



TOWN OF PUTNAM

TOWN HALL
200 SCHOOL STREET
PUTNAM, CONNECTICUT 06260

Inland Wetland Commission Special Meeting
Hybrid Meeting
November 30, 2022 6:00 P.M.
Municipal Complex Room 109 First Floor

Agenda:

1. Call to Order & Roll Call:

Continue Public Hearing on Application 2022—09 Putnam River Road, LLC & 285 River Road, LLC request for an 11 lot Subdivision and Gravel Excavation for properties located at 357 River Road, Town Assessors Map 043, Lot 010, Zoned Agricultural-2 and 285 River Road, Town Assessors Map 043 Lot 005, Zoned Agricultural-2. Development will include the excavation of gravel to create two permanent ponds. VOTE REQUIRED

Regular Meeting:

1. Correspondence:

2. Public Participation:

3. Unfinished Business: - (Review/Discussion/Action)

A. Application 2022-09 285 River Road LLC – Putnam River Road LLC - 285 River Road and 357 River Road– 11 Lot Subdivision and Gravel Excavation

4. New Business: - (Review/Discussion/Action)

If the application is complete the Commission shall decide if a public hearing and/or site walk Should be held on each application and continue further action until the next month's meeting. The commission may also delegate to its duly authorized agent.

A. Application - 257 Heritage Road - Nicholas Barry (applicant) Roland Marois (owner) Residential construction.

5. Other Business: POSSIBLE VOTE REQUIRED

A. Agent Report

6. Comments By Commissioners:

7. Adjournment.

8. Comments By Commissioners:

9. Adjournment.

Topic: Putnam Wetlands Zoom Meeting
Time: Nov 30, 2022 6:00 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us06web.zoom.us/j/84894819825?pwd=NDlnbTRVa1luN2NLNjMzb0RHRGpUZz09>

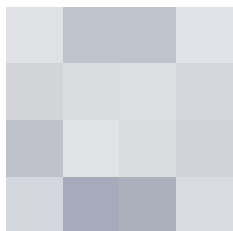
Meeting ID: 848 9481 9825

Passcode: JB0SRx

+1 929 205 6099 US (New York)

Meeting ID: 848 9481 9825

Phone Passcode: 758740



TOWN OF PUTNAM

TOWN HALL
200 SCHOOL STREET
PUTNAM, CONNECTICUT 06260

Inland Wetland Commission Meeting Minutes
Hybrid Meeting
November 9, 2022 7:00 P.M.
Municipal Complex Room 201 Second Floor

Agenda:

Present: Adam Paquin-Chairman, Walter Irwin, Mike Bogdanski, Cynthia Dunne, Shannon O'Shea, acting alternate

Absent: Theodore Altmeier, Christine Maine (Alternate)

Opened public hearing on Application 2022—09 Putnam River Road, LLC & 285 River Road, LLC request for an 11 lot Subdivision for properties located at 357 River Road, Town Assessors Map 043, Lot 010, Zoned Agricultural-2 and 285 River Road, Town Assessors Map 043 Lot 005, Zoned Agricultural-2. Development will include the excavation of gravel to create two permanent ponds.

Attorney Andrew McCoy was present. Attorney Harry Heller, David Held, Provost & Rovero and Wayne Bugden, Geologist reviewed the plans page by page with the Commission members. Area residents in attendance totaled 26. Peter McMorris 341 River Road questioned the ability of the groundwater flow reaching carpenter brook as shown on the plan and why the test borings on wells 4,5, & 6 were taken during the drought back in February of 2021 versus when it is wet. He questioned if the applicant had an alternative plan that would not create any harm. He read into the record greenways and how they are referenced in the 2005 Plan of Conservation and Development. It was of his opinion that the subdivision plan does not meet the 2005 Plan of Conservation and Development. Donna McMorris 341 River Road spoke in strong opposition stating there is all types of activity presently taking place in her neighborhood and does not want the subdivision questioning how the wetlands are being protected. She explained how it is wet out there in every season. Kenneth Haggerty of 363 Modock Road abuts the proposed lot 7 and stated that it is never dry.

Motion by Shannon O'Shea to continue the public hearing, second by Walter Irwin. ALL WERE IN FAVOR.

Motion by Walter Irwin to hold a Special Meeting on November 30, 2022 at 6:00 P.M. to continue the public hearing, second by Shannon O'Shea. ALL WERE FAVOR.

Regular Meeting:

Review minutes of the October 12, 2022 meeting.

Motion by Mike Bogdanski to accept the minutes, second by Cynthia Dunne. ALL WERE IN FAVOR.

Correspondence: None

Public Participation: No additional

Unfinished Business:

Application 2022-11 Vachon Putnam, LLC – 139 Pomfret St. – Dealership Expansion, Parking Modifications, Stormwater Modifications

Norm Thibeault of Killingly Engineering briefly went over the amended plan showing the extension of the basin on the westerly side of the vehicle display area where the discharge will be treated.

Motion by Mike Bogdanski to approve, second by Walter Irwin. ALL WERE IN FAVOR.

New Business:

Application # 2022-09 285 River Road LLC – Putnam River Road LLC & 285 River Road LLC – 11 Lot
Subdivision Public hearing continued to November 30, 2022
at 6:00 P.M. in Room 109 at the Municipal Complex
Public hearing continued to November 30, 2022 at 6:00 P.M.

Applications Received After Agenda was Published: - None

Other Business:

Agent Report:

Bruce Fitzback updated the Commission regarding Dunkin Donuts. New bridge is functional, guard rails will be installed as well as new fencing.

Thai Restaurant has a stop work order from both the Town and CT. D.O.T.

Comments By Commissioners: None

Motion by Mike Bogdanski to adjourn, second by Walter Irwin. ALL WERE IN FAVOR

Respectfully submitted by Brenda Roy.

Please note these minutes have not been accepted by the Commission and will be placed on their next meeting agenda.



INLAND WETLAND COMMISSION

APPENDIX A

APPLICATION FOR PERMIT

This application is for the use of inland wetlands and water courses.

The meetings are held on the second Wednesday of every month at 7:00pm in the Town Hall. If an on-site inspection is canceled due to inclement weather, the applicant is asked to call the office at 963-6803 30 minutes before the scheduled inspection to see if or when the inspection will be held.

Name of Applicant Putnam River Road, L.L.C. and 285 River Road, LLC

Applicant's Address P.O. Box 271, Putnam, CT 06260

Phone # 860-234-0907

Owner of Land Putnam River Road, L.L.C. and 285 River Road, LLC

Owner's Address P.O. Box 271, Putnam, CT 06260

Location and description of proposed activity: 285 River Road and 357 River Road

12 lot residential subdivision. Development will include the excavation of gravel to create two permanent ponds.

Activity & Purpose Code

Please CHECK one in each column that best describes the activity proposed.

<u>Code</u>	<u>Activity Type</u>	<u>Code</u>	<u>Activity Purpose</u>
☐	1 Filling	☐	A Residential Improvement by homeowner
☒	2 Excavation	☒	B New residential development - single family
☐	3 Land Clearing	☐	C New residential development - multi- family/condo
☐	4 Stream Channel	☐	D Commercial/Industrial Uses
☐	5 Stream Stabilization	☐	E Municipal Improvements
☐	6 Stream Clearance	☐	F Utility Company Improvements
☐	7 Culverting	☐	G Agriculture, Forestry or Conservation
☐	8 Und. Grd. Util.	☐	H Wetland Creation/Restoration
☐	9 Roadway Construction	☐	I Storm Water/Flood Control
☐	10 Drainage Improvements	☐	J Erosion/Sediment Control
☐	11 Pond Dredge/Dam Construction	☐	K Recreation/Boating/Navigation
☐	12 Activity Buffer/Set Back Area	☐	L Routine Maintenance
☐	13 Other: Please describe: _____		

INLAND WETLAND COMMISSION

APPENDIX A *Continued*

Project Name (if applicable) _____

Estimate of Linear Footage affecting Wetlands _____

0

Affected number of acres in which Wetlands are part of
the impacted area for Multi-Family, Condos and
Commercial Development _____

N/A

TO BE COMPLETED BY THE COMMISSION

Application Number _____

2022-09

Date of Receipt _____

7.12.2022 CK# 16183

Application Approved (date) _____

Conditions of approval if applicable _____

Application Denied (date) _____

Reason(s) for Denial _____

Signature of Chairman or Secretary of Commission _____

Date _____

INLAND WETLAND COMMISSION

APPENDIX A *Continued*

Application Procedure

1. Applicant will have a map showing the property boundaries, any wetlands on the property, proposed buildings, septic area, drainage if applicable and the dimension between these areas in scale 1" - 200' or less
2. Applicant must provide an approximate estimate of the linear footage of the wetlands that are affected by said proposal. This is for multi-family, condominiums or commercial development. Contact with the Zoning Official may clarify the nature of your project
3. Applicant must provide an approximate estimate of the number of acres that are affected by said proposal dealing with multi-family, condominiums and commercial development in which wetlands are part of that impacted area within the watershed.
4. Applicant will supply a copy of the soil scientist report with the application to the Wetlands Commission to be reviewed at the meeting by the Commission.
5. Applicant will have the soil scientist number the wetland flags and record the numbers of the flags on the site plan according to their location in the field. The location on the site map must match the field location.
6. If the applicant's estimates are not accurate, payment of the correct amount must be made before the Wetlands final approval of the application.
7. And any other information deemed necessary by the Commission.

Fee Schedule

1.	Permitted and non-regulated	\$40.00
2.	One lot regulated	\$40.00
3.	Regulated Area	
	Two (2) - Ten (10) lots	\$100.00
	Ten (10) - Twenty (20) lots	\$200.00
	Over Twenty (20+) lots	\$300.00
4.	Multi-Family/Condominium Regulated area	
	Zero (0) to Five (5) Acres	\$50.00
	Per linear foot of wetlands additional	\$0.35
	Over Five (5) acres	\$100.00
	Per linear foot of wetlands additional	\$0.35
5.	Commercial	
	Zero (0) to Five (5) Acres	\$100.00
	Per linear foot of wetlands additional	\$0.50
	Over Five (5) acres	\$300.00
	Per linear foot of wetlands additional	\$0.50

All applications must be submitted one week prior to the regularly scheduled monthly meeting.



Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete - print clearly - and mail this form in accordance with the instructions on pages 2 and 3 to:
Wetlands Management Section, Inland Water Resources Division, CT DEEP, 79 Elm Street – 3rd Floor, Hartford, CT 06106

PART I: To Be Completed By the Municipal Inland Wetlands Agency Only

- DATE ACTION WAS TAKEN (enter one year and month): Year _____ Month _____
- ACTION TAKEN (enter one code letter): _____
- WAS A PUBLIC HEARING HELD (check one)? Yes _____ No _____
- NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
(type name) _____ (signature) _____

PART II: To Be Completed By the Municipal Inland Wetlands Agency or the Applicant

- TOWN IN WHICH THE ACTION IS OCCURRING (type name): Purman
Does this project cross municipal boundaries (check one)? Yes _____ No X
If Yes, list the other town(s) in which the action is occurring (type name(s)): _____
- LOCATION (see directions for website information): USGS Quad Map Name: Purman or Quad Number: 28
Subregional Drainage Basin Number: 3700
- NAME OF APPLICANT, VIOLATOR OR PETITIONER (type name): Purman River Road, L.L.C. & 285 River Road, LLC
- NAME & ADDRESS/LOCATION OF PROJECT SITE (type information): 285 River Road, 357 River Road
Briefly describe the action/project/activity (check and type information): Temporary _____ Permanent X
Description: 12 lot residential subdivision and gravel/pond excavation
- ACTIVITY PURPOSE CODE (enter one code letter): B
- ACTIVITY TYPE CODE(S) (enter up to four code numbers): 2, 12, 14, _____
- WETLAND / WATERCOURSE AREA ALTERED (type in acres or linear feet as indicated):
Wetlands: 0.034 acres Open Water Body: 0 acres Stream: 60± linear feet
- UPLAND AREA ALTERED (type in acres as indicated): 15± acres
- AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (type in acres as indicated): 4± acres

DATE RECEIVED:

PART III: To Be Completed By the DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO

16183

PROVOST & ROVERO, INC.
ENGINEERING SURVEYING SITE PLANNING
57 E. MAIN ST. P.O. BOX 191 PLAINFIELD, CT 06374
(860) 230-0856 FAX (860) 230-0860

Jewett City Savings Bank
Jewett City, CT 06351

51-7433/2111



7/12/22

PAY TO THE
ORDER OF

Town of Putnam

Two hundred sixty and 00/100

\$ 260.00

DOLLARS

MEMO

203015 IW Application

AUTHORIZED SIGNATURE

~~COPIED TO FILE~~

Provost & Rovero, Inc.

Civil Engineering • Surveying • Site Planning • Structural • Mechanical • Architectural Engineering

P.O. Box 191
57 East Main Street
Plainfield, CT 06374

Telephone (860) 230-0856
Fax (860) 230-0860
www.prorovinc.com

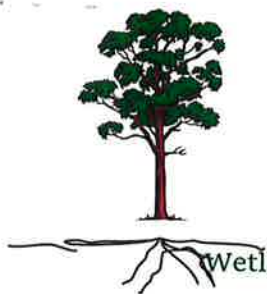
July 12, 2022

**Putnam River Road, L.L.C. & 285 River Road, LLC
Proposed 12 Lot Resubdivision**

P & R Job #203095

APPLICATION PACKAGE CONTENTS – Inland Wetlands

1. Application fee \$260.00
2. Inland Wetlands Commission application form
3. 3 copies of plans dated 6/29/2022
4. DEEP Activity Reporting Form



Joseph R. Theroux

~ Certified Forester/ Soil Scientist ~

Phone 860-428-7992 ~ Fax 860-376-6842

P.O. Box 32, Voluntown, CT. 06384

Forestry Services ~ Environmental Impact Assessments

Wetland Delineations and Permitting ~ E&S/Site Monitoring

Wetland function and value assessments

7/29/2022

Provost & Rovero, Inc.
57 East Main St.
P.O. Box 191
Plainfield, CT. 06374

Attn: Mr. David Held

Re: Wetland delineation, 285 & 357 River Road, Putnam, CT.

Dear Mr. Held,

At your request I have delineated the inland wetlands and watercourses on the above referenced property.

Fluorescent pink flags with a corresponding location number delineate the boundary between the upland soils and inland wetlands and watercourses.

These wetland soils have been delineated in accordance with the standards of the National Cooperative Soil Survey and the definitions of wetlands as found in the Connecticut Statutes, Chapter 440, Section 22A-38.

Flag numbers WF-1 through WF-52 delineate the southern and eastern boundary of Carpenter Brook, its adjacent floodplain soils, inland wetlands and the large marsh adjacent to River Road.

Flag numbers WF-1A through WF-62 A and WF-1B through WF-66 B delineate an intermittent watercourse, its adjacent forested wetlands and the western boundary of Carpenter Brook, its adjacent floodplain soils, inland wetlands and the western limits of the marsh. The intermittent watercourse flows to the east from the western property boundary and joins with Carpenter Brook.

Flag numbers WF-1C through WF-47C, WF-1D through WF-31D, WF-1E through WF-138E, WF-1I through WF-60I and WF-1J through WF-34J delineate a large palustrine forested wetland complex located in the southwestern portion of the property. This complex has several intermittent watercourses within its boundaries which flow downslope to the southeast. These watercourses receive hydrology from the larger portions of inland wetlands, from surface runoff and groundwater breakout.

Flag numbers WF-1F through W-22F and WF-1G through WF-15G delineate a palustrine forested wetland located on the southeast property line. The eastern portion of this wetland was historically trenched in an effort to channel flows through the adjacent uplands to and from the adjacent wetland.

Flag numbers WF-1H through WF-7H delineate a small forested wetland in the southeast property corner. This wetland has formed in a depressed area due to persistent wetness from the shallow seasonal water tables.

Flag numbers WF-1K through WF-16K delineate a potential vernal pool in the western portion of the property that has formed in a depression in the topography. On the dates of the delineation, (October 5th-14th, 2021), this area was inundated.

Flag numbers WF-1L through WF-14L delineate a small forested wetland and intermittent watercourse adjacent to the "B" series watercourse in the northwest portion of the property. This wetland and watercourse have formed from seasonal groundwater breakout.

These wetlands and watercourses have formed from the persistent wetness from the high seasonal water tables, perched water tables trapped by ledge or compact till horizons and surface runoff.

The typical hydric soils found in these wetlands are characterized by thick organic topsoil horizons, shallow redoximorphic features and low chroma colors within 20 inches of the soil surface.

If you have any questions concerning the delineation or this report, please feel free to contact me.

Thank you,

Joseph R. Theroux

Joseph R. Theroux
Certified Soil Scientist
Member SSSSNE, NSCSS, SSSA.

PROPOSED 11 LOT RESUBDIVISION

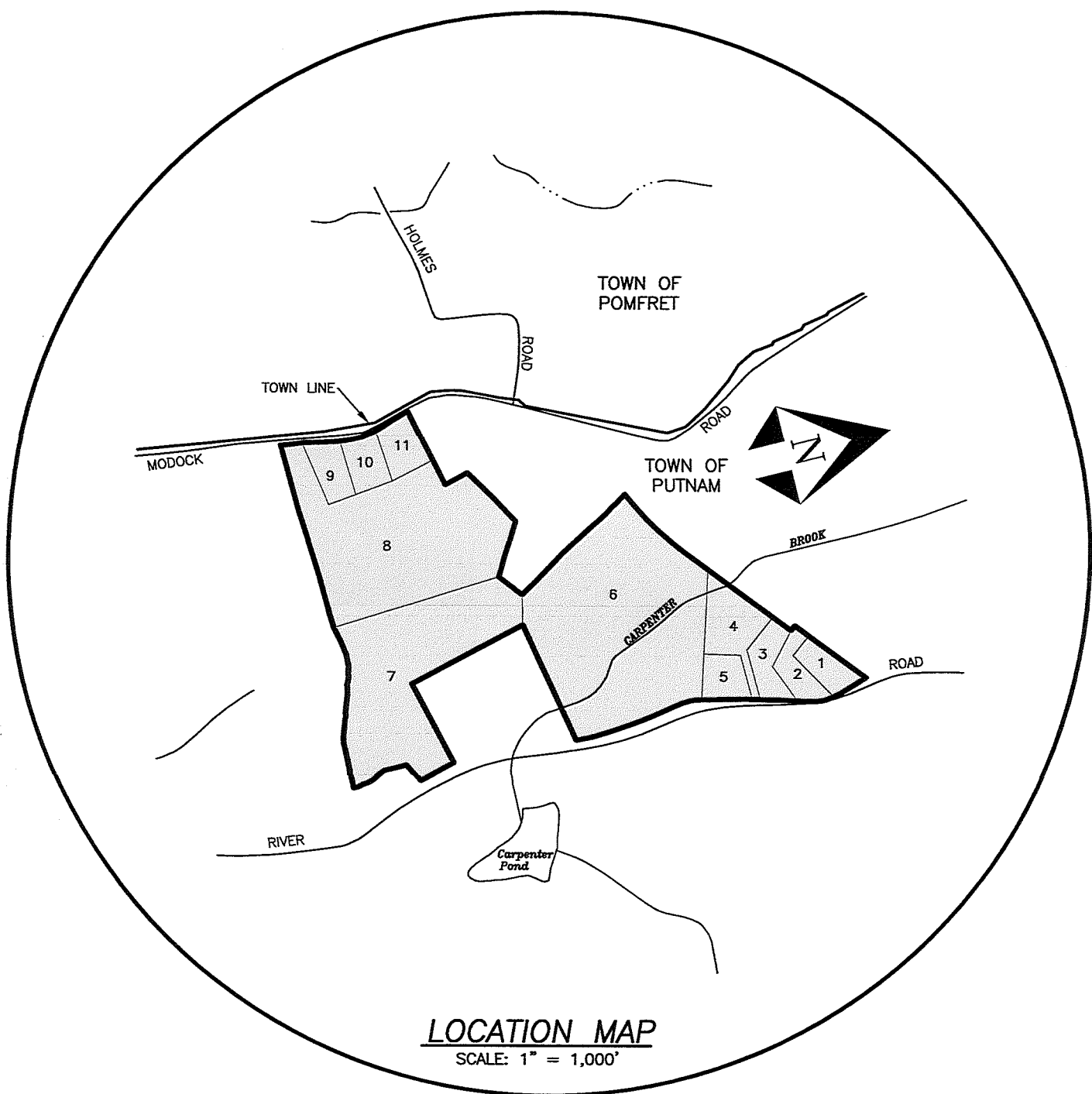
RIVER ROAD & MODOCK ROAD
PUTNAM, CONNECTICUT

OWNER & APPLICANT:

PUTNAM RIVER ROAD, L.L.C. & 285 RIVER ROAD, LLC
P.O. BOX 271
PUTNAM, CT 06260

LEGEND

○	IRON PIN OR PIPE RECOVERED
□	MONUMENT RECOVERED
●	IRON PIN TO BE SET
#	WETLAND FLAG
⋈	UTILITY POLE
○	EXISTING MANHOLE
⋈	EXISTING SIGN
⊠	TEST PIT
⊠	PERCOLATION TEST
⊠	EXISTING WELL
—	STONE WALL
---	EXISTING CONTOUR
---	EXISTING INDEX CONTOUR
---	OVERHEAD WIRES
---	EXISTING TREE LINE
---	PROPOSED CONTOUR
---	PROPOSED POND CONTOUR
---	TEMPORARY EXCAVATION CONTOUR
---	PROPOSED SILT FENCE
---	PROPOSED CLEARING LIMITS
---	LIMIT OF 100 YEAR FLOOD
---	BUILDING SETBACK LINE
---	PROPOSED U.G. UTILITIES



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EXCAVATION PLAN No. 1 & 2	10-11 OF 17
EXCAVATION CROSS SECTIONS	12-15 OF 17
DETAIL SHEET 1 & 2	16-17 OF 17

PREPARED BY:

Provost & Rovero, Inc.

Civil Engineering • Surveying • Site Planning
Structural • Mechanical • Architectural Engineering

57 East Main Street, P.O. Box 191
Plainfield, Connecticut 06374
(860) 230-0856 - FAX: (860) 230-0860
info@prorovinc.com
www.prorovinc.com

REVISIONS	
DATE	DESCRIPTION
7/29/2022	MISC. REVISIONS

JUNE 29, 2022

FINAL APPROVAL BY THE TOWN OF
PUTNAM PLANNING COMMISSION

CHAIRMAN / SECRETARY DATE

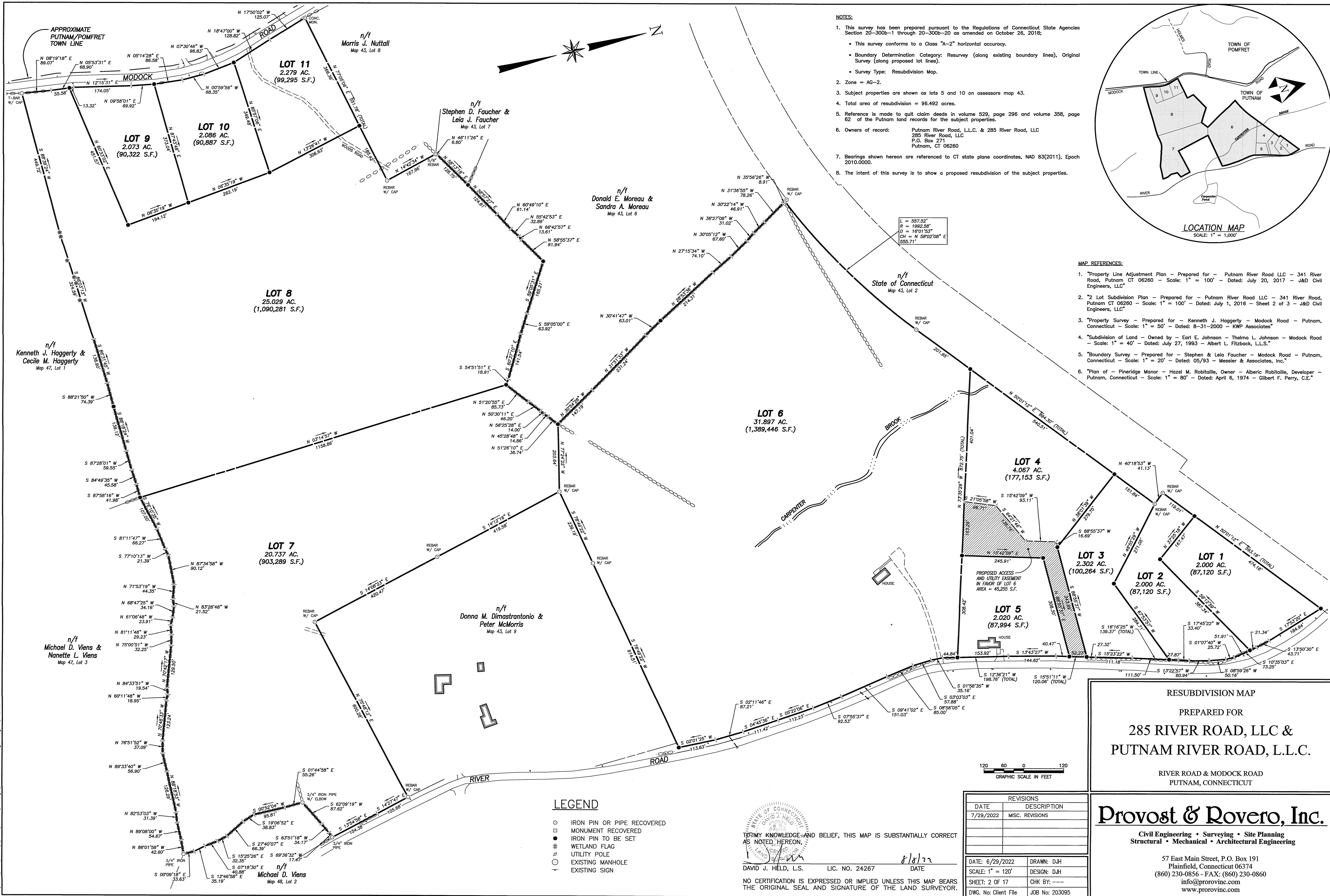
APPROVED BY THE TOWN OF PUTNAM INLAND
WETLAND AND WATER COURSES COMMISSION

CHAIRMAN / SECRETARY DATE

STATE OF CONNECTICUT
DAVID M. HEID
No. 24287
LICENSED PROFESSIONAL ENGINEER

ENGINEER

8/8/22
DATE





NOTES:

1. This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Section 20-300b-1 through 20-300b-20 as amended on October 26, 2018;

This map was prepared from record research, other maps, limited field measurements and other sources. It is not to be construed as a Property/Boundary or Limited Property/Boundary Survey and is subject to such facts as said surveys may disclose.

- This survey conforms to a Class "C" horizontal accuracy.
- Topographic features conform to a Class "T-2" accuracy.
- Survey Type: General Location Survey.

2. The subject parcel is shown as lots 5 and 10 on assessor's map 43.

3. Zone: AG-2.

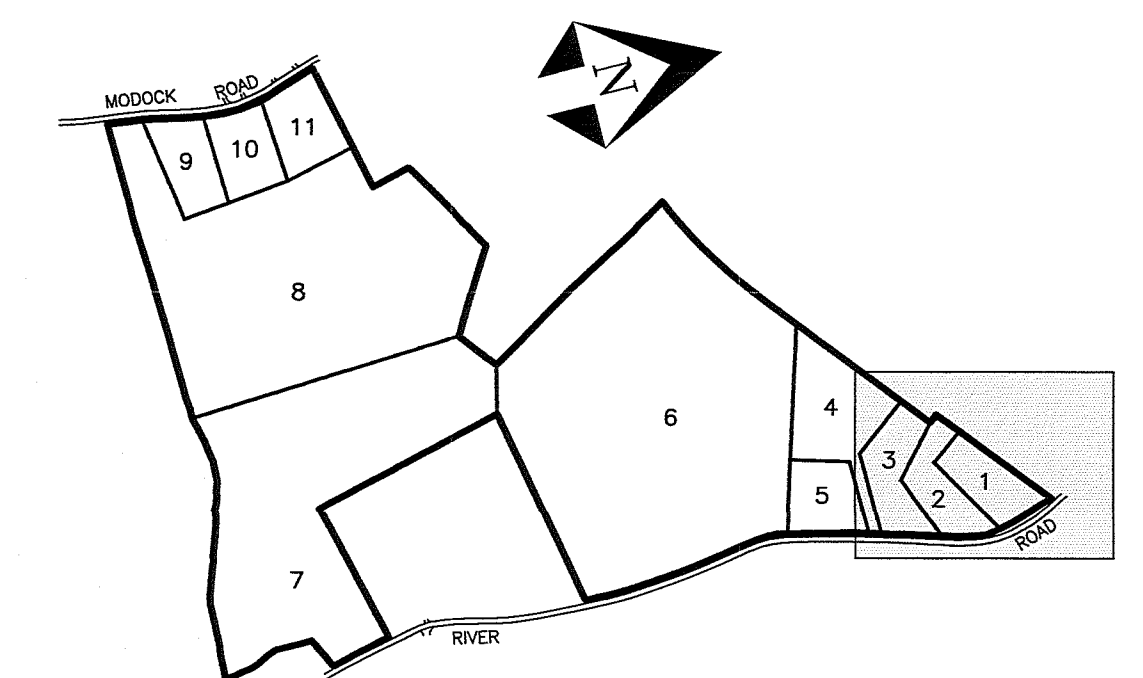
4. Owner of record: Putnam River Road, L.L.C. & 285 River Road, LLC
P.O. Box 271
Putnam, CT 06260

5. The intent of this survey is to show the conceptual development of the subject properties and the extent of two proposed ponds.

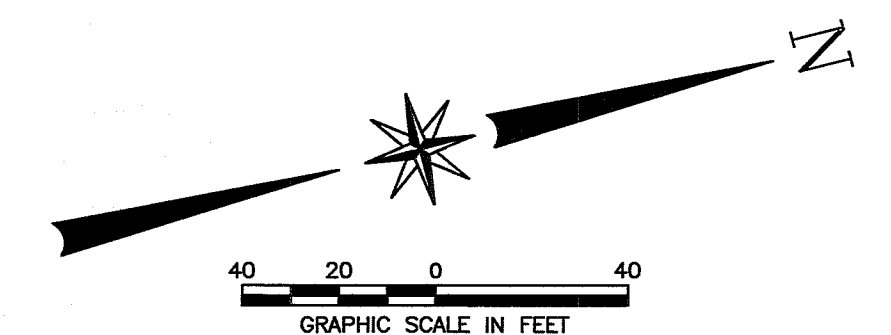
6. Elevations based on NAVD 1988. Contour interval = 2'.

7. The locations of existing utilities are based on surface evidence and other sources of information. Before any construction is to commence contact "CALL BEFORE YOU DIG" at 1-800-922-4455.

8. Wetlands shown were flagged in the field by Joseph Theroux, certified soil scientist in 2021.



KEY MAP
SCALE: 1" = 800'



LEGEND

- | | |
|--|------------------------------|
| | IRON PIN OR PIPE RECOVERED |
| | MONUMENT RECOVERED |
| | IRON PIN TO BE SET |
| | WETLAND FLAG |
| | UTILITY POLE |
| | EXISTING MANHOLE |
| | EXISTING SIGN |
| | TEST PIT |
| | PERCOLATION TEST |
| | EXISTING WELL |
| | STONE WALL |
| | EXISTING CONTOUR |
| | EXISTING INDEX CONTOUR |
| | OVERHEAD WIRES |
| | EXISTING TREE LINE |
| | PROPOSED CONTOUR |
| | PROPOSED POND CONTOUR |
| | TEMPORARY EXCAVATION CONTOUR |
| | PROPOSED SILT FENCE |
| | PROPOSED CLEARING LIMITS |
| | LIMIT OF 100 YEAR FLOOD |
| | BUILDING SETBACK LINE |
| | PROPOSED U.G. UTILITIES |

SITE PLAN No. 1

PREPARED FOR

285 RIVER ROAD, LLC &
PUTNAM RIVER ROAD, L.L.C.

RIVER ROAD & MODOCK ROAD
PUTNAM, CONNECTICUT

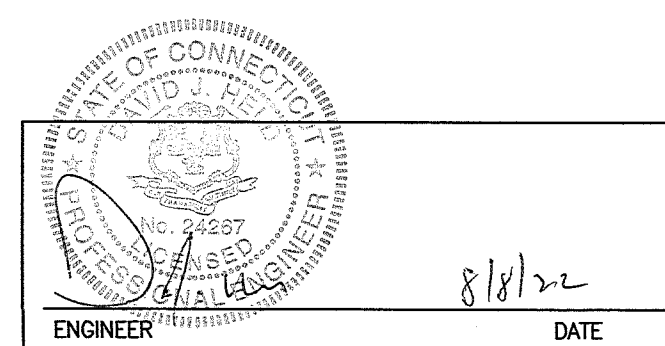
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www.prorovinc.com

REVISIONS	
DATE	DESCRIPTION
7/29/2022	MISC. REVISIONS

DATE: 6/29/2022	DRAWN: DJH
SCALE: 1" = 40'	DESIGN: DJH
SHEET: 4 OF 17	CHK BY: ---
DWC: No Client File	JOB No: 203095



TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT
AS NOTED HEREON.

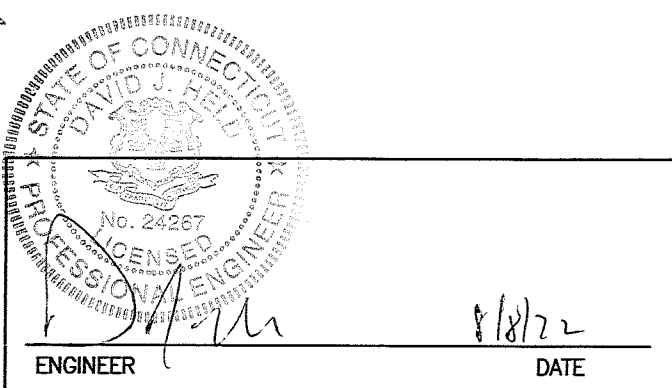
DAVID J. HELD, L.S.

LIC. NO. 24267

8/2/22

DATE _____

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS
THE ORIGINAL SEAL AND SIGNATURE OF THE LAND SURVEYOR.



DAVID J. HELD, L.S. LIC. NO. 24267 DATE

SITE PLAN No. 2

PREPARED FOR

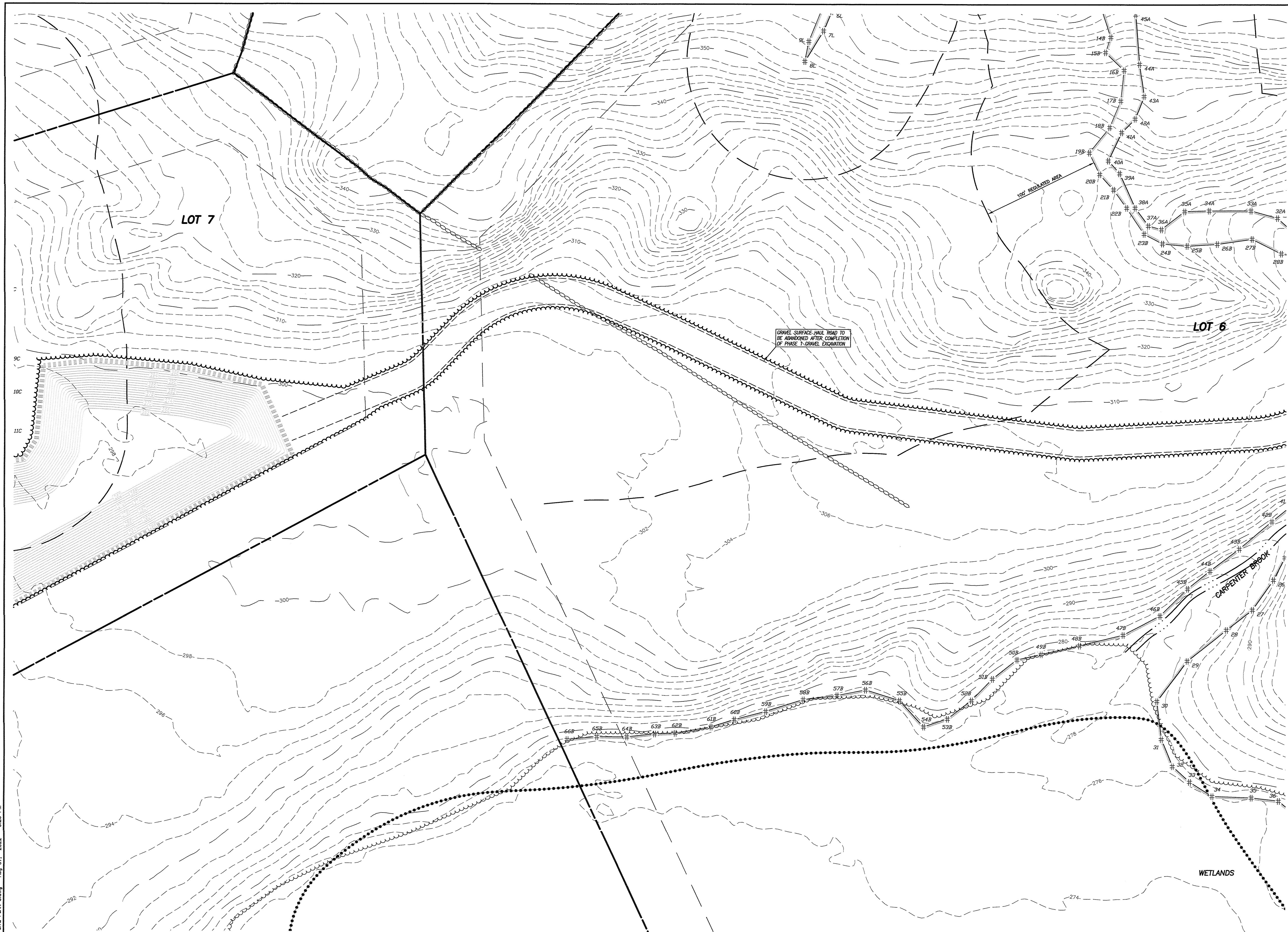
285 RIVER ROAD, LLC &
PUTNAM RIVER ROAD, L.L.C.

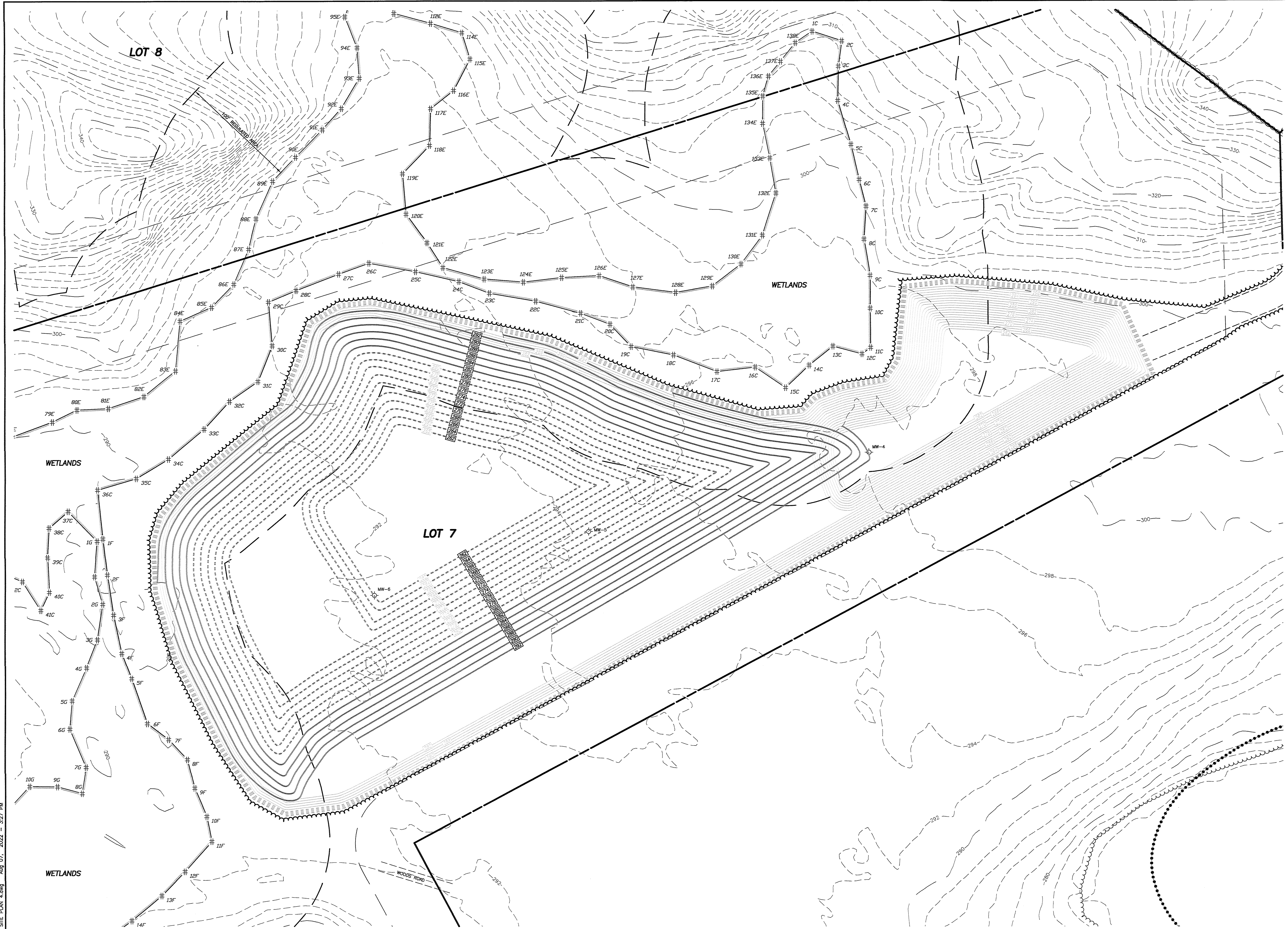
RIVER ROAD & MODOCK ROAD
PUTNAM, CONNECTICUT

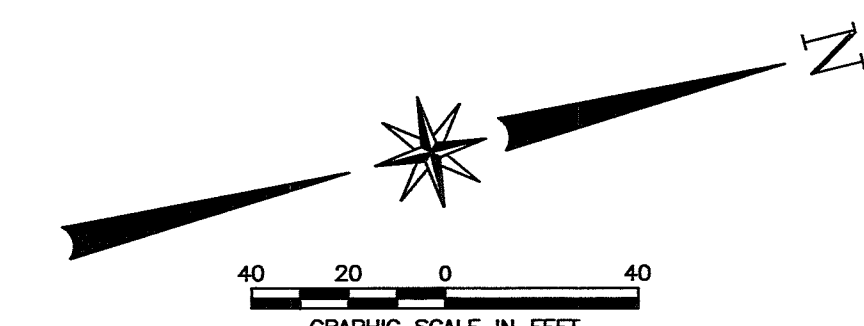
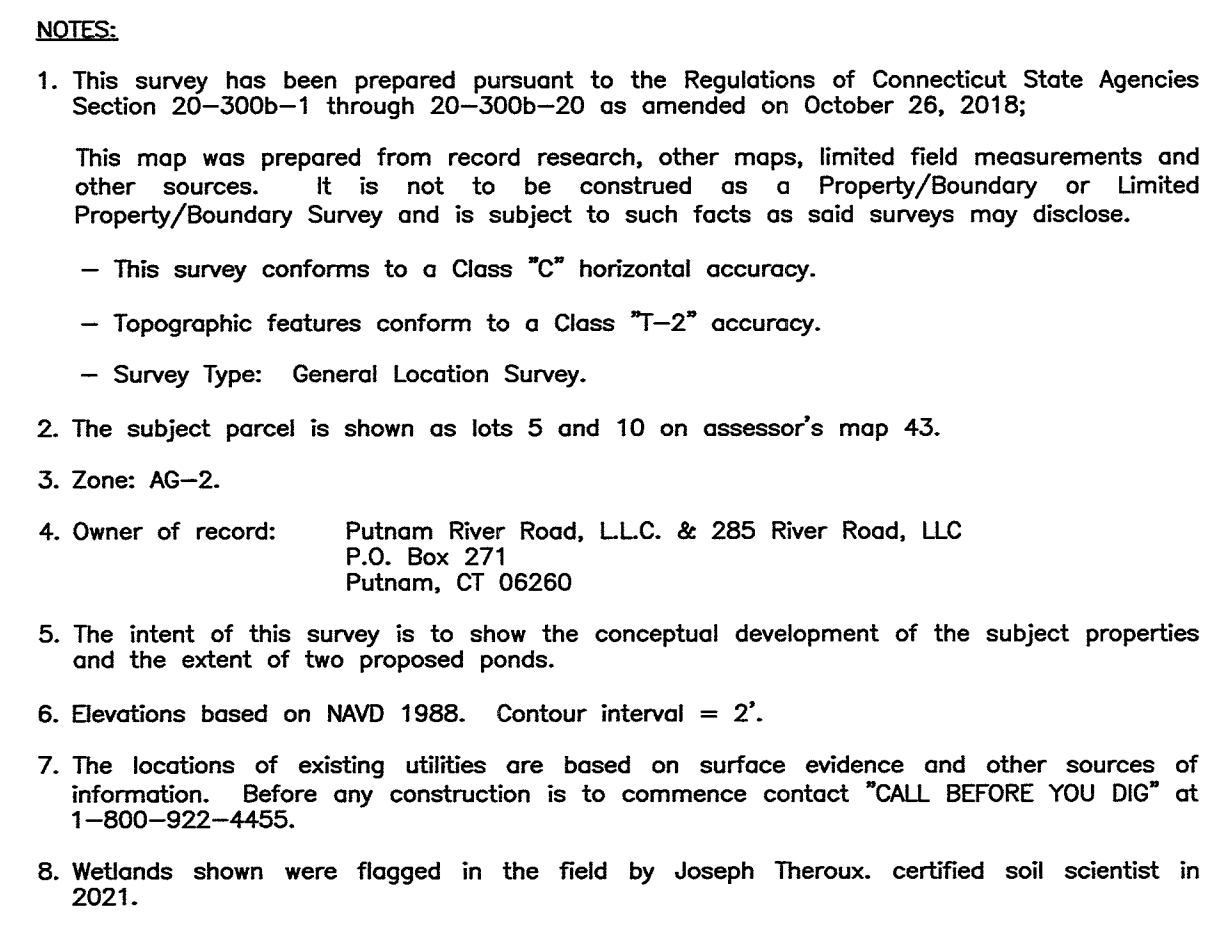
Provost & Rovero, Inc.

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Plainfield, Connecticut 06374
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○	IRON PIN OR PIPE RECOVERED
□	MONUMENT RECOVERED
●	IRON PIN TO BE SET
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⋈	UTILITY POLE
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—	BUILDING SETBACK LINE
—	PROPOSED U.G. UTILITIES

Provost & Rovero, Inc.

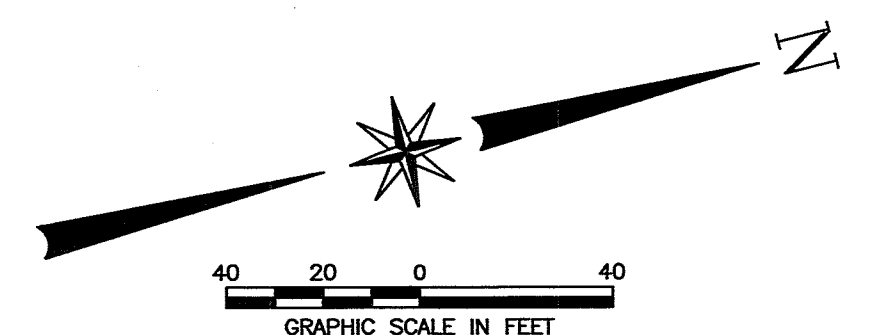
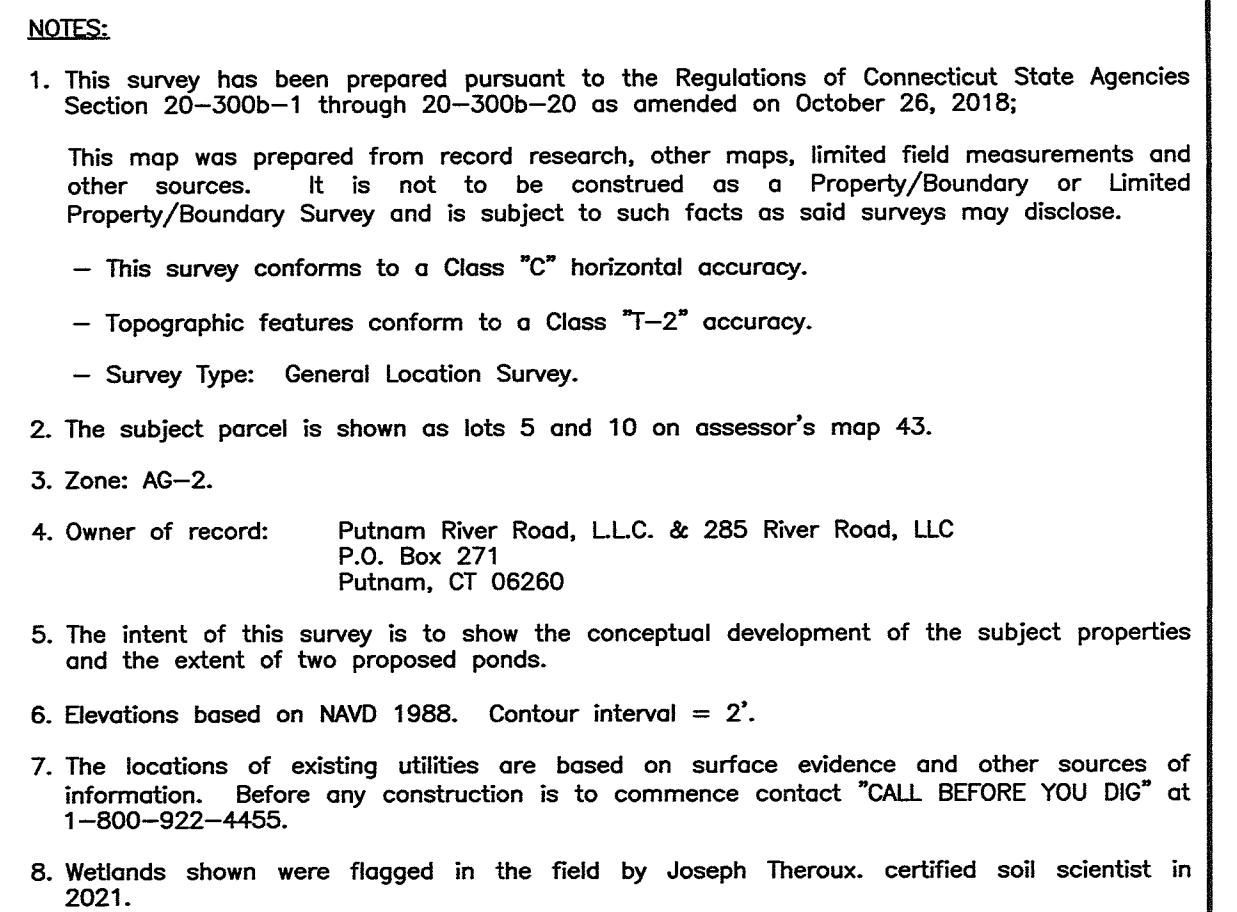
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REVISIONS	
DATE	DESCRIPTION
7/29/2022	MISC. REVISIONS

DATE: 6/29/2022	DRAWN: DJH
SCALE: 1" = 40'	DESIGN: DJH
SHEET: 8 OF 17	CHK BY: ---
DWG. No: Client File	JOB No: 203095

\\Users\Dave\Desktop\JOBS\203095\Drawings\08 SITE PLAN 5.dwg Aug 08, 2022 - 1:05 PM



	IRON PIN OR PIPE RECOVERED
	MONUMENT RECOVERED
	IRON PIN TO BE SET
	WETLAND FLAG
	UTILITY POLE
	EXISTING MANHOLE
	EXISTING SIGN
	TEST PIT
	PERCOLATION TEST
	EXISTING WELL
	STONE WALL
	EXISTING CONTOUR
	EXISTING INDEX CONTOUR
	OVERHEAD WIRES
	EXISTING TREE LINE
	PROPOSED CONTOUR
	PROPOSED POND CONTOUR
	TEMPORARY EXCAVATION CONTOUR
	PROPOSED SILT FENCE
	PROPOSED CLEARING LIMITS
	LIMIT OF 100 YEAR FLOOD
	BUILDING SETBACK LINE
	PROPOSED U.G. UTILITIES

RIVER ROAD & MODOCK ROAD
PUTNAM, CONNECTICUT

Civil Engineering • Surveying • Site Planning
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Plainfield, Connecticut 06374
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info@prorovinc.com
www.prorovinc.com

REVISIONS	
DATE	DESCRIPTION
7/29/2022	MISC. REVISIONS

DATE: 6/29/2022	DRAWN: DJH
SCALE: 1" = 40'	DESIGN: DJH
SHEET: 9 OF 17	CHK BY: ---
DWG. No: Client File	JOB No: 203095

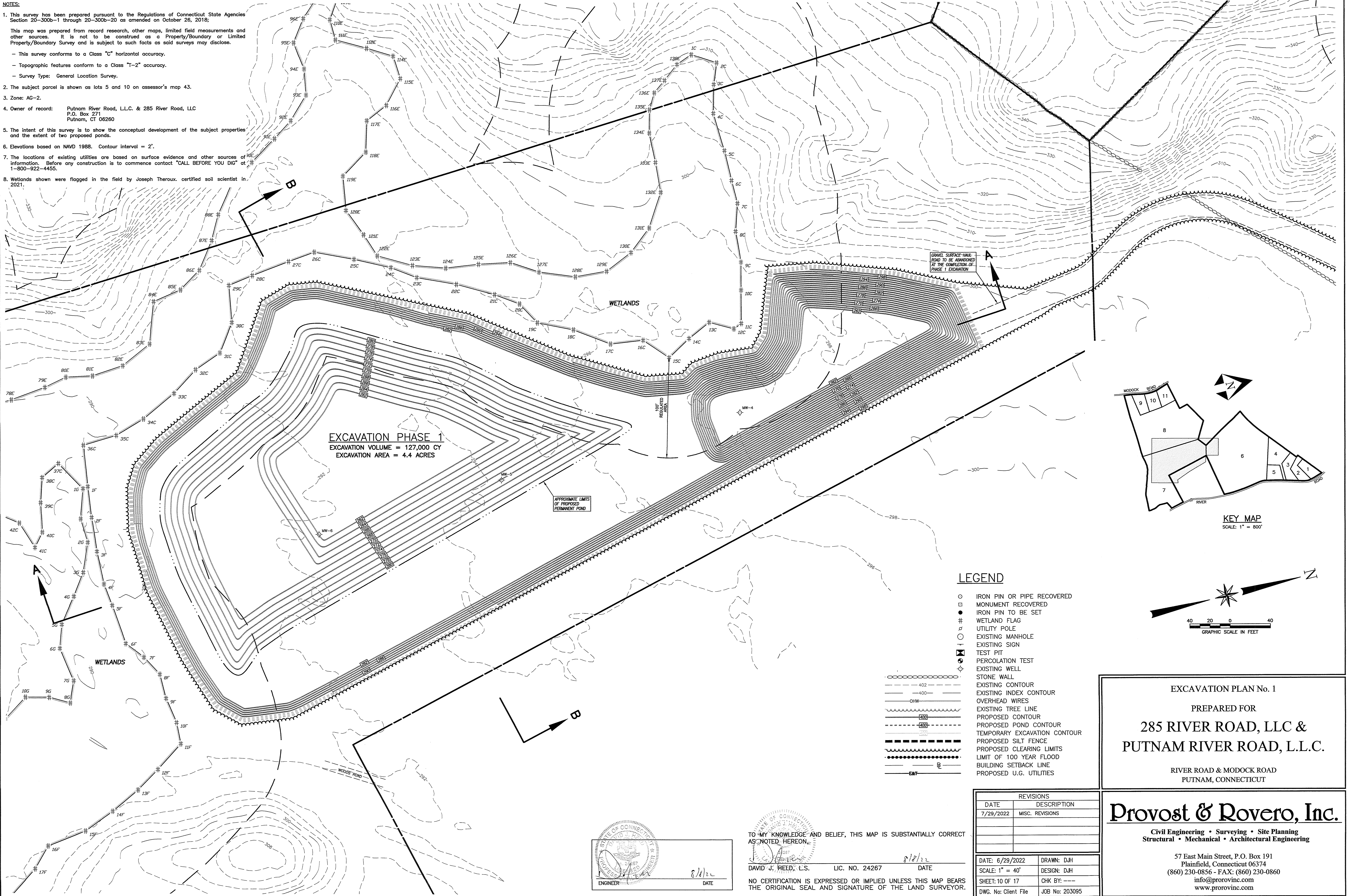
TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT
AS NOTED HEREON,

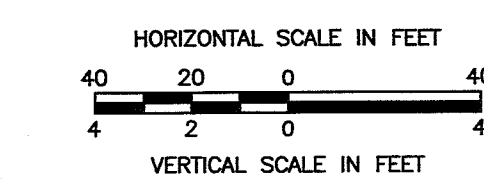
DAVID J. HELD, L.S. LIC. NO. 24267 DATE

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS
THE ORIGINAL SEAL AND SIGNATURE OF THE LAND SURVEYOR.

NOTES:

- This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Section 20-300b-1 through 20-300b-20 as amended on October 26, 2018;
This map was prepared from record research, other maps, limited field measurements and other sources. It is not to be construed as a Property/Boundary or Limited Property/Boundary Survey and is subject to such facts as said surveys may disclose.
 - This survey conforms to a Class "C" horizontal accuracy.
 - Topographic features conform to a Class "T-2" accuracy.
 - Survey Type: General Location Survey.
- The subject parcel is shown as lots 5 and 10 on assessor's map 43.
- Zone: AG-2.
- Owner of record: Putnam River Road, L.L.C. & 285 River Road, LLC
P.O. Box 271
Putnam, CT 06260
- The intent of this survey is to show the conceptual development of the subject properties and the extent of two proposed ponds.
- Elevations based on NAVD 1988. Contour interval = 2'.
- The locations of existing utilities are based on surface evidence and other sources of information. Before any construction is to commence contact "CALL BEFORE YOU DIG" at 1-800-922-4455.
- Wetlands shown were flagged in the field by Joseph Theroux, certified soil scientist in 2021.





EXCAVATION CROSS SECTION B-B

PREPARED FOR

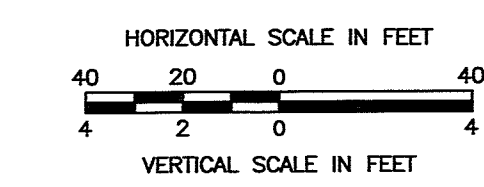
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PUTNAM RIVER ROAD, L.L.C.

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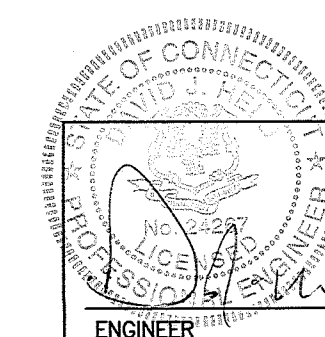
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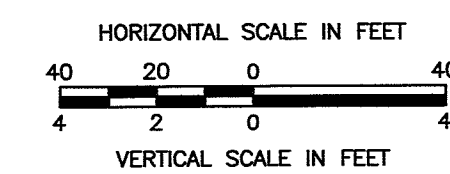
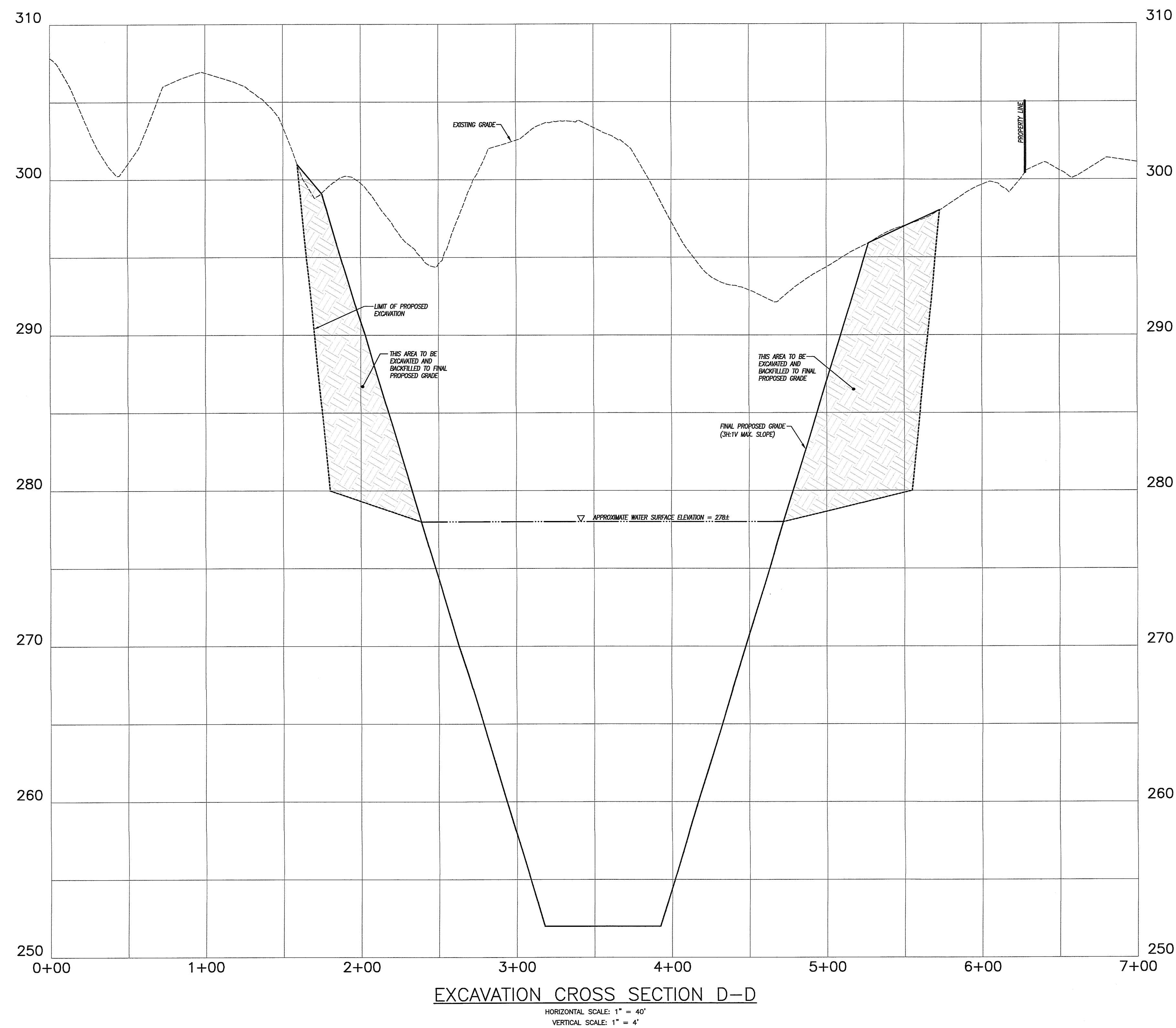
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REVISIONS	
DATE	DESCRIPTION
7/29/2022	MISC. REVISIONS

DATE: 6/29/2022	DRAWN: DJH
SCALE: AS SHOWN	DESIGN: DJH
SHEET: 14 OF 17	CHK BY: ---
DWG. No: Client File	JOB No: 203095



8/8/2
DATE



REVISIONS	
DATE	DESCRIPTION
7/29/2022	MISC. REVISIONS

DATE: 6/29/2022	DRAWN: DJH
SCALE: AS SHOWN	DESIGN: DJH
SHEET: 15 OF 17	CHK BY: ---
DWG. No: Client File	JOB No: 203095

EXCAVATION CROSS SECTION D-D

PREPARED FOR

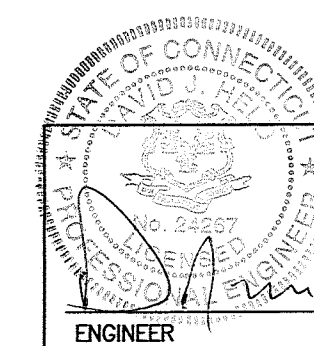
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PUTNAM RIVER ROAD, L.L.C.

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EROSION AND SEDIMENT CONTROL PLAN:

REFERENCE IS MADE TO:

1. Connecticut Guidelines for Soil Erosion and Sediment Control 2002 (2002 Guidelines).
2. Soil Survey of Connecticut, N.R.C.S.

SILT FENCE INSTALLATION AND MAINTENANCE:

1. Dig a 6" deep trench on the uphill side of the barrier location.
2. Position the posts on the downhill side of the barrier and drive the posts 1.5 feet into the ground.
3. Lay the bottom 6" of the fabric in the trench to prevent undermining and backfill.
4. Inspect and repair barrier after heavy rainfall.
5. Inspections will be made at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater to determine maintenance needs.
6. Sediment deposits are to be removed when they reach a height of 1 foot behind the barrier or half the height of the barrier and are to be deposited in an area which is not regulated by the inland wetlands commission.

7. Replace or repair the fence within 24 hours of observed failure. Failure of the fence has occurred when sediment fails to be retained by the fence because:
- the fence has been overtopped, undercut or bypassed by runoff water,
 - the fence has been moved out of position (knocked over), or
 - the geotextile has decomposed or been damaged.

HAY BALE INSTALLATION AND MAINTENANCE:

1. Bales shall be placed as shown on the plans with the ends of the bales tightly abutting each other.
2. Each bale shall be securely anchored with at least 2 stakes and gaps between bales shall be wedged with straw to prevent water from passing between the bales.
3. Inspect bales at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inches or greater to determine maintenance needs.
4. Remove sediment behind the bales when it reaches half the height of the bale and deposit in an area which is not regulated by the Inland Wetlands Commission.
5. Replace or repair the barrier within 24 hours of observed failure. Failure of the barrier has occurred when sediment fails to be retained by the barrier because:
- the barrier has been overtopped, undercut or bypassed by runoff water,
 - the barrier has been moved out of position, or
 - the hay bales have deteriorated or been damaged.

TEMPORARY VEGETATIVE COVER:

SEED SELECTION

Grass species shall be appropriate for the season and site conditions. Appropriate species are outlined in Figure 13-2 in the 2002 Guidelines.

TIMING CONSIDERATIONS

Seed with a temporary seed mixture within 7 days after the suspension of grading work in disturbed areas where the suspension of work is expected to be more than 30 days but less than 1 year.

SITE PREPARATION

Install needed erosion control measures such as diversions, grade stabilization structures, sediment basins and grassed waterways.

Grade according to plans and allow for the use of appropriate equipment for seedbed preparation, seeding, mulch application, and mulch anchoring.

SEEDBED PREPARATION

Loosen the soil to a depth of 3-4 inches with a slightly roughened surface. If the area has been recently loosened or disturbed, no further roughening is required. Soil preparation can be accomplished by tracking with a bulldozer, discing, harrowing, raking or dragging with a section of chain link fence. Avoid excessive compaction of the surface by equipment traveling back and forth over the surface. If the slope is tracked, the cleat marks shall be perpendicular to the anticipated direction of the flow of surface water.

If soil testing is not practical or feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 300 pounds per acre or 7.5 pounds per 1,000 square feet of 10-10-10 or equivalent. Additionally, lime may be applied using rates given in Figure 13-1 in the 2002 Guidelines.

SEEDING

Apply seed uniformly by hand cyclone seeder, drill, cultipacker type seeder or hydroseeder at a minimum rate for the selected species. Increase seeding rates by 10% when hydroseeding.

MULCHING

Temporary seedlings made during optimum seeding dates shall be mulched according to the recommendations in the 2002 Guidelines. When seeding outside of the recommended dates, increase the application of mulch to provide 95%-100% coverage.

MAINTENANCE

Inspect seeded area at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for seed and mulch movement and soil erosion.

Where seed has moved or where soil erosion has occurred, determine the cause of the failure. Repair eroded areas and install additional controls if required to prevent recurrence of erosion.

Continue inspections until the grasses are firmly established. Grasses shall not be considered established until a ground cover is achieved which is mature enough to control soil erosion and to survive severe weather conditions (approximately 80% vegetative cover).

PERMANENT VEGETATIVE COVER:

Refer to Permanent Seeding Measure in the 2002 Guidelines for specific applications and details related to the installation and maintenance of a permanent vegetative cover. In general, the following sequence of operations shall apply:

1. Topsoil will be replaced once the excavation and grading has been completed. Topsoil will be spread at a uniform depth approximating existing conditions on imported silt or suitable on-site materials.
2. Apply agricultural ground limestone. Apply fertilizer. Quantities shall be determined based on laboratory soil tests. Work lime and fertilizer into the soil to a depth of 4".
3. Inspect seedbed before seeding. If traffic has compacted the soil, retil compacted areas.
4. Apply the chosen grass seed mix. The recommended seeding dates are: April 1 to June 15 & August 15 - October 1.
5. Following seeding, firm seedbed with a roller. Mulch immediately following seeding. If a permanent vegetative stand cannot be established by September 30, apply a temporary cover on the topsoil such as netting, mat or organic mulch.

EROSION AND SEDIMENT CONTROL NARRATIVE:

PRINCIPLES OF EROSION AND SEDIMENT CONTROL

The primary function of erosion and sediment controls is to absorb erosional energies and reduce runoff velocities that force the detachment and transport of soil and/or encourage the deposition of eroded soil particles before they reach any sensitive area.

KEEP LAND DISTURBANCE TO A MINIMUM

The more land that is in vegetative cover, the more surface water will infiltrate into the soil, thus minimizing stormwater runoff and potential erosion. Keeping land disturbance to a minimum not only involves minimizing the extent of exposure at any one time, but also the duration of exposure. Phasing, sequencing and construction scheduling are interrelated. Phasing divides a large project into distinct sections where construction work over a specific area occurs over distinct periods of time and each phase is not dependent upon a subsequent phase in order to be functional. A sequence is the order in which construction activities are to occur during any particular phase. A sequence should be developed on the premise of "first things first" and "last things last" with proper attention given to the inclusion of

adequate erosion and sediment control measures. A construction schedule is a sequence with time lines applied to it and should address the potential overlap of actions in a sequence which may be in conflict with each other.

- Limit areas of clearing and grading. Protect natural vegetation from construction equipment with fencing, tree armorings, and retaining walls or tree wells.
- Route traffic patterns within the site to avoid existing or newly planted vegetation.
- Phase construction so that areas which are actively being developed at any one time are minimized and only that area under construction is exposed. Clear only those areas essential for construction.
- Sequence the construction of storm drainage systems so that they are operational as soon as possible during construction. Ensure all outlets are stable before outletting storm drainage flow into them.
- Schedule construction so that final grading and stabilization is completed as soon as possible.

SLOW THE FLOW

Detachment and transport of eroded soil must be kept to a minimum by absorbing and reducing the erosive energy of water. The erosive energy of water increases as the volume and velocity of runoff increases. The volume and velocity of runoff increases during development as a result of reduced infiltration rates caused by the removal of existing vegetation, removal of topsoil, compaction of soil and the construction of impervious surfaces.

- Use diversions, stone dikes, silt fences and similar measures to break flow lines and dissipate storm water energy.
- Avoid diverting one drainage system into another without calculating the potential for downstream flooding or erosion.

KEEP CLEAN RUNOFF SEPARATED

Clean runoff should be kept separated from sediment laden water and should not be directed over disturbed areas without additional controls. Additionally, prevent the mixing of clean off-site generated runoff with sediment laden runoff generated on-site until after adequate filtration of on-site waters has occurred.

- Segregate construction waters from clean water.

- Divert site runoff to keep it isolated from wetlands, watercourses and drainage ways that flow through or near the development until the sediment in that runoff is trapped or detained.

REDUCE ON SITE POTENTIAL INTERNALLY AND INSTALL PERIMETER CONTROLS

While it may seem less complicated to collect all waters to one point of discharge for treatment and just install a perimeter control, it can be more effective to apply internal controls to many small sub-drainage basins within the site. By reducing sediment loading from within the area, the chance of perimeter control failure and the potential off-site damage that it can cause is reduced. It is generally more expensive to correct off-site damage than it is to install proper internal controls.

- Control erosion and sedimentation in the smallest drainage area possible. It is easier to control erosion than to contend with sediment after it has been carried downstream and deposited in unwanted areas.
- Direct runoff from small disturbed areas to adjoining undisturbed vegetated areas to reduce the potential for concentrated flows and increase settlement and filtering of sediments.
- Concentrated runoff from development should be safely conveyed to stable outlets using rip roped channels, waterways, diversions, storm drains or similar measures.
- Determine the need for sediment basins. Sediment basins are required on larger developments where major grading is planned and where it is impossible or impractical to control erosion at the source. Sediment basins are needed on large and small sites when sensitive areas such as wetlands, watercourses, and streets would be impacted by off-site sediment deposition. Do not locate sediment basins in wetlands or permanent or intermittent watercourses. Sediment basins should be located to intercept runoff prior to its entry into the wetland or watercourse.
- Grade and landscape around buildings and septic systems to divert water away from them.

EXCAVATION NOTES:

1. No blasting or on-site processing is anticipated for completion of the work shown. If blasting is required, the owner is responsible for obtaining all necessary permits.
2. The emergency contact for operations at this site is Jeffrey Rawson (860) 428-7110. A different emergency contact may be designated if operations are compacted by a different party.
3. The allowable hours of operation shall be 7:00 AM to 4:30 PM, Monday through Friday and 7:00 AM to 12:00 noon on Saturday. No operations shall be allowed on Sundays, Christmas, New Years Day, Memorial Day, Fourth of July, Labor Day and Thanksgiving except by special permission of the Putnam Zoning Commission or its designated agent.
4. The owner and/or site operator shall provide adequate dust control to prevent any off-site nuisance. The preferred dust control measure is the application of water to vehicular travel areas.
5. The owner/operator shall install any necessary barricades or barriers to provide protection around the perimeter of open excavation faces and steep slopes.
6. Excavation operations shall be completed in accordance with all appropriate Mine Safety & Health Administration (MSHA) rules and regulations.
7. The proposed excavation shown hereon is anticipated to be completed over the course of several years. The total amount of material to be excavated per the proposed grades shown hereon is approximately 385,000 CY. All useable material excavated will be transported off-site for processing and/or sale. Over excavation and/or removal of suitable material within the limits of disturbance and limits of excavation shown hereon is allowable. Over excavation shall not include the blasting or removal of ledge rock. Silt from off site aggregate washing and processing shall be imported as necessary to establish final subgrade elevations.
8. The site operator is responsible for determining the most appropriate means and methods for excavating material in the applicable phase. In general, excavation shall begin with stripping and stockpiling subsoil which will be utilized for site restoration. Removal of material should begin with a downcutting technique to ensure complete internal drainage with the disturbed area (bowl effect).
9. The entire site, including the active excavation area shall be maintained in a self-contained condition to prevent the discharge of sediment laden stormwater to undisturbed areas, Carpenter Brook, adjacent properties or wetlands.
10. All trucks leaving the site shall have the loads covered.
11. No stumps, trimmings, brush or other deleterious materials shall be buried on site. All such materials shall be chipped for use in site restoration or shall be properly disposed of at an off site facility.

EXCAVATION SEQUENCE OF OPERATIONS:

1. Limits of clearing/disturbance for Phase 1 excavation shall be field staked or flagged by a licensed land surveyor.
2. Contact CALL BEFORE YOU DIG at 1-800-922-4455 to verify the location of underground utilities prior to the start of any ground disturbance.
3. Clear and grub trees for the Phase 1 excavation area, temporary gravel haul road and temporary bridge.
4. Install the temporary gravel haul road to the temporary bridge location.
5. Install the temporary bridge.
6. Install the remainder of the temporary gravel haul road to the Phase 1 excavation area.
7. Install silt fence at the down gradient limits of the Phase 1 excavation area perimeter.

8. Strip topsoil and subsoil. An adequate quantity of topsoil and subsoil shall be stockpiled on the site for final restoration. Stockpiles should be within the approved limits of excavation and shall be protected with perimeter erosion controls and/or temporary seeding as required.
9. Begin excavation by downcutting the entire Phase 1 area to an elevation approximately 2' above the water table.
10. Excavate the northerly portion of Phase 1 to the proposed final elevation and then backfill to the proposed final subgrade elevation. Subgrade elevations shall allow for containment

during dewatering of excavated materials.

11. Excavate the southerly portion of Phase 1 to the proposed final elevations. Side slopes and the area adjacent to property boundaries shall be backfilled as required to establish proposed grades.
12. Loam and seed disturbed areas and side slopes to establish permanent vegetative cover. See Restoration Notes below for additional details.
13. Upon the establishment of permanent vegetative stabilization of Phase 1, the temporary bridge shall be removed. Any disturbed areas remaining after removal of the bridge should be stabilized with loam, seed and permanent vegetation. Erosion control blankets shall be utilized for the stabilization of stream channel banks adjacent to Carpenter Brook. The gravel haul road shall be abandoned in place.
14. Limits of clearing/disturbance for Phase 2 excavation shall be field staked or flagged by a licensed land surveyor.
15. Contact CALL BEFORE YOU DIG at 1-800-922-4455 to verify the location of underground utilities prior to the start of any ground disturbance.
16. Clear and grub trees for the excavation of Phase 2.
17. Demolish the existing house, remove electrical utilities, abandon the well and remove the existing septic system. Abandonment of the well shall be coordinated with the installation of a new well to serve 285 River Road.
18. Install silt fence at the down gradient limits of the Phase 2 excavation area perimeter.
19. Strip topsoil and subsoil. An adequate quantity of topsoil and subsoil shall be stockpiled on the site for final restoration. Stockpiles should be within the approved limits of excavation and shall be protected with perimeter erosion controls and/or temporary seeding as required.
20. Begin excavation by downcutting the entire Phase 2 area to an elevation approximately 2' above the water table.
21. Excavate the northerly portion of Phase 2 to the proposed final elevation and then backfill to the proposed final subgrade elevation. Subgrade elevations shall allow for containment during dewatering of excavated materials.
22. Excavate the southerly portion of Phase 2 to the proposed final elevations. Side slopes and the area adjacent to property boundaries shall be backfilled as required to establish proposed grades.
23. Loam and seed disturbed areas and side slopes to establish permanent vegetative cover. See Restoration Notes below for additional details.
24. Temporary erosion and sediment controls shall be removed after the establishment of permanent vegetative cover.

RESTORATION NOTES:

1. Restoration of disturbed areas shall take place following the completion of excavation or other work. Sufficient restoration bonding should be maintained as required by the Town to cover the restoration cost for disturbed/open site areas.
2. Final restoration shall begin with establishing the required subgrade elevations. Proposed grades shown are approximate and may be adjusted to match field conditions at the time of restoration. In general, all disturbed slopes shall be graded to a 3H:1V maximum gradient.
3. Prepare the restoration area by spreading a 12" min. thickness (compacted) layer of silt or washing fines.
4. Complete restoration by spreading on-site stockpiled topsoil to an approximate minimum thickness of 4" (compacted) and seeding for a permanent vegetative cover. On-site topsoil stockpiles may be supplemented with composted organic matter, wood chips and imported topsoil as necessary to provide a suitable planting medium.
5. Spread seed for a permanent vegetative cover over the prepared restoration area. The permanent vegetative cover may be a suitable wildlife habitat mix or the following mixture which is suitable for use in all locations:

Variety	Lbs./Acres
Switchgrass (Blackwell, Shelter, Cave-in-rock)	4.0
Big Bluestem (Niagara, Kaw)	4.0
Little Bluestem (Blaze, Aldous, Camper)	4.5
Sand Lovegrass (NE-27, Bend)	1.5
Bird's-foot Trefoil (Empire, Vink)	2.0
TOTAL	13.5

6. Hay or straw mulch shall be utilized on 3H:1V slopes to provide temporary stabilization during establishment of permanent vegetative cover. In general, no slopes greater than 3H:1V will be allowable. In the event that steeper slopes are necessary in isolated locations to transition to existing natural grades, no slopes should be steeper than 2H:1V.
7. Fertilizer and lime shall be provided as required to establish a permanent vegetative cover.
8. In lieu of the manual application of mulch and fertilizer, the restoration area may be planted with hydroseeding methods with a suitable tackifier, mulch and fertilizer mix.

PERCOLATION TEST RESULTS
May 24, 2022
NDH
File #22000255 & 22000293

PERC 1
Depth: 23"

TIME	READING
11:21	4.75"
11:54	8"
12:01	11.5"
12:08	15.25"
12:15	17.5"
12:22	18.5"
12:25	dry

Percolation Rate: 4.6 min/inch

PERC 2
Depth: 24"

TIME	READING
12:18	8.5"
12:20	10.875"
12:25	14"
12:30	16.5"
12:35	19"
12:40	20.75"

Percolation Rate: 2.8 min/inch

PERC 3
Depth: 23"

TIME	READING
11:18	7.75"
11:20	9.5"
11:22	11.375"
11:24	12.875"
11:26	14"
11:28	15.125"
11:30	16"
11:32	16.875"
11:34	17.75"
11:36	18.375"
11:38	19"

Percolation Rate: 3.2 min/inch

PERC 4
Depth: 25"

TIME	READING
10:00	8"
10:37	11.5"
10:49	15.75"
10:59	18"
11:14	21.25"

Percolation Rate: 4.6 min/inch

PERCOLATION TEST RESULTS
May 24, 2022
NDH
File #22000255 & 22000293

PERC 5
Depth: 24"

TIME	READING
11:47	4.75"
1:24	9.25"
1:27	12.875"
1:30	15"
1:33	16.75"
1:36	18.5"
1:39	20"
1:42	21"
1:45	22"

Percolation Rate: 3 min/inch

PERC 6
Depth: 15"

TIME	READING
10:22	2.75"
10:30	8"
10:38	11.25"
10:52	14.875"
10:51	5.75"
10:40	7.5"
10:55	9.5"
11:00	10.125"
11:05	10.5"
11:10	10.875"

Percolation Rate: 13 min/inch

PERC 7
Depth: 19"

TIME	READING
11:23	5.25"
11:35	11.75"
11:43	13.5"
11:51	14.5"
11:59	15.5"
12:07	16.5"

Percolation Rate: 8.0 min/inch

PERC 12
Depth: 22"

TIME	READING
11:47	7.75"
11:53	11.375"
12:00	13.25"
12:10	15"
12:20	16.25"
12:30	17.5"

Percolation Rate: 8.0 min/inch

PERC 8
Depth: 26"

TIME	READING
3:02	4.25"
3:05	11.5"
3:08	14.5"
3:11	17.25"
3:16	19.875"
3:22	22"
3:24	dry

Percolation Rate: 2.8 min/inch

TEST PIT OBSERVATIONS
May 24, 2022
Northeast District Department of Health
File #22000255 & 22000293

TEST PIT	DEPTH	SOIL DESCRIPTION
1-1	0'-4" 4'-25" 25'-48" Mottling GWT Ledge Restrictive	organics, topsoil brown loamy sand rotten rock N/A N/A 48" 25"
1-2	0-3" 3'-30"	topsoil, organics brown loamy sand, boney, rotten rock starts @ 16"
	Mottling GWT Ledge Restrictive	N/A N/A 30" 16" (unsuitable)
1-3	0-5" 5'-32" 32'-75" Mottling GWT Ledge Restrictive	organics, topsoil brown loamy sand gray compact sandy pan N/A N/A N/A 32"
1-4	0-3" 3'-22" 22'-74"	organics, topsoil brown sandy loam, roots mottled gray moist very fine sandy loam
	Mottling GWT Ledge	N/A N/A N/A
1-5	0-5" 5'-27" 27'-76" Mottling GWT Ledge Restrictive	organics, topsoil tan sandy loam gray compact sandy pan N/A N/A N/A 27"
2-1	0-6" 6'-20" 20'-32" 32'-72" Mottling GWT Ledge Restrictive	organics, topsoil, roots yellow brown fine sandy loam loamy very fine sand gray very fine loamy sand, mottled 32" N/A N/A 32"
2-2	0-8" 8'-25" 25'-40" 40'-74" Mottling GWT Ledge Restrictive	organics, topsoil, roots loamy fine sand, some roots gray loamy fine sand, mottled compact rotten rock, mica 25" N/A N/A rotten rock @ 40"
3-1	0-12" 12'-26" 26'-59" 59'-73" Mottling GWT Ledge Restrictive	organics, topsoil, roots fine sandy loam, roots, some rocks tight gray loamy very fine sand, some rocks loamy coarse sand & gravel 26" N/A N/A 26"
3-2	0-10" 10'-18" 18'-26" 26'-43" 43'-69" Mottling GWT Ledge Restrictive	organics, topsoil, roots fine sandy loam, roots loamy very fine sand, few roots tight gray loamy very fine sand, mottled coarse sands & gravel 26" N/A N/A 26"
4-1	0-12" 12'-26" 26'-38" 38'-54" 54'-75" Mottling GWT Ledge Restrictive	topsoil, roots silty loamy fine sand, few roots gray silty loamy fine sand, mottled tight loamy sand & gravel boney med. sands & gravel 28" N/A N/A 26"
4-2	0-14" 14'-22" 22'-45" Mottling GWT Ledge	topsoil, roots sandy loam, roots, large rocks silty loamy fine sand N/A N/A 32" (unsuitable)
4-3	0-12" 12'-30" 30'-72" Mottling GWT Ledge Restrictive	topsoil, roots fine sandy loam to silty loamy fine sand, roots, large rocks tight very boney sands & gravel N/A N/A N/A 26"
5-1	0-12" 12'-25" 25'-43" 43'-77" Mottling GWT Ledge Restrictive	organics, topsoil brown loamy sand tan sandy loam, mod. compact gray compact sandy pan silty mod. compact boney med. sand N/A N/A N/A 25"
5-2	0-10" 10'-35" 35'-45" 45'-77" Mottling GWT Ledge Restrictive	organics, topsoil brown loamy sand boney compact gray loamy sand boney med. sand N/A N/A N/A 35"
6-1	0-8" 8'-27" 27'-67" Mottling GWT Ledge Restrictive	organics, topsoil brown sandy loam, rocks gray boney mottled very fine sand 28" N/A N/A 27"

TEST PIT OBSERVATIONS
May 24, 2022
Northeast District Department of Health
File #22000255 & 22000293

TEST PIT	DEPTH	SOIL DESCRIPTION
6-2	0-14" 14'-24" 24'-68" Mottling GWT N/A Ledge Restrictive	topsoil, garbage tan loamy sand, boney gray mottled loamy sand 26" N/A N/A 27"
6-3	0-10" 10'-15" 15'-44" 44'-78" Mottling GWT Ledge Restrictive	organics, topsoil loamy sand gray very fine loamy sand, silty sandy & gravel, boney N/A N/A N/A 15"
7-1	0-8" 8'-24" 24'-73" Mottling GWT Ledge Restrictive	topsoil grovelly loam sand, large rocks coarse sand & gravel, boney N/A N/A N/A 73"
7-2	0-8" 8'-22" Mottling GWT Ledge	topsoil, roots loamy fine sand, roots, rocks N/A N/A 22" (unsuitable)
7-3	0-8" 8'-24" 24'-72" Mottling GWT Ledge Restrictive	topsoil, roots loamy sand with fines, large rocks boney coarse sands & gravel N/A N/A N/A 30"
8-1	0-10" 10'-30" 30'-75"	organics, topsoil sandy loam, some gravel, roots coarse sands and gravel with rotten rock N/A N/A N/A
8-2	0-7" 7'-30" 30'-70"	organics, topsoil sandy loam, some gravel, roots coarse sands & gravel with rotten rock N/A N/A N/A
9-1	0-4" 4'-19" Ledge	organics, topsoil, roots sandy loam, roots 16"-19" (unsuitable)
9-3	0-4" 4'-26" 26'-32" 32'-74" Mottling GWT Ledge Restrictive	organics, topsoil, roots sandy loam, roots, rocks loamy fine sand, some roots, rocks compact rocks, silty loamy fine sand N/A N/A N/A 32"
9-4	0-5" 5'-14" 14'-29" 29'-63" Mottling GWT Ledge Restrictive	organics, topsoil, roots sandy loam, roots, rocks loamy fine sand, few roots, rocks compact silty loamy very fine sand, rocks N/A N/A N/A 28"
10-1	0-2" 2'-15" 15'-22" 22'-36" Mottling GWT Ledge	organics, topsoil brown fine sandy loam tan sandy loam, mod. compact gray compact sandy pan N/A N/A 36" (unsuitable)
10-2	0-3" 3'-16" 16'-24" 24'-34" Mottling GWT Ledge	organics, topsoil brown fine sandy loam mod. compact fine sandy loam compact gray sandy pan N/A N/A 34" (unsuitable)
10-3	0-2" 2'-16" 16'-22" 22'-42" Mottling GWT Ledge Restrictive	organics, topsoil, large rocks brown fine sandy loam tan loamy fine sand gray sandy pan, moist N/A N/A N/A 44" (unsuitable)

TEST PIT OBSERVATIONS
May 24, 2022
Northeast District Department of Health
File #22000255 & 22000293

TEST PIT	DEPTH	SOIL DESCRIPTION
10-4	0-2" 2'-18" 18'-23" 23'-54" Mottling GWT Ledge	organics, topsoil brown fine sandy loam mod. compact tan loamy fine sand compact gray sandy pan, moist N/A N/A N/A 54"
10-5	0-3" 3'-17" 17'-30" 30'-46" Mottling GWT Ledge Restrictive	organics, topsoil, roots brown fine sandy loam

LOT 1
 TP 1-3, 1-4, 1-5
 Depth to restrictive layer = 27 in.
 Slope % = 2.8 %
 Number of Bedrooms = 3
 Percolation rate = 4.6 min/in
 Max. depth into exist. grade = 0 in.
 System Size = 495 s.f.

 Hydraulic Factor = 42
 Flow Factor = 1.50
 Perc Factor = 1.00

LOT 2
 TP 2-1, 2-2
 Depth to restrictive layer = 29 in.
 Slope % = 9.5 %
 Number of Bedrooms = 3
 Percolation rate = 2.8 min/in
 Max. depth into exist. grade = 1 in.
 System Size = 495 s.f.

 Hydraulic Factor = 26
 Flow Factor = 1.50
 Perc Factor = 1.00

 $26 \times 1.50 \times 1.00 = 39.0'$

LOT 3
 TP 3-1, 3-2
 Depth to restrictive layer = 26 in.
 Slope % = 2.5 %
 Number of Bedrooms = 3
 Percolation rate = 3.2 min/in
 Max. depth into exist. grade = 2 in.
 System Size = 495 s.f.

 Hydraulic Factor = 48
 Flow Factor = 1.50
 Perc Factor = 1.00

 $48 \times 1.50 \times 1.00 = 72.0'$

LOT 4
 TP 4-1, 4-3
 Depth to restrictive layer = 28 in.
 Slope % = 1.1 %
 Number of Bedrooms = 3
 Percolation rate = 4.6 min/in
 Max. depth into exist. grade = 2 in.
 System Size = 495 s.f.

 Hydraulic Factor = 49
 Flow Factor = 1.50
 Perc Factor = 1.00

 $49 \times 1.50 \times 1.00 = 73.5'$

LOT 5
 TP 5-1, 5-2
 Depth to restrictive layer = 30 in.
 Slope % = 1.1 %
 Number of Bedrooms = 3
 Percolation rate = 3.0 min/in
 Max. depth into exist. grade = 1 in.
 System Size = 495 s.f.

 Hydraulic Factor = 49
 Flow Factor = 1.50
 Perc Factor = 1.00

 $49 \times 1.50 \times 1.00 = 73.5'$

LOT 6
TP 7-1, 7-3
Depth to restrictive layer = 72 in.
Slope % = 2.4 %
Number of Bedrooms = 3
Percolation rate = 5.7 min/in
Max. depth into exist. grade = 24 in.
System Size = 495 s.f.

MLSS is not applicable

LOT 7
 TP 8-1, 8-2
 Depth to restrictive layer = 30 in.
 Slope % = 1.2 %
 Number of Bedrooms = 3
 Percolation rate = 2.8 min/in
 Max. depth into exist. grade = 6 in.
 System Size = 495 s.f.

 Hydraulic Factor = 49
 Flow Factor = 1.50
 Perc Factor = 1.00

 $49 \times 1.50 \times 1.00 = 73.5'$

LOT 8
 TP 9-3, 9-4
 Depth to restrictive layer = 31 in.
 Slope % = 11.8 %
 Number of Bedrooms = 3
 Percolation rate = 6.6 min/in
 Max. depth into exist. grade = 11 in.
 System Size = 495 s.f.

 Hydraulic Factor = 20
 Flow Factor = 1.50
 Perc Factor = 1.00

 $20 \times 1.50 \times 1.00 = 30.0'$

 MLSS = 30.0'

LOT 9
 TP 10-6, 10-7, 10-8
 Depth to restrictive layer = 28 in.
 Slope % = 5.7 %
 Number of Bedrooms = 3
 Percolation rate = 9.6 min/in
 Max. depth into exist. grade = 8 in.
 System Size = 495 s.f.

 Hydraulic Factor = 30
 Flow Factor = 1.50
 Perc Factor = 1.00

 $30 \times 1.50 \times 1.00 = 45.0'$

 MLSS = 45.0'

LOT 10
 TP 11-1, 11-2
 Depth to restrictive layer = 28 in.
 Slope % = 3.3 %
 Number of Bedrooms = 3
 Percolation rate = 8.0 min/in
 Max. depth into exist. grade = 5 in.
 System Size = 495 s.f.

 Hydraulic Factor = 30
 Flow Factor = 1.50
 Perc Factor = 1.00

 $30 \times 1.50 \times 1.00 = 45.0'$

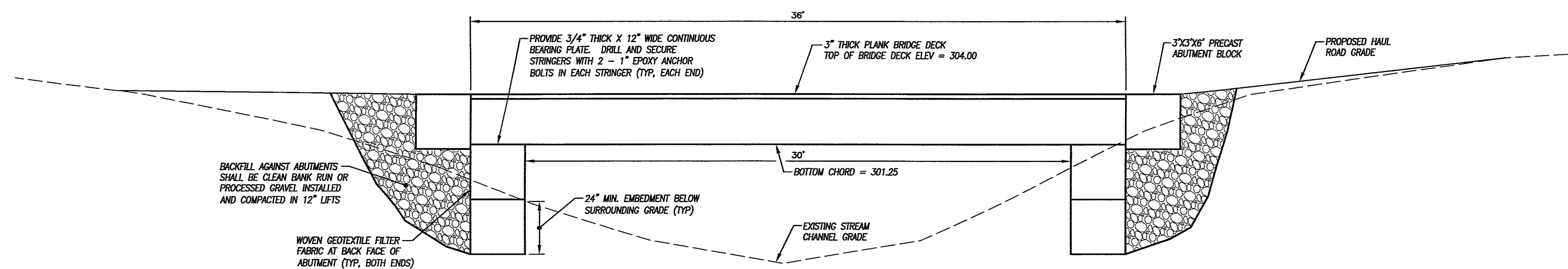
 MLSS = 45.0'

LOT 11
 TP 12-1, 12-2
 Depth to restrictive layer = 25 in.
 Slope % = 8.9 %
 Number of Bedrooms = 3
 Percolation rate = 8.0 min/in
 Max. depth into exist. grade = 6 in.
 System Size = 495 s.f.

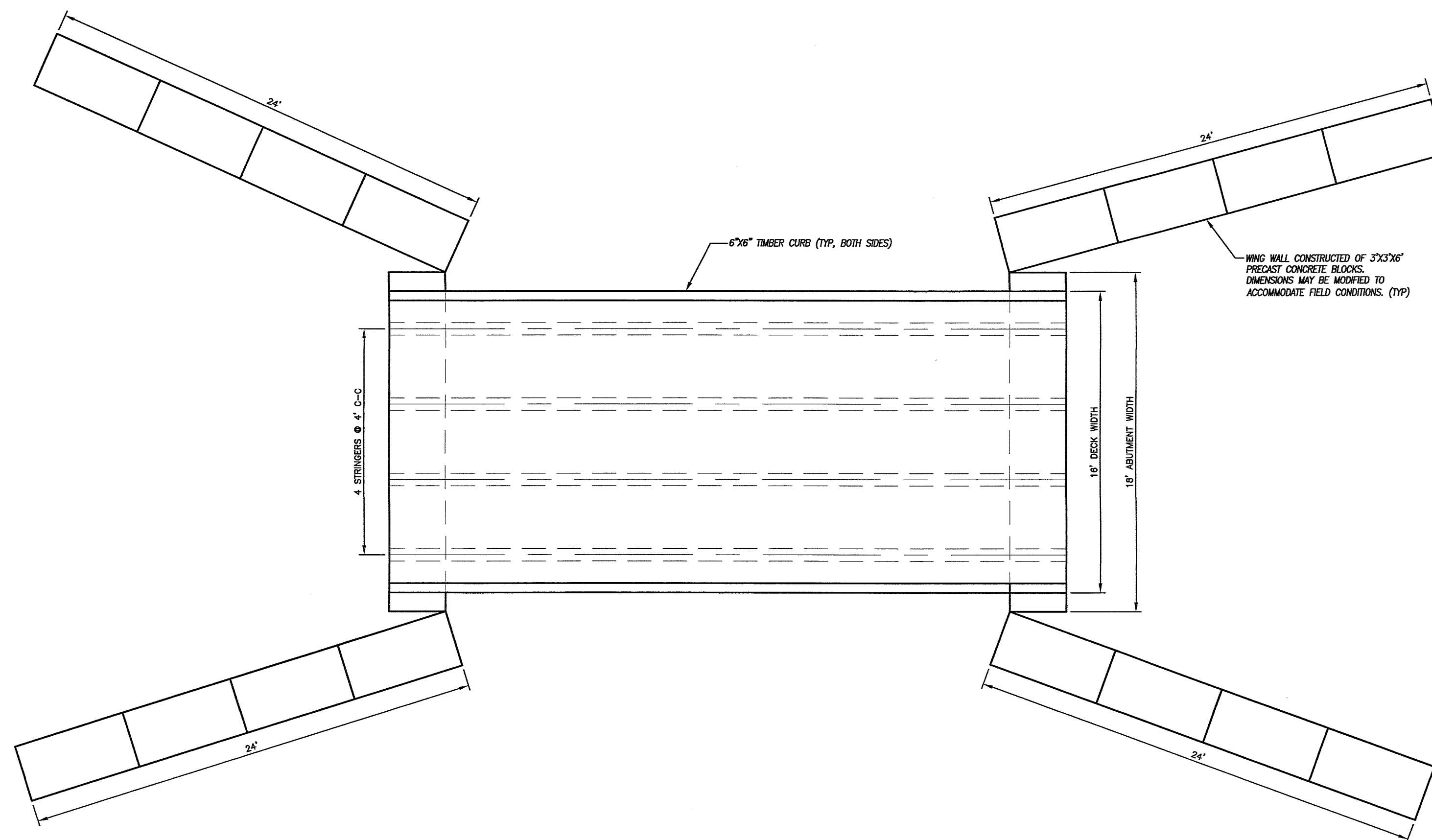
 Hydraulic Factor = 28
 Flow Factor = 1.50
 Perc Factor = 1.00

 $28 \times 1.50 \times 1.00 = 42.0'$

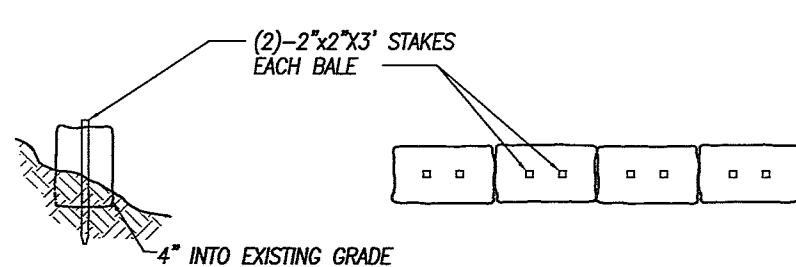
 MLSS = $42.0'$



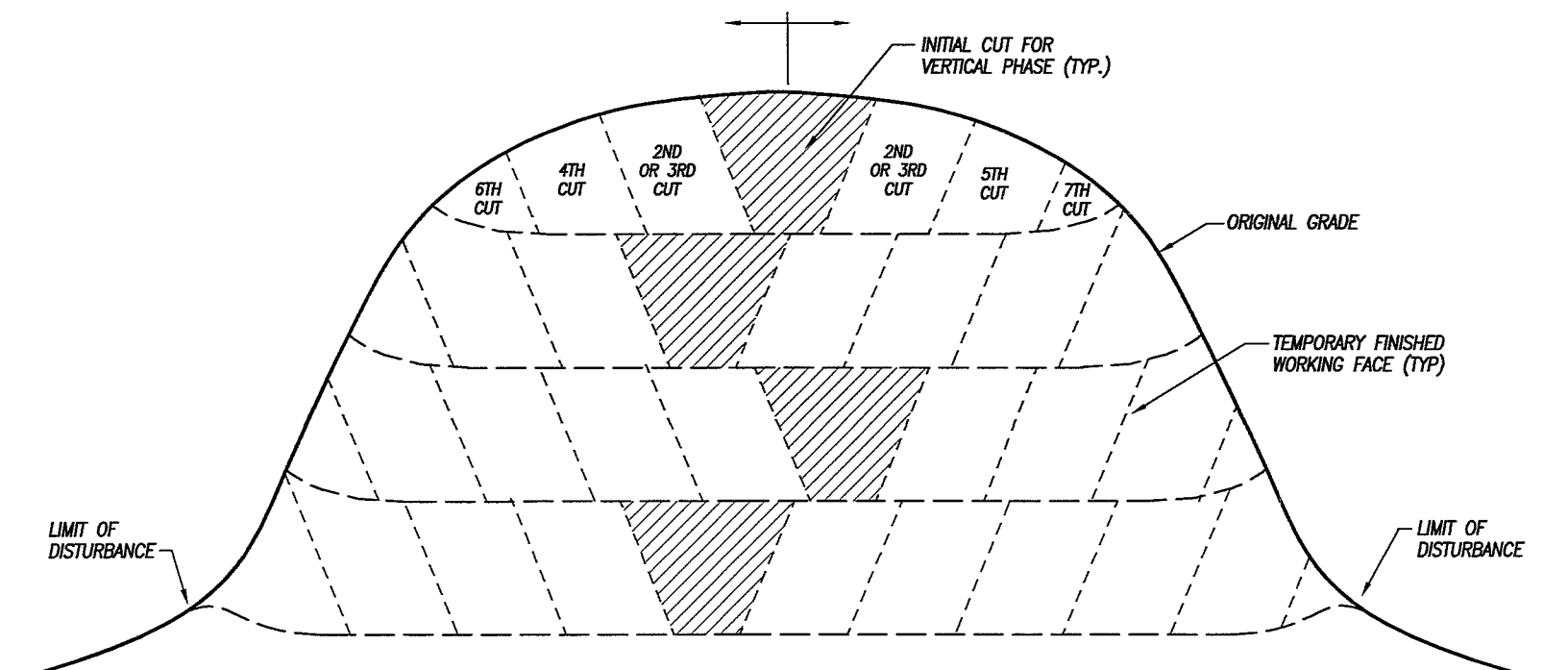
SCALE: 1" = 5'



SCALE: 1" = 5'

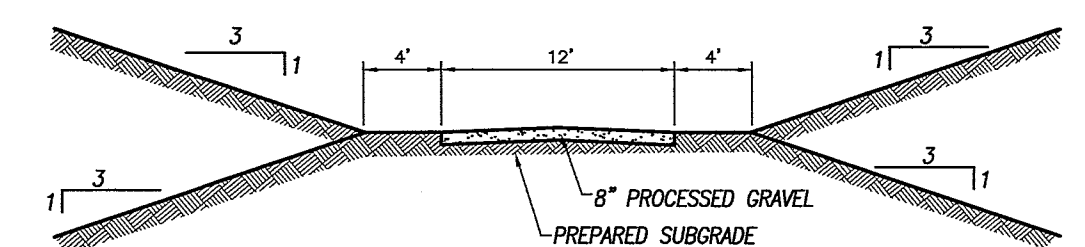


NOT TO SCALE

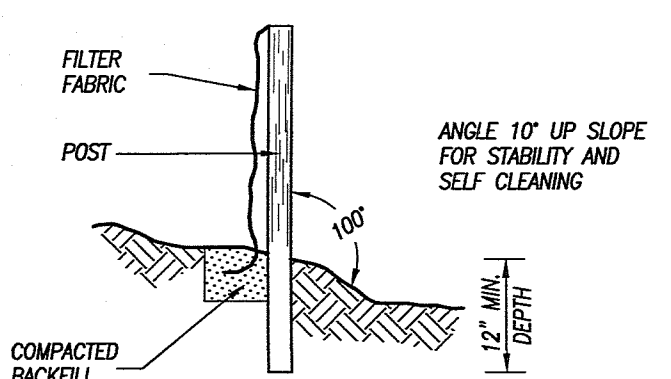


EXCAVATION PROGRESSES IN BOTH DIRECTIONS FOR ENTIRE LENGTH OF EACH VERTICAL SUBPHASE, STARTING AT BOTTOM OF INITIAL CUT, THEN AN INITIAL CUT IS MADE FOR THE SUBSEQUENT LOWER VERTICAL SUBPHASE AND THE PROCESS CONTINUES.

NOT TO SCALE



NOT TO SCALE



NOT TO SCALE

PREPARED FOR

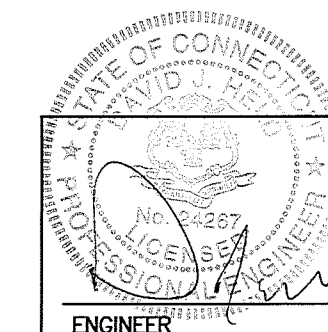
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REVISIONS	
DATE	DESCRIPTION
7/29/2022	MISC. REVISIONS

DATE: 6/29/2022	DRAWN: DJH
SCALE: AS SHOWN	DESIGN: DJH
SHEET: 17 OF 17	CHK BY: ---
DWG. No: Client File	JOB No: 203095



8/8/2.



October 11, 2022

Bruce Fitzback
Land Use Agent
Town of Putnam
200 School Street
Putnam, CT 06260

Sent via email: Bruce.Fitzback@putnamct.us

Re: Hydrogeologic Review: Proposed 11 Lot Subdivision
Putnam River Road, LLC & 285 River Road, LLC

Dear Mr. Fitzback:

At the request of the Town of Putnam Inland Wetlands and Watercourses Commission (IWWC) and on behalf of Putnam River Road, LLC and 285 River Road, LLC (the “Applicants”), One Earth Environmental, LLC (“One Earth”) is providing this hydrogeologic review with respect to the referenced proposed development project.

Based on our discussions, we understand Putnam IWWC is concerned that the Applicant’s proposed removal of sand and gravel and construction of two ponds may alter hydrogeologic conditions in a way that may impact nearby wetlands or watercourses, including Carpenter Brook. We have evaluated the hydrogeology of the project area and the engineering plans and related information submitted by the Applicant to Putnam IWWC. We conclude the proposed project would not have the potential to alter hydrogeologic conditions in a manner that would cause significant impacts to wetlands or watercourses. We summarize the procedures, results, and findings of our evaluation below. Please note that, per our discussions, our focus was on hydrogeologic conditions only, and the potential that changes in hydrogeologic conditions associated with the project could cause adverse impacts to inland wetland and watercourse systems on and adjacent to the project site.

Procedures

To conduct the hydrogeologic evaluation, One Earth:

- Reviewed the Applicant’s permit submittals and supporting information, including:
 - Site plans prepared by Provost & Rovero, (6/29/2022, revised 7/29/2022)
 - Soil scientist’s report (Joseph Theroux, 7/29/2022)
 - Test pit logs (included on Detail Sheet 1 of Provost & Rovero plan set)
 - Soil boring logs/monitoring well completion logs (Glacier Drilling, Inc., Feb 8-Feb 10, 2021)
 - Groundwater elevation data for MW-1 through MW-6, measured by Provost & Rovero on July 11, 2022 and October 3, 2022
- Reviewed published soil, geologic and hydrogeologic mapping available from state and federal agencies

- Conducted a walking site reconnaissance of the properties on September 29, 2022, and October 3, 2022

Using this information, we developed a conceptual site model of the hydrogeology of the project area and evaluated the project's potential to cause significant changes to the groundwater-surface water system, as discussed below.

Project Area Description

The project area occupies approximately 97 acres in the southwestern part of Putnam, located west of River Road and a private residential parcel at 341 River Road, southeast of the Airline Trail, east of Modock Road and associated residential and agricultural parcels, and north of privately-owned parcels occupied by single-family residences and woodlands. The surrounding areas include woodlands, some cropland, and single-family residences. The Wheelabrator Ash Landfill is located across River Road, about 900 feet east-southeast of the project area. The Airline Trail, a state-owned, multi-use recreational trail following the route of an abandoned railroad, borders the project area to the north.

Most of the project area is located within the drainage basin of Carpenter Brook, a small stream that begins along the flank of Richmond Hill, approximately 1.7 miles north-northwest of the project area. From its source, Carpenter Brook flows south-southeastward, passing beneath Route 44 and Mantup Road, and entering the northern end of the project area by passing through a stone culvert beneath the Airline Trail. After entering the project area, Carpenter Brook flows approximately 500 feet at a gentle slope through mixed woodland and overgrown areas, joined by a small, intermittent stream flowing from the west. Its gradient then steepens as it flows approximately 450 feet between higher streambanks before entering the northwest corner of a large marsh located in the southeastern part of the project area. Carpenter Brook flows out from the southeastern end of the marsh, and turns eastward, exits the project area by passing beneath River Road, and eventually discharges to the Quinebaug River about 3800 feet to the east.

Based on USGS hydrologic modeling (StreamStats - <https://streamstats.usgs.gov/ss/>), a drainage basin divide passes through the southern part of the project area, forming the southern boundary of the Carpenter Brook drainage basin. South of this divide, the southern and southwestern parts of the project area are located in the drainage basin of an unnamed, intermittent stream. This stream originates as palustrine wetlands and shallow historic drainage ditches in the wooded southern and southwestern parts of the project area (Theroux, July 2022). This stream flows south-southeastward offsite, eventually discharging to the Quinebaug River about 3800 feet south of the project area.

The topography of the project area is characterized by flat to gently sloping areas in the vicinity of Carpenter Brook. Steeper slopes are present in the northeast corner of the project area and throughout the western part of the project area. This topography reflects the geology of the area; predominantly gentle and moderate sloping areas in the eastern and southern parts of the project area are underlain by sands and gravels, mapped by the Connecticut Geological Survey/USGS as glaciofluvial deposits. These sediments partially fill a buried bedrock valley that lies beneath the lower portions of the Carpenter Brook drainage; a portion of these sand and gravel deposits will be excavated during the proposed project. In contrast, the western part of the project area is characterized by steeper slopes. The thin soils in this area are derived from glacial till (per USDA and USGS mapping) and contain numerous boulders. The steepest slopes of this area run

north-to-south through the western part of the project area and contain numerous bedrock outcrops of gneiss and schist.

Groundwater in the sand and gravel deposits originates as regional groundwater flow from surrounding uplands and underlying bedrock, and, to a lesser extent, direct infiltration of precipitation and overland runoff. This shallow groundwater is inferred to flow primarily toward Carpenter Brook, with some groundwater discharging to the Brook and some continuing to flow down-valley through the subsurface sand and gravel layers.

It is likely that a short segment of Carpenter Brook flowing through the project area is a “losing stream.” Instead of receiving groundwater discharge, a losing stream gives up some of its water by seepage to the aquifer below. This phenomenon occurs when a stream surface is higher than the surrounding water table and is common where a watercourse flowing over till-covered soils enters an area underlain by highly permeable sands and gravels, and particularly where there is a significant change in the slope of the streambed. Water lost by seepage through the streambed flows roughly parallel to the stream through the underlying sands and gravels, then reenters the channel some distance downstream, where the stream becomes a “gaining stream” once again. The amount of water lost from a losing stream segment to underlying sediments will depend on the hydraulic gradient between the stream and adjacent groundwater and the permeability of the sediments. In some instances, a losing or gaining stream can be identified by observable changes in streamflow, whereas lesser fluxes cannot be detected without careful flow measurements. Although noticeable changes in streamflow were not apparent along the channel of Carpenter Brook, site topography and hydrogeology suggest that a short segment of Carpenter Brook, downstream of the Airline Trail and upstream of the steep section of channel near the large marsh, exhibit characteristics of a losing stream.

Seasonally, groundwater from the till-covered uplands seeps to the ground surface at locations near the base of the steeper, east-facing slopes and bedrock outcrops in the western and south-central parts of the project area. This groundwater breakout contributes water to an intermittent tributary to Carpenter Brook in the western part of the project area and to shallow wetland channels in the southern part of the project area that drain southward via the unnamed, intermittent stream (Theroux, July 2022).

Proposed Pond Construction

Based on the site plans provided by Provost & Rovero (revision date of July 29, 2022), the project will include construction of two ponds by excavation and removal of sand and gravel to depths below the water table. Removal of sand and gravel will extend horizontally beyond the final limits of the ponds; these over-excavated areas will be backfilled with clean silt and restored.

The ponds will be groundwater flow-through systems, having neither inlets nor outlets. Groundwater will enter each pond by seepage from adjacent saturated sands and gravels. Less significant sources of water entering the ponds will include direct precipitation and runoff from surrounding areas; the runoff component of water inflow will be minimal, due to the small, closed basins surrounding each pond. Water will be lost

from the ponds by seepage to the surrounding groundwater in downgradient areas; less significant losses of water will occur via evapotranspiration.

The southern or "Phase 1" pond will be located in the western part of proposed Lot #7, in a flat to gently sloping area. This area is currently wooded with hardwood species and white pine. The excavation to remove sand and gravel from the area of the Phase 1 Pond will be larger than the final pond area, measuring about 890 feet from north to south, and a maximum of about 380 feet from east to west. After backfilling portions of the excavation with silt, the final pond depression will be about 620 feet from north to south and 360 feet from east to west. With a surface water elevation of about 280+/- feet, the area of open surface water will cover about 1.7 acres and have a maximum water depth of about 20 feet. The western and southern margins of the Phase 1 pond will extend to within about 25 to 30 feet of the intermittent channels of the palustrine wetland complex; the northeastern margin of the Phase 1 pond will be about 400 feet to the southwest of the large marsh.

The northern or "Phase 2" pond will be located north of the large marsh, east of Carpenter Brook, and west of River Road. This area is currently occupied by overgrown fields and light woodlands, as well as a single-family house that will be demolished. The completed pond will occupy portions of proposed Lots #4, #5 and #6. The initial excavation to remove sand and gravel from this area will measure about 960 feet from north to south, and a maximum of about 450 feet from east to west. After removal of sand and gravel, portions of this excavation will be backfilled with silt such that the final pond depression will be about 550 feet from north to south and 400 feet from east to west. With a planned surface water elevation of approximately 278 feet, the pond will cover an area of about 1.8 +/- acres and have a maximum depth of about 26 feet. The western edge of the Phase 2 pond will extend within about 75 feet of the wetland limits along Carpenter Brook, and about 25 to 30 feet from the northern edge of the large marsh.

Potential Ways That Pond Construction Could Impact Wetlands or Watercourses

The proposed ponds will not involve dams, excavation in wetlands, or diversion of surface waters. Therefore, surface drainage patterns will not be altered and construction of the ponds will not directly impact the flow of water within Carpenter Brook or other watercourses. The two proposed ponds will not have inflow or outflow channels. Instead, water will enter and leave the ponds primarily via interchange with the surrounding aquifer.

However, surface water and groundwater are part of an interconnected system; under certain scenarios, excavating ponds may alter hydrogeologic conditions, potentially affecting the interaction of groundwater with streams or wetlands. This could occur, for example, if the excavation, re-grading or pond construction were to cause significant changes to any of the following:

1. the rate of groundwater recharge
2. the amount of water storage in the aquifer
3. hydraulic gradients of the groundwater (i.e., the "slope" of the water table) that might alter the direction of horizontal groundwater flow
4. vertical groundwater flow patterns, such as could occur by removing confining units (e.g., large, continuous layers of silt or clay), thereby interconnecting discrete hydrogeologic units
5. groundwater flow velocity

It is our professional opinion that the development of the project does not have the potential to cause such effects, as we discuss below.

Findings

1. Potential to Affect Groundwater Recharge

The Applicant's proposed activities would not be expected to significantly impact total groundwater recharge. Slight, localized changes in recharge can be expected during gravel excavation and other construction activities, but these would not significantly alter the total volume of precipitation that would recharge the groundwater.

Likewise, the hydrogeologic effects of the proposed activities will not extend far enough to significantly affect the interchange of water between surface waters and the adjacent aquifer, and thus, will not impact any recharge of the aquifer that may occur along "losing stream" segments of Carpenter Brook.

Following removal of sand and gravel, the Applicant's proposed restoration activities will make use of clean silt or washing fines from off-site aggregate processing to backfill portions of the proposed excavations and to achieve final grades. This fine material will have a lower permeability than the native sands and gravels that it will replace. In areas where fines are used, the rate at which infiltrated precipitation will percolate downward to the water table will decrease, potentially resulting in higher rates of storm runoff in these areas. However, the finished slopes will direct runoff to the ponds, and this water will still recharge groundwater by seeping through the pond bottom and adjacent native materials. The net effect of storm runoff to the ponds will be to temporarily raise the water levels in the ponds, causing transient mounding of the surrounding water table. Because the areas of proposed excavations are small relative to the sizes of the drainage basins, these localized disturbances would not significantly impact groundwater recharge or the amount of water entering Carpenter Brook or other wetlands.

2. Potential to Affect Groundwater Storage

Groundwater storage provides the primary source of base flow for streams and wetlands during periods of low precipitation or snowmelt. Therefore, if construction activities significantly reduced the volume of groundwater storage, this could impact nearby wetlands or watercourses. Such change could occur, for example, if the proposed activities lowered the water table, as could occur if the construction caused groundwater to be drained to a different, lower elevation.

Based on available hydrogeologic information and the design of the project, the proposed activities will not dewater portions of the sand and gravel aquifer and creation of the permanent ponds will not decrease groundwater storage. In fact, because the ponds will be constructed by removing material below the water table, the net effect will be to slightly increase the overall water storage in the interconnected groundwater-surface water system, though the amount of increased water storage will be insignificant compared to the total aquifer storage within the Carpenter Brook drainage basin.

Any changes in evapotranspiration will also not significantly affect water storage, due to the small size of the ponds relative to the size of the aquifer system.

3. Potential to Affect Horizontal Groundwater Flow Direction

As noted above, because the ponds will have no surface water inflow or outflow, their construction is not expected to affect the boundaries of surface water drainage basins. Importantly, however, drainage basin divides and groundwater divides do not precisely coincide; groundwater elevations, and not surface topography, determine the locations of groundwater divides. Therefore, it is important to evaluate potential changes in groundwater elevations and groundwater flow direction that may result from the project.

The proposed gravel excavation can be expected to cause minor, small-scale changes in groundwater flow direction during construction. The final constructed ponds will also influence groundwater flow direction immediately around the planned ponds. These changes will not significantly affect the interaction of groundwater and wetlands/watercourses within the project area for the following reasons:

- Based on project boring logs, test pits and published geologic mapping, there are no continuous silt or clay layers or sequences of glacial till soils in the areas of proposed excavation. Therefore, the project will not create new pathways for groundwater flow between distinct hydrostratigraphic units.
- The water surface elevation of each proposed pond will rise and fall with the surrounding water table. Thus, at any time, the pond elevation will be roughly equivalent to the mean pre-construction water table elevation across this area (i.e., the water table elevation had the pond not been constructed). And because the water table elevation differs by only several feet across the area of each proposed pond, the ponds will not significantly increase or decrease the gradient of the water table, and thus, will have no significant influence on the flux of water between the aquifer and Carpenter Brook or other wetlands.
- The excavations are not expected to alter the locations of groundwater divides, and therefore, will not cause water to be diverted from one drainage basin to another. The evidence supporting this conclusion for each proposed pond area is discussed below:

Phase 1 Pond

USGS hydrologic modeling (Streamstats - <https://streamstats.usgs.gov/ss/>) suggests that the area of the proposed Phase 1 pond may be located astride a drainage divide separating the Carpenter Brook drainage basin to the north and northeast from the drainage basin of an unnamed intermittent tributary of the Quinebaug River to the south. The precise boundary of this drainage basin divide is not defined at a usable scale by the USGS modeling and cannot be easily determined using available topographic mapping, since the area is relatively flat. (This likely explains the presence of historical drainage channels that appear to have been dug and/or deepened by farmers to promote surface drainage (Theroux, July 2022)).

A groundwater divide can be inferred to be located in the general vicinity of the surface drainage divide in the southern part of the project area. As noted, however, the location of the groundwater divide, and not the surface drainage basin boundary, is the important factor when assessing whether the project has the potential to affect groundwater flow direction. The general location of the groundwater divide in the southern part of the project

area can be inferred using the groundwater elevation measurements provided by Provost & Rovero, Inc., for monitoring wells MW-4, MW-5 and MW-6. These data, measured in July and October 2022, indicate that the hydraulic gradient across the entire area of the proposed Phase 1 excavation is consistently toward the north, in the direction of the large marsh and Carpenter Brook. This information demonstrates that the hydrogeologic divide between Carpenter Brook and the unnamed tributary is located south of the southern limits of the Phase 1 excavation. Therefore, construction of the Phase 1 pond will not significantly alter existing groundwater flow patterns or impact the amount of groundwater flowing to Carpenter Brook or other wetlands.

Phase 2 Pond

The Phase 2 pond and proposed adjacent areas of sand and gravel removal are entirely within the drainage basin of Carpenter Brook and no groundwater divides are inferred to be located in the vicinity of the pond. The pond surface will be continuous with the water table in the surrounding aquifer. Any changes to the groundwater hydraulic gradient would be minor and confined to areas immediately surrounding the proposed ponds. During, and following, construction, the general groundwater flow direction through the sand and gravel aquifer will remain in the direction of the large marsh.

4. Potential to Affect Vertical Groundwater Flow

Shallow groundwater in a sand and gravel aquifer will flow predominantly in a horizontal direction across the landscape. However, groundwater flow is 3-dimensional and typically also has a significant vertical component. The vertical potential for groundwater flow is generally in a downward direction in upland recharge areas but upward in areas where groundwater is discharging, such as beneath wetlands and watercourses. The direction or rate of vertical groundwater flow can be altered if excavation causes changes to surface water drainage patterns or interconnects discrete water-bearing units that were originally separated by a hydrogeologic confining unit, such as a silt or clay layer.

Based on the geologic logs of well borings and test pits within the project area, the sand and gravel deposits do not contain extensive, continuous layers of silt or other fines that would function as a hydrogeologic confining unit. Therefore, the proposed excavations will not cause the interconnection of discrete hydrostratigraphic units and will have no significant effect on vertical groundwater flow.

5. Potential to Affect Groundwater Flow Velocity

As noted, the proposed pond construction will cause localized changes in the rates of water movement. Groundwater that has seeped into the pond on the upgradient side will be able to pass unimpeded through the pond and exit on the downgradient side, potentially increasing the velocity of flow through the hydrologic system. On the other hand, low-permeability silt that will be used to backfill portions of the excavation and grade the slopes of the pond can be expected to slow the flux of water through the pond-aquifer system. And, at any particular time, a pond surface will be at a single elevation, thereby flattening the adjacent water table, and consequently slightly steepening the gradient of the water table elsewhere. Due to the relatively small sizes of the ponds and related disturbances, and their distance from wetlands and surface

waters, these changes will be localized to the immediate areas and not expected to significantly alter the overall rates of groundwater interchange with nearby wetlands and watercourses.

Conclusions

Based on the review of information described herein, we conclude that the proposed excavation and removal of sand and gravel, replacement of a portion of this material with clean silt, and construction of two ponds will not significantly impact the hydrology of Carpenter Brook or other wetlands or watercourses.

If you have questions or need any clarification regarding this report, please contact me at 860-933-0195.

Sincerely,



Wayne H. Bugden, PG, LEP
Owner/Manager

c. Harry Heller, Esq.
Madilyn Smith, Esq.
Jeffrey Rawson
David Held, P.E.

References

Applicant-Provided Documents Reviewed:

Plan Set: Proposed 11 Lot Subdivision, River Road & Modock Road, Putnam, Connecticut, Prepared by Provost & Rovero, Inc., June 29, 2022, Revision July 29, 2022

Excel Spreadsheet of Monitor well readings (7/11/2022 and 10/1/2022)

Soil sampling logs and well completion logs for holes B-1/MW-1 through B-6/MW-6, prepared by Glacial Drilling, February 2021

Letter to Provost & Rovero, Inc. from Joseph Theroux R. Report, Soil Scientist, Re: of Wetland Delineation, 285 & 357 River Road, Putnam, CT, 7/29/2022

Application for Permit: Putnam Inland Wetland Commission; Name of Applicant: Putnam River Road, LLC ad 285 River Road, LLC.

Published References Consulted/Cited:

Randall, Allan D., Mendall P. Thomas, Chester E. Thomas, Jr., John A. Baker, 1966. *Water Resources Inventory of Connecticut, Part 1: Quinebaug River Basin*, U.S. Geological Survey and Connecticut Water Resources Commission, Connecticut Water Resources Bulletin No. 8

Rodgers, John, 1:125,000 scale, *Bedrock Geological Map of Connecticut*, 1985, Published by Connecticut Geological and Natural History Survey of the Connecticut Department of Environmental Protection

Stone, Janet R., John P. Shaefer, Elizabeth H. London and Woodrow B. Thompson, 1992. *Surficial Materials Map of Connecticut*, CT Department of Environmental Protection and USGS

Stone, Janet Radway, John P. Schafer, Elizabeth Haley London, Mary L. DiGiacomo-Cohen, Ralph S. Lewis, and Woodrow B. Thompson, *Quaternary Geologic Map of Connecticut and Long Island Sound* (2005), USGS Scientific Investigations Map 2784

USDA WebSoil Survey, available at <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

USGS Streamstats Streamflow Statistics and Spatial Analysis Tools available at <https://streamstats.usgs.gov/ss/>

Top of well casing elevation	298.81	
Date	Depth to water (ft)	Water elevation
7/11/2022	25.77	273.04
10/3/2022	26.15	272.66

Top of well casing elevation	310.84	
Date	Depth to water (ft)	Water elevation
7/11/2022	25.45	285.39
10/3/2022	24.6	286.24

Top of well casing elevation	310.19	
Date	Depth to water (ft)	Water elevation
7/11/2022	35.8	274.39
10/3/2022	35.84	274.35

Top of well casing elevation	300.16	
Date	Depth to water (ft)	Water elevation
7/11/2022	25.2	274.96
10/3/2022	27.1	273.06

Top of well casing elevation	296.15	
Date	Depth to water (ft)	Water elevation
7/11/2022	19.35	276.8
10/3/2022	21.8	274.35

Top of well casing elevation 294.35

Date	Depth to water (ft)	Water elevation
7/11/2022	15.55	278.8
10/3/2022	17.95	276.4

**APPLICATION OF
PUTNAM RIVER ROAD, L.L.C. AND 285 RIVER ROAD LLC
TO TOWN OF PUTNAM
INLAND WETLANDS AND WATERCOURSES COMMISSION**

**CERTIFICATION PURSUANT TO SECTION 7.6(i) OF THE PUTNAM INLAND
WETLANDS AND WATERCOURSES REGULATIONS**

I, Robert G. Viens, as Member of Putnam River Road, L.L.C. and as Member of 285 River Road LLC, hereunto duly authorized, hereby certify that I am familiar with all of the information provided in an application to the Town of Putnam Inland Wetlands and Watercourses Commission with respect to an eleven (11) lot residential resubdivision and the excavation of gravel from the property to create two (2) permanent ponds, all as more particularly depicted on a plan entitled "Proposed 11 Lot Resubdivision River Road & Modock Road Putnam, Connecticut Owner & Applicant: Putnam River Road, L.L.C. & 285 River Road, LLC P.O. Box 271 Putnam, CT 06260 June 29, 2022 Revisions Date 7/29/2022 Misc. Revisions Sheets 1 of 17 to 17 of 17 Job No: 203095 Dwg No: Client File Prepared By Provost & Rovero, Inc. Civil Engineering – Surveying – Site Planning Structural – Mechanical – Architectural Engineering 57 East Main Street, P.O. Box 191 Plainfield, Connecticut 06374 (860) 230-0856 – Fax (860) 230-0860 info@prorovinc.com www.prorovinc.com" and am aware of the penalties for obtaining a permit through deception or through inaccurate or misleading information.

**APPLICANTS:
PUTNAM RIVER ROAD, L.L.C.**

By:  10-3-2022 (L.S.)
Robert G. Viens, its Member

285 RIVER ROAD LLC

By:  10-3-2022 (L.S.)
Robert G. Viens, its Member

Petition

Clint M. RFA
Certified 9-27-22

The below Town of Putnam, CT residents would like to request that the Inland Wetland Commission hold a Public Hearing regarding Application #2022-09, 285 River Rd LLC - Putnam River Road LLC - 11 Lot Subdivision

Num	Printed Name	Address	Phone Number	Signature
1	Peter McMorris	341 River Rd Putnam, CT	860 235-0806	Peter McMorris
2	Lynn Beckham	242 River Rd	860-617-5678	Lynn Beckham
3	David Vitale	227 River Rd	860 428 4768	David Vitale
4	Mary Vitale	227 River Rd	860 428 7805	Mary Vitale
5	Nylon Soares	268 River Rd	401 413 1607	Nylon Soares
6	Megan O'Rourke	208 River Rd	860 441 7177	Megan O'Rourke
7	James Procaccini	285 River Rd	401-298-0268	James Procaccini
8	Justin Procaccini	279 River Rd	401-271-2143	Justin Procaccini
9	Eric Edstrom	341 River Road	508-365-9726	Eric Edstrom
10	Susan Meun	449 WOSTICK AVE	860-928-9330	Susan Meun
11	Ron Gnee	181 Modock Rd.	860-928-7281	Ron Gnee
12	Steve Rumpell	191 Modock Rd.	860-307-3685	Steve Rumpell
13	Michael Rivers	191 Modock Rd	860 928 5252	Michael Rivers
14	Virginia Fiske	191 Modock Rd	860-428-2449	Virginia Fiske
15	Tammy Rivers	191 Modock Rd	860-268-4439	Tammy Rivers
16	Kenneth J. Haggan	303 Modock Rd.	860-377-1059	Kenneth J. Haggan
17	Don MOREAU	225 Modock Rd	860-516-3111	Don MOREAU
18	MOENIS VITALI	251 MODOCK RD	860 .933 5597	MOENIS VITALI
19	Jo Ann Bauer	59 Gary School Rd	860 928 8004	Jo Ann Bauer
20	Donna Memmies	341 River Rd	860-377-2876	Donna Memmies
21	Donna Memmies			
22	Dennis LaBell	405 modock Rd	860-234-6695	Dennis LaBell
23	Gary LaFrance	323 Modock Rd	508-864-1310	Gary LaFrance
24	Steve Faucher	241 Modock Rd	860-617-4142	Steve Faucher
25	Jim Faucher	241 modock Rd	860-208-5605	Jim Faucher

no matching address

no matching name / address

not a reg. voter

Petition

The below Town of Putnam, CT residents would like to request that the Inland Wetland Commission hold
a Public Hearing regarding Application #2022-09, 285 River Rd LLC - Putnam River Road LLC - 11 Lot
Subdivision

Num	Printed Name	Address	Phone Number	Signature
1	<i>Bob Pungent</i>	<i>56 Mantup Rd</i>		<i>[Signature]</i>
2	<i>J. [Signature]</i>	<i>38 Mantup Rd</i>	<i>465-6070</i>	<i>[Signature]</i>
3	SEAN A. Smith	59 Mantup Rd	7742395748	<i>[Signature]</i>
4	Wendy Spell	135 River Rd	260-576-1868	<i>[Signature]</i>
5	<i>Rita Arand</i>	165 River Rd	860-933-1851	<i>Rita Arand</i>
6	<i>[Signature]</i>	257 Sabin St	800 630-0269	<i>[Signature]</i>
7	<i>Marianne Vias</i>	<i>113 Mantup</i>		<i>Marianne Vias</i>
8				
9				
10				
11				
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13				
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16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

Cannot
verify

**APPLICATION OF
PUTNAM RIVER ROAD, L.L.C. AND 285 RIVER ROAD LLC
TO TOWN OF PUTNAM
INLAND WETLANDS AND WATERCOURSES COMMISSION**

**AUTHORIZATION PURSUANT TO SECTION 7.6(j) OF THE PUTNAM INLAND
WETLANDS AND WATERCOURSES REGULATIONS**

PUTNAM RIVER ROAD, L.L.C. and **285 RIVER ROAD LLC**, hereby authorize the Putnam Inland Wetlands and Watercourses Commission and its agents to access and inspect properties located at 285 River Road and 357 River Road, Putnam, Connecticut, at reasonable times, both before and after a final decision has been issued with respect to an Application (i) with respect to a proposed eleven lot resubdivision of properties designated as 285 River Road and 357 River Road, Putnam, Connecticut and (ii) for the excavation of earth product in conjunction with the creation of two (2) ponds in accordance with a plan entitled "Proposed 11 Lot Resubdivision River Road & Modock Road Putnam, Connecticut Owner & Applicant: Putnam River Road, L.L.C. & 285 River Road, LLC P.O. Box 271 Putnam, CT 06260 June 29, 2022 Revisions Date 7/29/2022 Misc. Revisions Sheets 1 of 17 to 17 of 17 Job No: 203095 Dwg No: Client File Prepared By Provost & Rovero, Inc. Civil Engineering – Surveying – Site Planning Structural – Mechanical – Architectural Engineering 57 East Main Street, P.O. Box 191 Plainfield, Connecticut 06374 (860) 230-0856 – Fax (860) 230-0860 info@prorovinc.com www.prorovinc.com".

Dated at Putnam, Connecticut this 3 day of OCTOBER, 2022.

**APPLICANTS:
PUTNAM RIVER ROAD, L.L.C.**

By:  (L.S.)
Robert G. Viens, its Member

285 RIVER ROAD LLC

By:  (L.S.)
Robert G. Viens, its Member

Soil Sampling Log

Date Started 2/8/21

Sheet 1 Of 1

Date Finish 2/8/21

Proj. No.

Weight Of Hammer 140 300

Location 285 & 357 River Road

Hammer Fall 30' 24"

Putnam, CT

Ground Water Observations

Date Time Depth

Rawson Materials

6 Kennedy Drive

Putnam, CT 06260

Offset

Ground Elevation

Hole No. B - 1 / MW - 1

Sampler O.D. I.D.

Casing Sampler Core
Type FJ FJ Barrel

Type Of Rig Geoprobe SONIC 8140LS

Size I.D. 6.0" 4.5"

Dept. Below Surface	Sample No. Depths Elev. Ft.	Type Of Sample	Blows Per 6" On Sample			Density Or Consist Moisture	Profile Change Depth Elev.	Field Identification Of Soils Remarks	Sample			PID
			From	To					No.	Pen	Rec	
0 - 5'	L1	6"				M Comp, Dry	5" 2.0' 3.0' 4.0'	Topsoil: Dark brown fine Sand, some Silt Brown fine Sand, trace Cobble, trace Silt Greenish brown fine Sand, little fine Gravel, little Silt Orange brown fine Sand, little fine to coarse Gravel	1	60"	45"	
5' - 15'	L2	6"				Loose, Dry	5.0' 7.0'	Brown fine Sand & Cobbles, little fine to coarse Gravel, trace Silt Brown fine Sand, some fine to coarse Gravel, trace Silt	2	120"	120"	
10'												
15' - 25'	L3	6"				Loose, Moist	14.0' 15.0'	Brown fine Sand, some fine to coarse Gravel, little Cobble Brown fine to medium Sand, some fine to coarse Gravel, trace Cobble, trace Silt	3	120"	108"	
20'							20.0' 23.0'	Brown medium Sand, some fine Sand, some fine Gravel Brown fine Sand, some fine to coarse Gravel, trace Silt				
25' - 35'	L4	6"				Loose, Wet	25.0'	Brown medium to coarse Sand, some coarse Gravel, trace Silt, trace Cobble Brown fine Sand Brown medium to coarse Sand, trace fine to coarse Gravel Brown fine Sand	4	120"	120"	
30'							28.0' 29.0' 32.0'					
35' - 45'	L5	6"				M Comp, Wet	34.0' 35.0'	Brown fine Sand and Silt Brown medium to coarse Sand, trace fine to coarse Gravel,	5	120"	70"	
40'							40.0'	Brown fine Sand, some Cobble, some Silt, trace fine to coarse Gravel				
45' - 46'	L6	4.5"				Dense, Wet	45.0'	Brown fine Sand and Silt, some Cobble, little Silt				

Driller: Mark Schock

Assistant: John Babick

Soils Engineer: David Held

Proportions used trace= 0.10%, little = 10.20%, some = 20.35%, and = 35.50%

Sample Type:
C = Cored W = Washed
SS = Split Spoon
UP = Undisturbed Piston

Cohesionless Density
0-10 Loose
10-30 Med. Comp.
30-50 Dense

Total Footage:
Earth Boring Ft. 46.0
Rock Coring Ft.

GLACIER DRILLING

Date Started	2/8/2021		
Date Finish	2/8/2021		
Weight Of Hammer	140	300	
Hammer Fall	30'	24"	

Putnam, CT

Size I.D. 6.0" 4.5"

Type Of Rig Geoprobe SONIC 8140LS

Driller: Mark Schock
Assistant: John Babick
Soils Engineer: David Held

Cohesionless Density
0-10 Loose
10-30 Med. Comp.
30-50 Dense

Total Footage:
Earth Boring Ft. 46.0
Rock Coring

Soil Sampling Log

Date Started 2/8/2021

Sheet 1 Of 1

Date Finish 2/8/2021

Proj. No.

Weight Of Hammer 140 300

Location 285 & 357 River Road

Hammer Fall 30' 24"

Putnam, CT

Ground Water Observations

Date Time Depth

Sampler O.D. I.D.

Type Of Rig Geoprobe SONIC 8140LS



75 Commerce Circle
Durham, CT 06422
Phone: 860-349-0397

Offset

Ground Elevation

Hole No. B - 2 / MW - 2

Casing Sampler Core
Type FJ FJ Barrel
Size I.D. 6.0" 4.5"

Rawson Materials

6 Kennedy Drive

Putnam, CT 06260

Dept. Below Surface	Sample No. Depths Elev. Ft.	Type Of Sample	Blows Per 6" On Sample			Density Or Consist Moisture	Profile Change Depth Elev.	Field Identification Of Soils Remarks	Sample			PID
			From	To					No.	Pen	Rec	
0 - 5'	L1	6"				Loose, Dry	0.5'	Topsoil: dark brown fine Sand and Silt, trace fine Gravel Brown fine Sand and Silt	1	60"	60"	
							3.0'					
5' - 10'	L2	6"				M Comp, Dry	5.0'	Brown fine Sand, some fine to coarse Gravel, little Cobble, little Silt Brown fine Sand, some coarse Gravel, little Cobble, little fine Gravel, little Silt	2	60"	60"	
10' - 15'	L3	6"				M Comp, Dry	10.0'	Brown fine Sand and fine to coarse Gravel, little Cobble, trace Silt	3	60"	60"	
15' - 25'	L4	6"				M Comp, Dry	15.0'	Brown fine Sand, some fine to coarse Gravel, trace Cobble, trace medium Sand, trace Silt	4	120"	102"	
20'												
25' - 35'	L5	6"				M Comp, Wet	25.0'	Brown medium to coarse Sand, some fine to coarse Gravel	5	120"	110"	
							27.0'	Light brown fine Sand and Silt, trace coarse Gravel				
30.0'							30.0'	Brown fine Sand and Silt, trace fine to coarse Gravel, trace Cobble				
35.0'							35.0'					
40.0'							40.0'	Rock: B.O.B., installed a 2" PVC Monitoring Well at 32' using: Threaded Plug 10' Screen, .010 Slot 24' PVC Riser Expandable Gripper 6 Sand, 50 lb bags from 40' to 20' Bentonite from 20' to 17' 4" Protective Steel Sleeve 2 Concrete Mix, 80 lb bags				

Driller: Mark Schock

Assistant: John Babick

Soils Engineer: David Held

Proportions used trace= 0.10%, little = 10.20%, some = 20.35%, and = 35.50%

Sample Type:
C = Cored W = Washed
SS = Split Spoon
UP = Undisturbed Piston

Cohesionless Density
0-10 Loose
10-30 Med. Comp.
30-50 Dense

Total Footage:
Earth Boring Ft. 40.0
Rock Coring Ft.

Soil Sampling Log

Date Started 2/9/2021

Sheet 1 Of 1

Date Finish 2/9/2021

Proj. No.

Weight Of Hammer 140 300

Location 285 & 357 River Road

Hammer Fall 30' 24"

Putnam, CT

Ground Water Observations

Date Time Depth

Rawson Materials

6 Kennedy Drive

Putnam, CT 06260

Offset

Ground Elevation

Hole No. B - 3 / MW - 3

Sampler O.D. I.D.

Casing Sampler Core
Type FJ FJ Barrel

Type Of Rig Geoprobe SONIC 8140LS

Size I.D. 6.0" 4.5"

Dept. Below Surface	Sample No. Depths Elev. Ft.	Type Of Sample	Blows Per 6" On Sample			Density Or Consist Moisture	Profile Change Depth Elev.	Field Identification Of Soils Remarks	Sample			PID
			From	To					No.	Pen	Rec	
0 - 5'			0-6	6-12	12-18			Topsoil Orange brown silty fine Sand and Gravel				
							1.5'					
							2.5'					
5' - 10'							5.0'	Brown fine to coarse Sand and fine to medium Sand.				
10' - 15'								Brown coarse Sand and fine Gravel, Cobbles, trace Boulders				
15' - 20'												
							19.0'					
20' - 25'							21.0'	Granitic Boulder				
25' - 30'								Dense Silte and fine Gravel, Cobbles				
							27.0'					
30' - 40'												
								Brown medium to fine Sand, little coarse Sand				
40' - 45'												
45'							45.0	Bedrock: B.O.B., installed a 2" PVC Monitoring Well using: Threaded Plug 10' Screen, .010 Slot 37' PVC Riser Expandable Gripper 10 Sand, 50 lb bags from 45' to 20' Bentonite from 20' to 17' 4" Protective Steel Sleeve 2 Concrete Mix, 80 lb bags				

Driller: Mark Schock

Proportions used trace= 0.10%, little = 10.20%, some = 20.35%, and = 35.50%

Assistant: John Babick

Sample Type:
C = Cored W = Washed
SS = Split Spoon
UP = Undisturbed PistonCohesionless Density
0-10 Loose
10-30 Med. Comp.
30-50 DenseTotal Footage:
Earth Boring Ft. 45.0
Rock Coring

Ft.

Soil Sampling Log

Date Started 2/10/2021

Sheet 1 Of 1

Date Finish 2/10/2021

Proj. No.

Weight Of Hammer 140 300

Hammer Fall 30' 24"



75 Commerce Circle
Durham, CT 06422
Phone: 860-349-0397

Location 285 & 357 River Road

Putnam, CT

Ground Water Observations

Date Time Depth

Sampler O.D. I.D.

Type Of Rig Geoprobe SONIC 8140LS

Rawson Materials

6 Kennedy Drive

Putnam, CT 06260

Offset

Ground Elevation

Hole No. B - 4 / MW - 4

Casing	Sampler	Core
FJ	FJ	Barrel

Size I.D. 6.0" 4.5"

Dept. Below Surface	Sample No. Depths Elev. Ft.	Type Of Sample	Blows Per 6" On Sample			Density Or Consist Moisture	Profile Change Depth Elev.	Field Identification Of Soils Remarks	Sample			PID
			From	To					No.	Pen	Rec	
0 - 5'			0-6	6-12	12-18		1.5'	Topsoil				
5' - 10'								Brown fine to coarse Sand and Gravel				
10' - 15'							10.0'					
15' - 20'								Brown coarse to fine Sand and Gravel, trace Cobbles				
20' - 25'												
25' - 30'							25.0'					
30' - 40'							33.0'	Brown coarse to fine Gravel and fine to coarse Sand				
40' - 50'							40.0'	Brown fine to medium Sand, some Silt, little Gravel				
							49.0'	Bedrock: B.O.B., installed a 2" PVC Monitoring Well at 30' using: Threaded Plug 10' Screen, .010 Slot 25' PVC Riser Expandable Gripper 6 Sand, 50 lb bags from 31' to 17' Bentonite from 17' to 14' 4" Protective Steel Sleeve 2 Concrete Mix, 80 lb bags				

Driller: Mark Schock

Assistant: Matthew Schock

Soils Engineer: David Held

Proportions used trace= 0.10%, little = 10.20%, some = 20.35%, and = 35.50%

Sample Type:
C = Cored W = Washed
SS = Split Spoon
UP = Undisturbed Piston

Cohesionless Density
0-10 Loose
10-30 Med. Comp.
30-50 Dense

Total Footage:
Earth Boring Ft. 49.0
Rock Coring Ft.

Soil Sampling Log

Date Started 2/10/2021

Sheet 1 Of 1

Date Finish 2/10/2021

Proj. No.

Weight Of Hammer 140 300

Location 285 & 357 River Road

Hammer Fall 30' 24"

Putnam, CT

Ground Water Observations

Date Time Depth

Sampler O.D. I.D.

Type Of Rig Geoprobe SONIC 8140LS



75 Commerce Circle
Durham, CT 06422
Phone: 860-349-0397

Offset

Ground Elevation

Hole No. B - 5 / MW - 5

Casing Sampler Core
Type FJ FJ Barrel

Size I.D. 6.0" 4.5"

Rawson Materials

6 Kennedy Drive

Putnam, CT 06260

Dept. Below Surface	Sample No. Depths Elev. Ft.	Type Of Sample	Blows Per 6" On Sample			Density Or Consist Moisture	Profile Change Depth Elev.	Field Identification Of Soils Remarks	Sample			PID
			From	To					No.	Pen	Rec	
0 - 5'			0-6	6-12	12-18		1.5'	Topsoil				
5' - 10'								Brown fine to coarse Sand and fine Gravel, trace Cobble				
10' - 15'												
15' - 25'							15.0'	Brown fine to medium Sand, little coarse Sand, little fine Gravel				
25' - 35'							22.0'	Brown medium Sand				
35' - 45'							30.0'	Brown fine to coarse Sand and fine to coarse Gravel				
45' - 50'							40.0'	Medium brown fine Sand				
50' - 55'							50.0'	Dark brown glacial Till				
							54.0'	Weathered rock: B.O.B., installed a 2" PVC Monitoring Well at 29' using Threaded Plug 10' Screen, .010 Slot 25' PVC Riser Expandable Gripper 6 Sand, 50 lb bags from 31' to 17' Bentonite from 17' to 14' 4" Protective Steel Sleeve 2 Concrete Mix, 80 lb bags				

Driller: Mark Schock

Assistant: Matthew Schock

Soils Engineer: David Held

Proportions used trace= 0.10%, little = 10.20%, some = 20.35%, and = 35.50%

Sample Type:
C = Cored W = Washed
SS = Split Spoon
UP = Undisturbed Piston

Cohesionless Density
0-10 Loose
10-30 Med. Comp.
30-50 Dense

Total Footage:
Earth Boring Ft. 54.0
Rock Coring Ft.

Soil Sampling Log

Date Started 2/10/2021

Date Finish 2/10/2021

Weight Of Hammer 140 300

Hammer Fall 30' 24"

Ground Water Observations

Date Time Depth

Sampler O.D. I.D.

Type Of Rig Geoprobe SONIC 8140LS



75 Commerce Circle
Durham, CT 06422
Phone: 860-349-0397

Sheet 1 Of 1

Proj. No.

Location 285 & 357 River Road

Putnam, CT

Offset

Ground Elevation

Hole No. B - 6 / MW - 6

Casing Sampler Core
Type FJ FJ Barrel

Size I.D. 6.0" 4.5"

Rawson Materials

6 Kennedy Drive

Putnam, CT 06260

Dept. Below Surface	Sample No. Depths Elev. Ft.	Type Of Sample	Blows Per 6" On Sample			Density Or Consist Moisture	Profile Change Depth Elev.	Field Identification Of Soils Remarks	Sample			PID
			From	To					No.	Pen	Rec	
0 - 5'			0-6	6-12	12-18		1.5'	Topsoil				
								Brown fine to medium Sand, little fine to coarse Gravel				
5' - 10'												
10' - 20'							10.0'	Dark brown coarse to fine Sand, some fine to coarse Gravel				
20' - 30'												
							25.0'	Brown very fine Sand and Silt				
30' - 40'							30.0'	Brown fine to medium Sand and Silt, little fine to coarse Gravel				
40' - 50'							40.0'	Light brown fine Sand and Silt				
50' - 60'												
							57.0'	Till				
							60.0'	B.O.B., installed a 2" PVC Monitoring Well at 30' using:				
								Threaded Plug				
								10' Screen, .010 Slot				
								25' PVC Riser				
								Expandable Gripper				
								7 Sand, 50 lb bags from 31' to 17'				
								Bentonite from 17' to 14'				
								4" Protective Steel Sleeve				
								2 Concrete Mix, 80 lb bags				

Driller: Mark Schock

Assistant: Matthew Schock

Soils Engineer: David Held

Proportions used trace= 0.10%, little = 10.20%, some = 20.35%, and = 35.50%

Sample Type:
C = Cored W = Washed
SS = Split Spoon
UP = Undisturbed Piston

Cohesionless Density
0-10 Loose
10-30 Med. Comp.
30-50 Dense

Total Footage:
Earth Boring Ft. 60.0
Rock Coring Ft.



INLAND WETLAND COMMISSION

APPENDIX A

APPLICATION FOR PERMIT

This application is for the use of inland wetlands and water courses.

The meetings are held on the second Wednesday of every month at 7:00pm in the Town Hall. If an on-site inspection is canceled due to inclement weather, the applicant is asked to call the office at 963-6803 30 minutes before the scheduled inspection to see if or when the inspection will be held.

Name of Applicant Nicholas Barry
Applicant's Address 1090 North Rd, Dayville, CT 06241
Phone # 860-234-3093
Owner of Land Roland Morris
Owner's Address 27 Freeley Park, Pomfret Center, CT 06259
Location and description of proposed activity: 257 Heritage Rd
New Home Construction

Activity & Purpose Code

Please **CHECK** one in each column that best describes the activity proposed.

<u>Code</u>	<u>Activity Type</u>	<u>Code</u>	<u>Activity Purpose</u>
☐	1 Filling	☐	A Residential Improvement by homeowner
☒	2 Excavation	☒	B New residential development - single family
☐	3 Land Clearing	☐	C New residential development - multi- family/condo
☐	4 Stream Channel	☐	D Commercial/Industrial Uses
☐	5 Stream Stabilization	☐	E Municipal Improvements
☐	6 Stream Clearance	☐	F Utility Company Improvements
☐	7 Culverting	☐	G Agriculture, Forestry or Conservation
☐	8 Und. Grd. Util.	☐	H Wetland Creation/Restoration
☐	9 Roadway Construction	☐	I Storm Water/Flood Control
☐	10 Drainage Improvements	☐	J Erosion/Sediment Control
☐	11 Pond Dredge/Dam Construction	☐	K Recreation/Boating/Navigation
☐	12 Activity Buffer/Set Back Area	☐	L Routine Maintenance
☐	13 Other: Please describe:		