compressive Strength (28 Days): 4000 psi (27.6 MPa).
2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.45.
3. Slump Limit: 4 inches (100 mm), plus or minus 1 inch (25 mm).

C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:

1. Air Content: 5 percent plus or minus 1.5 percent for 3/4-inch (19-mm) nominal maximum aggregate size.

D. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

E. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing admixture, high-range, water-reducing admixture, or high-range, water-reducing and retarding admixture in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

F. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements for concrete exposed to deicing chemicals as follows:

1. Fly Ash or Pozzolan: 25 percent.
2. Ground Granulated Blast-Furnace Slag: 50 percent.

2.7 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 deg F(30 deg C) and 90 deg F(32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F(32 deg C), reduce mixing and delivery time to 60 minutes.

2.8 ADA TACTILE WARNING SURFACING, GENERAL

A. Accessibility Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities and ICC A117.1 for tactile warning surfaces.

1. For tactile warning surfaces composed of multiple units, provide units that when installed provide consistent side-to-side and end-to-end dome spacing that complies with requirements.
2. Source Limitations: Obtain each type of tactile warning surfacing, anchor, and fasteners from single source with resources to provide materials and products of consistent quality in appearance and physical properties.

2.9 DETECTABLE WARNING TILES

A. Cast-in-Place Detectable Warning Tiles: Accessible truncated-dome detectable warning tiles with replaceable surface configured for setting flush in new concrete walkway surfaces, with slip-resistant surface treatment on domes and field of tile.
   1. Material: Molded glass- and carbon-fiber-reinforced polyester.
   2. Color: Black
   3. Mounting:

      a. Replaceable detectable warning tile wet-set into freshly poured concrete and surface-fastened to permanently embedded anchors.

2.10 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of tactile warning surfaces, noncorrosive and compatible with each material joined, and complying with the following:

   1. Furnish Type 316 stainless-steel fasteners for exterior use.
   2. Fastener Heads: For nonstructural connections, use flathead or oval countersunk screws and bolts with tamper-resistant heads, colored to match tile.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.

B. Proof-roll prepared subbase surface below concrete pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding.

   1. Completely proof-roll subbase in one direction. Limit vehicle speed to 3 mph (5 km/h).
   2. Proof-roll with a loaded 10-wheel tandem-axle dump truck weighing not less than 15 tons (13.6 tonnes).
   3. Subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch (13 mm) require correction according to requirements in Division 2 Section "Earthwork".

C. Proceed with concrete pavement operations only after nonconforming conditions have been corrected and subgrade is ready to receive pavement.

D. **ADA Tactile Warning Tiles:**

   1. Verify that pavement is in suitable condition to begin installation according to manufacturer's written instructions. Verify that installation of tactile warning surfacing will comply with accessibility requirements upon completion.
   2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.5 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour unless pavement terminates at isolation joints.

1. Continue steel reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.
2. Provide tie bars at sides of paving strips where indicated.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.

1. Locate expansion joints at intervals of 20 feet (15.25 m), unless otherwise indicated.
2. Extend joint fillers full width and depth of joint.

3. Terminate joint filler not less than 1/2 inch (13 mm) or more than 1 inch(25 mm) below finished surface if joint sealant is indicated.
4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
6. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:

1. Use grooving tool to form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 1/4-inch (6-mm) radius. Repeat grooving of contraction joints after applying surface finishes.

E. Edging: Tool edges of paving, curbs, and joints in concrete after initial floating with an edging tool to a 1/4-inch (6-mm) radius. Repeat tooling of edges after applying surface finishes.

1. All Contraction, Isolation and Construction joints to be edged.

3.6 CONCRETE PLACEMENT

A. Inspection: Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast in. Notify other trades to permit installation of their work.

B. Remove snow, ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to fresh concrete after testing.

F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.

H. Screed pavement surfaces with a straightedge and strike off.

I. Commence initial floating using bull floats or darbies to impart an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

J. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When air temperature has fallen to or is expected to fall below 40 deg F(4.4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F(10 deg C) and not more than 80 deg F(27 deg C) at point of placement.
2. Do not use frozen materials or materials containing ice or snow.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mix designs.

K. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F(32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

L. Curbs: When automatic machine placement is used for curb placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not approved, remove and replace with formed concrete.

3.7 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Fine-Textured Broom Finish: Draw a soft bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.

3.8 SPECIAL FINISHES

A. ADA Tactile Warning Tiles:

1. Concrete Paving Installation: Comply with installation requirements in Section 32 1313 "Concrete Paving". Mix, place, and finish concrete to conditions complying with detectable warning tile manufacturer's written requirements for satisfactory embedment of removable tile.
2. Set each detectable warning tile accurately and firmly in place with embedding anchors and fasteners attached, and firmly seat tile back in wet concrete by tamping or vibrating. If necessary, temporarily apply weight to tiles to ensure full contact with concrete.
3. Set surface of tile flush with surrounding concrete and adjacent tiles, with variations between tiles and between concrete and tiles not exceeding plus or minus 1/8 inch (3 mm) from flush.
4. Protect exposed surfaces of installed tiles from contact with wet concrete. Complete finishing of concrete paving surrounding tiles. Remove concrete from tile surfaces.
5. Clean tiles using methods recommended in writing by manufacturer.

3.9 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h(1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:

1. Moist Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

   a. Water.
   b. Continuous water-fog spray.

c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.10 ADA TACTILE WARNING TILES: CLEANING AND PROTECTION

A. Remove and replace tactile warning surfacing that is broken or damaged or does not comply with requirements in this Section. Remove in complete sections from joint to joint unless otherwise approved by Architect. Replace using tactile warning surfacing installation methods acceptable to Architect.

B. Protect tactile warning surfacing from damage and maintain free of stains, discoloration, dirt, and other foreign material.

3.11 PAVEMENT TOLERANCES

A. Comply with tolerances of ACI 117 and as follows:

1. Elevation: 1/4 inch (6 mm).
2. Thickness: Plus 3/8 inch (10 mm), minus 1/4 inch (6 mm).
3. Surface: Gap below 10-foot- (3-m-) long, unleveled straightedge not to exceed 1/4 inch (6 mm).
4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1 inch (25 mm).
5. Vertical Alignment of Tie Bars and Dowels: 1/4 inch (6 mm).
6. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge: Length of dowel 1/4 inch per 12 inches (6 mm per 300 mm).
7. Joint Spacing: 3 inches (75 mm).
8. Contraction Joint Depth: Plus 1/4 inch (6 mm), no minus.
9. Joint Width: Plus 1/8 inch (3 mm), no minus.

3.12 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain at least 1 composite sample for each 100 cu. yd.(76 cu. m) or fraction thereof of each concrete mix placed each day.

a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F(4.4 deg C) and below and when 80 deg F(27 deg C) and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test 1 specimen at 7 days and 2 specimens at 28 days.

a. A compressive-strength test shall be the average compressive strength from 2 specimens obtained from same composite sample and tested at 28 days.

C. Strength of each concrete mix will be satisfactory if average of any 3 consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).

D. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.

F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.

G. Remove and replace concrete pavement where test results indicate that it does not comply with specified requirements.

H. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.13 REPAIRS AND PROTECTION

A. Remove and replace concrete pavement that is broken, damaged, or defective or that does not comply with requirements in this Section.

B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy adhesive.

C. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 32 1313

APPENDIX G – STATEMENT OF SPECIAL INSPECTION
ARCHITECTURAL & STRUCTURAL
FOR ADDITIONAL INFORMATION SEE
01 4533 – CODE REQUIRED SPECIAL INSPECTIONS

Statement of Special Inspections

Project: Greenwich Central Middle School

Location: *9 Indian Rock Lane, Greenwich CT*

Owner: *Greenwich Board of Education*

Design Professional in Responsible Charge: *Kemp A. Morhardt, AIA, NCARB*

This Statement of Special Inspections is submitted in accordance with Section 1704.2.3 of the 2021 International Building Code. It includes a *Schedule of Special Inspection Services* applicable to the above-referenced Project as well as the identity of the individuals, agencies, or firms intended to be retained for conducting these inspections. If applicable, it includes *Requirements for Seismic Resistance* and/or *Requirements for Wind Resistance*. This *Statement of Special Inspections* encompass the following disciplines:

☐ Structural ☐ Mechanical/Electrical/Plumbing

☒ Architectural ☐ Other: _____

Are *Requirements for Seismic Resistance* included in the *Statement of Special Inspections*? ☐ Yes ☒ No

Are *Requirements for Wind Resistance* included in the *Statement of Special Inspections*? ☐ Yes ☒ No

The Special Inspector(s) shall keep records of all inspections and shall furnish interim inspection reports to the Building Official and to the Registered Design Professional in Responsible Charge at a frequency agreed upon by the Design Professional and the Building Official prior to the start of work. Discrepancies shall be brought to the immediate attention of the Contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge prior to completion of that phase of work. A *Final Report of Special Inspections* documenting required special inspections and corrections of any discrepancies noted in the inspections shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge at the conclusion of the project.

Frequency of interim report submittals to the Registered Design Professional in Responsible Charge:

☐ Weekly ☐ Bi-Weekly ☒ Monthly Other; specify:_____

The Special Inspection program does not relieve the Contractor of the responsibility to comply with the Contract Documents. Jobsite safety and means and methods of construction are solely the responsibility of the Contractor.

Statement of Special Inspections Prepared by:

Kemp A. Morhardt, AIA, NCARB
Type or print name

Signature

11/5/2024
Date

Preparer's seal



Building Official's Acceptance:

Signature Date

Owner's Authorization:

Permit Number: Signature Date

Frequency of interim report submittals to the Building Official:

☒ Monthly ☐ Bi- Monthly ☐ Upon Completion Other; specify:_____

Schedule of Inspection and Testing Agencies

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- ☐ Steel Construction
- ☐ Concrete Construction
- ☐ Masonry Construction
- ☐ Wood Construction
- ☐ Soils
- ☐ Pile Foundations
- ☐ Pier Foundations
- ☐ Cold Formed Steel Framing
- ☒ Sprayed Fire-Resistant Materials
- ☒ Mastic and Intumescent Fire-Resistant Coatings
- ☒ Exterior Insulation and Finish Systems (EIFS)
- ☒ Fire-Resistant Penetrations and Joints
- ☐ Smoke Control
- ☐ Sealing of Mass Timber
- ☐ Architectural Designated Seismic Systems
- ☐ Seismic Certification of Non-Structural Components

***Inspection Agents**			
Agency	**Firm**	**Address**	**Telephone**
1. Special Inspection Coordinator	TBD		
2. Testing/Inspections	TBD		
3. Geotechnical Engineer	Tighe and Bond	213 Court Street Suite 1100 Middletown CT 06457	(860)-704-4760
4. Other			
Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.			

Quality Assurance for Seismic Resistance

See the *Schedule of Special Inspections* for inspection and testing requirements

Seismic Design Category: B

Statement of Special Inspection for Seismic Resistance Required (Yes/No): No

Description of seismic force-resisting system subject to special inspection and testing for seismic resistance: **(Required for Seismic Design Categories B, C, D, E or F in accordance with IBC Sections 1705.13.1 through 1705.13.3, and 1705.14.1 and 1705.14.2)**

Description of designated seismic systems subject to special inspection and testing for seismic resistance: **(Required for architectural, electrical and mechanical systems and their components that require design in accordance with Chapter 13 of ASCE 7, have a component importance factor, *Ip*, greater than one and are in Seismic Design Categories C, D, E or F.)**

Description of additional seismic systems and components requiring special inspections and testing: **(Required for systems noted in IBC Section 1705.13.5 through 1705.13.7 in Seismic Design Categories C, D, E or F.)**

Statement of Responsibility:

Each contractor responsible for the construction or fabrication of a system or component described above must submit a Statement of Responsibility.

Quality Assurance for Wind Requirements

See the *Schedule of Special Inspections* for inspection and testing requirements

Nominal Design Wind Speed, *Vasd*: 101 m.p.h.

Wind Exposure Category: B

Statement of Special Inspection for Wind Resistance Required (Yes/No): No

(Required in wind exposure Category B, where the Basic wind speed is 130 miles per hour or greater. Required in wind exposure Category C or D, where the basic design wind speed, ***V***, is 140 miles per hour or greater.)
Description of main windforce-resisting system subject to special inspection for wind resistance: **(Required for systems noted in IBC Section 1705.12)**

Statement of Responsibility:

Each contractor responsible for the construction or fabrication of a system or component described above must submit a Statement of Responsibility.

Minimum Qualifications of Inspectors and Testing Technicians *

* (as referenced in Table 1 of the *"Model Program for Special Inspection"* published by the International Code Council (ICC) and AC 291 published by the International Accreditation Service (IAS).

The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided if requested.

Table 1 – Minimum Qualifications for Special Inspectors [a, b]

SPECIAL INSPECTION CATEGORY	REQUIRED EXPERIENCE	REQUIRED CERTIFICATION(S)	NOTES
EIFS	Note c	AWCI EIFS Inspector	
Firestop systems	Note c	UL firestop examination of FM firestop examination	
Wall panels, curtain walls and veneers	Note c	ICC Commercial Building Inspector or ICC Residential Building Inspector	Note d
Seismic isolation systems	Note c	RDP, PE, BS engineering/ architecture	
Special cases	Note c	ICC Commercial Building Inspector or ICC Residential Building Inspector	Note d

Table 1 – continued
Minimum Qualifications for Special Inspectors [a, b]

a. It is recognized that the development of qualified inspectors requires those individuals to obtain experience performing inspections of actual work. The requirements herein include such experience, as do some of the required certifications. To provide a vehicle for individuals to obtain this experience, they shall perform inspections in accordance with written associate or apprentice programs that are prepared by the SIA, approved by the IAS, and meet the requirements of the local governing authority. These programs must include, at a minimum, passing certification exams, when available, administered by third-party agencies, such as ICC and ACI; in-house SIA and third-party training; observation by the associate or apprentice of inspections performed by certified inspectors; and performance by the associate or apprentice inspectors of duplicate inspections with certified inspectors. This written program will also define the use of associate or apprentice inspectors and will limit their use based upon the level of supervision and the complexity of the inspection assignment. The complexity of an assignment shall be minimal and will often be task specific. Supervision should be direct, with a certified inspector being present at the site with the associate or apprentice. The associate or apprentice to certified inspector ratio on a project site shall not exceed 1:1. All documents related to work by an associate or apprentice inspector must be cosigned by a certified inspector. The written program must include documentation of compliance with the program.

b. When qualifications for special inspectors are locally defined, by statute, ordinance or rule that meet or exceed the requirements outlined in this criteria, these local requirements shall be recognized.

c. Applicants shall comply with one of the following education and experience requirements:

   1. PE, licensed architects or RDP, and a minimum of three months of relevant work experience; or
   2. BS in engineering, architecture or physical science, and a minimum of six months of relevant work experience; or
   3. Two years of verified college or technical school (a copy of a diploma or transcript required), and a minimum of one year of relevant work experience; or
   4. High school or equivalent graduate (a copy of a diploma or certificate required), and a minimum of two years of verified relevant work experience; or
   5. A minimum of three years of verified relevant work experience.

d. PE, licensed architects, or RDP are exempt from the required certifications listed in this table, but are subject to on-site assessment of competence by IAS.

Reference Abbreviations, and Recognized Certifying or Accreditation Agencies

AA	Associate of Arts (degree)
AABC	Associated Air Balance Council
ACI	American Concrete Institute
ANSI	American National Standards Institute
API	American Petroleum Institute
ASNT	American Society for Nondestructive Testing
ASTM	American Society for Testing and Materials
AWCI	Association of the Wall and Ceiling Industry
AWS	American Welding Society
BS	Bachelor of Science (degree)
CWI	Certified welding inspector
EIFS	Exterior insulation and finish system
EIT	Engineer in Training
FM	Factory Mutual Global
IAS	International Accreditation Service
IBC	International Building Code
ICC	International Code Council
ICC-ES	ICC Evaluation Service
NDT	Nondestructive testing
NICET	National Institute for Certification of Engineering Technologists
PE	Professional engineer
RDP	Registered design professional
SI	Special inspector
SIA	Special inspection agency
UL	Underwriters Laboratories

Schedule of Special Inspection Services

MATERIAL/ACTIVITY	REFERENCE SECTION	SERVICE (See **Table 1** above for minimum qualifications)	APPLICABLE TO THIS PROJECT			
			Y/N	EXTENT	AGENT[1]	DATE COMPLETED
1705.12 Wind-Resisting Components						
1. Fastening of roof covering, roof deck and roof framing connections.		Field inspection	**N**	Periodic		
2. Fastening of exterior wall covering and wall connections to roof and floor diaphragms and framing		Field inspection	**N**	Periodic		
1705.13.4 Designated Seismic Systems Verification						
Inspect and verify that the component label, anchorage or mounting conforms to the certificate of compliance in accordance with *Section 1705.14.3*		Field inspection	**N**	Periodic		
1705.13.5 Architectural Components Special Inspections for Seismic Resistance						
Inspection during the erection and fastening of exterior cladding and interior and exterior veneer		Field inspection	**N**	Periodic		
Inspection during the erection and fastening of interior and exterior nonbearing walls		Field inspection	**N**	Periodic		
Inspection during anchorage of access floors		Field inspection	**N**	Periodic		
1705.13.7 Storage Racks Special Inspections for Seismic Resistance						
Inspection during the anchorage of storage racks 8 feet or greater in height		Field inspection	**N**	Periodic		
1705.14.2 Seismic Certification of Nonstructural Components (Seismic Design Category B,C,D, E, or F, and ASCE 7, Section 13.2.1)						
Review certificate of compliance for nonstructural components, supports and/or attachments		Certificate of compliance review	**N**	Each submittal		
1705.14.3 Designated Seismic Systems (Seismic Design Category C,D,E, or F and ASCE 7, Section 13.2.2)						
Review certificate of compliance for designated seismic system components		Certificate of compliance review	**N**	Each submittal		
1705.15 Sprayed Fire-resistant Materials						
Verify surface condition preparation of structural members		Field inspection	**Y**	*Per IBC Section 1705.15.1 & 1705.15.2*	2	
Verify application of sprayed fire-resistant materials		Field inspection	**Y**	*Per IBC Section 1705.15.3*	2	
Verify average thickness of sprayed fire-resistant materials applied to structural members		Field inspection and testing	**Y**	*Per IBC Section 1705.15.4*	2	
Verify density of the sprayed fire-resistant material complies with approved fire-resistant design		Field inspection and testing	**Y**	*Per IBC Section 1705.15.5*	2	
Verify the cohesive/adhesive bond strength of the cured sprayed fire-resistant material		Field inspection and testing	**Y**	*Per IBC Section 1705.15.6*	2	
1705.16 Mastic and Intumescent Fire-Resistant Coatings						

MATERIAL/ACTIVITY	REFERENCE SECTION	SERVICE (See **Table 1** above for minimum qualifications)	APPLICABLE TO THIS PROJECT			
			Y/N	EXTENT	AGENT[1]	DATE COMPLETED
Inspect and test mastic and intumescent fire-resistant coatings applied to structural elements and decks in accordance with *AWCI 12-B*		Field inspection and testing	**Y**	Periodic	2	
1705.17 Exterior Insulation and Finish Systems (EIFS)						
Verify materials, details and installations are per the approved construction documents		Field inspection	**Y**	Periodic		
Inspection of water-resistive barrier over sheathing substrate	*ASTM E2570*	Field inspection	**Y**	Periodic		
1705.18 Fire-Resistant Penetrations and Joints						
Inspect penetration firestop systems		Field testing	**Y**	Per *ASTM E2174*	1	
Inspect fire-resistant joint systems		Field testing	**Y**	Per *ASTM E2393*	1	
Inspect perimeter fire barrier systems		Field testing	**Y**	Per *ASTM E2393*	1	
1705.20 Sealing of Mass Timber						
Inspect sealants and adhesives		Field inspection	**N**	Periodic		

Notes:

1. The inspection and testing agent(s) shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official prior to commencing work. The qualifications of the Special Inspector(s) and/or testing agencies may be subject to the approval of the Building Official and/or the Design Professional.
2. The list of Special Inspectors may be submitted as a separate document, if noted so above.
3. Special Inspections as required by *Section 1704.2.5* are not required where the fabricator is approved in accordance with *IBC Section 1704.2.5.1.*
4. Observe on a random basis, operations need not be delayed pending these inspections. Perform these tasks for each welded joint, bolted connection, or steel element.
5. NDT of welds completed in an approved fabricator's shop may be performed by that fabricator when approved by the AHJ, refer to *AISC 360, N7*.
6. Where applicable, see also *Section 1705.12*, Special Inspections for Seismic resistance.
7. Specific requirements for special inspection shall be included in the research report for the anchor used by an approved source in accordance with *17.8.2 in ACI 318*, or other qualification procedures. Where specific requirements are not provided, special inspection requirement shall be specified by the registered design professional and shall be approve by the building official prior to the commencement of work.
8. Quality Control (QC) – Controls and inspections implemented by the installer to confirm that the material provided and work performed meet the requirements of the construction documents, installation drawings, shop drawings, design documents and referenced standards.
   Quality Assurance (QA) – Inspection as herein required of the materials, installation, fabrication, erection or placement of components and connections, performed by an agency, individual or firm other than the installer, requiring special expertise to confirm compliance with construction documents and referenced standards.
9. Continuous required for the first 5000 square feet (465 square meters) of AAC masonry. Periodic required after the first 5000 square feet (465 square meters) of AAC masonry.

Statement of Special Inspections

Project: Greenwich Central Middle School

Location: *9 Indian Rock Lane, Greenwich CT*

Owner: *Greenwich Board of Education*

Design Professional in Responsible Charge: *Douglas S. Graham, P.E.*

This Statement of Special Inspections is submitted in accordance with Section 1704.2.3 of the 2021 International Building Code. It includes a *Schedule of Special Inspection Services* applicable to the above-referenced Project as well as the identity of the individuals, agencies, or firms intended to be retained for conducting these inspections. If applicable, it includes *Requirements for Seismic Resistance* and/or *Requirements for Wind Resistance*. This *Statement of Special Inspections* encompass the following disciplines:

☒ Structural ☐ Mechanical/Electrical/Plumbing

☐ Architectural ☐ Other: _____

Are *Requirements for Seismic Resistance* included in the *Statement of Special Inspections*? ☐ Yes ☒ No

Are *Requirements for Wind Resistance* included in the *Statement of Special Inspections*? ☐ Yes ☒ No

The Special Inspector shall keep records of all inspections and shall furnish interim inspection reports to the Building Official and to the Registered Design Professional in Responsible Charge at a frequency agreed upon by the Design Professional and the Building Official prior to the start of work. Discrepancies shall be brought to the immediate attention of the Contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge prior to completion of that phase of work.

All Agents of the Special Inspector shall submit an Agent's Final Report of Special Inspections to the Special Inspector. The Special Inspector shall then submit a Final Report of Special Inspections along with the Agents Final Report of Special Inspections to the Building Official, including any open discrepancies.

Frequency of interim report submittals by the Special Inspector to the Registered Design Professional in Responsible Charge:

☐ Weekly ☐ Bi-Weekly ☒ Monthly Other; specify:_____

The Special Inspection program does not relieve the Contractor of the responsibility to comply with the Contract Documents. Jobsite safety and means and methods of construction are solely the responsibility of the Contractor.

Frequency of interim report submittals to the Building Official:

Statement of Special Inspections Prepared by:

Steven G. Murray, P.E.

Type or print name

Steven G Murray

Signature

11/7/2024

Date

Preparer's seal



Building Official's Acceptance:

Signature

Date

Owner's Authorization:

Permit Number:

Signature

Date

☐ Monthly ☐ Bi- Monthly ☐ Upon Completion Other; specify:_____

Schedule of Inspection and Testing Agencies

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- ☒ Steel Construction
- ☒ Concrete Construction
- ☐ Masonry Construction
- ☐ Wood Construction
- ☒ Soils
- ☐ Pile Foundations
- ☐ Pier Foundations
- ☐ Cold Formed Steel Framing
- ☐ Sprayed Fire-Resistant Materials
- ☐ Mastic and Intumescent Fire-Resistant Coatings
- ☐ Exterior Insulation and Finish Systems (EIFS)
- ☐ Smoke Control
- ☐ MEP Designated Seismic Systems
- ☐ Architectural Designated Seismic Systems
- ☐ Special Cases (Numbered below)
  - Permanent Soil Nail Walls
  - Underpinning
  - Foundation Drainage
  - Super-Longspan Steel Joists

***Inspection Agents**			
Agency	**Firm**	**Address**	**Telephone**
1. Special Inspector	TBD		
2. Testing/Inspections	TBD		
3. Geotechnical Engineer	TBD		
4. Structural Observer (if required by 1704.6)			
5. Other			
Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.			

Special Inspections for Seismic Resistance

See the *Schedule of Special Inspections* for inspection and testing requirements

Seismic Design Category: ___

Statement of Special Inspection for Seismic Resistance Required (Yes/No): ___

Description of seismic force-resisting system subject to special inspection and testing for seismic resistance: **(Required for Structures as stated in IBC Sections 1705.13 through 1705.13.9)**

Description of designated seismic systems subject to special inspection and testing for seismic resistance: **(Required for architectural, electrical and mechanical systems and their components that require design in accordance with Chapter 13 of ASCE 7, have a component importance factor, *Ip*, greater than one and are in Seismic Design Categories C, D, E or F.)**

Description of additional seismic systems and components requiring special inspections and testing: **(Required for Structures as stated in IBC Sections 1705.13 through 1705.13.9.)**

Statement of Responsibility:

Each contractor responsible for the construction or fabrication of a system or component described above must submit a Statement of Responsibility.

Special Inspections for Wind Resistance

See the *Schedule of Special Inspections* for inspection and testing requirements

Basic Wind Speed, V_{ult}: ___ m.p.h.

Wind Exposure Category: ___

Statement of Special Inspection for Wind Resistance Required (Yes/No): ___

(Required in wind exposure Category B, where the basic wind speed, V_{ult}, is 150 miles per hour or greater. Required in wind exposure Category C or D, where the basic wind speed, V_{ult}, is 140 miles per hour or greater.)
Description of main windforce-resisting system subject to special inspection for wind resistance: **(Required for systems noted in IBC Section 1705.12.1 and 1705.12.2)**

Description of windforce-resisting components subject to special inspection for wind resistance: **(Required for systems and components noted in IBC Section 1705.12.3)**

Statement of Responsibility:

Each contractor responsible for the construction or fabrication of a system or component described above must submit a Statement of Responsibility.

Structural Observations

Structural Observations Required per 1704.6 (Yes/No): ___

Structural Observations shall be performed by a registered design professional (Inspection Agent #4 Above) in accordance with 1704.6

Minimum Qualifications of Inspectors and Testing Technicians *

* (as referenced in Table 1 of the *"Model Program for Special Inspection"* published by the International Code Council (ICC) and AC 291 published by the International Accreditation Service (IAS).

The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided if requested.

Table 1 – Minimum Qualifications for Special Inspectors [a, b]

SPECIAL INSPECTION CATEGORY	REQUIRED EXPERIENCE	REQUIRED CERTIFICATION(S)	NOTES
Concrete construction (prestressed/precast)	Note c	ICC Prestressed SI and ICC Reinforced Concrete SI	
Reinforced concrete	Note c	ICC Reinforced Concrete SI or ACI Concrete Construction SI	
NDT	120 hours for Level II	ANSI/ASNT-CP-189 NDT or SNT-TC-1a NDT	
Pier and pile foundations	Note c	NICET II (geotechnical or construction, or construction material testing or soils)	Note d
Post-installed structural anchors in concrete	Note c	ICC Reinforced Concrete SI or ACI Concrete Construction SI	
Soils	Note c	ICC Soils SI or NICET II (geotechnical or construction, or construction material testing or soils)	Note d
Steel (high-strength bolting)	Note c	ICC Structural Steel and Bolting SI	
Steel (welding)	5 years minimum or in accordance with AWS	AWS CWI or ICC Structural Welding SI	
Masonry construction	Note c	ICC Structural Masonry SI	
Wood construction	Note c	ICC Commercial Building Inspector or ICC Residential Building Inspector	Note d
Structural cold-formed steel	Note c	ICC Commercial Building Inspector or ICC Residential Building Inspector	Note d
Excavation—sheeting, shoring and bracing	Note c	NICET II (geotechnical or construction, or construction material testing or soils)	Note d
Structural safety—stability and mechanical demolition	Note c	RDP, PE, BS engineering/ architecture or valid site safety manager certification	
Seismic isolation systems	Note c	RDP, PE, BS engineering/ architecture	
Special cases	Note c	ICC Commercial Building Inspector or ICC Residential Building Inspector	Note d

Table 1 – continued
Minimum Qualifications for Special Inspectors [a, b]

a. It is recognized that the development of qualified inspectors requires those individuals to obtain experience performing inspections of actual work. The requirements herein include such experience, as do some of the required certifications. To provide a vehicle for individuals to obtain this experience, they shall perform inspections in accordance with written associate or apprentice programs that are prepared by the SIA, approved by the IAS, and meet the requirements of the local governing authority. These programs must include, at a minimum, passing certification exams, when available, administered by third-party agencies, such as ICC and ACI; in-house SIA and third-party training; observation by the associate or apprentice of inspections performed by certified inspectors; and performance by the associate or apprentice inspectors of duplicate inspections with certified inspectors. This written program will also define the use of associate or apprentice inspectors and will limit their use based upon the level of supervision and the complexity of the inspection assignment. The complexity of an assignment shall be minimal and will often be task specific. Supervision should be direct, with a certified inspector being present at the site with the associate or apprentice. The associate or apprentice to certified inspector ratio on a project site shall not exceed 1:1. All documents related to work by an associate or apprentice inspector must be cosigned by a certified inspector. The written program must include documentation of compliance with the program.

b. When qualifications for special inspectors are locally defined, by statute, ordinance or rule that meet or exceed the requirements outlined in these criteria, these local requirements shall be recognized.

c. Applicants shall comply with one of the following education and experience requirements:

   1. PE, licensed architects or RDP, and a minimum of three months of relevant work experience; or
   2. BS in engineering, architecture or physical science, and a minimum of six months of relevant work experience; or
   3. Two years of verified college or technical school (a copy of a diploma or transcript required), and a minimum of one year of relevant work experience; or
   4. High school or equivalent graduate (a copy of a diploma or certificate required), and a minimum of two years of verified relevant work experience; or
   5. A minimum of three years of verified relevant work experience.

d. PE, licensed architects, or RDP are exempt from the required certifications listed in this table but are subject to on-site assessment of competence by IAS.

Reference Abbreviations, and Recognized Certifying or Accreditation Agencies

AA	Associate of Arts (degree)
AABC	Associated Air Balance Council
ACI	American Concrete Institute
ANSI	American National Standards Institute
API	American Petroleum Institute
ASNT	American Society for Nondestructive Testing
ASTM	American Society for Testing and Materials
AWCI	Association of the Wall and Ceiling Industry
AWS	American Welding Society
BS	Bachelor of Science (degree)
CWI	Certified welding inspector
EIFS	Exterior insulation and finish system
FM	Factory Mutual Global
IAS	International Accreditation Service
IBC	International Building Code
ICC	International Code Council
ICC-ES	ICC Evaluation Service
NDT	Nondestructive testing
NICET	National Institute for Certification of Engineering Technologists
PE	Professional engineer
RDP	Registered design professional
SI	Special inspector
SIA	Special inspection agency
UL	Underwriters Laboratories

Schedule of Special Inspection Services

MATERIAL/ACTIVITY	REFERENCE SECTION	SERVICE (See **Table 1** above for min qualifications)	APPLICABLE TO THIS PROJECT			
			Y/N	EXTENT	AGENT[1]	DATE COMPLETED
1704.2.5 Inspection of Fabricated Items						
Verify fabrication / quality control procedures		In-plant review[3]	**N**	Periodic		
1705.1.1 Special Cases (work unusual in nature including but not limited to alternative materials and systems, unusual design applications, materials and systems with special manufacturer's requirements)		Submittal review, shop[3] and/or field operations	**N**			
1705.2.1 Steel Construction						
Fabricator and erector documents (Verify reports and certificates as listed in *AISC 360, Chapter N3.2* for compliance with construction documents.)		Submittal Review	**Y**	Each submittal	**2**	
Material verification of structural steel		Shop[3] and field inspection	**Y**	Periodic	**2**	
Embedments (Verify diameter, grade, type, length, embedment. See *1705.3* for anchors)		Field Inspection	**Y**	Periodic	**2**	
Verify member locations, braces, stiffeners and application of joint details at each connection comply with construction documents.		Field Inspection	**Y**	Periodic	**2**	
Structural steel welding:						
Inspection tasks prior to welding (Observe, or perform for each welded joint or member, the QA tasks listed in *AISC 360, Table N5.4-1*)		Shop[3, 5, 10] and field inspection	**Y**	Observe or Perform as noted[4]	**2**	
Inspection tasks during welding (Observe or perform for each welded point or member, the QA tasks listed in *AISC 360, Table N5.4-2*)		Shop[3, 5, 10] and field inspection	**Y**	Observe[4]	**2**	
Inspection tasks after welding (Observe or perform for each welded point or member, the QA tasks listed in *AISC 360, Table N5.4-3*)		Shop[3, 5,10] and field inspection	**Y**	Observe or Perform as noted[4]	**2**	
Nondestructive testing (NDT) of welded joints: see Commentary					**2**	
Complete penetration groove welds 5/16" or greater		Shop [3, 5, 10] and field inspection	**Y**	Witness 25% (Shop), 50% (Field); Perform NDT 100%	**2**	
Thermally cut surfaces of access holes when material t>2"		Shop [3, 5, 10] and field inspection	**N**	Witness 25% (Shop), 50% (Field); Perform NDT 100%	**2**	
Welded joints subject to fatigue when required by *AISC 360, Appendix 3, Table A-3.1*		Shop [3, 5, 10] or field radiographic or Ultrasonic testing	**N**	Witness 25% (Shop), 50% (Field); Perform NDT 100%	**2**	
Fabricator NDT reports when fabricator performs NDT[5, 10]		Verify fabricator submitted reports	**Y**	Each submittal[5]	**2**	
Structural Steel Bolting:		Shop[3] and field inspection				
Inspection tasks Prior to Bolting			**Y**	Observe or Perform as noted[4]	**2**	

MATERIAL/ACTIVITY	REFERENCE SECTION	SERVICE (See **Table 1** above for min qualifications)	APPLICABLE TO THIS PROJECT			
			Y/N	EXTENT	AGENT[1]	DATE COMPLETED
(Observe or perform tasks for each bolted connection in accordance with QA tasks listed in *AISC 360, Table N5.6-1*)						
Inspection tasks during bolting (Observe the QA tasks listed in AISC 360, Table N5.6-2)			**Y**	Observe[4]	**2**	
Pre-tensioned and slip-critical joints			**N**			
Turn-of-nut with matching markings				Periodic	**2**	
Direct tension indicator				Periodic	**2**	
Twist-off type tension control bolt				Periodic	**2**	
Turn-of-nut without matching markings				Continuous	**2**	
Calibrated wrench				Continuous	**2**	
Snug-tight joints			**Y**	Periodic	**2**	
Inspection tasks after bolting (Perform tasks for each bolted connection in accordance with QA tasks listed in AISC 360, Table N5.6-3)			**Y**	Perform[4]	**2**	
Pre-tensioned and slip-critical joints			**N**			
Turn-of-nut with matching markings				Periodic	**2**	
Direct tension indicator				Periodic	**2**	
Twist-off type tension control bolt				Periodic	**2**	
Turn-of-nut without matching markings				Continuous	**2**	
Calibrated wrench				Continuous	**2**	
Snug-tight joints			**Y**	Periodic	**2**	
Inspection of steel elements of composite construction prior to concrete placement.						
Placement and installation of steel deck			**Y**	Observe or Perform as noted[4]	**2**	
Placement and installation of steel headed stud anchors			**Y**	Observe or Perform as noted[4]	**2**	
Document acceptance of rejection of steel elements			**Y**	Observe or Perform as noted[4]	**2**	
1705.2.2 Cold-formed Steel Deck						
Special Inspections and qualification of welding special inspectors for cold-formed steel floor and roof deck shall be in accordance with the quality assurance inspection requirements of SDI QA/QC.	SDI-QA/QC – 2017		**Y**			
Table 1.1 Inspection or Execution Tasks Prior to Deck Placement						
A – Verify compliance of materials (deck and all deck accessories) with construction documents, including profiles, material properties, and base metal thickness			**Y**	QC,QA[8] – Perform[4]	**2**	
B – Document acceptance or rejection of deck and deck accessories			**Y**	QC,QA[8] – Perform[4]	**2**	
Table 1.2 Inspection or Execution Tasks After Deck Placement						
A – Verify compliance of deck and all deck accessories installation with construction documents			**Y**	QC,QA[8] – Perform[4]	**2**	
B – Verify deck materials are represented by the mill certifications that comply with the construction documents			**Y**	QC[8]- N/A QA[8]-Perform[4]	**2**	
C – Document acceptance or rejection of deck and deck accessories			**Y**	QC,QA[8] – Perform[4]	**2**	

MATERIAL/ACTIVITY	REFERENCE SECTION	SERVICE (See **Table 1** above for min qualifications)	APPLICABLE TO THIS PROJECT			
			Y/N	EXTENT	AGENT[1]	DATE COMPLETED
Table 1.3 Inspection or Execution Tasks Prior to Welding						
A – Welding procedure specifications (WPS) available			**Y**	QC, QA[8]-Observe[4]	**2**	
B – Manufacturer certifications for welding consumables available			**Y**	QC, QA[8]-Observe[4]	**2**	
C – Material identification (type/grade)			**Y**	QC, QA[8]-Observe[4]	**2**	
D – Check welding equipment			**Y**	QC, QA[8]-Observe[4]	**2**	
Table 1.4 Inspection or Execution Tasks During Welding						
A – Use of qualified welders			**Y**	QC, QA[8]-Observe[4]	**2**	
B – Control and handling of welding consumables			**Y**	QC, QA[8]-Observe[4]	**2**	
C – Environmental conditions (wind speed, moisture, temperature)			**Y**	QC, QA[8]-Observe[4]	**2**	
D – WPS followed			**Y**	QC, QA[8]-Observe[4]	**2**	
Table 1.5 Inspection or Execution Tasks After Welding						
A – Verify size and location of welds, including support, sidelap, and perimeter welds			**Y**	QC, QA[8]-Perform[4]	**2**	
B – Welds meet visual acceptance criteria			**Y**	QC, QA[8]-Perform[4]	**2**	
C – Verify repair activities			**Y**	QC, QA[8]-Perform[4]	**2**	
D – Document acceptance or rejection of welds			**Y**	QC, QA[8]-Perform[4]	**2**	
Table 1.6 Inspection or Execution Tasks Prior to Mechanical Fastening						
A – Manufacturer installation instructions available for mechanical fasteners			**Y**	QC, QA[8]-Observe[4]	**2**	
B – Proper tools available for fastener installation			**Y**	QC, QA[8]-Observe[4]	**2**	
C – Proper storage for mechanical fasteners			**Y**	QC, QA[8]-Observe[4]	**2**	
Table 1.7 Inspection or Execution Tasks During Mechanical Fastening						
A – Fasteners are positioned as required			**Y**	QC, QA[8]-Observe[4]	**2**	
B – Fasteners are installed in accordance with manufacturer's instructions			**Y**	QC, QA[8]-Observe[4]	**2**	
Table 1.8 Inspection or Execution Tasks After Mechanical Fastening						
A – Check spacing, type, and installation of support fasteners			**Y**	QC, QA[8]-Perform[4]	**2**	
B – Check spacing, type, and installation of sidelap fasteners			**Y**	QC, QA[8]-Perform[4]	**2**	
C – Check spacing, type, and installation of perimeter fasteners			**Y**	QC, QA[8]-Perform[4]	**2**	
D – Verify repair activities			**Y**	QC, QA[8]-Perform[4]	**2**	
E – Document acceptance or rejection of mechanical fasteners			**Y**	QC, QA[8]-Perform[4]	**2**	
1705.2.3 Open-Web Steel Joists and Joist Girders						
1. Installation	Table 1705.2.3					

MATERIAL/ACTIVITY	REFERENCE SECTION	SERVICE (See **Table 1** above for min qualifications)	APPLICABLE TO THIS PROJECT			
			Y/N	EXTENT	AGENT[1]	DATE COMPLETED
a. End connections – welding or bolting	SJI specifications listed in Section 2207.1[6]		**Y**	Periodic	**2**	
b. Bridging – horizontal or diagonal			**Y**			
1. Standard bridging	SJI specifications listed in Section 2207.1[6]		**Y**	Periodic	**2**	
2. Bridging that differs from the SJI specifications listed in Section 2207.1.			**Y**	Periodic	**2**	
1705.2.4 Cold-formed Steel Trusses Spanning 60 Feet or Greater						
Verify temporary and permanent restraint/bracing are installed in accordance with the approved truss submittal package		Field inspection	**N**	Periodic	**2**	
1705.3 Concrete Construction	Table 1705.3[6] Note IBC References ACI 318-14 not 318-19					
1. Inspect reinforcement, including prestressing tendons, and verify placement.	ACI 318 Ch. 20, 25.2, 25.3, 26.6.1-26.6.3 IBC 1908.4	Field inspection and Shop[3] for Precast Conc	**Y**	Periodic	**2**	
2. Reinforcing bar welding:	Field inspection and Shop[3] for Precast Conc	Field inspection and Shop[3] for Precast Conc	**N**			
a. Verify weldability of reinforcing bars other than ASTM A706;				Periodic	**2**	
b. Inspect single pass fillet welds, maximum 5/16"; and				Periodic	**2**	
c. Inspect all other welds.				Continuous	**2**	
3. Inspect anchors cast in concrete.	ACI 318: 17.8.2	Field inspection	**Y**	Periodic	**2**	
4. Inspect anchors post-installed in hardened concrete members. Provide reports which include the following information: Anchor description, including adhesive product name, anchor type, nominal anchor diameter, and anchor length, Hole description, including verification of drill bit compliance with ANSI B212.15-1994, hole depth and cleanliness, Installation description, including verification of concrete strength by ASTM C42 methods and verification of anchor installation and location (spacing and edge distance) in accordance with the manufacturer's published instructions and applicable ICC ES report			**Y**		**2**	
a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads (Installer and Inspector must be ACI/CRI Adhesive Anchor Installer Certified).	ACI 318:17.8.2.4	Field inspection	**Y**	Continuous	**2**	
b. Mechanical Anchors and adhesive anchors not defined in 4.a.	ACI 318: 17.8.2	Field inspection	**Y**	Periodic	**2**	
5. Verify use of approved design mix	ACI 318:Ch. 19, 26.4.3, 26.4.4 IBC 1904.1, 1904.2,	Field inspection and Shop[3] for Precast Conc	**Y**	Periodic	**2**	
6. Prior to concrete placement, fabricate specimens for strength tests, perform	ASTM C172 ASTM C31	Field inspection	**Y**	Continuous	**2**	

MATERIAL/ACTIVITY	REFERENCE SECTION	SERVICE (See **Table 1** above for min qualifications)	APPLICABLE TO THIS PROJECT			
			Y/N	EXTENT	AGENT[1]	DATE COMPLETED
slump, density and air content tests, and determine temperature of the concrete.	ACI 318: 26.5, 26.12					
7. Inspect concrete placement for proper application techniques.	ACI 318: 26.5	Field inspection	**Y**	Continuous	**2**	
8. Verify maintenance of specified curing temperature and techniques including approved cold and hot weather concreting procedures.	ACI 318: 26.5.3-26.5.5	Field inspection	**Y**	Periodic	**2**	
9. Inspection of prestressed concrete for:	ACI 318: 26.10	Field inspection and Shop[3] for Precast Conc	**N**			
10. Inspect erection of precast concrete members.	ACI 318 Ch. 26.9	Field inspection	**N**	Periodic	**2**	
11.For precast concrete diaphragm connections or reinforcement at joints classified as moderate or high deformability elements (MDE or HDE) in structures assigned to Seismic Design Category C, D, E or F, inspect such connections and reinforcement in the field for:	ACI 318 26.13.1.3		**N**			
12. Inspect installation tolerances of precast concrete diaphragm connections for compliance with ACI 550.5.	ACI 318 26.13.1.3		**N**	Periodic	**2**	
13. Verify of in-situ concrete strength, prior to stressing of tendons in post tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	ACI 318: 26.11.2	Review field testing and laboratory systems	**N**	Periodic	**2**	
14. Inspect formwork for shape, location and dimensions of the concrete member being placed.	ACI 318: 26.11.1.2(b)	Field inspection	**Y**	Periodic	**2**	
1705.4 Masonry Construction						
Special Inspections and tests of masonry construction shall be performed in accordance with the quality assurance program requirements of TMS 402/ACI 530/ASCE 5 and TMS 602/ACI 530.1/ASCE 6.	TMS 402/ACI 530/ ASCE 5, TMS 602/ACI 530.1/ ASCE 6		**N**			
1705.5 Wood Construction						
Inspection of pre-fabricated wood structural elements and assemblies in accordance with section *1704.2.5.*		In-plant review[3]	**N**	Periodic	**2**	
1705.6 Soils						
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.		Field inspection	**Y**	Periodic	**3**	
2. Verify excavations are extended to proper depth and have reached proper material.		Field inspection	**Y**	Periodic	**3**	
3. Perform classification and testing of compacted fill materials.		Field inspection	**Y**	Periodic	**2**	
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.		Field inspection	**Y**	Continuous	**2**	
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.		Field inspection	**Y**	Periodic	**3**	
1705.7 Driven Deep Foundations						
1. Verify element materials, sizes and lengths comply with requirements.		Field inspection	**N**	Continuous	**2**	

MATERIAL/ACTIVITY	REFERENCE SECTION	SERVICE (See **Table 1** above for min qualifications)	APPLICABLE TO THIS PROJECT			
			Y/N	EXTENT	AGENT[1]	DATE COMPLETED
1705.8 Cast-in-Place Deep Foundations						
1. Inspect drilling operations and maintain complete and accurate records for each element.		Field inspection	**N**	Continuous	**2**	
1705.9 Helical Pile Foundations						
Verify installation equipment, pile dimensions, tip elevations, final depth, final installation torque and other pertinent installation data as required.		Field inspection	**N**	Continuous	**2**	
1705.10 Structural Integrity of Deep Foundation Elements						
Whenever there is a reasonable doubt as to the structural integrity of a deep foundation element, an engineering assessment shall be required. The engineering assessment shall include tests for defects performed in accordance with ASTM D4945, ASTM D5882, ASTM D6760 or ASTM D7949, or other approved method.			**N**	As Required	**1**	
1705.12 Special Inspections for Wind Resistance (Required in wind exposure Category B, where the basic wind speed, V_{ult}, is 150 miles per hour or greater. Required in wind exposure Category C or D, where the basic wind speed, V_{ult}, is 140 miles per hour or greater)			**N**			
1705.13 Special Inspections for Seismic Resistance			**N**			

Notes:

1. The inspection and testing agent(s) shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official prior to commencing work. The qualifications of the Special Inspector(s) and/or testing agencies may be subject to the approval of the Building Official and/or the Design Professional.
2. The list of Special Inspectors may be submitted as a separate document, if noted so above.
3. Special Inspections as required by *Section 1704.2.5* are not required where the fabricator is approved in accordance with *IBC Section 1704.2.5.1.At completion of fabrication, approved fabricated shall submit a certificate of compliance to the owner or the owner's authorized agent for submittal to the AHJ as specified in Section 1704.5 stating that the work was performed in accordance with the approved construction documents. At completion of erection,,erector shall submit a certificate of compliance to the AHJ stating that the materials supplied and work performed by the erector are in accordance with the Construction Documents.*
4. Observe on a random basis, operations need not be delayed pending these inspections. Perform these tasks for each welded joint, bolted connection, or steel element.
5. NDT of welds completed in an approved fabricator's shop is permitted to be performed by that fabricator when approved by the AHJ and thus would not require the involvement of a third-party inspector for QA NDT inspections, refer to *AISC 360, N6*. The fabricator shall submit all NDT reports for review to the special inspector and AHJ.
6. Where applicable, see also *Section 1705.12*, Special Inspections for Seismic resistance.
7. Specific requirements for special inspection shall be included in the research report for the anchor used by an approved source in accordance with *17.8.2 in ACI 318*, or other qualification procedures. Where specific requirements are not provided, special inspection requirement shall be specified by the registered design professional and shall be approve by the building official prior to the commencement of work.
8. Quality Control (QC) – Controls and inspections implemented by the installer to confirm that the material provided and work performed meet the requirements of the construction documents, installation drawings, shop drawings, design documents and referenced standards.
   Quality Assurance (QA) – Inspection as herein required of the materials, installation, fabrication, erection or placement of components and connections, performed by an agency, individual or firm other than the installer, requiring special expertise to confirm compliance with construction documents and referenced standards.
9. Continuous required for the first 5000 square feet (465 square meters) of AAC masonry. Periodic required after the first 5000 square feet (465 square meters) of AAC masonry.
10. Visually inspect 100% of single-pass field fillet welds that exceed 5/16". Witness 50%. Use non-destructive testing for 25% (see project specifications for NDT options).
    Visually inspect 100% of single-pass field fillet welds that are 5/16" or less. Witness 10%. Use non-destructive testing when the inspector feels it is necessary to verify quality of weld.

MATERIAL/ACTIVITY	REFERENCE SECTION	SERVICE (See **Table 1** above for min qualifications)	APPLICABLE TO THIS PROJECT			
			Y/N	EXTENT	AGENT[1]	DATE COMPLETED
Where the fabricator is approved in accordance with *IBC Section 1704.2.5.1.,* NDT quality assurance inspections may not be waived unless complies with note 5 above.						

CODE INFORMATION

1. OCCUPANCY CLASSIFICATION (CSBC 302):

USE GROUP(S): E, A-1, A-2, A-3, A-4, B, S-1

ACCESSORY USE AREAS (CSBC 508.2): A-3 - CONFERANCE ROOMS

MIXED OCCUPANCIES (CSBC 508)

NON-SEPARATED USES (CSBC 508.3): YES

SEPARATED USES (CSBC 508.4): NO

2. CONSTRUCTION TYPE CLASSIFICATION (CSBC 602.0):

MINIMUM TYPE OF CONSTRUCTION REQUIRED: IB

ACTUAL TYPE OF CONSTRUCTION PROVIDED: IB

3. BUILDING HEIGHT & MODIFICATIONS (CSBC 503 & 504):

ALLOWABLE HEIGHT IN STORIES/FEET: 6 / 180'

TABULAR HEIGHT IN STORIES/FEET: 5 / 160'

INCREASE FOR SPRINKLERS IN STORIES/FEET: 1 / 20'

ACTUAL HEIGHT IN STORIES/FEET: 2 / 32'

STORIES ABOVE GRADE: 2

4. ACTUAL BUILDING AREA (CSBC 502.1 & CHAPTER 2):

GROSS BUILDING AREA PER FLOOR:

FIRST FLOOR GROSS BUILDING AREA: 74,184 SF

SECOND FLOOR GROSS BUILDING AREA: 53,104 SF

TOTAL GROSS BUILDING AREA: 127,288 SF

5. BUILDING AREA & MODIFICATIONS (CSBC 503 & 506):

CALCULATION NOT APPLICABLE - UNLIMITED AREA BUILDING

ALLOWABLE AREA (*Aa*) CALCULATION BY OCCUPANCY CLASSIFICATION:

At = TABULAR AREA (CSBC TABLE 506.2)

If = INCREASE FOR FRONTAGE - SEE BELOW (CSBC 506.3): N/A

ALLOWABLE AREA EQUATION 5-1 (CSBC 506.1):

Aa = At + (At x If) + (At x Is)

Aa (N/A) = N/A + (N/A x N/A) + (N/A x N/A) = N/A SF

Aa (N/A) = N/A + (N/A x N/A) + (N/A x N/A) = N/A SF

FRONTAGE INCREASE (*If*) CALCULATIONS (CSBC 506.3):

	NORTH	EAST	SOUTH	WEST
TOTAL PERIMETER:	N/A FT	N/A FT	N/A FT	N/A FT
TOTAL FRONTAGE	N/A FT	N/A FT	N/A FT	N/A FT

TOTAL PERIMETER (*P*): N/A FT

TOTAL FRONTAGE (*F*): N/A FT

FRONTAGE INCREASE EQUATION 5-2 (CSBC 506.3):

If = (F/P - 0.25) W/30

If = (N/A' / N/A' - 0.25) N/A /30) = N/A

FRONTAGE INCREASE - VALUE OF W - EQUATION 5-3 (CSBC 506.2.1):

W = [(L1 x w1) + (L2 x w2) + (L3 x w3)...] / F

W = [(N/A' x N/A') + (N/A' x N/A') + (N/A x N/A)...] / F = N/A FT

7a. CASE 2a - MIXED OCCUPANCIES - NON-SEPARATED (CSBC 508.3):
ALLOWABLE BUILDING AREA (CSBC 506.2.2):

CALCULATION NOT APPLICABLE - UNLIMITED AREA BUILDING

ALLOWABLE BUILDING AREA CALCULATION - 'MOST RESTRICTIVE' (CSBC 508.3.2) FOR EACH FLOOR

$$\frac{\text{(OCC. CLASS ..) ACTUAL AREA}}{\text{ALLOWABLE AREA (Aa)}} \leq 1$$

$$\frac{\text{(OCC. CLASS ..) N/A SF}}{\text{N/A SF}} = \text{N/A - } \textbf{\textit{OK}}$$

MIXED OCCUPANCY TOTAL ALLOWABLE BUILDING AREA DETERMINATION CALCULATIONS (CSBC 506.5) FOR MULTI-STORY BUILDINGS (3 OR MORE STORIES)

CALCULATION NOT APPLICABLE - UNLIMITED AREA BUILDING

$$\frac{\text{(OCC. CLASS ..) ACTUAL AREA}}{\text{ALLOWABLE AREA (Aa)}} = \text{X}$$

FIRST FLOOR - MIXED OCCUPANCIES:

$$\frac{\text{(OCC. CLASS ..) N/A SF}}{\text{N/A SF}} = \text{N/A}$$

SECOND FLOOR - MIXED OCCUPANCIES:

$$\frac{\text{(OCC. CLASS ..) N/A SF}}{\text{N/A SF}} = \text{N/A}$$

THIRD FLOOR - SINGLE OCCUPANCY:

$$\frac{\text{(OCC. CLASS ..) N/A SF}}{\text{N/A SF}} = \text{N/A} \times$$

TOTAL OF ALL FLOORS LESS THAN 3: N/A - ***OK***

8. FIRE RESISTANCE RATED REQUIREMENTS FOR BUILDING ELEMENTS (CBC TABLE 601):

BUILDING ELEMENT	FIRE SEP DIST. (FEET)	RATING REQD	RATING PROVIDED
STRUCTURAL FRAME, INCLUDING COLUMNS, GIRDERS, TRUSSES		2 HR	2 HR
BEARING WALLS			
EXTERIOR			
NORTH	N/A	2 HR	2 HR @ GYM
EAST	N/A	2 HR	2 HR @ GYM
WEST	N/A	2 HR	2 HR @ GYM
SOUTH	N/A	2 HR	2 HR @ GYM
INTERIOR		2 HR	N/A
INT. CARRYING ROOF ONLY		N/A	N/A
NONBEARING WALLS AND PARTITIONS			
NORTH		NR	NR
EAST		NR	NR
WEST		NR	NR
SOUTH		NR	NR
INTERIOR		NR	NR
FLOOR CONSTRUCTION: INCLUDING SUPPORTING BEAMS AND JOISTS		2 HR	2 HR
ROOF CONSTRUCTION: INCLUDING SUPPORTING BEAMS AND JOISTS		1 HR	1 HR
SHAFTS - EXIT		2 HR	2 HR
SHAFTS - OTHER		2 HR	2 HR
CORRIDOR SEPARATION		NR	NR
OCCUPANCY SEPARATION		N/A	N/A
INCIDENTAL USE SEPARATION		NR	NR
PARTY/FIRE WALL SEPARATION		N/A	N/A
SMOKE BARRIER SEPARATION		N/A	N/A
TENANT SEPARATION		N/A	N/A
PEDESTRIAN WALKWAYS		N/A	N/A

NR = NO RATING
N/A = NOT APPLICABLE, CONDITION NOT PRESENT IN DESIGN
1 HR = 1 HOUR RATING
2 HR = 2 HOUR RATING
3 HR = 3 HOUR RATING
0 HR = UNRATED SMOKE PARTITION

9. OCCUPANCY LOAD - REFER TO FIRESAFETY PLANS FOR OCCUPANT LOADS OF INDIVIDUAL ROOMS (CSBC 1004.1):

DESIGN TOTAL FOR EACH FLOOR:

FIRST FLOOR: 2,702 OCC.

SECOND FLOOR: 1,638 OCC.

TOTAL EXIT CAPACITY FOR EACH FLOOR:

FIRST FLOOR: 5,198 OCC.

SECOND FLOOR: 1,800 OCC.

DESIGN TOTAL FOR ENTIRE BUILDING: 4,340 OCC.

TOTAL EXIT CAPACITY FOR ENTIRE BUILDING: 6,998 OCC.

10. MODIFICATIONS:

APPROVED:

A) CODE SECTION: 2902.1 NUMBER: M-24-0292

FILED/PENDING (NOT YET APPROVED):

A) CODE SECTION: NONE

11. ACCESSIBLE BUILDING:

DESIGNATED: X NON-DESIGNATED:

12. MINIMUM PLUMBING FIXTURE COUNT (CSBC TABLE 2902.1):

		REQUIRED	PROVIDED	
GROUP **A-1** OCCUPANCY DESIGN LOAD: 707				* = NO DEDICATED FACILITIES - SHARED WITH "A-4" AND "E" USE
AUDITORIUM	W/C MALE	3	9*	A-1 W/C 1 PER 125 MALE / 1 PER 65 FEMALE
	W/C FEMALE	6	9*	A-1 LAVS 1 PER 200
	LAVATORY	4	17*	A-1 D/F 1 PER 500
	D/F	2	8*	
GROUP **A-2** OCCUPANCY DESIGN LOAD: 297		REQUIRED	PROVIDED	* = NO DEDICATED FACILITIES - SHARED WITH "A-4" AND "E" USE
CAFE	W/C	4	11*	A-2 W/C 1 PER 75
	LAVATORY	2	10*	A-2 LAVS 1 PER 200
	D/F	1	4*	A-2 D/F 1 PER 500
GROUP **A-3** OCCUPANCY DESIGN LOAD: 274		REQUIRED	PROVIDED	* = NO DEDICATED FACILITIES - SHARED WITH "E" USE
MEDIA CENTER	W/C MALE	2	3*	A-3 W/C 1 PER 125 MALE / 1 PER 65 FEMALE
	W/C FEMALE	3	3*	A-3 LAVS 1 PER 200
	LAVATORY	2	6*	A-3 D/F 1 PER 500
	D/F	1	4*	
GROUP **A-4** OCCUPANCY DESIGN LOAD: 976		REQUIRED	PROVIDED	* = NO DEDICATED FACILITIES - SHARED WITH "A-1" AND "E" USE
GYMNASIUM	W/C MALE	7	8	A-4 W/C 1 PER 75 FOR FIRST 1,500 / 1 PER 120 REMAINDER MALE
	W/C FEMALE	13	13*	A-4 W/C 1 PER 40 FOR FIRST 1,500 / 1 PER 60 REMAINDER FEMALE
	LAVATORY	6	12*	A-4 LAVS 1 PER 200 MALE / 1 PER 150 FEMALE
	D/F	1	4	A-4 D/F 1 PER 1000
GROUP **E** OCCUPANCY DESIGN LOAD: 1,962		REQUIRED	PROVIDED	* SHARED WITH "A-1" AND "A-4" USE
	W/C	40	48*	E W/C 1 PER 50
	LAVATORY	40	42*	E LAVS 1 PER 50
	D/F	20	20*	E D/F 1 PER 100
GROUP **B** OCCUPANCY DESIGN LOAD: 124		REQUIRED	PROVIDED	* = NO DEDICATED FACILITIES - SHARED WITH "E" USE
	W/C	4	4	B W/C 1 PER 25 FOR FIRST 50 / 1 PER 50 REMAINDER
	LAVATORY	2	4	B LAVS 1 PER 40 FOR FIRST 50 / 1 PER 80 REMAINDER
	D/F	2	4*	B D/F 1 PER 100

13. ENTIRE BUILDING SPRINKLERED (CSBC 903.1):

YES

14. THRESHOLD BUILDING CONDITIONS (CSBC 107.7):

YES

15. CODES TO WHICH THIS PROJECT WAS DESIGNED:

2022 STATE OF CONNECTICUT STATE BUILDING CODE - CSBC

- 2021 INTERNATIONAL BUILDING CODE IBC
- 2021 INTERNATIONAL MECHANICAL CODE - IMC
- 2021 INTERNATIONAL PLUMBING CODE - IPC
- 2021 INTERNATIONAL ENERGY CONSERVATION CODE - IECC
- 2020 NFPA 70 NATIONAL ELECTRICAL CODE, of the NATIONAL FIRE PROTECTION ASSOC, INC.
- 2017 ICC/ANSI A117.1 ACCESSIBLE and USABLE BUILDINGS and FACILITIES ANSI
- 2018 AMENDMENTS TO THE CONNECTICUT STATE BUILDING CODE

2008 CONNECTICUT PUBLIC HEALTH CODE - PHC

2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

2017 ICC/ANSI A117.1 ACCESSIBLE and USABLE BUILDINGS and FACILITIES, AS AMENDED BY 2022 CONNECTICUT STAE BUILDING CODE

2022 CONNECTICUT STATE FIRE SAFETY CODE - CSFSC

- 2021 INTERNATIONAL FIRE CODE - IFC
- 2021 AMENDMENTS TO THE CONNECTICUT FIRE SAFETY CODE
- 2018 NFPA 10 - STANDARD FOR PORTABLE FIRE EXTINGUISHERS
- 2019 NFPA 13 - STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS
- 2019 NFPA 72 - NATIONAL FIRE ALARM AND SIGNALING CODE

2022 CONNECTICUT STATE FIRE PREVENTION CODE - CFPC

- 2021 NFPA 1, UNIFORM FIRE CODE

16. EXIT ACCESS:

COMMON PATH OF TRAVEL LIMITATIONS (CSBC 1006.2.1)

ALLOWABLE: 75' (A & E OCC.) PROVIDED: <75'

ALLOWABLE: 100' (B OCC.) PROVIDED: < 100'

EXIT ACCESS TRAVEL DISTANCE LIMITATIONS (CSBC 1017.2)

ALLOWABLE: 250' (A & E OCC.) PROVIDED: < 250'

ALLOWABLE: 300' (B OCC.) PROVIDED: < 300'

MINIMUM CORRIDOR WIDTH (CSBC 1020.3)

ALLOWABLE: 72" (E WHEN OCC. >100) PROVIDED: > 72"

CORRIDOR DEAD END LIMITATION (CSBC 1020.4)

ALLOWABLE: 20' (A OCC.) PROVIDED: < 20'

ALLOWABLE: 50' (B & E OCC.) PROVIDED: < 50'

17. EGRESS CAPACITY OF DOORS (CSBC 1005.1):

DOORS WITH STANDARD HOLLOW METAL FRAMES AND BUTT HINGES

SIZE	CLEAR WIDTH	MAX. OCC. LOAD (CAP = 2"/OCC)
(1) 3'-0"	33.125"	165 OCCUPANTS
(1) 3'-2"	35.125"	175 OCCUPANTS
(1) 3'-4"	37.125"	185 OCCUPANTS
(1) 3'-6"	39.125"	195 OCCUPANTS
(1) 3'-8"	41.125"	205 OCCUPANTS
(1) 3'-10"	43.125"	215 OCCUPANTS
(1) 4'-0"	45.125"	225 OCCUPANTS
(2) 3'-0"	67.125"	337 OCCUPANTS
(2) 3'-2"	71.125"	357 OCCUPANTS
(2) 3'-3"	73.125"	367 OCCUPANTS
(2) 3'-4"	75.125"	377 OCCUPANTS
(2) 3'-6"	79.125"	397 OCCUPANTS
(2) 3'-7"	81.125"	407 OCCUPANTS
(2) 3'-8"	83.125"	417 OCCUPANTS
(2) 3'-10"	87.125"	437 OCCUPANTS
(2) 4'-0"	91.125"	457 OCCUPANTS

18. INTERIOR FINISHES (CSBC 803.11):

GROUP A-1, A-2, A-3 AND A-4 OCCUPANCY:

VERTICAL EXITS & EXIT PASSAGEWAYS - CLASS "A" OR "B"

EXIT ACCESS CORRIDORS & OTHER EXITS - CLASS "A" OR "B"

ROOMS AND ENCLOSED SPACES - CLASS "A", "B" OR "C"

GROUP E AND B OCCUPANCY:

VERTICAL EXITS & EXIT PASSAGEWAYS - CLASS "A" OR "B"

EXIT ACCESS CORRIDORS & OTHER EXITS - CLASS "A", "B" OR "C"

ROOMS AND ENCLOSED SPACES - CLASS "A", "B" OR "C"

19. HISTORIC BUILDING:

"NO"

20. EGRESS-RELATED CODE INFORMATION:

FLOOR AREA ALLOWANCES PER OCCUPANT (CSBC 1004.5)

CLASSROOM OCCUPANCY - 20 NET

SHOP & VOCATIONAL ROOM OCCUPANCY - 50 NET

BUSINESS/OFFICE OCCUPANCY - 150 GROSS

CAFETERIA OCCUPANCY - 15 NET

GYMNASIUM OCCUPANCY - 5 NET

MEDIA CENTER READING AREAS - 50 NET

MEDIA CENTER STACKS AREA - 100 GROSS

EXERCISE ROOMS - 50 GROSS

KITCHEN OCCUPANCY - 200 GROSS

STORAGE & MECHANICAL OCCUPANCY - 300 GROSS

EGRESS WIDTH PER OCCUPANT SERVED

EGRESS - STAIRS = .3" PER PERSON (CSBC 1005.3.1)

EGRESS - CORRIDORS, RAMPS AND DOORS = .2" PER PERSON (CSBC 1005.3.2)

THRESHOLD BUILDING CRITERIA

NO.	THRESHOLD LIMITS	YES	NO
1	HAVING FOUR STORIES		X
2	60 FEET IN HEIGHT		X
3	WITH A CLEAR SPAN OF 150 FEET IN WIDTH		X
4	CONTAINING 150,000 SQUARE FEET OF TOTAL GROSS FLOOR AREA		X
5	WITH AN OCCUPANCY OF 1,000 PERSONS	X	

DEFERRED SUBMITTALS SUMMARY (CSBC 107.3.4.1) - DELEGATED DESIGN

NO.	BUILDING COMPONENTS	SPECIFICATION SECTION
1	UNIT MASONRY	04 2000
2	STRUCTURAL STEEL FRAME CONNECTIONS	05 1200
3	STEEL JOISTS	05 2100
4	COLD FORMED METAL FRAMING	05 4000
5	METAL FABRICATIONS	05 5000
6	METAL STAIRS	05 5100
7	DECORATIVE METAL RAILINGS	05 7000
8	MONUMENTAL STAIRS	05 7100
9	METAL COMPOSITE WALL PANELS	07 4213.13
10	FIBER CEMENT WALL PANELS	07 4646
11	METAL FRAMED SKYLIGHTS	08 3600
12	ALUMINUM FRAMED ENTRANCES AND STOREFRONTS	08 4113
13	GLAZED ALUMINUM CURTAINWALLS	08 4414
14	LOUVERED EQUIPMENT ENCLOSURES	08 9200
15	GROUND SET FLAGPOLES	10 7516
16	STAGE RIGGING AND CURTAINS	11 0610
17	ATHLETIC FIELD EQUIPMENT	11 6833
18	TELESCOPING BLEACHERS	12 6613
19	SITE FURNISHINGS	12 9300
20	ELECTRIC TRACTION ELEVATORS	14 2100
21	FIRE PROTECTION	21 0400, 21 0433, 21 0516, 21 0533, 21 0548, 21 1313, 21 3000
22	EXPANSION FITTINGS AND LOOPS FOR PLUMBING PIPING	22 0516
23	HANGERS AND SUPPORTS FOR PLUMBING AND EQUIPMENT	22 0529
24	HEAT TRACING FOR PLUMBING PIPING	22 0533
25	VIBRATION AND SEISMIC CONTROLS FOR PLUMBING PIPING AND EQUIPMENT	22 0548
26	FUEL GAS PIPING	22 1123
27	EXPANSION FITTINGS AND LOOPS FOR HVAC PIPING	23 0516
28	HANGERS AND SUPPORTS FOR HVAC PIPING, DUCTWORK AND EQUIPMENT	23 0529
29	VIBRATION AND SEISMIC CONTROLS FOR HVAC PIPING AND EQUIPMENT	23 0548
30	INSTRUMENTATION AND CONTROLS FOR HVAC	23 0900
31	NOT USED	
32	BREECHINGS, CHIMNEYS, AND STACKS	23 5100
33	VIBRATION AND SEISMIC CONTROLS FOR ELECTRIC	26 0548
34	OVERCURRENT PROTECTION DEVICE COORDINATION STUDY	26 0573
35	LIGHTNING PROTECTION FOR STRUCTURES	26 4113
36	CABLE TRAY FOR COMMUNICATIONS SYSTEMS	27 0536
37	SPEAKER AND ELECTRIC SCREEN RIGGING	27 4100
38	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM	27 6010
39	EXCAVATION, BACKFILL, COMPACTION, & DEWATERING	31 2300
40	AGGREGATE PIERS	31 6616
41	SEGMENTAL RETAINING WALLS	32 3223
42	IRRIGATION SYSTEMS	32 8423

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

Drawn: JP, JZ

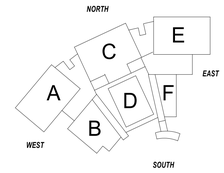
Checked: JZ

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	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	PHASE 2

CODE INFORMATION

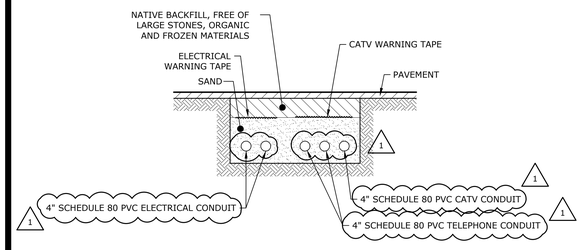
Date: 07/08/2024

Scale: 12" = 1'-0"

Proj. Number: 22367.00

Drawing Number: **GC0A**

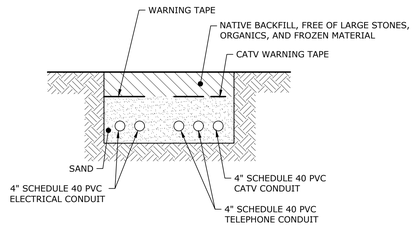
Autodesk Docs://22367.00 - Greenwich Central Middle School/A_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 1:38:55 PM



ELECTRIC, CATV, AND TELEPHONE SERVICE
INSTALLATION BENEATH PAVED AREAS

ELECTRIC DUCTBANK NOTES:

1. ALL CONDUIT SHOWN ARE 4" DIAMETER PVC SCHEDULE 80 UNLESS OTHERWISE NOTED.
2. ALL SWEEPS AND RISER CONDUITS SHALL BE PVC TYPE EB 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"SPARE" OR UNUSED CONDUITS SHALL BE PROVIDED WITH A $\frac{3}{8}$" NYLON DRAG LINE.
6. ALL CONDUIT BENDS SHALL BE A MINIMUM OF 12X THE CONDUIT RADIUS.
7. PITCH CONDUITS TOWARDS MANHOLES AND AWAY FROM BUILDINGS. AVOID CREATING LOW POINTS IN CONDUIT RUNS BETWEEN MANHOLES.
8. CONDUITS EXTENDED FROM MANHOLES, TRANSFORMERS, SWITCHGEAR, TUNNEL WALLS, BUILDING FOUNDATION WALLS SHALL BE GALVANIZED RIGID STEEL.
9. 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 SWEEPS AND RISER CONDUITS SHALL BE PVC TYPE EB UNLESS OTHERWISE NOTED.
3. PROVIDE BASE AND INTERMEDIATE SPACERS WHICH CONNECT TOGETHER TO FORM A UNIFORM SUPPORT 6'-0" ON CENTER.
4. PROVIDE THREE 1 $\frac{1}{4}$" NON-METALLIC FLEX INTERDUCT WITH STRING LINES IN EACH OF THE 6 PVC DUCTS.
5. WHERE NOTED, PROVIDE THE REQUIRED RACKING IN EACH MANHOLE TO ALLOW ALL CARRIERS TO TIE OFF SLACK IN AN ORDERLY FASHION.
6. TEL-CATA/CATV MANHOLES SHALL NOT BE SPACED FURTHER THAN 500 FEET APART.
7. ALL CONDUITS TO BE LABELLED A TO Z.
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. 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	–

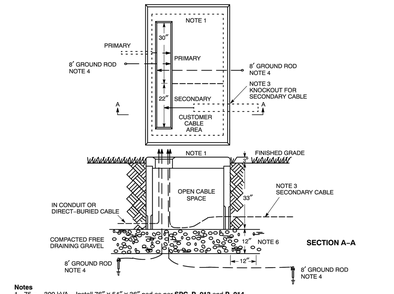
OIL SUMP – If the surrounding grade pitches toward critical areas, it is recommended that an oil sump be provided. This should consist of 3/4–inch trap rock fill under and around the equipment pad adequate to contain the quantity of oil in the equipment to be installed at the given location.

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**.

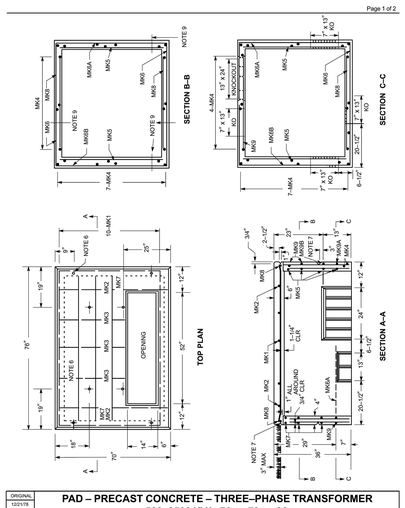
ORIGINAL	PAD–MOUNTED OIL INSULATED EQUIPMENT LOCATION AND MECHANICAL PROTECTION			
10/9/73				
APPROVED				
1/2002	NORTHEAST UTILITIES	DESIGN & APPLICATION STANDARD	DTR 42.061	9



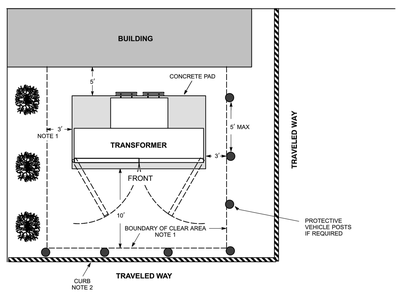
Notes
1. 75 – 300 kVA – Install 76" x 54" x 36" pad as per **SPC P–013** and **P–014**.
   500 – 2500 kVA – Install 76" x 70" x 36" pad as per **SPC P–015** and **P–016**.
2. **Primary Cable**
   a. Install direct–buried cables a minimum of 30 inches below grade.
   b. Install cables in conduit a minimum 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 56.509** – **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 Specification M.02.01 Grading C. Crushed stone, or stone dust may be used for the remaining backfill and compacted in maximum 6 inch layers. Loose gravel, or stone dust, shall be placed in 6–inch layers or 2 inches in maximum dimension, shall be placed in 6–inch layers and compacted with mechanical tampers to not less than 95 percent of the maximum dry density as determined by the standard compaction tests, AASHTO T180 or ASTM D698.

ORIGINAL	INSTALLATION OF CONCRETE PAD FOR THREE–PHASE PAD–MOUNTED TRANSFORMERS 75–2500 KVA – DIRECT–BURIED			
6/28/87				
APPROVED				
5/2006				
1/2012	NORTHEAST UTILITIES	CONSTRUCTION STANDARD	DTR 58.301	8

Page 1 of 2

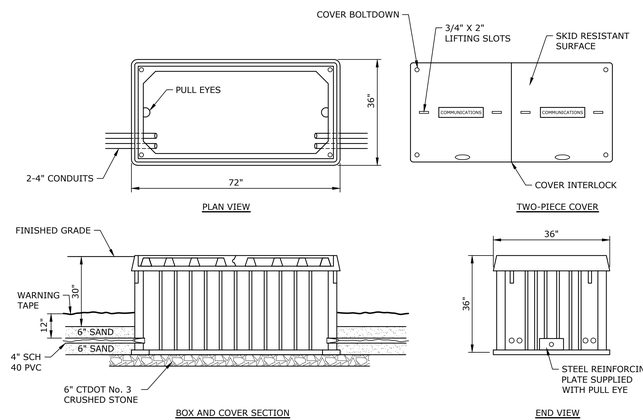


ORIGINAL	PAD – PRECAST CONCRETE – THREE–PHASE TRANSFORMER 500–2500 KVA–76" x 70" x 36"			
12/2178				
APPROVED				
3/1/02	NORTHEAST UTILITIES	MATERIAL SPECIFICATION	SPC P–015	7



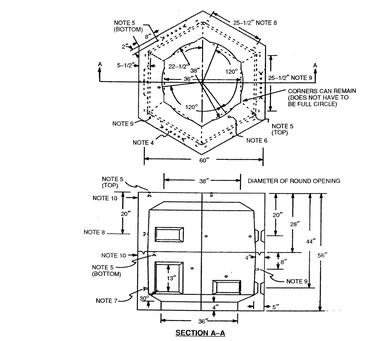
Notes
1. To inspect, provide access, operate elbow connectors and ventilate the transformer, the above specified clear area distances to buildings or shrubs shall be maintained. The distance from the building is to the concrete transformer pad. Property line shall be considered an obstruction, since 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	PAD–MOUNTED TRANSFORMERS LOCATION TO BUILDINGS AND ROADWAYS			
4/10/91				
APPROVED				
1/2002	NORTHEAST UTILITIES	CONSTRUCTION STANDARD	DTR 42.047	6



COMMUNICATIONS PULL BOX
NO SCALE

ML 1245 D



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	HANDHOLE – HEXAGONAL – PRECAST CONCRETE 60" WIDE X 56" HIGH OUTSIDE			
10/3/75				
APPROVED				
10/1/96				
1/2002	NORTHEAST UTILITIES	MATERIAL SPECIFICATION	SPC H–019	8

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

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

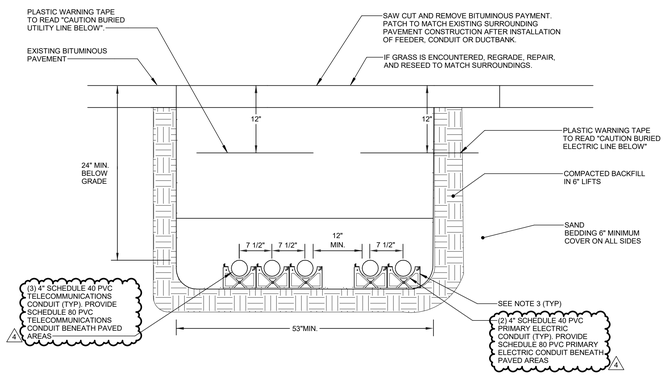
KEYPLAN

Number	Date	Issued For
1	11/06/2024	ADDENDUM #6
	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

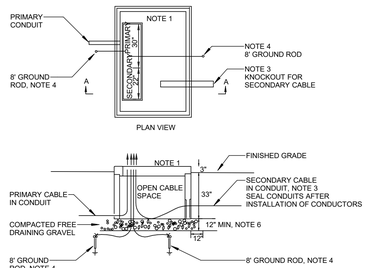
F:\Projects\GIS\6066 Greenwich Public Schools\003 Central Middle School\Drawings\AutoCAD\Sheet\G6066-003-C-501 DETL.dwg November 05, 2024 - 4:06 PM



NOTES:

1. TYPICAL CONDUITS AND QUANTITIES SHOWN, REFER TO DRAWINGS FOR QUANTITIES AND SIZES.
2. COORDINATE AND GROUP CONDUITS IN COMMON TRENCH. SINGLE ROW SHOWN, MULTIPLE ROW DUCT BANKS ARE ACCEPTABLE, MAINTAINING SEPARATION DISTANCE REQUIREMENTS.
3. PROVIDE SUITABLE SEPARATORS AND CHAIRS 4 FT. MAX. ON CENTER, SET TO COMPACTED TRENCH BOTTOM AND BAND CONDUITS TOGETHER PRIOR TO BACKFILL OR PLACING CONCRETE.
4. REFER TO CONCRETE ENCASEMENT DETAIL WHERE CONCRETE ENCASEMENT IS REQUIRED. USE 'TYPE EB' SCHEDULE 40 PVC CONDUIT.

1 TYPICAL PRIMARY ELECTRIC/TELECOMMUNICATIONS TRENCHING DETAIL
1/8" = 1'-0"

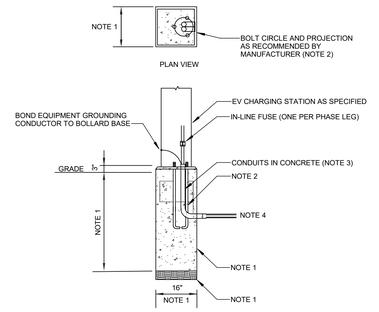


SECTION A-A

NOTES

1. 500-2500 KVA - INSTALL 76"X 70" X 36" PAD AS PER UTILITY Co. SPC P-015 AND P-016 (BY DIVISION 33)
2. PRIMARY CABLE
   A. INSTALL DIRECT BURIED CABLES A MINIMUM OF 30" BELOW GRADE.
   B. INSTALL CABLES IN CONDUIT A MINIMUM OF 24" BELOW GRADE.
   C. LOOP CABLES IN CABLE PIT BEFORE MAKING CONNECTIONS.
3. SECONDARY CABLE - LEAVE SLACK FOR FUTURE RECONNECTING TO TRANSFORMERS WITH HIGHER SECONDARY TERMINALS.
4. 3/4" COPPER GROUND ROD - INSTALL IN TRENCH AND CONNECT A #2 COPPER CONDUCTOR FROM ROD THROUGH PAD OPENING AND EXTENDING 5' ABOVE PAD.
5. THE FOLLOWING UTILITY Co. DTR'S SHOULD ALSO BE USED:
   A. DTR 42.061 - LOCATION AND MECHANICAL PROTECTION REQUIREMENTS.
   B. DTR 56.509 - PRIMARY, SECONDARY AND TRANSFORMER GROUNDING.
   C. DTR 17.063 - THREE PHASE TRANSFORMER CONNECTIONS.
6. THE EXCAVATION FOR THE PAD SHALL BE CARRIED TO A DEPTH OF 12" BELOW THE BOTTOM OF THE PAD WALLS. THE BACKFILL UNDER THE PAD WALLS SHALL BE A CLEAN GRAVEL, FREE OF FOREIGN MATTER AND CONSTRUCTION DEBRIS, AND IN ACCORDANCE WITH CONNECTICUT DOT SPEC M.02.06 GRADING "A". OR MASSACHUSETTS DPW SPEC M1.03.0 TYPE B. BACKFILL SHALL BE PLACED IN 6" LAYERS AND COMPACTED WITH MECHANICAL TAMPERS TO NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY STANDARD COMPACTION TESTS, AASHTO T180 OR ASTM D698.

2 EVERSOURCE CT/WMA - TRANSFORMER PAD DETAIL
NTS



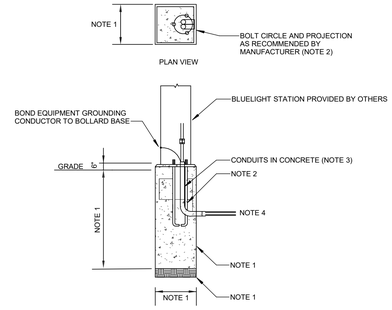
NOTES:

1. CONCRETE EV CHARGING STATION BASE SHALL BE PROVIDED BY SITE CONTRACTOR. REFER TO STRUCTURAL BASE DETAILS FOR REQUIRED DEPTH, REINFORCEMENT AND CONCRETE SPECIFICATIONS. EV CHARGING STATION BASE SHALL BE SET ON UNDISTURBED SOIL.
2. ANCHOR BOLTS SHALL BE PROVIDED IN EV CHARGING STATION BASE BY SITE CONTRACTOR, ADHERING TO STRUCTURAL BASE DETAILS AND SPECIFICATIONS. COORDINATE EXACT BOLT HOLE PATTERN WITH ELECTRICAL CONTRACTOR AND APPROVED EV CHARGING STATION MANUFACTURER PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR SHALL PROVIDE SCHEDULE 40 PVC CONDUIT SWEEPS WITHIN EV CHARGING STATION BASE. COORDINATE EXACT STUB-UP LOCATION OF ALL CONDUITS WITH APPROVED EV CHARGING STATION MANUFACTURER BOLT HOLE PATTERN PRIOR TO INSTALLATION.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE UNDERGROUND CONDUITS TO THE EV CHARGING STATION AS SPECIFIED ON SITE ELECTRICAL PLAN. REFER TO TRENCHING DETAILS FOR MINIMUM BURIAL DEPTH AND ADDITIONAL INFORMATION. MINIMUM SIZE/QUANTITY SHALL BE:

   * SINGLE PORT EV CHARGING STATION CIRCUIT: 2#8+1#10G, 1-1/4" SCHEDULE 40 PVC CONDUIT, 1" SCHEDULE 40 PVC CONDUIT FOR COMMUNICATIONS, COORDINATE WITH DIV. 27

   * DUAL PORT EV CHARGING STATION CIRCUIT: 4#8+1#10G, 1-1/2" SCHEDULE 40 PVC CONDUIT, 1" SCHEDULE 40 PVC CONDUIT FOR COMMUNICATIONS, COORDINATE WITH DIV. 27

3 EXTERIOR EV BASE DETAIL
NTS

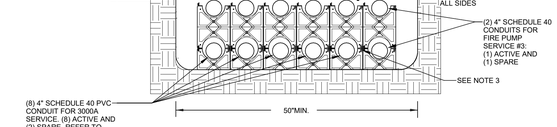


NOTES:

1. CONCRETE BLUELIGHT STATION BASE SHALL BE PROVIDED BY SITE CONTRACTOR. REFER TO STRUCTURAL BASE DETAILS FOR REQUIRED DEPTH, REINFORCEMENT AND CONCRETE SPECIFICATIONS. BASE TO EXTEND 6" ABOVE GRADE AND 6" BEYOND THE OVERALL UNIT DIAMETER. BLUELIGHT STATION BASE SHALL BE SET ON UNDISTURBED SOIL.
2. ANCHOR BOLTS SHALL BE PROVIDED IN BLUELIGHT STATION BASE BY SITE CONTRACTOR, ADHERING TO STRUCTURAL BASE DETAILS AND SPECIFICATIONS. COORDINATE EXACT BOLT HOLE PATTERN WITH ELECTRICAL CONTRACTOR AND APPROVED BLUELIGHT STATION MANUFACTURER PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR SHALL PROVIDE SCHEDULE 40 PVC CONDUIT SWEEPS WITHIN BLUELIGHT STATION BASE. COORDINATE EXACT STUB-UP LOCATION OF ALL CONDUITS WITH APPROVED BLUELIGHT STATION MANUFACTURER BOLT HOLE PATTERN PRIOR TO INSTALLATION.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE UNDERGROUND CONDUITS TO THE BLUELIGHT STATION AS SPECIFIED ON SITE ELECTRICAL PLAN. REFER TO TRENCHING DETAILS FOR MINIMUM BURIAL DEPTH AND ADDITIONAL INFORMATION. MINIMUM SIZE/QUANTITY SHALL BE:

   * POWER CIRCUIT CIRCUIT: 2#8+1#10G, 1-1/4" SCHEDULE 40 PVC CONDUIT
   * COMMUNICATIONS CONDUIT: 1-1/2" SCHEDULE 40 PVC CONDUIT

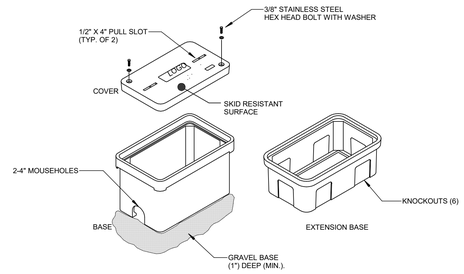
7 BLUELIGHT BASE DETAIL
NTS



NOTES:

1. TYPICAL CONDUITS AND QUANTITIES SHOWN, REFER TO DRAWINGS FOR QUANTITIES AND SIZES.
2. COORDINATE AND GROUP CONDUITS IN COMMON TRENCH. SINGLE ROW SHOWN, MULTIPLE ROW DUCT BANKS ARE ACCEPTABLE, MAINTAINING SEPARATION DISTANCE REQUIREMENTS.
3. PROVIDE SUITABLE SEPARATORS AND CHAIRS 4 FT. MAX. ON CENTER, SET TO COMPACTED TRENCH BOTTOM AND BAND CONDUITS TOGETHER PRIOR TO BACKFILL OR PLACING CONCRETE.
4. REFER TO CONCRETE ENCASEMENT DETAIL WHERE CONCRETE ENCASEMENT IS REQUIRED. USE 'TYPE EB' SCHEDULE 40 PVC CONDUIT.

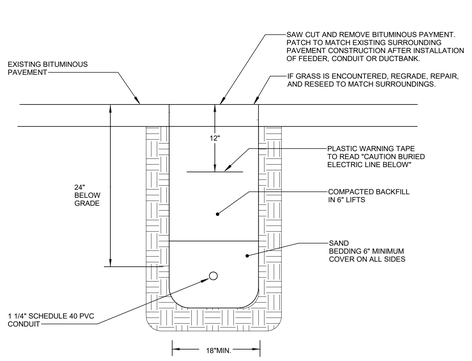
4 TRENCH DETAIL - MAIN 3000A ELECTRICAL SERVICE AND FIRE PUMP SERVICE
NTS



NOTES:

1. PROVIDE STANDARD HANDHOLE. COVER COLOR SHALL BE AS COORDINATED WITH THE OWNER
2. COVER, RING AND BOX SHALL BE MADE OF SAME MATERIAL.
3. PROVIDE IMPRINTED LOGO WITH 'ELECTRIC' OR 'COMMUNICATIONS' LOGO AS INDICATED ON DRAWINGS.
4. PROVIDE EXTENSION BASES AND GRADE ADJUSTABLE EXTENSIONS TO SET FLUSH WITH GRADE AND TO SET AT DEPTH TO ALLOW CONDUITS TO ENTER THE BASE HORIZONTALLY.
5. PITCH CONDUITS AWAY FROM HANDHOLE.
6. REFER TO DRAWINGS FOR SIZES.
7. PROVIDE TIER 22 DESIGN FOR ALL HANDHOLES LOCATED IN PAVED AREAS OR WHERE SUBJECT TO VEHICULAR TRAFFIC. TIER 15 DESIGN ELSEWHERE.
8. PROVIDE HANDHOLE WITH DIVIDED INTERIOR OPTION TO SEPARATE POWER AND COMMUNICATIONS CABLING, WHERE MULTIPLE SERVICES ARE SHOWN ON SITE PLAN.

5 HANDHOLE DETAIL
NTS



NOTES:

1. TYPICAL CONDUITS AND QUANTITIES SHOWN, REFER TO DRAWINGS FOR QUANTITIES AND SIZES.

6 TYPICAL SITE BRANCH CIRCUIT TRENCHING DETAIL
1/8" = 1'-0"

9 TRAFFIC SIGNAL RISER DETAIL
NTS

8 TELECOMMUNICATION HANDHOLE DETAIL
NTS

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

Drawn KCM
Checked SJM

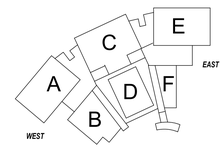
CES Consulting Engineering Services, Inc.
811 Middle Street
Middletown CT 06457
860.632.1682
ceseng.com
CES #2023095.00

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N



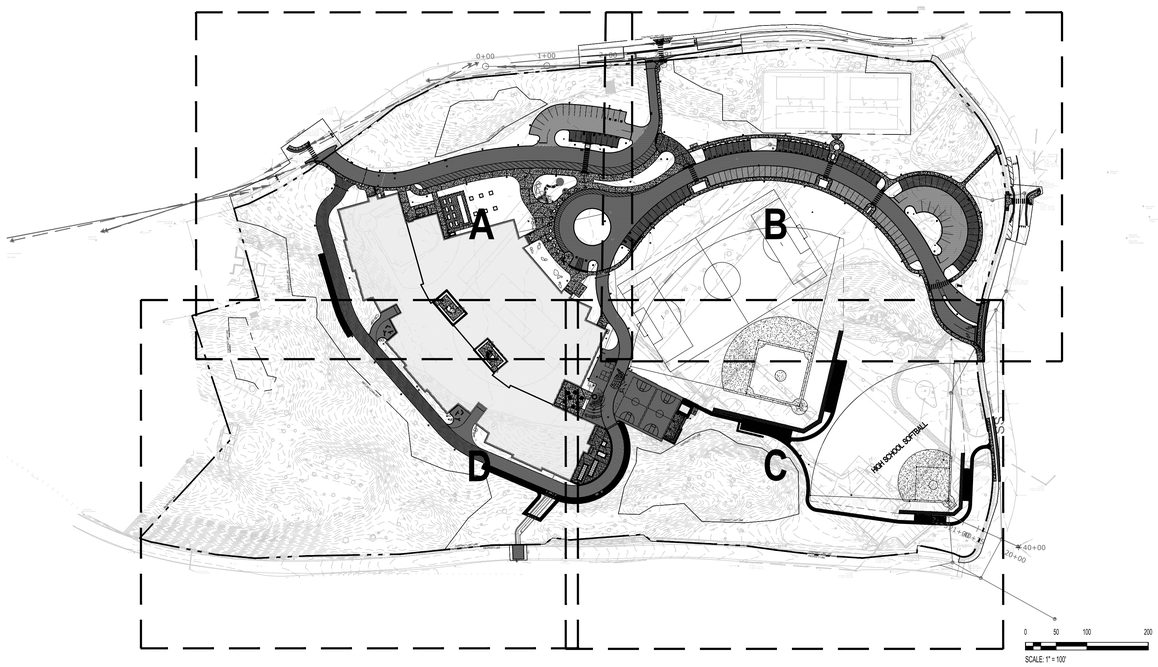
KEYPLAN

Number	Date	Issued For
4	11/06/2024	ADDENDUM NO. 6
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

MEP SITE UTILITY PLAN - DETAILS & SCHEDULES

Date 07/08/2024
Scale NTS
Proj. Number 22367.00
Drawing Number SU500

Autodesk Docs://22367.00 - Greenwich Central Middle School/R23_2023095-MEP Central - Greenwich Central Middle School.rvt
11/7/2024 2:32:45 PM



KEY PLAN

1" = 100'

TRAFFIC SIGNAGE LEGEND

KEY	NAME	IMAGE	SIZE	REFERENCE
A	STOP	STOP	18" X 18"	SE L502
B	HC PARKING	PENALTY PARKING Connecticut VAN ACCESSIBLE	12" X 18"	2E L502
C	HC VAN PARKING	PENALTY PARKING Connecticut VAN ACCESSIBLE	12" X 18" 12" X 6"	2E L502
D	DO NOT ENTER	DO NOT ENTER	12" X 18"	SE L502
E	TRUCK NO RIGHT TURN	NO RIGHT TURN	18" X 18"	SE L502
F	NO PARKING EMERGENCY VEHICLES ONLY	EMERGENCY VEHICLES ONLY	12" X 18"	SE L502
G	CARPOOL VEHICLES ONLY(LEFT ARROW)	CARPOOL VEHICLES ONLY	12" X 18"	SE L502
H	CARPOOL VEHICLES ONLY(RIGHT ARROW)	CARPOOL VEHICLES ONLY	12" X 18"	SE L502
I	ELECTRIC VEHICLE CHARGING	ELECTRIC VEHICLE CHARGING STATION ONLY TOW-AWAY ZONE	12" X 18"	2E L502
J	VISITOR PARKING ONLY	VISITOR PARKING ONLY	12" X 18"	SE L502

GENERAL SITE NOTES:

1. BOUNDARY AND TOPOGRAPHIC DATA WAS OBTAINED FROM SURVEY PREPARED BY MARTIN SURVEYING ASSOCIATES, LLC. THE LANDSCAPE ARCHITECT MAKES NO WARRANTY FOR INFORMATION SHOWN AS EXISTING. CONTRACTOR SHALL VERIFY CONDITIONS IN FIELD AND THEIR RELATIONSHIP TO NEW CONSTRUCTION. DISCREPANCIES SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE FOR RESOLUTION PRIOR TO COMMENCING RELATED WORK.

2. PRIOR TO COMMENCING CONSTRUCTION, CONTRACTOR SHALL NOTIFY 'CALL BEFORE YOU DIG' (PHONE NUMBER: 811) FOR FIELD LOCATING AND CLEAR MARKING OF SUBSURFACE UTILITIES PRIOR TO ANY EXCAVATION.

3. CONTRACTOR SHALL ESTABLISH AND/OR MAINTAIN AT LEAST ONE (1) BENCHMARK ON SITE FOR VERTICAL AND HORIZONTAL REFERENCE.

4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF GREENWICH, ALL LOCAL, STATE AND FEDERAL REQUIREMENTS SHALL BE ADHERED TO IN THE PERFORMANCE OF THIS WORK.

5. THE CONSTRUCTION LIMITS ARE AS DEFINED IN THE SPECIFICATIONS AND AS SHOWN IN THE DRAWINGS. DRAWINGS INDICATE MINIMUM LIMITS OF DEMOLITION/PAVEMENT REMOVAL REQUIRED FOR CONSTRUCTION OF NEW IMPROVEMENTS. WORK SHALL NOT EXCEED CONTRACT LIMIT LINES UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM THE OWNER'S REPRESENTATIVE.

6. ALL EXISTING TREES ALONG NEWLY ESTABLISHED TREELINE TO BE EVALUATED BY LICENSED ARBORIST FOR HEALTH PRIOR TO CONSTRUCTION, DURING CONSTRUCTION, AND AFTER CONSTRUCTION. CORRECTIVE ACTIONS PER ARBORIST RECOMMENDATIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

SITE PREPARATION NOTES:

1. COORDINATE WORK ON THIS SHEET WITH ALL DRAWINGS PERTAINING TO SITE WORK IN THE CONTRACT DOCUMENT SET. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIM OR HERSELF FAMILIAR WITH THE FULL SET OF DOCUMENTS FOR ALL SITE RELATED ITEMS.

2. PRIOR TO ANY DEMOLITION ACTIVITY THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL MEASURES. SEE SHEET CIVIL DRAWINGS FOR EROSION CONTROL PLANS & NOTES.

3. CONTRACTOR SHALL COORDINATE WITH OWNER'S REPRESENTATIVE AND THE GENERAL CONTRACTOR REGARDING STAGING AREAS, CONSTRUCTION FENCING LIMITS AND GATES, AND CONSTRUCTION TRAFFIC & PARKING.

4. LIMITS OF EXISTING PAVEMENTS AND CURBS TO REMAIN SHALL BE NEATLY SAWCUT TO PROVIDE FOR A NEAT, CLEAN JOINT/OR FINISHED EDGE.

5. REMOVAL OF SITE IMPROVEMENTS SHALL INCLUDE ALL SURFACE AND SUBSURFACE IMPROVEMENTS RELATED TO THE ITEMS DESIGNATED FOR REMOVAL EXCEPT WHERE INDICATED OTHERWISE. REMOVAL OF TREES AND SHRUBS INCLUDES CLEARING AND GRUBBING OF STUMPS.

6. DEBRIS FROM DEMOLITION SHALL BE REMOVED FROM SITE AND DISPOSED OF PROPERLY BY CONTRACTOR.

7. UTILITIES DESIGNATED TO BE ABANDONED SHALL BE DONE SO IN A SAFE AND LEGAL MANNER. COORDINATE WITH THE APPROPRIATE UTILITY AUTHORITIES AND THE OWNER'S REPRESENTATIVE.

8. ITEMS NOTED TO BE REMOVED AND SAVED FOR OWNER SHALL BE STORED ON SITE AND PROTECTED BY CONTRACTOR FOR RECOVERY BY OWNER. ITEMS NOTED TO BE RELOCATED SHALL BE REMOVED, STORED AND PROTECTED FROM DAMAGE UNTIL RE-INSTALLATION. STORED ITEMS DAMAGED BY CONTRACTOR SHALL BE REPLACED TO MATCH BY CONTRACTOR.

9. ALL SAW CUTS SHALL BE STRAIGHT AND CLEAN.

10. COORDINATE WITH LANDSCAPE ARCHITECT AND MANUFACTURER TO SELECT UP TO 7 TREES OF THOSE DESIGNATED TO BE REMOVED TO BE EVALUATED AND SALVAGED FOR REUSE AS SITE BENCHES (LIVE EDGE WOOD BENCH). SEE DETAILS AND SPECIFICATIONS.

11. CONTRACTOR TO OVER EXCAVATE TO A DEPTH OF 5' AND AS NOTED BY THE GEOTECHNICAL ENGINEER IN AREAS OF ROCK REMOVAL TO ALLOW FOR PROPOSED PLANTING. REMAINING ROCK TO BE MODIFIED TO ALLOW FOR POSITIVE DRAINAGE.

12. PRIOR TO ANY CONSTRUCTION WITHIN THE EXISTING WOODLAND AREAS TO BE PROTECTED, THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND TREE WARDEN TO ENSURE THAT ANY PRECONSTRUCTION MEETINGS OR EXPECTATIONS FOR CONSTRUCTIONS WITHIN THOSE AREAS ARE MET.

SPECIAL NOTE: NO ADDITIONAL TREES SHALL BE REMOVED WITHOUT SPECIFIC WRITTEN AUTHORIZATION FROM THE LA AND TREE WARDEN.

13. THE CONTRACTOR SHALL PROVIDE THE SERVICES OF AN ARBORIST TO MONITOR ALL TREES TO REMAIN BEFORE, DURING, AND AFTER CONSTRUCTION. ARBORIST SHALL COORDINATE WITH THE LANDSCAPE ARCHITECT, TREE WARDEN, AND TOWN ARBORIST TO ENSURE THE PROPER METHODS ARE COORDINATED.

SITE LAYOUT NOTES:

1. COORDINATE WORK ON THIS SHEET WITH ALL DRAWINGS PERTAINING TO SITE WORK IN THE CONTRACT DOCUMENT SET. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIM OR HERSELF FAMILIAR WITH THE FULL SET OF DOCUMENTS FOR ALL SITE RELATED ITEMS.

2. LOCATION AND ALIGNMENT OF SITE IMPROVEMENTS SUCH AS FENCES, ETC. SHALL BE STAKED IN FIELD BY CONTRACTOR AND APPROVED BY THE LANDSCAPE ARCHITECT OR CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION OF ANY AND ALL SUCH IMPROVEMENTS.

3. ALL DIMENSIONS ARE TO THE NEAREST FOOT UNLESS OTHERWISE NOTED. ALL ANGLES ARE 90° UNLESS OTHERWISE NOTED. ALL PROPOSED RADII ARE 5' RADIUS UNLESS OTHERWISE NOTED. DIMENSIONS ARE TO THE FACE OF CURB OR WALLS AND TO CENTERLINES OF PAVEMENT MARKINGS, DOORS AND LIGHT POLES EXCEPT WHERE OTHERWISE INDICATED ON THIS PLAN.

4. ALL PAVEMENT CUTS IN CONCRETE ARE TO THE NEAREST JOINT - CONCRETE WALK PAVEMENT LIMITS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL INSTALL NEW WALK TO MATCH EXISTING TO THE GREATEST EXTENT POSSIBLE.

SITE GRADING NOTES:

1. COORDINATE WORK ON THIS SHEET WITH ALL DRAWINGS PERTAINING TO SITE WORK IN THE CONTRACT DOCUMENT SET. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIM OR HERSELF FAMILIAR WITH THE FULL SET OF DOCUMENTS FOR ALL SITE RELATED ITEMS.

2. BLEND PROPOSED GRADES INTO EXISTING GRADES SMOOTHLY AND NEATLY. ALL SAWCUTS SHALL BE STRAIGHT AND CLEAN.

3. DISTURBED AREAS NOT INDICATED TO RECEIVE PAVEMENT OR OTHER TREATMENT SHALL BE SEEDED LAWN.

4. SEE SITE PLANTING PLANS FOR EXTENT AND REQUIRED DEPTH AND WIDTH OF CONTINUOUS PLANTING BEDS.

5. PRIOR TO FINAL ACCEPTANCE THE CONTRACTOR SHALL PUMP ALL ON-SITE DRAINAGE STRUCTURE SUMPS OF SILT AND DEBRIS.

6. ALL ACCESSIBLE ROUTES SHOWN ON PLAN SHALL BE A MAXIMUM OF 1:12 (AT RAMPS) OR 1:20 (ALL OTHER AREAS) IN THE DIRECTION OF TRAVEL WITH A MAXIMUM OF 1:50 CROSS SLOPE.

SITE PLANTING NOTES:

1. COORDINATE WORK ON THIS SHEET WITH ALL DRAWINGS PERTAINING TO SITE WORK IN THE CONTRACT DOCUMENT SET. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIM OR HERSELF FAMILIAR WITH THE FULL SET OF DOCUMENTS FOR ALL SITE RELATED ITEMS.

2. ALL DISTURBED AREAS NOT COVERED BY STRUCTURES, PAVEMENTS, MULCHES, PLANTING BEDS OR TREE PITS SHALL BE SEEDED LAWN.

3. CONTRACTOR SHALL SET PLANTS OUT IN FIELD FOR APPROVAL OF LOCATIONS BY ARCHITECT PRIOR TO PLANTING.

4. SPADE EDGE ALL PLANTING BEDS WITHIN LAWN AREAS UNLESS NOTED OTHERWISE TO RECEIVE STEEL EDGING. PROVIDE CLEAN SPADED EDGE AT PERIMETER OF ALL PLANTING BEDS AND TREE PITS ADJACENT LAWN AREAS. SPADE EDGE OF NEWLY PLANTED LAWN AREAS FOLLOWING SECOND MOWING

5. ALL PLANTING BEDS AND PITS TO RECEIVE APPROVED MULCH TO DEPTHS INDICATED IN PLANTING DETAILS.

6. WHERE DISCREPANCIES OCCUR BETWEEN PLANTING QUANTITIES OR TYPES SHOWN ON PLAN AND IN THE PLANT LIST, THE QUANTITY OF PLANTINGS SHOWN ON PLAN SHALL PREVAIL.

7. CONTRACTOR SHALL MEET WITH LANDSCAPE ARCHITECT AND TREE WARDEN PRIOR TO CONSTRUCTION TO DETERMINE STRATEGY FOR PLANTING INSTALLATION WITHIN ESTABLISHED WOODED AREAS AND AREAS OF LEDGE. ACCESS, METHOD OF INSTALL AND MAINTENANCE OF THESE AREAS TO BE SENSITIVE TO SURROUNDING ESTABLISHED ECOSYSTEM.

8. PLANTINGS PROVIDED WITHIN WOODED AREAS TO FOLLOW PLANTING DETAILS AND INPUT FROM TREE WARDEN.

SITE IRRIGATION NOTES:

1. COORDINATE WORK ON THIS SHEET WITH ALL DRAWINGS PERTAINING TO SITE WORK IN THE CONTRACT DOCUMENT SET. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIM OR HERSELF FAMILIAR WITH THE FULL SET OF DOCUMENTS FOR ALL SITE RELATED ITEMS.

2. CONTRACTOR IS RESPONSIBLE FOR, BUT NOT LIMITED TO, IRRIGATION SYSTEM DESIGN AND COMPLETE INSTALLATION OF IRRIGATION SYSTEM FOLLOWING ALL APPLICABLE CODES AND LAWS.

3. SEPARATE ZONES SHALL BE CREATED ACCORDING TO USE, AS EITHER PLANTING BED OR LAWN AREA IS DELINEATED BY SHEET L404 FOR BASE BID PLANTINGS.

GENERAL SITE LEGEND

- CONTRACT LIMIT LINE
- PROPERTY LINE
- SAWCUT LINE
- CURB
- CATCH BASIN
- YARD DRAIN
- DRAIN INLET
- BOLLARD
- DECORATIVE LIGHT STANDARD (SEE SITE ELECTRICAL PLANS)
- EMERGENCY PHONE (BLUE LIGHT) (SEE SITE ELECTRICAL PLANS)
- CUSTOM WOOD BENCH SALVAGED WOOD FROM TREE REMOVAL
- BOULDER
- LARGE PLANTER
- CHAIN LINK FENCE
- METAL SCREEN FENCE

GENERAL SITE ABBREVIATIONS

BIT.	BITUMINOUS
CLF	CHAIN LINK FENCE
CLL	CONTRACT LIMIT LINE
CONC.	CONCRETE
N.I.C.	NOT IN CONTRACT

SITE LAYOUT ABBREVIATIONS

℄	CENTER LINE
DIA.	DIAMETER
EJ	EXPANSION JOINT
EQ.	EQUAL
MAX	MAXIMUM
MIN.	MINIMUM
R	RADIUS
(TYP.)	TYPICAL CONDITION

SITE GRADING ABBREVIATIONS

BC	BOTTOM OF CURB
BFE	BASEMENT FLOOR ELEVATION
BS	BOTTOM OF STAIR
BW	BOTTOM OF WALL
CB	CATCH BASIN
DI	DRAIN INLET
EL.	ELEVATION
FFE	FINISH FLOOR ELEVATION
FLUSH	FLUSH CONDITION
HP	HIGH POINT
LP	LOW POINT
MEG	MATCH EXISTING GRADE
TC	TOP OF CURB
TF	TOP OF FRAME
TRC	TRANSITION CURB
TS	TOP OF STAIR
TW	TOP OF WALL
YD	YARD DRAIN

SITE PLANTING ABBREVIATIONS

B&B	BALLED & BURLAPPED
CAL	CALIPER AT 4' HT.
CONT.	CONTAINER
GAL	GALLON CONTAINER
HT.	HEIGHT
O.C.	ON CENTER
PT.	PINT CONTAINER
QTY	QUANTITY
SPD	SPREAD

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

Drawn: RC
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	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

GENERAL SITE INFORMATION

Date: 07/08/2024
Scale: AS SHOWN
Proj. Number: 22367.00
Drawing Number: L001

P:\Projects\Proj\22\22367\40-Documentation\02-Drawings\4utoCAD\Site\L001 - General Information.dwg November 05, 2024 - 2:43 PM

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 L501 BTUMINOUS PAVEMENT (TYP.) (REGULAR DUTY)
2A L501 CONCRETE PAVEMENT (TYP.) (PEDESTRIAN)
1B L501 BTUMINOUS PAVEMENT (TYP.) (HEAVY DUTY)
LIMITS OF MILLING & REPAVING FOR RUMBLE STRIP INSTALLATION, SEE CIVIL
APPROX. LOCATION OF 6" WATER MAIN (PER RECORD MAP)
EDGE OF PAVEMENT
GRAN MON
STONE WALL
SEE CIVIL
ORCHARD STREET
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) 3E L501 AND FIBER MULCH
VINYL-COATED CHAIN LINK FENCE 6' HEIGHT (SEE DETAIL) 3D L601
RAISED CONCRETE PLANTERS (SEE DETAIL) 3E L501
RAISED PT WOOD COMPOST AREA TO MATCH EXISTING, PROVIDE SHOP DRAWINGS FOR APPROVAL
DUST COLLECTOR
RELOCATED GARDEN STORAGE SHED
5D L502 SITE LIGHT FOOTING (TYP.)
EXISTING PLAQUE AND BOULDER TO BE SALVAGED FOR RELOCATION
3A L502 RIBBON BIKE RACK
PRIVACY FENCE AT DUST COLLECTOR 4E L504 SEE DETAIL
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
3A L502 RIBBON BIKE RACK
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 PLANTER
WOOD FENCE
PROPERTY LINE
CONTRACT LIMIT LINE
5A L501 STONE MULCH
ALTERNATE 3: UNIT PAVERS IN LIEU OF CONCRETE PAVEMENT
1D L503 TYPICAL SEGMENTAL BLOCK RETAINING WALL
1C L501 POROUS BITUMINOUS CONCRETE
WHITEBOARD, SEE ARCH
LIVE EDGE WOOD BENCH SHAPES VARY (SEE DETAIL) 3E L503
BOULDER TYP. 2C L501
BOULDER 2C L501
IRON PIN FOUND
SCALE: 1" = 20'

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

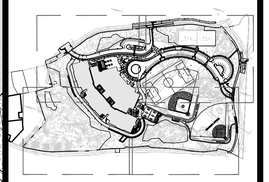
Drawn: RC
Checked: EFS

Greenwich Public Schools

GREENWICH CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CT 06830

STATE PROJECT NO:057-0114 N



Number	Date	Issued For
3	11/06/2024	ADDENDUM NO. 6
2	10/30/2024	ADDENDUM NO. 4
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

P:\Projects\Proj\23236740-Documentation\02-Drawings\4-autoCAD\Sht\L202-SiteMaterials.dwg November 05, 2024 - 11:34 AM

PLANT_SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CAL	SIZE		REMARKS
DECIDUOUS TREES								
AR	14	ACER RUBRUM	RED MAPLE	B & B	2-2.5" (66%), 3-3.5" (33%)			SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
CK	7	CLADRASTIS KENTUKEA	AMERICAN YELLOWWOOD	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
COV	2	CARYA OVATA	SHAGBARK HICKORY	B & B	2-2.5" (66%), 3-3.5" (33%)			SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
GA	4	GLEDITSIA TRIACANTHOS INERMIS 'SHADE MASTER'	THORNLESS HONEY LOCUST	B & B	2-2.5" (66%), 3-3.5" (33%)			SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
LT	3	LIRIODENDRON TULIPIFERA	TULIP POPLAR	B & B	2-2.5" (66%), 3-3.5" (33%)			SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
NS	7	NYSSA SYLVATICA	TUPELO	B & B	2-2.5" (66%), 3-3.5" (33%)			SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
OA	1	OXYDENDRUM ARBOREUM	SOURWOOD TREE	B & B	2-2.5" (66%), 3-3.5" (33%)			
PO	2	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	B & B	2-2.5" (66%), 3-3.5" (33%)			SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
QA	6	QUERCUS ALBA	WHITE OAK	B & B	2-2.5" (66%), 3-3.5" (33%)			SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
QR	2	QUERCUS RUBRA	RED OAK	B & B	2-2.5" (66%), 3-3.5" (33%)			SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
TCO	9	TILIA CORDATA	LITTLELEAF LINDEN	B & B	2-2.5" (66%), 3-3.5" (33%)			SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
UP	4	ULMUS AMERICANA 'PRINCETON'	PRINCETON AMERICAN ELM	B & B	2-2.5" (66%), 3-3.5" (33%)			SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
EVERGREEN TREES								
AB	13	ABIES BALSAMEA	BALSAM FIR	B & B	CONIFER	6-8` (40%), 9-10` (40%), 12-14` (20%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
CDS	3	CEDRUS DEODARA 'SANDER'S BLUE'	SANDER'S BLUE DEODAR CEDAR	B & B	CONIFER	6-8` (40%), 9-10` (40%), 12-14` (20%)		
CPT	4	CHAMAECYPARIS THYOIDES	ATLANTIC WHITE CYPRESS	B & B	CONIFER	6-8` (40%), 9-10` (40%), 12-14` (20%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
IA	18	ILEX OPACA	AMERICAN HOLLY	B & B		6-8` (40%), 9-10` (40%), 12-14` (20%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
JV	17	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR	B & B	CONIFER	6-8` (40%), 9-10` (40%), 12-14` (20%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
MG	5	METASEQUOIA GLYPTOSTROBOIDES	DAWN REDWOOD	B & B	CONIFER	6-8` (40%), 9-10` (40%), 12-14` (20%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
PA	13	PICEA ABIES	NORWAY SPRUCE	B & B	CONIFER	6-8` (40%), 9-10` (40%), 12-14` (20%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
PE	13	PINUS ECHINATA	SHORT LEAF PINE	B & B	CONIFER	6-8` (40%), 9-10` (40%), 12-14` (20%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
PINV	18	PINUS VIRGINIANA	VIRGINIA PINE	B & B	CONIFER	6-8` (40%), 9-10` (40%), 12-14` (20%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
PT	8	PINUS TAEDA	LOBLOLLY PINE	B & B	CONIFER	6-8` (40%), 9-10` (40%), 12-14` (20%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
TC	3	TAXUS CANADENSIS	AMERICAN YEW	B & B	CONIFER	6-8` (40%), 9-10` (40%), 12-14` (20%)		FULL TO GROUND; DENSE FOLIAGE; WELL-BRANCHES; GOOD COLOR; PYRAMIDAL FORM
TD	3	TAXODIUM DISTICHUM	BALD CYPRESS	B & B	CONIFER	6-8` (40%), 9-10` (40%), 12-14` (20%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY, FREE OF BRANCHING TO 5' HT. DENSE FOLIAGE, WELL-BRANCHED; GOOD COLOR
ORNAMENTAL TREES								
CC	25	CERCIS CANADENSIS	EASTERN REDBUD	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR
CF	34	CORNUS FLORIDA	FLOWERING DOGWOOD	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR
CM	1	CORNUS MAS	CORNELIAN CHERRY	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR
CR2	1	CORNUS X 'RUTCAN'	CONSTELLATION® FLOWERING DOGWOOD	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR
CV	11	CHIONANTHUS VIRGINICUS	WHITE FRINGETREE	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR
FA	4	FRANKLINIA ALATAMAHA	FRANKLIN TREE	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR
GBP	5	GINKGO BILOBA 'PRINCETON SENTRY'	PRINCETON SENTRY MAIDENHAIR TREE	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR
MDE	2	MALUS X DOMESTICA 'EMPIRE'	EMPIRE APPLE	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR
MDG	2	MALUS X DOMESTICA 'GRANNY SMITH'	GRANNY SMITH APPLE	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR
MDM	1	MALUS X DOMESTICA 'MCINTOSH'	MCINTOSH APPLE	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR
MDZ	1	MALUS X DOMESTICA 'ZESTAR!'	ZESTAR APPLE	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR
MGE	13	MAGNOLIA GRANDIFLORA 'EDITH BOGUE'	EDITH BOGUE SOUTHERN MAGNOLIA	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR
MH	3	MALUS X '20TH CENTURY'	20TH CENTURY APPLE	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR
MM	22	MAGNOLIA MACROPHYLLA	BIGLEAF MAGNOLIA	B & B		6-8` (66%), 9-10` (33%)		
MV	8	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR
VPT	4	VIBURNUM PLICATUM TOMENTOSUM 'MARIESII'	MARIE DOUBLEFILE VIBURNUM	B & B		6-8` (66%), 9-10` (33%)		SINGLE, STRAIGHT TRUNK; SPECIMEN QUALITY; DENSE FOLIAGE; WELL-BRANCHED; GOOD COLOR

CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	MIN. HT.	MIN. SPR.		REMARKS
DECIDUOUS SHRUBS								
CA	16	CLETHRA ALNIFOLIA	SUMMERSWEET	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
CO	6	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
CR	70	CORNUS SERICEA	RED TWIG DOGWOOD	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
HQ	25	HYDRANGEA QUERCIFOLIA	OAKLEAF HYDRANGEA	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
IM	2	ILEX VERTICILLATA 'MALE'	MALE WINTERBERRY	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
IW	48	ILEX VERTICILLATA	WINTERBERRY	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
MP	7	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
SN	6	SAMBUCUS NIGRA	BLACK ELDERBERRY	3 GAL.	30" - 36"			
VA	21	VACCINIUM ANGUSTIFOLIUM	LOWBUSH BLUEBERRY	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
VC	13	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
VM	40	VIBURNUM ACERIFOLIUM	MAPLELEAF VIBURNUM	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
EVERGREEN SHRUBS								
IG	104	ILEX GLABRA	INKBERRY HOLLY	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
IGM	17	ILEX GLABRA	INKBERRY HOLLY MALE	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
KL	95	KALMIA LATIFOLIA	MOUNTAIN LAUREL	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
RC	35	RHODODENDRON CATAWBIENSE	CATAWBA RHODODENDRON	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
RMA	143	RHODODENDRON MAXIMUM	ROSEBAY RHODODENDRON	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
RN	17	RHODODENDRON NUDIFLORUM	PINXTERBLOOM AZALEA	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
RV	5	RHODODENDRON VISCOSUM	SWAMP AZALEA	3 GAL.	30" - 36"			WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR

CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	MIN. HT.	MIN. SPR.	SPACING	REMARKS
GRASSES								
AMG	529	SESLERIA AUTUMNALIS	AUTUMN MOOR GRASS	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			12" o.c.	WELL-ROOTED; HEALTHY STEMS; GOOD COLOR
PAH	126	PENNISETUM ALOPECUROIDES 'HAMELN'	HAMELN FOUNTAIN GRASS	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			30" o.c.	WELL-ROOTED; HEALTHY STEMS; GOOD COLOR
SL	133	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			18" o.c.	WELL-ROOTED; HEALTHY STEMS; GOOD COLOR
GROUND COVER								
AU	6	ARCTOSTAPHYLOS UVA-URSI	KINNIKINNICK	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			24" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
DP	769	DENNSTAEDTIA PUNCTILOBULA	HAY-SCENTED FERN	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			24" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
GB	216	GERANIUM MACRORRHIZUM	BIGROOT GERANIUM	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			18" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
LS	419	LIRIOPE SPICATA	CREEPING LILYTURF	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			18" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
OSC	12	OSMUNDA CINNAMOMEA	CINNAMON FERN	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			18" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
RG	98	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			24" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
PERENNIALS								
AI	53	ASCLEPIAS INCARNATA	SWAMP MILKWEED	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			18" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
AS4	563	ASCLEPIAS SPECIOSA	SHOWY MILKWEED	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			18" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
CL	148	COREOPSIS LANCEOLATA	LANCELEAF TICKSEED	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			18" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
ED	124	EUTROCHIUM MACULATUM 'RED DWARF'	RED DWARF JOE PYE WEED	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			48" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
EP	30	ECHINACEA PURPUREA	CONEFLOWER	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			24" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
IV	252	IRIS VERSICOLOR	BLUE FLAG	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			24" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
MC	11	MONARDA CLINOPODIA	WHITE BERGAMOT	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			36" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
MF	11	MONARDA FISTULOSA	BERGAMOT	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			36" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR
PD	30	PENSTEMON DIGITALIS	BEARDTONGUE	5 PT. (33%), 1 GAL. (33%), 3 GAL. (33%)			18" o.c.	WELL-ROOTED; DENSE FOLIAGE; HEALTHY STEMS; GOOD COLOR

⚠ ATHLETIC TURF SEED MIX - SEE SPEC

GENERAL LAWN AREAS - FOUNDATION SEED MIX
15% FALCON IV TURF TYPE TALL FESCUE
20% AMBROSE CHEWINGS FESCUE
20% VIKING H20 HARD FESCUE
15% DOUBLE TIME TETRAPLOID PRG
10% MAZAMARA KBG
10% DIVA KBG

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

Drawn: EFS
Checked: HWW

Greenwich Public Schools

GREENWICH CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CT 06830

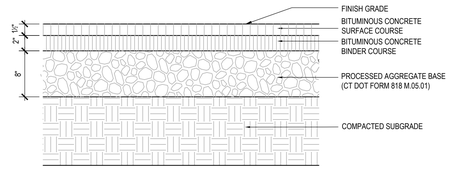
STATE PROJECT NO:057-0114 N

Number	Date	Issued For
1	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

PLANT MATERIAL LIST

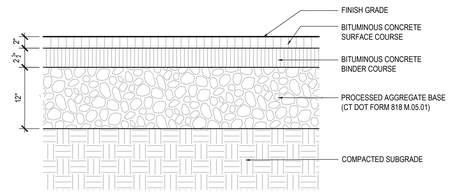
Date: 07/08/2024
Scale: AS SHOWN
Proj. Number: 22367.00
Drawing Number: L402

P:\Projects\Proj\22367-00\Documentation\02-Drawings\4-Arch\CAD\Site\L401 Site Planting.dwg November 05, 2024 - 12:00 PM



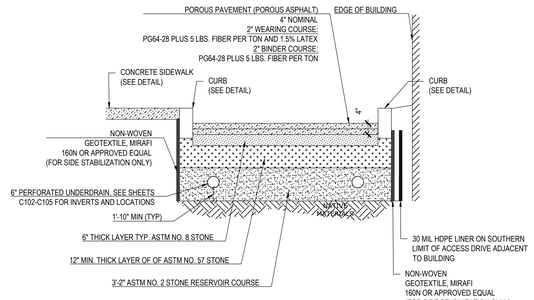
1A BITUMINOUS CONCRETE PAVEMENT (REGULAR DUTY)

1 1/2" = 1'-0"



1B BITUMINOUS CONCRETE PAVEMENT (HEAVY DUTY)

1 1/2" = 1'-0"



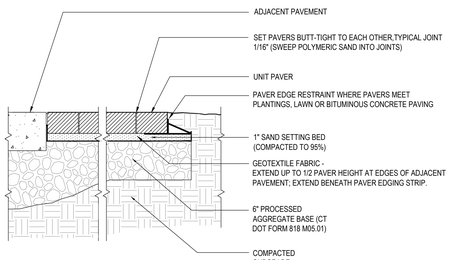
NOTES:

1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE, UTILITIES AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. FILTER COURSE TO BE INCREASED AS NECESSARY TO MEET PROPOSED GRADES.

1C BITUMINOUS CONCRETE PAVEMENT (POROUS) FIRE LANE ONLY ⚠

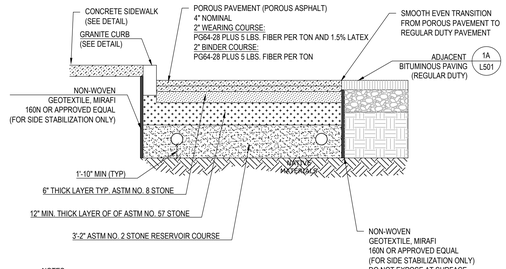
NTS

SEE DETAL 1E FOR BITUMINOUS CONCRETE PAVEMENT (POROUS) IN PARKING AREAS



1D UNIT PAVERS ON SAND SETTING BED WITH EDGE RESTRAINT

1 1/2" = 1'-0"

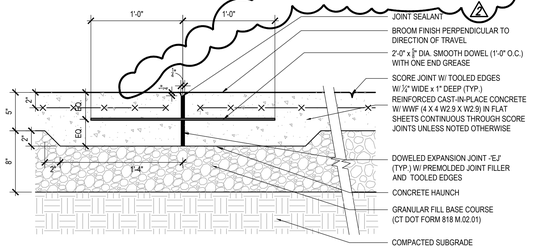


NOTES:

1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE, UTILITIES AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. FILTER COURSE TO BE INCREASED AS NECESSARY TO MEET PROPOSED GRADES.

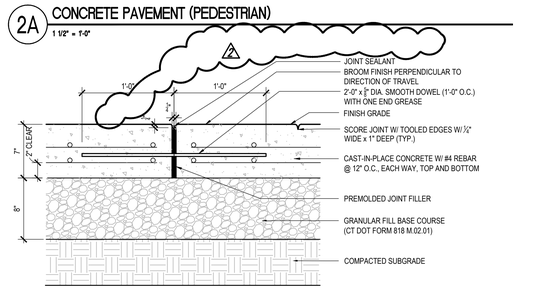
1E BITUMINOUS CONCRETE PAVEMENT (POROUS) PARKING AREAS ONLY

NTS



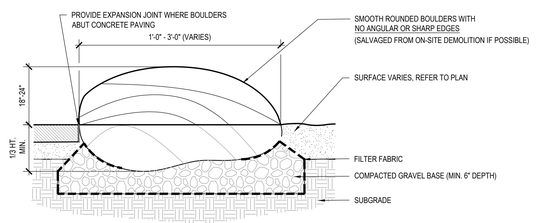
2A CONCRETE PAVEMENT (PEDESTRIAN)

1 1/2" = 1'-0"



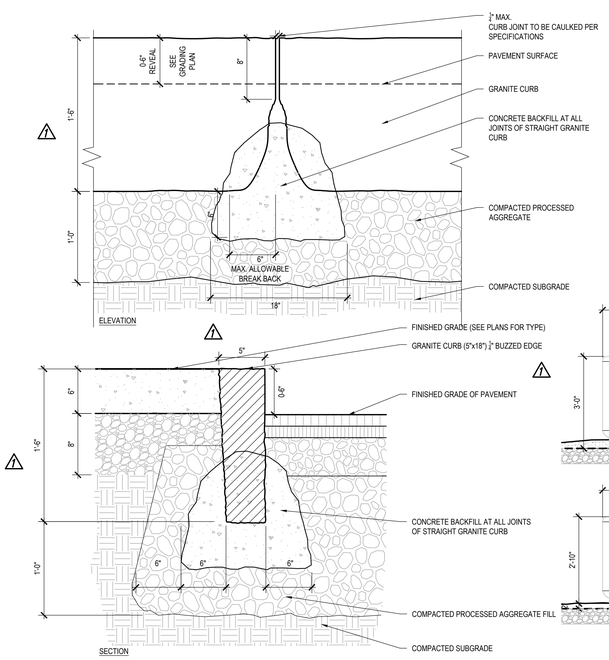
2B CONCRETE PAVEMENT (HEAVY DUTY)

1 1/2" = 1'-0"



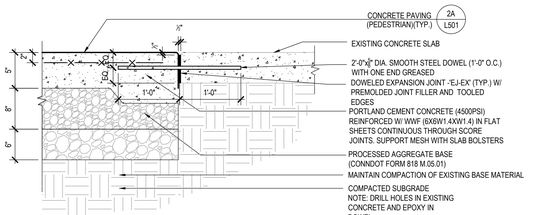
2C BOULDER

3/4" = 1'-0"



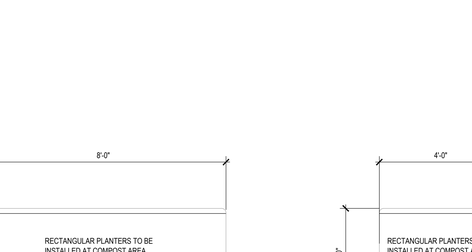
2E GRANITE CURB (GC)

1 1/2" = 1'-0"



3A CONCRETE ADJACENT TO EXISTING CONCRETE SIDEWALK (EJ-EX)

1" = 1'-0"

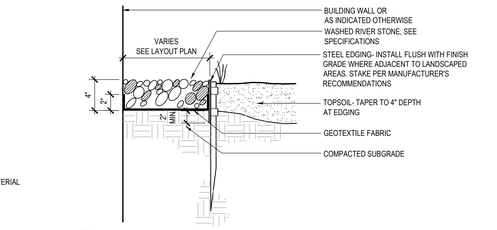


3B FROST PAD (EJ-1)

1" = 1'-0"

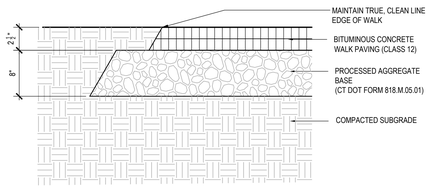
3C FROST PAD AT PEDESTRIAN UNIT PAVERS (EJ-2)

1" = 1'-0"



5A STONE MULCH

1 1/2" = 1'-0"

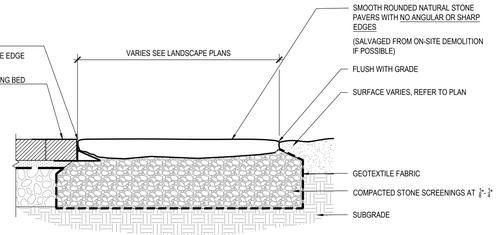


5B BITIMINOUS CONCRETE WALK

1 1/2" = 1'-0"

3E RAISED CONCRETE PLANTERS AND FIBER MULCH

1/2" = 1'-0"



5C STEPPING STONE

3/4" = 1'-0"

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

Drawn
RC
Checked
HWW

Greenwich Public Schools

GREENWICH CENTRAL MIDDLE SCHOOL

9 INDIAN ROCK LANE
GREENWICH, CT 06830

STATE PROJECT NO:057-0114 N

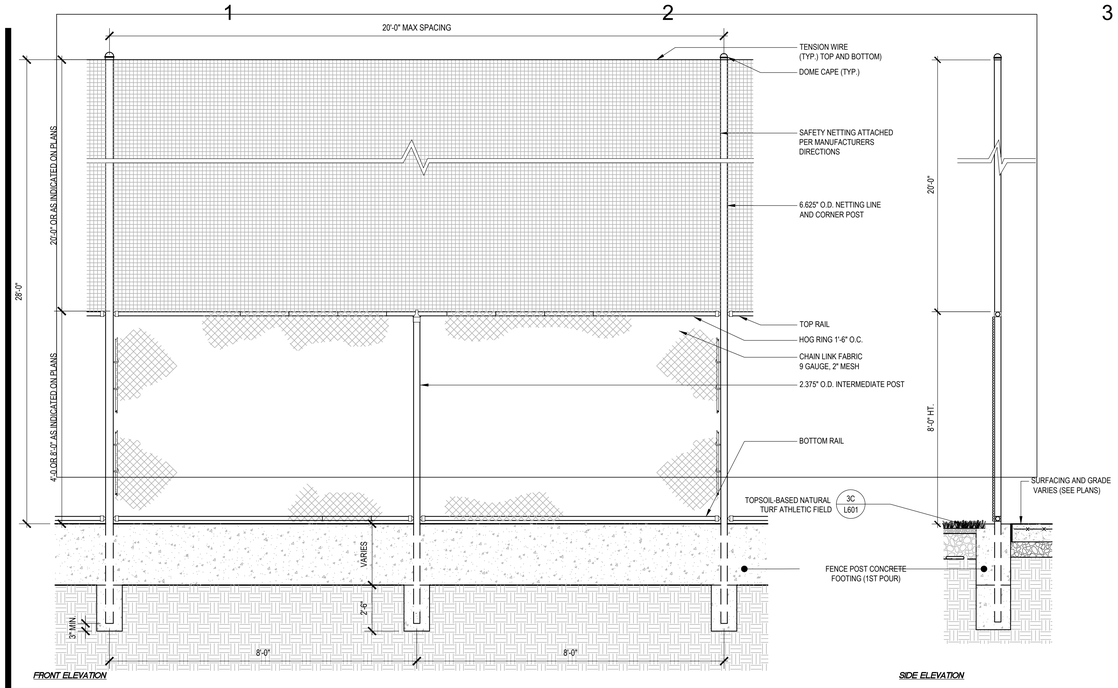
Number	Date	Issued For
2	11/06/2024	ADDENDUM NO. 6
1	10/30/2024	ADDENDUM NO. 4
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

SITE DETAILS

Date
07/08/2024
Scale
AS SHOWN
Proj. Number
22367.00

Drawing Number
L501

P:\Projects\Proj\22367.00-Documentation\02-Drawings\AutoCAD\Sht\L501-Details.dwg November 04, 2024 - 2:21 PM

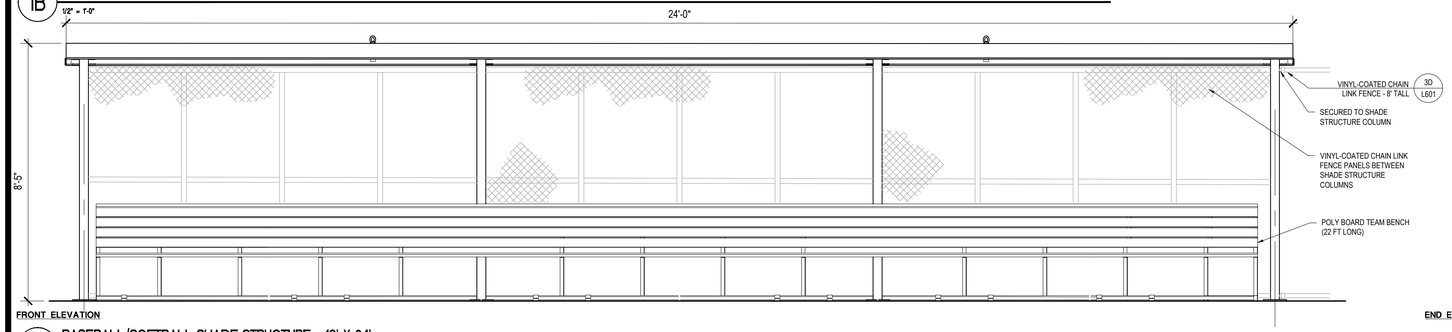


FRONT ELEVATION

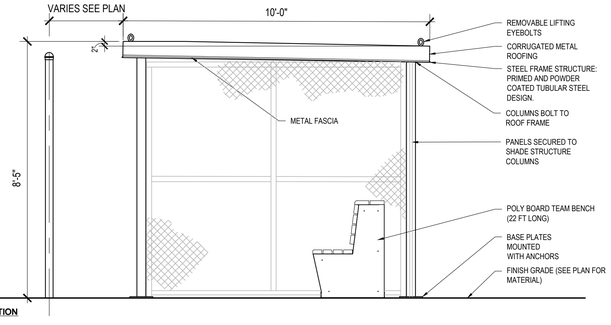
SIDE ELEVATION

1B SAFETY NETTING AT VINYL-COATED FENCE (ALTERNATE S1)

1/2" = 1'-0"



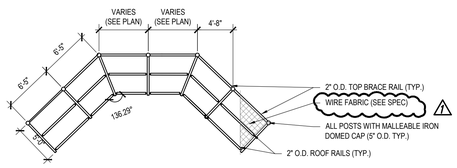
FRONT ELEVATION

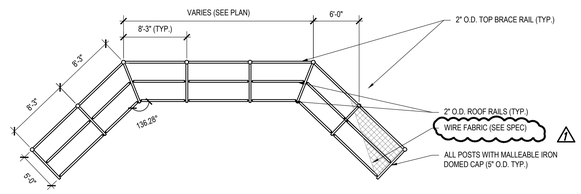


END ELEVATION

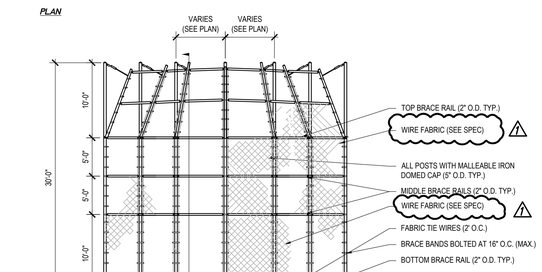
1C BASEBALL/SOFTBALL SHADE STRUCTURE - 10' X 24'

1/2" = 1'-0"

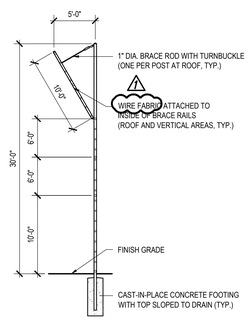




PLAN

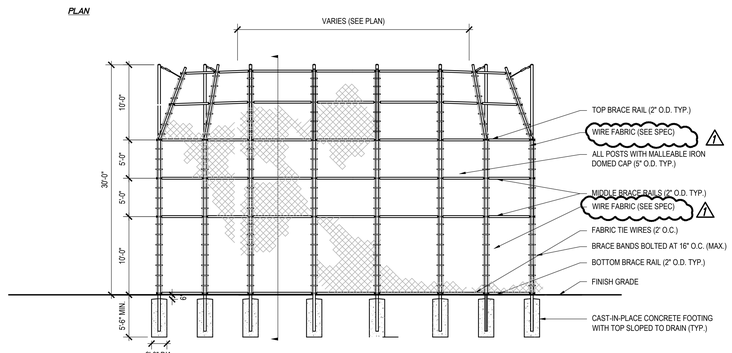


ELEVATION

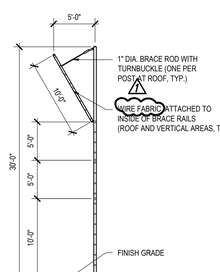


SECTION

PLAN



ELEVATION



SECTION

1E SOFTBALL BACKSTOP

1/8" = 1'-0"

3E BASEBALL BACKSTOP

1/8" = 1'-0"

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

Drawn
RC
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	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING PERMIT
	07/08/2024	PHASE 2

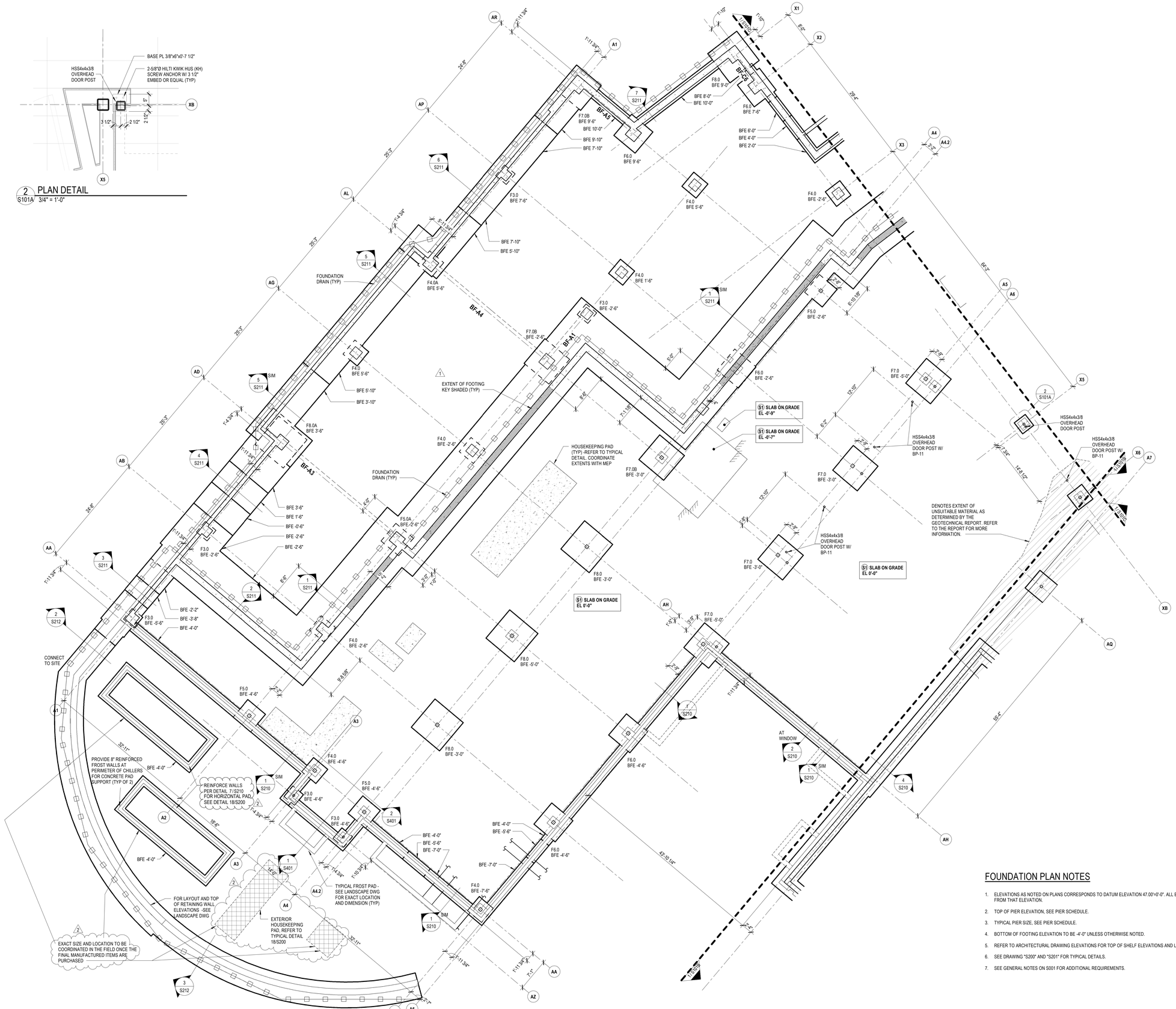
ATHLETIC FIELD SITE DETAILS

Date
07/08/2024
Scale
AS SHOWN
Proj. Number
22367.00

Drawing Number
L602

P:\Projects\Proj\22\22367\40-Documentation\03-Drawings\AutoCAD\Sheet\601-Athletic Details.dwg November 06, 2024 - 12:13 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.

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2020 The SLAM Collaborative, Inc.

Drawn MJL
Checked

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

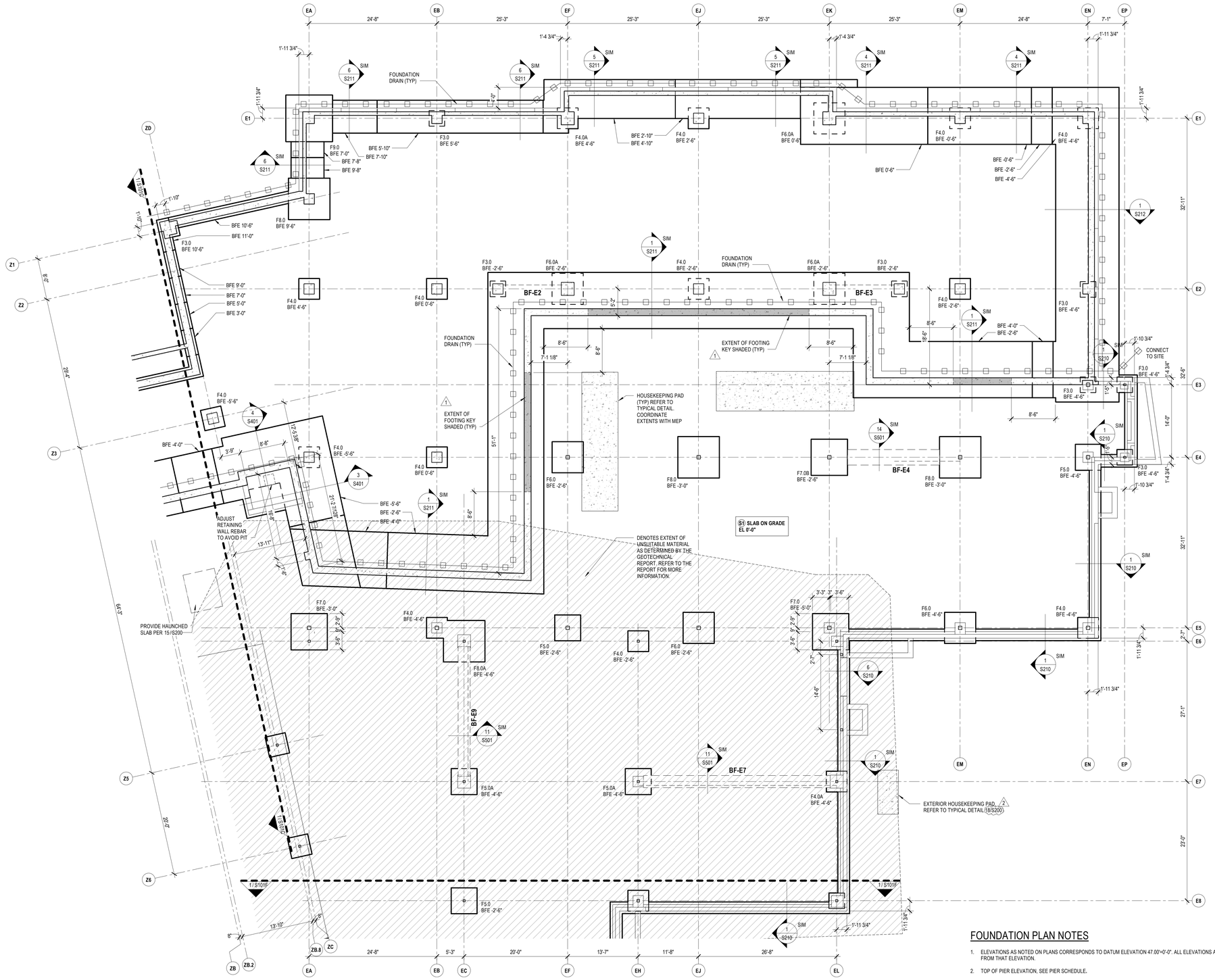
Number	Date	Issued For
2	11/06/2024	ADDENDUM NO. 6
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING / PERMIT
	07/08/2024	PHASE 2

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
11/6/2024 2:28:07 PM



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.

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2020 The SLAM Collaborative, Inc.

Drawn MJL
Checked

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

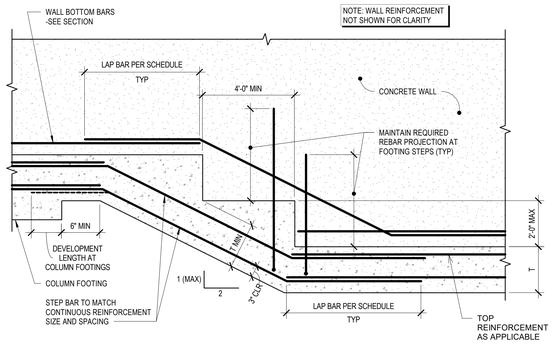
Number	Date	Issued For
2	11/06/2024	ADDENDUM NO. 6
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING / PERMIT
	07/08/2024	PHASE 2

FOUNDATION PLAN - PART E

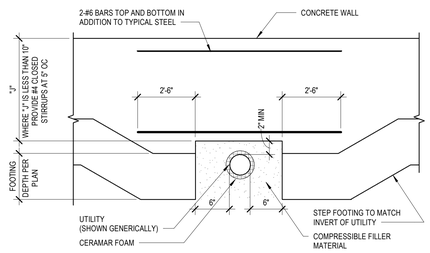
Date 07/08/2024
Scale 1/8" = 1'-0"
Proj. Number 22367.00

Drawing Number S101E

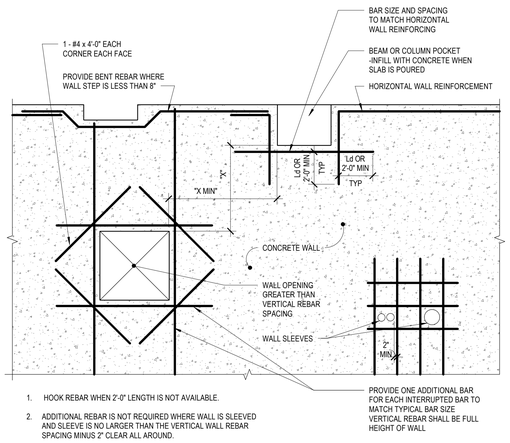
Autodesk Docs://22367.00 - Greenwich Central Middle School/S_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 2:28:16 PM



1 S200 TYPICAL STEPPED FOOTING
NOT TO SCALE

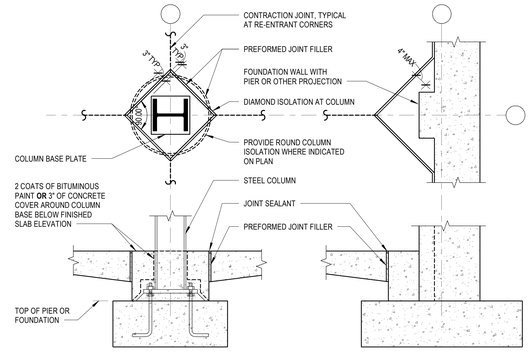


2 S200 TYPICAL FOOTING BREAK
NOT TO SCALE

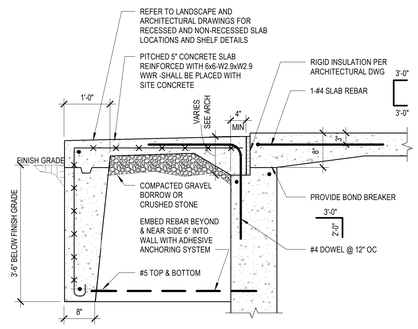


1. HOOK REBAR WHEN 2'-0" LENGTH IS NOT AVAILABLE.
2. ADDITIONAL REBAR IS NOT REQUIRED WHERE WALL IS SLEEVED AND SLEEVE IS NO LARGER THAN THE VERTICAL WALL REBAR SPACING MINUS 2" CLEAR ALL AROUND.

3 S200 TYPICAL WALL REINFORCING
NOT TO SCALE

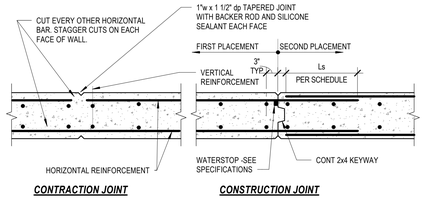


4 S200 TYPICAL ISOLATION JOINT AT COLUMN OR PIER
NOT TO SCALE



FROST PADS

5 S200 TYPICAL SLAB AT EXTERIOR DOOR
NOT TO SCALE

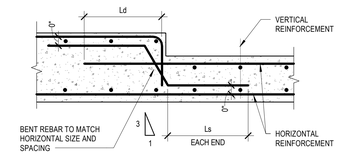


CONTRACTION JOINT ***CONSTRUCTION JOINT***

PLAN

1. PROVIDE CONSTRUCTION JOINT OR CONTRACTION JOINT AT 65'-0" MAX SPACING.
2. LOCATE JOINT NO CLOSER THAN 4'-0" FROM A PIER/CORNER OR PORTION OF WALL SUPPORTING CONCENTRATED LOAD.
3. JOINT LOCATIONS AND DETAILS TO BE APPROVED BY ARCHITECT AND STRUCTURAL ENGINEER.
4. DO NOT USE THIS DETAIL FOR SHEAR WALLS OR WALLS DESIGNED TO SPAN HORIZONTALLY (NOTED ON PLANS).
5. PRIOR TO PLACEMENT OF WALL AT CONSTRUCTION JOINTS, ABRASIVE BLAST OR CHIP FIRST PLACEMENT FACE OF JOINT TO REMOVE LAITANCE, HONEYCOMBING, ETC. CLEAN WITH WATER AND STIFF BRUSH.
6. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER SHALL BE REMOVED.
7. USE A BONDING AGENT AT LOCATIONS WHERE FRESH CONCRETE IS PLACED AGAINST HARDENED OR PARTIALLY HARDENED SURFACES.
8. CLEAN JOINT PRIOR TO INSTALLING JOINT SEALANT.

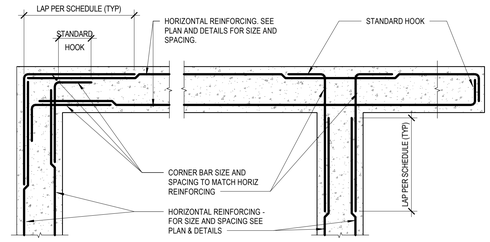
6 S200 TYPICAL WALL JOINTS
NOT TO SCALE



PLAN

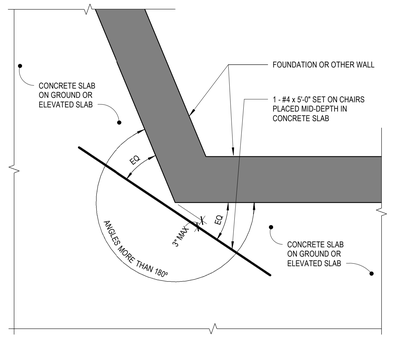
1. REFER TO PLANS OR SECTIONS FOR WALL THICKNESSES.

7 S200 TYPICAL CHANGE IN WALL THICKNESS
NOT TO SCALE

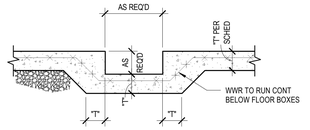


CORNER **INTERSECTION** **WALL END**

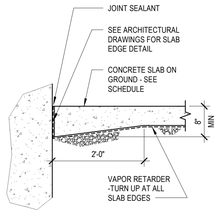
8 S200 TYPICAL WALL INTERSECTIONS
NOT TO SCALE



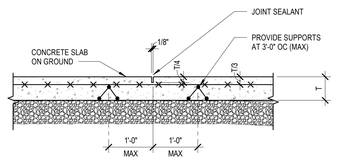
9 S200 TYPICAL RE-ENTRANT CORNER
NOT TO SCALE



10 S200 TYPICAL SLAB ON GRADE AT FLOOR BOXES
NOT TO SCALE



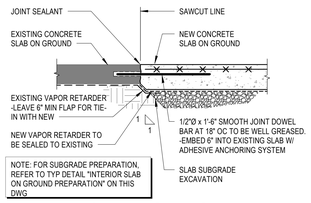
12 S200 TYPICAL SLAB ON GROUND PERIMETER
NOT TO SCALE



NOTES:

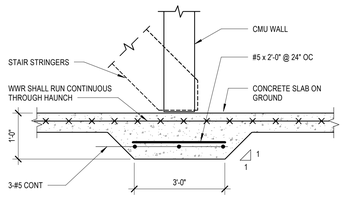
1. CONSTRUCTION JOINT MAY REPLACE CONTRACTION JOINT.
2. FOR SLAB ON GROUND WITH FIBER REINFORCEMENT, SAW CUT SHALL BE A DEPTH OF T/3.

13 S200 TYPICAL SLAB ON GROUND CONTRACTION JOINT
NOT TO SCALE



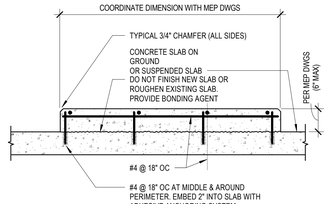
NOTE: FOR SUBGRADE PREPARATION, REFER TO TYP DETAIL "INTERIOR SLAB ON GROUND PREPARATION" ON THIS DWG

14 S200 TYPICAL NEW SLAB TO EXISTING SLAB DETAIL
NOT TO SCALE



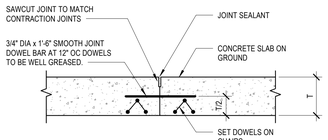
1. PROVIDE HAUNCHED SLAB BENEATH ALL CMU WALLS AND STAIR STRINGER BEARING LOCATIONS.
2. HAUNCH SHALL BE CONTINUOUS AT CMU WALLS AND TO EXTEND 1'-0" WIDER THAN THE WIDTH OF THE STAIRS EACH SIDE.
3. CONTRACTOR TO SUBMIT DRAWING THAT INDICATES LAYOUT OF HAUNCHED SLABS FOR A/E APPROVAL.

15 S200 TYPICAL HAUNCHED SLAB
NOT TO SCALE

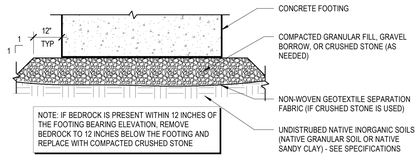


NOTE: VERIFY ALL PAD LOCATIONS, DIMENSIONS, AND ADEQUACY WITH THE MECHANICAL ENGINEER AND THE INDIVIDUAL EQUIPMENT REQUIREMENTS. MECHANICAL ENGINEER TO SPECIFY ISOLATION DATA.

16 S200 TYPICAL HOUSEKEEPING PAD
NOT TO SCALE

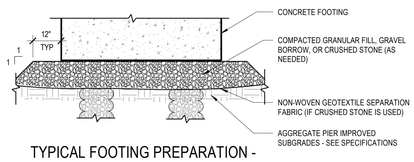


11 S200 TYPICAL SLAB CONSTRUCTION JOINT
NOT TO SCALE

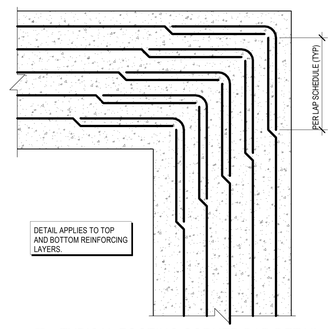


NOTE: IF BEDROCK IS PRESENT WITHIN 12 INCHES OF THE FOOTING BEARING ELEVATION, REMOVE BEDROCK TO 12 INCHES BELOW THE FOOTING AND REPLACE WITH COMPACTED CRUSHED STONE

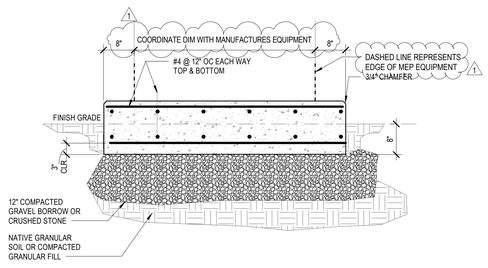
19 S200 TYPICAL FOOTING PREPARATION - NON AGGREGATE PIER AREAS
NOT TO SCALE



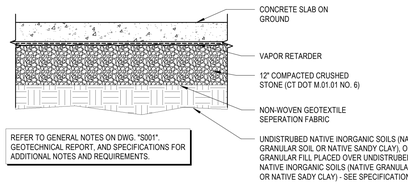
21 S200 TYPICAL FOOTING PREPARATION - AGGREGATE PIER AREAS
NOT TO SCALE



17 S200 TYPICAL FOOTING CORNER BAR DETAIL
NOT TO SCALE

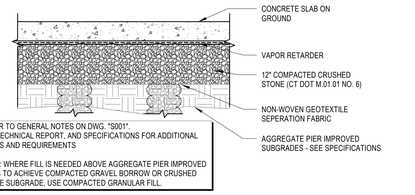


18 S200 EXTERIOR REINFORCED CONCRETE PAD
NOT TO SCALE



REFER TO GENERAL NOTES ON DWG. "S001", GEOTECHNICAL REPORT, AND SPECIFICATIONS FOR ADDITIONAL NOTES AND REQUIREMENTS.

20 S200 TYPICAL INTERIOR SLAB ON GROUND PREPARATION - NON AGGREGATE PIER AREAS
NOT TO SCALE



REFER TO GENERAL NOTES ON DWG. "S001", GEOTECHNICAL REPORT, AND SPECIFICATIONS FOR ADDITIONAL NOTES AND REQUIREMENTS.

NOTE: WHERE FILL IS NEEDED ABOVE AGGREGATE PIER IMPROVED SOILS TO ACHIEVE COMPACTED GRAVEL BORROW OR CRUSHED STONE SUBGRADE, USE COMPACTED GRANULAR FILL.

22 S200 TYPICAL INTERIOR SLAB ON GROUND PREPARATION - AGGREGATE PIER AREAS
NOT TO SCALE

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2020 The SLAM Collaborative, Inc.

Drawn
MJL
Checked

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	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING / PERMIT
	07/08/2024	PHASE 2

TYPICAL FOUNDATION DETAILS

Date 07/08/2024
Scale 3/4" = 1'-0"
Proj. Number 22367.00
Drawing Number **S200**

Autodesk Docs://22367.00 - Greenwich Central Middle School/S_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 2:28:18 PM



1E SECOND FLOOR PLAN - A
1/16" = 1'-0"

EDGE OF SLAB PLAN GENERAL NOTES

1. DIMENSIONS LOCATE EDGE OF SLAB AT PERIMETER AND OPENINGS RELATIVE TO STRUCTURAL COLUMN CENTERLINES.

2. SLAB RECESSES, DEPRESSIONS, OVERPOURS AND HOUSEKEEPING PADS INDICATED VIA "SLAB PLAN GRAPHIC LEGEND" ON THIS SHEET.

3. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION ON SLABS.

4. SEE SHEET A500 & A501 FOR TYPICAL SLAB DETAILS

EDGE OF SLAB PLAN GRAPHIC LEGEND

REFER TO STRUCTURAL DRAWINGS FOR REQUIRED SLAB THICKNESS/ COMPOSITION

- FLOOR SLAB (S.O.G. / ELEVATED SLAB)
- DEPRESSED OR ELEVATED SLAB
- ROOF DECK
- AREAS UNDER MECHANICAL UNITS TO HAVE MIN. 3" ROOF INSULATION, 5/8" GYPSUM DRYWALL OVER ROOF DECK - SEE DETAIL 4E/A530
- (-) X' - X" - SLAB ELEVATION (RELATIVE TO FLOOR LEVEL)

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

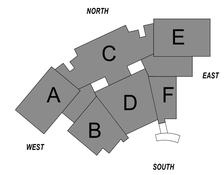
Drawn: JZ
Checked: JZ

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
2	11/06/2024	ADDENDUM NO. 6
1	10/30/2024	ADDENDUM NO. 4
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	PHASE 2

SECOND FLOOR & LOWER ROOF SLAB EDGE PLAN

Date: 07/08/2024
Scale: As indicated
Proj. Number: 22367.00
Drawing Number: A092

Autodesk Docs://22367.00 - Greenwich Central Middle School\A_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 1:20:40 PM

ROOF PLAN GRAPHIC LEGEND

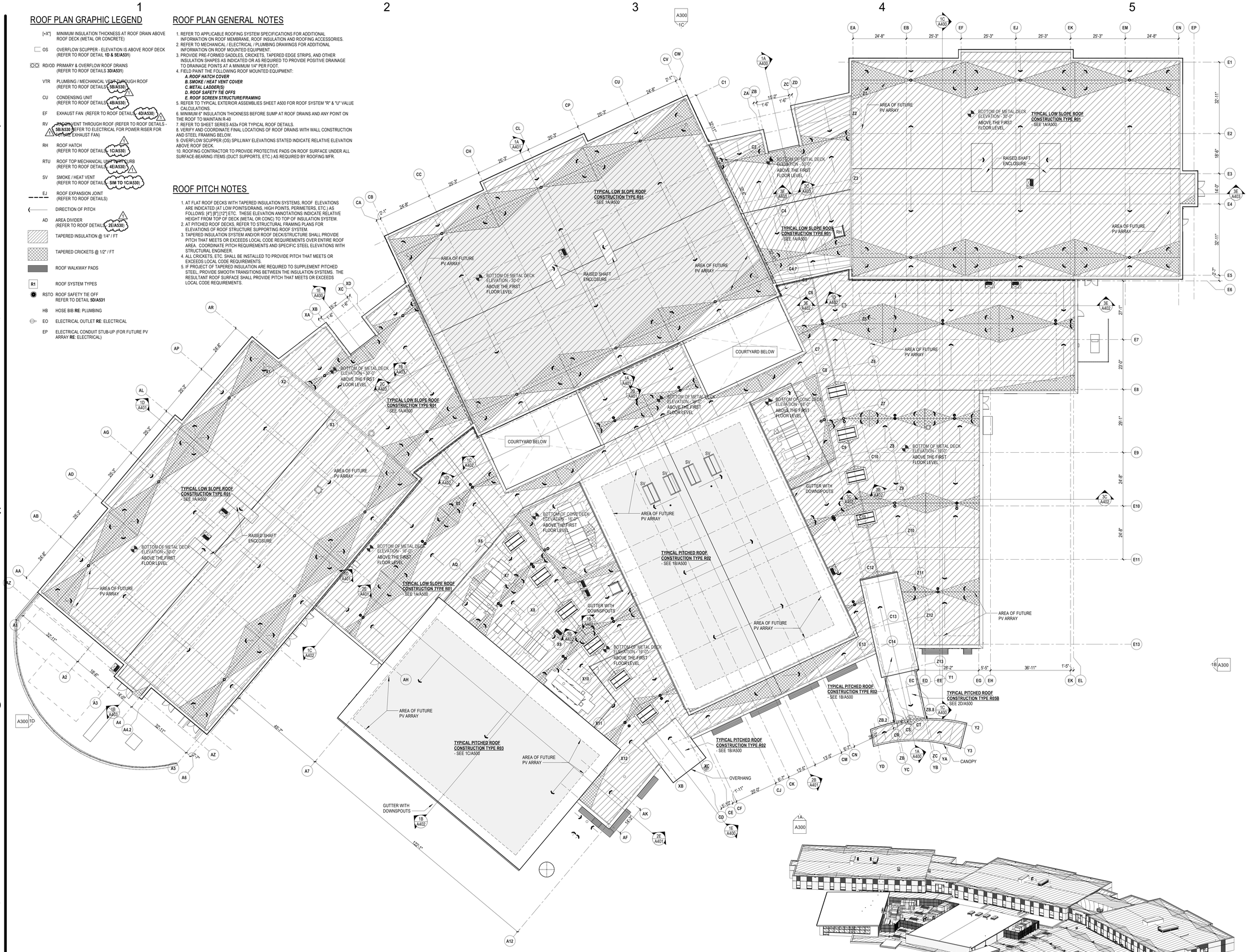
- [+X"] MINIMUM INSULATION THICKNESS AT ROOF DRAIN ABOVE ROOF DECK (METAL OR CONCRETE)
- OS OVERFLOW SCUPPER - ELEVATION IS ABOVE ROOF DECK (REFER TO ROOF DETAIL **1D & 5E/A531**)
- RD/OD PRIMARY & OVERFLOW ROOF DRAINS (REFER TO ROOF DETAILS **3D/A531**)
- VTR PLUMBING / MECHANICAL VENT THROUGH ROOF (REFER TO ROOF DETAILS - 5B/A530)
- CU CONDENSING UNIT (REFER TO ROOF DETAILS - 4B/A530)
- EF EXHAUST FAN (REFER TO ROOF DETAILS - 4D/A530)
- RV ROOF VENT THROUGH ROOF (REFER TO ROOF DETAILS - 5B/A530 REFER TO ELECTRICAL FOR POWER RISER FOR ROOF EXHAUST FAN)
- RH ROOF HATCH (REFER TO ROOF DETAILS - 1C/A530)
- RTU ROOF TOP MECHANICAL UNIT W/CURB (REFER TO ROOF DETAILS - 4E/A530)
- SV SMOKE / HEAT VENT (REFER TO ROOF DETAILS - SIM TO 1C/A530)
- EJ ROOF EXPANSION JOINT (REFER TO ROOF DETAILS)
- DIRECTION OF PITCH
- AD AREA DIVIDER (REFER TO ROOF DETAILS - 2E/A530)
- TAPERED INSULATION @ 1/4" / FT
- TAPERED CRICKETS @ 1/2" / FT
- ROOF WALKWAY PADS
- R1 ROOF SYSTEM TYPES
- RSTO ROOF SAFETY TIE OFF REFER TO DETAIL **5D/A531**
- HB HOSE BIB **RE**: PLUMBING
- EO ELECTRICAL OUTLET **RE**: ELECTRICAL
- EP ELECTRICAL CONDUIT STUB-UP (FOR FUTURE PV ARRAY **RE**: ELECTRICAL)

ROOF PLAN GENERAL NOTES

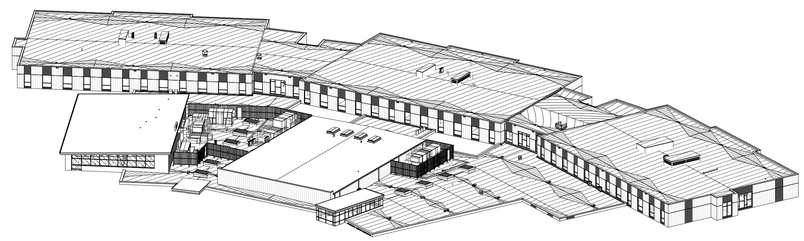
1. REFER TO APPLICABLE ROOFING SYSTEM SPECIFICATIONS FOR ADDITIONAL INFORMATION ON ROOF MEMBRANE, ROOF INSULATION AND ROOFING ACCESSORIES.
2. REFER TO MECHANICAL / ELECTRICAL / PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION ON ROOF MOUNTED EQUIPMENT.
3. PROVIDE PRE-FORMED SADDLES, CRICKETS, TAPERED EDGE STRIPS, AND OTHER INSULATION SHAPES AS INDICATED OR AS REQUIRED TO PROVIDE POSITIVE DRAINAGE TO DRAINAGE POINTS AT A MINIMUM 1/4" PER FOOT.
4. FIELD PAINT THE FOLLOWING ROOF MOUNTED EQUIPMENT:
   - ***A. ROOF HATCH COVER***
   - ***B. SMOKE / HEAT VENT COVER***
   - ***C. METAL LADDER(S)***
   - ***D. ROOF SAFETY TIE OFFS***
   - ***E. ROOF SCREEN STRUCTURE/FRAMING***
5. REFER TO TYPICAL EXTERIOR ASSEMBLIES SHEET A500 FOR ROOF SYSTEM "R" & "U" VALUE CALCULATIONS.
6. MINIMUM 6" INSULATION THICKNESS BEFORE SUMP AT ROOF DRAINS AND ANY POINT ON THE ROOF TO MAINTAIN R-40
7. REFER TO SHEET SERIES AS3x FOR TYPICAL ROOF DETAILS.
8. VERIFY AND COORDINATE FINAL LOCATIONS OF ROOF DRAINS WITH WALL CONSTRUCTION AND STEEL FRAMING BELOW.
9. OVERFLOW SCUPPER (OS) SPILLWAY ELEVATIONS STATED INDICATE RELATIVE ELEVATION ABOVE ROOF DECK.
10. ROOFING CONTRACTOR TO PROVIDE PROTECTIVE PADS ON ROOF SURFACE UNDER ALL SURFACE-BEARING ITEMS (DUCT SUPPORTS, ETC.) AS REQUIRED BY ROOFING MFR.

ROOF PITCH NOTES

1. AT FLAT ROOF DECKS WITH TAPERED INSULATION SYSTEMS, ROOF ELEVATIONS ARE INDICATED (AT LOW POINTS/DRAINS, HIGH POINTS, PERIMETERS, ETC.) AS FOLLOWS: [4"] [8"] [12"] ETC. THESE ELEVATION ANNOTATIONS INDICATE RELATIVE HEIGHT FROM TOP OF DECK (METAL OR CONC) TO TOP OF INSULATION SYSTEM.
2. AT PITCHED ROOF DECKS, REFER TO STRUCTURAL FRAMING PLANS FOR ELEVATIONS OF ROOF STRUCTURE SUPPORTING ROOF SYSTEM.
3. TAPERED INSULATION SYSTEM AND/OR ROOF DECK/STRUCTURE SHALL PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS OVER ENTIRE ROOF AREA. COORDINATE PITCH REQUIREMENTS AND SPECIFIC STEEL ELEVATIONS WITH STRUCTURAL ENGINEER.
4. ALL CRICKETS, ETC. SHALL BE INSTALLED TO PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS.
5. IF PROJECT OF TAPERED INSULATION ARE REQUIRED TO SUPPLEMENT PITCHED STEEL, PROVIDE SMOOTH TRANSITIONS BETWEEN THE INSULATION SYSTEMS. THE RESULTANT ROOF SURFACE SHALL PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS.



1E 3 - OVERALL ROOF PLAN
1/16" = 1'-0"



5E ROOF SCAPE - 3D

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

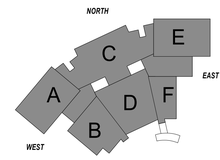
Drawn: CP, JZ
Checked: JZ

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	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	PHASE 2

OVERALL ROOF PLAN

Date: 07/08/2024
Scale: As indicated
Proj. Number: 22367.00
Drawing Number: A103

Autodesk Docs://22367.00 - Greenwich Central Middle School/A_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 1:21:33 PM

ROOF PLAN GRAPHIC LEGEND

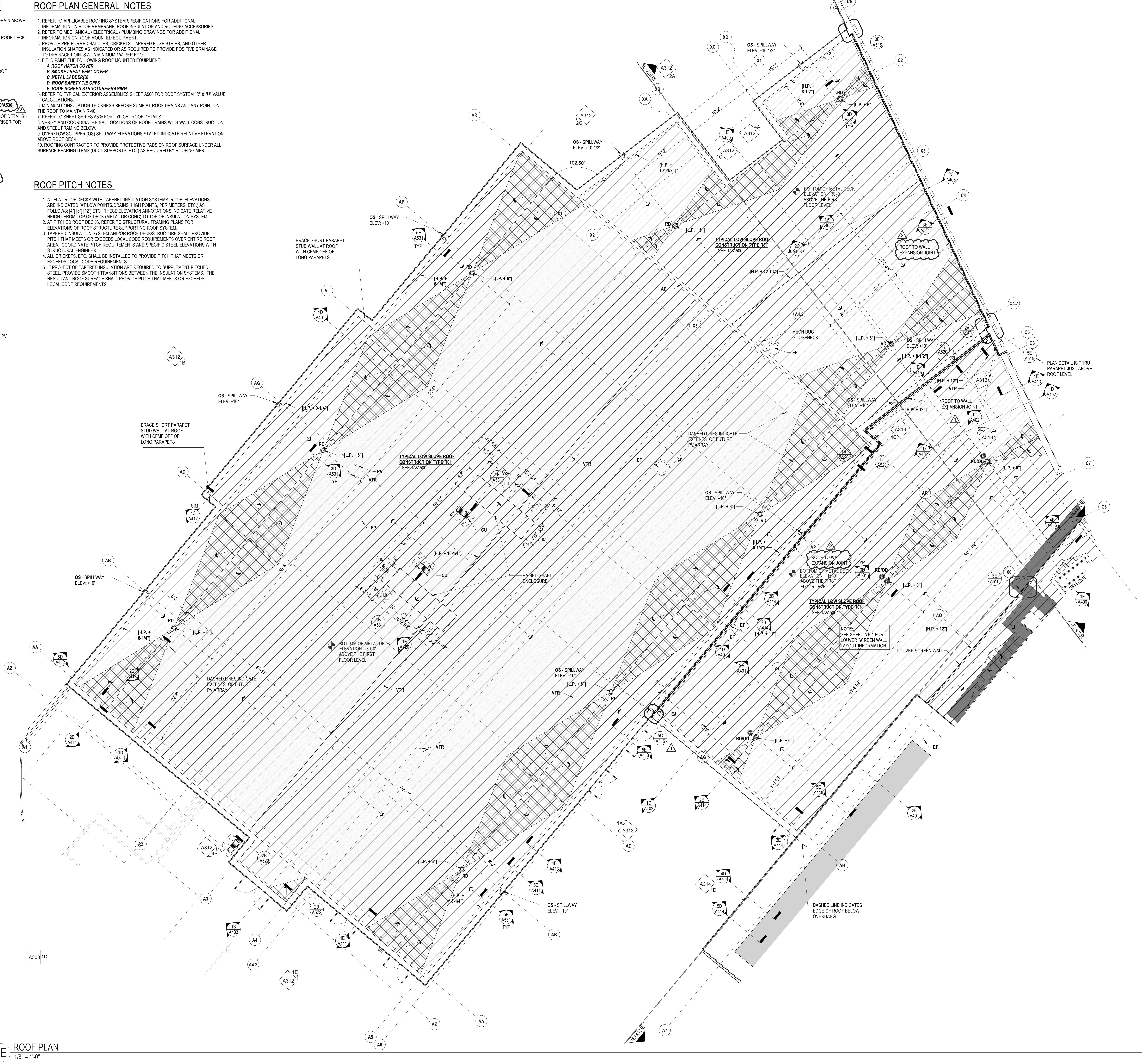
- [+X"] MINIMUM INSULATION THICKNESS AT ROOF DRAIN ABOVE ROOF DECK (METAL OR CONCRETE)
- OS OVERFLOW SCUPPER - ELEVATION IS ABOVE ROOF DECK (REFER TO ROOF DETAIL **1D & 5E/A531**)
- RD/OD PRIMARY & OVERFLOW ROOF DRAINS (REFER TO ROOF DETAILS **3D/A531**)
- VTR PLUMBING / MECHANICAL VENT THROUGH ROOF (REFER TO ROOF DETAILS - **5B/A530**)
- CU CONDENSING UNIT (REFER TO ROOF DETAILS - **4B/A530**)
- EF EXHAUST FAN (REFER TO ROOF DETAILS - **4D/A530**)
- RV RADON VENT THROUGH ROOF (REFER TO ROOF DETAILS - **5B/A530** REFER TO ELECTRICAL FOR POWER RISER FOR FUTURE EXHAUST FAN)
- RH ROOF HATCH (REFER TO ROOF DETAILS - **1C/A530**)
- RTU ROOF TOP MECHANICAL UNIT WITH CURB (REFER TO ROOF DETAILS - **4E/A530**)
- SV SMOKE / HEAT VENT (REFER TO ROOF DETAILS - **SIM TO 1C/A530**)
- EJ ROOF EXPANSION JOINT (REFER TO ROOF DETAILS)
- ← DIRECTION OF PITCH
- AD AREA DIVIDER (REFER TO ROOF DETAILS - **2E/A530**)
- ▨ TAPERED INSULATION @ 1/4" / FT
- ▩ TAPERED CRICKETS @ 1/2" / FT
- ■ ROOF WALKWAY PADS
- **R1** ROOF SYSTEM TYPES
- ● RSTO ROOF SAFETY TIE OFF REFER TO DETAIL **5D/A531**
- HB HOSE BIB **RE**: PLUMBING
- EO ELECTRICAL OUTLET **RE**: ELECTRICAL
- EP ELECTRICAL CONDUIT STUB-UP (FOR FUTURE PV ARRAY **RE**: ELECTRICAL)

ROOF PLAN GENERAL NOTES

1. REFER TO APPLICABLE ROOFING SYSTEM SPECIFICATIONS FOR ADDITIONAL INFORMATION ON ROOF MEMBRANE, ROOF INSULATION AND ROOFING ACCESSORIES.
2. REFER TO MECHANICAL / ELECTRICAL / PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION ON ROOF MOUNTED EQUIPMENT.
3. PROVIDE PRE-FORMED SADDLES, CRICKETS, TAPERED EDGE STRIPS, AND OTHER INSULATION SHAPES AS INDICATED OR AS REQUIRED TO PROVIDE POSITIVE DRAINAGE TO DRAINAGE POINTS AT A MINIMUM 1/4" PER FOOT.
4. FIELD PAINT THE FOLLOWING ROOF MOUNTED EQUIPMENT:
   - ***A. ROOF HATCH COVER***
   - ***B. SMOKE / HEAT VENT COVER***
   - ***C. METAL LADDER(S)***
   - ***D. ROOF SAFETY TIE OFFS***
   - ***E. ROOF SCREEN STRUCTURE/FRAMING***
5. REFER TO TYPICAL EXTERIOR ASSEMBLIES SHEET A500 FOR ROOF SYSTEM "R" & "U" VALUE CALCULATIONS.
6. MINIMUM 6" INSULATION THICKNESS BEFORE SUMP AT ROOF DRAINS AND ANY POINT ON THE ROOF TO MAINTAIN R-40
7. REFER TO SHEET SERIES A53x FOR TYPICAL ROOF DETAILS.
8. VERIFY AND COORDINATE FINAL LOCATIONS OF ROOF DRAINS WITH WALL CONSTRUCTION AND STEEL FRAMING BELOW.
9. OVERFLOW SCUPPER (OS) SPILLWAY ELEVATIONS STATED INDICATE RELATIVE ELEVATION ABOVE ROOF DECK.
10. ROOFING CONTRACTOR TO PROVIDE PROTECTIVE PADS ON ROOF SURFACE UNDER ALL SURFACE-BEARING ITEMS (DUCT SUPPORTS, ETC.) AS REQUIRED BY ROOFING MFR.

ROOF PITCH NOTES

1. AT FLAT ROOF DECKS WITH TAPERED INSULATION SYSTEMS, ROOF ELEVATIONS ARE INDICATED (AT LOW POINTS/DRAINS, HIGH POINTS, PERIMETERS, ETC.) AS FOLLOWS: [4"] [8"] [12"] ETC. THESE ELEVATION ANNOTATIONS INDICATE RELATIVE HEIGHT FROM TOP OF DECK (METAL OR CONC) TO TOP OF INSULATION SYSTEM.
2. AT PITCHED ROOF DECKS, REFER TO STRUCTURAL FRAMING PLANS FOR ELEVATIONS OF ROOF STRUCTURE SUPPORTING ROOF SYSTEM.
3. TAPERED INSULATION SYSTEM AND/OR ROOF DECK/STRUCTURE SHALL PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS OVER ENTIRE ROOF AREA. COORDINATE PITCH REQUIREMENTS AND SPECIFIC STEEL ELEVATIONS WITH STRUCTURAL ENGINEER.
4. ALL CRICKETS, ETC. SHALL BE INSTALLED TO PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS.
5. IF PROJECT OF TAPERED INSULATION ARE REQUIRED TO SUPPLEMENT PITCHED STEEL, PROVIDE SMOOTH TRANSITIONS BETWEEN THE INSULATION SYSTEMS. THE RESULTANT ROOF SURFACE SHALL PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS.



1E ROOF PLAN
1/8" = 1'-0"

SLAM
The S/L/A/M Collaborative

80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077

www.**slamcoll**.com

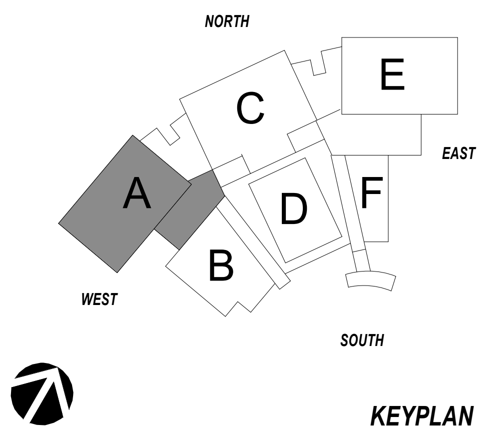
Drawn
JZ, TAS
Checked
JZ

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
2	11/06/2024	ADDENDUM NO. 6
1	10/23/2024	ADDENDUM NO. 3
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	PHASE 2

ROOF PLAN - PART A

Date
07/08/2024
Scale
1/8" = 1'-0"
Proj. Number
22367.00

Drawing Number
A103A

© 2021 The S/L/A/M Collaborative, Inc.

Autodesk Docs://22367.00 - Greenwich Central Middle School/A_22367_GREENWICH_CENTRAL_MS_R22.rvt

11/6/2024 1:22:00 PM

ROOF PLAN GRAPHIC LEGEND

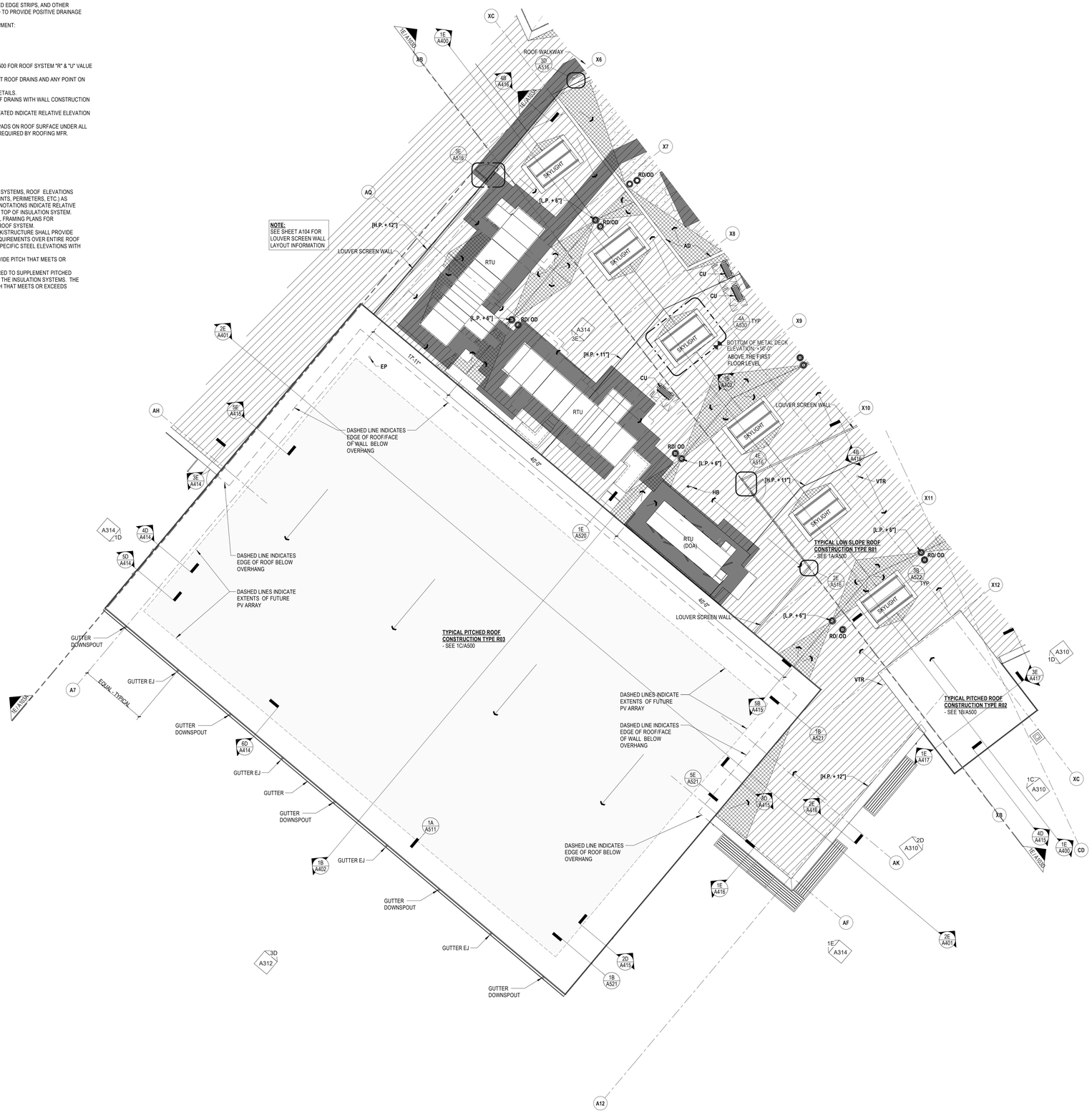
- [•X"] MINIMUM INSULATION THICKNESS AT ROOF DRAIN ABOVE ROOF DECK (METAL OR CONCRETE)
- OS OVERFLOW SCUPPER - ELEVATION IS ABOVE ROOF DECK (REFER TO ROOF DETAIL **1D & 5E/A531**)
- RD/OD PRIMARY & OVERFLOW ROOF DRAINS (REFER TO ROOF DETAILS **3D/A531**)
- VTR PLUMBING / MECHANICAL VENT THROUGH ROOF (REFER TO ROOF DETAILS - **5B/A530**)
- CU CONDENSING UNIT (REFER TO ROOF DETAILS - **4B/A530**)
- EF EXHAUST FAN (REFER TO ROOF DETAILS - **4D/A530**)
- RV RADON VENT THROUGH ROOF (REFER TO ROOF DETAILS - **5B/A530**) (REFER TO ELECTRICAL FOR POWER RISER FOR CENTRAL EXHAUST FAN)
- RH ROOF HATCH (REFER TO ROOF DETAILS - **1C/A530**)
- RTU ROOF TOP MECHANICAL UNIT WITH CURB (REFER TO ROOF DETAILS - **4E/A530**)
- SV SMOKE / HEAT VENT (REFER TO ROOF DETAILS - **SIM TO 1C/A530**)
- EJ ROOF EXPANSION JOINT (REFER TO ROOF DETAILS)
- DIRECTION OF PITCH
- AD AREA DIVIDER (REFER TO ROOF DETAILS - **2E/A530**)
- TAPERED INSULATION @ 1/4" / FT
- TAPERED CRICKETS @ 1/2" / FT
- ROOF WALKWAY PADS
- R1 ROOF SYSTEM TYPES
- RSTO ROOF SAFETY TIE OFF REFER TO DETAIL **5D/A531**
- HB HOSE BIB **RE**: PLUMBING
- EO ELECTRICAL OUTLET **RE**: ELECTRICAL
- EP ELECTRICAL CONDUIT STUB-UP (FOR FUTURE PV ARRAY **RE**: ELECTRICAL)

ROOF PLAN GENERAL NOTES

1. REFER TO APPLICABLE ROOFING SYSTEM SPECIFICATIONS FOR ADDITIONAL INFORMATION ON ROOF MEMBRANE, ROOF INSULATION AND ROOFING ACCESSORIES.
2. REFER TO MECHANICAL / ELECTRICAL / PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION ON ROOF MOUNTED EQUIPMENT.
3. PROVIDE PRE-FORMED SADDLES, CRICKETS, TAPERED EDGE STRIPS, AND OTHER INSULATION SHAPES AS INDICATED OR AS REQUIRED TO PROVIDE POSITIVE DRAINAGE TO DRAINAGE POINTS AT A MINIMUM 1/4" PER FOOT.
4. FIELD PAINT THE FOLLOWING ROOF MOUNTED EQUIPMENT:
   - ***A. ROOF HATCH COVER***
   - ***B.SMOKE / HEAT VENT COVER***
   - ***C. METAL LADDER(S)***
   - ***D. ROOF SAFETY TIE OFFS***
   - ***E. ROOF SCREEN STRUCTURE/FRAMING***
5. REFER TO TYPICAL EXTERIOR ASSEMBLIES SHEET A500 FOR ROOF SYSTEM "R" & "U" VALUE CALCULATIONS.
6. MINIMUM 6" INSULATION THICKNESS BEFORE SUMP AT ROOF DRAINS AND ANY POINT ON THE ROOF TO MAINTAIN R-40
7. REFER TO SHEET SERIES A53x FOR TYPICAL ROOF DETAILS.
8. VERIFY AND COORDINATE FINAL LOCATIONS OF ROOF DRAINS WITH WALL CONSTRUCTION AND STEEL FRAMING BELOW.
9. OVERFLOW SCUPPER (OS) SPILLWAY ELEVATIONS STATED INDICATE RELATIVE ELEVATION ABOVE ROOF DECK.
10. ROOFING CONTRACTOR TO PROVIDE PROTECTIVE PADS ON ROOF SURFACE UNDER ALL SURFACE-BEARING ITEMS (DUCT SUPPORTS, ETC.) AS REQUIRED BY ROOFING MFR.

ROOF PITCH NOTES

1. AT FLAT ROOF DECKS WITH TAPERED INSULATION SYSTEMS, ROOF ELEVATIONS ARE INDICATED (AT LOW POINTS/DRAINS, HIGH POINTS, PERIMETERS, ETC.) AS FOLLOWS: [4"] [8"] [12"] ETC. THESE ELEVATION ANNOTATIONS INDICATE RELATIVE HEIGHT FROM TOP OF DECK (METAL OR CONC) TO TOP OF INSULATION SYSTEM.
2. AT PITCHED ROOF DECKS, REFER TO STRUCTURAL FRAMING PLANS FOR ELEVATIONS OF ROOF STRUCTURE SUPPORTING ROOF SYSTEM.
3. TAPERED INSULATION SYSTEM AND/OR ROOF DECK/STRUCTURE SHALL PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS OVER ENTIRE ROOF AREA. COORDINATE PITCH REQUIREMENTS AND SPECIFIC STEEL ELEVATIONS WITH STRUCTURAL ENGINEER.
4. ALL CRICKETS, ETC. SHALL BE INSTALLED TO PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS.
5. IF PROJECT OF TAPERED INSULATION ARE REQUIRED TO SUPPLEMENT PITCHED STEEL, PROVIDE SMOOTH TRANSITIONS BETWEEN THE INSULATION SYSTEMS. THE RESULTANT ROOF SURFACE SHALL PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS.



1E ROOF PLAN
1/8" = 1'-0"

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

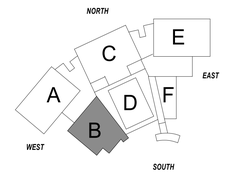
Drawn: JZ, TAS
Checked: JZ

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	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	PHASE 2

ROOF PLAN - PART B

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: A103B

Autodesk Docs://22367.00 - Greenwich Central Middle School\A_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 1:22:15 PM

ROOF PLAN GRAPHIC LEGEND

- [+X"] MINIMUM INSULATION THICKNESS AT ROOF DRAIN ABOVE ROOF DECK (METAL OR CONCRETE)
- OS OVERFLOW SCUPPER - ELEVATION IS ABOVE ROOF DECK (REFER TO ROOF DETAIL **1D & 5E/A531**)
- RD/OD PRIMARY & OVERFLOW ROOF DRAINS (REFER TO ROOF DETAILS **3D/A531**)
- VTR PLUMBING / MECHANICAL VENT THROUGH ROOF (REFER TO ROOF DETAILS - 5B/A530)
- CU CONDENSING UNIT (REFER TO ROOF DETAILS - 4B/A530)
- EF EXHAUST FAN (REFER TO ROOF DETAILS - 4D/A530)
- RV EXHAUST VENT THROUGH ROOF (REFER TO ROOF DETAILS - 5B/A530) REFER TO ELECTRICAL FOR POWER RISER FOR OTHER EXHAUST FAN)
- RH ROOF HATCH (REFER TO ROOF DETAILS - 1C/A530)
- RTU ROOF TOP MECHANICAL UNIT WITH CURB (REFER TO ROOF DETAILS - 4E/A530)
- SV SMOKE / HEAT VENT (REFER TO ROOF DETAILS - SIM TO 1C/A530)
- EJ ROOF EXPANSION JOINT (REFER TO ROOF DETAILS)
- DIRECTION OF PITCH
- AD AREA DIVIDER (REFER TO ROOF DETAILS - 2E/A530)
- TAPERED INSULATION @ 1/4" / FT
- TAPERED CRICKETS @ 1/2" / FT
- ROOF WALKWAY PADS
- R1 ROOF SYSTEM TYPES
- RSTO ROOF SAFETY TIE OFF REFER TO DETAIL **5D/A531**
- HB HOSE BIB **RE**: PLUMBING
- EO ELECTRICAL OUTLET **RE**: ELECTRICAL
- EP ELECTRICAL CONDUIT STUB-UP (FOR FUTURE PV ARRAY **RE**: ELECTRICAL)

ROOF PLAN GENERAL NOTES

1. REFER TO APPLICABLE ROOFING SYSTEM SPECIFICATIONS FOR ADDITIONAL INFORMATION ON ROOF MEMBRANE, ROOF INSULATION AND ROOFING ACCESSORIES.
2. REFER TO MECHANICAL / ELECTRICAL / PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION ON ROOF MOUNTED EQUIPMENT.
3. PROVIDE PRE-FORMED SADDLES, CRICKETS, TAPERED EDGE STRIPS, AND OTHER INSULATION SHAPES AS INDICATED OR AS REQUIRED TO PROVIDE POSITIVE DRAINAGE TO DRAINAGE POINTS AT A MINIMUM 1/4" PER FOOT.
4. FIELD PAINT THE FOLLOWING ROOF MOUNTED EQUIPMENT:
   - ***A. ROOF HATCH COVER***
   - ***B. SMOKE / HEAT VENT COVER***
   - ***C. METAL LADDER(S)***
   - ***D. ROOF SAFETY TIE OFFS***
   - ***E. ROOF SCREEN STRUCTURE/FRAMING***
5. REFER TO TYPICAL EXTERIOR ASSEMBLIES SHEET A500 FOR ROOF SYSTEM "R" & "U" VALUE CALCULATIONS.
6. MINIMUM 6" INSULATION THICKNESS BEFORE SUMP AT ROOF DRAINS AND ANY POINT ON THE ROOF TO MAINTAIN R-40
7. REFER TO SHEET SERIES A53x FOR TYPICAL ROOF DETAILS.
8. VERIFY AND COORDINATE FINAL LOCATIONS OF ROOF DRAINS WITH WALL CONSTRUCTION AND STEEL FRAMING BELOW.
9. OVERFLOW SCUPPER (OS) SPILLWAY ELEVATIONS STATED INDICATE RELATIVE ELEVATION ABOVE ROOF DECK.
10. ROOFING CONTRACTOR TO PROVIDE PROTECTIVE PADS ON ROOF SURFACE UNDER ALL SURFACE-BEARING ITEMS (DUCT SUPPORTS, ETC.) AS REQUIRED BY ROOFING MFR.

ROOF PITCH NOTES

1. AT FLAT ROOF DECKS WITH TAPERED INSULATION SYSTEMS, ROOF ELEVATIONS ARE INDICATED (AT LOW POINTS/DRAINS, HIGH POINTS, PERIMETERS, ETC.) AS FOLLOWS: [4"] [8"] [12"] ETC. THESE ELEVATION ANNOTATIONS INDICATE RELATIVE HEIGHT FROM TOP OF DECK (METAL OR CONC) TO TOP OF INSULATION SYSTEM.
2. AT PITCHED ROOF DECKS, REFER TO STRUCTURAL FRAMING PLANS FOR ELEVATIONS OF ROOF STRUCTURE SUPPORTING ROOF SYSTEM.
3. TAPERED INSULATION SYSTEM AND/OR ROOF DECK/STRUCTURE SHALL PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS OVER ENTIRE ROOF AREA. COORDINATE PITCH REQUIREMENTS AND SPECIFIC STEEL ELEVATIONS WITH STRUCTURAL ENGINEER.
4. ALL CRICKETS, ETC. SHALL BE INSTALLED TO PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS.
5. IF PROJECT OF TAPERED INSULATION ARE REQUIRED TO SUPPLEMENT PITCHED STEEL, PROVIDE SMOOTH TRANSITIONS BETWEEN THE INSULATION SYSTEMS. THE RESULTANT ROOF SURFACE SHALL PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS.

1E ROOF PLAN
1/8" = 1'-0"

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The S/L/A/M Collaborative, Inc.

Drawn: JZ, TAS
Checked: JZ

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
2	11/06/2024	ADDENDUM NO. 6
1	10/23/2024	ADDENDUM NO. 3
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	PHASE 2

ROOF PLAN - PART C

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: A103C

Autodesk Docs://22367.00 - Greenwich Central Middle School\A_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 1:22:54 PM



1E ROOF PLAN
1/8" = 1'-0"

ROOF PLAN GENERAL NOTES

1. REFER TO APPLICABLE ROOFING SYSTEM SPECIFICATIONS FOR ADDITIONAL INFORMATION ON ROOF MEMBRANE, ROOF INSULATION AND ROOFING ACCESSORIES.
2. REFER TO MECHANICAL / ELECTRICAL / PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION ON ROOF MOUNTED EQUIPMENT.
3. PROVIDE PRE-FORMED SADDLES, CRICKETS, TAPERED EDGE STRIPS, AND OTHER INSULATION SHAPES AS INDICATED OR AS REQUIRED TO PROVIDE POSITIVE DRAINAGE TO DRAINAGE POINTS AT A MINIMUM 1/4" PER FOOT.
4. FIELD PAINT THE FOLLOWING ROOF MOUNTED EQUIPMENT:
   - ***A. ROOF HATCH COVER***
   - ***B. SMOKE / HEAT VENT COVER***
   - ***C. METAL LADDER(S)***
   - ***D. ROOF SAFETY TIE OFFS***
   - ***E. ROOF SCREEN STRUCTURE/FRAMING***
5. REFER TO TYPICAL EXTERIOR ASSEMBLIES SHEET A500 FOR ROOF SYSTEM "R" & "U" VALUE CALCULATIONS.
6. MINIMUM 6" INSULATION THICKNESS BEFORE SUMP AT ROOF DRAINS AND ANY POINT ON THE ROOF TO MAINTAIN R-40
7. REFER TO SHEET SERIES A53x FOR TYPICAL ROOF DETAILS.
8. VERIFY AND COORDINATE FINAL LOCATIONS OF ROOF DRAINS WITH WALL CONSTRUCTION AND STEEL FRAMING BELOW.
9. OVERFLOW SCUPPER (OS) SPILLWAY ELEVATIONS STATED INDICATE RELATIVE ELEVATION ABOVE ROOF DECK.
10. ROOFING CONTRACTOR TO PROVIDE PROTECTIVE PADS ON ROOF SURFACE UNDER ALL SURFACE-BEARING ITEMS (DUCT SUPPORTS, ETC.) AS REQUIRED BY ROOFING MFR.

ROOF PITCH NOTES

1. AT FLAT ROOF DECKS WITH TAPERED INSULATION SYSTEMS, ROOF ELEVATIONS ARE INDICATED (AT LOW POINTS/DRAINS, HIGH POINTS, PERIMETERS, ETC.) AS FOLLOWS: [4"] [8"] [12"] ETC. THESE ELEVATION ANNOTATIONS INDICATE RELATIVE HEIGHT FROM TOP OF DECK (METAL OR CONC) TO TOP OF INSULATION SYSTEM.
2. AT PITCHED ROOF DECKS, REFER TO STRUCTURAL FRAMING PLANS FOR ELEVATIONS OF ROOF STRUCTURE SUPPORTING ROOF SYSTEM.
3. TAPERED INSULATION SYSTEM AND/OR ROOF DECK/STRUCTURE SHALL PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS OVER ENTIRE ROOF AREA. COORDINATE PITCH REQUIREMENTS AND SPECIFIC STEEL ELEVATIONS WITH STRUCTURAL ENGINEER.
4. ALL CRICKETS, ETC. SHALL BE INSTALLED TO PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS.
5. IF PROJECT OF TAPERED INSULATION ARE REQUIRED TO SUPPLEMENT PITCHED STEEL, PROVIDE SMOOTH TRANSITIONS BETWEEN THE INSULATION SYSTEMS. THE RESULTANT ROOF SURFACE SHALL PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS.

ROOF PLAN GRAPHIC LEGEND

- [+X"] MINIMUM INSULATION THICKNESS AT ROOF DRAIN ABOVE ROOF DECK (METAL OR CONCRETE)
- OS OVERFLOW SCUPPER - ELEVATION IS ABOVE ROOF DECK (REFER TO ROOF DETAIL **1D & 5E/A531**)
- RD/OD PRIMARY & OVERFLOW ROOF DRAINS (REFER TO ROOF DETAILS **3D/A531**)
- VTR PLUMBING / MECHANICAL VENT THROUGH ROOF (REFER TO ROOF DETAILS **5B/A530**)
- CU CONDENSING UNIT (REFER TO ROOF DETAILS **4B/A530**)
- EF EXHAUST FAN (REFER TO ROOF DETAILS **4D/A530**)
- RV RADON VENT THROUGH ROOF (REFER TO ROOF DETAILS - **5B/A530** REFER TO ELECTRICAL FOR POWER RISER FOR CENTRIFUGE EXHAUST FAN)
- RH ROOF HATCH (REFER TO ROOF DETAILS **1C/A530**)
- RTU ROOF TOP MECHANICAL UNIT W/ CURB (REFER TO ROOF DETAILS **4E/A530**)
- SV SMOKE / HEAT VENT (REFER TO ROOF DETAILS **SIM TO 1C/A530**)
- EJ ROOF EXPANSION JOINT (REFER TO ROOF DETAILS)
- DIRECTION OF PITCH
- AD AREA DIVIDER (REFER TO ROOF DETAILS **2E/A530**)
- TAPERED INSULATION @ 1/4" / FT
- TAPERED CRICKETS @ 1/2" / FT
- ROOF WALKWAY PADS
- R1 ROOF SYSTEM TYPES
- RSTO ROOF SAFETY TIE OFF REFER TO DETAIL **5D/A531**
- HB HOSE BIB **RE**: PLUMBING
- EO ELECTRICAL OUTLET **RE**: ELECTRICAL
- EP ELECTRICAL CONDUIT STUB-UP (FOR FUTURE PV ARRAY **RE**: ELECTRICAL)

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The S/L/A/M Collaborative, Inc.

Drawn: JZ, TAS
Checked: JZ

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane, Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH / EAST / SOUTH / WEST

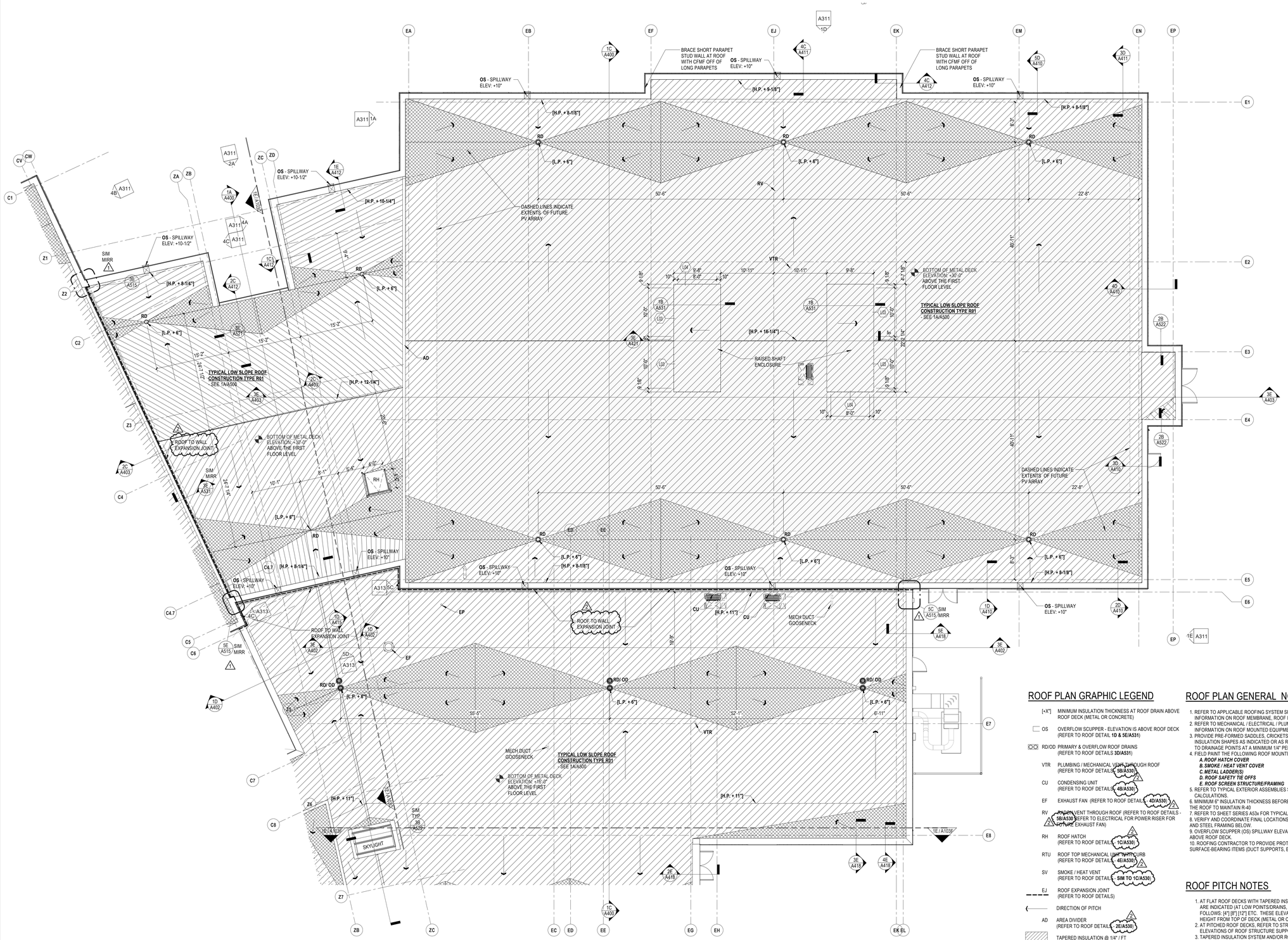
KEYPLAN

Number	Date	Issued For
1	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	PHASE 2

ROOF PLAN - PART D

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: A103D

Autodesk Docs://22367.00 - Greenwich Central Middle School/A_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 1:23:12 PM



1E ROOF PLAN
1/8" = 1'-0"

ROOF PLAN GRAPHIC LEGEND

- [•X"] MINIMUM INSULATION THICKNESS AT ROOF DRAIN ABOVE ROOF DECK (METAL OR CONCRETE)
- OS OVERFLOW SCUPPER - ELEVATION IS ABOVE ROOF DECK (REFER TO ROOF DETAIL **1D & 5E/A531**)
- RD/OD PRIMARY & OVERFLOW ROOF DRAINS (REFER TO ROOF DETAILS **3D/A531**)
- VTR PLUMBING / MECHANICAL VENT THROUGH ROOF (REFER TO ROOF DETAILS - **5B/A530**)
- CU CONDENSING UNIT (REFER TO ROOF DETAILS - **4B/A530**)
- EF EXHAUST FAN (REFER TO ROOF DETAILS - **4D/A530**)
- RV ROOF VENT THROUGH ROOF (REFER TO ROOF DETAILS - **5B/A530**) REFER TO ELECTRICAL FOR POWER RISER FOR ROOF EXHAUST FAN)
- RH ROOF HATCH (REFER TO ROOF DETAILS - **1C/A530**)
- RTU ROOF TOP MECHANICAL UNIT WITH CURB (REFER TO ROOF DETAILS - **4E/A530**)
- SV SMOKE / HEAT VENT (REFER TO ROOF DETAILS - **SIM TO 1C/A530**)
- EJ ROOF EXPANSION JOINT (REFER TO ROOF DETAILS)
- DIRECTION OF PITCH
- AD AREA DIVIDER (REFER TO ROOF DETAILS - **2E/A530**)
- TAPERED INSULATION @ 1/4" / FT
- TAPERED CRICKETS @ 1/2" / FT
- ROOF WALKWAY PADS
- R1 ROOF SYSTEM TYPES
- RSTO ROOF SAFETY TIE OFF REFER TO DETAIL **5D/A531**
- HB HOSE BIB **RE**: PLUMBING
- EO ELECTRICAL OUTLET **RE**: ELECTRICAL
- EP ELECTRICAL CONDUIT STUB-UP (FOR FUTURE PV ARRAY **RE**: ELECTRICAL)

ROOF PLAN GENERAL NOTES

1. REFER TO APPLICABLE ROOFING SYSTEM SPECIFICATIONS FOR ADDITIONAL INFORMATION ON ROOF MEMBRANE, ROOF INSULATION AND ROOFING ACCESSORIES.
2. REFER TO MECHANICAL / ELECTRICAL / PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION ON ROOF MOUNTED EQUIPMENT.
3. PROVIDE PRE-FORMED SADDLES, CRICKETS, TAPERED EDGE STRIPS, AND OTHER INSULATION SHAPES AS INDICATED OR AS REQUIRED TO PROVIDE POSITIVE DRAINAGE TO DRAINAGE POINTS AT A MINIMUM 1/4" PER FOOT.
4. FIELD PAINT THE FOLLOWING ROOF MOUNTED EQUIPMENT:
   - ***A. ROOF HATCH COVER***
   - ***B. SMOKE / HEAT VENT COVER***
   - ***C. METAL LADDER(S)***
   - ***D. ROOF SAFETY TIE OFFS***
   - ***E. ROOF SCREEN STRUCTURE/FRAMING***
5. REFER TO TYPICAL EXTERIOR ASSEMBLIES SHEET A500 FOR ROOF SYSTEM "R" & "U" VALUE CALCULATIONS.
6. MINIMUM 6" INSULATION THICKNESS BEFORE SUMP AT ROOF DRAINS AND ANY POINT ON THE ROOF TO MAINTAIN R-40
7. REFER TO SHEET SERIES A53x FOR TYPICAL ROOF DETAILS.
8. VERIFY AND COORDINATE FINAL LOCATIONS OF ROOF DRAINS WITH WALL CONSTRUCTION AND STEEL FRAMING BELOW.
9. OVERFLOW SCUPPER (OS) SPILLWAY ELEVATIONS STATED INDICATE RELATIVE ELEVATION ABOVE ROOF DECK.
10. ROOFING CONTRACTOR TO PROVIDE PROTECTIVE PADS ON ROOF SURFACE UNDER ALL SURFACE-BEARING ITEMS (DUCT SUPPORTS, ETC.) AS REQUIRED BY ROOFING MFR.

ROOF PITCH NOTES

1. AT FLAT ROOF DECKS WITH TAPERED INSULATION SYSTEMS, ROOF ELEVATIONS ARE INDICATED (AT LOW POINTS/DRAINS, HIGH POINTS, PERIMETERS, ETC.) AS FOLLOWS: [4"] [8"] [12"] ETC. THESE ELEVATION ANNOTATIONS INDICATE RELATIVE HEIGHT FROM TOP OF DECK (METAL OR CONC) TO TOP OF INSULATION SYSTEM.
2. AT PITCHED ROOF DECKS, REFER TO STRUCTURAL FRAMING PLANS FOR ELEVATIONS OF ROOF STRUCTURE SUPPORTING ROOF SYSTEM.
3. TAPERED INSULATION SYSTEM AND/OR ROOF DECK/STRUCTURE SHALL PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS OVER ENTIRE ROOF AREA. COORDINATE PITCH REQUIREMENTS AND SPECIFIC STEEL ELEVATIONS WITH STRUCTURAL ENGINEER.
4. ALL CRICKETS, ETC. SHALL BE INSTALLED TO PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS.
5. IF PROJECT OF TAPERED INSULATION ARE REQUIRED TO SUPPLEMENT PITCHED STEEL, PROVIDE SMOOTH TRANSITIONS BETWEEN THE INSULATION SYSTEMS. THE RESULTANT ROOF SURFACE SHALL PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS.

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

Drawn: JZ, TAS
Checked: JZ

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH / EAST / WEST / SOUTH

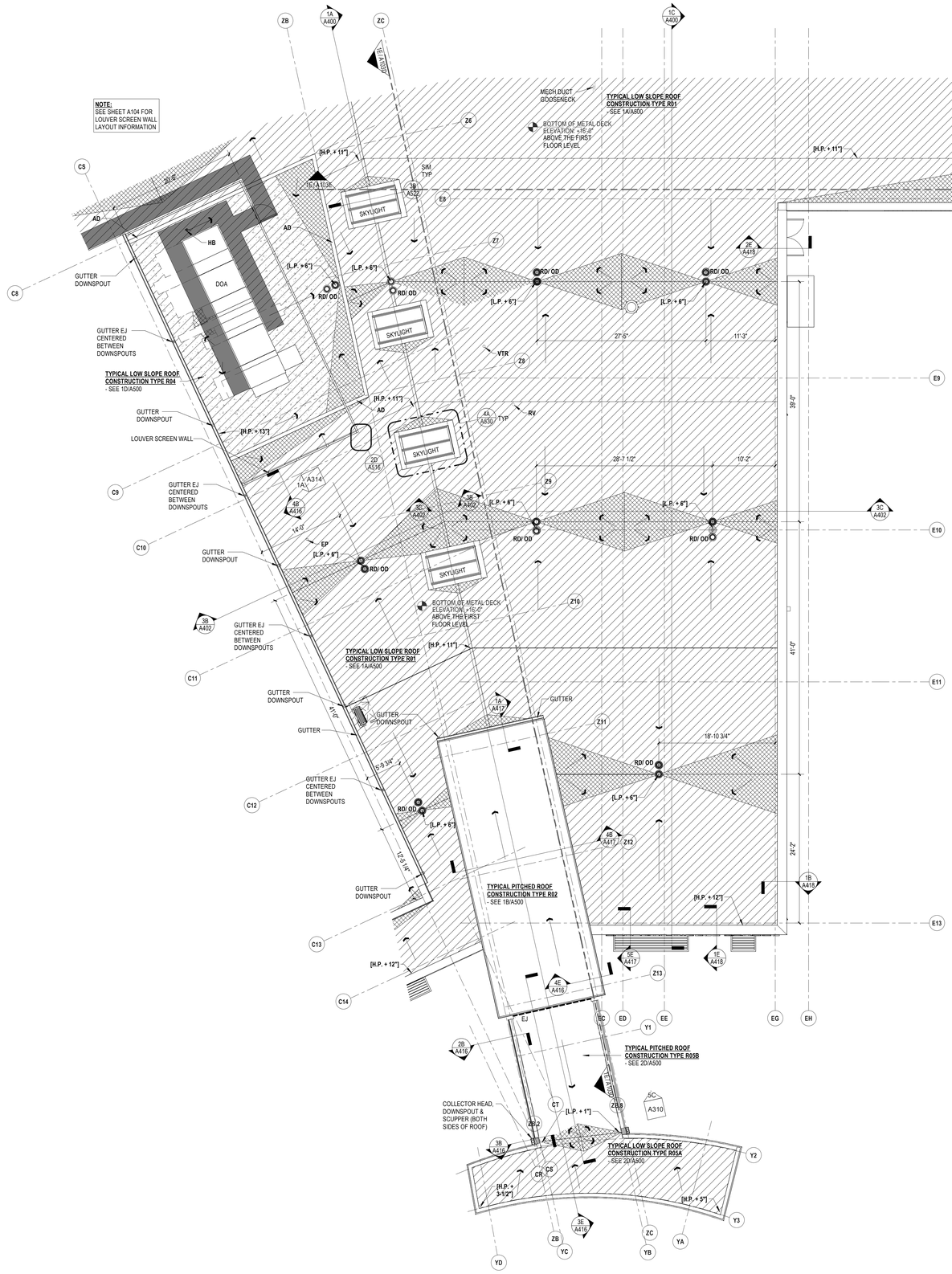
KEYPLAN

Number	Date	Issued For
2	11/06/2024	ADDENDUM NO. 6
1	10/23/2024	ADDENDUM NO. 3
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	PHASE 2

ROOF PLAN - PART E

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: A103E

Autodesk Docs://22367.00 - Greenwich Central Middle School/A_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 1:23:48 PM



1E ROOF PLAN
1/8" = 1'-0"

ROOF PLAN GRAPHIC LEGEND

- [-X"] MINIMUM INSULATION THICKNESS AT ROOF DRAIN ABOVE ROOF DECK (METAL OR CONCRETE)
- OS OVERFLOW SCUPPER - ELEVATION IS ABOVE ROOF DECK (REFER TO ROOF DETAIL **1D & 5E/A531**)
- RD/OD PRIMARY & OVERFLOW ROOF DRAINS (REFER TO ROOF DETAILS **3D/A531**)
- VTR PLUMBING / MECHANICAL VENT THROUGH ROOF (REFER TO ROOF DETAILS **5B/A530**)
- CU CONDENSING UNIT (REFER TO ROOF DETAILS **4B/A530**)
- EF EXHAUST FAN (REFER TO ROOF DETAILS **4D/A530**)
- RV PLUMBING VENT THROUGH ROOF (REFER TO ROOF DETAILS - **5B/A530**) (REFER TO ELECTRICAL FOR POWER RISER FOR POWER EXHAUST FAN)
- RH ROOF HATCH (REFER TO ROOF DETAILS **1C/A530**)
- RTU ROOF TOP MECHANICAL UNIT WITH CURB (REFER TO ROOF DETAILS **4E/A530**)
- SV SMOKE / HEAT VENT (REFER TO ROOF DETAILS **SIM TO 1C/A530**)
- EJ ROOF EXPANSION JOINT (REFER TO ROOF DETAILS)
- DIRECTION OF PITCH
- AD AREA DIVIDER (REFER TO ROOF DETAILS **2E/A530**)
- TAPERED INSULATION @ 1/4" / FT
- TAPERED CRICKETS @ 1/2" / FT
- ROOF WALKWAY PADS
- R1 ROOF SYSTEM TYPES
- RSTO ROOF SAFETY TIE OFF REFER TO DETAIL **5D/A531**
- HB HOSE BIB **RE**: PLUMBING
- EO ELECTRICAL OUTLET **RE**: ELECTRICAL
- EP ELECTRICAL CONDUIT STUB-UP (FOR FUTURE PV ARRAY **RE**: ELECTRICAL)

ROOF PLAN GENERAL NOTES

1. REFER TO APPLICABLE ROOFING SYSTEM SPECIFICATIONS FOR ADDITIONAL INFORMATION ON ROOF MEMBRANE, ROOF INSULATION AND ROOFING ACCESSORIES.
2. REFER TO MECHANICAL / ELECTRICAL / PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION ON ROOF MOUNTED EQUIPMENT.
3. PROVIDE PRE-FORMED SADDLES, CRICKETS, TAPERED EDGE STRIPS, AND OTHER INSULATION SHAPES AS INDICATED OR AS REQUIRED TO PROVIDE POSITIVE DRAINAGE TO DRAINAGE POINTS AT A MINIMUM 1/4" PER FOOT.
4. FIELD PAINT THE FOLLOWING ROOF MOUNTED EQUIPMENT:
   - ***A. ROOF HATCH COVER***
   - ***B. SMOKE / HEAT VENT COVER***
   - ***C. METAL LADDER(S)***
   - ***D. ROOF SAFETY TIE OFFS***
   - ***E. ROOF SCREEN STRUCTURE/FRAMING***
5. REFER TO TYPICAL EXTERIOR ASSEMBLIES SHEET A500 FOR ROOF SYSTEM "R" & "U" VALUE CALCULATIONS.
6. MINIMUM 6" INSULATION THICKNESS BEFORE SUMP AT ROOF DRAINS AND ANY POINT ON THE ROOF TO MAINTAIN R-40
7. REFER TO SHEET SERIES A53x FOR TYPICAL ROOF DETAILS.
8. VERIFY AND COORDINATE FINAL LOCATIONS OF ROOF DRAINS WITH WALL CONSTRUCTION AND STEEL FRAMING BELOW.
9. OVERFLOW SCUPPER (OS) SPILLWAY ELEVATIONS STATED INDICATE RELATIVE ELEVATION ABOVE ROOF DECK.
10. ROOFING CONTRACTOR TO PROVIDE PROTECTIVE PADS ON ROOF SURFACE UNDER ALL SURFACE-BEARING ITEMS (DUCT SUPPORTS, ETC.) AS REQUIRED BY ROOFING MFR.

ROOF PITCH NOTES

1. AT FLAT ROOF DECKS WITH TAPERED INSULATION SYSTEMS, ROOF ELEVATIONS ARE INDICATED (AT LOW POINTS/DRAINS, HIGH POINTS, PERIMETERS, ETC.) AS FOLLOWS: [4"] [8"] [12"] ETC. THESE ELEVATION ANNOTATIONS INDICATE RELATIVE HEIGHT FROM TOP OF DECK (METAL OR CONC) TO TOP OF INSULATION SYSTEM.
2. AT PITCHED ROOF DECKS, REFER TO STRUCTURAL FRAMING PLANS FOR ELEVATIONS OF ROOF STRUCTURE SUPPORTING ROOF SYSTEM.
3. TAPERED INSULATION SYSTEM AND/OR ROOF DECK/STRUCTURE SHALL PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS OVER ENTIRE ROOF AREA. COORDINATE PITCH REQUIREMENTS AND SPECIFIC STEEL ELEVATIONS WITH STRUCTURAL ENGINEER.
4. ALL CRICKETS, ETC. SHALL BE INSTALLED TO PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS.
5. IF PROJECT OF TAPERED INSULATION ARE REQUIRED TO SUPPLEMENT PITCHED STEEL, PROVIDE SMOOTH TRANSITIONS BETWEEN THE INSULATION SYSTEMS. THE RESULTANT ROOF SURFACE SHALL PROVIDE PITCH THAT MEETS OR EXCEEDS LOCAL CODE REQUIREMENTS.

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

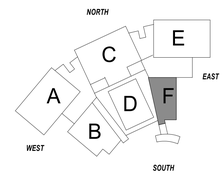
Drawn: JZ, TAS
Checked: JZ

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N



KEYPLAN

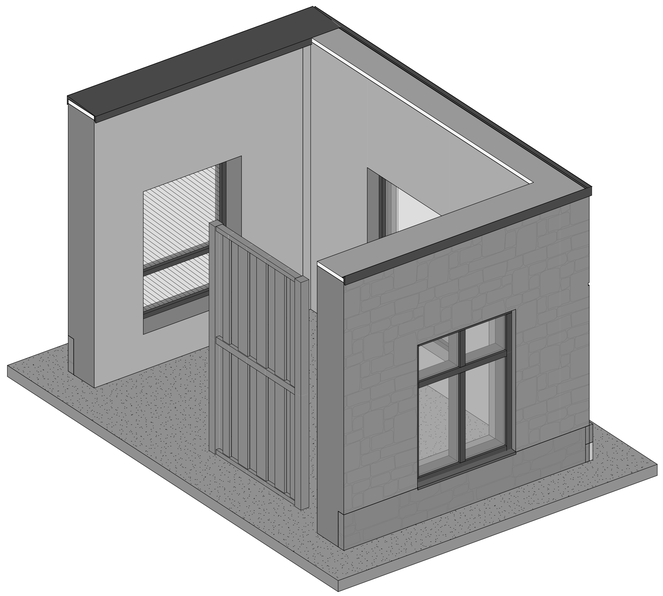
Number	Date	Issued For
1	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	PHASE 2

ROOF PLAN - PART F

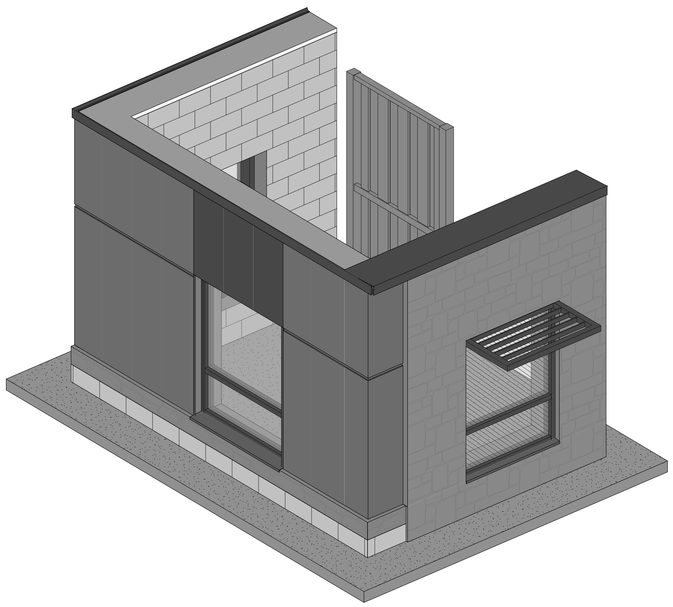
Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: A103F

Autodesk Docs://22367.00 - Greenwich Central Middle School/A_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 1:24:02 PM

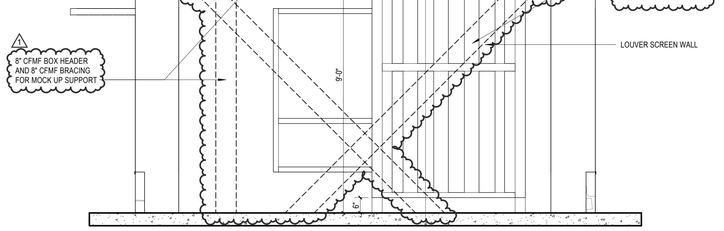
CONTRACTOR NOTE:
ALL FIBER CEMENT PANEL DIMENSIONS ARE NOMINAL DIMENSIONS. ACTUAL DIMENSIONS MAY VARY PER MFR. STANDARDS. CONTRACTOR/ CM TO COORDINATE ACTUAL DIMENSIONS WITH OVERALL LAYOUT OF REVEALS, MOVEMENT JOINTS AND CW/ SF ROUGH OPENINGS SHOWN ON A310 SERIES ELEVATIONS AND "AL" SERIES DIMENSION PLANS. CONTRACTOR/ CM TO COORDINATE WITH CFMF SUB-CONTRACTOR. CW/SF SUB-CONTRACTOR AND FIBER CEMENT PANEL SUB-CONTRACTOR TO ENSURE PROPER NOMINAL DIMENSIONAL LAYOUT.



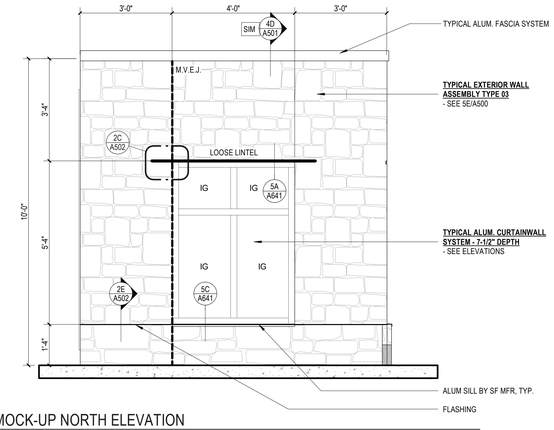
1C 3D MOCK-UP 02



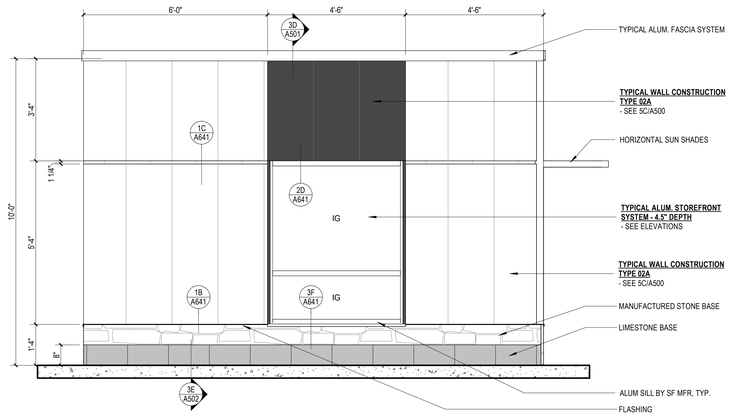
1E 3D MOCK-UP 01



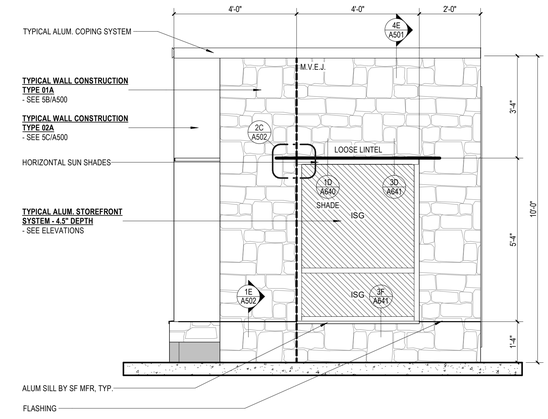
4B MOCK-UP EAST ELEVATION
1/2" = 1'-0"



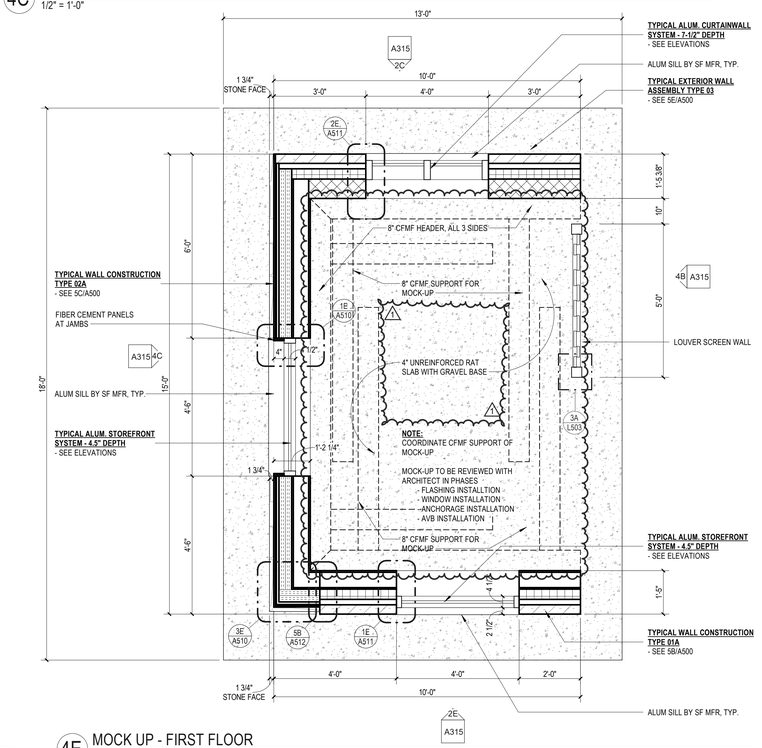
2C MOCK-UP NORTH ELEVATION
1/2" = 1'-0"



4C MOCK-UP WEST ELEVATION
1/2" = 1'-0"



2E MOCK-UP SOUTH ELEVATION
1/2" = 1'-0"



4E MOCK UP - FIRST FLOOR
1/2" = 1'-0"

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

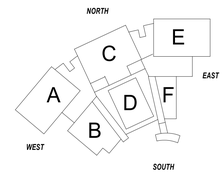
Drawn JZ
Checked JZ

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane, Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N



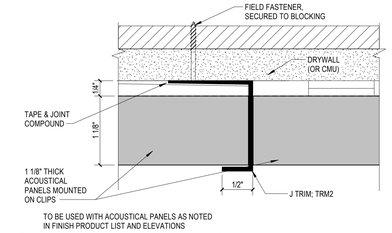
KEYPLAN

Number	Date	Issued For
1	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING/ PERMIT

EXTERIOR STAND ALONE MOCK-UP

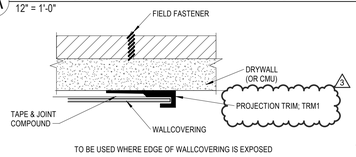
Date 07/08/2024
Scale As indicated
Proj. Number 22367.00
Drawing Number A315

Autodesk Docs://22367.00 - Greenwich Central Middle School/A_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 4:31:45 PM



TO BE USED WITH ACOUSTICAL PANELS AS NOTED IN FINISH PRODUCT LIST AND ELEVATIONS

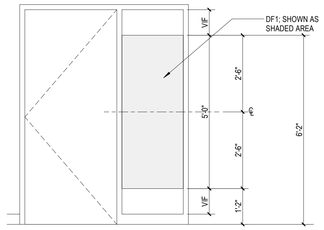
1A TRIM AT CAFETERIA ACOUSTICAL PANELS
1/2" = 1'-0"



TO BE USED WHERE EDGE OF WALLCOVERING IS EXPOSED

1B TYPICAL EXPOSED EDGE TRIM AT WALLCOVERING
1/2" = 1'-0"

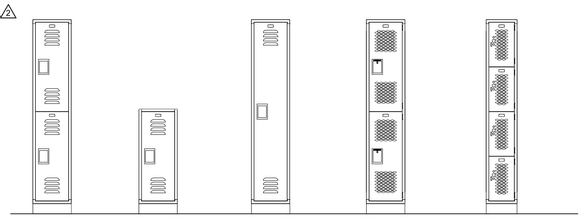
NOTE:
TYPICAL DECORATIVE FILM INSTALLATION AT SIDELITES. TO BE INSTALLED ON THE INTERIOR SIDE (NOT CORRIDOR SIDE) OF EACH ROOM, CENTERED VERTICALLY ON THE SIDELITE, DIMENSIONS TO BE V.I.F



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)

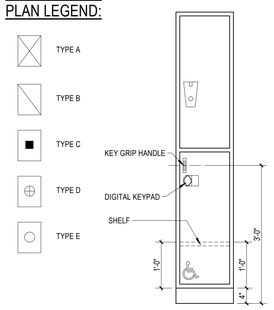
TYPE: C
18"w X 18"d X 72"h
- SINGLE TIER
- METAL LOCKER
(TYP. CUSTODIAN)

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.)

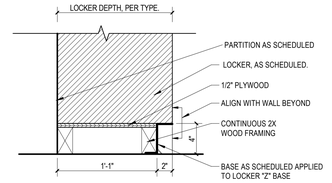
LOCKER TYPE LEGEND
1/2" = 1'-0"

LOCKER TYPE PLAN LEGEND:

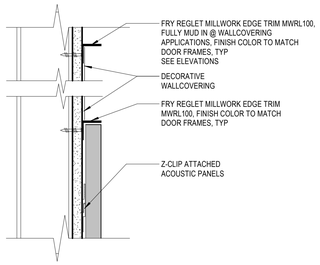


NOTE: PROVIDE AT 5% OF EACH LOCKER TYPE; SEE INTERIOR ELEVATIONS FOR LOCATIONS

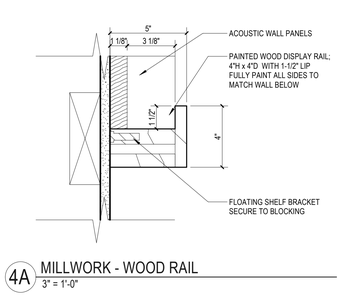
3A ADA LOCKER
3/4" = 1'-0"



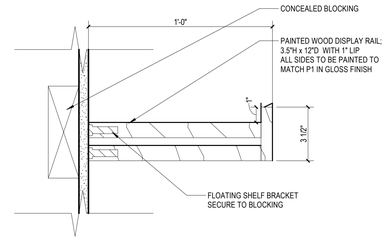
2B LOCKER BASE
1 1/2" = 1'-0"



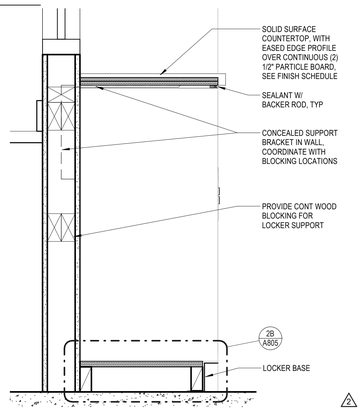
3B INT. DETAIL - ACOUSTIC WALL PANEL
3" = 1'-0"



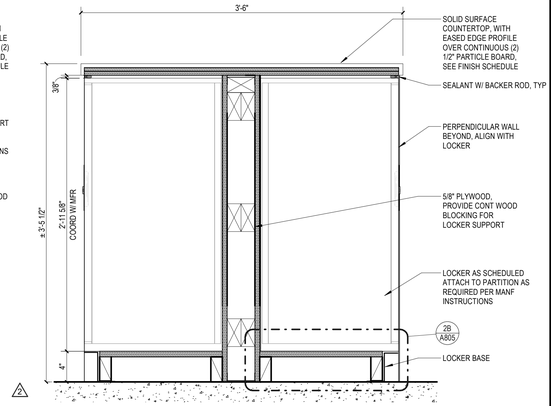
4A MILLWORK - WOOD RAIL
3" = 1'-0"



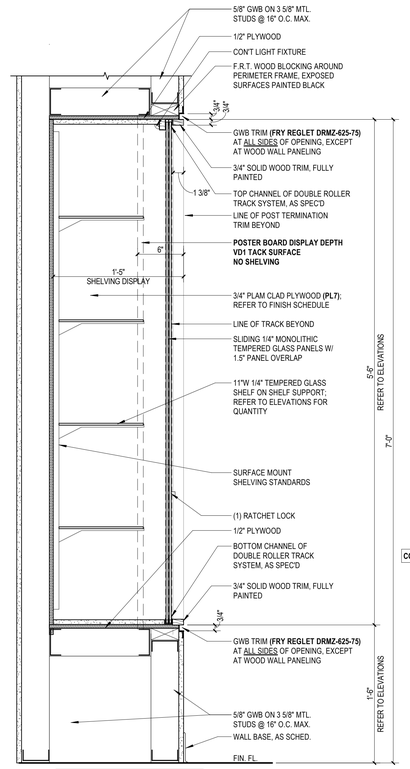
5A MILLWORK - DISPLAY SHELF
3" = 1'-0"



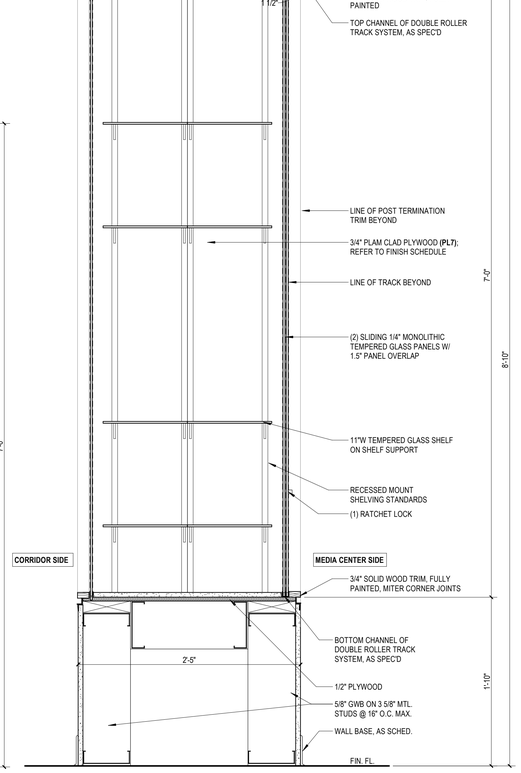
4B LOCKERS AT LOW COUNTER
1 1/2" = 1'-0"



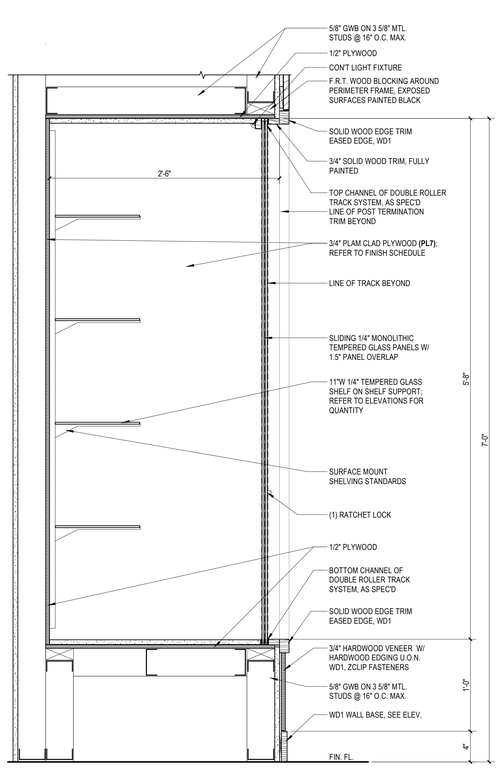
5B LOCKERS AT LOW WALL AND COUNTERTOP
1 1/2" = 1'-0"



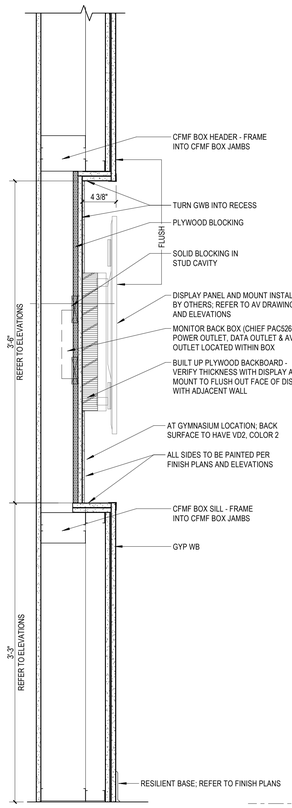
1E RECESSED DISPLAY CASE
1 1/2" = 1'-0"



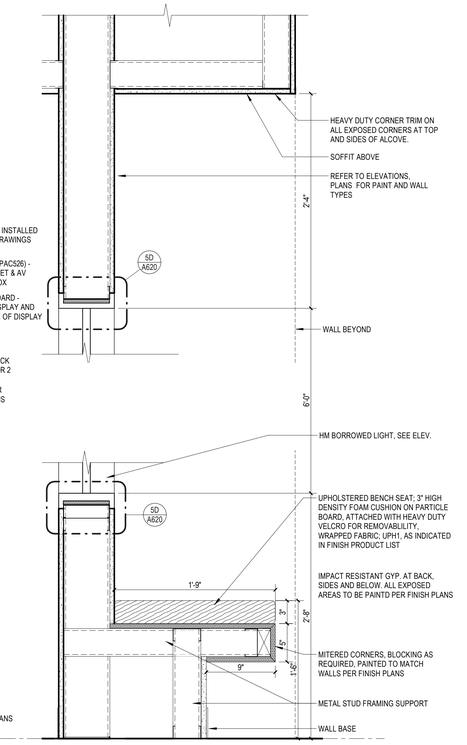
2E RECESSED DISPLAY CASE DBL SIDED SECTION DETAIL
1 1/2" = 1'-0"



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"

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

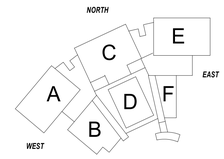
Drawn: AHS, CP
Checked: JZ

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
3	11/06/2024	ADDENDUM NO. 6
2	10/30/2024	ADDENDUM NO. 4
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

Autodesk Docs://22367.00 - Greenwich Central Middle School/A_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 1:24:19 PM

FINISH PLAN GRAPHIC LEGEND

REFER TO GENERAL FINISH NOTES ON A911

FLOOR LEGEND

RT1 - NO GRAPHIC PATTERN NEEDED, FULL FIELD
RT2 - SHOWN AS GRID PATTERN
RT3
RT4 - NO GRAPHIC PATTERN NEEDED, FULL FIELD
RT5
RT6
RT7
RT8
CPT1 - 3 NO GRAPHIC SHOWN, FULL FILED
CPT4
CPT5
REFER TO A903 FOR ALL FLOOR PATTERNS.

FLOOR FINISH TAGS ON PLANS

XX_ = FLOORING
XX_ = BASE
— XXX — = LOCATION OF BASE WHERE MORE THAN ONE TYPE WITHIN SPACE

FLOORING TRANSITION DETAIL LEGEND

REFER TO DETAILS 2B / A806
X FLOORING TRANSITION

WALL FINISH LEGEND

XX WALL MATERIAL OTHER THAN STANDARD PAINT COLOR

ROLLER WINDOW SHADE LOCATIONS

RS1 MANUAL SHOWN AS AT EXTERIOR AND INTERIOR WINDOWS ----------
RS2 AT GYM ONLY

CASEWORK FINISH TAGS ON PLANS

SOSF_ = COUNTERS
PL_ = BASE & TALL CABINETS
PL_ = TALL CABINET DOORS (IF DIFFERENT THAN BASE)

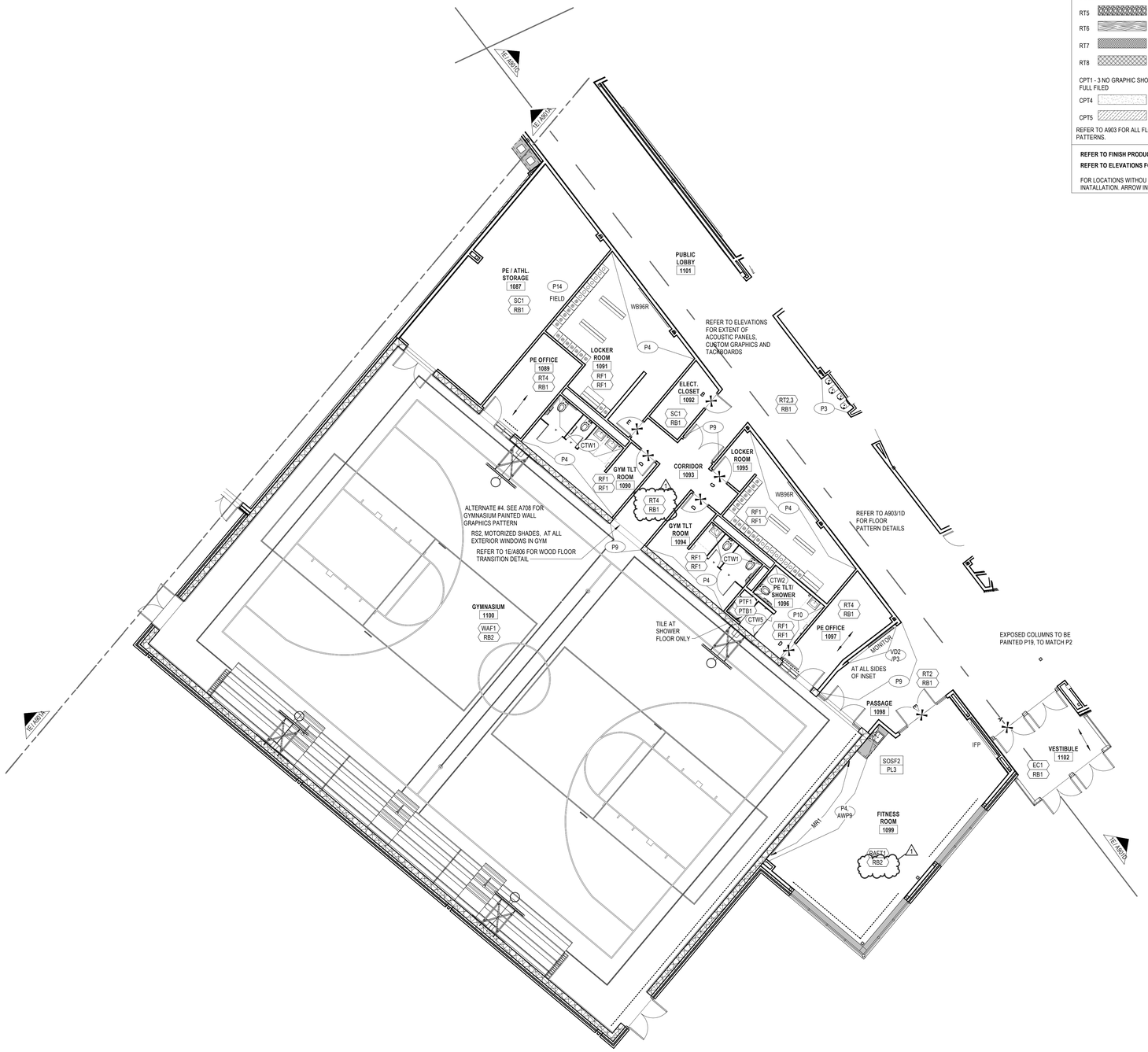
Where only 2 rows are shown the first indicates all components of cabinets and the second indicates the counter.

Tag within room applies to all casework within space, UNO.

REFER TO FINISH PRODUCT LIST ON SHEETS A910 & A911 FOR COMPLETE LIST OF PRODUCT REFERENCED HERE.

REFER TO ELEVATIONS FOR LOCKER PAINT COLORS

FOR LOCATIONS WITHOU FLOOR PATTERNS REFER TO FINISH PLANS FOR ARROW INDICATING DIRECTION OF TILE INATALLATION. ARROW INDICATES LONGES SIDE OF TILE OR PLANKS.



1E FIRST FLOOR PLAN - PART B
1/8" = 1'-0"

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

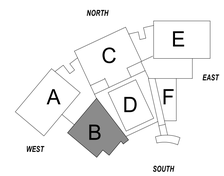
Drawn AHS
Checked JZ

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N



KEYPLAN

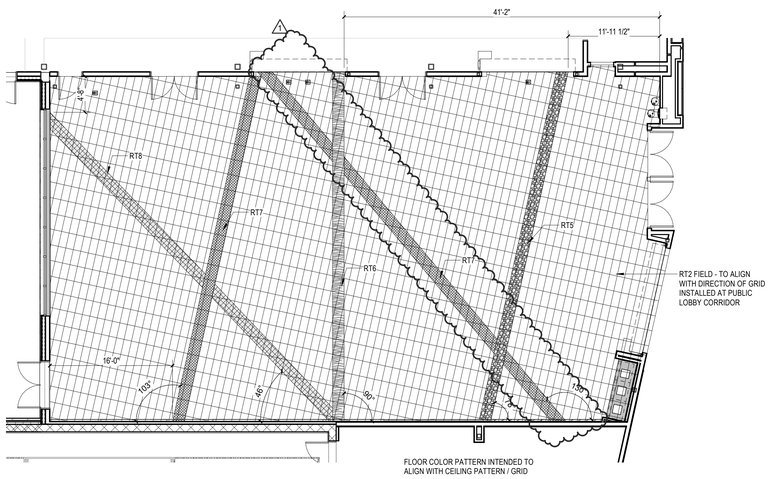
Number	Date	Issued For
1	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	PHASE 2

FIRST FLOOR FINISH PLAN - PART B

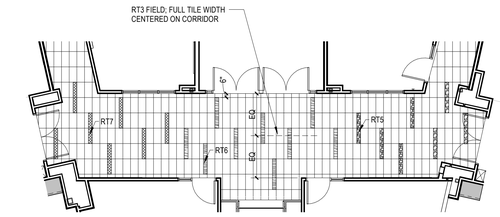
Date 07/08/2024
Scale As indicated
Proj. Number 22367.00
Drawing Number A901B

© 2021 The S/L/A/M Collaborative, Inc.

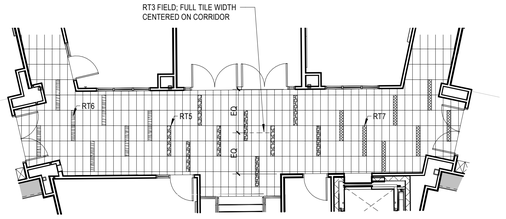
Autodesk Docs://22367.00 - Greenwich Central Middle School/A_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 1:24:25 PM



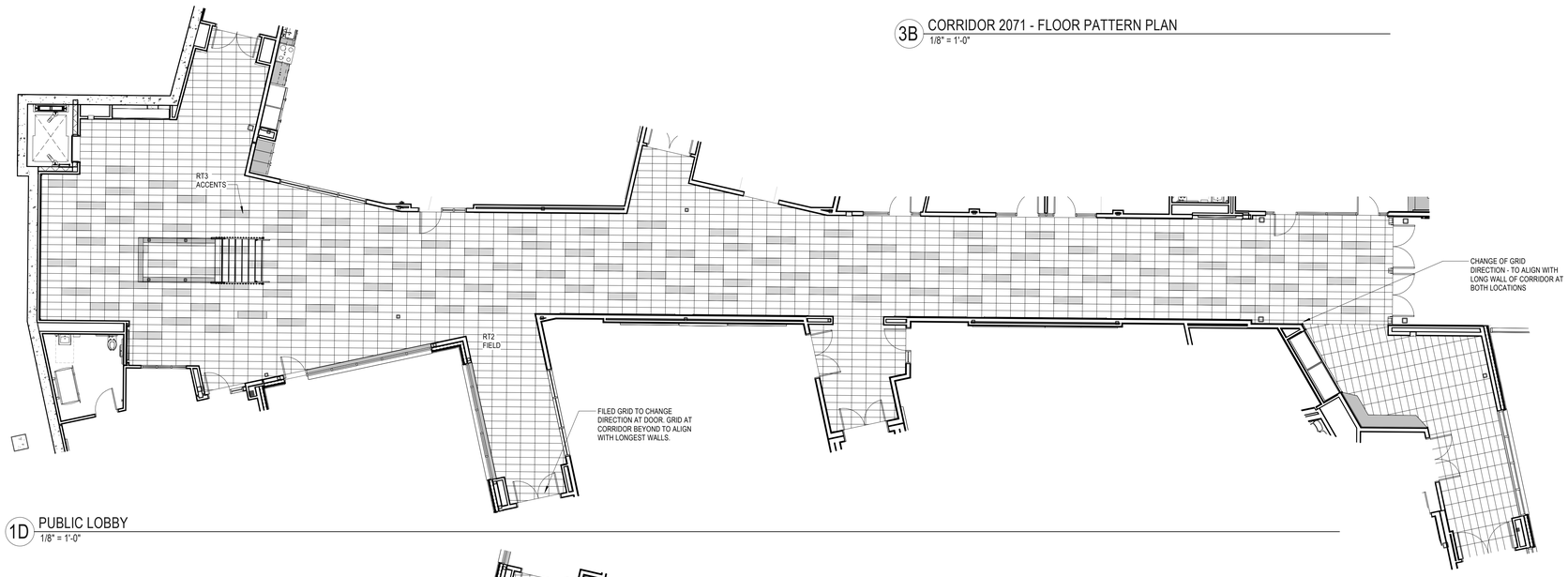
1B CAFETERIA FLOOR PATTERN DETAIL
1/8" = 1'-0"



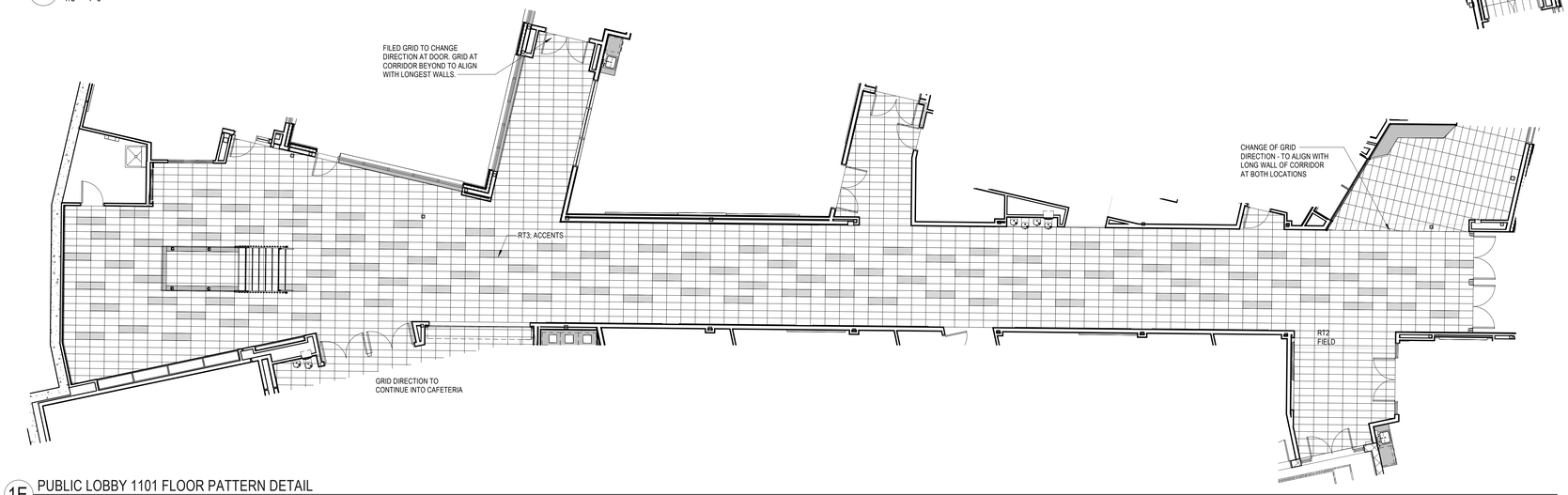
3A CORRIDOR 2001 FLOOR PATTERN DETAIL
1/8" = 1'-0"



3B CORRIDOR 2071 - FLOOR PATTERN PLAN
1/8" = 1'-0"



1D PUBLIC LOBBY
1/8" = 1'-0"



1E PUBLIC LOBBY 1101 FLOOR PATTERN DETAIL
1/8" = 1'-0"

FLOOR PATTERN GRAPHIC LEGEND

RT LEGEND

RT1 - NO GRAPHIC PATTERN NEEDED, FULL FIELD

RT2 - SHOWN AS GRID PATTERN

RT3

RT4 - NO GRAPHIC PATTERN NEEDED, FULL FIELD

RT5

RT6

RT7

RT8

* THESE HATCH PATTERNS ONLY APPLY TO THE FLOOR PATTERN PLANS .

FOR LOCATIONS NOT SHOWN HERE REFER TO FINISH PLANS WHERE ARROW INDICATED DIRECTION OF TILE INSTALLATION. ARROW INDICATES LONGES SIDE OF TILE OR PLANKS.

REFER TO FINISH PRODUCT LIST ON SHEETS A910 & A911 FOR COMPLETE LIST OF PRODUCT REFERENCED HERE.

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The SLAM Collaborative, Inc.

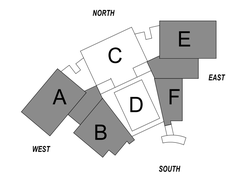
Drawn: AHS
Checked: JZ

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	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	PHASE 2

FLOOR PATTERN DETAILS

Date: 07/08/2024
Scale: As indicated
Proj. Number: 22367.00
Drawing Number: A903

Autodesk Docs://22367.00 - Greenwich Central Middle School/A_22367_GREENWICH CENTRAL_MS_R22.rvt
11/6/2024 1:24:32 PM

FINISH PRODUCT LIST

FINISH TYPE DIVISION	REFERENCE I.D.	MANUFACTURER	DESCRIPTION	SIZE	COLOR/PATTERN	TYPICAL LOCATION (refer to Finish Plans)	REMARKS	MANUFACTURER CONTACT INFORMATION
FLOORING								
CPT - Tile Carpeting - Division 09 Section "Tile Carpeting"	CPT1	Shaw	Cross Weave tile, 5T526, multi-level loop pattern loop,100% Solution Dyed, EcoSolution Q100 Nylon, "SSP" Soil Protection, Ecowork Backing, glue-down install, limited lifetime warranty	9" x 36"	Vibrant Tejate 25486	Offices, Admin Areas	Installed in monolithic pattern in direction as indicated on Finish Plans	Rick Gondon, Shaw richard.gondon@shawinc.com, (860) 209-0698
	CPT2	Shaw	Chromatone tile, 5T444, multi-level loop pattern loop,100% Solution Dyed, EcoSolution Q100 Nylon, "SSP" Soil Protection, Ecowork Backing, glue-down install, limited lifetime warranty	18" x 36"	Indigo Charcoal	Conference Room	Installed in Ashlar pattern in direction as indicated on Finish Plans	Rick Gondon, Shaw richard.gondon@shawinc.com, (860) 209-0698
	CPT3	Shaw	Turn tile, 5T205, multi-level loop pattern loop,100% Solution Dyed, EcoSolution Q100 Nylon, "SSP" Soil Protection, Ecowork Backing, glue-down install, limited lifetime warranty	12" x 48"	Strategy 04555	Media Center	Installed in Ashlar pattern in direction as indicated on Finish Plans	Rick Gondon, Shaw richard.gondon@shawinc.com, (860) 209-0698
	CPT4	Shaw	Fine Point 5T113 multi-level loop pattern loop,100% Solution Dyed, EcoSolution Q100 Nylon, "SSP" Soil Protection, Ecowork Backing, glue-down install, limited lifetime warranty	18" x 36"	Ink	Auditorium	Installed in monolithic pattern in direction as indicated on Finish Plans	Rick Gondon, Shaw richard.gondon@shawinc.com, (860) 209-0698
	CPT5	Interface	Driftwood 138/940A50AX00, multi-level loop pattern loop,100% Solution Dyed, Type 6,6 nylon, CiasbacRE tile backing, Intersept & Protek soil protection, 52% recycled	18" x 36"	Palm 104854	Learning Commons	Installed in monolithic pattern in direction as indicated on Finish Plans	Rick Gondon, Shaw richard.gondon@shawinc.com, (860) 209-0698
EC - Entrance Carpet - Division 09 Section "Tile Carpeting"	EC1	Shaw Contract	Portal 5T035, Entry Carpet Tile, multi-level loop pattern loop,100% Solution Dyed, EcoSolution Q100 Nylon, "SSP" Soil Protection, Ecowork Backing, glue-down install, limited lifetime warranty	24" x 24"	Lava	Entry Vestibules	Installed in monolithic pattern in direction as indicated on Finish Plans	Rick Gondon, Shaw richard.gondon@shawinc.com, (860) 209-0698
PTF - Porcelain Tile Flooring - Divisoin 09 Section "Tiling"	PTF1	Daltile	Keystones porcelain unglazed mosaics, thru color mounted on a sheet	2" x 2"	Desert Gray D014	Installed at shower floors	Install with PTB2	Lisa Cupolo, lcupolo@creativematerialscorp.com, (518) 701-5720
PST - Porcelain Stair Tread - Divisoin 09 Section "Tiling"	PST1	Creative Materials	Mosa, Core Collection Terra, Porcelain tile to be used at stair tread with Schluer nosing with abrasive component, TREP-GI-GK, matching tile at landing	30cm x 60cm	216V Anthracite Smooth	At both open stairs	Refer to stair tread detail	Lisa Cupolo, lcupolo@creativematerialscorp.com, (518) 701-5720
RAFT - Resilient Athletic Floor Tile - Division 09 Section "Resilient Athletic Flooring"	RAF1	Gerflor	Taraflex, Multi-Use 6.2, D-Max complex, Double density CXP HD+ foam backing, 100% pure vinyl wear layer	4'-11"w, 6.2mm thick	Maple	OT/PT	Installed in direction as indicated on Finish Plans	Nate Foley, nate.foley@gerflorusa.com, (877)437-3567
RAFT - Resilient Athletic Floor Tile - Division 09 Section "Resilient Athletic Flooring"	RAFT1	To Market	Atmosphere, Metropolis Collection, Acrobat, Through-body colored tile, Straight edge	23" x 23" 12mm	TM601 Hot Rod	Fitness Room	Installed in standard grid	Judy Shaefer, To Market judy@tomkt.com, (203) 856-4774
RF - Resinous Flooring - Division 09 Section "Fluid Applied Flooring"	RF1	Stonhard	Stongard MD Waterproof Flooring System, Decorative quartz slip resistant broadcase system, Stonproof MET urethane elastomeric waterproof membrane, Stonshield undercoat, stonshield aggregate, stonkote CE high performance clear epoxy sealer, medium texture	1/8" thick 4"h base	Fieldstone	Toilet Rooms, Locker Rooms	Top of base to receive 1/8" metal cove strip (clear anodized finish), refer to details	Carl Vose cvose@stonhard.com, 508-274-5521
	RF2	Stonhard	Stonshield HRI, durable slip resistant surface, stonshield HRI base, Stonshield undercoat, Stonshield aggregate, Stonkote CE4 clear Epoxy Sealer, medium texture	3/16" thick 4"h base	Malt	Kitchen/Servery	Top of base to receive 1/8" metal cove strip (clear anodized finish), refer to details	Carl Vose cvose@stonhard.com, 508-274-5521
RST - Resilient Stair Treads and Accessories - Division 09 Section "Resilient Flooring"	RST1	Mannington	Colorspec, Color Spec, Stair Tread and Riser System with matching tile at landings, hammered finish, contrasting rubber insert at nosing		Agate Gray 027 with black insert	Enclosed egress Stairs		Kevin O'Bryan, Mannington kevin_o'bryan@mannington.com, (860) 217-1813
	RST2	Mannington	Colorspec, Color Spec, Stair Tread and Riser System, hammered finish, contrasting rubber insert at nosing		Black Brown with light color insert	Stairs to stage at Auditorium		Kevin O'Bryan, Mannington kevin_o'bryan@mannington.com, (860) 217-1813
RFT - Resilient Tile - Division 09 Section "Resilient Tile Flooring"	RT1	Mannington	Spacia Collection, Wood, Class III vinyl tile, 20 mil wear layer, Quantum Guard Elite wear protection, beveled edge, 2% rapidly renewable content, 15 yr min warranty, no wax required	6" x 36" x 2.5mm	Northern Maple Natural	Field at Classrooms, Learning Commons, Classroom Corridors, Classrooms, Lactation, Life Skills and where noted on finish plans.		Kevin O'Bryan, Mannington kevin_o'bryan@mannington.com, (860) 217-1813
	RT2	Mannington	Amtico Stone, Class III vinyl tile, 20 mil wear layer, Quantum Guard Elite wear protection, square unbeveled edge, 2% rapidly renewable content, 15 yr min warranty, no wax required	12" x 24" x 2.5mm	Stria Volcanic	Field at First Floor Corridors		Kevin O'Bryan, Mannington kevin_o'bryan@mannington.com, (860) 217-1813
	RT3	Mannington	Amtico Stone, Class III vinyl tile, 20 mil wear layer, Quantum Guard Elite wear protection, square unbeveled edge, 2% rapidly renewable content, 15 yr min warranty, no wax required	12" x 24" x 2.5mm	Stria Rock	Accent at First Floor Corridors		Kevin O'Bryan, Mannington kevin_o'bryan@mannington.com, (860) 217-1813
	RT4	Mannington	Color Anchor Colletion, Stride, Class III vinyl tile, 20 mil wear layer, Quantum Guard Elite wear protection, square unbeveled edge, 2% rapidly renewable content, 15 yr warranty, no wax required	6" x 36" x 2.5mm	Stonehenge	Field at FCS, Health Suite, Faculty Dining, Video Production, Lactation, Main Office workroom, Behavioral Classroom, Band, Orchestra and Choral, Custdoial Breakroom		Kevin O'Bryan, Mannington kevin_o'bryan@mannington.com, (860) 217-1813
	RT5	Mannington	Color Anchor Colletion, Stride, Class III vinyl tile, 20 mil wear layer, Quantum Guard Elite wear protection, square unbeveled edge, 2% rapidly renewable content, 15 yr warranty, no wax required	6" x 36" x 2.5mm	Island Blue	Accent as noted on Finish Plans (blue)		Kevin O'Bryan, Mannington kevin_o'bryan@mannington.com, (860) 217-1813
	RT6	Mannington	Color Anchor Colletion, Stride, Class III vinyl tile, 20 mil wear layer, Quantum Guard Elite wear protection, square unbeveled edge, 2% rapidly renewable content, 15 yr warranty, no wax required	6" x 36" x 2.5mm	Lagoon	Accent as noted on Finish Plans (teal)		Kevin O'Bryan, Mannington kevin_o'bryan@mannington.com, (860) 217-1813
	RT7	Mannington	Color Anchor Colletion, Stride, Class III vinyl tile, 20 mil wear layer, Quantum Guard Elite wear protection, square unbeveled edge, 2% rapidly renewable content, 15 yr warranty, no wax required	6" x 36" x 2.5mm	Monstera	Accent as noted on Finish Plans (green)		Kevin O'Bryan, Mannington kevin_o'bryan@mannington.com, (860) 217-1813
	RT8	Mannington	Color Anchor Colletion, Stride, Class III vinyl tile, 20 mil wear layer, Quantum Guard Elite wear protection, square unbeveled edge, 2% rapidly renewable content, 15 yr warranty, no wax required	6" x 36" x 2.5mm	Granny Smith	Accent as noted on Finish Plans (light green)		Kevin O'Bryan, Mannington kevin_o'bryan@mannington.com, (860) 217-1813
SC - Sealed Concrete - Division 03 Section "Concrete Floor Finishes"	SC1	-	Clear Finish Sealer	_	-	BOH spaces as noted on the Finish Plans, storage, receiving, loading dock and as noted on Finish Plans		-
	SC2	Sherwin Williams	Armorseal 8100, Water based Epoxy Floor Coating, chemical and abrasion resistant	_	-	At Auditorium at seating areas		Heather R.Bourgeois heather.r.bourgeois@sherwin.com, (617) 428-1408
	SC3	Sherwin Williams	Armorseal 8100, Water based Epoxy Floor Coating, chemical and abrasion resistant	_	-	Wood Shop classroom, Art Rooms, Innovation Room		Heather R.Bourgeois heather.r.bourgeois@sherwin.com, (617) 428-1408
WAF - Wood Athletic Flooring - Division 09 Section "Wood Athletic Flooring"	WAF1	Robbins	Bio-Channel SB, Self-Blocking, Anchored Construction, Continuous Pre-Cut & Pre-Assembled Interwoven Subfloor, Zero G Shock Pad, Low Profile, 6mil Polyethylene Vapor Barrier	1-3/4" Thick	Northern Hardwood Maple, Grade 2 or better with flat cut grain, clear high gloss finish	Gymnasium		Rick Onslager, Dalene Hardwood Floors, 267-254-7796, ronslager@robbinsfloor.com
WF - Wood Flooring - Division 06 Section "Wood Strip and Plank Flooring" and "Rough Carpentry"	WF1		Wood Strip Flooring, Northern Hard Maple, kiln dried, tongue and groove, Select Grade	3/4" Thick, 2-1/2"W Planks, Random Lengths, 4" depression required at slab	Clear Coat Finish	Front Stage at Auditorium (Refer to Finish Plans for extent of new and existing floor to remain)	Installed with Wood Base	-
	WF2	Panel Processing	High Density Fiberboard, Painted, S2S Smooth on Two Sides	1/4" Thick	To be painted to match P13	Stage	Installed with Vented Base	
BASE								
PTB - Porcelain Tile Flooring - Divisoin 09 Section "Tiling"	PTB1	Daltile	Keystones porcelain unglazed mosaic trim MB5A, thru color mounted on a sheet	2 rows 2" x 2" and 1 row C-833 curved	Desert Gray D014	Installed at shower floors	Install with PTF1	
RB - Resilient Wall Base -Division 09 Section "Resilient Flooring"	RB1	Burke / Mannington	Premium TS Rubber Wall Base - Cove	4"H x 1/8" 120' Coil	Black Brown	Typical Throughout, U.N.O.		Kevin O'Bryan, Mannington, kevin_o'bryan@mannington.com, (860) 217-1813
	RB2	Johnsonite / Tarkett	Vented Rubber Wall Base - Cove	4"H with 3" Toe	Black	Gymnasium, Stage, Fitness Center		Kevin O'Bryan, Mannington, kevin_o'bryan@mannington.com, (860) 217-1813
WB - Wood Base - Division 06 Section "Finish Carpentry"	WB1	-	To Match WD1	4"h	Stained to match wood	with WWP1 at Auditorium		-
WALLS								
ADP - Acoustic Diffusion Panel - Division 09 Section "Fixed Sound Refelective Panel"	ADP1	Kinetics	Geometric Sound Diffusers, Radius diffuser, Wall Mounted, 0.125" thermo-molded plastic, Fabric facing, Class A fire rated, Z-Clip and angle bracket mounting	4'w x 4'h x 7"	White	Band & Choral as indicated on elevations		Matthew Garner, Vibration Products, mgarner@ketchumandwalton.com, 551-655-6222
	ADP2	Kinetics	Geometric Sound Diffusers, Radius diffuser, Wall Mounted, 0.125" thermo-molded plastic, Fabric facing, Class A fire rated, Z-Clip and angle bracket mounting	3'w x 4'h x 9.75"	White	Orchestra as indicated on elevations		Matthew Garner, Vibration Products, mgarner@ketchumandwalton.com, 551-655-6222

FINISH PRODUCT LIST

FINISH TYPE DIVISION	REFERENCE I.D.	MANUFACTURER	DESCRIPTION	SIZE	COLOR/PATTERN	TYPICAL LOCATION (refer to Finish Plans)	REMARKS	MANUFACTURER CONTACT INFORMATION
AWP - Acoustic Wall Panel - Division 09 "Sound Absorbing Wall and Ceiling Units"	AWP1	Kinetics	Tuned Absorber/Diffuser (TAD) Panels, 2-1/8" Thick, Fabric Wrapped, square edge, z-clip mounting, fiberglass sound absorptive core with 1/8" laminate with custom-designed hole pattern, hardened edges. BAD Panel, perforated, 3/16" fire rated template between the fiberglass and the fabric, Class A, NRC .95, square edge, attached with Z-bar	Refer to Elevations for sizes	Carnegie, Xorel, Fractal Emboss, 6261-W753	Band, Choral and Orchestra		Matthew Garner, Vibration Products, mgarner@ketchumandwalton.com, 551-655-6222
	AWP2	Conwed	Respond IR, IR108, Fabric wrapped Direct-Attach Impact Resistant Wall Panels,1-1/8" thick, 1.15 NRC, Fire Rated Class A, Resin hardened Square Edge, Z-bar Mounting, Acoustic Wrapped Wall Panels, Square resin edge, .085 NRC, wall mounted with z-clip	1 1/8" thick, refer to elevations	Carnegie, Xorel, Meteor, 6427-2030	Cafeteria and at Main Corridors (blue)	To be installed with TRM2 at edge where color changes	Kristi Haines Young, ADR Architectural Design Resources, kristi@a-d-r.com, (781) 837-4700
	AWP3	Conwed	Respond IR, IR108, Fabric wrapped Direct-Attach Impact Resistant Wall Panels, 1-1/8" thick, 1.15 NRC, Fire Rated Class A, Resin hardened Square Edge, Z-bar Mounting, Acoustic Wrapped Wall Panels, Square resin edge, .085 NRC, wall mounted with z-clip	1 1/8" thick, refer to elevations	Carnegie, Xorel, Meteor, 6427-739	Cafeteria and at Main Corridors (teal)	To be installed with TRM2 at edge where color changes	Kristi Haines Young, ADR Architectural Design Resources, kristi@a-d-r.com, (781) 837-4700
	AWP4	Conwed	Respond IR, IR108, Fabric wrapped Direct-Attach Impact Resistant Wall Panels,1-1/8" thick, 1.15 NRC, Fire Rated Class A, Resin hardened Square Edge, Z-bar Mounting, Acoustic Wrapped Wall Panels, Square resin edge, .085 NRC, wall mounted with z-clip	1 1/8" thick, refer to elevations	Carnegie, Xorel, Meteor, 6427-2009	Cafeteria and at Main Corridors (green)	To be installed with TRM2 at edge where color changes	Kristi Haines Young, ADR Architectural Design Resources, kristi@a-d-r.com, (781) 837-4700
	AWP5	Conwed	Respond IR, IR108, Fabric wrapped Direct-Attach Impact Resistant Wall Panels, 1-1/8" thick, 1.15 NRC, Fire Rated Class A, Resin hardened Square Edge, Z-bar Mounting, Acoustic Wrapped Wall Panels, Square resin edge, .085 NRC, wall mounted with z-clip	1 1/8" thick, refer to elevations	Carnegie, Xorel, Meteor, 6427-2008	Cafeteria and at Main Corridors (med green)	To be installed with TRM2 at edge where color changes	Kristi Haines Young, ADR Architectural Design Resources, kristi@a-d-r.com, (781) 837-4700
	AWP6	Conwed	Respond IR, IR108, Fabric wrapped Direct-Attach Impact Resistant Wall Panels, 1-1/8" thick, 1.15 NRC, Fire Rated Class A, Resin hardened Square Edge, Z-bar Mounting, Acoustic Wrapped Wall Panels, Square resin edge, .085 NRC, wall mounted with z-clip	1 1/8" thick, refer to elevations	Carnegie, Xorel, Meteor, 6427-2007	Cafeteria and at Main Corridors (lt green)	To be installed with TRM2 at edge where color changes	Kristi Haines Young, ADR Architectural Design Resources, kristi@a-d-r.com, (781) 837-4700
	AWP7	Conwed	Respond IR, IR108, Fabric wrapped Direct-Attach Impact Resistant Wall Panels, 1-1/8" thick, 1.15 NRC, Fire Rated Class A, Resin hardened Square Edge, Z-bar Mounting, Acoustic Wrapped Wall Panels, Square resin edge, .085 NRC, wall mounted with z-clip	1 1/8" thick, refer to elevations	Carnegie, Xorel, Meteor, 6427-2005	Main Corridors (yellow)	To be installed with TRM2 at edge where color changes	Kristi Haines Young, ADR Architectural Design Resources, kristi@a-d-r.com, (781) 837-4700
	AWP8	Conwed	Respond IR, IR108, Fabric wrapped Direct-Attach Impact Resistant Wall Panels, 1-1/8" thick, 1.15 NRC, Fire Rated Class A, Resin hardened Square Edge, Z-bar Mounting, Acoustic Wrapped Wall Panels, Square resin edge, .085 NRC, wall mounted with z-clip	1 1/8" thick, refer to elevations	Carnegie, Xorel, Sahara Matte, 6423-817	Full height and width of walls at Practice Rooms and Small Group Rooms where noted on finish plans	Minimal seaming to be used	Kristi Haines Young, ADR Architectural Design Resources, kristi@a-d-r.com, (781) 837-4700
	AWP9	Conwed	Respond HI, Fabric wrapped Direct-Attach High Impact Resistant Wall Panels, 1-1/8" thick, 1.15 NRC, Fire Rated Class A, Resin hardened Square Edge, Z-bar Mounting, Acoustic Wrapped Wall Panels, Square resin edge, .085 NRC, wall mounted with z-clip	1 1/8" thick, refer to elevations	Carnegie, Xorel, Meteor, 6427-2029	Fitness Center (blue)		Kristi Haines Young, ADR Architectural Design Resources, kristi@a-d-r.com, (781) 837-4700
	AWP10	MDC Wall	Zintra Acoustic Solutions, Perdita, 100% Polyester, pattern layer on backer, NRC .75, Customized for size and pattern. To be intalled horizontally with pattern horizontal as well. Direct mounted mechanically	1" thick, 44"h, length to fit as shown on elevations	Cadet as field color with rost as dots	Media Center		Toni Dozier, tdozier@mdcwall.com, (800) 621-4006
	AWP11	Conwed	Respond IR, IR108, Fabric wrapped Direct-Attach Impact Resistant Wall Panels,2-1/8" thick, 1.15 NRC, Fire Rated Class A, Resin hardened Square Edge, Z-bar Mounting, Acoustic Wrapped Wall Panels, Square resin edge, .085 NRC, wall mounted with z-clip	2" thick, refer to elevations	Carnegie, Xorel, Strie	Back wall of Auditorium and at upper portion of wall at Media Center		Kristi Haines Young, ADR Architectural Design Resources, kristi@a-d-r.com, (781) 837-4700
	AWP12	Armstrong	Tectum Finale PB, Cementitous Wood Fiber Sound absorbing wall panels with plant based binder infill, .85 NRC, coarse texture, direct mounting D-20, all edges beveled, Class A Fire Rated	96" x 48" refer to elevations for variations due to wall constraints	Painted to match wall color (P1)	At Wood Shop		Julie D. Wilson, jdwilson@armstrongceilings.com, Mobile: (860) 996-1232
CTW - Ceramic Tile Wall - Division 09 Section "Tiling"	CWT1	Creative Materials	Mosa Murals, Change, Ceramic wall tile with gloss and matte finish	15"cm x 30"cm	34590 Silver Gray	Toilet Wall at multi-person bathrooms	Installed in a vertically in stacked pattern	Lisa Cupolo, lcupolo@creativematerialscorp.com, (518) 701-5720
	CTW2	Creative Materials	Omni Color Palette, glazed ceramic wall tile, glossy finish	4" x 16"	Soft Blue	Toilet Wall at first floor single person bathrooms	Installed in a vertically in stacked pattern	Lisa Cupolo, lcupolo@creativematerialscorp.com, (518) 701-5720
	CTW3	Creative Materials	Omni Color Palette, glazed ceramic wall tile, glossy finish	4" x 12"	White Ice	Backsplash at FCS and ADD ALT #5; Installed at sink walls in multi-person bathrooms on second floor	Installed in a horizontal stacked pattern at backsplash and in a vertically in stacked pattern at shower	Lisa Cupolo, lcupolo@creativematerialscorp.com, (518) 701-5720
	CTW4	Creative Materials	Mosa Murals, Change, Ceramic wall tile with gloss and matte finish	15"cm x 30"cm	White	Cafeteria Servery Wall and at Trash area	Installed in a vertically in stacked pattern	Lisa Cupolo, lcupolo@creativematerialscorp.com, (518) 701-5720
	CTW5	American Olean	Color Story Wall, glazed ceramic wall tile, glossy finish	4" x 16"	Cobalt	**ADD ALT #5; Installed at sink walls in multi-person bathrooms at 1104 & 1105**	Installed in a vertically in stacked pattern	
DF - Decorative Film - Division 08 Section "Glazing"	DF1	Solyx	Customized Combination Gradient Design Window film, Dual Feather Gradient SXJ-0548, from clear at bottom to white at center to clear at top, film to be applied to full extent of glass with gradient starting at 1'6"h and ending at 5'9"h, level 3 privacy opaqueness at center of glass/film	Custom size to match sidelites full height and width of each	60" h	Office Sidelites, Storefront at Health Suite and Conference Room	Refer to detail 1C/A805	Jeffery Lipitz, 3M, jlipitz@mmm.com, 917-407-2032
FRP - Fiberglas Reinforced Panels - Division 06 "Fiberglass Reinforced Paneling"	FRP1	Marlite	Fiberglass Reinforced Plastic panels with smooth surface, Class A Fire Rated	4' x 8' sheets	Bright White	Kitchen/Servery All Walls	Use Manufactures recommended Trims, connectors and corners	Jamie McEdward, Marlite, jmcedward@marlite.com, (330) 260-7627
	FRP2	Marlite	Fiberglass Reinforced Plastic panels with smooth surface, Class A Fire Rated	4' x 8' sheets	Light Gray	Custodial Closets, Custodial Suite	Use Manufactures recommended Trims, connectors and corners	Jamie McEdward, Marlite, jmcedward@marlite.com, (330) 260-7627
HPC - High-Performance Coatings - Division 09 Section "Acoustic Finishes"	HPC1	International Cellulose Corp	K-13, Spray-applied thermal and acoustical insulation, made of 80% recycled natural fibers, resistant to fire,mold and mildew, 1.0 NRC	1.5" thick	Standard light gray at Mechanical rooms, Custom color to match ceiling color; P17 at Wood Shop	At exposed ceilings in Wood Shop and Mechanical Rooms 1048, 1060, 1067		
P - Interior Painting - Division 09 Section "Interior Painting"	P1	Benjamin Moore	SCUFF-X 486, high performance one coat latex, washable, scrub resistant, scuff resistant,anti-microbial, with Gennex color technology, satin finish	-	OC151 White	Field Throughout Unless Otherwise Noted, hand rails, painted portion of stairs		Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8549
	P2	Benjamin Moore	Epoxy Semi-Gloss finish		To match PPG 1010-7 Zombie	Trim / Frames Throughout, Stringers,metal railings and understide of stairs through out, columns where noted, Kitchen/Servery		Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8549
	P3	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 1161-7 Brilliant Blue	DK Blue Accent (GCMS School Color) Toilet Rooms Sink Wall, Installed at front Auditorium Corridor, Fitness Room		Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8549
	P4	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 1162-6 Teeny Bikini	Blue Accent Right Learning Commons Accent, Waiting Areas		Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8549
	P5	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 1130-6 Moss Ring	Green Accent Middle Learning Commons Accent		Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8549
	P6	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 1151-6 Adventure	Teal Accent Left Learning Commons Accent		Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8549
	P7	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 1210-4 Maybe Maui	Yellow Accent Corridor, Innovation & Robotics, OT/PT, Life Skills, Cafeteria Soffit		Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8549
	P8	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 Shwerin Williams 7096 Iron Ore	Dark Gray Accent Stage Vestibule, Columns in Café		Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8549
	P9	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 1010-6 Up in Smoke	Gray Accent Main Concourse, Media Production Classroom, Passage		Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8549
	P10	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 1162-5 Shrinking Violet	Light Blue Accent Treatment Room, Nurse Prep Room, Custdoial Breakroom, Right Pod Classroom Accent	Accent paint color at right classroom wing, accent color for lockers at left classroom wing	Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8549
	P11	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 1130-5 Pear Cactus	Light Green Accent Student Workstation, Middle Pod Classroom Accent	Accent paint color at center classroom wing, accent color for lockers at right classroom wing	Allyson Smith, Benjamin Moore allyson.smith@benjaminmoore.com, (203) 501-8549

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The S/L/A/M Collaborative, Inc.

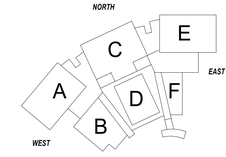
Drawn: AHS
Checked: JZ

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	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	PHASE 2

FINISH PRODUCT LIST - PART A

Date: 07/08/2024
Scale:
Proj. Number: 22367.00
Drawing Number: A910

Autodesk Docs://22367.00 - Greenwich Central Middle School\A_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 1:24:32 PM

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	Kinetics	Geometrics 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
APC - Acoustical Panel Ceilings - Division 09 Section "Acoustical Ceilings"	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, 86258 High NRC, FLB Edge, .85 NRC, 35 CAC, 9/16" DXL Grid, Class A Fire Rated	24" x 48"	Flat White with white grid	Kitchen Servery and adjacent spaces, Culinary/FCS, 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
PCB - 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 Niesyn, Armstrong Ceilings, SKniesyn@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, Writable 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 ⚠1	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 ⚠1	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	-	D0100-02 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: reques 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 A003 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
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The S/L/A/M Collaborative, Inc.

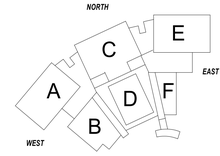
Drawn: AHS
Checked: JZ

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
2	11/06/2024	ADDENDUM NO. 6
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	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
11/6/2024 1:24:33 PM

SPECIALTY EQUIPMENT - PRODUCT INFORMATION

	DESCRIPTION	QUANTITY	NEW OR EXISTING	POWER	PURCHASE / INSTALL	PRODUCT/BASIS OF DESIGN	REMARKS
CONSTRUCTION /ENGINEERING							
EC01	SCROLL SAW	6	E	Y	O / C	DeWalt, DW788, 20" variable speed scroll saw, 20 v, 1.3 amps	
EC02	TABLE SAW	1	E	Y	O / C	Sawstop, PCS17, 1.75HP, 120v, 14amp	
EC03	BAND SAW	1	E	Y	O / C	Powermatic, 824315, 14", PM9-1791216K, 1-1/2HP, 1Ph, 115/230	
EC04	JOINTER	1	E	Y	O / C	Powermatic 843948, 8" Helical Cutterhead, PM9-1610086K, Motor 1Ph, 2HP, 230V, 9amp, 450cu.ft/min dust collection	
EC05	CNC MACHINE	1	E	Y	O / C	Inventables, X-Carve CNC Machine	
EC06	DISC SANDER	1	E	Y	O / C	Rockler, Powermatic DS-20 20" Disc Sander, 3HP 230.460V, PM9-1791264	
EC07	DRILL PRESS	2	E	Y	O / C	Powermatic, PM2800B, 18", 1 HP, 1ph, 115/230 volt, 15amps	
EC08	CHOP SAW	1	E	Y	O / C	Makita, 10" Dual-Bevel Sliding Compound Miter Saw with Laser, LS1019L, 120v 15amps	
EC09	DRUM SANDER	1	E	Y	O / C	Powermatic, 22", 421812, PM9-1792244 Motor 1Ph, 1-3/4HP, 115V	
EC10	SPRAY BOOTH	1	N	Y	C / C	Sentry, Portable Spray Booth, SS-340-DSH, 115/1/60, 2 amps, 220/1/50. .75 amps	VENTING REQUIRED
EC11	PLANER	1	E	Y	O / C	Powermatic, 835284, PM9-1791213, 15HH, 15"Planer Helicat, 3 HP, 1PH, 230V	
EC12	3D PRINTER	1	E	Y	O / C	DarkLabs Emblaser 2	
EC13	LASER ENGRAVER	1	E	Y	O / C	Afina H+1	
EC14	LASER CUTTER	1	E	Y	O / C	Glowforge Pro	
GENERAL							
EG01	REFRIGERATOR - COUNTER DEPTH	5	N	Y	C / C	Frigidaire, Gallery GRFG2353AF, Counter Depth, Energy Star, ADA Compliant, no water/ice	PLUMBING REQUIRED
EG02	BASIC REFRIGERATOR	6	N	Y	C / C	Frigidaire, Gallery GRFN2023AF, Energy Star, ADA Compliant	NO PLUMBING REQUIRED
EG03	RANGE HOOD	5	Y	Y	C / C	GE JVM6405SJSS Compact, Recirculating	
EG04	UNDER COUNTER FRIDGE	2	N	Y	C / C	Summit, ASDS2413, Energy Star, ADA Compliant	
EG05	DISHWASHER	5	N	Y	C / C	Summit, DW2434SSADA, Energy Star, ADA Compliant	PLUMBING REQUIRED
EG06	CLOTHING WASHER	3	N	Y	C / C	GE GFW550SSNSPN	PLUMBING REQUIRED
EG07	CLOTHING DRYER	3	N	Y	C / C	GE GFD55EsslNSPN	VENTING REQUIRED
EG08	RANGE	5	N	Y	C / C	GE JB460ST	
EG09	INSTRUCTOR'S RANGE	1	N	Y	C / C	Jenn-Air, NOIR Series, Stainless Steel, induction freestanding,ADA compliant	
EG10	INSTRUCTOR'S RANGE EXHAUST HOOD	1	N	Y	C / C	Bosch, HIB82651UC, Box canopy Island Hood Recirculating Exhaust with Extension	Ceiling mounted
EG11	MAIL SORTER	4	N	N	C / C	Hamilton Sorter, S342CE03, 36"w x 42"h x 12"d, 24 slots, with (9) additional shelves	
EG12	COPIER / PRINTER	4	N	Y	O / O	N/A - PROVIDED BY OWNER	Power and data required
EG13	CHANGING TABLE	1	N	Y	C / C	Max-Ability; Pressalit 3000 - R8592318301 (Adult), motorized	Power required
EG14	LASER PRINTER	2	E	Y	O / O		
EG15	PLOTTER	2	E	Y	O / O		
HEALTH							
EH01	MEDICINE CABINET	1	N	N	C / C	McKesson Narcotic Double Key Lock Wall Cabinet, #499769, Color; White	WALL MOUNTED
EH02	MEDICAL UNDER COUNTER FRIDGE	1	N	Y	C / C	Summit, CP351WADA, Energy Star, ADA Compliant	
EH03	OPT SCOPE	1	N	Y	C / C	Midmark, 77791-MXPROBP	WALL MOUNTED
EH04	SHARPS CONTAINER	1	N	N	C / C	McKesson Prevent Wall Cabinet with Glove Box, 855131	WALL MOUNTED
SCIENCE							
ES01	GOGGLE CABINET	6	N	N	C / C	Diversified Woodcraft, ESC11-11LM	
ES02	DRYING RACK	29	<varies>	N	C / C	<varies>	
VISUAL ART							
EV01	KILN	1	N	Y	C / C	L&L Kiln, eQuad-Pro Series, E23T-3-208-3P, 031815-D-DHF	HARDWIRED

SPECIALTY EQUIPMENT - LOCATION SCHEDULE

ID TAG	DESCRIPTION	ROOM NUMBER	ROOM NAME	QUANTITY
CONSTRUCTION /ENGINEERING				
EC01	SCROLL SAW	1039	WOOD SHOP	6
EC02	TABLE SAW	1039	WOOD SHOP	1
EC03	BAND SAW	1039	WOOD SHOP	1
EC04	JOINTER	1039	WOOD SHOP	1
EC05	CNC MACHINE	1039	WOOD SHOP	1
EC06	DISC SANDER	1039	WOOD SHOP	1
EC07	DRILL PRESS	1039	WOOD SHOP	2
EC08	CHOP SAW	1039	WOOD SHOP	1
EC09	DRUM SANDER	1039	WOOD SHOP	1
EC10	SPRAY BOOTH	1039	WOOD SHOP	1
EC11	PLANER	1039	WOOD SHOP	1
EC12	3D PRINTER	1038	INNOVATION & ROBOTICS LAB	1
EC13	LASER ENGRAVER	1038	INNOVATION & ROBOTICS LAB	1
EC14	LASER CUTTER	1038	INNOVATION & ROBOTICS LAB	1
GENERAL				
EQ01	REFRIGERATOR - COUNTER DEPTH	1033	FACULTY DINING / WRK	1
EQ01	REFRIGERATOR - COUNTER DEPTH	1035	COOKING LAB	2
EQ01	REFRIGERATOR - COUNTER DEPTH	1051	LIFE SKILLS ROOM	1
EQ01	REFRIGERATOR - COUNTER DEPTH	2072	FACULTY WORKROOM	1
EQ02	BASIC REFRIGERATOR	1006	WORKROOM	1
EQ02	BASIC REFRIGERATOR	1022	PREP	1
EQ02	BASIC REFRIGERATOR	1075	CUSTODIAL OFFICE / BREAK RM	1
EQ02	BASIC REFRIGERATOR	2008	PREP	1
EQ02	BASIC REFRIGERATOR	2049	PREP	1
EQ02	BASIC REFRIGERATOR	2086	PREP	1
EQ03	RANGE HOOD	1035	COOKING LAB	4
EQ03	RANGE HOOD	1051	LIFE SKILLS ROOM	1
EQ04	UNDER COUNTER FRIDGE	1030	LAC . RM	1
EQ04	UNDER COUNTER FRIDGE	1057	MEDIA TEAM OFFICE	1
EQ05	DISHWASHER	1035	COOKING LAB	1
EQ05	DISHWASHER	1051	LIFE SKILLS ROOM	1
EQ05	DISHWASHER	2008	PREP	1
EQ05	DISHWASHER	2049	PREP	1
EQ05	DISHWASHER	2086	PREP	1
EQ06	CLOTHING WASHER	1034	FAMILY CONSUMER SCIENCE	1
EQ06	CLOTHING WASHER	1051	LIFE SKILLS ROOM	1
EQ06	CLOTHING WASHER	1088	LAUNDRY	1
EQ07	CLOTHING DRYER	1034	FAMILY CONSUMER SCIENCE	1
EQ07	CLOTHING DRYER	1051	LIFE SKILLS ROOM	1
EQ07	CLOTHING DRYER	1088	LAUNDRY	1
EQ08	RANGE	1035	COOKING LAB	4
EQ08	RANGE	1051	LIFE SKILLS ROOM	1
EQ09	INSTRUCTOR'S RANGE	1035	COOKING LAB	1
EQ10	INSTRUCTOR'S RANGE EXHAUST HOOD	1035	COOKING LAB	1
EQ11	MAIL SORTER	1006	WORKROOM	4
EQ12	COPIER / PRINTER	1004	MAIL & RECORDS STORAGE	1
EQ12	COPIER / PRINTER	1033	FACULTY DINING / WRK	1
EQ12	COPIER / PRINTER	1057	MEDIA TEAM OFFICE	1
EQ12	COPIER / PRINTER	2072	FACULTY WORKROOM	1
EQ13	CHANGING TABLE	1052	LIFE SKILLS TOILET	1
EQ14	LASER PRINTER	1055	MEDIA CENTER	2
EQ15	PLOTTER	1055	MEDIA CENTER	2
HEALTH				
EH01	MEDICINE CABINET	1024	TREATMENT / ISOLATION ROOM	1
EH02	MEDICAL UNDER COUNTER FRIDGE	1024	TREATMENT / ISOLATION ROOM	1
EH03	OPT SCOPE	1024	TREATMENT / ISOLATION ROOM	1
EH04	SHARPS CONTAINER	1024	TREATMENT / ISOLATION ROOM	1
SCIENCE				
ES01	GOGGLE CABINET	2007	SCIENCE	1
ES01	GOGGLE CABINET	2009	SCIENCE	1
ES01	GOGGLE CABINET	2048	SCIENCE	1
ES01	GOGGLE CABINET	2050	SCIENCE	1
ES01	GOGGLE CABINET	2085	SCIENCE	1
ES01	GOGGLE CABINET	2087	SCIENCE	1
ES02	DRYING RACK	2007	SCIENCE	4
ES02	DRYING RACK	2008	PREP	1
ES02	DRYING RACK	2009	SCIENCE	6
ES02	DRYING RACK	2048	SCIENCE	4
ES02	DRYING RACK	2049	PREP	1
ES02	DRYING RACK	2050	SCIENCE	4
ES02	DRYING RACK	2085	SCIENCE	4
ES02	DRYING RACK	2086	PREP	1
ES02	DRYING RACK	2087	SCIENCE	4
VISUAL ART				
EV01	KILN	1043	KILN	1

TACKBOARD SCHEDULE

ID TAG	DESCRIPTION	QUANITITY	Room: Number	Room: Name
TB48	TB 48"w x 48"h	1	1072	CUSTODIAL WORK ROOM
TB48	TB 48"w x 48"h	1	1020	WAITING AREA
TB48	TB 48"w x 48"h	1	1023	REST AREA
TB48	TB 48"w x 48"h	1	1020	WAITING AREA
TB48	TB 48"w x 48"h	1	1023	REST AREA
TB48	TB 48"w x 48"h	1	2072	FACULTY WORKROOM
TB48	TB 48"w x 48"h	1	2087	SCIENCE
TB48	TB 48"w x 48"h	1	2085	SCIENCE
TB48	TB 48"w x 48"h	1	1038	INNOVATION & ROBOTICS LAB
TB72	TB 72"w x 48"h	1	2087	SCIENCE
TB72	TB 72"w x 48"h	1	2085	SCIENCE
TB72	TB 72"w x 48"h	1	1011	PASSAGE
TB72	TB 72"w x 48"h	1	1001	MAIN CONCOURSE
TB72	TB 72"w x 48"h	1	1001	MAIN CONCOURSE
TB96	TB 96"w x 48"h	1	1041	ART ROOM
TB96	TB 96"w x 48"h	1	1033	FACULTY DINING / WRK
TB96	TB 96"w x 48"h	1	2091	CORRIDOR
TB96	TB 96"w x 48"h	1		
TB96	TB 96"w x 48"h	1	2054	CORRIDOR
TB96	TB 96"w x 48"h	1	2054	CORRIDOR
TB96	TB 96"w x 48"h	1	2020	CORRIDOR
TB96	TB 96"w x 48"h	1	2020	CORRIDOR
TB96	TB 96"w x 48"h	1	2001	CORRIDOR
TB96	TB 96"w x 48"h	1	2001	CORRIDOR
TB96	TB 96"w x 48"h	1	2071	CORRIDOR
TB96	TB 96"w x 48"h	1	1001	MAIN CONCOURSE
TB120	TB 120"w x 48"h	1	1115	CORRIDOR
TB120	TB 120"w x 48"h	1	1115	CORRIDOR
TB120	TB 120"w x 48"h	1	1115	CORRIDOR
TB120	TB 120"w x 48"h	1	1115	CORRIDOR
TB120	TB 120"w x 48"h	1	2071	CORRIDOR
TB120	TB 120"w x 48"h	1	2071	CORRIDOR
TB120	TB 120"w x 48"h	1	2001	CORRIDOR
TB120	TB 120"w x 48"h	1	2001	CORRIDOR
TB120	TB 120"w x 48"h	1	1101	PUBLIC LOBBY
TB120	TB 120"w x 48"h	1	1101	PUBLIC LOBBY
TB120	TB 120"w x 48"h	1	1101	PUBLIC LOBBY
TB120	TB 120"w x 48"h	1	1101	PUBLIC LOBBY
TB120	TB 120"w x 48"h	1		
TB120	TB 120"w x 48"h	1		
TB144	TB 144"w x 48"h	1	1050	CORRIDOR
TB144	TB 144"w x 48"h	1	1050	CORRIDOR
TB144	TB 144"w x 48"h	1	1050	CORRIDOR
TB144	TB 144"w x 48"h	1	1101	PUBLIC LOBBY

WHITEBOARD TOTALS

ID TAG	DESCRIPTION	QTY
WB48	48" Wide x 48" High	2
WB60	60" Wide x 48" High	14
WB84	84" Wide x 48" High	2
WB96	96" Wide x 48" High	84
WB96R	96" Wide x 48" High With Rail	88
WB120	120" Wide x 48" High	9
WB120R	120" Wide x 48" High With Rail	2

ASSEMBLED WHITEBOARD - LOCATION BY TYPE

ID TAG	DESCRIPTION	QUANTITY	Room: Number	Room: Name
WB48	48" Wide x 48" High	1	2065	ASST. PR. OFF.
WB48	48" Wide x 48" High	1	2030	ASST. PRINCIPAL
WB60	60" Wide x 48" High	1	1033	FACULTY DINING / WRK
WB60	60" Wide x 48" High	1	1072	CUSTODIAL WORK ROOM
WB60	60" Wide x 48" High	1	1023	REST AREA
WB60	60" Wide x 48" High	1	1015	COUNSELOR
WB60	60" Wide x 48" High	1	1014	COUNSELOR
WB60	60" Wide x 48" High	1	1016	TEEN TALK
WB60	60" Wide x 48" High	1	1013	COUNSELOR
WB60	60" Wide x 48" High	1	1007	PRINCIPAL
WB60	60" Wide x 48" High	1	1009	POS BEHAVIOR INTERV.
WB60	60" Wide x 48" High	1	1101	PUBLIC LOBBY
WB60	60" Wide x 48" High	1	1033	FACULTY DINING / WRK
WB60	60" Wide x 48" High	1	2064	PSYCH OFFICE
WB60	60" Wide x 48" High	1	2063	SENSORY
WB60	60" Wide x 48" High	1	1101	PUBLIC LOBBY
WB84	84" Wide x 48" High	1	1041	ART ROOM
WB84	84" Wide x 48" High	1	2073	SPEECH LANGUAGE
WB96	96" Wide x 48" High	1	2088	CLASSROOM
WB96	96" Wide x 48" High	1	2088	CLASSROOM
WB96	96" Wide x 48" High	1	2089	CLASSROOM
WB96	96" Wide x 48" High	1	2082	COMMONS
WB96	96" Wide x 48" High	1	2084	CLASSROOM
WB96	96" Wide x 48" High	1	1034	FAMILY CONSUMER SCIENCE
WB96	96" Wide x 48" High	1	2062	MATH INTERVENTION
WB96	96" Wide x 48" High	1	2028	ELL BILINGUAL CR
WB96	96" Wide x 48" High	1	2083	CLASSROOM
WB96	96" Wide x 48" High	1	2083	CLASSROOM
WB96	96" Wide x 48" High	1	1075	CUSTODIAL OFFICE / BREAK RM
WB96	96" Wide x 48" High	1	2074	SPED RES.
WB96	96" Wide x 48" High	1	2062	MATH INTERVENTION
WB96	96" Wide x 48" High	1	2044	CLASSROOM
WB96	96" Wide x 48" High	1	2044	CLASSROOM
WB96	96" Wide x 48" High	1	2043	CLASSROOM
WB96	96" Wide x 48" High	1	2042	W.L. CLASSROOM
WB96	96" Wide x 48" High	1	2042	W.L. CLASSROOM
WB96	96" Wide x 48" High	1	2041	W.L. CLASSROOM
WB96	96" Wide x 48" High	1	2040	CLASSROOM
WB96	96" Wide x 48" High	1	2039	CLASSROOM
WB96	96" Wide x 48" High	1	2039	CLASSROOM
WB96	96" Wide x 48" High	1	2052	CLASSROOM
WB96	96" Wide x 48" High	1	2052	CLASSROOM
WB96	96" Wide x 48" High	1	2048	SCIENCE
WB96	96" Wide x 48" High	1	2050	SCIENCE
WB96	96" Wide x 48" High	1	2046	CLASSROOM
WB96	96" Wide x 48" High	1	2046	CLASSROOM
WB96	96" Wide x 48" High	1	2078	SPED RES.
WB96	96" Wide x 48" High	1	2078	SPED RES.
WB96	96" Wide x 48" High	1	2079	SPED RES.
WB96	96" Wide x 48" High	1	2079	SPED RES.
WB96	96" Wide x 48" High	1	2076	CLASSROOM
WB96	96" Wide x 48" High	1	2076	CLASSROOM
WB96	96" Wide x 48" High	1	2077	CLASSROOM
WB96	96" Wide x 48" High	1	2077	CLASSROOM
WB96	96" Wide x 48" High	1	2080	CLASSROOM
WB96	96" Wide x 48" High	1	2080	CLASSROOM
WB96	96" Wide x 48" High	1	2081	CLASSROOM
WB96	96" Wide x 48" High	1	2081	CLASSROOM
WB96	96" Wide x 48" High	1	2075	W.L. CLASSROOM
WB96	96" Wide x 48" High	1	2075	W.L. CLASSROOM
WB96	96" Wide x 48" High	1	2003	HEARING / VISION IMPAR.
WB96	96" Wide x 48" High	1	2002	SPED RES.
WB96	96" Wide x 48" High	1	2003	HEARING / VISION IMPAR.
WB96	96" Wide x 48" High	1	2011	CLASSROOM
WB96	96" Wide x 48" High	1	2013	CLASSROOM
WB96	96" Wide x 48" High	1	2013	CLASSROOM
WB96	96" Wide x 48" High	1	2015	SPED RES.
WB96	96" Wide x 48" High	1	2015	SPED RES.
WB96	96" Wide x 48" High	1	2016	SPED RES.
WB96	96" Wide x 48" High	1	2016	SPED RES.
WB96	96" Wide x 48" High	1	2009	SCIENCE
WB96	96" Wide x 48" High	1	2019	CLASSROOM
WB96	96" Wide x 48" High	1	2019	CLASSROOM
WB96	96" Wide x 48" High	1	2018	CLASSROOM
WB96	96" Wide x 48" High	1	2018	CLASSROOM
WB96	96" Wide x 48" High	1	2014	CLASSROOM
WB96	96" Wide x 48" High	1	2014	CLASSROOM
WB96	96" Wide x 48" High	1	1122	CHORAL
WB96	96" Wide x 48" High	1	1009	POS BEHAVIOR INTERV.
WB96	96" Wide x 48" High	1	2007	SCIENCE
WB96	96" Wide x 48" High	1	2073	SPEECH LANGUAGE
WB96	96" Wide x 48" High	1	2074	SPED RES.
WB96	96" Wide x 48" High	1	2017	W.L. CLASSROOM
WB96	96" Wide x 48" High	1	2017	W.L. CLASSROOM
WB96	96" Wide x 48" High	1	2011	CLASSROOM
WB96	96" Wide x 48" High	1	2084	CLASSROOM
WB96	96" Wide x 48" High	1	2084	CLASSROOM
WB96	96" Wide x 48" High	1	2047	CLASSROOM
WB96	96" Wide x 48" High	1	2047	CLASSROOM
WB96	96" Wide x 48" High	1	2051	CLASSROOM
WB96	96" Wide x 48" High	1	2010	CLASSROOM
WB96	96" Wide x 48" High	1	2010	CLASSROOM

ASSEMBLED WHITEBOARD - LOCATION BY TYPE

ID TAG	DESCRIPTION	QUANTITY	Room: Number	Room: Name
WB96	96" Wide x 48" High	1	2006	CLASSROOM
WB96	96" Wide x 48" High	1	2005	CLASSROOM
WB96	96" Wide x 48" High	1	2051	CLASSROOM
WB96	96" Wide x 48" High	1	2006	CLASSROOM
WB96	96" Wide x 48" High	1	2005	CLASSROOM
WB96	96" Wide x 48" High	1	2089	CLASSROOM
WB96	96" Wide x 48" High	1	2090	COMMONS
WB96R	96" Wide x 48" High With Rail	1	2087	SCIENCE
WB96R	96" Wide x 48" High With Rail	1	1038	INNOVATION & ROBOTICS LAB
WB96R	96" Wide x 48" High With Rail	1	1038	INNOVATION & ROBOTICS LAB
WB96R	96" Wide x 48" High With Rail	1	2088	CLASSROOM
WB96R	96" Wide x 48" High With Rail	1	2089	CLASSROOM
WB96R	96" Wide x 48" High With Rail	1	2089	CLASSROOM
WB96R	96" Wide x 48" High With Rail	1	2088	CLASSROOM
WB96R	96" Wide x 48" High With Rail	1	2083	CLASSROOM
WB96R	96" Wide x 48" High With Rail	1	1118	ORCHESTRA
WB96R	96" Wide x 48" High With Rail	1	1118	ORCHESTRA
WB96R	96" Wide x 48" High With Rail	1	1051	LIFE SKILLS ROOM
WB96R	96" Wide x 48" High With Rail	1	1051	LIFE SKILLS ROOM
WB96R	96" Wide x 48" High With Rail	1	2047	CLASSROOM
WB96R	96" Wide x 48" High With Rail	1	2051	CLASSROOM
WB96R	96" Wide x 48" High With Rail	1	2005	CLASSROOM
WB96R	96" Wide x 48" High With Rail	1	2084	CLASSROOM
WB96R	96" Wide x 48" High With Rail	1	2083	CLASSROOM
WB96R	96" Wide x 48" High With Rail	1	2076	CLASSROOM
WB96R	96" Wide x 48" High With Rail	1	1101	PUBLIC LOBBY
WB96R	96" Wide x 48" High With Rail	1	2046	CLASSROOM
WB96R	96" Wide x 48" High With Rail	1	2046	CLASSROOM
WB96R	96" Wide x 48" High With Rail	1	1064	OT/PT
WB96R	96" Wide x 48" High With Rail	1	2085	SCIENCE
WB96R	96" Wide x 48" High With Rail	1	2085	SCIENCE
WB96R	96" Wide x 48" High With Rail	1	2048	SCIENCE
WB96R	96" Wide x 48" High With Rail	1	2048	SCIENCE
WB96R	96" Wide x 48" High With Rail	1	2050	SCIENCE
WB96R	96" Wide x 48" High With Rail	1	2050	SCIENCE
WB96R	96" Wide x 48" High With Rail	1	2009	SCIENCE
WB96R	96" Wide x 48" High With Rail	1	2009	SCIENCE
WB96R	96" Wide x 48" High With Rail	1	2007	SCIENCE
WB96R	96" Wide x 48" High With Rail	1	2007	SCIENCE
WB96R	96" Wide x 48" High With Rail	1	1064	OT/PT
WB96R	96" Wide x 48" High With Rail	1	1091	LOCKER ROOM
WB96R	96" Wide x 48" High With Rail	1	1095	LOCKER ROOM
WB96R	96" Wide x 48" High With Rail	1	2062	MATH INTERVENTION
WB96R	96" Wide x 48" High With Rail	1	2062	MATH INTERVENTION

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

© 2021 The S/L/A/M Collaborative, Inc.

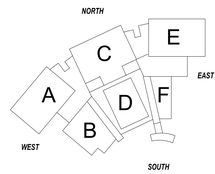
Drawn: AMH
Checked: JZ

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane, Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N



KEYPLAN

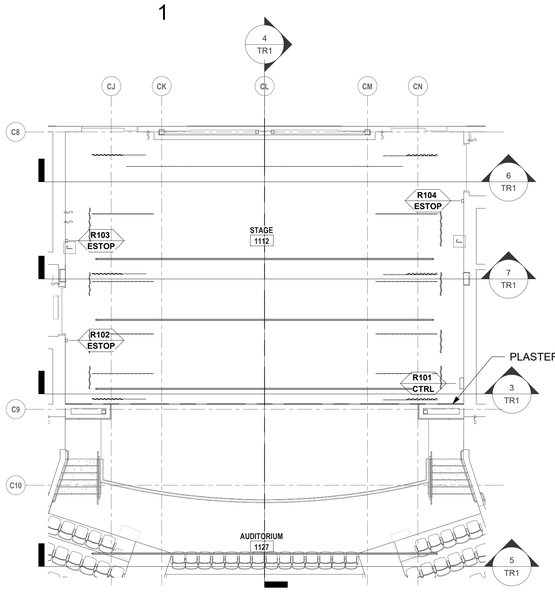
Number	Date	Issued For
1	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING/ PERMIT
	07/08/2024	PHASE 2

SPECIALTY EQUIPMENT LIST

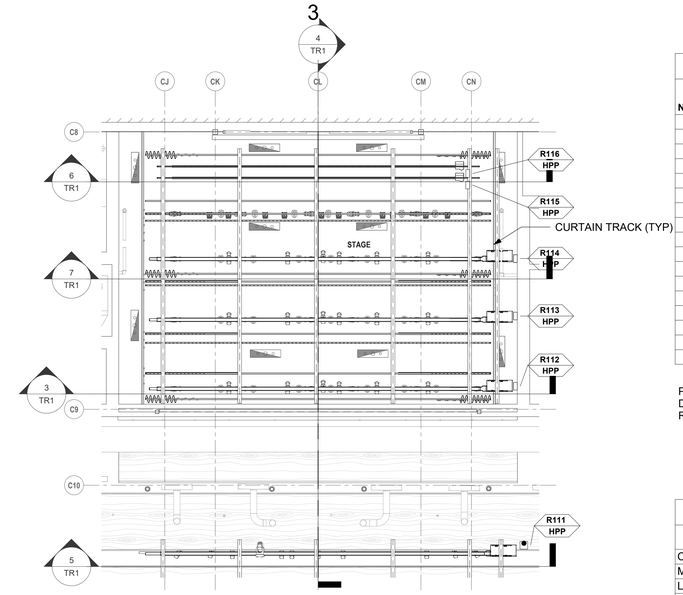
Date: 07/08/2024
Scale:
Proj. Number: 22367.00

Drawing Number: **A912**

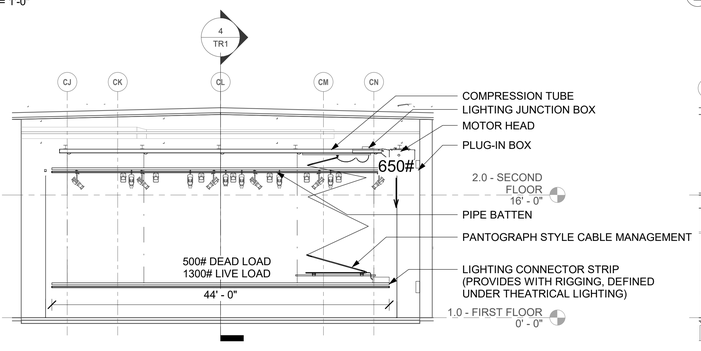
Autodesk Docs://22367.00 - Greenwich Central Middle School/A_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 12:44:26 PM



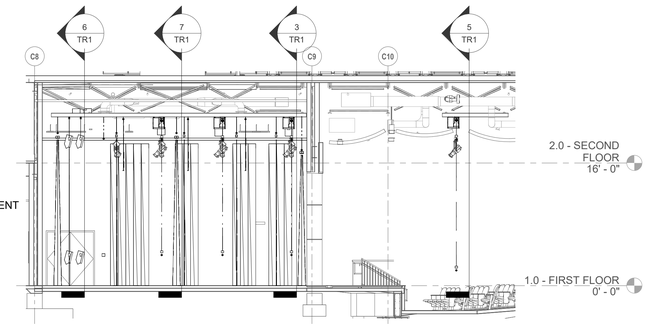
1 STAGE LEVEL PLAN
1/8" = 1'-0"



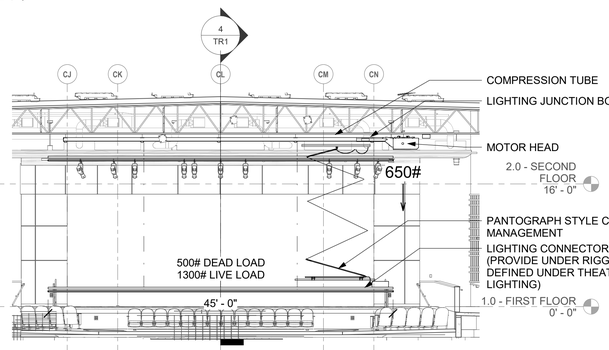
2 UPPER LEVEL RIGGING PLAN
1/8" = 1'-0"



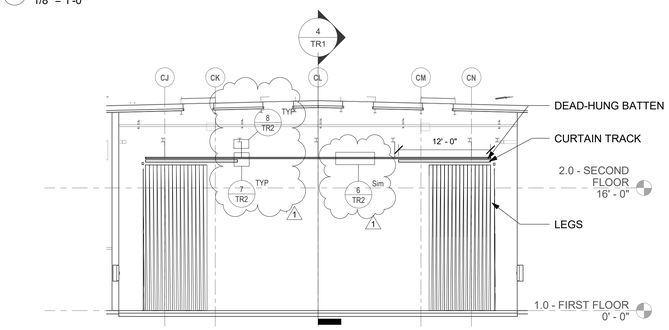
3 TRANSVERSE SECTION - STAGE ELECTRIC BATTEN
1/8" = 1'-0"



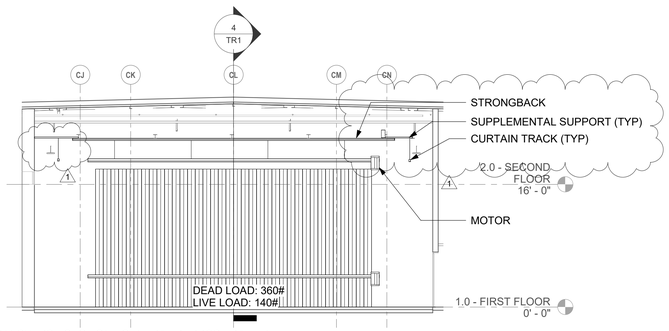
4 CENTERLINE SECTION - STAGE
1/8" = 1'-0"



5 TRANSVERSE SECTION - FOH ELECTRIC
1/8" = 1'-0"



7 TRANSVERSE SECTION - LEGS
1/8" = 1'-0"



6 TRANSVERSE SECTION - GENERAL PURPOSE BATTEN
1/8" = 1'-0"

LINESET SCHEDULE

SET NUMBER	DISTANCE FROM PLASTER	USAGE	WEIGHT (DEAD)	CAPACITY (LIVE)	HORSE-POWER	PIPE LENGTH	COMMENTS
0	19' - 6"	FOH ELECTRIC	750 lb	1,300 lb	2	45' - 0"	INTEGRATED CONNECTOR STRIP
1	0' - 8"	MAIN TRAVELER	300 lb	0 lb		45' - 0"	
2	2' - 0"	1 ELECTRIC	750 lb	1,300 lb	2	44' - 0"	INTEGRATED CONNECTOR STRIP
3	4' - 0"	TRACKED LEGS	250 lb	0 lb		45' - 0"	
4	8' - 0"	BORDER	150 lb	0 lb		45' - 0"	
5	10' - 0"	TRACKED LEGS	250 lb	0 lb		45' - 0"	
6	11' - 0"	2 ELECTRIC	750 lb	1,300 lb	2	44' - 0"	INTEGRATED CONNECTOR STRIP
7	15' - 6"	BORDER	150 lb	0 lb		45' - 0"	
8	16' - 0"	TRACKED LEGS	250 lb	0 lb		45' - 0"	
9	17' - 0"	MID-STAGE TRAVELER	250 lb	0 lb		45' - 0"	
10	18' - 11"	3 ELECTRIC	750 lb	1,300 lb	2	44' - 0"	INTEGRATED CONNECTOR STRIP
11	23' - 11"	BORDER	150 lb	0 lb		45' - 0"	
12	24' - 10"	TRACKED LEGS	250 lb	0 lb		45' - 0"	
13	26' - 6"	4 ELECTRIC	150 lb	1,200 lb		45' - 0"	DEAD HUNG, PROVIDE WITH CONNECTOR STRIP
14	29' - 6"	GENERAL PURPOSE	400 lb	150 lb	1	38' - 0"	
15	31' - 0"	CYCLORAMA	400 lb	150 lb	1	38' - 0"	
16	32' - 6"	UPSTAGE TRAVELER	300 lb	0 lb		45' - 0"	

PROVIDE LIGHTING CONNECTOR STRIPS, JUNCTION BOXES, FLEXIBLE CABLES, AND WORK LIGHTS FOR MOTORIZED HOISTS AND DEAD-HUNG ELECTRIC.
REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR CONNECTOR STRIPS AND WORK LIGHTS.

DRAPERY SCHEDULE

DESCRIPTION	PANEL HEIGHT	PANEL WIDTH	FULLNESS	COLOR	COMMENTS
CYCLORAMA	18' - 0"	36' - 0"	0%	WHITE	
MAIN TRAVELER	17' - 0"	24' - 0"	100%	PER ARCHITECT	PER PANEL, TYPE OF 2
LEGS	19' - 0"	8' - 0"	0%	BLACK	PER PANEL, TYPE OF 2
BORDER	6' - 8"	45' - 0"	0%	BLACK	
LEGS	19' - 0"	8' - 0"	0%	BLACK	PER PANEL, TYPE OF 2
BORDER	6' - 8"	45' - 0"	0%	BLACK	
LEGS	19' - 0"	8' - 0"	0%	BLACK	PER PANEL, TYPE OF 2
BORDER	6' - 8"	45' - 0"	0%	BLACK	
LEGS	19' - 0"	8' - 0"	0%	BLACK	PER PANEL, TYPE OF 2
UPSTAGE TRAVELER	19' - 0"	24' - 0"	100%	BLACK	PER PANEL, TYPE OF 2
MID-STAGE TRAVELER	19' - 0"	24' - 0"	100%	BLACK	PER PANEL, TYPE OF 2
SIDE MASKING PANEL	18' - 6"	3' - 0"	0%	BLACK	
SIDE MASKING PANEL	18' - 6"	3' - 0"	0%	BLACK	
SIDE MASKING PANEL	18' - 6"	3' - 0"	0%	BLACK	
SIDE MASKING PANEL	18' - 6"	3' - 0"	0%	BLACK	
SIDE MASKING PANEL	18' - 6"	3' - 0"	0%	BLACK	
SIDE MASKING PANEL	18' - 6"	3' - 0"	0%	BLACK	
SIDE MASKING PANEL - UPSTAGE	18' - 6"	5' - 0"	0%	BLACK	
SIDE MASKING PANEL - UPSTAGE	18' - 6"	5' - 0"	0%	BLACK	

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

Drawn AGB
Checked AGB

CAVANAUGHTOCCI
327 F BOSTON POST ROAD, SUDBURY, MA 01776-3027
978.443.7871 www.cavtocci.com

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	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

THEATRICAL RIGGING

Date 06/07/2024
Scale 1/8" = 1'-0"
Proj. Number 22367.00

Drawing Number TR1

© 2021 The SLAM Collaborative, Inc.

Autodesk Docs://22367.00 - Greenwich Central Middle School/TH_22367_GREENWICH_CENTRAL_MS_R22.rvt
11/6/2024 8:15:29 AM

KEYNOTES - MECHANICAL	
Key Value	Keynote Text
M11	PROVIDE DUCT SLEEVE WHERE DUCT PENETRATES THE EXTERIOR WALL.



1 MECHANICAL ROOF FLOOR PLAN - B
1/8" = 1'-0"

SLAM
The S/L/A/M Collaborative

80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077

www.slamcoll.com

Drawn: LAE
Checked: BH

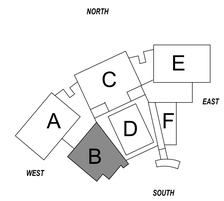
CES Consulting Engineering Services, Inc.
811 Middle Street
Middletown CT 06457
860.632.1682
ceseng.com
CES #2023095.00

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N



KEYPLAN

Number	Date	Issued For
4	11/06/2024	ADDENDUM NO. 6
3	10/30/2024	ADDENDUM NO. 4
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

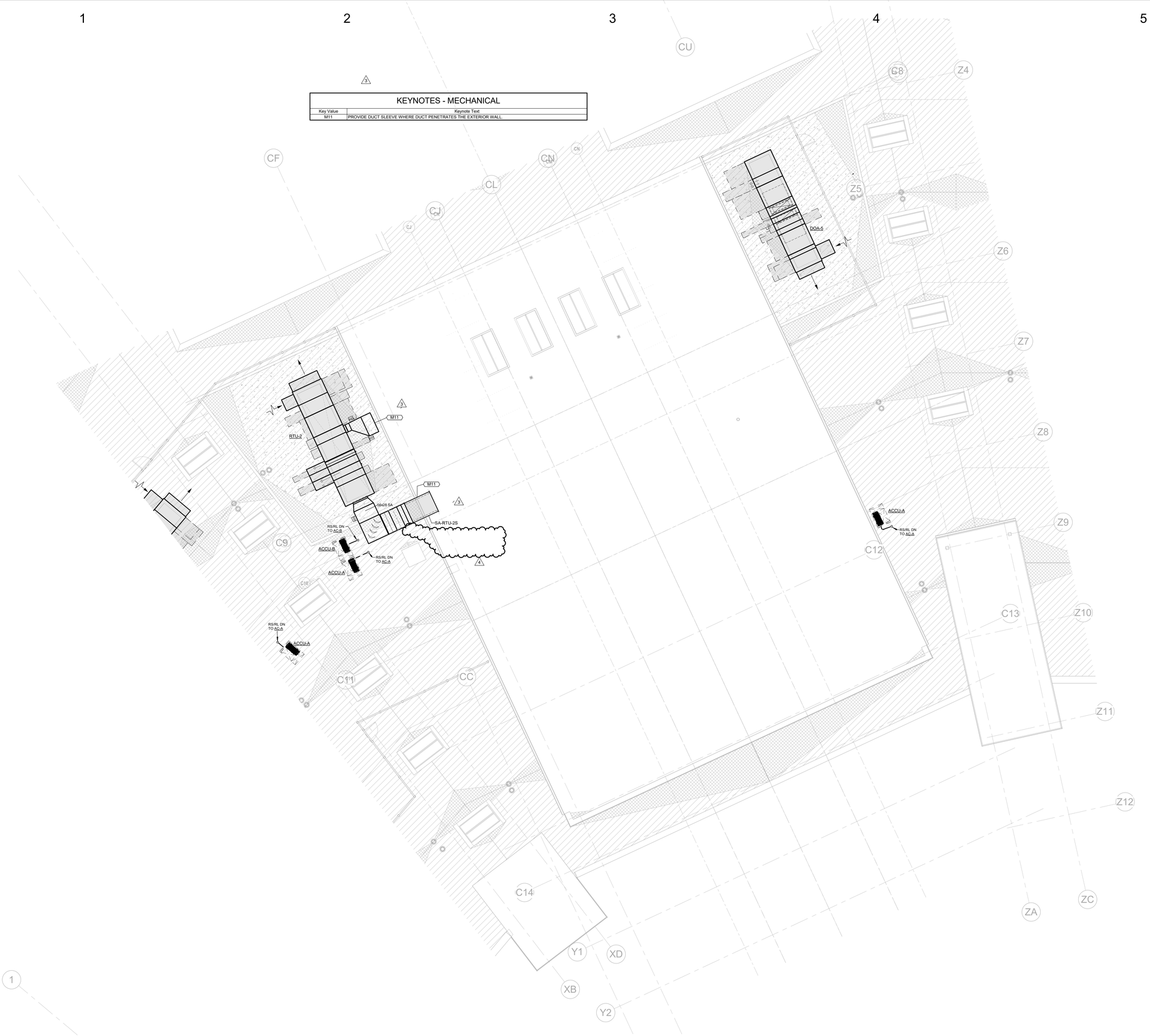
MECHANICAL ROOF PLAN - PART B

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00

Drawing Number: M103B

Autodesk Docs://22367.00 - Greenwich Central Middle School/R22-2023095-MEP Central - Greenwich Central Middle School.rvt
11/6/2024 10:55:34 AM

KEYNOTES - MECHANICAL	
Key Value	Keynote Text
M11	PROVIDE DUCT SLEEVE WHERE DUCT PENETRATES THE EXTERIOR WALL.



1 MECHANICAL ROOF FLOOR PLAN - D
1/8" = 1'-0"

SLAM
The S/L/A/M Collaborative

80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077

www.slamcoll.com

Drawn: LAE
Checked: BH

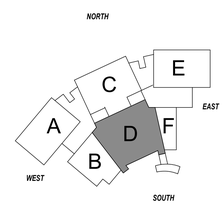
CES
Consulting Engineering Services, Inc.
811 Middle Street
Middletown CT 06457
860.632.1682
ceseng.com
CES #2023095.00

Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N



KEYPLAN

Number	Date	Issued For
4	11/06/2024	ADDENDUM NO. 6
3	10/30/2024	ADDENDUM NO. 4
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

MECHANICAL ROOF PLAN - PART D

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00

Drawing Number: M103D

Autodesk Docs://22367.00 - Greenwich Central Middle School/R22-2023095-MEP Central - Greenwich Central Middle School.rvt
11/6/2024 10:55:42 AM



1 MECHANICAL PIPING SECOND FLOOR PLAN - A
1/8" = 1'-0"

SLAM
The S/L/A/M Collaborative

80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077

www.slamcoll.com

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
EAST
SOUTH
WEST

KEYPLAN

Number	Date	Issued For
4	11/06/2024	ADDENDUM NO. 6
2	10/23/2024	ADDENDUM NO. 3
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

MECHANICAL PIPING SECOND FLOOR PLAN - PART A

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: MP102A

Autodesk Docs://22367.00 - Greenwich Central Middle School/R22-2023095-MEP Central - Greenwich Central Middle School.rvt
11/6/2024 10:55:00 AM



SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

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
EAST
WEST
SOUTH
A B C D E F

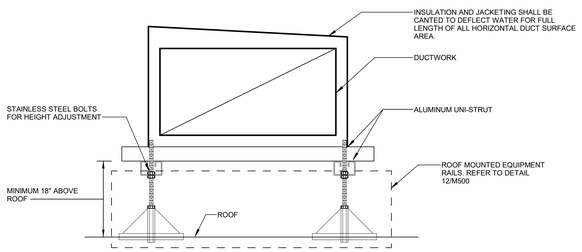
KEYPLAN

Number	Date	Issued For
4	11/06/2024	ADDENDUM NO. 6
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

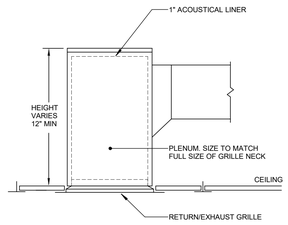
MECHANICAL PIPING SECOND FLOOR PLAN - PART C

Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: MP102C

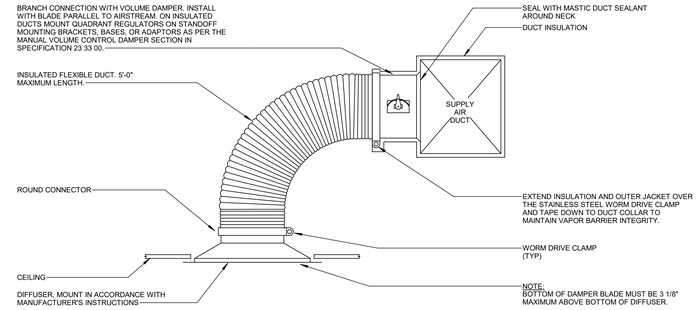
Autodesk Docs://22367.00 - Greenwich Central Middle School/R23-202309S-MEP Central - Greenwich Central Middle School.rvt
11/6/2024 10:56:12 AM



9 ROOF MOUNTED DUCT SUPPORT DETAIL
NTS

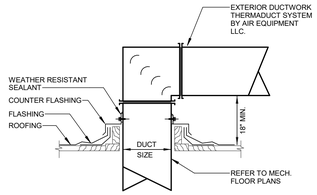


4 TYPICAL RETURN AIR / EXHAUST AIR GRILLE PLENUM DETAIL
NTS

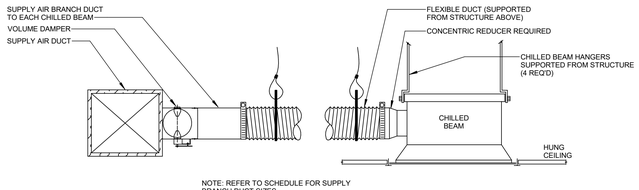


NOTES:
1. SUPPORT FLEXIBLE DUCT FROM STRUCTURE AS SPECIFIED. DUCT SHALL NOT KINK, SAG OR REST ON LIGHT FIXTURES, CEILING SUPPORT TEES OR TILE.
2. PROVIDE REGULATORS WHERE VOLUME DAMPER IS ACCESSIBLE.
3. IN UNCONDITIONED CEILING PLENUMS, INSULATE BACK OF DIFFUSER WITH 1" DUCT WRAP AND SEAL WITH VAPOR BARRIER TAPE.

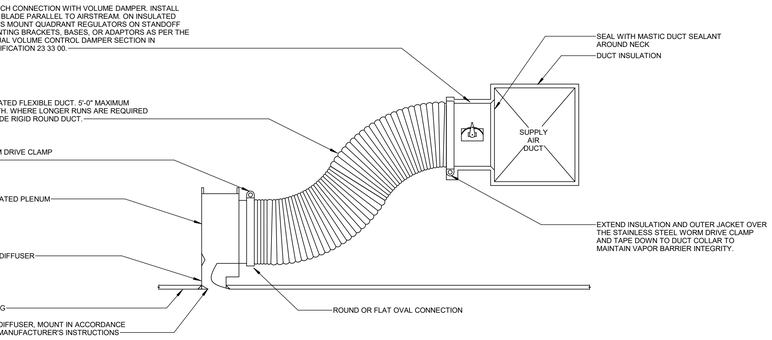
1 DIFFUSER WITH FLEX DUCT DETAIL
NTS



10 EXTERIOR DUCT ROOF PENETRATION DETAIL
NTS

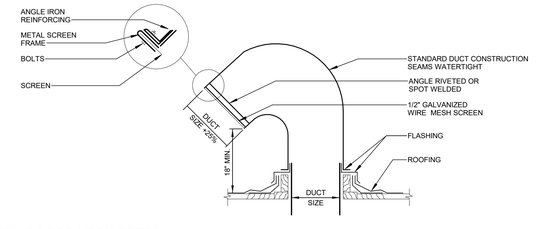


5 CHILLED BEAM DUCT CONNECTION DETAIL
NTS

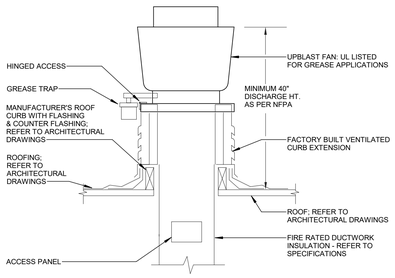


NOTES:
1. ALL INTERIOR EXPOSED SURFACES OF SLOT DIFFUSER/PLENUM ARE TO BE PAINTED FLAT BLACK.
2. SUPPORT FLEXIBLE DUCT FROM STRUCTURE AS SPECIFIED. DUCT SHALL NOT KINK, SAG OR REST ON LIGHT FIXTURES, CEILING SUPPORT TEES OR TILE.
3. PROVIDE REMOTELY ACTIVATED VOLUME DAMPER WHERE VOLUME DAMPER IS INACCESSIBLE. VOLUME DAMPER IS TO BE ADJUSTED THROUGH FACE OF THE DIFFUSER.

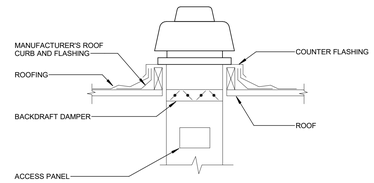
2 DIFFUSER WITH FLEX DUCT DETAIL
NTS



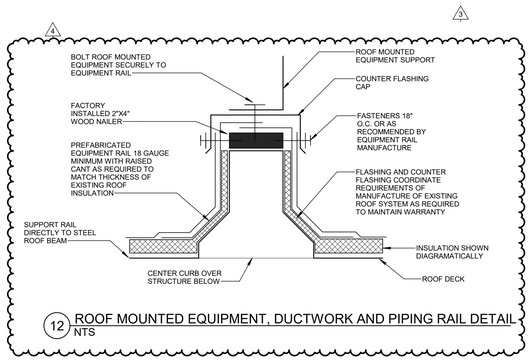
6 GOOSE NECK DETAIL
NTS



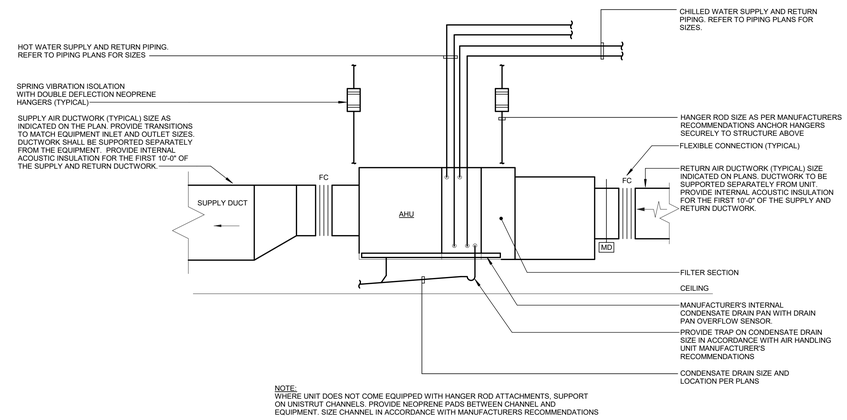
11 UPBLAST FAN DETAIL FOR KITCHEN EXHAUST (KHEF-1)
NTS



7 ROOF MOUNTED FAN DETAIL
NTS

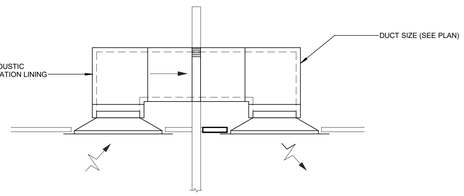


12 ROOF MOUNTED EQUIPMENT, DUCTWORK AND PIPING RAIL DETAIL
NTS

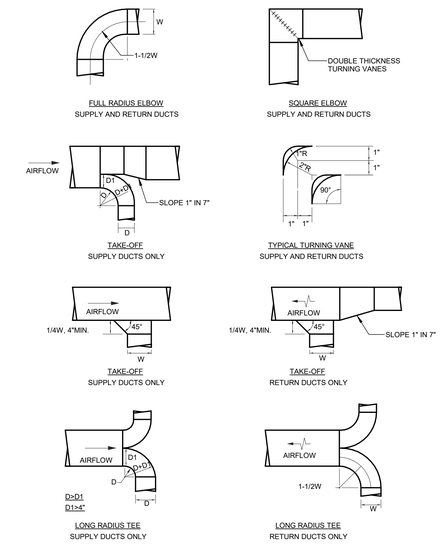


NOTE:
WHERE UNIT DOES NOT COME EQUIPPED WITH HANGER ROD ATTACHMENTS, SUPPORT ON UNISTRUT CHANNELS. PROVIDE NEOPRENE PADS BETWEEN CHANNEL AND EQUIPMENT. SIZE CHANNEL IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS

8 HORIZONTAL / SUSPENDED AIR HANDLING UNIT DETAIL
NTS



13 TRANSFER DUCT DETAIL
NTS



3 TYPICAL DUCT DETAILS
NTS

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

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
EAST
SOUTH
WEST
A B C D E F

KEYPLAN

Number	Date	Issued For
4	11/06/2024	ADDENDUM NO. 6
3	10/30/2024	ADDENDUM NO. 4
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

MECHANICAL DETAILS

Date: 07/08/2024
Scale: NTS
Proj. Number: 22367.00
Drawing Number: M500

Autodesk Docs://2367.00 - Greenwich Central Middle School/R22-2023095-MEP Central - Greenwich Central Middle School.rvt
11/6/2024 10:55:49 AM

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, ADJUSTABLE CURB.
4. FAN MOUNTED VFD IS NOT REQUIRED.
5. PROVIDE WITH BACKDRAFT DAMPER, 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. PROVIDE WITH DISCONNECT SWITCH.
4. FAN SHALL BE ON/OFF CONTROL
5. FAN SHALL BE INTERLOCKED WITH DISHWASHER OPERATION.
6. 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		REMARKS
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	
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 99.5% EFFICIENT ASHRAE 95 AUTOLOCK 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.

SLAM
S / L / A / M Architects, Landscape Architects & Engineers, P.C.
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

Drawn LAE
Checked BH

CES Consulting Engineering Services, Inc.
811 Middle Street
Middletown CT 06457
860.632.1682
ceseng.com
CES #2023095.00

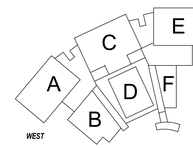
Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane, Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH / EAST / SOUTH / WEST



KEYPLAN

Number	Date	Issued For
4	11/06/2024	ADDENDUM NO. 6
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**

Autodesk Docs://22367.00 - Greenwich Central Middle School/R22-2023095-MEP Central - Greenwich Central Middle School.rvt
11/6/2024 10:55:52 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
EP9	PROVIDE CONNECTION TO INTERNAL TERMINAL BLOCK FOR LIGHTS AND RECEPTACLES

1 ELECTRICAL POWER FIRST FLOOR PLAN - A
1/8" = 1'-0"

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
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

NORTH / EAST / WEST / SOUTH

KEYPLAN

Number	Date	Issued For
4	11/06/2024	ADDENDUM NO. 6
3	10/30/2024	ADDENDUM NO. 4
1	10/16/2024	ADDENDUM NO. 2
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL POWER FIRST FLOOR PLAN - PART A

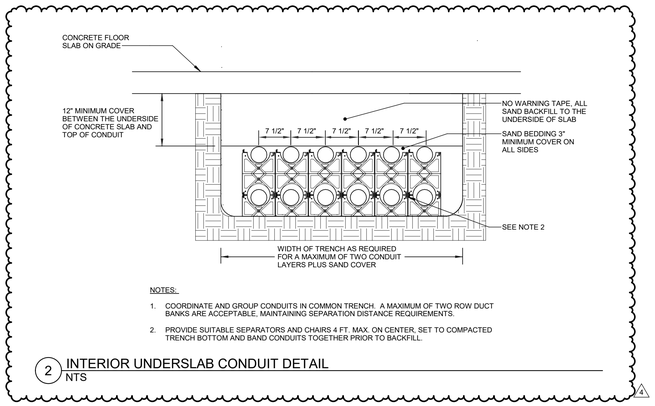
Date: 07/08/2024
Scale: 1/8" = 1'-0"
Proj. Number: 22367.00
Drawing Number: EP101A

Autodesk Docs://22367.00 - Greenwich Central Middle School/R22-202309-MEP Central - Greenwich Central Middle School.rvt
11/7/2024 4:17:17 PM

LIGHTING CONTROL RELAY PANEL SCHEDULE

RELAY PANEL	RELAY	LOAD	SOURCE PANEL	CONTROL	REMARKS
LCPA	1	OUTDOOR EQUIPMENT YARD NORMAL LIGHTING CONTROL ZONE 'z1'	LP1B	LINE VOLTAGE SWITCH	RELAY GROUP WITH WEATHERPROOF LINE VOLTAGE SWITCH FOR ON/OFF.
	2	AREA A,B,E EXTERIOR EMERGENCY LIGHTING CONTROL ZONE 'z2'	ELP1B	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL. LOW VOLTAGE OVERRIDE SWITCH AT LOCATION SHOWN ON FLOOR PLAN.
	3	VESTIBULE 1071 & STAIR NO. 2 1ST2 NORMAL LIGHTING CONTROL ZONE 'z3'	LP1B	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	4	VESTIBULE 1071 & STAIR NO. 2 1ST2 EMERGENCY LIGHTING CONTROL ZONE 'z4'	ELP1B	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	5	ENTRANCE EXTERIOR NORMAL LIGHTING CONTROL ZONE 'z5'	LP1B	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	6	MAIN ENTRANCE EXTERIOR EMERGENCY LIGHTING CONTROL ZONE 'z6'	ELP1B	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	7	CORRIDOR 2020, STAIR NO. 2 2ST2 NORMAL LIGHTING CONTROL ZONE 'z7'	LP1B	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	8	CORRIDOR 2020, STAIR NO. 2 2ST2 EMERGENCY LIGHTING CONTROL ZONE 'z8'	ELP1B	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	9	SPARE	LP1B		
	10	SPARE	LP1B		
	11	SPARE	LP1B		
	12	SPARE	LP1B		
	13	SPARE	LP1B		
	14	SPARE	LP1B		
	15	SPARE	LP1B		
	16	SPARE	LP1B		
	17	SPARE	ELP1B		EMERGENCY RELAY AT PANEL.
	18	SPARE	ELP1B		EMERGENCY RELAY AT PANEL.
	19	SPARE	ELP1B		EMERGENCY RELAY AT PANEL.
	20	SPARE	ELP1B		EMERGENCY RELAY AT PANEL.
	21	SPARE	ELP1B		EMERGENCY RELAY AT PANEL.
	22	SPARE	ELP1B		EMERGENCY RELAY AT PANEL.
	23	SPARE	ELP1B		EMERGENCY RELAY AT PANEL.
	24	SPARE	ELP1B		EMERGENCY RELAY AT PANEL.
LCPB	1	PASSAGE 1098, PUBLIC LOBBY 1101, VESTIBULE 1102 NORMAL LIGHTING CONTROL ZONE 'z1'	LP1B	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	2	PASSAGE 1098, PUBLIC LOBBY 1101, VESTIBULE 1102 EMERGENCY LIGHTING CONTROL ZONE 'z2'	ELP1B	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	3	PUBLIC LOBBY 1101 DISPLAY CASE LIGHTING CONTROL ZONE 'z3'	LP1B	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	4	ENTRANCE EXTERIOR EMERGENCY LIGHTING CONTROL ZONE 'z4'	ELP1B	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	5	SPARE	LP1B		
	6	SPARE	LP1B		
	7	SPARE	LP1B		
	8	SPARE	LP1B		
	9	SPARE	ELP1B		EMERGENCY RELAY AT PANEL.
	10	SPARE	ELP1B		EMERGENCY RELAY AT PANEL.
	11	SPARE	ELP1B		EMERGENCY RELAY AT PANEL.
	12	SPARE	ELP1B		EMERGENCY RELAY AT PANEL.
LCPC	1	CORRIDOR 1115 NORMAL LIGHTING CONTROL ZONE 'z1'	LP1C	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	2	CORRIDOR 1115 EMERGENCY LIGHTING CONTROL ZONE 'z2'	ELP1C	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	3	CORRIDOR 2001 NORMAL LIGHTING CONTROL ZONE 'z3'	LP1C	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	4	VESTIBYLE 2000, CORRIDOR 2001 EMERGENCY LIGHTING CONTROL ZONE 'z4'	ELP1C	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	5	CORRIDOR 2054 NORMAL LIGHTING CONTROL ZONE 'z5'	LP1C	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	6	CORRIDOR 2054 EMERGENCY LIGHTING CONTROL ZONE 'z6'	ELP1C	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	7	AREA C EXTERIOR LIGHTING CONTROL ZONE 'z7'	ELP1C	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	8	AREA C EXTERIOR LIGHTING CONTROL ZONE 'z8'	ELP1C	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	9	COURTYARD 1116 LIGHTING CONTROL ZONE 'z9'	ELP1C	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	10	COURTYARD 1116 LIGHTING CONTROL ZONE 'z10'	ELP1C	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	11	SPARE	LP1C		
	12	SPARE	LP1C		
	13	SPARE	LP1C		
	14	SPARE	LP1C		
	15	SPARE	LP1C		
	16	SPARE	ELP1C		EMERGENCY RELAY AT PANEL.
LCPD	1	CORRIDOR 1124, CORRIDOR 1131, CORRIDOR 1132 NORMAL AND DISPLAY CASE LIGHTING CONTROL ZONE 'z1'	LP1D	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	2	CORRIDOR 1124, CORRIDOR 1131, CORRIDOR 1132 EMERGENCY LIGHTING CONTROL ZONE 'z2'	ELP1D	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	3	ENTRY VESTIBULE 1000 NORMAL LIGHTING CONTROL ZONE 'z3'	LP1D	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	4	ENTRY VESTIBULE 1000 EMERGENCY LIGHTING CONTROL ZONE 'z4'	ELP1D	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	5	SPARE	LP1D		
	6	SPARE	LP1D		
	7	SPARE	LP1D		
	8	SPARE	LP1D		
	9	SPARE	ELP1D		EMERGENCY RELAY AT PANEL.
	10	SPARE	ELP1D		EMERGENCY RELAY AT PANEL.
	11	SPARE	ELP1D		EMERGENCY RELAY AT PANEL.
	12	SPARE	ELP1D		EMERGENCY RELAY AT PANEL.
LCPE	1	MAIN CONCOURSE 1001 NORMAL LIGHTING CONTROL ZONE 'z1'	LP1E	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	2	MAIN CONCOURSE 1001 EMERGENCY LIGHTING CONTROL ZONE 'z2'	ELP1E	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	3	CORRIDOR 1050 NORMAL LIGHTING CONTROL ZONE 'z3'	LP1E	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	4	CORRIDOR 1050 EMERGENCY LIGHTING CONTROL ZONE 'z4'	ELP1E	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	5	PASSAGE 1028 NORMAL LIGHTING CONTROL ZONE 'z5'	LP1E	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	6	CORRIDOR 1050 EMERGENCY LIGHTING CONTROL ZONE 'z6'	ELP1E	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	7	MAIN CONCOURSE 1001 DISPLAY CASE LIGHTING CONTROL ZONE 'z7'	LP1E	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	8	VESTIBULE 1047, STAIR NO. 1 1ST1 NORMAL LIGHTING CONTROL ZONE 'z8'	LP1E	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	9	STAIR NO. 1 1ST1 EMERGENCY LIGHTING CONTROL ZONE 'z9'	ELP1E	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	10	CORRIDOR 2071 NORMAL LIGHTING CONTROL ZONE 'z10'	LP1E	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	11	VESTIBULE 2070, CORRIDOR 2071 EMERGENCY LIGHTING CONTROL ZONE 'z11'	ELP1E	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	12	CORRIDOR 2091, STAIR NO. 1 2ST1 NORMAL LIGHTING CONTROL ZONE 'z12'	LP1E	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER.
	13	CORRIDOR 2091, STAIR NO. 1 2ST1 EMERGENCY LIGHTING CONTROL ZONE 'z13'	ELP1E	TIME CLOCK	RELAY GROUP CONTROLLED BY ASTRONOMICAL TIME CLOCK. COORDINATE TIME SETTINGS WITH OWNER. EMERGENCY RELAY AT PANEL.
	14	SPARE	LP1E		
	15	SPARE	LP1E		
	16	SPARE	LP1E		
	17	SPARE	LP1E		
	18	SPARE	LP1E		
	19	SPARE	ELP1E		EMERGENCY RELAY AT PANEL.
	20	SPARE	ELP1E		EMERGENCY RELAY AT PANEL.
	21	SPARE	ELP1E		EMERGENCY RELAY AT PANEL.
	22	SPARE	ELP1E		EMERGENCY RELAY AT PANEL.
	23	SPARE	ELP1E		EMERGENCY RELAY AT PANEL.
	24	SPARE	ELP1E		EMERGENCY RELAY AT PANEL.

NOTES:
1. DESCRIPTIONS LISTED ARE BASED ON HUBBELL NX SERIES LIGHTING RELAY PANELS AND CONTROLS. EQUAL PRODUCTS BY ACUITY BRANDS (NLIGHT)
2. PROVIDE UL 924 EMERGENCY LIGHTING RELAYS AT PANEL FOR EMERGENCY LIGHTING CIRCUITS.
3. TYPE LVD SWITCHES: FOUR BUTTON SWITCHES WITH INDICATOR LIGHTS AND ENGRAVED BUTTONS. PROVIDE MODEL BASED ON GANGED SWITCHES AT A GIVEN LOCATION. PROVIDE OFF BUTTONS ONLY WHERE INDICATED IN SCHEDULE.
4. COORDINATE PROGRAMMING OF ALL LIGHTING GROUPS/CHANNELS/ZONES WITH THE OWNER, INCLUDING BLINK WARNINGS AND TIME SCHEDULES.
5. 50% ON (HALF #1), DAYLIGHTING AND EMERGENCY ON BUTTONS TO EXTEND TIMER FOR 2 HOURS FOLLOWING BLINK WARNING.
6. ALL ON BUTTONS TO OVERRIDE TIMER UNTIL NEXT SCEDULED TIMED EVENT.
7. ALL ON BUTTONS SHALL BE GREEN WITH CUSTOM ENGRAVING. ALL OFF BUTTONS SHALL BE RED WITH CUSTOM ENGRAVING.
8. PROGRAM SYSTEM TO SWEEP ALL LIGHTS "OFF" WITH BLINK WARNING EVERY TWO HOURS AFTER A PROGRAM "OFF" EVENT UNTIL NEXT SCHEDULED TIMED "ON" EVENT.



NOTES:

1. COORDINATE AND GROUP CONDUITS IN COMMON TRENCH. A MAXIMUM OF TWO ROW DUCT BANKS ARE ACCEPTABLE, MAINTAINING SEPARATION DISTANCE REQUIREMENTS.
2. PROVIDE SUITABLE SEPARATORS AND CHAIRS 4 FT. MAX. ON CENTER, SET TO COMPACTED TRENCH BOTTOM AND BAND CONDUITS TOGETHER PRIOR TO BACKFILL.

2 INTERIOR UNDERSLAB CONDUIT DETAIL
NTS

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077
www.slamcoll.com

Drawn: KCM
Checked: SJM

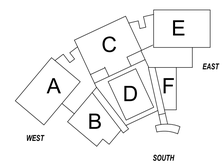
CES Consulting Engineering Services, Inc.
811 Middle Street
Middletown CT 06457
860.632.1682
ceseng.com
CES #2023095.00

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
4	11/06/2024	ADDENDUM NO. 6
2	10/23/2024	ADDENDUM NO. 3
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL DETAILS

Date: 07/08/2024
Scale: NTS
Proj. Number: 22367.00

Drawing Number: E505 (2)

Autodesk Docs://22367.00 - Greenwich Central Middle School/R22-2023095-MEP Central - Greenwich Central Middle School.rvt
11/7/2024 2:32:29 PM

MOTOR / EQUIPMENT CIRCUIT SCHEDULE

EQUIPMENT	OCPD	PANEL	LOAD					LOCAL DISC. SW	MOTOR STARTER			WIRING	REMARKS
			HP	MCA	KW	PH	VOLT		SIZE	TYPE	LOCATION		
AC-1	-	GP-WS	5	-	-	1	230	60A-3P/ 40AF	-	SPC	AT UNIT	2#8, #10G, 1"C	
AC-A	-	ACCU-A	-	-	.03	1	208	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	SEE REMARKS 2, 4
AC-B	-	ACCU-B	-	-	.03	1	208	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	SEE REMARK 2, 4
AC-C	-	ACCU-C	-	-	.07	1	208	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	SEE REMARK 2, 4
AC-D	-	ACCU-D	-	-	.07	1	208	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	SEE REMARK 2, 4
ACCU-A	15A-2P	OS, VARIES	-	11	-	1	208	MAN	-	SPC	AT UNIT	2#10, #10G, 3/4"C	SEE REMARK 4
ACCU-B	15A-2P	OS, VARIES	-	11	-	1	208	MAN	-	SPC	AT UNIT	2#10, #10G, 3/4"C	SEE REMARK 4
ACCU-C	25A-2P	OSP2A	-	19	-	1	208	30A-2P	-	SPC	AT UNIT	2#10, #10G, 3/4"C	SEE REMARK 4
ACCU-D	30A-2P	OS, VARIES	-	19	-	1	208	30A-2P	-	SPC	AT UNIT	2#10, #10G, 3/4"C	SEE REMARK 4
AFU-A	25A-1P	OSP1E	3/4	-	-	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	
DC-1	25A-3P	MP1E	10	-	-	3	480	30A-3P	-	SPC	AT UNIT	2#12, #12G, 3/4"C	SEE REMARKS 11, 12
B-1	15A-1P	OSP1C	-	13	-	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	SEE REMARK 7
B-2	15A-1P	OSP1C	-	13	-	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	SEE REMARK 7
BP-1A&1B	15A-3P	MP1C	(2)1	5	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	
CF-A	15A-2P	MP1B	-	6.5	-	1	208	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	
CHILLER CH-1	450A-3P	MSB-1	-	459.8	-	3	480	600A-3P	-	SPC	AT UNIT	(2)3#350KCMIL, #1G, (2)3"C	SEE REMARKS 6, 5
CHILLER CH-2	450A-3P	MSB-1	-	459.8	-	3	480	600A-3P	-	SPC	AT UNIT	(2)3#350KCMIL, #1G, (2)3"C	SEE REMARKS 6, 5
CH H2O BOX HEATER (CHWBH)	40A-1P	MSB-1	-	-	3	3	120	MAN	-	SPC	AT UNIT	2#8, #10G, 1"C	SEE REMARKS 6
HWP-1	15A-3P	MP1C	1.5	-	-	3	480	30A-3P	-	VFD	AT UNIT	3#12, #12G, 3/4"C	
HWP-2	15A-3P	MP1C	1.5	-	-	3	480	30A-3P	-	VFD	AT UNIT	3#12, #12G, 3/4"C	
HWP-3A/3B	(2) 25A-3P	MP1C	(2)10	-	-	3	480	30A-3P	-	VFD	AT UNIT	(2) 3#10, #10G, 3/4"C	
CHWP-1	15A-3P	MP1A	3	-	-	3	480	30A-3P	-	VFD	AT UNIT	3#12, #12G, 3/4"C	
CHWP-2	15A-3P	MP1A	3	-	-	3	480	30A-3P	-	VFD	AT UNIT	3#12, #12G, 3/4"C	
CHWP-3A/3B	(2) 40A-3P	MP1A	(2) 15	-	-	3	480	60A-3P	-	VFD	AT UNIT	(2) 3#8, #10G, 1"C	
MCHWP-1A/1B	(2) 25A-3P	MP1A	(2) 10	-	-	3	480	30A-3P	-	VFD	AT UNIT	(2) 3#10, #10G, 3/4"C	
RP-1	15A-1P	OSP1C	-	1/25	-	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	
WH-1	15A-1P	OSP1C	-	-	-	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	SEE REMARK 7
FP-1	175A-3P	MSB-2	50	-	-	3	480	200A-3P	-	SPC	AT UNIT	3#2/0, #6G, 2"C	SEE REMARK 13
JP-1	15A-3P	MSB-2	1.5	-	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	
DOA-1 (SF)	45A-3P	MP1E	-	26.25	-	3	480	60A-3P	-	SPC	AT UNIT	3#8, #10G, 3/4"C	SEE REMARK 5
DOA-1 (EF)	20A-3P	MP1E	-	13.75	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	
DOA-1 (WHEEL)	15A-3P	MP1E	-	1.85	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	
DOA-1 (CDQ)	15A-3P	MP1E	-	.37	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	
DOA-2 (SF)	60A-3P	MP1E	-	33.75	-	3	480	60A-3P	-	SPC	AT UNIT	3#6, #10G, 1"C	SEE REMARK 5
DOA-2 (EF)	30A-3P	MP1E	-	26.25	-	3	480	30A-3P	-	SPC	AT UNIT	3#10, #10G, 3/4"C	
DOA-2 (WHEEL)	15A-3P	MP1E	-	1.85	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	
DOA-2 (CDQ)	15A-3P	MP1E	-	.37	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	
DOA-3 (SF)	60A-3P	MP1C	-	33.75	-	3	480	60A-3P	-	SPC	AT UNIT	3#6, #10G, 1"C	SEE REMARK 5
DOA-3 (EF)	30A-3P	MP1C	-	26.25	-	3	480	30A-3P	-	SPC	AT UNIT	3#10, #10G, 3/4"C	
DOA-3 (WHEEL)	15A-3P	MP1C	-	1.85	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	
DOA-3 (CDQ)	15A-3P	MP1C	-	.37	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	
DOA-4 (SF)	60A-3P	MP1A	-	33.75	-	3	480	60A-3P	-	SPC	AT UNIT	3#6, #10G, 1"C	SEE REMARK 5
DOA-4 (EF)	30A-3P	MP1A	-	17.5	-	3	480	30A-3P	-	SPC	AT UNIT	3#10, #10G, 3/4"C	
DOA-4 (WHEEL)	15A-3P	MP1A	-	1.85	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	
DOA-4 (CDQ)	15A-3P	MP1A	-	.37	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	
DOA-5 (SF)	60A-3P	MP1D	-	33.75	-	3	480	60A-3P	-	SPC	AT UNIT	3#6, #10G, 1"C	SEE REMARK 5
DOA-5 (EF)	30A-3P	MP1D	-	17.5	-	3	480	30A-3P	-	SPC	AT UNIT	3#10, #10G, 3/4"C	N/A
DOA-5 (WHEEL)	15A-3P	MP1D	-	1.85	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	N/A
DOA-5 (CDQ)	15A-3P	MP1D	-	.37	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	N/A
HRV-1	15A-3P	MP1B	-	9.7	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	SEE REMARK 5
RTU-1 (SF)	30A-3P	MP1B	-	17.5	-	3	480	30A-3P	-	SPC	AT UNIT	3#10, #10G, 3/4"C	SEE REMARK 5
RTU-1 (EF)	20A-3P	MP1B	-	13.75	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	N/A
RTU-1 (WHEEL)	15A-3P	MP1B	-	.55	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	N/A
RTU-2 (SF)	45A-3P	MP1D	-	26.25	-	3	480	60A-3P	-	SPC	AT UNIT	3#8, #10G, 3/4"C	SEE REMARK 5
RTU-2 (EF)	45A-3P	MP1D	-	26.25	-	3	480	60A-3P	-	SPC	AT UNIT	3#8, #10G, 3/4"C	N/A
RTU-2 (WHEEL)	15A-3P	MP1D	-	.55	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	N/A
RTU-3 (SF)	45A-3P	MP1B	15	26.25	-	3	480	30A-3P	-	SPC	AT UNIT	3#8, #10G, 1"C	SEE REMARK 5
RTU-3 (EF)	30A-3P	MP1B	-	17.5	-	3	480	30A-3P	-	SPC	AT UNIT	3#10, #10G, 3/4"C	N/A
RTU-3 (WHEEL)	15A-3P	MP1B	-	1.63	-	3	480	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	N/A
FCU-A,B	20A-1P	VARIES	1/2	2	-	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	SEE REMARKS 1, 2
FCU-C,D,E,F,G	20A-1P	VARIES	1/2	-	-	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	SEE REMARKS 1, 2
KHEF-1	20A-3P	KP	3	-	-	3	208	30A-3P	-	SPC	AT UNIT	3#12, #12G, 3/4"C	SEE REMARK 8
DWEF-1	15A-1P	KP	1/2	-	-	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	SEE REMARK 8
EF-1	15A-1P	OSP1F	1/4	-	-	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	
EF-2	15A-1P	OSP1F	1/4	-	-	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	
DEF-1	15A-1P	KP	1/4	-	-	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	
CUH-A1,A2,B1,B2,B3	15A-1P	OS, VARIES	1/4	-	-	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	SEE REMARK 1
UH-A1,A2	15A-1P	OS, VARIES	1/30	-	-	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	SEE REMARK 1
UH-A3,A4	15A-1P	OS, VARIES	1/15	-	-	1	120	MAN	-	SPC	AT UNIT	2#12, #12G, 3/4"C	SEE REMARK 1

GENERAL NOTES:
1. DISCONNECT SWITCHES SHALL BE HEAVY-DUTY TYPE AND SHALL BE LOCATED AT EQUIPMENT LOCATION UNLESS OTHERWISE NOTED.
2. ABBREVIATIONS:
   - MAN: MANUAL STARTER (TOGGLE SWITCH WITH THERMAL OVERLOADS)
   - FVNR: COMBINATION FULL VOLTAGE NON-REVERSING STARTER/ DISCONNECT SWITCH
   - VFD: VARIABLE FREQUENCY DRIVE, FURNISHED BY DIV. 23, WIRED BY DIV. 26. PROVIDE POWER WIRING FROM SOURCE PANELBOARD TO VFD AND FROM VFD TO MOTOR(S). COORDINATE EXACT LOCATION IN FIELD WITH DIV.23.
   - DIV.21: EQUIPMENT FURNISHED BY DIVISION 21 FIRE PROTECTION CONTRACTOR
   - DIV.22: EQUIPMENT FURNISHED BY DIVISION 22 PLUMBING CONTRACTOR
   - DIV.23: EQUIPMENT FURNISHED BY DIVISION 23 HVAC CONTRACTOR
   - SPC: SINGLE POINT CONNECTION (STARTERS INTEGRAL TO EQUIPMENT). COORDINATE EXACT POINT OF CONNECTION IN FIELD.
3. OVERCURRENT PROTECTION DEVICES (OCPD) SHALL BE MOLDED CASE CIRCUIT BREAKERS UNLESS NOTED WITH AN "F" FOR FUSE.
4. DISCONNECT SWITCHES AND STARTERS SHALL BE NEMA 3R RATED WHEN LOCATED OUTSIDE.
5. REFER TO PANEL SCHEDULES FOR SOURCE PANEL/ CIRCUIT INFORMATION.
6. REFER TO ELECTRICAL AND MECHANICAL PLANS FOR EXACT LOCATIONS OF EQUIPMENT.
7. STARTERS SHALL BE SQUARE D CLASS 8536 OR APPROVED EQUAL.

REFERENCED REMARKS:
1. REFER TO FLOOR PLANS FOR CIRCUITING. ALL UNITS INDICATED ON PLANS SHALL BE DAISY-CHAINED TOGETHER. PROVIDE SEPARATE DISCONNECT SWITCH FOR EACH UNIT ON CIRCUIT.
2. CONDENSATE PUMP FOR AC/ FAN COIL UNIT SHALL BE FURNISHED/INSTALLED BY DIV.23. ELECTRICAL CONTRACTOR SHALL PROVIDE HARDWIRED CONNECTION TO PUMP VIA DEDICATED CIRCUIT POWERED FROM SAME UNIT AS AC/ FAN COIL UNIT. PROVIDE MOTOR RATED TOGGLE SWITCH AT PUMP FOR DISCONNECTING MEANS.
3. CONDENSATE PUMP FOR AC/ FAN COIL UNIT SHALL BE FURNISHED/INSTALLED BY DIV.23. ELECTRICAL CONTRACTOR SHALL PROVIDE DUPLEX RECEPTACLE FOR PUMP, POWERED VIA LOCAL UNSWITCHED RECEPTACLE CIRCUIT. COORDINATE EXACT LOCATION WITH DIV.23.
4. PROVIDE POWER WIRING FROM SOURCE PANELBOARD TO OUTDOOR UNIT. PROVIDE INTERCONNECT WIRING IN 3/4"C. FROM OUTDOOR UNIT TO INDOOR UNIT. WIRE SIZE AND TYPE SHALL BE PER MANUFACTURER'S REQUIREMENTS. PROVIDE SEPARATE DISCONNECT SWITCH FOR EACH OF THE TWO UNITS.
5. PROVIDE SEPARATE 20A/120V/1PH CONNECTION TO UNIT FOR INTEGRAL LIGHTS AND RECEPTACLES. POWER VIA CIRCUIT INDICATED ON PLANS.
6. UNIT IS LOCATED OUTSIDE BUILDING ON PAD. CIRCUIT SHALL RUN UNDER SLAB FROM PANEL TO UNIT LOCATION. COORDINATE EXACT STUB-UP LOCATION IN FIELD WITH HVAC CONTRACTOR PRIOR TO ROUGH-IN.
7. POWER VIA EPO/ SHUTOFF SYSTEM AS SPECIFIED ON ELECTRICAL DETAILS.
8. VFD FURNISHED AND INSTALLED BY KITCHEN EQUIPMENT CONTRACTOR. PROVIDE WIRING FROM SOURCE PANEL TO VFD, AND FROM VFD TO MOTOR(S). PROVIDE CONTROL WIRING AS DICTATED ON FOOD SERVICE DETAILS AND ELECTRICAL DRAWINGS.
9. NEMA 3R DISCONNECT SWITCH FOR CHILLER SHALL BE MOUNTED IN AN ACCESSIBLE LOCATION ADJACENT TO UNIT. COORDINATE EXACT LOCATION OF STARTER/VFD AND CONTROL PANEL IN FIELD WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
10. DUPLEX PUMP ASSEMBLY - PROVIDE POWER WIRING TO CONTROL PANEL AND FROM CONTROL PANEL TO EACH OF THE TWO PUMPS.
11. PROVIDE SEPARATE 20A/120V/1PH CONNECTION TO NO-RETURN VALVE CONTROL PANEL AND VFD. POWER VIA CIRCUIT INDICATED ON PLANS.
12. PROVIDE SEPARATE 20A/120V/1PH CONNECTION TO SPARK DETECTION SYSTEM CONTROL PANEL AND VFD. POWER VIA CIRCUIT INDICATED ON PLANS.
13. FIRE PUMP CONTROLLER IS SEPERATE OF FIRE PUMP SKID. ELECTRICAL CONTRACTOR TO WIRE FIRE PUMP FEEDER THROUGH THE FIRE PUMP CONTROLLER TO THE FIRE PUMP MOTOR TERMINAL. ELECTRICAL CONTRACTOR RESPONSIBLE FOR ALL CONNECTIONS FROM FIRE PUMP CONTROLLER TO FIRE PUMP MOTOR

ELECTRICAL FEEDER SCHEDULE

COPPER CONDUCTORS

CIRCUIT SYMBOL	CONDUCTORS (1 PH, 2W) WITH GROUND	CONDUIT SIZE	CONDUCTORS (1 OR 3 PH, 3 WIRE) WITH GROUND	CONDUIT SIZE	CONDUCTORS (3 PH, 4 WIRE) WITH GROUND	CONDUIT SIZE	OVERCURRENT RATING
1	2#12 & 1#12G	3/4"	3#12 & 1#12G	3/4"	4#12 & 1#12G	3/4"	15A
2	2#12 & 1#12G	3/4"	3#12 & 1#12G	3/4"	4#12 & 1#12G	3/4"	20A
2.5	2#10 & 1#10G	3/4"	3#10 & 1#10G	3/4"	4#10 & 1#10G	3/4"	25A
3	2#10 & 1#10G	3/4"	3#10 & 1#10G	3/4"	4#10 & 1#10G	3/4"	30A
3.5	2#8 & 1#10G	1"	3#8 & 1#10G	1"	4#8 & 1#10G	1"	35A
4	2#8 & 1#10G	1"	3#8 & 1#10G	1"	4#8 & 1#10G	1"	40A
4.5	2#8 & 1#10G	1"	3#8 & 1#10G	1"	4#8 & 1#10G	1"	45A
5	2#8 & 1#10G	1"	3#8 & 1#10G	1"	4#8 & 1#10G	1"	50A
6	2#6 & 1#10G	1"	3#6 & 1#10G	1"	4#6 & 1#10G	1"	60A
7	2#4 & 1#8G	1 1/4"	3#4 & 1#8G	1 1/4"	4#4 & 1#8G	1 1/4"	70A
8	2#4 & 1#8G	1 1/4"	3#4 & 1#8G	1 1/4"	4#4 & 1#8G	1 1/4"	80A
9	2#3 & 1#8G	1 1/4"	3#3 & 1#8G	1 1/4"	4#3 & 1#8G	1 1/4"	90A
10	2#3 & 1#8G	1 1/4"	3#3 & 1#8G	1 1/4"	4#3 & 1#8G	1 1/4"	100A
11			3#2 & 1#6G	1 1/4"	4#2 & 1#6G	1 1/2"	110A
12			3#1 & 1#6G	1 1/2"	4#1 & 1#6G	2"	125A
15			3#1/0 & 1#6G	2"	4#1/0 & 1#6G	2"	150A
17			3#2/0 & 1#6G	2"	4#2/0 & 1#6G	2"	175A
20			3#3/0 & 1#6G	2"	4#3/0 & 1#6G	2 1/2"	200A
22			3#4/0 & 1#4G	2 1/2"	4#4/0 & 1#4G	2 1/2"	225A
25			3#250KCMIL & 1#4G	3"	4#250KCMIL & 1#4G	3"	250A
30			3#350KCMIL & 1#4G	3"	4#350KCMIL & 1#4G	4"	300A
35			3#500KCMIL & 1#3G	4"	4#500KCMIL & 1#3G	4"	350A
40			3#600KCMIL & 1#3G	4"	4#600KCMIL & 1#3G	4"	400A
45			(2)3#4/0 & 1#2G	(2) 2 1/2"	2 SETS OF 4#4/0 & 1#2G	(2) 2 1/2"	450A
50			(2)3#250KCMIL & 1#2G	(2) 3"	2 SETS OF 4#250KCMIL & 1#2G	(2) 3"	500A
60			(2)3#350KCMIL & 1#1G	(2) 3"	2 SETS OF 4#350KCMIL & 1#1G	(2) 4"	600A
70			(2)3#500KCMIL & 1#1/0G	(2) 4"	2 SETS OF 4#500KCMIL & 1#1/0G	(2) 4"	700A
80			(2)3#600KCMIL & 1#1/0G	(2) 4"	2 SETS OF 4#600KCMIL & 1#1/0G	(2) 4"	800A
90			(3)3#350KCMIL & 1#2/0G	(3) 3"	3 SETS OF 4#350KCMIL & 1#2/0G	(3) 4"	900A
100			(3)3#500KCMIL & 1#2/0G	(3) 4"	3 SETS OF 4#500KCMIL & 1#2/0G	(3) 4"	1000A
120			(4)3#350KCMIL & 1#3/0G	(4) 3"	4 SETS OF 4#350KCMIL & 1#3/0G	(4) 4"	1200A
160			(4)3#600KCMIL & 1#4/0G	(4) 4"	4 SETS OF 4#600KCMIL & 1#4/0G	(4) 4"	1600A
200			(5)3#600KCMIL & 1#250G	(5) 4"	5 SETS OF 4#600KCMIL & 1#250G	(5) 4"	2000A
250			(6)3#600KCMIL & 1#350G	(6) 4"	6 SETS OF 4#600KCMIL & 1#350G	(6) 4"	2500A
300			(8)3#500KCMIL & 1#500G	(8) 4"	8 SETS OF 4#500KCMIL & 1#500G	(8) 4"	3000A

NOTES:
1. CONDUIT SIZES ARE BASED ON THE NEC ANNEX C TABLES FOR EMT/SCH 40 WITH THHN/THWN CONDUCTORS. CONDUCTOR SIZES USED IN CONDUIT CALCULATION ARE BASED ON THE SIZE OF THE HOT CONDUCTORS OF CIRCUIT. EXAMPLE: 40A 3PH, 4W CONDUIT SIZE IS BASED ON 4#8 + 1#8G + 1#8 "SPACE". FOR ACTUAL WIRE INSTALL USE QUANTITY AND SIZES WITHIN SCHEDULE.
2. UNLESS OTHERWISE INDICATED, CONDUCTOR SIZING SHALL MATCH THE SIZE INDICATED ABOVE FOR THE APPLICABLE OVERCURRENT DEVICE. PROVIDE LARGER CIRCUIT WHERE INDICATED.
3. PROVIDE MINIMUM SIZE CONDUIT INDICATED IN THE SPECIFICATIONS OR ON THE DRAWINGS.
4. FOR SINGLE PHASE FEEDERS, PROVIDE A 3-WIRE CIRCUIT UNLESS DEVICE SERVED DOES NOT HAVE PROVISIONS FOR A NEUTRAL. FOR THREE PHASE FEEDERS, PROVIDE A 4-WIRE CIRCUIT UNLESS DEVICE SERVED DOES NOT HAVE PROVISIONS FOR A NEUTRAL.
5. PROVIDE TYPE OF RACEWAY OR CABLE AS INDICATED IN THE SPECIFICATIONS OR ON THE DRAWINGS.
6. REFER TO PANELBOARD SCHEDULES AND ONE-LINE RISER DIAGRAM DRAWINGS FOR CONDUCTOR AND CONDUIT SIZE REQUIREMENTS.
7. ALL CONDUCTOR SIZES ARE BASED ON 75°C (167°F), ALL EQUIPMENT CONNECTED TO WIRES SHALL BE RATED OR 75°C (167°F)

FLOOR BOX SCHEDULE

SYMBOL	DESCRIPTION	CONDUIT/ FLOOR BOX	CABLING	NOTES
FB A	FLOOR BOX WITH POWER	LEGRAND #RFB2E-OG OR EQUAL WITH (1) 3/4"C FOR POWER TRENCHED TO NEAREST ACCESSIBLE WALL AND ABOVE CEILING.	POWER ONLY	PROVIDE WITH (2) INTEGRAL DUPLEX RECEPTACLES. PROVIDE WITH SURFACE STYLE ROUND COVER ASSEMBLY.
FB B	FLOOR BOX WITH POWER, DATA	LEGRAND #RFB4E-OG OR EQUAL WITH (1) 3/4"C FOR POWER AND (1) 1-1/4"C FOR DATA TRENCHED TO NEAREST ACCESSIBLE WALL AND ABOVE CEILING.	(1) CAT.6 CABLE TO DATA PATCH PANEL (1) CAT.6 CABLE TO VOIP PATCH PANEL	PROVIDE WITH (2) INTEGRAL DUPLEX RECEPTACLES. PROVIDE WITH SURFACE STYLE ROUND COVER ASSEMBLY.
FB C	FLOOR BOX WITH POWER, DATA, AV	LEGRAND #EFB6-OG OR EQUAL WITH (1) 3/4"C FOR POWER AND (1) 1-1/4"C FOR DATA TRENCHED TO NEAREST ACCESSIBLE WALL AND ABOVE CEILING. PROVIDE ADDITIONAL 1-1/4"C. TO LOCAL AV DISPLAY BOX IN ROOM.	(1) CAT.6 CABLE TO DATA PATCH PANEL (1) CAT.6 CABLE TO VOIP PATCH PANEL REFER TO AV DETAILS FOR CABLING	PROVIDE WITH (2) INTEGRAL DUPLEX RECEPTACLES. PROVIDE WITH SURFACE STYLE ROUND COVER ASSEMBLY.
FB D	FLOOR BOX WITH POWER, DATA, AV (HIGH CAPACITY)	LEGRAND #EFB8-OG OR EQUAL WITH (1) 3/4"C FOR POWER AND (1) 1-1/4"C FOR DATA TRENCHED TO NEAREST ACCESSIBLE WALL AND ABOVE CEILING. PROVIDE ADDITIONAL 1-1/4"C. TO LOCAL AV DISPLAY BOX IN ROOM.	(1) CAT.6 CABLE TO DATA PATCH PANEL (1) CAT.6 CABLE TO VOIP PATCH PANEL REFER TO AV DETAILS FOR CABLING	PROVIDE WITH (2) INTEGRAL DUPLEX RECEPTACLES. PROVIDE WITH SURFACE STYLE ROUND COVER ASSEMBLY.
FB FF (X,Y)	FLOOR BOX WITH POWER AND DATA FURNITURE FEED	LEGRAND #EFBFF-OG OR EQUAL WITH (1) 1-1/4"C FOR POWER AND (1) 1-1/4"C FOR DATA TRENCHED TO NEAREST ACCESSIBLE WALL AND ABOVE CEILING.	(X) CAT.6 CABLES TO DATA PATCH PANEL (Y) CAT.6 CABLES TO VOIP PATCH PANEL	PROVIDE WITH FLEXIBLE WHIP CONNECTIONS TO MODULAR FURNITURE, MINIMUM 1-1/4". LOCATE BOX IN KNEE SPACE UNDER FURNITURE. COORDINATE EXACT LOCATION IN FIELD WITH FURNITURE INSTALLER PRIOR TO INSTALLATION.

GENERAL NOTES:
1. ALL CONDUITS FOR FLOOR BOXES SHALL BE TRENCHED TO THE NEAREST WALL AND SHALL STUB ABOVE ACCESSIBLE CEILING, OR IN A LOCATION INDICATED ON PLANS.
2. ALL POKE-THROUGH DEVICES SHALL BE PROVIDED WITH SEPARATE CONDUIT SLEEVES TO FLOOR BELOW FOR POWER, DATA AND AV CABLING. PROVIDE ALL NECESSARY FIRESTOPPING OF CONDUIT SLEEVES TO MATCH FIRE RATING OF FLOOR.
3. PROVIDE INTERNAL BARRIER KITS TO SEPARATE POWER, DATA AND AV COMPARTMENTS IN ALL FLOOR BOXES AND POKE-THROUGH DEVICES.
4. ALL FINISHES, COLORS AND COVER MATERIALS SHALL BE SELECTED BY ARCHITECT.
5. PROVIDE MOUNTING BRACKETS AS RECOMMENDED BY MANUFACTURER FOR ALL DEVICES MOUNTED IN FLOOR BOXES AND POKE-THROUGH DEVICES.
6. DATA CABLING SHALL BE ROUTED TO PATCH PANELS IN I.T. ROOMS INDICATED ON FLOOR PLANS. TERMINATE CABLING AT SPECIFIC PATCH PANELS INDICATED IN I.T. RACK ELEVATIONS.
7. CONTRACTOR SHALL LABEL EACH DEVICE TERMINATION POINT AND CORRESPONDING PATCH PANEL PORT WITH THE SAME, UNIQUE LABEL. REFER TO SPECIFICATIONS FOR MORE INFORMATION. ALL LABELS SHALL BE FINALIZED WITH AND APPROVED BY OWNER'S I.T. STAFF PRIOR TO INSTALLATION.
8. PROVIDE ALL NECESSARY CONNECTORS, ADAPTERS, KEYSTONES, ATTACHMENTS AND OTHER ACCESSORIES REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
9. TERMINATE ALL STRUCTURED CABLING CABLES IN RJ45 CONNECTORS UNLESS OTHERWISE NOTED.

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
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

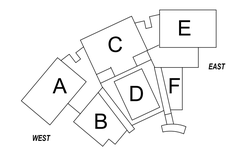
Greenwich Public Schools

Greenwich Central Middle School

9 Indian Rock Lane,
Greenwich, CT 06830

STATE PROJECT NO: 057-0114 N

NORTH / EAST / SOUTH / WEST



KEYPLAN

Number	Date	Issued For
4	11/06/2024	ADDENDUM NO. 6
2	10/23/2024	ADDENDUM NO. 3
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL SCHEDULES AND DIAGRAMS

Date: 07/08/2024
Scale: NTS
Proj. Number: 22367.00
Drawing Number: E600

Autodesk Docs://22367.00 - Greenwich Central Middle School/R22-202305-MEP Central - Greenwich Central Middle School.rvt
11/7/2024 2:32:31 PM

Branch Panel: GP1A

Location:	MAIN ELECTRICAL ROO...	**Volts:**	120/208 Wye	**A.I.C. Rating:**	42k 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	CONV. RECEPTACLE FIRE PUMP 1078	20 A	1	0.18	1.44					1	20 A	RECEPTACLES CUST. OFF/BRK RM...	2
3	RECECPTACLE CUST. EQUIP. 1073	20 A	1			0.18	0.18			1	20 A	RECEPTACLE CUST. TLT RM 1074	4
5	RECEPTACLE WATER SERVICE RM...	20 A	1					0.18	0.72	1	20 A	RECEPTACLES MECHANICAL 1067	6
7	RECEPTACLE KITCHEN TLT RM 1081	20 A	1	0.18	0.36					1	20 A	RECEPTACLES NON-FOOD STOR. 1082	8
9	RECEPTACLES OFFICE 1084	20 A	1			0.72	0.18			1	20 A	RECEPTACLE KITCHEN STOR. 1083	10
11	RECEPTACLES CAFETERIA 1086	20 A	1					0.72	0.54	1	20 A	RECEPTACLES CAFETERIA 1086	12
13	AV MONITORS CAFETERIA 1086	20 A	1	0.36	1.44					1	20 A	FLOOR BOXES CAFETERIA 1086	14
15	*EWC CAFETERIA	20 A	1			0.18	0.00			2	20 A	SPARE	16
17	*SPARE	20 A	1					0.00	0.00	--	--	--	18
19	*SPARE	20 A	1	0.00	0.18					1	20 A	RECEPT. MAIN ELECTRICAL ROOM...	20
21	*SPARE	20 A	1			0.00	0.72			1	20 A	RECEPTS. CUST. MAINT. CLOSET 1077	22
23	*SPARE	20 A	1					0.00	1.26	1	20 A	RECEPTS. CUST. WORK ROOM 1072	24
25	TIME CLOCK IN ROOM 1079	20 A	1	0.50	1.50					1	20 A	OH DOOR OPERATORS RM 1085, 1086	26
27	EXTERIOR RECEPTACLE AREA A	20 A	1			0.18	1.50			1	20 A	CH-1 RECEPTACLES AND LIGHTS	28
29	SERVICE RECEPTACLE ROOF A	20 A	1					0.18	1.50	1	20 A	CH-2 RECEPTACLES AND LIGHTS	30
31	SERVICE RECEPTACLE ROOF A	20 A	1	0.18	1.50					1	20 A	DOA-4 LIGHTS AND RECEPTACLE	32
33	SERVICE RECEPTACLE ROOF A	20 A	1			0.18	0.00			1	20 A	SPARE	34
35	CHWBH CH-1	40 A	1					3.84	0.00	1	20 A	SPARE	36
37	CHWBH CH-1	40 A	1	3.84	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
43	SPARE	20 A	1	0.00	0.00					1	20 A	SPARE	44
45	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	46
47	SPARE	20 A	1					0.00	0.00	1	20 A	SPARE	48
49	SPARE	20 A	1	0.00	0.00					1	20 A	SPARE	50
51	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	52
53	SPARE	20 A	1					0.00	0.00	1	20 A	SPARE	54
55	SPARE	20 A	1	0.00	0.00					1	20 A	SPARE	56
57	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	58
59	SPARE	20 A	1					0.00	0.00	1	20 A	SPARE	60
61	SPARE	20 A	1	0.00	0.00					1	20 A	SPARE	62
63	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	64
65													66
67													68
69													70
71													72
73													74
75													76
77													78
79													80
81													82
83													84
			Phase Load:	11.66 kVA		4.02 kVA		8.94 kVA					
			Phase...	103.5 A		33.5 A		80.8 A					
			Total Load:	24.62 kVA									
			Total Amps:	68.34 A									

Notes:
*PROVIDE GFCI CIRCUIT BREAKER

Branch Panel: GP1B

Location:	ELECT. CLOSET 1092	**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 ROOMS 1087/1088	20 A	1	0.90	0.09					2	30 A	DRYER LAUNDRY/ICE 1088	2
3	GYM EQUIPMENT CONTROL PANELS	30 A	1			0.50	0.09			--	--	--	4
5	WASH MACH. LAUNDRY/ICE 1088	20 A	1					0.18	1.08	1	20 A	RECEPTACLES PE OFFICE 1089	6
7	RECEPTACLES LOCKER ROOM 1091	20 A	1	0.72	0.18					1	20 A	RECEPTACLE ELECT. CLOSET 1092	8
9	RECEPTACLE GYM TLT ROOM 1090	20 A	1			0.36	0.72			1	20 A	RECEPTACLES LOCKER ROOM 1095	10
11	RECEPTACLE GYM TLT ROOM 1094	20 A	1					0.36	0.18	1	20 A	RECEPTACLE PE TLT/SHOWER 1096	12
13	RECEPTACLES PE OFFICE 1097	20 A	1	1.26	0.36					1	20 A	RECEPTACLES ROOMS 1101/1132	14
15	CONV. RECEPTS. FITNESS ROOM 1099	20 A	1			1.08	1.08			1	20 A	CONV. RECEPTS. FITNESS ROOM 1099	16
17	EXTERIOR RECEPTACLE GYM	20 A	1					0.18	0.18	1	20 A	EXTERIOR RECEPTACLE VESTIBULE	18
19	FITNESS EQUIPMENT IN ROOM 1099	20 A	1	0.18	0.18					1	20 A	FITNESS EQUIPMENT IN ROOM 1099	20
21	FITNESS EQUIPMENT IN ROOM 1099	20 A	1			0.18	0.18			1	20 A	FITNESS EQUIPMENT IN ROOM 1099	22
23	RECEPTACLES PUBLIC LOBBY 1101	20 A	1					0.54	0.90	1	20 A	RECEPTACLES PUBLIC LOBBY 1101	24
25	SERVICE RECEPTACLE ROOF C	20 A	1	0.36	0.00					1	20 A	SPARE	26
27	*EWC PUBLIC LOBBY 1101	20 A	1			0.18	0.18			1	20 A	*EWC PUBLIC LOBBY 1101	28
29	*SPARE	20 A	1					0.00	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	2			0.00	0.68			2	15 A	CEILING FAN - GYM	34
35	--	--	--					0.00	0.68	--	--	--	36
37	SCOREBOARD GYM	20 A	1	0.50	0.68					2	15 A	CEILING FAN - GYM	38
39	GYM EQUIPMENT CONTROL PANELS	30 A	1			0.50	0.68			--	--	--	40
41	RECEPTACLES GYM	20 A	1					0.36	0.68	2	15 A	CEILING FAN - GYM	42
43	RECEPTACLES GYM	20 A	1	1.08	0.68					--	--	--	44
45	RECEPTACLES GYM	20 A	1			1.08	0.68			2	15 A	CEILING FAN - GYM	46
47	RECEPTACLES EXTERIOR	20 A	1					0.18	0.68	--	--	--	48
49	SERVICE RECEPTACLE ROOF B	20 A	1	0.18	0.00					1	20 A	SHADE MOTORS - GYM	50
51	SERVICE RECEPTACLE ROOF B	20 A	1			0.18	0.00			1	20 A	SPARE	52
53	SERVICE RECEPTACLE ROOF B	20 A	1					0.18	0.00	1	20 A	SPARE	54
55	SPARE	20 A	1	0.00	0.00					1	20 A	SPARE	56
57	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	58
59	SPARE	20 A	1					0.00	0.00	1	20 A	SPARE	60
61	SPARE	20 A	1	0.00	0.00					1	20 A	SPARE	62
63	SPARE	20 A	1			0.00	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	0.00					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													74
75													76
77													78
79													80
81													82
83													84
			Phase Load:	7.34 kVA		8.34 kVA		6.35 kVA					
			Phase...	62.5 A		70.8 A		52.9 A					
			Total Load:	22.03 kVA									
			Total Amps:	61.14 A									

Notes:
*PROVIDE GFCI TYPE CIRCUIT BREAKER

Branch Panel: GP1C

Location:	MECHANICAL 1060	**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	RECEPTACLE CUSTODIAL 1066	20 A	1	0.18	1.08					1	20 A	RECEPTACLES OT/PT 1064	2
3	RECEPTACLES OT/PT 1064	20 A	1			1.08	0.18			1	20 A	RECEPTACLE OT/PT STOR. 1065	4
5	RECEPTACLE MEDIA EQUIP. STOR....	20 A	1					0.18	1.80	1	20 A	RECEPTACLES MEDIA PROD. CR 1063	6
7	RECEPTACLES ROOM 1061	20 A	1	0.72	0.72					1	20 A	RECEPTACLES MECHANICAL 1060	8
9	RECEPTACLES MECHANICAL 1060	20 A	1			0.90	1.44			1	20 A	RECEPTS./FL BOX MEDIA COLLAB....	10
11	RECEPTS./FL BOX MEDIA COLLAB....	20 A	1					1.44	1.44	1	20 A	RECEPTS./FL BOX MEDIA COLLAB....	12
13	RECEPTACLES ROOMS 1053/1055	20 A	1	1.80	1.44					1	20 A	RECEPTACLES ROOMS 1054/1055	14
15	RECEPTACLES ROOMS 1055/1056	20 A	1			1.08	0.18			1	20 A	COPIER IN MEDIA COLLAB. 1056	16
17	COPIER IN MEDIA COLLAB. 1056	20 A	1					0.18	0.18	1	20 A	RECEPTACLE COURTYARD 1116	18
19	RECEPTACLE COURTYARD 1117	20 A	1	0.18	0.90					1	20 A	RECEPTACLES CORRIDOR 1115	20
21	RECEPTACLES IT 1058	20 A	1			1.44	1.26			1	20 A	RECEPTACLES IT 1058	22
23	WASHER LIFE SKILLS 1051	20 A	1					0.18	2.25	2	20 A	*DRYER LIFE SKILLS 1051	24
25	*DISHWASHER LIFE SKILLS 1051	20 A	1	0.18	2.25					--	--	--	26
27	RANGE LIFE SKILLS 1051	40 A	2			3.95	0.18			1	20 A	RANGE HOOD LIFE SKILLS 1051	28
29	--	--	--					3.95	1.62	1	20 A	RECEPTACLES LIFE SKILLS 1051	30
31	RECEPTACLES LIFE SKILLS 1051	20 A	1	1.44	0.36					1	20 A	PRINTERS MEDIA COLLAB 1056	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	RECEPT. MECHANICAL 1060	20 A	1	0.18	0.72					1	20 A	RECEPTS MEDIA BOOTH 1059	38
39	MOTORIZED LIFT, LIFE SKILLS 1052	20 A	1			0.50	0.72			1	20 A	RECEPTACLES TLT 1052, CONCOUR...	40
41	SERVICE RECEPTACLE ROOF C	20 A	1					0.18	1.50	1	20 A	DOA-3 LIGHTS AND RECEPTACLE	42
43	SPARE	20 A	1	0.00	0.00					1	20 A	SPARE	44
45	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	46
47	SPARE	20 A	1					0.00	0.00	1	20 A	SPARE	48
49	SPARE	20 A	1	0.00	0.00					1	20 A	SPARE	50
51	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	52
53	SPARE	20 A	1					0.00	0.00	1	20 A	SPARE	54
55	SPARE	20 A	1	0.00	0.00					1	20 A	SPARE	56
57	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	58
59	SPARE	20 A	1					0.00	0.00	2	20 A	SPARE	60
61	SPARE	20 A	1	0.00	0.00					--	--	--	62
63													64
65													66
67													68
69													70
71													72
73													74
75													76
77													78
79													80
81													82
83													84
			Phase Load:	12.15 kVA		12.91 kVA		14.90 kVA					
			Phase...	101.3 A		108.6 A		125.1 A					
			Total Load:	39.96 kVA									
			Total Amps:	110.92 A									

Notes:
*PROVIDE GFCI CIRCUIT BREAKER

Branch Panel: GP1D

Location:	ELECT. CLOSET 1106	**Volts:**	120/208 Wye	**A.I.C. Rating:**	10 KAIC
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	HOIST POWER - 1ST ELECTRIC	15 A	3	0.17	0.00					3	15 A	SPARE	2
3	--	--	--			0.17	0.00			--	--	--	4
5	--	--	--					0.17	0.00	--	--	--	6
7	HOIST POWER - 3RD ELECTRIC	15 A	3	0.17	0.17					3	15 A	HOIST POWER - FOH ELECTRIC	8
9	--	--	--			0.17	0.17			--	--	--	10
11	--	--	--					0.17	0.17	--	--	--	12
13	RECEPTACLE BAND STORAGE 1111	20 A	1	0.18	0.90					1	20 A	RECEPTACLES BAND 1109	14
15	RECEPTACLES BAND 1109	20 A	1			0.90	0.90			1	20 A	RECEPTACLES BAND 1109	16
17	RECEPTACLE PRACTICE ROOM 1110	20 A	1					0.18	0.54	1	20 A	RECEPTACLE STAGE STORAGE 1113	18
19	RECEPTACLE CORRIDOR 1129	20 A	1	0.36	0.36					1	20 A	LOCAL SOUND SYSTEM PWR RM 1113	20
21							0.18			1	20 A	RECEPTACLE TOILET 1105	22
23	RECEPTACLE TOILET 1104	20 A	1					0.18	0.18	1	20 A	RECEPTACLE 1103	24
25	PROJECTION SCREEN PWR STAGE...	20 A	1	0.50	1.80					1	20 A	RECEPTACLES/FL BOX STAGE 1112	26
27	THEATR. LIGHT CONT. PWER RM 1113	20 A	1			0.36	0.90			1	20 A	RECEPTACLES H/L AUDITORIUM 1127	28
29	RECEPTACLES BOH AUDITORIUM 1127	20 A	1					0.72	0.90	1	20 A	RECEPTACLES H/R AUDITORIUM 1127	30
31	RECEPTS. AUDIO/LIGHT CTRL DESK	20 A	1	0.72	1.08					1	20 A	RECEPTS. AUDIO/LIGHT CTRL DESK	32
33	RECEPTS. CORR. 1124, 1131, 1132	20 A	1			0.54	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	0.72					1	20 A	RECEPTACLES, STAGE SUPPORT	38
39	RECEPT. ELECT. CLOSET 1106	20 A	1			0.18	0.54			1	20 A	RECEPTACLES STAGE 1112	40
41	THEATR. RIGGING HOIST CTRL PANEL	20 A	1					0.50	0.18	1	20 A	PROJECTOR IN ROOM 1127	42
43	SPARE	20 A	1	0.00	1.50					1	20 A	DOA-5 LIGHTS AND RECEPTACLE	44
45	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	46
47	SPARE	20 A	1					0.00	0.00	1	20 A	SPARE	48
49	SPARE	20 A	1	0.00	0.00					1	20 A	SPARE	50
51	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	52
53	SPARE	20 A	1					0.00	0.00	1	20 A	SPARE	54
55	SPARE	20 A	1	0.00	0.00					1	20 A	SPARE	56
57	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	58
59	SPARE	20 A	1					0.00	0.00	1	20 A	SPARE	60
61	SPARE	20 A	1	0.00	0.00					2	20 A	SPARE	62
63	SPARE	20 A	1			0.00	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:	8.62 kVA		5.00 kVA		3.88 kVA					
			Phase...	73.3 A		43.1 A		32.3 A					
			Total Load:	17.50 kVA									
			Total Amps:	48.58 A									

Notes:
*PROVIDE GFCI CIRCUIT BREAKER

Branch Panel: GP1E

Location:	MECHANICAL 1048	**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	WHEEL ART 1041	20 A	1	0.18	0.18					1	20 A	WHEEL ART 1041	2
3	WHEEL ART 1041	20 A	1			0.18	0.18			1	20 A	WHEEL ART 1041	4
5	CORD REELS ART 1041	20 A	1					0.54	1.26	1	20 A	RECEPTACLES ART 1041	6
7	RECEPTACLES ART 1041	20 A	1	1.08	3.67					3	50 A	KILN	8
9	ART 1042, KILN 1043	20 A	1			0.90	3.67			--	--	--	10
11	RECEPTACLES STORAGE 10444, 1045	20 A	1					0.54	3.67	--	--	--	12
13	*SPARE	20 A	1	0.00	0.00					1	20 A	*SPARE	14
15	*SPARE	20 A	1			0.00	0.00			1	20 A	*SPARE	16
17	RECEPT. MECHANICAL 1048	20 A	1					0.18	0.18	1	20 A	EXTERIOR RECEPTACLE	18
19	Power	20 A	1	0.18	1.50					1	20 A	DOA-1 LIGHTS AND RECEPTACLES	20
21	SERVICE RECEPTACLE ROOF E	20 A	1			0.18	1.50			1	20 A	DOA-2 LIGHTS AND RECEPTACLES	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	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	28
29	SPARE	20 A	1					0.00	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
43	SPARE	20 A	1	0.00	0.00					1	20 A	SPARE	44
45	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	46
47	SPARE	20 A	1					0.00	0.00	1	20 A	SPARE	48
49	SPARE	20 A	1	0.00	0.00					1	20 A	SPARE	50
51	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	52
53	SPARE	20 A	1					0.00	0.00	1	20 A	SPARE	54
55	SPARE	20 A	1	0.00	0.00					1	20 A	SPARE	56
57	SPARE	20 A	1			0.00	0.00			1	20 A	SPARE	58
59	SPARE	20 A	1					0.00	0.00	1	20 A	SPARE	60
61	SPARE	20 A	1	0.00	0.00					2	20 A	SPARE	62
63	SPARE	20 A	1			0.00	0.00			--	--	--	64
65	RECEPTACLE CUSTODIAL 1049	20 A	1					0.18	0.72	1	20 A	RECEPTACLES CORRIDOR 1050	66
67	RECEPTACLES WOOD SHOP EXT	20 A	1	0.18	0.72					1	20 A	RECEPTACLES ART 1041	68
69													70
71													72
73													74
75													76
77													78
79													80
81													82
83													84
			Phase Load:	7.69 kVA		6.61 kVA		7.27 kVA					
			Phase...	64.9 A		55.1 A		61.4 A					
			Total Load:	21.56 kVA									
			Total Amps:	59.84 A									

Notes:
*PROVIDE GFCI CIRCUIT BREAKER

Branch Panel: GP1F

Location:	ELECT. CLOSET 1029	**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:**	400 A
Enclosure:	Type 1			**MCB Rating / MLO:**	400A MCB

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LIGHTS - ELEVATOR PIT	20 A	1	0.00	0.00					1	20 A	Other	2
3	*WATER COOLER TOILET 1026, 1027	20 A	1			0.36	0.50			1	20 A	GCMS EXTERIOR SIGN	4
5	COPIER MAIL 1004	20 A	1					0.36	0.90	1	20 A	RECEPTACLE CONFERENCE 1019	6
7	DC-1 SPARK DETECTION CONTROL	20 A	1	0.12	0.90					1	20 A	RECEPTACLE ADMIN ID 1003	8
9	RECEPTACLES CHORAL 1122	20 A	1			1.26	1.40			1	20 A	RECEPTACLES TOILET 1025,...	10
11	RECEPTACLE ADMIN ID 1003	20 A	1					1.08	0.18	1	20 A	SERVICE RECEPTACLE ROOF E	12
13	OVERHEAD DOOR WOOD SHOP 1039	20 A	1	6.66	0.18					1	20 A	SERVICE RECEPTACLE ROOF D	14
15	HEAT TRACE, WOOD SHOP 1039	20 A	2			1.66	9.95			3	100 A	GP-WS	16
17	--	--	--					1.66	6.60	--	--	--	18
19	RECEPTACLE ELEVATOR PIT	20 A	1	0.18	9.88					--	--	--	20
21	GP-CL	200 A	3			16.26	0.18			1	20 A	SERVICE RECEPTACLE ROOF D	22
23	--	--	--					21.29	0.18	1	20 A	RECEPTACLE EXTERIOR AREA E	24
25	--	--	--	13.83	0.18					1	20 A	COPIER FACULTY 1033	26
27	RECEPTACLE EXT DUST COLLECTOR	20 A	1			0.18	0.18			1	20 A	EXT. RECEPT. ENTRY VEST 1000	28
29	RECEPT ELECT. CLOSET 1029	20 A	1					0.18	0.18	1	20 A	*FRIDGE WORKROOM 1006	30
31	*FRIDGE ISOLATION 1024	20 A	1	0.18	0.54					1	20 A	CORD REELS ROBOTICS 1038	32
33	*FRIDGE PREP 1022	20 A	1			0.18	0.54			1	20 A	CORD REELS ROBOTICS 1038	34
35	RECEPTACLES LAC 1030, STOR. 1037	20 A	1					0.54	0.72	1	20 A	RECEPTACLES TOILET 1026, 1027	36
37	COMPUTERS PASSAGE 1011	20 A	1	0.72	0.90					1	20 A	RECEPTACLES TLT 1031/32, STOR....	38
39	RECEPTACLES CONCOURSE 1001	20 A	1			0.72	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	0.90					1	20 A	RECEPTACLES COUNSELOR 1015	44
45	RECEPTACLES WAITING 1002	20 A	1			0.90	0.90			1	20 A	RECEPTACLES REST 1023	46
47	RECEPTACLES WORKROOM 1006	20 A	1					0.90	0.90	1	20 A	RECEPTACLES TEEN TALK 1016	48
49	RECEPTACLES - INTERVENTION 1008	20 A	1	0.90	1.08					1	20 A	RECEPTACLES CHORAL 1122	50
51	RECEPTACLES COUNSELOR 1013	20 A	1			0.90	1.08			1	20 A	RECEPTACLES ORCHESTRA 1118	52
53	RECEPTACLES COUNSELOR 1014	20 A	1					0.90	1.08	1	20 A	RECEPTACLES PRINCIPAL 1007	54
55	RECEPTACLE CONFERENCE 1019	20 A	1	1.08	1.26					1	20 A	RECEPTACLES FACULTY 1033	56
57	RECEPTACLES 1020, 1021, 1022	20 A	1			1.08	1.26			1	20 A	RECEPTACLES FACULTY 1033	58
59	RECEPTACLES BEHAVIOR 1009	20 A	1					1.08	1.26	1	20 A	RECEPTACLES ORCHESTRA 1118	60
61	RECEPTACLE CHORAL STORAGE 1123	20 A	1	0.18	1.62					1	20 A	RECEPTACLES RECEPTION 1010a	62
63	DC-1 NO-RETURN VALVE CONTROL	20 A	1			0.12	1.62			1	20 A	RECEPTACLES ROBOTICS 1038	64
65	RECEPTACLES ROBOTICS 1038	20 A	1					1.62	--	1	--	SPACE	66
67	SPACE	--	1	--	--					1	--	SPACE	68
69	SPACE	--	1			--	--			1	--	SPACE	70
71	SPACE	--	1					--	--	1	--	SPACE	72
73	SPACE	--	1	--	--					1	--	SPACE	74
75	SPACE	--	1			--	--			1	--	SPACE	76
77	SPACE	--	1					--	--	1	--	SPACE	78
79	SPACE	--	1	--	--					1	--	SPACE	80
81	SPACE	--	1			--	--			1	--	SPACE	82
83	SPACE	--	1					--	--	1	--	SPACE	84
			Phase Load:	41.28 kVA		41.23 kVA		41.62 kVA					
			Phase...	344.1 A		343.6 A		346.9 A					
			Total Load:	124.13 kVA									
			Total Amps:	344.55 A									

Notes:
*PROVIDE GFCI CIRCUIT BREAKER

Branch Panel: GDP

Location:	MAIN ELECTRICAL ROO...	**Volts:**	480/277 Wye	**A.I.C. Rating:**	65k AIC
Supply From:	MSB-1	**Phases:**	3	**Bus Material:**	
Mounting:	Surface	**Wires:**	4	**Bus Rating:**	1200 A
Enclosure:	Type 1			**MCB Rating / MLO:**	1200A MCB

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	GDPC	400 A	3	35.89	68.58					3	600 A	GDPE	2
3	--	--	--			31.77	67.99			--	--	--	4
5	--	--	--					30.48	68.13	--	--	--	6
7	T-GPA/B	150 A	3	33.04	0.00					3	150 A	SPARE	8
9	--	--	--			26.94	0.00			--	--	--	10
11	--	--	--					26.63	0.00	--	--	--	12
13	SPARE	150 A	3	0.00	0.00					3	150 A	SPARE	14
15	--	--	--			0.00	0.00			--	--	--	16
17	--	--	--					0.00	0.00	--	--	--	18
			Phase Load:	137.51 kVA		126.69 kVA		125.24 kVA					
			Phase...	497.2 A		458.2 A		452.1 A					
			Total Load:	389.44 kVA									
			Total Amps:	468.43 A									

Notes:

SLAM
The S/L/A/M Collaborative

80 Glastonbury Boulevard
Glastonbury, CT 06033-4410
Phone: 860 657.8077

www.**slamcoll**.com

Drawn
KCM
Checked
SJM

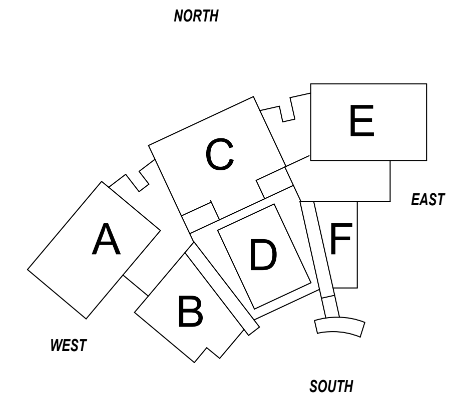
CES
Consulting Engineering Services, Inc.
811 Middle Street
Middletown CT 06457
860.632.1682
ceseng.com
CES #2023095.00

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
4	11/06/2024	ADDENDUM NO. 6
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL PANEL SCHEDULES

Date
07/08/2024
Scale

Proj. Number
22367.00

Drawing Number
E602

Autodesk Docs://22367.00 - Greenwich Central Middle School/R22-2023095-MEP Central - Greenwich Central Middle School.rvt

11/7/2024 2:32:34 PM

ELECTRICAL RISER DIAGRAM KEY NOTES

E1 PROVIDE CONCRETE PAD AND GROUNDING SYSTEM FOR UTILITY TRANSFORMER, PER UTILITY COMPANY REQUIREMENTS. PROVIDE PER ELECTRICAL DETAILS.

E2 PROVIDE THE FOLLOWING GENERATOR AUXILIARY CONNECTIONS ROUTED UNDERGROUND:
- **20A-1P** CIRCUIT FOR BATTERY CHARGER, 2#12+1#12G, 3/4"C. TO BREAKER IN **PANEL OSP1A**
- **30A-2P** CIRCUIT FOR BLOCK HEATER, 2#10+1#10G, 3/4"C. TO BREAKER IN **PANEL OSP1A**
- 1"C. WITH WIRING PER MFR. REQUIREMENTS TO **ATS-1** FOR START CIRCUIT.
- 1"C. WITH WIRING PER MFR. REQUIREMENTS TO **ATS-2** FOR START CIRCUIT - THIS WIRING SHALL TRANSITION TO 2-HOUR RATED M.I. CABLE WHEN ABOVE GROUND INSIDE THE BUILDING, IF ROUTED THROUGH A SPACE OTHER THAN THE EMERGENCY ATS ELECTRICAL ROOM.
- 3 1"C. WITH WIRING PER MFR. REQUIREMENTS TO ATS-3 (FIRE PUMP) FOR START CIRCUIT - THIS WIRING SHALL TRANSITION TO 2-HOUR RATED M.I. CABLE WHEN ABOVE GROUND INSIDE THE BUILDING, IF ROUTED THROUGH A SPACE OTHER THAN THE FIRE PUMP ROOM.
- 1"C. WITH WIRING PER MFR. REQUIREMENTS TO GENERATOR ANNUNCIATOR PANEL, LOCATED PER ELECTRICAL FLOOR PLANS.
- 3 1"C. WITH WIRING PER MFR. REQUIREMENTS TO REMOTE EPO PUSHBUTTON, LOCATED PER ELECTRICAL FLOOR PLANS.
- PROVIDE GENERATOR MODULE FOR ENGINE START MONITORING SYSTEM AT GENERATOR FOR ATS-2 AND ATS-3 FIRE PUMP. PROVIDE POWER FROM GENERATOR BATTERY AND CONNECT ONE ALARM OUTPUT TO GENERATOR ANNUNCIATOR ALARM CIRCUIT. CONNECT SECOND ALARM OUTPUT TO FIRE ALARM SYSTEM MONITORING MODULE IN BUILDING.

E3 PROVIDE GROUNDING AS A SEPARATELY DERIVED SYSTEM IN ACCORDANCE WITH NEC. PROVIDE GROUNDING ELECTRODES AT GENERATOR PER NEC.

E4 CONCRETE HOUSEKEEPING PAD BY DIVISION 03 CONTRACTOR. COORDINATE ALL REQUIREMENTS WITH DIVISION 03 CONTRACTOR.

E5 PV DISCONNECT SWITCH AND CT/PT METERING CABINET LOCATION

E6 PV COLLECTOR PANEL LOCATION

E7 LOCATE ON OPPOSITE SIDE OF BUS AS MAIN CIRCUIT BREAKER, PER NEC 690 REQUIREMENTS.

E8 PROVIDE C.T.-RATED UTILITY METER SOCKET PER UTILITY COMPANY REQUIRMENTS. LOCATION SHOWN ON PLANS. PROVIDE 1-1/2"C. WITH NYLON PULLSTRING FROM METER TO SWITCHBOARD C.T. CABINET. COORDINATE METER AND C.T. CABINET PRODUCT AND INSTALLATION REQUIREMENTS WITH UTILITY COMPANY PRIOR TO INSTALLATION.

E9 PROVIDE SIGNAGE AT THE SWITCHBOARD PER SPECIFICATIONS AND NEC FOR ARC FLASH AND FAULT CURRENT INDICATION. IN ADDITION, PROVIDE PERMANENT SIGNAGE INDICATING OTHER SOURCES OF POWER, WHERE APPLICABLE.

E10 TRANSFORMERS MOUNTED REMOTELY FROM PANELBOARDS BEING SERVED SHALL BE PROVIDED WITH SECONDARY OVERCURRENT PROTECTION AT THE TRANSFORMER

ELECTRICAL SUBMETER SCHEDULE

DESIGNATION	VOLTAGE	CURRENT SENSOR RATING	ITEMS METERED	ENCLOSURE
EM1	480/277 3PH	1200A	RECEPTACLES (GDP)	SEE NOTE #1
EM2	480/277 3PH	200A	LIGHTING (LDP)	
EM3	480/277 3PH	1200A	MECHANICAL (MDP)	
EM4	480/277 3PH	200A	KITCHEN (KP)	
EM5	480/277 3PH	100A	EMERG. LIGHTING (ELDP)	
EM6	480/277 3PH	400A	STANDBY (OSDP)	
EM7	480/277 3PH	450A	HVAC EQUIPMENT	
EM8	480/277 3PH	450A	HVAC EQUIPMENT	
EM9	480/277 3PH	450A	SITE	
EM10	480/277 3PH	450A	EV CHARGING	

NOTE:

1. SATEC #BFM-II BRANCH FEEDER MONITOR, WALL MOUNTED IN MAIN ELECTRICAL ROOM, WITH THE FOLLOWING CHARACTERISTICS:
   - A. 6 CHANNEL EXPANSION MODULE.
   - B. BUILT IN RS-485 COMMUNICATIONS CAPABILITY.
   - C. MONITORING/DISPLAY CAPABILITIES FOR KWH, POWER FACTOR PER PHASE, KW DEMAND, REAL TIME LOAD (KW), VOLTS PER PHASE, DATE & TIME, ID CODES FOR COMMUNICATION.
   - D. 0 TO 2 VOLT OUTPUT SPLIT CORE HIGH ACCURACY CURRENT SENSORS (HACS).

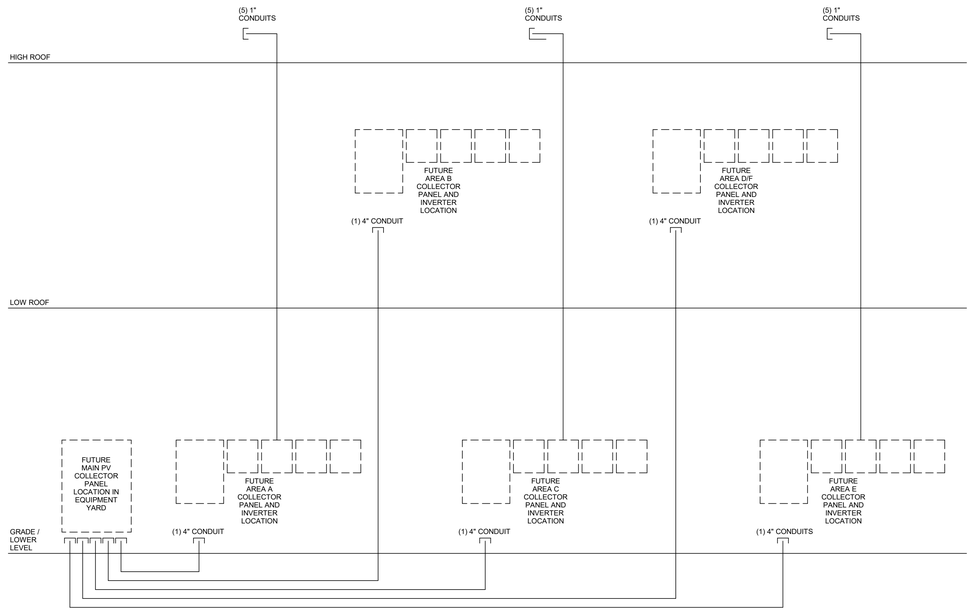
DRY TYPE TRANSFORMER SCHEDULE

COPPER CONDUCTORS

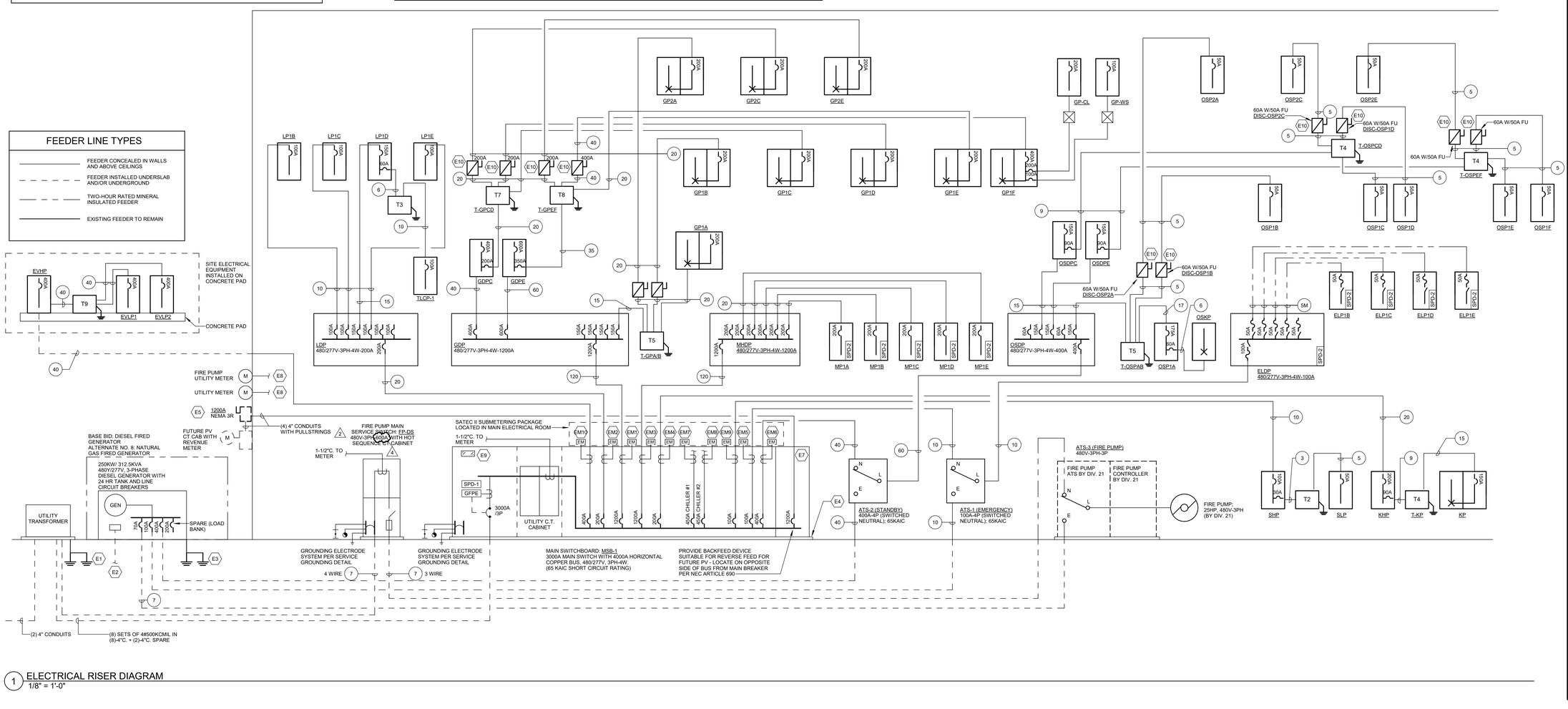
SIZE	KVA	PRIMARY AMPS	SECONDARY AMPS	480 VOLT OVERCURRENT	208 VOLT OVERCURRENT (NOTE 4)	480 VOLT FEEDER	208/120 VOLT FEEDER	GEC (NOTE 5)	SSBJ (NOTE 6)
T1	9	11	25	20A, 3P	30A, 3P	3#12 & 1#12G - 3/4"C	4#10 - 3/4"C	1#8 - 3/4"C	1#8
T2	15	18	42	30A, 3P	50A, 3P	3#10 & 1#10G - 3/4"C	4#8 - 1"C	1#8 - 3/4"C	1#8
T3	30	36	83	60A, 3P	100A, 3P	3#6 & 1#10G - 1"C	4#3 - 1 1/4"C	1#6 - 3/4"C	1#6
T4	45	54	125	90A, 3P	150A, 3P	3#3 & 1#8G - 1 1/4"C	4#1/0 - 2"C	1#6 - 3/4"C	1#6
T5	75	90	208	150A, 3P	250A, 3P	3#1/0 & 1#6G - 2"C	4#250 KCMIL - 3"C	1#2 - 3/4"C	1#2
T6	112.5	135	313	200A, 3P	400A, 3P	3#3/0 & 1#6G - 2"C	4#600 KCMIL - 4"C	1#1/0 - 3/4"C	1#1/0
T7	150	181	417	300A, 3P	500A, 3P	3#350 KCMIL & 1#4G - 3"C	(2) SETS OF: 4#250 KCMIL - (2) 3"C	1#1/0 - 3/4"C	1#1/0
T8	225	270	625	400A, 3P	800A, 3P	3#600 KCMIL & 1#3G - 4"C	(2) SETS OF: 4#600 KCMIL - (2) 4"C	1#3/0 - 3/4"C	1#3/0
T9	300	361	834	600A, 3P	1000A, 3P	(2) SETS OF: 3#350 KCMIL & 1#1G - (2) 3"C	(3) SETS OF: 4#500 KCMIL - (3) 4"C	1#3/0 - 3/4"C	1#3/0
T10	500	600	1400	1000A, 3P	1600A, 3P	(3) SETS OF: 3#500 KCMIL & 1#2/0G - (3) 4"C	4#600 KCMIL - (4) 4"C	1#300 KCMIL- 1"C	1#300 KCMIL

TRANSFORMER NOTES:

1. BOND NEUTRAL TRANSFORMER SECONDARY TO THE TRANSFORMER GROUND BAR AND CASE WITH SYSTEM BONDING JUMPER.
2. USE NEAREST AVAILABLE EFFECTIVELY GROUNDED WATER PIPE, STRUCTURAL STEEL AND/OR DRIVEN GROUND ROD IN ACCORDANCE WITH N.E.C. 250-81 AND 250-83 FOR THE SEPARATELY DERIVED SYSTEM GROUNDING ELECTRODE.
3. ALL CONDUCTOR SIZES ARE FOR COPPER CONDUCTORS. N.E.C. TABLE 310.15(B)(16).
4. SECONDARY OVERCURRENT PROTECTION SHALL BE LOCATED WITH IN (10) FEET OF THE TRANSFORMER SECONDARY TERMINALS EITHER IN A PANELBOARD (MAIN BREAKER), AN INDIVIDUALLY MOUNTED CIRCUIT BREAKER, OR A FUSIBLE DISCONNECT SWITCH.
5. GROUNDING ELECTRODE CONDUCTOR TO BE RUN FROM GROUND BAR IN TRANSFORMER TO THE GROUNDING ELECTRODE FOR THE SEPARATELY DERIVED SYSTEM.
6. SYSTEM BONDING JUMPER/SUPPLY SIDE BONDING JUMPER TO BE INSTALLED BETWEEN THE TRANSFORMER GROUND BAR AND CASE AND BETWEEN THE GROUND BAR IN THE FIRST SUPPLY SIDE DISCONNECTING MEANS (PANELBOARD, ENCLOSED CIRCUIT BREAKER OR FUSIBLE DISCONNECT SWITCH) AND TRANSFORMER GROUND BAR. INSTALL MULTIPLE SUPPLY SIDE BONDING JUMPERS OF THE SIZE LISTED, (1) IN EACH FEEDER RACEWAY.
7. 600 KCMIL CONDUCTORS SHALL BE PROVIDED WITH MAC ADAPTERS AS REQUIRED TO COORDINATE WITH BREAKER LUG SIZES.



2 FUTURE PV SYSTEM CONDUIT RISER DIAGRAM
1/8" = 1'-0"



1 ELECTRICAL RISER DIAGRAM
1/8" = 1'-0"

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
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

NORTH / EAST / WEST / SOUTH

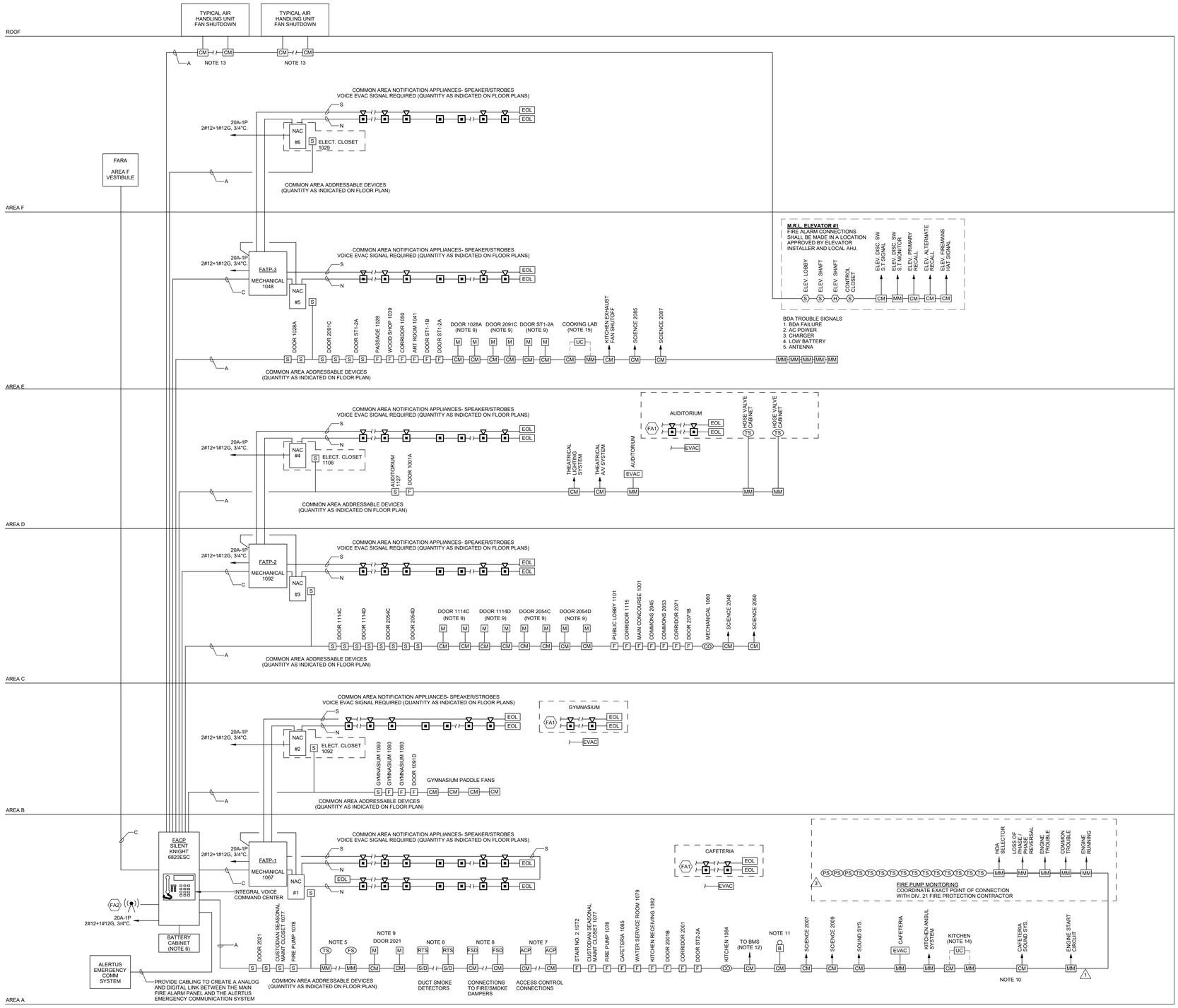
KEYPLAN

Number	Date	Issued For
4	11/06/2024	ADDENDUM NO. 6
3	10/30/2024	ADDENDUM NO. 4
2	10/23/2024	ADDENDUM NO. 3
	09/30/2024	BIDDING/PERMIT
	07/08/2024	PHASE 2

ELECTRICAL RISER DIAGRAM

Date: 07/08/2024
Scale: NTS
Proj. Number: 22367.00
Drawing Number: E700

Autodesk Docs://22367.00 - Greenwich Central Middle School/R22-2023095-MEP Central - Greenwich Central Middle School.rvt
11/7/2024 4:17:12 PM



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 PRIMARY AND SECONDARY COMMUNICATION TO CENTRAL STATION 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.

SLAM
The S/L/A/M Collaborative
80 Glastonbury Boulevard
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

NORTH
EAST
SOUTH
WEST

KEYPLAN

Number	Date	Issued For
4	11/06/2024	ADDENDUM NO. 6
3	10/30/2024	ADDENDUM NO. 4
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

Autodesk Docs://22367.00 - Greenwich Central Middle School/R22-202305-MEP Central - Greenwich Central Middle School.rvt
11/6/2024 10:55:20 AM